

717 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 717 battery distribution cluster is the optimum battery management system for your twin outboard powered boat.

The 717 combines 4 of BEP's 701 battery switches and 2 of BEP's 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 717 SYSTEM INCLUDES dedicated battery switches for both the port and starboard start banks, the house bank and emergency parallel, and a 710-125A voltage sensitive relay (VSR) for each start bank. The port VSR allows the port and house batteries to be charged at the same time.

When the port engine is started, and the port start battery reaches 13.7 Volts, the relay closes, Combining the battery banks (port start and house) and allowing them to be charged simultaneously.

When the starboard engine is started, and the starboard start battery reaches 13.7 Volts, the relay closes, Combining the battery banks (starboard start and house) and allowing them to be charged simultaneously.

When both engines are running and both start batteries have reached 13.7 Volts the house battery is charged with the combined charge of both alternators.

When an engine is stopped and the start batteries voltage drops to 12.8 Volts, the connected 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 717 cluster is designed for twin outboard's without auxiliary outputs with an alternator size up to 100A.

How to use

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

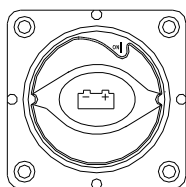
4. On leaving the boat switch the PORT START, STARBOARD START and HOUSE battery switches to off.

Trouble shooting

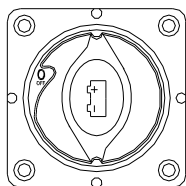
Fault	Possible solution
Engine wont start	-Ensure start battery switch is switched on
House battery is flat	-Ensure engine charging system is working. -Ensure the light on VSR case is on when engine is running and start battery voltage is above 13.7 Volts. If light is not on and voltage is over 13.7V 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. <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. -Ensure alternator is not too small for the battery bank. Check with the table below

Alternator Vs Battery capacity

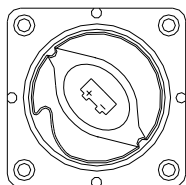
Alternator Size	Second battery size
10 Amp	60 Amp hours
16 Amp	85 Amp hours
25-35 Amp	85-105 Amp hours
50-60 Amp	130-210 Amp hours
80-90 Amp	130-220 Amp hours



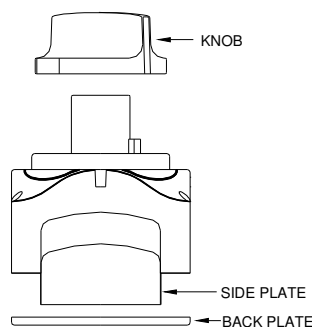
SWITCH IN ON POSITION



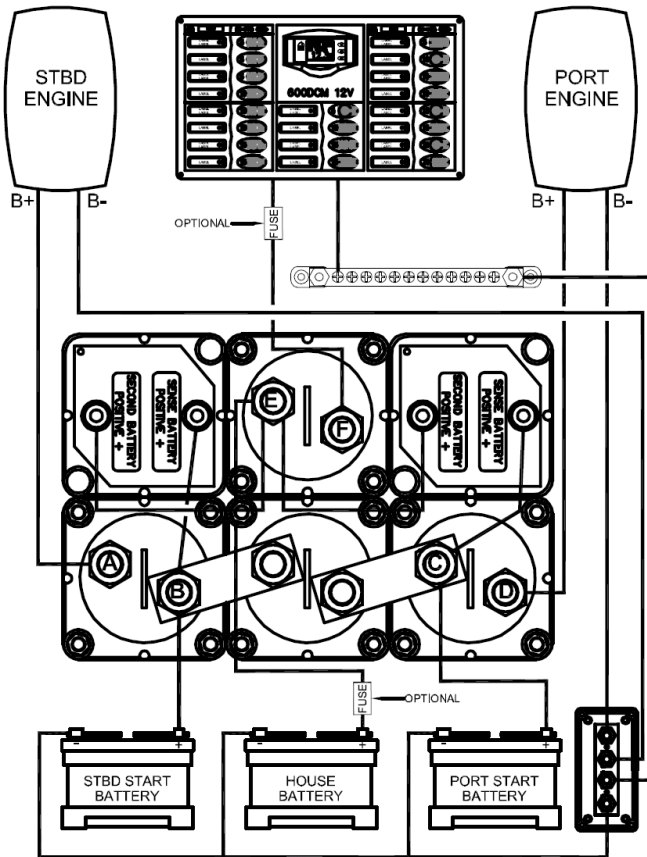
SWITCH IN OFF POSITION



SWITCH IN REMOVAL POSITION



INSTALLATION DIAGRAM



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

STUD A- CONNECT DIRECTLY TO THE POSITIVE OF THE STBD OUTBOARD MAIN.

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 POSITIVE OF THE PORT OUTBOARD MAIN.

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.

NOTE: THIS DIAGRAM IS NOT INTENDED TO BE A FULL SYSTEMS WIRING DIAGRAM. IT'S SOLE PURPOSE IS TO SHOW 717 CONNECTIONS

OPTIONAL ACCESSORY CONNECTIONS:

BATTERY CHARGER:
CONNECT THE BATTERY CHARGER POSITIVE OUTPUT TO TERMINAL B,C OR E.
THE HOUSE BATTERY SWITCH CAN BE OFF BUT THE ENGINE BATTERY SWITCH MUST BE ON WHEN LEAVING THE BOAT. THIS ALLOWS THE VSR TO ENGAGE AND CHARGE BOTH BATTERIES.

SOLAR PANEL:
CONNECT THE SOLAR PANEL POSITIVE OUTPUT TO TERMINAL B,C OR E.
THE HOUSE BATTERY SWITCH CAN BE OFF BUT THE ENGINE BATTERY SWITCH MUST BE ON WHEN LEAVING THE BOAT. THIS ALLOWS THE VSR TO ENGAGE AND CHARGE BOTH BATTERIES.

BOW THRUSTER:
CHECK MANUFACTURER'S SPECIFICATIONS TO ENSURE BOW THRUSTER IS WITHIN BATTERY SWITCH SPECIFICATIONS.
CONNECT THE BOW THRUSTER TO THE START BATTERY SWITCH (TERMINAL A OR D) TO PREVENT BOW THRUSTER LOADS RUNNING THROUGH THE VSR.

DATE	1/06/04	DWG No.	INST-717 OVERVIEW		TITLE:
DRAWN	S PLAYER				INSTALLATION DIAGRAM FOR 717
REV.	DATE	DESCRIPTION	DRAWN	APPROV	

BEP MARINE LTD.

13 Tarnedale Grove
Albany
Auckland 1310 N.Z.
PH 09 415 7261 FAX 09 415 9327
www.bepmarine.com

