

WIRE #9 Engine Battery Sense 12 -24VDC: This wire supplies the positive sense voltage for the engine starting battery. This is an optional feature. The engine battery voltage will only be displayed if it is connected. It must be connected directly to the battery. It must be protected by a 5A inline fuse located as close to the battery as possible. **Do not install the fuse until the installation is complete. Install fuse just prior to testing the installation.**

Run Requests from HVAC Systems

There are three inputs for Run Requests from HVAC systems.

Wire #10 Run Request HVAC #1: This input wire must supply +12V to the controller when the HVAC system requires the genset to run. Typically it is supplied from a thermostat or the HVAC system controller.

Wire #11 Run Request HVAC #2: Used with a second HVAC unit. See above.

Wire #12 Run Request HVAC #3: Used with a third HVAC unit. See above.

Sensing AC Shore Power is Present

The two inputs described below are used to prevent the genset from automatically starting when AC Shore Power is present.

Do not connect 120VAC or 240VAC line voltage to the EC-30! It will be damaged and will not be covered by warranty.

Wire #13 AC Present - Ground: Wires #13 and #14 must be supplied by one of these options.

- UL Listed 120VAC to 12-16VAC transformer.
- UL Listed 120VAC to 12VDC plug-in power supply. - 12VDC ground side connects to wire #13. + 12VDC positive side connects to wire #14.

Note: AC transformer or 120VAC to 12VDC converter is not supplied.

Wire # 14 AC Present + Positive: This is the + positive input. See above.

SAFETY INPUTS

THE EC -30 R EQUIRES A SAFETY INPUT TO PREVENT THE GENSET FROM UNEXPECTED AUTOMATIC STARTING AFTER THE VEHICLE HAS BEEN PARKED. THE SAFETY INPUT MAY BE SUPPLIED FROM DIFFERENT SOURCES DEPENDING ON THE APPLICATION:

VEHICLE TYPE	SAFETY INPUT
DIESEL COACH	-AIR PARK BRAKE SWITCH -IGNITION SWITCH
GASOLINE/LP/DIESEL -MOTOR HOMES -VAN CONVERSION	-TRANSMISSION PARK / NEUTRAL - IGNITION SWITCH
-TRAILER -5 th WHEEL -PICKUP CAMPER	-TRAILER BRAKE LIGHT -CAMPER BRAKE LIGHT

NOTE: AUTOMATIC OPERATION IS NOT ALLOWED UNLESS THE SAFETY INPUT HAS BEEN VERIFIED.

During the Safety Input set up choose Ignition, Brake or Park. The following definitions apply:

- **Ignition:** Input is connected to the vehicle ignition system (motor homes or van conversions).
- **Brake:** Brake light for all trailer and 5th wheel installations, or air brake on diesel motor homes.
- **Park:** The park signal/neutral (transmission) from motorized motor homes or van conversions.

The Safety Input must change state when the vehicle is parked. This prevents automatic operation if the vehicle is parked in a garage or other enclosed space. For example the vehicle ignition switch changes state from on to off when vehicle is parked.

Safety Inputs

The two inputs described below are used to prevent the genset from automatically starting. The voltage across the input must change from 0VDC to 12VDC or from 12VDC to 0VDC when the vehicle is parked.

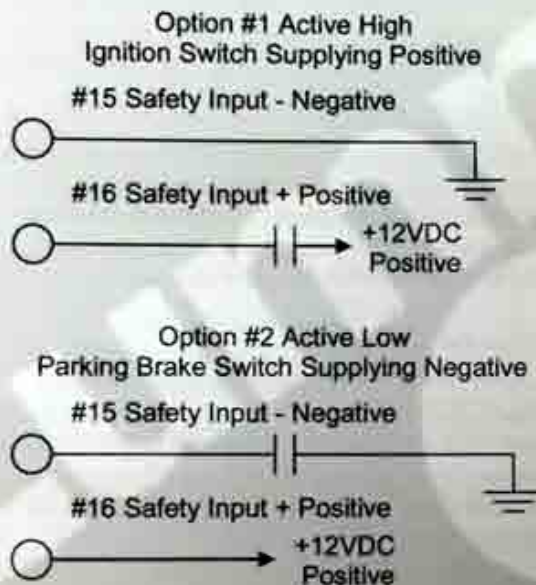
Wire#15 Safety Input – Negative: The negative input to the safety circuit. See Below.

Wire #16 Safety Input +12V: The positive input to the safety circuit. See Below.

This input should be treated like a relay coil input, or a light bulb. It must be supplied with both a positive and a negative. The actual safety switch (ignition, park brake, or transmission park switch) may be located in the positive or negative side of the circuit.

These inputs may be wired to be active (on) when supplied with a negative or positive input. If supplied with a positive input connect #15 to negative. If supplied with a negative input connect #16 to +12V. The drawing below shows how to wire these inputs for either a negative or positive input.

Wiring Options for Safety Inputs



Final Connections and Testing

This section describes the final connections and the test procedure to verify that the unit has been installed correctly and is operating properly.

1. Plug the genset end of the connector into the genset.
2. Pass the controller end of the harness through the cutout for the controller.
3. Plug the controller end of the harness into the controller.
4. Insert the controller in the cutout hole and secure it with the screws supplied with the controller. **DO NOT OVER-TIGHTEN MOUNTING SCREWS, IT MAY DAMAGE OR DISTORT THE ENCLOSURE.**
5. Install the magnetic overlay.

Test Procedure

The following test procedure describes a systematic method of testing both the installation and operation of the EC-30. It is highly recommended that the installer follow these steps:

1. Reconnect the genset negative (-) battery cable.
2. Insert the fuse in the fuse holders for: Wire #7 8-35VDC Power, Wire # 8 House Battery Sense, and Wire #9 Engine Battery Sense.
3. Refer to Setting Up section of this manual to select the genset type.
4. **Setting the Hour-Meter: If the EC-30 is installed on a new genset this step may be skipped.** See Setting Up section of this manual.
5. Start and stop the genset using the Stop/Start switch located at the genset. This confirms the genset operation.
6. Start the genset at the Automatic Genset Controller and check the following:
 - a. The indicator light in the controller Start/Stop switch flashes while the genset engine is cranking. This verifies that the diagnostic wiring is correct. (Only for units with diagnostics.)
 - b. Genset starts and continues to run.
 - c. The indicator light in the Start/Stop switch remains illuminated when the genset is running.
 - d. Use the Up/Down Switch to the right of the display to scroll to the Hour Meter display and confirm that it is operating.
 - e. Use the Up/Down Switch to the right of the display to scroll to the Volt Meter display and confirm that it is operating.
7. Stop the genset at the controller and check the following:
 - a. The genset stops
 - b. The indicator light in the Start/Stop switch turns off.
 - c. The Hour Meter stops.
8. Refer to Figure #3 and use the TEST SYSTEM Displays in the Setting Up section of this manual and follow the test procedure outlined there to sequentially test all inputs and outputs.
9. Set the clock to the current local time as described in the Setting Up section of this manual.

Troubleshooting

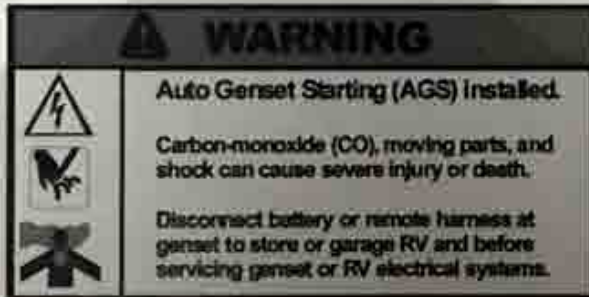
If controller functions do not operate properly, proceed as follows:

1. Does the genset operate correctly from the genset controls? If it does not, the problem is in the genset, not the EC 30 controller. See the genset Operator, Installation, and Service Manuals.
2. If the genset operates correctly from the genset controls, Confirm that the correct connection diagram (Figures 5, 6 and 7) was used, then check EC 30 wiring connections.
3. Confirm that the correct voltages are present on each terminal.
4. Check all terminal connections on both ends of the wiring harness. Are harness connectors properly joined?
5. Repeat the TEST SYSTEM procedure as described in this Operation and Installation Manual.

AGS Warning Labels

The unit includes a sheet of adhesive warning labels. Affix one label at or near each of the following locations:

- Genset Service Access Panel
- Genset Start/Stop Switch
- Vehicle AC Distribution Panel
- Vehicle AC Transfer Switch
- For towed RV, tow tongue or tongue jack



How to Obtain Customer Service

If you require service, parts, or product literature, contact the nearest Onan dealer or distributor. To locate the nearest authorized dealer or distributor, in the United States or Canada call 1-800-888-ONAN for name and telephone number (This automated service utilizes touch-tone phones only). By calling this number, you can also request a directory of authorized RV servicing dealers:

RV Sales and Service Directory F-919.

To get service, contact the authorized dealer or distributor nearest you. Explain the problem and

make an appointment. If you have difficulty in arranging for service or resolving a problem, please contact the dealer coordinator or service manager at the nearest Onan dealer for assistance.

Before calling for service, have the following information available:

1. The complete model number and serial number.
2. Software version number, as shown in the SYSTEM INFO displays.
3. The date of purchase.
4. The nature of the problem.

To enjoy the benefits the product offers requires an understanding of this manual. If you have ideas for its improvement we happily accept editorial comments.

!WARNING! Improper service or replacement of parts can result in severe personal injury, death, and/or equipment damage. Service personnel must be trained and experienced to perform electrical and/or mechanical service.

Warranty Policy

The ONAN limited warranty covers your Energy Command 20/30 Control for the first three (3) years you own your EC 20/30 if purchased at the same time as an Onan generator. Energy Command 20/30 Controllers sold separately are covered for 90 days.

For complete Onan Limited Warranty details contact your Onan RV Service and Parts dealer or call 1-800-888-ONAN (1-800-888-6626).



Appendix A Onan Gensets for Use With the EC-20/30

QUIET DIESELS

MODEL	KW	PRODUCT	EC-20/30 GEN TYPE	Service IN Hours	Connection Figure	Onan IN Cable No.
HDCAx	10/12	Quiet Diesel	QD 10/12	250	5	044-00076
HDKCx	10/12	Quiet Diesel	QD 10/12	250	5	044-00076
HDKAx	7.5/8	Quiet Diesel	QD 7.5/8	150	5	044-00076
HDKBx	5.5	Quiet Diesel	QD 5.5	150	5	044-00076

GASOLINE/LIQUID PETROLEUM (LP) (with Status Light)

MODEL	KW	PRODUCT	EC-20/30 GEN TYPE	Service IN Hours	Connection Figure	Onan IN Cable No.
HGJAx	7.0	Marquis Platinum	GAS/LP	150	6	044-00075
HGJAx	5.5	Marquis Gold	GAS/LP	150	6	044-00075
KY	4.0/3.6	MicroQuiet	GAS/LP	150	6	044-00075
KYD	4.0/3.6	CampPower	GAS/LP	150	6	044-00075

GASOLINE/LIQUID PETROLEUM (LP) (without Status Light)

Note 1: This genset model does not support diagnostic fault codes.

MODEL	KW	PRODUCT	EC-20/30 GEN TYPE	Service IN Hours	Connection Figure	Onan IN Cable No.
KVD	2.8/2.5	CampPower (Note 1)	GAS/LP	150	7	044-00074
KV	2.8/2.5	MicroLite (Note 1)	GAS/LP	150	7	044-00074

- 25 foot cables available through Onan IN. Cables have mating connectors for EC20/30 and genset, flying leads for other connections.
- Also available is an 18" pigtail, part number 044-00077, without the genset connector that mates to the EC20/30.



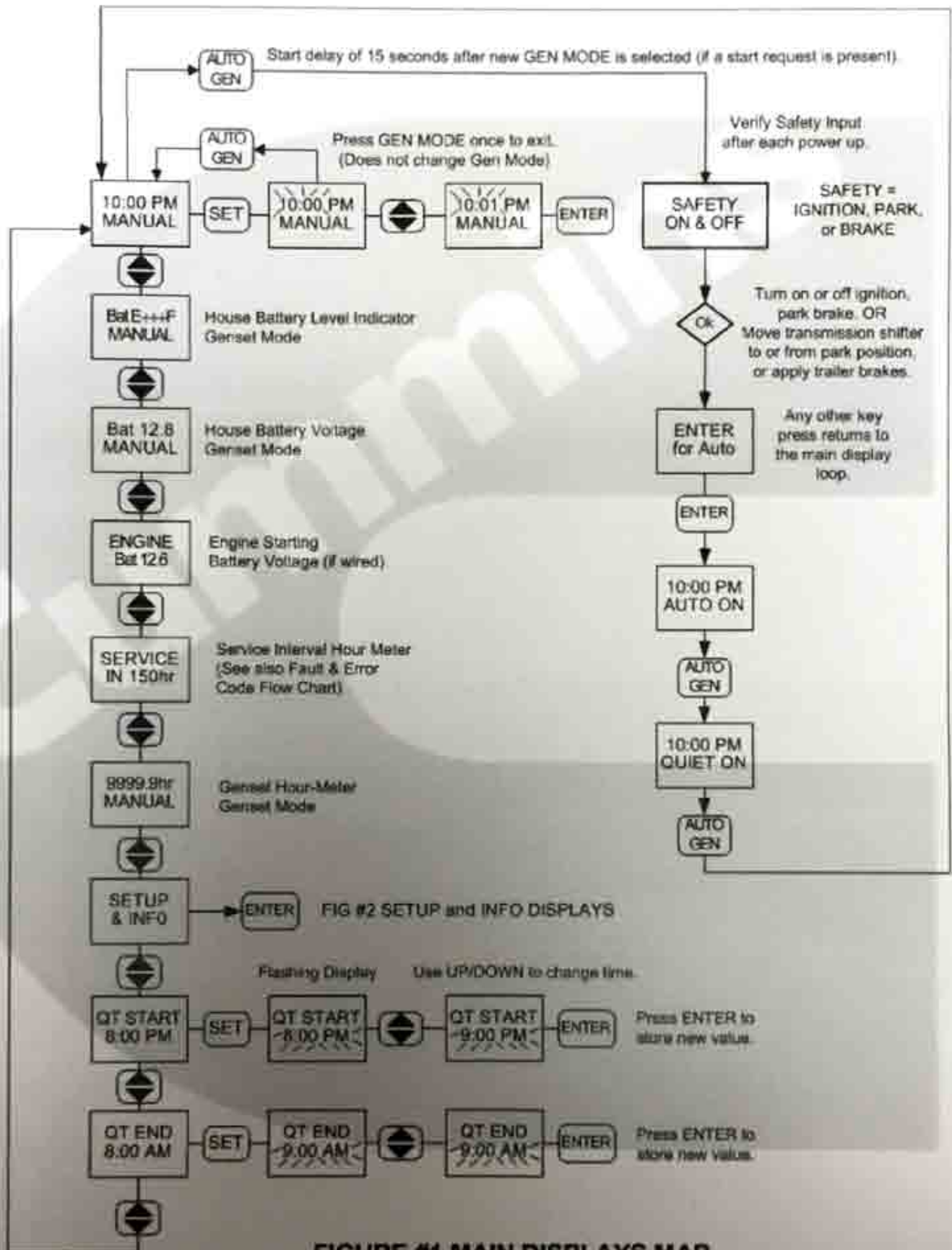


FIGURE #1 MAIN DISPLAYS MAP

Setup and Information Displays

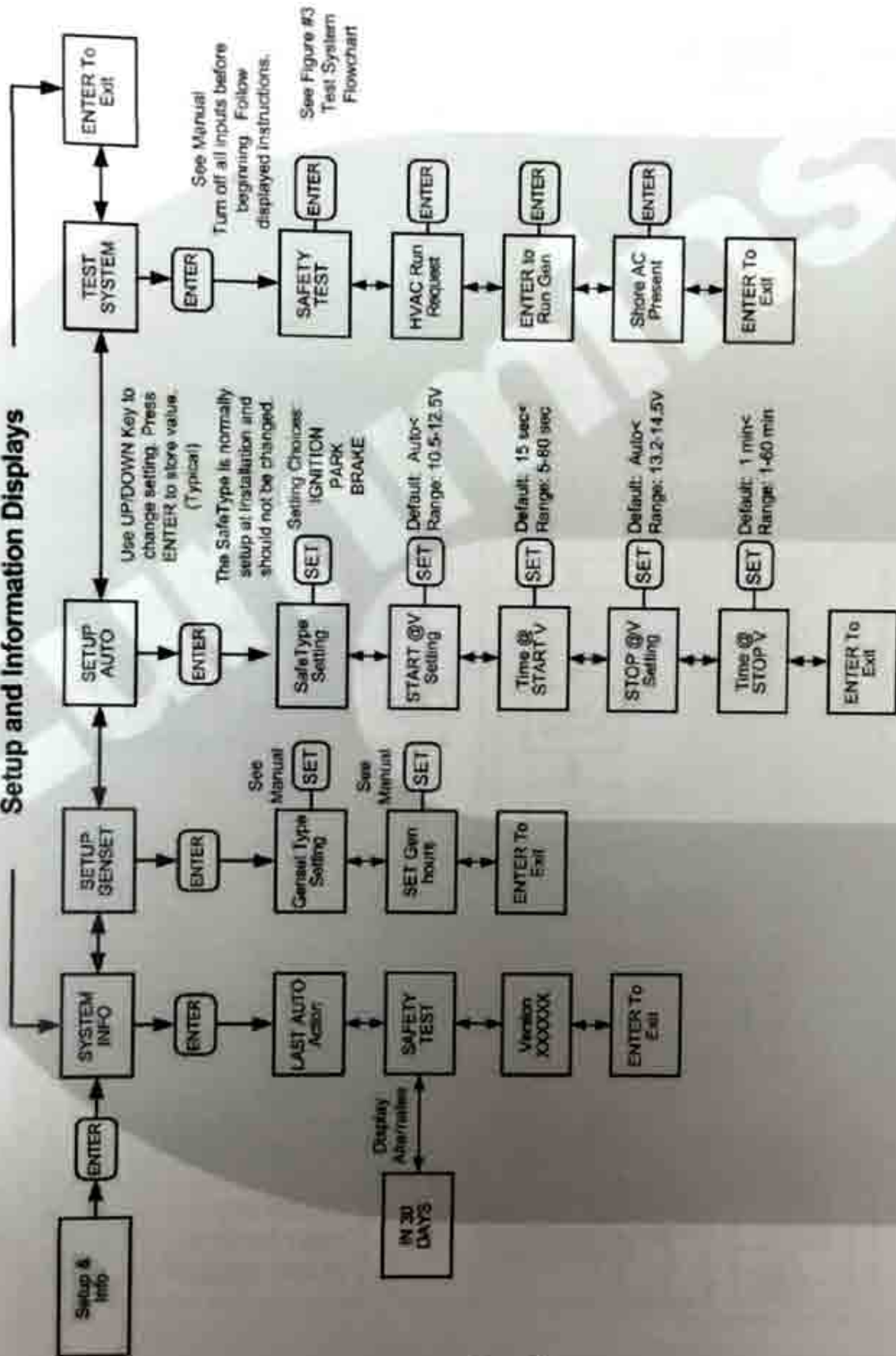
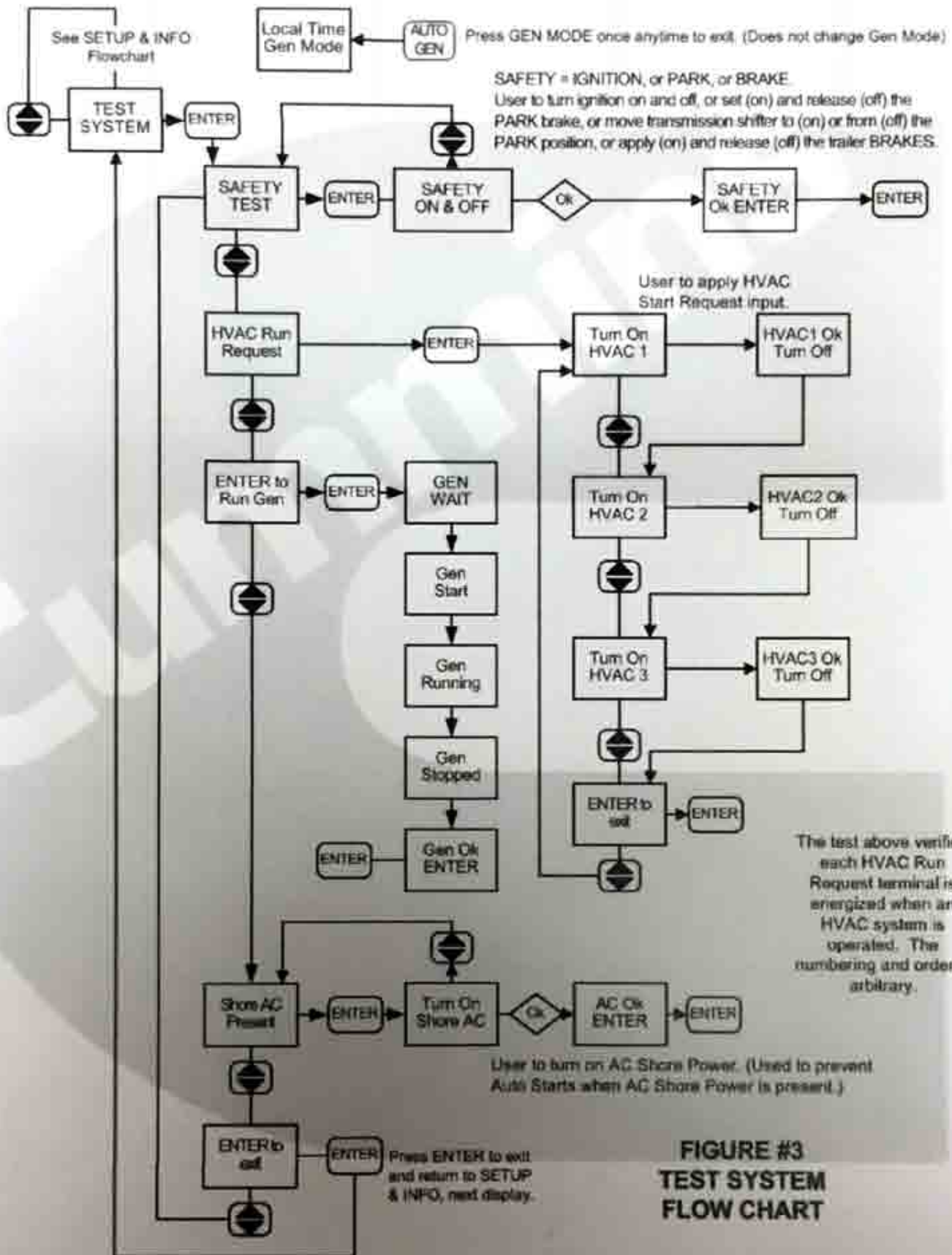


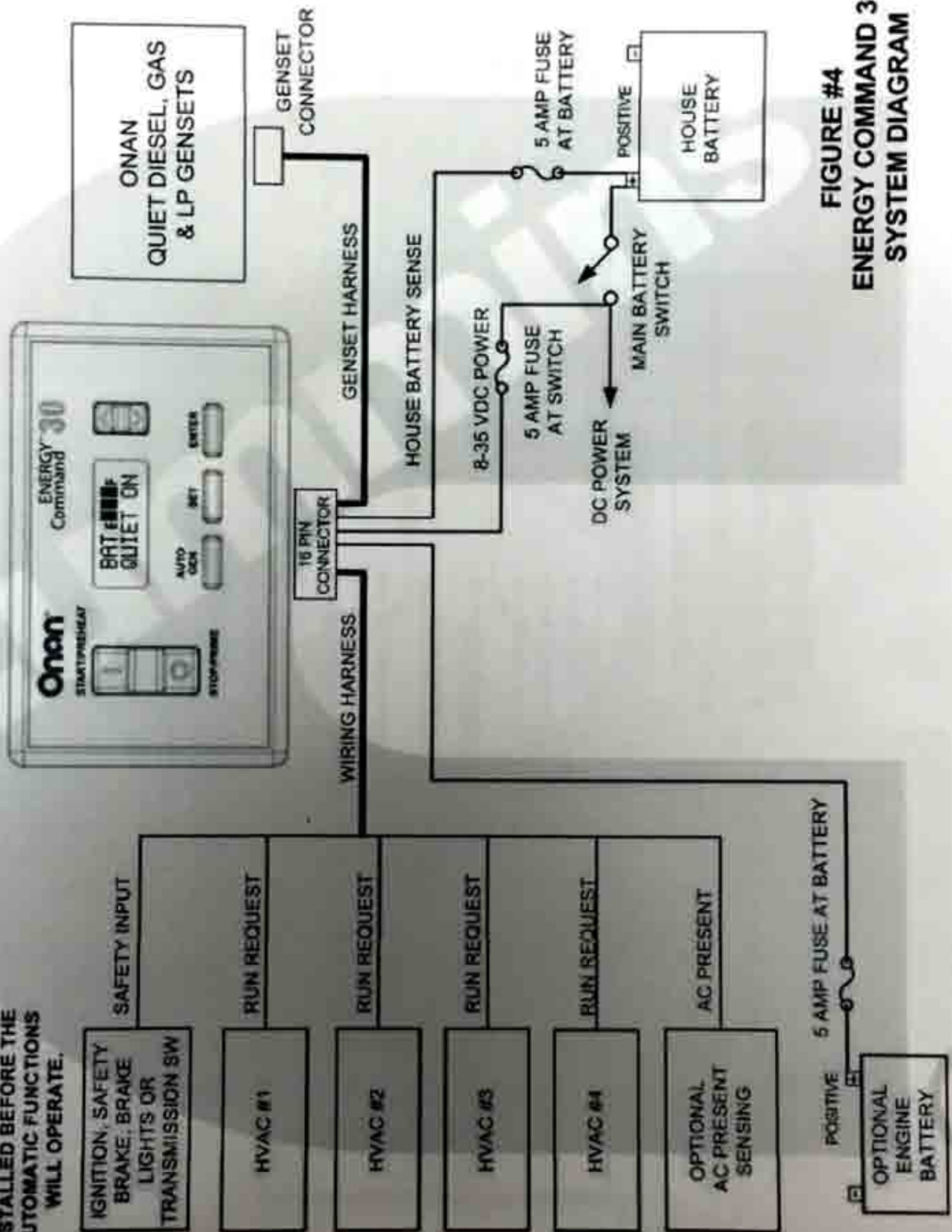
FIGURE #2 SETUP AND INFO DISPLAYS



**FIGURE #3
TEST SYSTEM
FLOW CHART**

!WARNING!

THE SAFETY INPUT MUST BE INSTALLED BEFORE THE AUTOMATIC FUNCTIONS WILL OPERATE.



**FIGURE #4
ENERGY COMMAND 30
SYSTEM DIAGRAM**

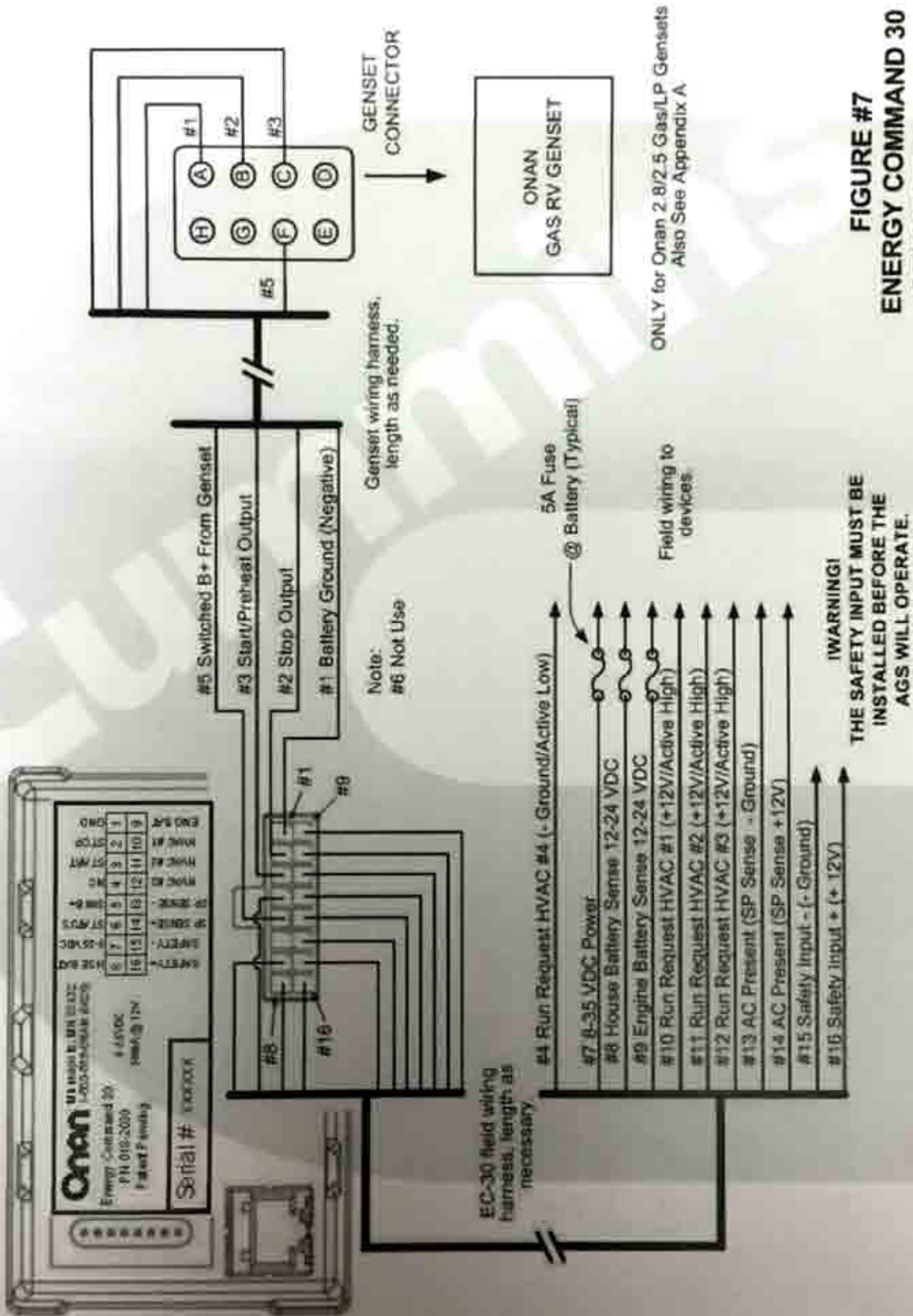


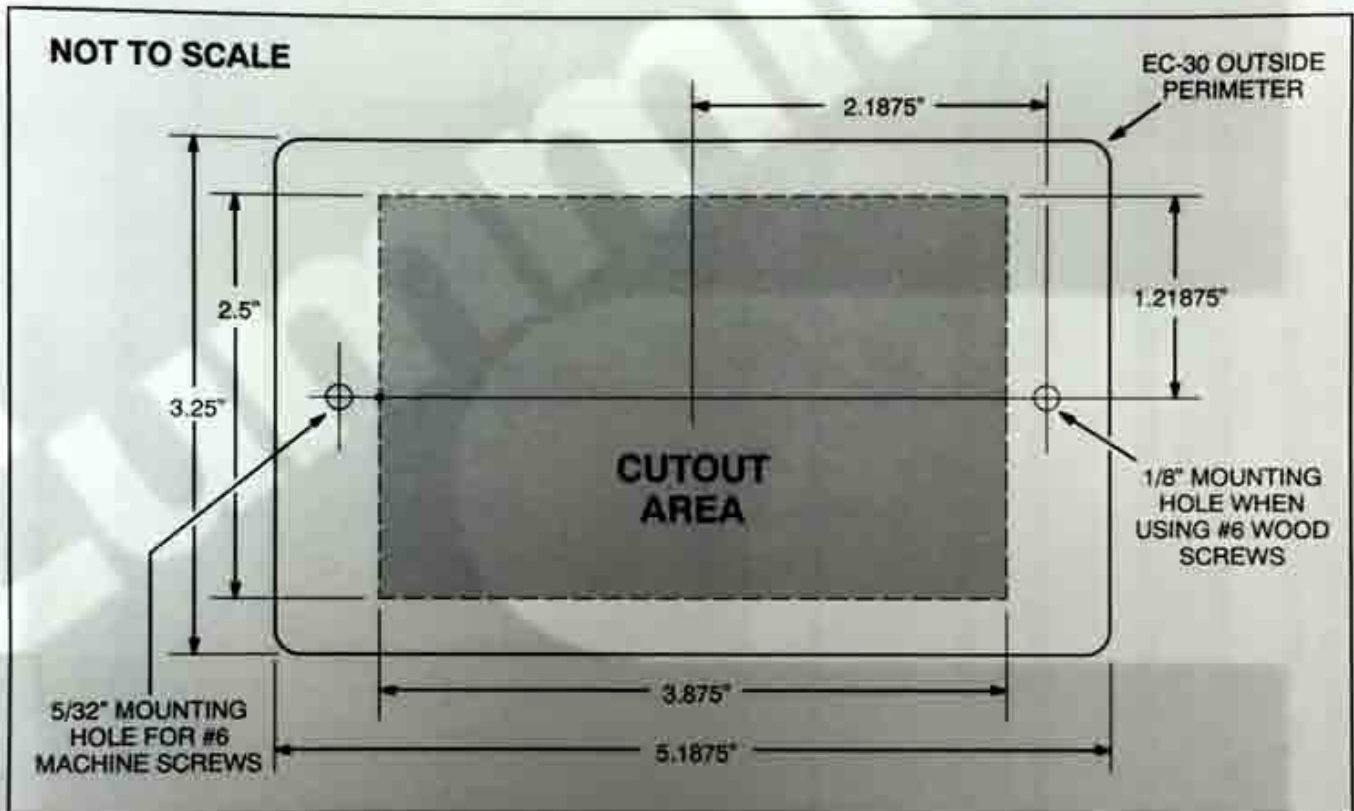
FIGURE #7
ENERGY COMMAND 30
CONNECTIONS FOR
GAS RV GENSETS

The mounting footprint for the control is shown below. Select an appropriate mounting location, make sure there is enough room to install the control panel, and mark the locations for the cutout area and the mounting holes, as indicated in the illustration. Use a center punch to mark the perimeter of the cutout area.

Depending on the tool to be used (Roto-zip tool recommended, reciprocating saw, or key hole saw), determine where to drill the corner starting holes. The edge of the bit should just touch the

edge of the cutout area. Also lightly punch or mark the two mounting holes.

Use the perimeter punch marks to draw an outline on the cutout area on the mounting surface. Drill the corner starting holes and use the selected tool to remove the cutout area. File the corners and as needed to fit. Align the EGR-1 and check that the mounting hole punch marks line up. Adjust mounting hole marks as needed and drill mounting holes appropriately for the screws being used to mount the unit.



Mounting Footprint

Use scissors to cut out template around the solid perimeter line. Use square or level to align template on mounting surface. Tape the template securely to the mounting surface. Use a center punch to mark the perimeter of the cutout area.

Depending on the tool to be used (Roto-zip tool recommended, reciprocating saw, or key hole saw) determine where to drill the corner starting holes. The edge of the bit should just touch the edge of the cutout area. Use the 45° line and the outlines of the three common drill sizes shown (5/32", 1/4", 3/8") to mark and punch the corner starting holes. Also lightly punch or mark the two mounting holes.

Remove the template and use the perimeter punch marks to draw an outline of the cutout area on the mounting surface. Drill the corner starting holes and use the selected tool to remove the cutout area. File the corners and as needed to fit. Align the EGR-1 and check that the mounting hole punch marks line up. Adjust mounting hole marks as needed and drill mounting holes appropriately for the screws being used to mount the unit.

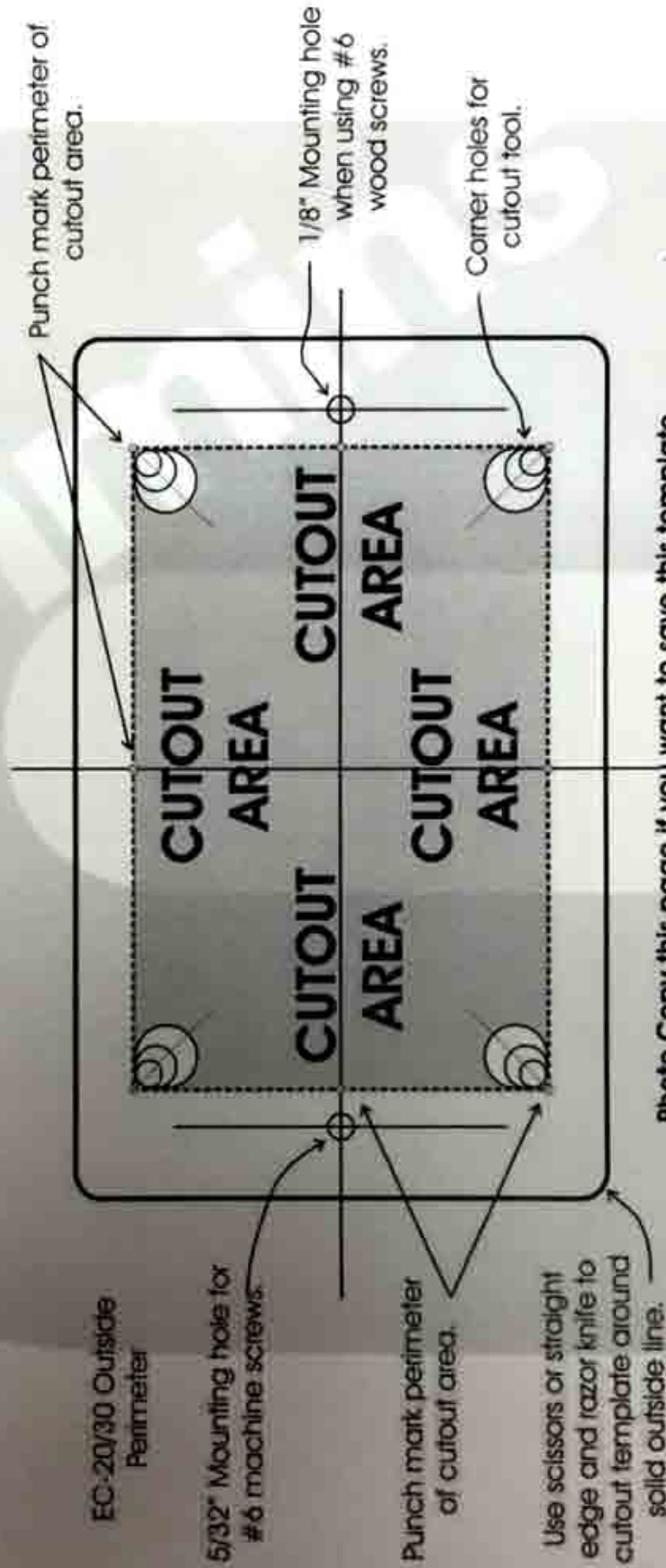


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Mounting Template

Date: 08/06/04

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