

## MULTIPLE BATTERY SET-UP FOR HILUX SURF

*This system has been developed for a Diesel powered Surf.  
It is possible to adapt it to suit any other vehicle*

### FEATURES

- Allows multiple batteries to be charged simultaneously
- Automatic or Manual Modes
- Manual override of Automatic Mode

### BENEFITS

- Provides a source of Accessory power for radios etc
- The ability to manage your batteries and 'jump start' yourself in an emergency

### OPTION 1

This is the basic version and is well suited to those who want to be able to charge their secondary battery for use when the vehicle is not running. This is great for those who like to use battery power for lighting, fridge's and music while camping.

Your second battery can be set to charge while the engine is running and will re-set to isolate when ignition is off

It also gives you the option of a self jump-start only if a *200A Link relay* and *Heavy duty cables* are used for the link. Otherwise it is the old fashioned booster cables from one battery to the other.

### OPTION 2.

This is a Multiple Battery System which is similar to *Option 1* with the addition of a dedicated battery for powering radios. It has the same design philosophy while allowing two batteries to be charged and automatically isolated when engine is off.

### OPTION 3

The big one!

This is a multiple battery set-up with the option of fully automatic linking and isolating of the No 2 engine battery. It has the choice of Manual or Auto-modes with built in over-ride facility.

This option retains the manual control for the dedicated radio battery

All of these options are laid out on the one system diagram and it is the owners choice how much of a set-up is desired.

Keep in mind that the system can be upgraded at a later date by adding the components as required.

### SYSTEM OUTLINE

- Where two batteries are fitted to the vehicle in the engine bay this system will allow them to be linked for starting and charging
- The system automatically isolates the nominated NO2 BATTERY when the ignition key is in the off position, regardless of whether it is in the AUTO or MANUAL mode.
- In addition to this it allows the manual linking of an Auxiliary Battery dedicated to powering your stereo, CD player and communication radios.
- The charging link for both batteries can be unlinked at any time using the 'UNLINK' switch.

### AUTOMATIC MODE ( OPTION 3 ONLY )

When the key is turned to IGN the NO2 BATTERY is linked to the NO1 BATTERY for glow power and start cranking. It will remain linked until:

- a) The 'UNLINK' switch is pressed
- b) IGN key is turned off

The green light on the control module and the optional red light on the link relay under the bonnet indicate its link condition.

Note : The Automatic mode only applies to the No2 Battery.  
The AUX POWER BATTERY is linked for charging manually

## **MANUAL MODE**

When the key is turned to IGN the No2 Battery is NOT linked to the No1 Battery  
It may be manually by pressing the No2 link switch.

## **UNLINKING**

The system will automatically unlink both batteries when the IGN key is off. Alternatively you may unlink them at any time by pressing the UNLINK switch

## **AUX POWER ( Option 2,3 )**

The AUX PWR Battery has its own switch to provide power to your radios and this is indicated by a red light located near the switch or radios.

## **Key to Parts on the Schematic Wiring Diagram**

All the part numbers are as listed from Dick Smith Electronics  
Similar components may be sourced from other suppliers.

### **RELAYS**

<b>R1</b> No2 Battery Link solenoid earth feed relay	P8017
<b>R2</b> Aux Power charging relay earth feed	P8017
<b>R3</b> Aux Power Battery charging relay	P8035
<b>R4</b> 200A Linking solenoid	
<b>R5</b> Auto/Manual Mode control relay	P8024

### **SWITCHES**

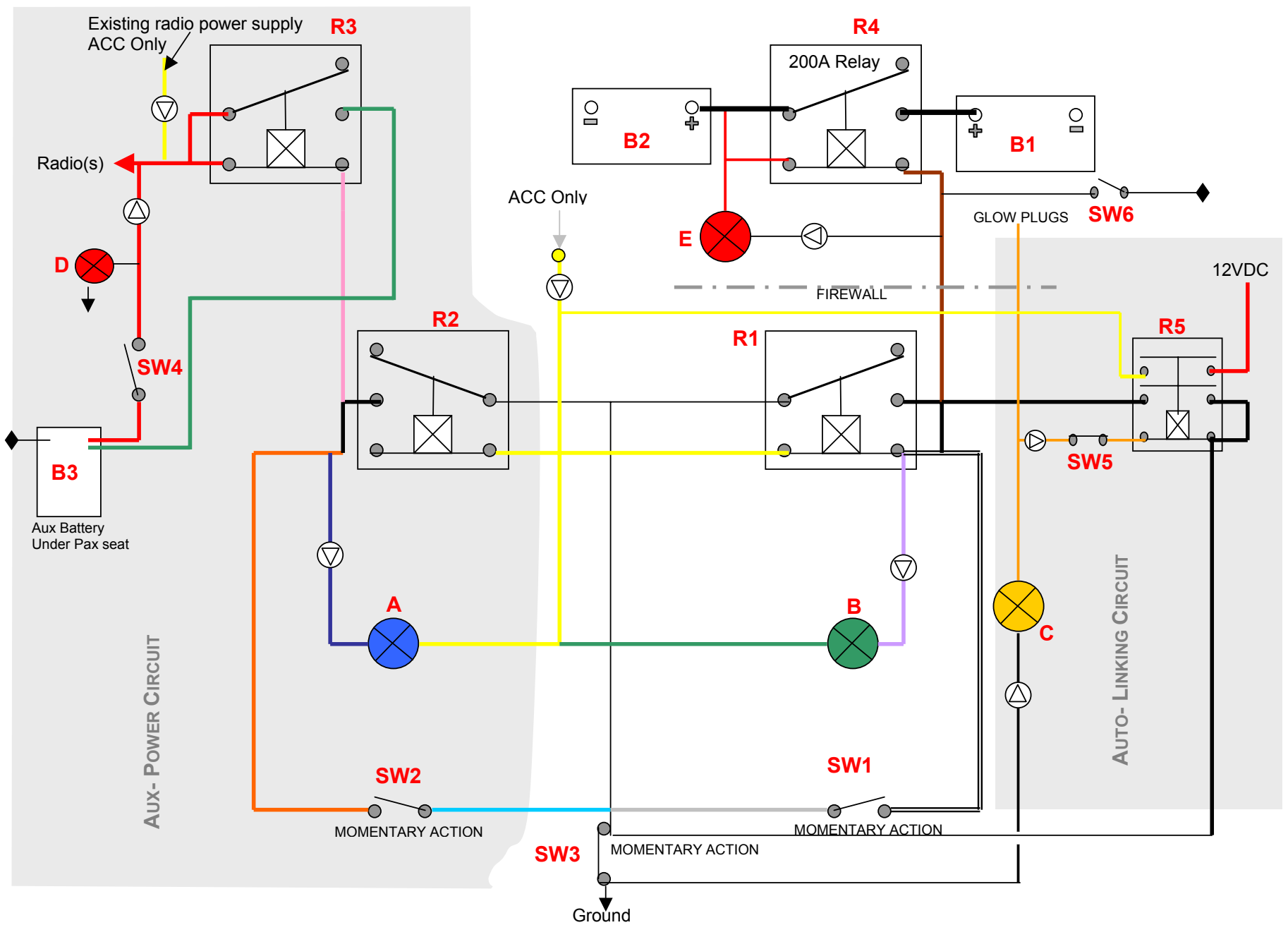
<b>SW 1</b> No2 Battery Link	<i>Momentary Action / Push-"On"</i>	P7561
<b>SW 2</b> Aux Pwr Charging	<i>Momentary Action / Push-"On"</i>	P7561
<b>SW 3</b> Unlink ( When IGN is On )	<i>Momentary Action / Push-"Off"</i>	P7561
<b>SW 4</b> Aux Power to radios	<i>Toggle or Rocker</i>	P7666
<b>SW 5</b> Auto / Manual select	<i>Toggle or Rocker</i>	P7700
<b>SW 6</b> Emergency link	<i>Toggle ( optional )</i>	P7666

### **BEZELS** ( Indicating lights )

<b>A</b> Aux Pwr Charging	P8056
<b>B</b> No2 Battery Linked	P8052
<b>C</b> Glow Indicator	P8054
<b>D</b> Aux Power in use	P8100
<b>E</b> Link Solenoid energised ( optional )	P8100

### **BATTERIES**

<b>B1</b> Main engine battery	
<b>B2</b> No2 engine battery	
<b>B3</b> Auxiliary power battery	S7369



**THIS IS A LAYOUT GUIDE ONLY  
REFER TO SCHEMATIC DIAGRAM FOR CIRCUIT DETAILS**

