SECTION 4 - ELECTRICAL SYSTEM

Your yacht is equipped with a standard 12 volt DC system and 120 volt AC system. The wiring is run to prevent chafing or contact with water, where possible, and is supported as needed. We recommend that you check all the connections at least once a year for corrosion, loose fittings, etc.

DC 12 VOLT SYSTEM

MAIN DC CIRCUIT BREAKER

Operating switches for lights and accessories are located on the main switch panel. The main circuit breaker, will automatically trip to the OFF position in the event of an overload to the circuit. If the breaker trips to OFF, the cause should be determined and any necessary repairs should be made before repositioning the circuit breaker switch to ON.

Before purchasing any electrical accessories for your boat, ensure that they are compatible to a negative ground system.

IMPORTANT: Be sure to disconnect the batteries and the AC shore power cord before opening the panel, or severe injuries or electrocution may occur.

All wires, terminals, and connections should be checked periodically for loose connections or corrosion which could cause high resistance, electrical sparks, or a fire. The engine accessory wiring should also be checked at this time.

BATTERIES

Your electrical system is powered by marine-grade, 12 volt, deep cycle batteries located under the port settee. Attention should be given to maintaining the proper level of distilled water. Do not overfill.

The batteries are mounted in a way to prevent tipping over at extreme angles of heel. Be sure batteries and connections are secured.

With proper care, the batteries installed in your Catalina will provide long and reliable service.

Your batteries should be checked periodically for any cracks or breaks in the case or cover and any cracks in the sealing compound. If there is any damage, the battery should be replaced at once.

WARNING: The electrolyte in a battery is a solution of sulfuric acid. If any should come in contact with the eyes, rinse immediately with large amounts of fresh water and seek medical attention. Electrolyte spilled on clothing will destroy the clothing.

DC 12 VOLT SYSTEM (continued)

ELECTROLYTE LEVEL

The electrolyte level in a battery should never be allowed to fall low enough to expose the plates. This not only results in a loss of battery capacity while the battery is low, but will cause hardening of the active material on the battery plates. This will result in a permanent loss of battery capacity.

CAUTION: Use only pure distilled water to replenish electrolyte levels. The water from many city water supply systems is unsatisfactory for battery use.

CHARGING THE BATTERY

Before adding water, a hydrometer reading of the battery should be taken. If the reading shows the battery to be above 1.225 specific gravity, the battery has a sufficient charge. If the reading is below 1.225, the battery should be removed for bench charge.

Once charged, the battery should have a specific gravity of at least 1.260. If this cannot be reached, the battery should be inspected by a battery supplier.

The batteries should be checked often to ensure that they do not run down. Check that all battery cells keep an even fluid level and that the fluid is about 3/8" above the top of the separators. When storing for winter, check and fill with distilled water as needed, recharge the batteries fully. When preparing the batteries after winter storage, recharge the batteries to full charged level.

If one or two cells have lower fluid levels, it is a good indicator that something is wrong with the battery, and it should be checked.

DISCHARGED STATE

Leaving a battery in a discharged state for any length of time can also result in a permanent loss of capacity for the battery. Since it will freeze at relatively low temperatures, leaving it in the cold weather can destroy the battery.

CLEAN CONNECTIONS

Keep battery connections clean and tight. A cupful of strong baking soda solution and a toothbrush will clean corrosion from the terminals and neutralize any spilled acid (do not allow any of the surface solution to enter the battery cells). A coating of petroleum jelly on the battery terminals will inhibit corrosion.

MAIN BATTERY SWITCH

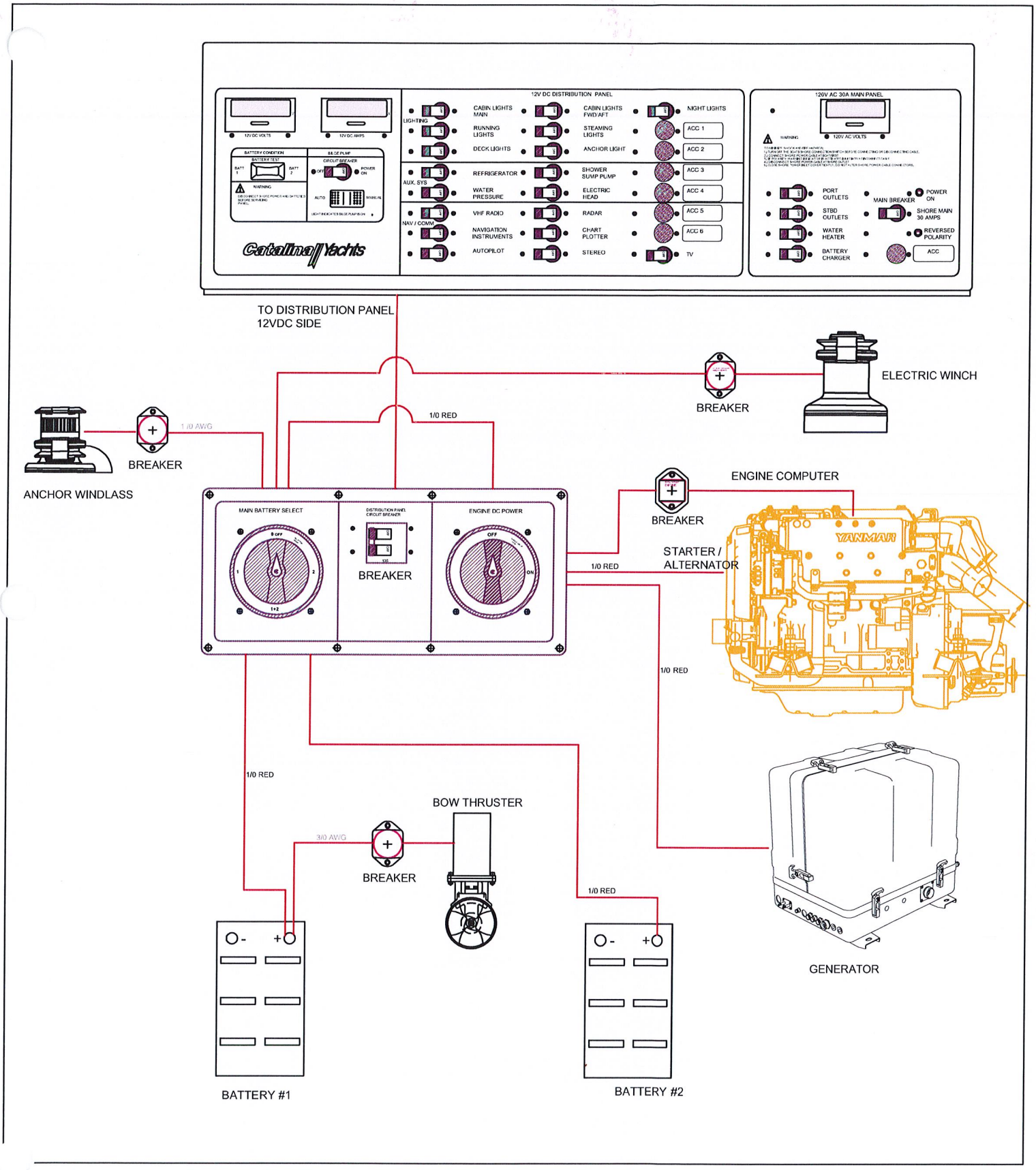
The circular battery switch has the markings 1, 2, "ALL", and "OFF." You can selectively charge the battery with the engine alternator. Many experienced sailors use battery #2 for electrical lighting and house loads needs and keep #1 in reserve for starting the engine.

When a starting battery is installed, it is recommended that two of the 12 volt batteries be wired in parallel (positive-to-positive, negative-to-negative) and connected to position #2 with the third battery connected to position #1 and reserved for starting the engine. It is easier to remember that two batteries are connected to #2, and one is connected to #1. It is recommended that a group 24 or 27 type battery with ample cranking amps be used for the engine starting battery.

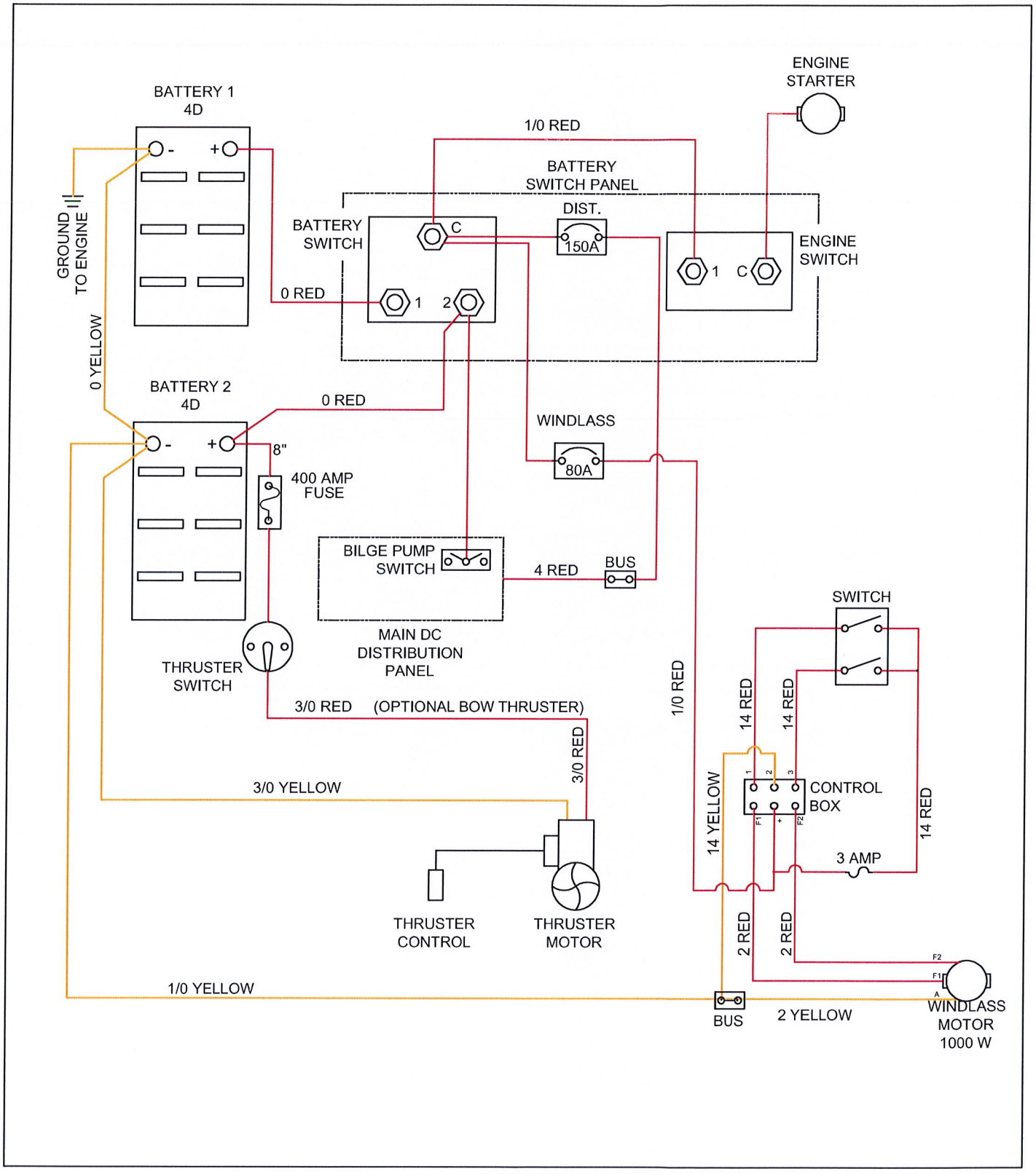
When the engine is running, never select the "OFF" position or the alternator diodes will be burned out.

If both batteries are of equal charge, keep the selector switch on the "ALL" position, and use "ALL" to start the engine if both batteries are low.

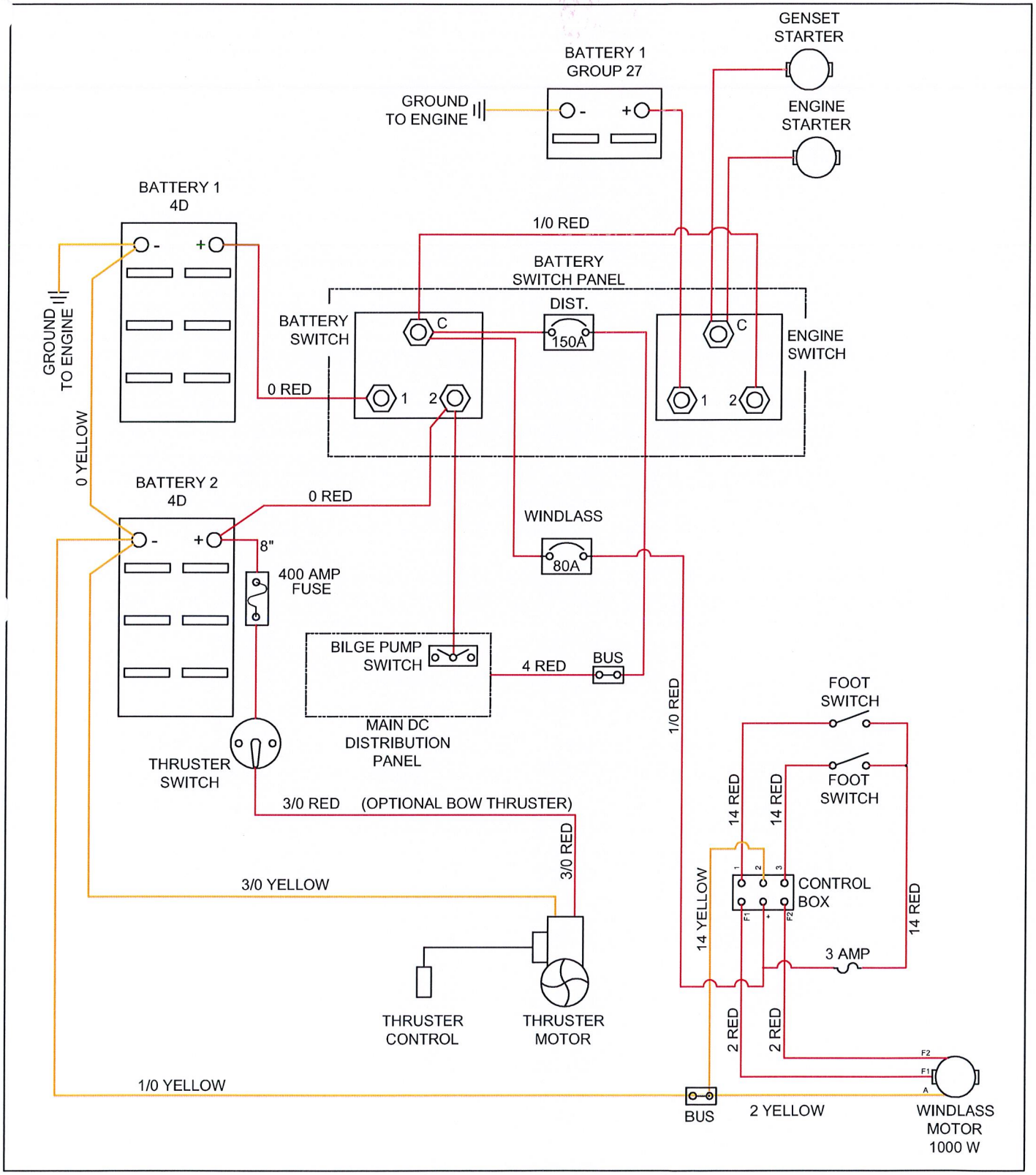
12 VOLT DC SYSTEM DIAGRAM



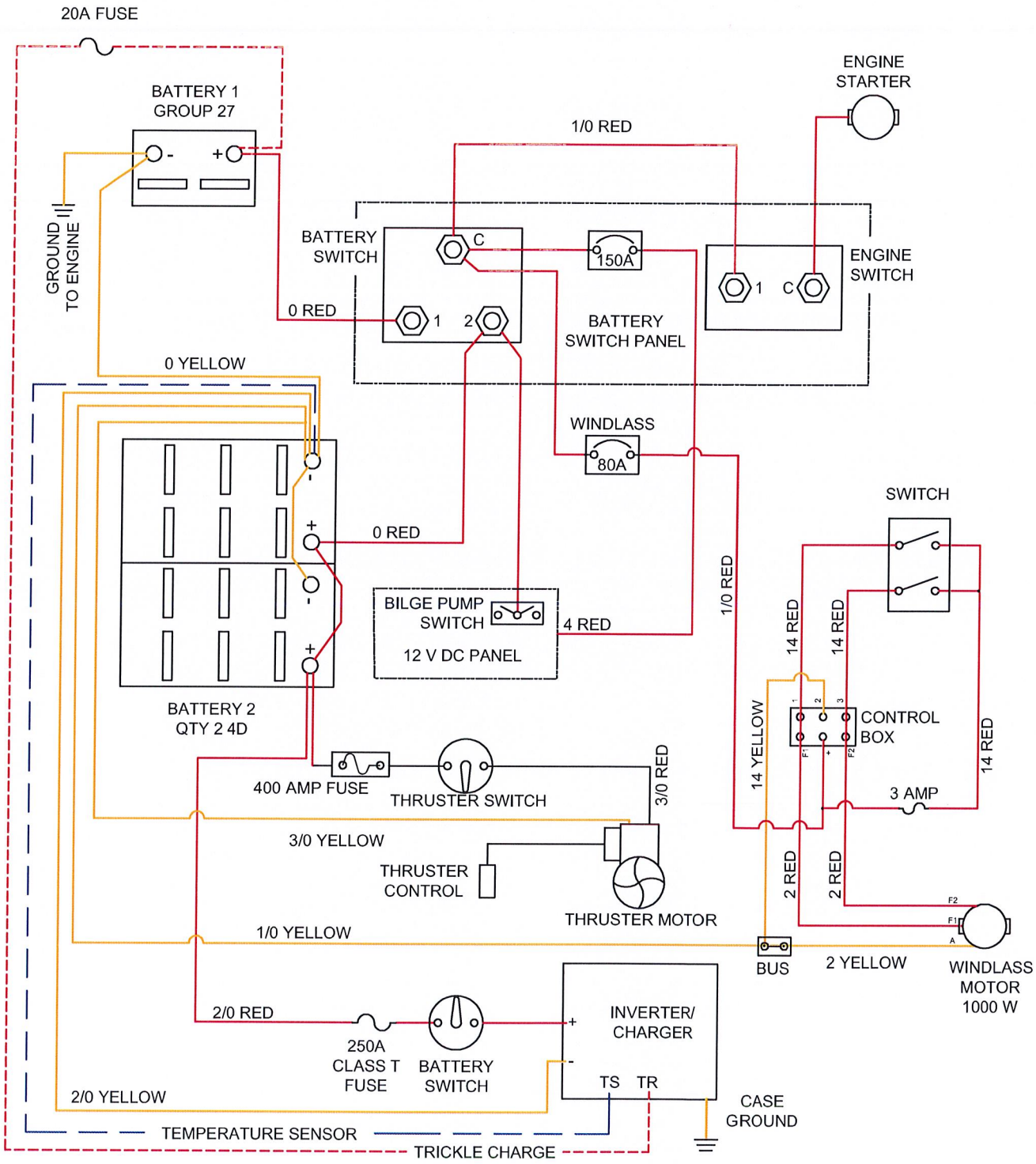
BATTERY SCHEMATIC



BATTERY SCHEMATIC with OPTIONAL START BATTERY



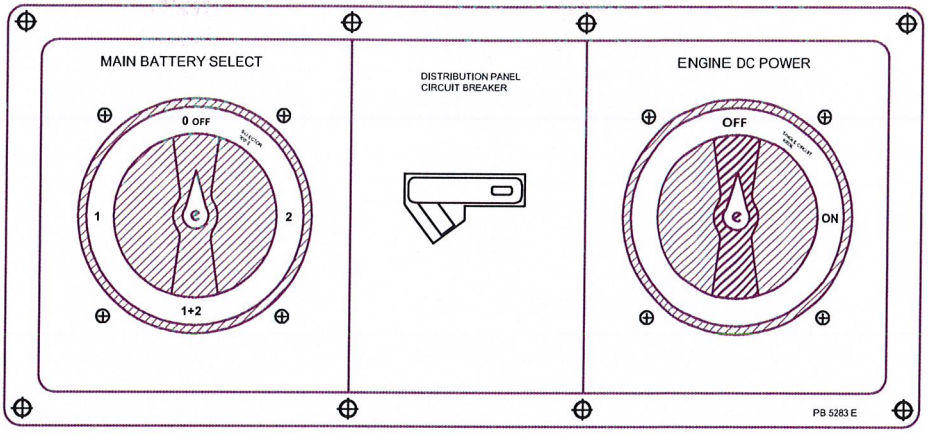
BATTERY SCHEMATIC with INVERTER



BATTERY SWITCH SELECTION

STANDARD BATTERY SWITCH

* NOTE : ALTERNATOR ONLY CHARGES SELECTED BATTERIES



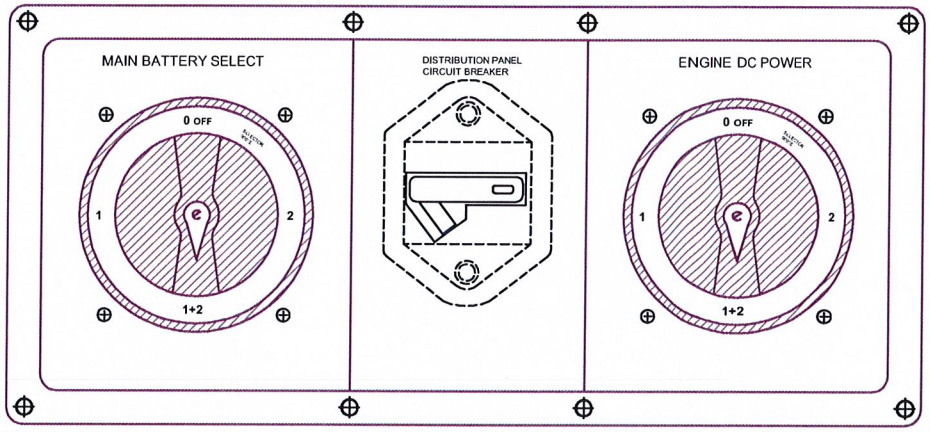
HOUSE SELECT:
1+2 - BOTH 4 D BATTERIES
2 - HOUSE #2 ONLY
1 - HOUSE #1 ONLY

BATTERY SWITCH
HOUSE NO. 1 - (1)4D
HOUSE NO. 2 - (1)4D

ENGINE SELECT:
ON - TO START ENGINE
OFF- WHEN SERVICING ENGINE

STARTING BATTERY OPTION

* NOTE : ALTERNATOR ONLY CHARGES SELECTED BATTERIES



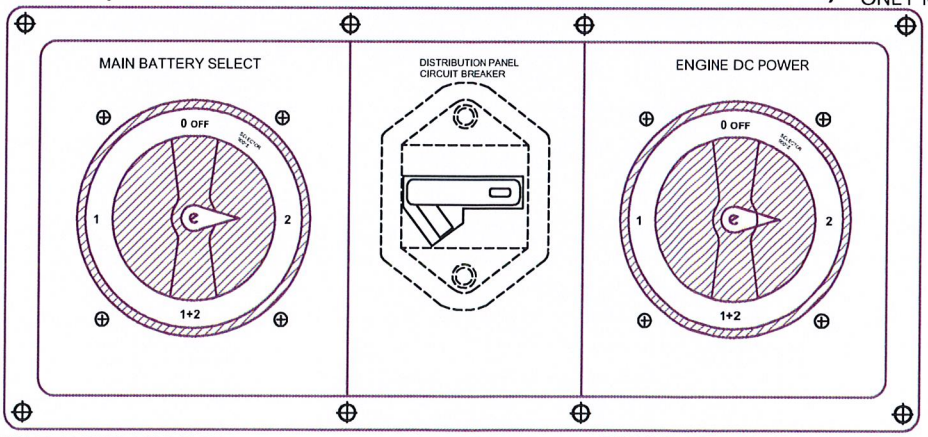
HOUSE SELECT:
1+2 - BOTH 4 D BATTERIES
2 - HOUSE #2 ONLY
1 - HOUSE #1 ONLY

BATTERY SWITCH
HOUSE NO. 1 - (1)4D
HOUSE NO. 2 - (1)4D
STARTING (1) GROUP 27

ENGINE SELECT (HOUSE OR STARTING)
1 + 2 - BOTH HOUSE AND STARTING
2 - HOUSE ONLY
1 - GROUP 27 STARTING ONLY

#2 HOUSE ONLY (#1 HOUSE AND GROUP 27 STARTING IN RESERVE)

* ALTERNATOR CHARGES ONLY MAIN HOUSE BANK



EXAMPLE: HOUSE SELECT

2 - #2 HOUSE ONLY
1 - #1 IN RESERVE

BATTERY SWITCH
HOUSE NO. 1 - (1)4D
HOUSE NO. 2 - (1)4D
STARTING (1) GROUP 27

ENGINE SELECT (HOUSE OR GROUP 27)

2 - HOUSE START ONLY
1 - GROUP 27 STARTING IN RESERVE