Part No. 6803

LASER®

Battery Tester

12 volt

Instructions

Introduction

The Laser 6803 Car Battery Tester quickly and accurately measures the cold cranking amps (CCA) capability of the vehicle starting battery, measures battery health and assists in pinpointing common faults in the vehicle starting and charging systems.

- Tests all automotive starting batteries, including lead-acid, AGM (absorbed glass mat) flat plate, AGM spiral wound, GEL batteries, and EFB (enhanced flooded battery)
- Detects bad cells
- Reverse polarity protected — will not damage battery tester or vehicle
- Tests fully charged or partly discharged batteries
- Multi language
- Test data can be printed out via PC or Laser 6804 Thermal Printer

Battery Test
Analyses battery health status to calculate actual cold cranking capability of the battery; advises whether to charge or replace battery if necessary. Can identify a faulty battery before actual failure.

Cranking Test
Identifies fault or potential faults in the starting circuit including the starter motor itself by measuring increases in starting load torque.

Charging Test
Checks and analyses the charging system, determines if output of generator or alternator is to normal parameters, detects under or over-charging.

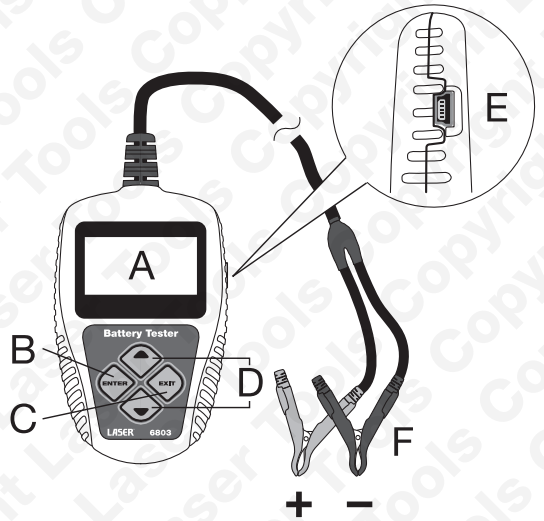
Technical Parameters

Cold cranking amps measuring range:

Standard	Measuring Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-N200z
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000
GB	30Ah-220Ah

Voltage measuring range: 8-30V DC

Controls



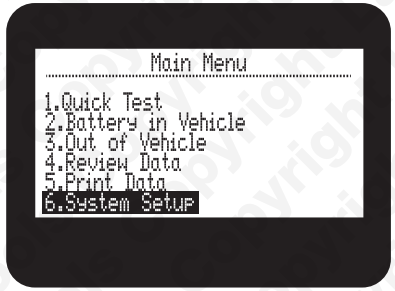
Ref.	Component
A	LCD display screen
B	ENTER key
C	EXIT key
D	UP / DOWN keys
E	Mini-USB socket
F	Battery Crocodile clips (+ red & - black)

Product Setup

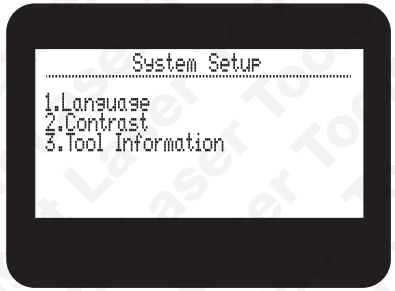
Instrument can be powered up by (a) connecting to vehicle battery via the crocodile clips (**F**), red to positive (+), black to negative (-), or (b) via the supplied USB cable to a PC.

From the startup screen press the ENTER key (**B**) to display the main menu.

Then scroll down by pressing the DOWN key (**D**) to **6.System Setup**.

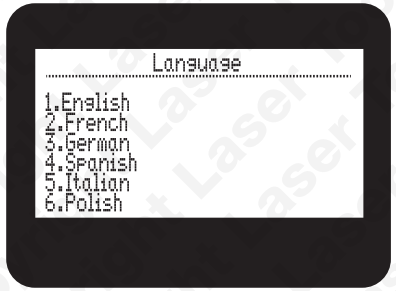


The System Setup screen enables the selection of Language, Screen Contrast or the Tool Information (current software and hardware versions).

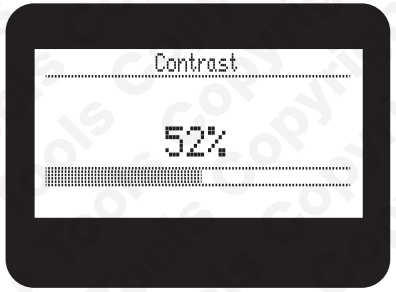


Product Setup

Select Language.



Adjust LCD screen contrast by using UP and DOWN keys.



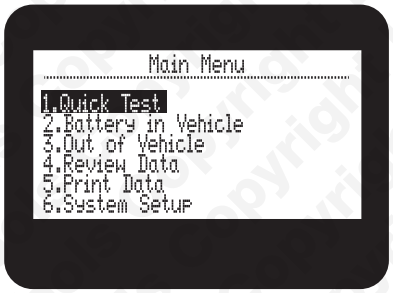
Select Tool Information.

Testing the Vehicle Battery

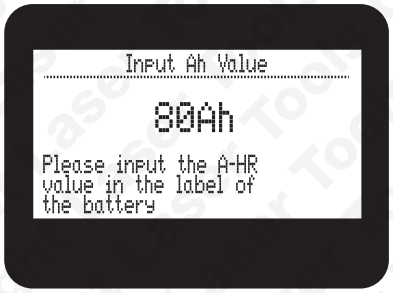
Quick Test
This test very quickly determines the battery status including voltage, CCA, electronic resistance, charge percentage value, state of health and test result.

From the startup screen press the ENTER key (**B**) to display the main menu.

Then scroll down by pressing the DOWN key (**D**) to **1.Quick Test**.

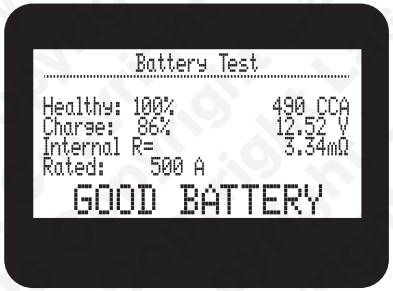


Press ENTER to select **Quick Test**. At the next screen enter the rated battery capacity (using the UP and DOWN keys) for the battery being tested (this can be read from the information label on top of the battery). This is the amp/hour (Ah) figure.



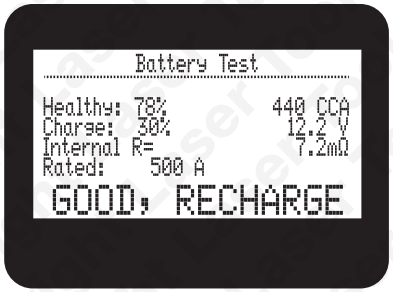
Now press the ENTER key to start the **Quick Test**. One of five results will be displayed:

1.
Good Battery — Test passed with no problems found.

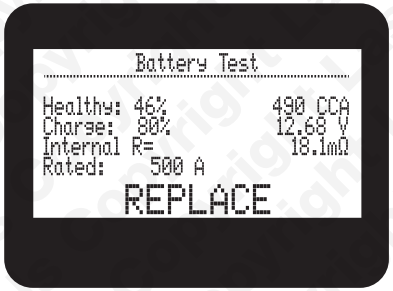


Testing the Vehicle Battery

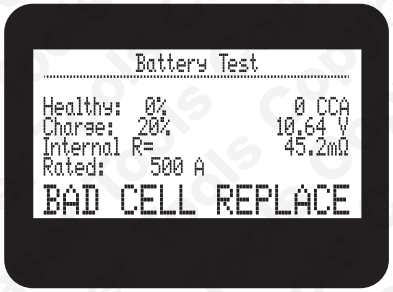
2.
Good, but Recharge — current is low, recharge before using.



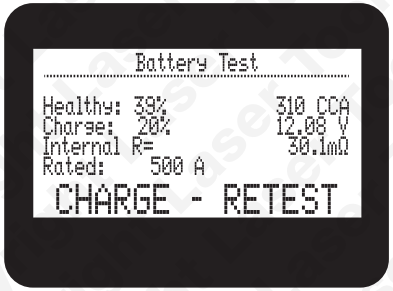
3.
Replace — the battery has reached (or is very near) the end of its useful life. Replace with new battery before using vehicle.



4.
Bad Cell — Replace — One or more cells damaged, replace battery.



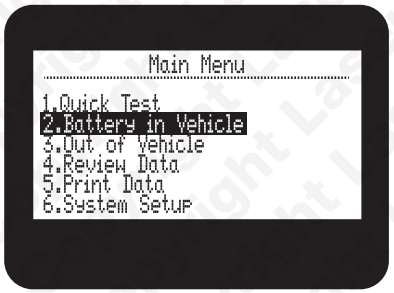
5.
Charge and Retest — an unstable battery can be recharged and tested again to avoid error.



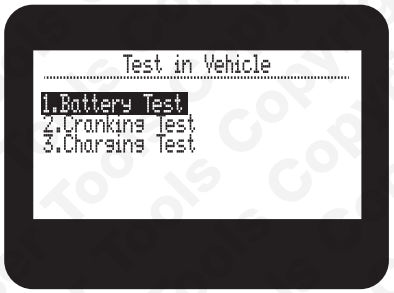
If the same result (or **Replace** result) is displayed after charging and retesting, then the battery is damaged and should be replaced.

Full Test — Battery in Vehicle

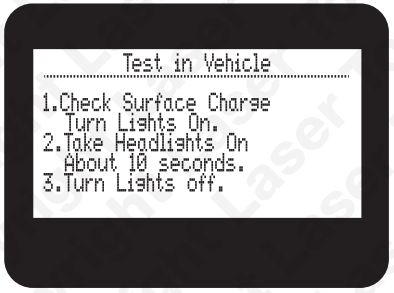
Select **2.Battery in Vehicle** from main menu.



Now select **1.Battery Test** from the Test in Vehicle menu.

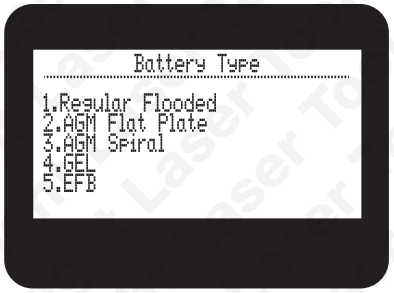


If the instrument detects a surface charge condition in the battery, the following screen is displayed:



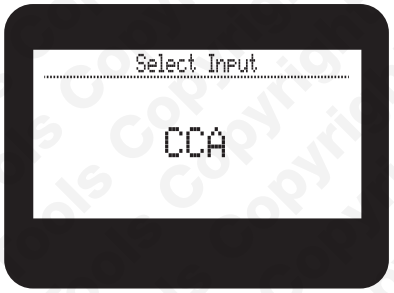
Follow the instructions displayed, then press the ENTER key to continue.

Select battery type (info on battery label).



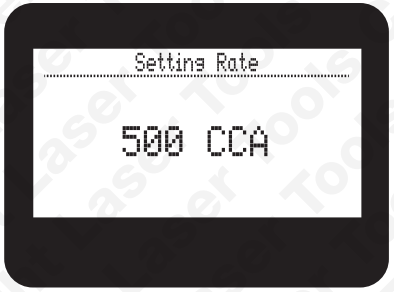
Now choose the **measuring range** for the battery; again, this information is displayed on the label on top of the battery. Cycle up or down to choose the correct measuring standard; for example EN, SAE or CCA.

If the battery label indicates 500 CCA, then choose **CCA**.



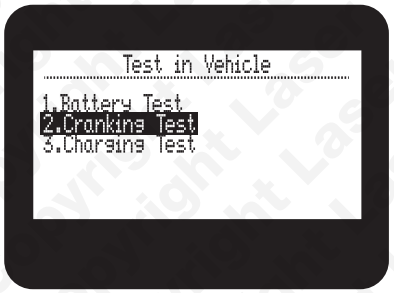
Press ENTER to select the **measuring rate**.

If the battery label indicates 500 CCA, then choose **500**.

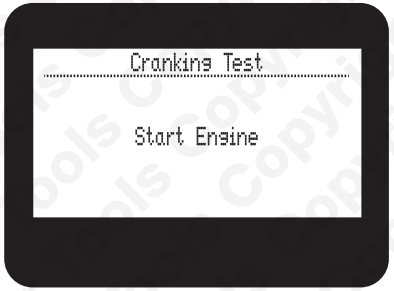


The screen will display '**TESTING**' for a few seconds. When the test is completed, one of five results will be displayed (refer to previous **Quick Test** section for descriptions and diagrams for these results).

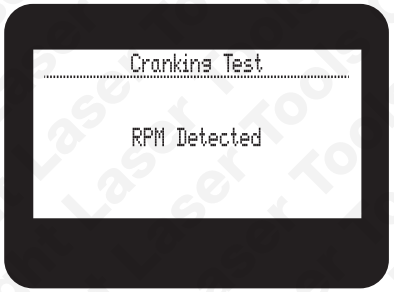
Now select **2.Cranking Test** from the Test in Vehicle menu.



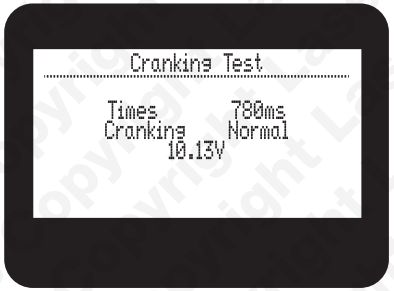
The tester will now prompt the operator to start the engine.



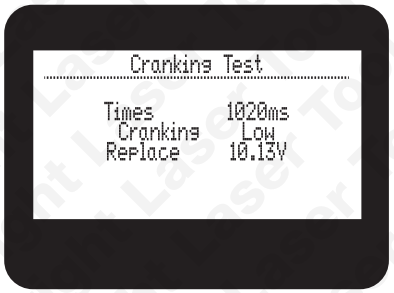
After the engine starts, the screen shows:



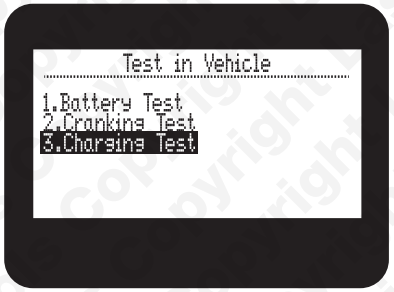
Then the test result is displayed, which includes the actual cranking voltage and the actual cranking time:



If **Cranking Test** is abnormal, **Replace** (battery) will be displayed with the results:

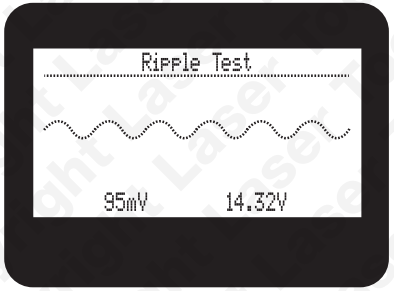


Now select **3.Charging Test** from the Test in Vehicle menu.



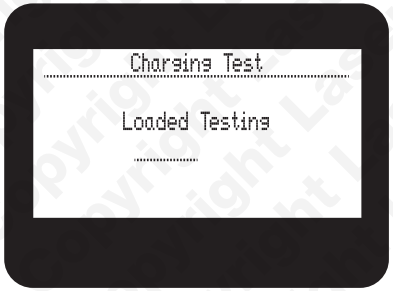
Keep the engine running for this test; make sure all electric accessories are switched OFF. Turning on or off any electric accessories during the test will affect the accuracy of the test result.

The instrument will run the following tests in sequence. For the **Ripple Test** (excessive ripple means that one or more of the alternator diodes is failing, allowing alternating current to be passed into the battery), the instrument will display the real time ripple and then the ripple volt and charging volt values:

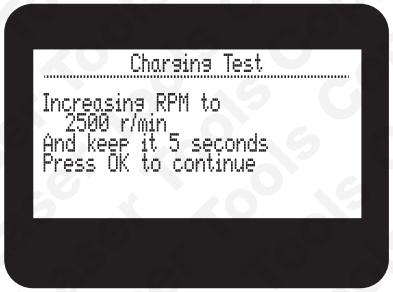


Testing the Vehicle Battery

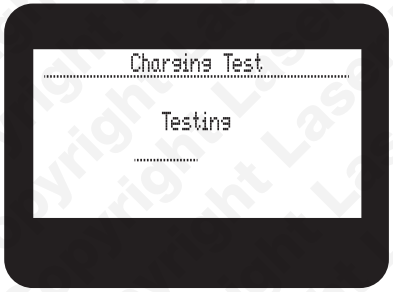
After the Ripple Test, the instrument will automatically start the Loaded Voltage Test:



The Loaded Voltage Test takes approximately 3 seconds, then you will be advised to bring the engine speed up to 2500 RPM and hold for 5 seconds. Then press ENTER to continue:

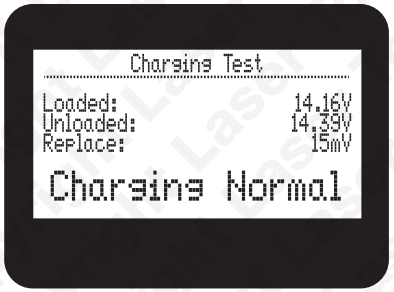


The instrument starts the Charging Volt Test after the increasing engine revs are detected:



Testing the Vehicle Battery

After the test has been completed, the screen displays the effective charging voltage and charging test results:



Charge Test Results

Charging Normal: No problems detected.

Charging Low: Charging voltage is low; check alternator drive belt and/or the alternator and battery connections. If no faults are found, refer to the manufacturer's documentation for charging system fault-finding.

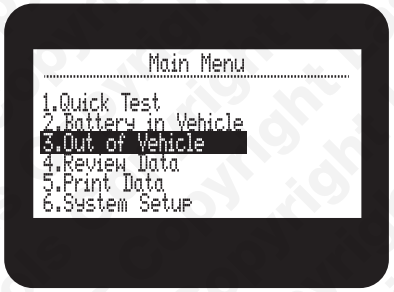
Charging High: Alternator output voltage is too high; it is likely that the alternator's internal voltage regulator is faulty. Overcharging will damage the battery and drastically shorten its life.

No Volt Output: No output from the generator or alternator has been detected — refer to 'Charging Low' instructions above.

Testing the Vehicle Battery

Test — Battery Out of Vehicle

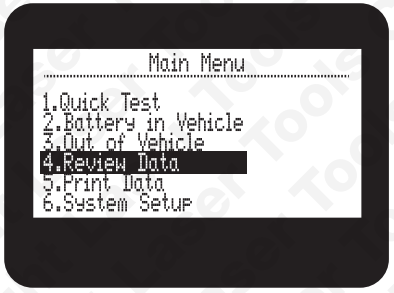
Out of Vehicle means that the car battery is not connected to the vehicle's electrical system, i.e. the battery terminals are not connected or the battery is being bench tested.



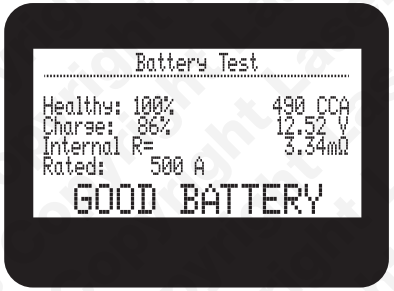
In this mode, only the **Battery Test** can be carried out — follow the **Battery Test** instructions from the 'Test in Vehicle' section.

Review Data

To view the last tested battery result, choose **4.Review Data** from the Main Menu.



The data will be displayed:



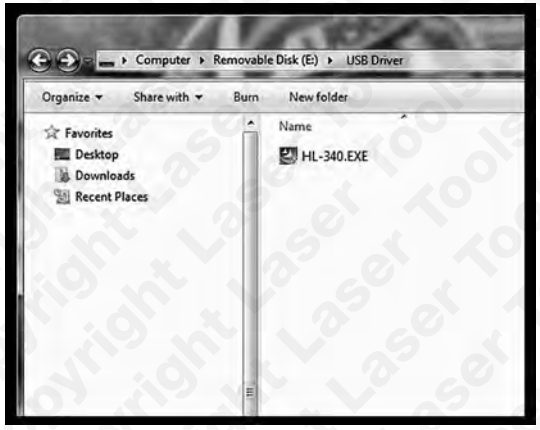
Print Data

The Laser 6803 Car Battery Tester can print out the test results via a PC or with the Laser 6804 Thermal Printer.

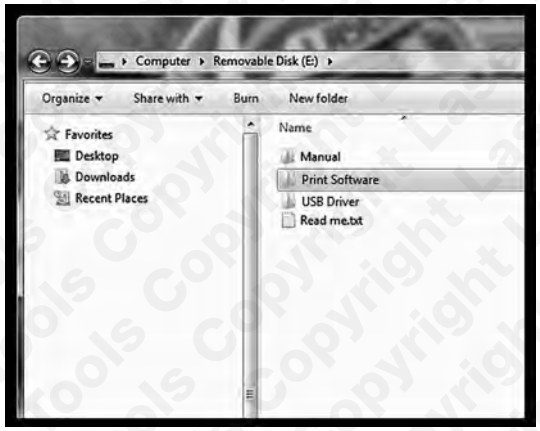
To Print from PC

1. Connect the 6803 Car Battery Tester to the PC via the USB cable supplied. The tester will power up.
2. Insert the Mini-CD supplied into the PC CD drive.
3. Locate the USB Driver folder.

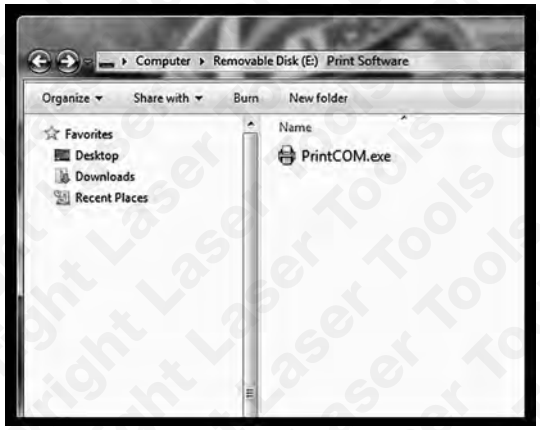
4. Install the USB driver (follow instructions on screen).



5. When the PC confirms that the USB Driver software has been installed correctly, locate the Print Software folder.

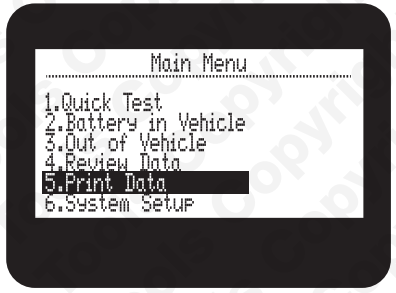


6. Run the print software.

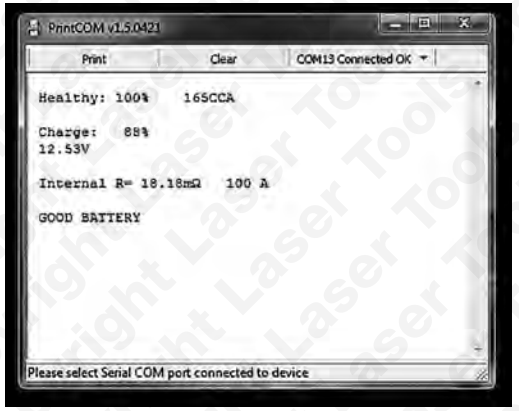


7. The software will confirm that it is connected to the battery tester. If there is any information displayed from a previous session, click on the '**Clear**' button.

8. On the main menu of the battery tester select **5.Print Data**:



9. The data from the battery tester will be sent to the PC:



10. Click on the '**Print**' button to send to the printer connected to the PC.

Precautions - please read

- Only for use with automotive 12 volt systems.
- Always refer to instructions before use.
- Observe standard workshop safety procedures when using the tester.
- Danger of sparking: (explosion risk) if vehicle battery has recently been charged, ensure area is well ventilated and **ensure eye protection is worn** before connecting up the battery tester.
- Danger of sparking: do not connect up the battery tester if there are any fuel leaks or fuel vapour present.
- Always take extreme care when connecting the battery tester to the vehicle battery. Always connect **red** cable clamp to the positive terminal of the battery **first**. When disconnecting, always remove the **black** cable clamp from the negative battery terminal of the battery **first**.
- When working with or near a lead-acid battery make sure to remove personal metal items such as watch straps, rings, bracelets, necklaces, etc. A short across the battery terminal from one of the above could cause severe burns.
- Protect the battery tester from prolonged exposure to humid or damp conditions.
- Ideal storing and operating temperature: 0˚C to +50˚C.
- Do not let the tester get wet or use in damp or wet conditions.
- Please keep away from children at all times.

Safety First. Be Protected.

Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

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9 February 2017 9:39 AM

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