

## **719-100A Battery Distribution Cluster**

### **IMPORTANT**

**Do not use any type of corrosion inhibiting spray such as CRC, INOX etc. on any part of this unit.**

**These units are hermetically sealed so do not require any other form of sealing.**

**The studs have been tinned to inhibit corrosion however a petroleum grease may be used (on metal parts only) if required.**

**Please note that this product is water resistant but is NOT designed to be submerged.**

**DUAL BATTERY CHARGING MADE EASY!** The 719 battery distribution cluster is the optimum battery management system for your triple outboard engined boat.

The 719-100A combines 6 of BEP's 701 battery switches and 3 710-125A Voltage sensitive relays (VSR).

**The 701 Battery Master Switch** offers a number of unique features. The highlights being the contour lock system, allowing it to be locked together with other switches. The 701 also features a control knob which cannot be removed whilst in the On or Off position, however can be removed by switching to an anti-clockwise 45° position.

The 701 also features a removable rear cover insulating the rear terminals against any short circuits and ensures the switch meets ABYC requirements.

### **701 specifications**

|                        |                     |
|------------------------|---------------------|
| Continuous rating:     | 275 Amps DC         |
| Intermittent rating:   | 455 Amps DC         |
| Cranking rating:       | 1250 Amps DC        |
| Voltage rating:        | 48 Volts DC         |
| Operation:             | On / Off            |
| Mounting:              | recessed or surface |
| Termination stud size: | 2 x 3/8" (10mm)     |

### **BEP Marine Battery Switch Test Procedure (UL 1107)**

Continuous (1 hour)

Intermittent (5 minutes)

Cranking (10 seconds)

The test is to determine the maximum current the switch can handle for the stated time, without the terminals exceeding 212°F (100°C) above the ambient temperature.

The continuous and intermittent ratings are tested 110% of specified ratings.

**THE 719 SYSTEM INCLUDES** dedicated battery switches for each bank and 3 710-125A voltage sensitive relays (VSR). The VSR allows for two batteries to be charged at the same time. When the engine is started, and the start battery reaches 13.7 Volts, the relay closes, Combining the battery banks (start and house) and allowing them to be charged simultaneously.

When the engine is stopped and the voltage drops to 12.8 Volts, the relay will open separating the batteries.

This system eliminates the possibility of draining the wrong battery and protects sensitive electrical equipment powered from the house battery from harmful engine start up spikes.

The 719 cluster is designed for triple outboard systems giving combined charge from all 3 outboards into the house battery via the VSR's.

### **How to use**

1. When boarding the boat switch the MID START, PORT START, STARBOARD START and HOUSE battery switches to ON.  
Only use the EMERGENCY PARALLEL battery switches if both batteries need to be combined for emergency starting.
2. Start the engine, when the start battery reaches 13.7 Volts the small red light on the VSR case will illuminate, indicating the VSR is engaged.

- When the engine is stopped and the start battery voltage drops to 12.8 Volts the light will switch off, indicating the VSR is disengaged.

**Special note:**

After a long run the residual voltage of the start battery may hold above 12.8 Volts for a period of time, this will hold the relay engaged. This is not a fault.

As soon as any load is applied the voltage will settle below 12.8 Volt, disengaging the VSR.

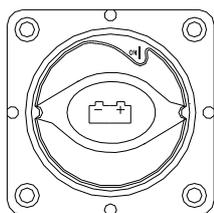
- On leaving the boat switch the PORT START, STARBOARD START and HOUSE battery switches to off.

**Trouble shooting**

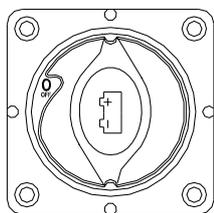
| Fault                   | Possible solution  |
|-------------------------|--|
| Engine wont start       | -Ensure start battery switch is switched on  |
| House battery is flat   | -Ensure engine charging system is working.<br>-Ensure the light on VSR case is on when engine is running and start battery voltage is above 13.7 Volts.<br>If light is not on and voltage is over 13.7V on the start battery then there is possibly a fault with the VSR |
| House loads not working | -Ensure house battery switch is switched on  |
| Start battery is flat   | -Switch the Emergency parallel switch to on. Turn off once engine is started.<br><u>Note:</u> When starting the engine with the emergency parallel, the house loads will not be protected from engine spikes.  |
| VSR chatters            | -Increase RPM's of engine to increase alternator output.<br>-Ensure alternator is not too small for the battery bank. Check with the table below   |

**Alternator Vs Battery capacity**

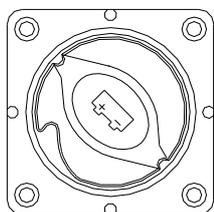
| Alternator Size | Second battery size |
|-----------------|---------------------|
| 10 Amp          | 60 Amp hours        |
| 16 Amp          | 85 Amp hours        |
| 25-35 Amp       | 85-105 Amp hours    |
| 50-60 Amp       | 130-210 Amp hours   |
| 80-90 Amp       | 130-220 Amp hours   |



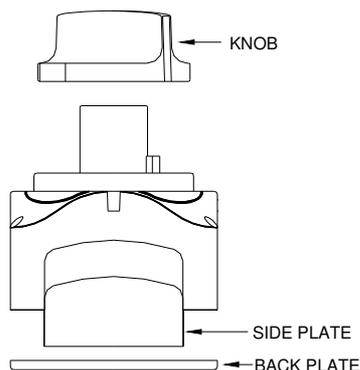
SWITCH IN ON POSITION



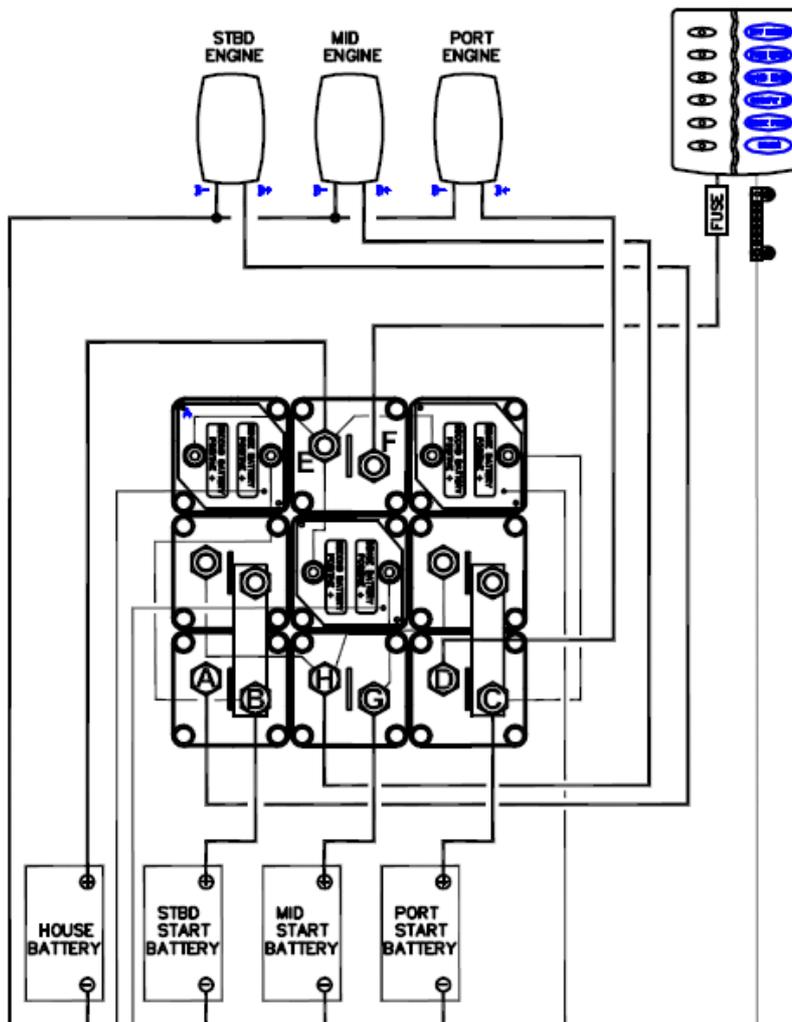
SWITCH IN OFF POSITION



SWITCH IN REMOVAL POSITION



# 719 INSTALLATION DIAGRAM



NOTE: THIS DIAGRAM IS NOT INTENDED TO BE A FULL SYSTEMS WIRING DIAGRAM. IT'S SOLE PURPOSE IS TO SHOW 719-100A CONNECTIONS

**STUD A-** CONNECT DIRECTLY TO THE STARTER POSITIVE OF THE STBD ENGINE.

**STUD B-** CONNECT DIRECTLY TO THE POSITIVE TERMINAL OF THE STBD START BATTERY.

**STUD C-** CONNECT DIRECTLY TO THE POSITIVE TERMINAL OF THE PORT START BATTERY.

**STUD D-** CONNECT DIRECTLY TO THE STARTER POSITIVE OF THE PORT ENGINE.

**STUD E-** CONNECT TO THE POSITIVE TERMINAL OF THE HOUSE BATTERY VIA A FUSE.

**STUD F-** CONNECT TO THE POSITIVE TERMINAL OF THE HOUSE LOAD THROUGH A FUSE.

**STUD G-** CONNECT DIRECTLY TO THE POSITIVE TERMINAL OF THE MID START BATTERY.

**STUD H-** CONNECT DIRECTLY TO THE STARTER POSITIVE OF THE MID ENGINE.

|             |       |                        |  |
|-------------|-------|------------------------|--|
| DVG No.     |       | INST-719-100A OVERVIEW |  |
| DESCRIPTION | DRAWN | APPROVED               |  |
|             |       |                        |  |
|             |       |                        |  |
|             |       |                        |  |

|                                   |
|-----------------------------------|
| TITLE                             |
| INSTALLATION DIAGRAM FOR 719-100A |

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