

E-mail: gunson@globalnet.co.uk

Visit our
Website
www.gunson.co.uk

Gunson Ltd, Acorn House, Coppem Rd, Dagenham, Essex. RM8 1NU.
The European Division of ACTRON Manufacturing Co Cleveland Ohio USA

ins \ mas \ smartj - 3.ins 12 / 99

Gunson
by **actron** 

SMART JUMPER HANDBOOK

Product Part No. 4167

Gunson's *Gold* Range

Important:

Charge Smart Jumper for 24 hours immediately after purchase.
Recharge after use and at least every three months if the unit is not in use.
For best performance store at above 10°C (50°F). A warm battery gives better performance.

**BEFORE FIRST USE READ THE INSTRUCTIONS
PARTICULARLY THE PRECAUTIONS SECTION**

Gunson Ltd, Acorn House, Coppem Rd, Dagenham, Essex. RM8 1NU.
The European Division of ACTRON Manufacturing Co Cleveland Ohio USA

1. FEATURES OF THE SMART JUMPER

- A. AUTOMATIC POWER CONNECTION SIGNAL - CENTRE MULTICOLOURED LED.**
A green light indicates power on when the clamps are properly hooked up. A red light and buzzer indicates reverse connection.
- B. SPARK-PROOF CLAMPS WITH ELECTRONIC SENSOR.**
The clamps carry electric current only when properly connected to the battery terminal. This important safety feature prevents short-circuit, damage and battery drains. A smart feature giving maximum protection for the user and vehicle

- C. BATTERY STATUS BUTTON.**
Battery Test and Display feature shows power available.

- D. BATTERY POWER INDICATORS.**
3 LEVEL LED DISPLAY - smart indicators with a system to recognise charging or standby condition. This provides a better guide to charge level.

- E. 12V DC SOCKET. VEHICLE CIGARETTE LIGHTER TYPE -** provides a d.c. power source of 12 volts for accessories rated up to 10 A continuous (or 15 A briefly).

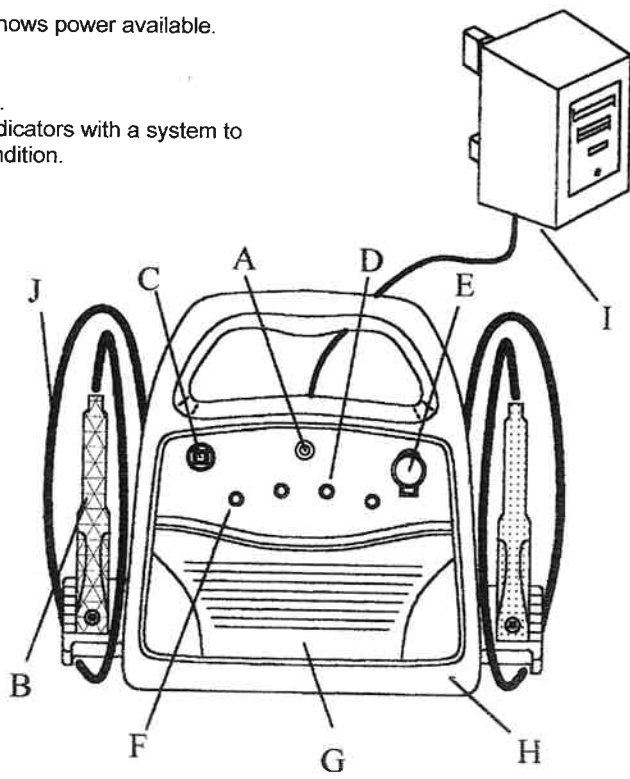
- F. BATTERY CHARGING LED.**
To confirm battery charging mode.

- G. RECHARGEABLE TRACTION TYPE BATTERY**
Lead acid sealed battery. Leak proof in any position. Rated 12 V and 17 Ah

- H. CORROSION PROOF POLYPROPYLENE CASE**

- I. GUNSON QUICK CHARGER WITH BATTERY PROTECTION FEATURES**
Automatic voltage control - charges to full capacity and prolongs battery life.

- J. EXTRA HEAVY 55 cm CABLES (AWG 4 WELDING GRADE)**



WARRANTY

This warranty is in addition to the statutory rights of the purchaser. Gunson have made every effort to ensure that this product is of the highest quality. However, Gunson accept no responsibility for any loss or damage arising from the use of this product.

If this product should require service or repair at any time, it should be returned to Gunson Ltd, Acorn House, Coppen Rd, Dagenham, Essex, RM8 1NU. All technical enquiries should be accompanied by a stamped self-addressed envelope. Repairs will be completed free of charge for manufacturing defects within one year of purchase. Please provide evidence of date of purchase. Defects due to other than manufacturing faults may be charged for.

IF YOU HAVE DIFFICULTY USING THIS PRODUCT PLEASE CONTACT THE HELP LINE. IF RETURNING GOODS FOR SERVICE OR ANY OTHER REASON, INCLUDE FULL DETAILS AND A DESCRIPTION OF ANY FAULTS	Name											☎		
	Address													
		Postcode												
	Fault or Reason													
													Purchased	
	Retailer											☎		

GUNSON LTD for general enquiries.	☎	+44 (0)20 8984 8855
	Fax	+44 (0)20 8984 8866
SALES / ORDERS		+44 (0)20 8984 0047
TECHNICAL HELP LINE		+44 (0)20 8592 1967

5. USING SMART JUMPER AS A DC POWER SOURCE

Smart Jumper has an internal 12 volt 17 Ah battery. It may be used as a DC power source to an appliance with a vehicle type cigarette lighter plug. Equipment not fitted with this type of plug might not be 12v power, carefully check suitability of such equipment. (a voltage regulator or inverter must be used for operation at other than 12 volts).

Plug any 12 Volt DC electric appliance, with maximum rating not exceeding 10 amps continuous, into the 12 Volt DC socket of the Smart Jumper. CAUTION: If the amps rating of the appliance exceeds 10 amps continuous (15 amps brief), the built-in circuit breaker will cycle on and off. If this happens, you should disconnect the appliance from the Smart Jumper (or use at a reduced load in the case of electric motor driven equipment e.g. Power Drill).

6. FURTHER INFORMATION

PERFORMANCE

When stored in normal room temperature, above 10 degrees C (50 F), a fully-charged Smart Jumper may provide as many as 30 jump starts, if each start is made at one-minute intervals. This will be reduced in unfavourable conditions e.g. reluctant starter, cold weather, large engine. In extreme conditions some degree of help is required from the vehicle battery.

If the engine is reluctant to crank after two or three brief attempts with Smart Jumper connected, allow a rest period with Smart Jumper still connected. This allows the vehicle battery to recharge and help meet the high power demanded by the starter.

STORAGE

If possible, keep the Smart Jumper at normal temperature to keep the built-in battery at its best operational condition. DO NOT keep the Smart Jumper permanently inside the vehicle during very cold or very hot weather. **Smart Jumper should not be exposed to extremes of temperature. At high temperatures a battery requires more frequent recharging and life is reduced, at low temperatures all batteries have reduced power.**

DURABILITY

The Smart Jumper, if properly used and maintained, will last a very long time. However, due to normal wear and tear, the internal battery of the Smart Jumper may gradually lose its ability to hold a charge or supply the same power as previously. Batteries deteriorate in two ways - firstly due to time (correct storage increases life) and secondly due to service wear from heavy repeated discharge (do not allow the battery to stay flat for long, if possible do not leave a load connected to totally flatten the battery).

After a full recharge, if the battery status LED shows a LOW level within 7 to 14 days when the Smart Jumper is not in use, it indicates that the battery cannot properly hold its charge or the circuit has malfunctioned. A new battery or circuit check by a QUALIFIED ELECTRICIAN, is required. You may take the Smart Jumper to any QUALIFIED AUTO ELECTRICIAN to replace the battery with a new 12 Volt 17 or 18 Ah battery. - preferably a traction / cyclic discharge type (a UPS type is less suitable for heavy discharge rates).

7. Specification

Battery Specification - what to look for.

Beware exaggerated claims of **peak** or **instantaneous** outputs for similar products. These are not tested to a recognised standard. Look for a genuine CCA rating (cold cranking amps, sustained output) and also the Ah (Ampere hour) rating as a guide to output at various conditions of use.

Smart Jumper Internal Battery Specification -

12 Volt lead acid sealed (gel electrolyte) battery, designed for cyclic use (i.e. withstands repeated charge / discharge).

CCA Rating for output at the battery clamps - BCI 235 (SAE 235, EN 228, IEC160, DIN 140).

Ah output rating at the accessory socket - 17 Ah minimum.

Charger Specification.

Dedicated charger (Only suitable for use with Smart Jumper).

Current - 800mA dc 1125 mA rms. Voltage -15.0V regulated to 14.2 V max at the battery terminals

.Thermal shutdown - full protection against overload.

CONFORMS TO BS/EN: 60335-2-29, 50081-1, 50082-1



2. PRECAUTIONS.

Smart Jumper is probably the safest 12 volt storage device available, with protection for the user and vehicle / equipment. It has a variety of uses and different precautions apply to each use. **Only jump 12 volt lead acid batteries - other voltages or battery types may burst and cause injury to persons and damage to property. The user must be competent in using any equipment to which Smart Jumper is connected.**

2.1 When using the battery Clamps.

Smart Jumper may be used for assisting all types of 12 volt lead acid battery (includes maintenance free, low maintenance and conventional types fitted to cars, motorcycles, boats, jet skis, leisure vehicles, lawn mower tractors etc). The heavy jump leads are not intended for powering other 12 volt equipment, a special power socket is provided for this use.

NOTE: the control system will not make a connection to the clamps unless it detects a battery

2.2 When jump starting a vehicle.

- Take care when working on a vehicle while the engine is running. Never wear loose clothing or neck ties which can catch in moving engine parts. Avoid contact with hot engine parts and ignition components (HT shocks can be received from damaged or wet ignition components).
- Make sure the vehicle handbrake is firmly applied. Block the wheels as additional safeguard if the vehicle is on sloping ground.
- Make sure that the product is located in a secure place, so that it can not be dislodged by engine vibration when the engine starts. Check that the product and leads are in a safe position before starting the engine (well away from the exhaust or rotating engine parts).
- Take care not to inhale exhaust gas. Never run the engine inside a closed garage or in a confined space without adequate circulation of fresh air.
- Keep children away from the vehicle while the engine compartment is open.
- Vehicle Batteries contain a corrosive acid. In the event of accidental contact rinse repeatedly with plenty of cold water. **Always seek medical attention in cases of eye contact.**

2.3 When using the output socket

NOTE: EQUIPMENT NOT FITTED WITH THIS TYPE OF PLUG MIGHT NOT BE 12V POWER, CHECK SUITABILITY BEFORE WIRING IN ANY ADAPTOR.

The output socket on the right hand of the front panel has an output of 12 volts with the centre connection positive (conventional for vehicle cigarette lighter sockets). A safety cutout at 10 amps continuous rating, (or briefly to 15 amps) is provided for user / equipment protection. If this operates (disconnects and connects the supply with audible clicking) **discontinue use and check equipment for current rating or fault.** Take care as faulty equipment / wiring can overheat.

2.4 When charging the internal battery

WARNING - The charger is 230 volt powered, keep it clean and dry.

- The charger will become quite hot when in use, particularly when charging the battery from flat.
- The charger supplied is fully automatic and does not require supervision, it may be left connected for extended periods, or permanently, to maintain battery condition. Exceptions to this rule are:

1. DO NOT STORE OR CHARGE THE BATTERY NEAR TO A HEATER OR IN DIRECT SUNLIGHT.

The charger may overcharge a battery if it is too hot, (ideal charge / storage condition 10 to 20 DegC)

2. WHEN THE BATTERY IS OLD / BEGINNING TO DETERIORATE.

Limit the charge period to 48 hours maximum or battery gassing may cause more rapid decline. The battery may still perform light duties but will soon need replacement. Discontinue use if the battery will not reach full charge.

Disposal of lead acid batteries At the end of its life, a vehicle battery or the Smart Jumper battery should be disposed of in a safe and responsible manner. The defective battery should be taken to your local government collection point for disposal of the acid and recycling the metals it contains.

3. CHARGING SMART JUMPER

Charge Smart Jumper for 24 hours immediately after purchase.

The battery power indicators will probably indicate a low state of charge (under 60%) when the battery status button is first pressed. The initial charge to full capacity will usually take 24 hours before the product is ready for normal use. This first charge is important and further charging may be of benefit to condition the new battery. The dedicated charger is another **smart feature** of this product. It is fully automatic and may be left connected to the rear socket for extended periods. NOTE: This is the only charger which should be used. It is not suited to charging other batteries as it works in conjunction with the smart jumper electronic circuits to give reliable safe charging and improved internal battery life. It ensures that SMART JUMPER is always ready to provide the maximum battery power.

3.1 Checking the internal battery charge

Press the battery status button and hold for 3 seconds. The LEDs will show the battery power.

HIGH: Recharging is **not required**.
MEDIUM: Recharging is **recommended**.
LOW: Recharging is **needed**.

Note: If the battery has been charged recently the indicators will be affected and may read too high, this is unavoidable battery chemistry and is due to "surface" charge on the plates. It does not give real energy to the battery and disappears as soon as the battery is loaded for a few seconds

3.2 How to charge the internal battery.

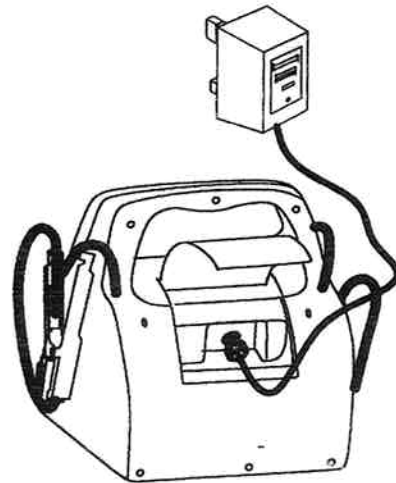
1. Open the rear compartment (press down to release and open from the lower edge).
2. Connect the plug on the charger lead to the Smart Jumper socket.
3. Plug the charger into an AC power source.

When the amber "battery charging" LED is on, it indicates that the battery charger is correctly powered and connected (see item F in figure 1). The LED indicator on the charger itself will also illuminate until charging nears completion.

To check the progress of charging - press the battery status button on the Smart Jumper and hold for 3 seconds, the battery power indicators will show low, medium, or full charge.

3.3 What the displays mean

When the battery status button is pressed the LED display shows the **battery power available** as LOW, MEDIUM OR FULL. When the charger is connected the display shows the **progress of charging**. The LED's automatically give the corrected display whether the battery is on or off charge. (The battery power available display will not always show the same level as the progress of charging display).



3.4 When to recharge the battery

Recharge if the power indicators show less than "full" when the battery status button is pressed. Recharge after use so SMART JUMPER is always ready to provide the maximum power. Recharge at least every three months if the unit is not in use to keep the internal battery in good condition.

The time taken to recharge the internal battery of the Smart Jumper depends on the level when charging commences. Generally, a 12 to 24 hour recharge is sufficient from "medium" charge. The "medium" light comes on below 80% charge and the "low" light below 60%.

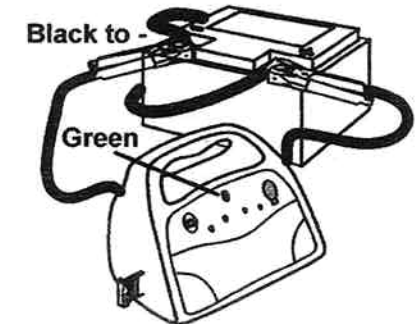
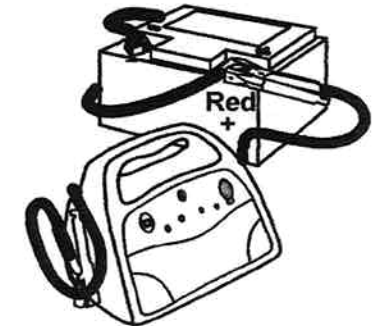
A totally flat battery would be 95% charged in 24 to 36 hours but would continue to take a further trickle charge for up to 72 hours. As the charger is "automatic", it can be left connected indefinitely without overcharging the battery. Note: When the temperature is above 30°C (85°F) or when the battery gets old and begins to deteriorate, charge for 48 hours maximum.

4. USING SMART JUMPER TO HELP START AN ENGINE

SMART JUMPER is used in addition to the vehicle's own battery (which is under performing), to provide supplementary power and start the engine. It has sufficient internal battery power to repeatedly start a medium size petrol engine in reasonable conditions. However it will require some assistance from the vehicle battery in unfavourable conditions e.g. reluctant starter, cold weather, large engine.

IMPORTANT: Turn off all accessories - ignition, lights, fan, screen heater, radio, wipers, etc. before making connections to the battery. The clamps will not provide power unless a battery is detected. A totally flat battery with a load on it will prevent the circuit from operating. If problems are experienced in achieving a connection see the notes below.

1. Connect the RED clamp of the Smart Jumper to the positive (+) terminal of the battery.
2. Connect the BLACK clamp of the Smart Jumper to the negative (-) terminal of the battery. Keep cables clear of any moving parts (fan blades, belts, pulleys, etc.).
3. The multicolour LED should show GREEN, (If the centre LED turns RED and you hear the beep warning, **reverse the connection**).
4. Start the engine. Use the starter in short bursts of around 5 seconds and allow at least 10 seconds recovery between attempts.
5. After the engine starts, disconnect the clamps. Power to the Smart Jumper cables is switched off AUTOMATICALLY. The centre LED will go off.



NOTE: If the engine is reluctant to crank after two or three brief attempts with Smart Jumper connected, allow a rest period. This allows the vehicle battery charge level to recover and help meet the high power demanded by the starter. Make sure the ignition and other loads are switched off!

THE BATTERY CLAMP CONNECTIONS

The automatic on/off feature avoids or reduces many risks. If a vehicle battery is not able to sustain ANY CHARGE there is risk of serious damage to vehicle electronic equipment. This results from high alternator voltage and "spikes" if the engine is started by jumping or by bump starting! Smart Jumper protects against this type of damage.

The battery clamps will normally make a connection accompanied by a click from the heavy duty relay. If the polarity is correct and the circuit does not operate, it is essential to check that the battery will take some charge. If you can not obtain a connection this is a clear warning - proceed as follows **but do not risk using a severely faulty battery:**

Disconnect the battery and remove it from the vehicle - will the smart jumper now connect to the battery alone? If so, there is probably an electrical load from the car which must be traced. If not the battery is **extremely suspect**, make sure it will take a charge from a battery charger and check the battery charger instructions to make sure the battery is behaving normally.

You may also ring our helpline for further advice. The automatic on/off feature gives protection to the vehicle and user. It avoids damage to electronic equipment from reverse polarity, it avoids any risk of sparking, burning, igniting battery fumes or spilled petrol.