



Battery Swap

Quick Reference Guide

Start with a photograph, record keeping 101

Get history, if possible, from owner/operator

Decisions about current batteries, did they:

- Perform to expectations? Usage: Live aboard, long term cruiser, dock queen?
- General Usage? Deep Discharge [how often]?
- How long did they last? Years & approx. number of cycles?

Obtain the float voltage when sitting at the dock, before you begin, RECORD

PPE Personal Protective Equipment

- Don't ruin your EYES → Don't ruin your clothes

Gather all tools

- Hand truck/Dock Cart, Tool bag
- Cardboard/plastic/blankets to protect the vessel
- Something to set batteries on

Turn OFF all charging sources & Loads

- Shore power unplugged → Inverter off [not inverting] → Solar/wind charging sources
- Furnace? [usually non-switched] make sure it's not running

Document battery replacement in-process, signage

- Do not start → Do not turn on chargers or loads
- Including your phone number & name

Smell bad/sulfur? **Ventilate!**

- NOTE: Over-charging or Bad batteries can also cause CO monitors to go off

Always disconnect the Negative cables first

- **Tech Tip #6** "Battery Wrenches"

Ty-Rap groups of cables as you remove **Tech Tip #12** "Keeping Track of Battery Cables"

- Also: **Tech Tip #3** "Zip Ties"

If you trace out any cables, label them

- **Tech Tip #007** "Battery Cable Labels"
- **Tech Tip #8** "Heat Shrink Labels" → For smaller, like bilge

pumps Insulate positive's as you remove them [electrical tape works],

- Just in-case they are still energized from another source *or* boat owner/someone turns on source of power

Check each positive cable, at the battery, does it have proper OCP?

Clean old batteries, Neutralize with Baking Soda, remove from vessel, Clean battery boxes.

Before leaving with new batteries from shop/truck, check all voltages

- Looking for any that may be defective [self discharge?]

Install new batteries – usually with a helper!

Re-install ALL cabling

- Connect Positive Cables first
- Remember 4 cable maximum per post
- Remember 'best practice' when creating house banks
- Where to connect the load [opposite ends]

Re-install any temperature devices

- Side or post [negative is best] → never on the top if stick on type

Write installation date on batteries with paint marker

Compare with 'beginning' photograph that you're not missing anything

Program all charging devices and/or check they match manufacture

Turn on chargers. Ensure all batteries are being charged

ACR's/VSR's/Battery Isolators/BTB Chargers, etc.

Put a large load [at least 0.25C] on system or run down and then put a strong charge to them

- Check with a thermal camera

Go back after 24 hours and check the float voltage

- **Tech Tip #15** "Check The FLOAT Voltage", coming soon.....