

NEXT GENERATION

Powerpack³



INSTRUCTION MANUAL DA25

Before operating this product please read this manual thoroughly and retain it for future reference

CE  FC



ark-pak
Portable. Power. **Anywhere.**

INSTRUCTION MANUAL DA25

Identifying the parts	1
Powerpack 3 Mounting	3
Connecting the Battery	4
Connecting the load	5
Energy indicator	7
Using the Smart Charger	8
Dual Battery System & Solar Panels	9
Trouble shooting & FAQs	10

IDENTIFYING THE PARTS

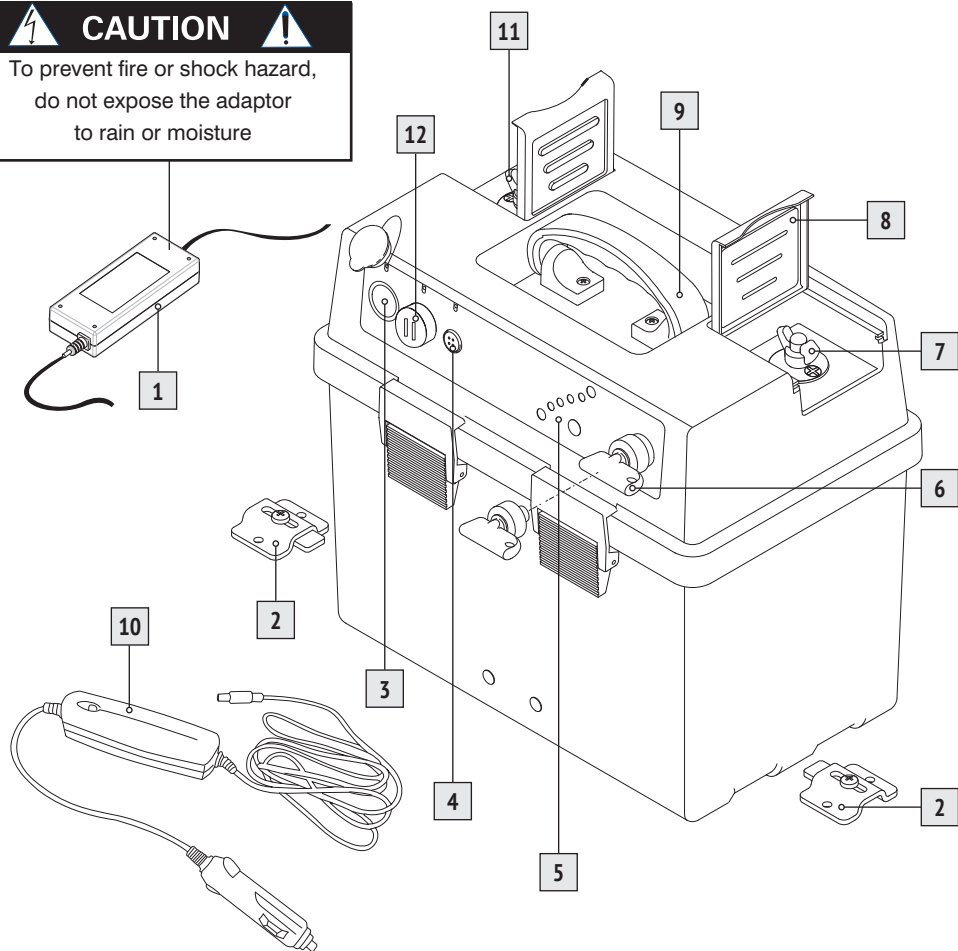
- | | | | |
|----------|--------------------------------------|-----------|--------------------------------|
| 1 | Powerpack 3 adaptor | 7 | Positive high current terminal |
| 2 | Stainless steel brackets | 8 | Terminal cover |
| 3 | 12V DC 10A Accessory Port with cover | 9 | Carry handle |
| 4 | Charger input with cover | 10 | DC-DC Car Charger |
| 5 | LED Condition/Charge Indicator | 11 | Negative high current terminal |
| 6 | Battery Isolator Switch | 12 | Twin 5V DC USB Outlet |



CAUTION



To prevent fire or shock hazard,
do not expose the adaptor
to rain or moisture



IDENTIFYING THE PARTS

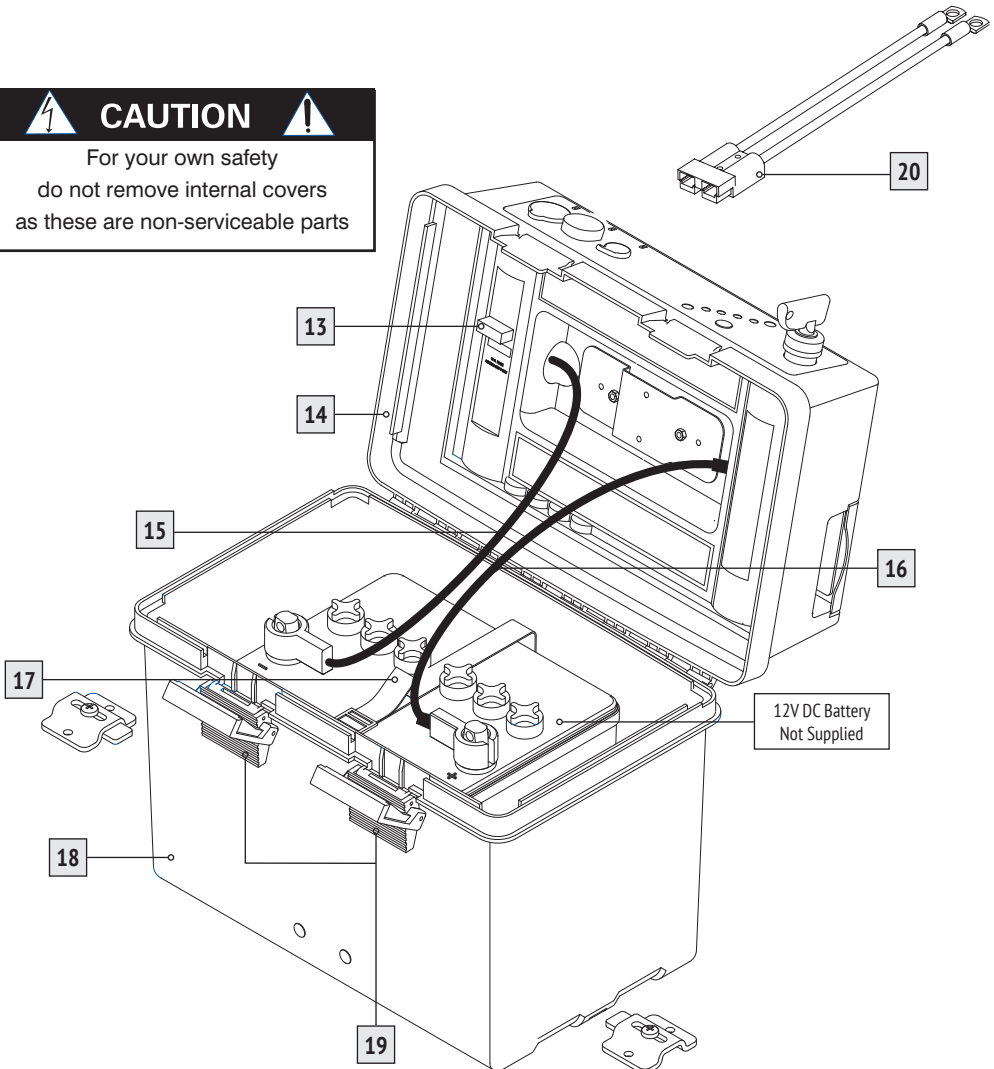
- | | | | |
|-----------|--------------------------------|-----------|---------------------------------|
| 13 | Accessory Port 10A fuse | 17 | Internal battery securing strap |
| 14 | Lid | 18 | Base |
| 15 | Negative battery cable (black) | 19 | Latches |
| 16 | Positive battery cable (red) | 20 | Anderson style plug lead |



CAUTION



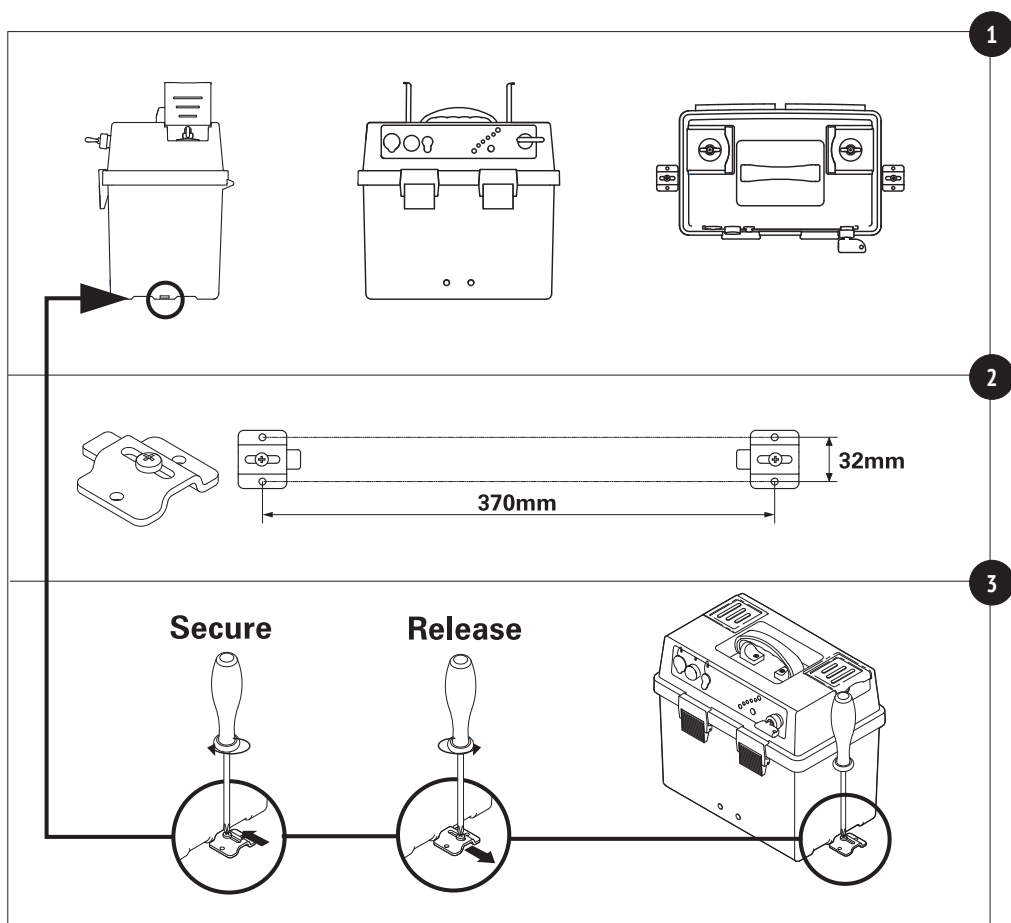
For your own safety
do not remove internal covers
as these are non-serviceable parts



MOUNTING

It is recommended that the Powerpack 3 be securely mounted with the supplied quick release mounting brackets.

- 1 Place the Powerpack 3 in a suitable location with adequate air ventilation and easy access
- 2 Mark bracket mounting holes as indicated, then fasten mounting brackets securely with screws provided
- 3 Locate Powerpack 3 between brackets, slide bracket tongue into Powerpack 3 cavity and tighten screws securely



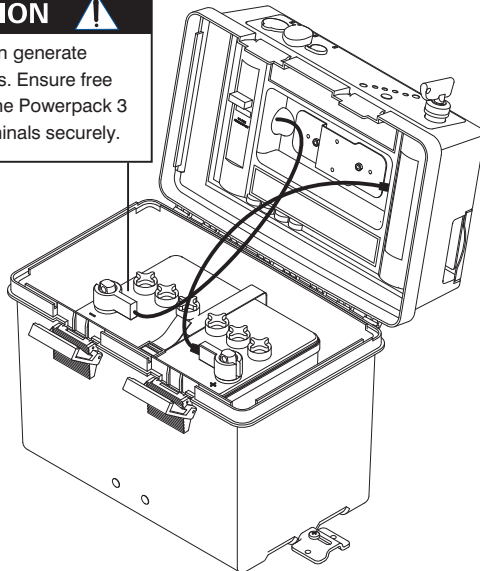
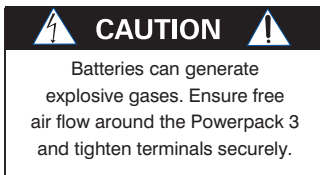
CONNECTING TO THE BATTERY

The Powerpack 3 is suitable for most 12V DC lead acid batteries, we recommend AGM (sealed batteries)

Powerpack 3: Internal Dimensions: 330mm(L) x 180mm(W) x 240mm(H)
External Dimensions: 360mm(L) x 240mm(W) x 320mm(H)

- 1 Place the battery into the Powerpack 3 base **18** and fasten via the internal battery securing strap. **17**
If the battery is small in size we suggest to pack suitable foam around the battery to stop battery movement.
- 2 Ensure Powerpack 3 switch isolator **6** is in the off position and the Powerpack 3 adaptor is not connected. **1**
- 3 Connect the positive red cable **16** to the positive (+) battery terminal post and the negative black cable **15** to the negative (-) battery terminal post. If the charging and conditioning LED flashes 1 sec on and 1 sec off, this indicates reverse polarity connection, or a short circuit in the battery.
- 4 Fasten the terminals securely.
- 5 Close the lid **14** and fasten the latches. **19**

*Please note that your battery terminals position may differ from the illustrated view.



CONNECTING THE LOAD

There are three output connection options:

The positive and negative high current terminals **7** **11** the accessory port **3** or the twin 5V DC USB outlets. **12**

The high current terminals **7** **11**, the accessory port **3** and twin USB outlets **12** can be disconnected by the battery isolator switch. **6**

Note: a battery is a high current device. For your safety never connect a device or load to the high current terminals **7** **11** without turning the battery isolator switch **6** to the **OFF** position first.

- 1 To connect a device or load to the Powerpack 3 high current terminals, **7** **11** undo red and black wing nuts.

Note: do not remove Powerpack 3 terminal washers. Washers must be below the terminals.

- 2 Connect positive cable (red) of the device to the positive (+) Powerpack 3 high current terminal **7** and tighten red wings nut securely.

- 3 Connect negative cable (black) of the device to the negative (-) Powerpack 3 high current terminal **11** and tighten black wing nut securely.

- 4 Turn the isolator switch **6** to the **ON** position when current is required.

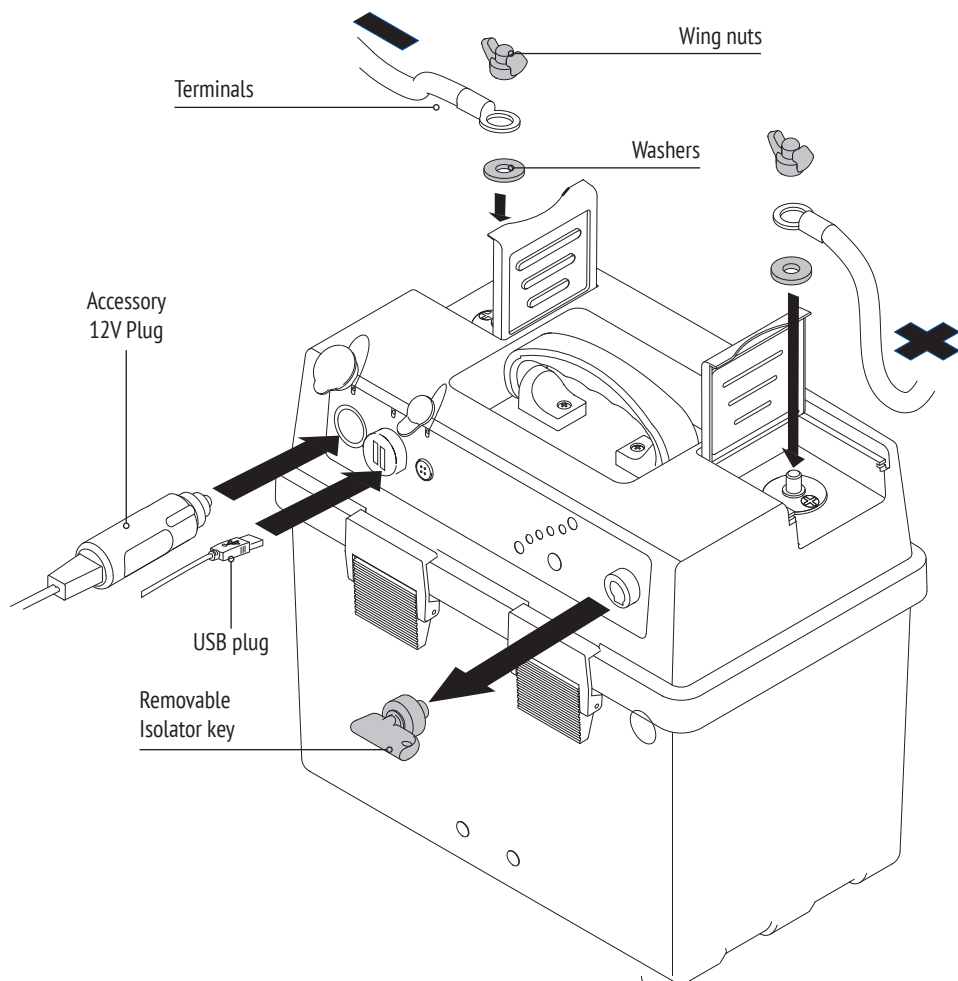
- 5 The accessory port **3** is protected by a 10A replaceable fuse. Should this fuse **13** fail, turn battery isolator switch **6** to the **OFF** position and replace fuse.
The isolation switch **6** has a removable key for extra security.

- 6 The twin USB outlets **12** are current limited to 3A and can be used for charging phones, MP3 players etc. Both outlets can be used simultaneously but the current cannot exceed 3A combined.



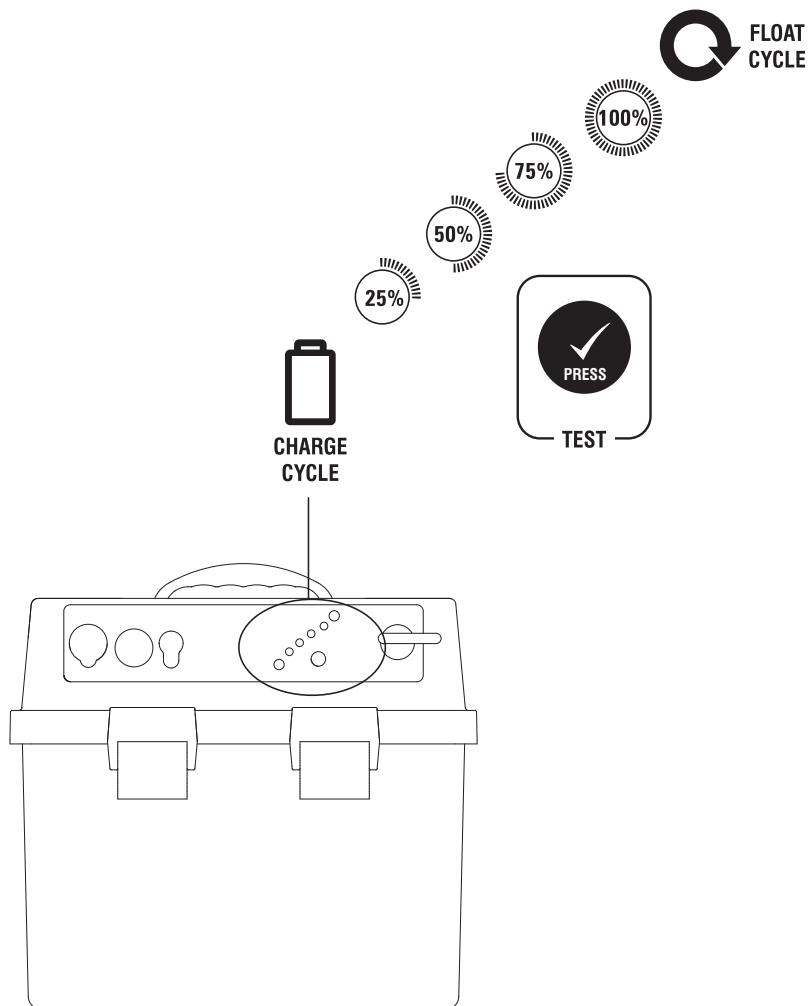
CAUTION

Always check polarity
when connecting to the Powerpack 3.
Incorrect termination may
cause damage



ENERGY INDICATOR

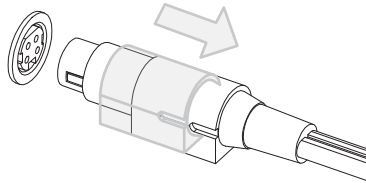
- 1 The Powerpack 3 is fitted with advanced electronics to monitor the energy levels at all times. The battery energy level can be monitored via the LED condition/charge indicator 5
- 2 To view the battery condition charge level, **PRESS + HOLD DOWN** the “Test” button.



USING THE SMART CHARGER

The Powerpack 3 Smart Charge is based upon an advanced software program that monitors your battery. Smart Charger will select from the following autocharge charge cycles to optimise your battery's performance.

To charge the battery, connect either the AC adaptor **1** or the DC-DC car charger **10** to the charge input socket **4**. To connect simply pull back the input plug sleeve, insert, then release. This locks the lead into the Powerpack 3 for a secure fit in all situations.



The autocharge cycles are as follows:

Stage 1: Charge - Recovers a flat battery to peak voltage. Charges battery until it reaches 12.5V.

- ✓ If it reaches 12.5V it will proceed to Stage 2: Bulk
- ✗ If it fails to reach 12.5V after a period of 60 hours, it will proceed to Stage 5: Conditioning
Conditioning indicator will flash 5 secs on 2 secs off. This indicates that your battery is very weak or may have a faulty cell. You can decide to repeat charge cycle by pulling out and replacing the power adaptor **1** or check your battery with a supplier.

Stage 2: Bulk - Tops up battery for extra capacity. Raises battery voltage to 14.5V.

- ✓ If it reaches 14.5V, it will proceed to Stage 3: Boosting
- ✗ If it fails to reach 14.5V after a period of 60 hours of charging time, it will move to Stage 5: Conditioning.

Stage 3: Boosting - Peak charge for maximum performance battery charge is maintained at 14.5V to boost the battery then proceed to Stage 4: Resting.

Stage 4: Resting - Allows the battery to consolidate after boost. The Powerpack 3 ceases charging to allow the battery to rest while allowing voltage normalise at 13.5V. Then proceeds to Stage 5: Conditioning.

Stage 5: Conditioning - Maintains performance and prolongs battery life. Battery charge is maintained at 13.5V. The battery is continually monitored and the charging current is automatically adjusted to maintain battery voltage at 13.5V for a period of 500 hours then proceeds to re-awaken.

Stage 6: Re-Awaken - Exercising the battery and avoiding sulphation build-up. After 500 hours of conditioning the charger automatically returns to Stage 1: Charge cycle.

Note: at any time you can reset auto charge cycle by removing and replacing Powerpack 3 adaptor or DC car charger. Depending on the size and condition of your battery, charge times may vary.

IMPORTANT – Keep clear of naked flame, spark or conductive material, while the battery is charging.

CHARGING THE POWERPACK 3 FROM VEHICLE 12V CIGARETTE SOCKET

A DC car charger is included with the Powerpack 3. This is the best method to charge your battery whilst travelling since the car charger also utilises the 2.5A smart charger system like the mains power supply. Insert the cigarette lighter type plug of the car charger into the 12V accessory port inside the vehicle cabin and connect the other end to the charger input socket on the front of the Powerpack 3. Make sure adequate ventilation is provided to dissipate heat and battery gases.

INSTALLING THE POWERPACK 3 AS PART OF A DUAL BATTERY SYSTEM

The Powerpack 3 can be used in a dual battery set-up. The best method to do this is to connect the Powerpack 3 to a dual battery wiring loom (not supplied) using the positive/negative external terminals. **7** **11**

Note: Using these methods, the smart charge system is bypassed so the Powerpack 3 cannot control the charging voltage. A voltage sensitive relay/solenoid must be used to ensure priority is given to charging the vehicle's main starting battery. The main isolator switch on the Powerpack 3 must be switched on. For more information, see FAQ's - page10

CHARGING THE BATTERY USING SOLAR PANELS (NOT SUPPLIED)

You can charge the battery via the external terminals **7** **11** using a solar panel array. The Anderson Style plug lead **20** can also be connected to the external terminals **7** **11** to allow use of an Anderson Plug style connection to the Powerpack 3. To do this the isolator switch must be in the ON position. The smart charge PCB will be bypassed with this configuration so there will be no control over battery voltage. If the battery is overcharged it may cause permanent damage. It is recommended to use an external voltage regulator (not supplied) when using solar panels.

IMPORTANT – Ensure Powerpack 3 isolator switch is in the **OFF** position while the battery is charging, except when charging through the external terminals

IMPORTANT – Always turn the Powerpack 3 isolator switch in the **OFF** position when the battery is not in use.

Q. What size battery can the Powerpack 3 take?

A. The unit can accept a battery up to 130Ah.

Q. How long will it last?

A. Depends on the overall current draw. We tested the Powerpack 3 fitted with a 130Ah battery, and it ran a 40L Waeco fridge up to 6 days.

Q. What is the built-in charger?

A. The built-in charger is a 2.5amp smart charger designed to charge, condition and maintain the battery over prolonged periods of time.

Q. What types of batteries are compatible with the Powerpack 3?

A. The Powerpack 3 can accept lead acid, gel and AGM batteries.

Q. Can I connect an inverter to the Powerpack 3?

A. Yes, you can connect an inverter directly to the external terminals **7** **11**. You can also connect and inverter to the accessory port **3** as long as the inverter current draw from the Powerpack 3 does not exceed 10A.

Q. Can I charge from my vehicles 12V outlet?

A. Yes, a DC car charger **10** is supplied with the Powerpack 3.

Q. Can I charge from solar panels?

A. Yes, refer to charging the battery using solar panels, page 9.

Q. Can I charge from my vehicle's alternator?

A. Yes, by setting up the Powerpack 3 as an auxiliary battery through a dual battery system. This method charges the battery directly and bypasses the built in charger. The battery isolator must be in the **ON** position.

Q. Can I charge from a generator?

A. Yes, you can charge from a generator using the 240V adaptor **1**, or if the generator has charging leads you can connect them to the external terminals on the Powerpack 3.

Q. Can I charge and use the Powerpack 3 at the same time?

A. Yes you can, but the smart charger may incorrectly show the weak battery indicator after 60hrs (see page 8). If that happens, remove and reconnect the AC adaptor or DC smart charger to clear the fault.

Q. Can I jumpstart vehicles with the Powerpack 3?

A. Yes, you can jumpstart vehicles if the battery you place in the Powerpack 3 has high cold cranking amps which are designed to start vehicles.

Q. How long will the Powerpack 3 take to charge my battery?

A. It depends on battery size and it's charge. For a completely flat 100Ahr battery the Powerpack 3 will take about 2 days. To calculate charge time in hours for a flat battery, divide the battery size (Ahr) by 2.5. e.g. $100\text{Ahr} / 2.5 = 40\text{hrs}$.

Q. What types of batteries are compatible with the Powerpack 3?

A. The Powerpack 3 can accept lead acid, gel and AGM batteries.

NOTES

[illegible]

[illegible]

NOT JUST ANOTHER BATTERY BOX...

Ark protects the investment it has made in innovation with Patents, and it monitors the marketplace internationally for unauthorised infringements.

Australian Innovation Patent No.2003100766

Australian Patent No.2003258369

Canadian Patent No.2538378

United States Patent No.7573229

United States Design Patent No.D495994

Canadian Registered Design No.104258

European Registered Design No.00007699-0001



N15335

ARK CORPORATION PTY LTD

8 Smoothy Place
Arndell Park NSW 2148
AUSTRALIA

T: +61 2 9678 9036
E: sales@arkcorporation.com
W: www.arkcorporation.com

