Yandina LLC.

TROLLBRIDGE2400® COMBINER

CHARGE 24 VOLT EQUIPMENT BATTERIES FROM 12V DC

SUMMARY

Rev June 2017

The Trollbridge2400® Combiner allows you to charge your 24 volt battery for you trolling motor, bow thruster, winch, hydraulics etc., from the 12 volt alternator on your main engine, your trailer hookup or any single or multi-output 12 volt charger. It works automatically by putting two 12 volt batteries in series when you need to run the 24 volt load and putting them in parallel for charging.

FEATURES

Use with 24 volt loads up to 12KW or 16 horse power, **500 amps** continuous

Automatic charging starts when the alternator is running and starting battery is above 13 volts

Rated for 12 volt alternators up to **200 amps** for rapid charging

Efficiency over **99%** at maximum load or charge

No load (350 microamps) on any batteries when idle

Both batteries are in parallel when idle

Eliminates the need for multiple output chargers

Green LED indicates 24 volt output active

Yellow LED indicates charging in progress

Red LED indicates fuse blown

Remote indicator outputs provided, see **§**

Waterproof. UNLIMITED warranty

No wasted power, no heat sink or cooling required

Simple 6 wire basic installation

12 volt house loads can also be placed on **BATTERY 1**.

HOW HOW IT WORKS

The Trollbridge2400® uses two 12 volt batteries to make 24 volts. They remain in parallel at 12 volts when not in use so only 12 volts is supplied to the load. If the load draws 1 amp or more from this it switches the batteries in series to give 24 volts. If no current is drawn it reverts to parallel mode after a time delay.

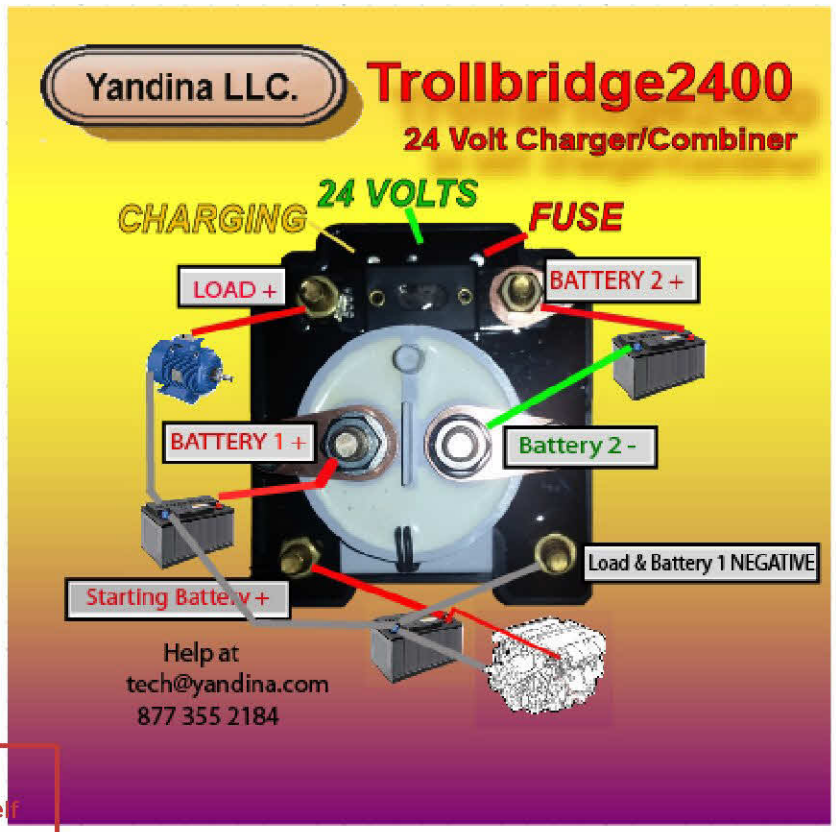
BATTERY 2 is switched in series for a 24 volt load. ***NOTHING ELSE CAN CONNECT TO BATTERY 2***.

A hard wired series jumper that typically exists between battery 1 and battery 2 for 24 volts is replaced by the 500 amp relay on the TB2400. The fuse comes installed between the battery 2 positive and the load output. The TB2400 has a charging terminal that connects to the starting battery.

CAUTION The negative side of your 24 volt load has to be connected to **BATTERY 1** negative and the starting battery negative. Make sure this negative ground is compatible with current and the load polarity.

INSTALLATION

Required fuse (250A) included. If the stalled current of the motor is greater than 250 amps and your cable sizes are adequate, a 500 amps maximum fuse is available..



ASSUME NOTHING - Read every word of this manual. NEVER short the two main relay terminals together, self destruct can result.

DANGER: During installation voltages will be present on unconnected terminals. Make sure cables on these do not short out to ground, battery circuits, or to each other. EXPLOSIVE level currents could result.

DOUBLE CHECK instructions prior to making each connection. Tap the connections first to check for sparks which would indicate a wiring error.

If modifying an existing installation REMOVE ALL CABLES FROM BATTERIES and start from scratch. In particular REMOVE any jumper between the batteries.

For maximum efficiency, mount the Trollbridge2400 adjacent to the batteries.

Use a cable gauge on the 24 volt circuit appropriate for your maximum load. Charging circuits 6 gauge or lighter.

Label the batteries with their number so you don't get confused. Double check each connection. Be very careful observing polarity. Mistakes can cause fire, explosion and injury. **Tap the connections first to check for sparks which would indicate a wiring error.**

Since the connections can carry hundreds of amps you need low resistance connections with clean metal to metal contact, the right size terminals, properly crimped terminals, with tight mechanical fastenings but don't over