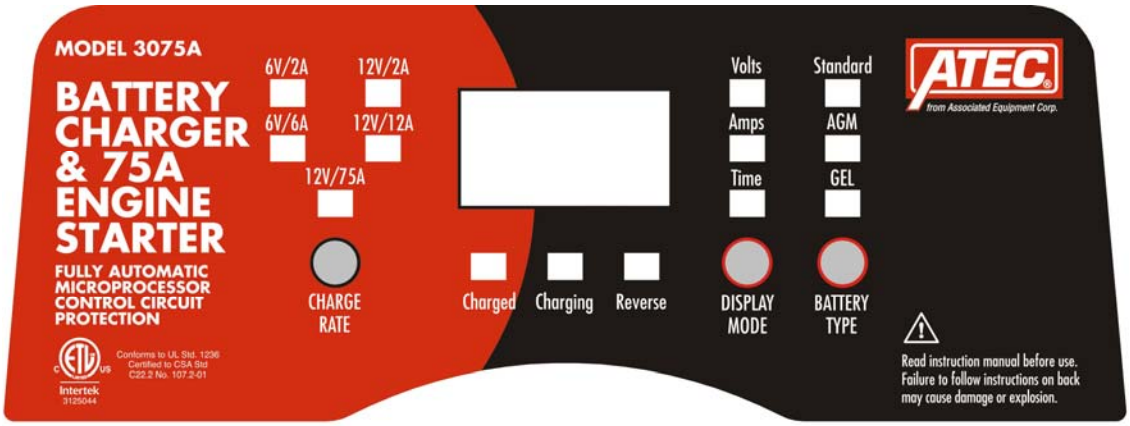

- Five charging modes: 6V/2A, 6V/6A
  12V/2A, 12V/12A & 12V/75A engine start
- Standard, GEL and AGM battery type settings
- Built-in digital display showing the voltage, amperage and time on charge
- Heavy-duty transformer and rectifier
- Built-in circuit protection
- Automatically checks for correct connection (requires a minimum of 1 volt DC at the battery terminals)
- Heavy-duty cables and clamps are corrosion-resistant for better connections
- Connect to side- or top-mount battery terminals
- Ideal for charging or boosting during winter season when the starting performance of vehicle batteries is lowered by cold or extreme weather conditions

Battery Charger Controls
Battery Charger controls are located on the control panel. Understand their use before operating Battery Charger.

Control Panel

Charge Rate Button – Select an appropriate setting for the battery you are charging:
2-amp Trickle – Use for charging small batteries, such as those used in motorcycles, garden tractors, ATVs, jet skis and snowmobiles, at a charge rate of up to 2 amps. Refer to manufacturer's specifications on recommended charge rate. This setting can also be used to slowly charge larger batteries. When the battery is fully charged, the Battery Charger current output will taper and then the Battery Charger will automatically shut off. When the battery's charge drops, the Battery Charger will come on again, keeping the battery fully charged.
12-amp Quick Charge – Use for charging larger automotive batteries at a charge rate of up to 12 amps. When the battery is fully charged, the Battery Charger current output will taper and then the Battery Charger will automatically shut off. When the battery's charge drops, the Battery Charger will come on again, keeping the battery fully charged.
75-amp Engine Start – Use for delivering up to 75 amps to a 12-volt battery to assist in engine starting.

Display Mode Button – Switch the display mode of the digital display from voltage value to amperage to charging time that has lasted. The default mode is voltage value of the battery.

Note: **If no battery is connected, the digital display will show "– – –"; if connecting to an inapplicable battery (e.g. 24V battery), the digital display will show "Er1"; if connecting to a dead battery, the digital display will show "Er2".**

Battery Type Button – Select the appropriate setting for the type of battery you are charging. Most automotive batteries are standard batteries. If unsure of the type of battery being charged, refer to the battery manufacturer for more information.

Charging and Charged LED Indicators – When the battery charger is charging the battery, the charging LED will be on. When the battery has reached a full charge, the charging LED will go off, and the Charged LED will be on, indicating the battery is fully charged.

Reverse LED Indicator – The red LED will light when the Battery Charger is not properly connected to the battery. When lit, it will not allow the Battery Charger to begin charging. This feature will only work on batteries that have at least 1 volt of charge.

Circuit Breaker
This Battery Charger has an internal, self-resetting circuit breaker that protects the Battery Charger from temporary overloads. When it operates, it makes a clicking sound and the current will be cutoff. After a cool-down period, the breaker will automatically close and the current will recover automatically. If the breaker continues to cycle every few minutes, reduce charge rate or discontinue charging.

Before Charging
- Make sure the Battery Charger is disconnected from the power supply.
- Make sure that the voltage of the battery matches the rated output of the Battery Charger by referring to the vehicle owner's manual.
- Check the polarities of the battery terminals: positive for the (+) symbol and negative for the (–) symbol.

Pre-Charge Activation
When starting to charge a battery, the current will depend on the battery's percent of charge. The actual current will usually be lower than the current selected on the Battery Charger, unless the battery is severely discharged. As the battery charge level increases, the current reduces. The digital meter is intended to show how the charging process is proceeding; it should not be used to determine the level of battery charge accurately - this should be done using a hydrometer or a voltmeter. Typically, 12.6V DC is considered full charge for a 12-volt battery if the voltage is measured one hour after the Battery Charger is disconnected. During charging, a nominal 12-volt battery can be 13.6 volts or higher, so it needs to rest after charging to measure state of charge.

EXPLOSION HAZARD
Be aware that a fully charged battery will also cause a low current reading. Attempting pre-charge activation of a fully charged battery may cause explosion - make sure that battery is discharged before using this procedure. Pre-charge activation is the term for the time it takes before a battery begins to accept a measurable rate of charge - it can be as long as 4-8 hours from the time the charging process begins. Pre-charge activation is indicated if the ammeter reading is zero and a hydrometer or voltmeter reading shows that the battery is fully discharged.

Note: **The newer, high-calcium-type 12-volt DC batteries may need pre-charge activation if their charge has been allowed to drop to a very low level. When deeply discharged, this type of battery will provide only a very low voltage output and will draw less than 1 amp during the recharging process, until activated.**

Charging if Battery Is Installed in a Vehicle

1. Check polarity of battery terminals - For top-mounted battery connectors, the positive terminal (marked POS, P, +) usually has a larger diameter than the negative battery terminal (marked NEG, N, –). For side-mounted battery connections, the positive terminal is red, the negative terminal is black.
2. Attach charger clamps to battery connections, as follows, ensuring a good connection (if there is a mistake, the Reverse indicator will light) when the Battery Charger is plugged in:

For Negative-Grounded Vehicles: Connect the positive (RED) charger clamp to the positive (POS, P, +) ungrounded battery terminal. Then, connect the negative (BLACK) charger clamp to the vehicle chassis, or the engine block (away from the battery). NOTE: Do not connect the charger clamp to the carburetor, fuel lines or sheet metal body parts: connect only to a heavy gauge metal part of the frame or engine block. **Negative-grounded type systems are the most common in today's vehicles.**

For Positive-Grounded Vehicles: Connect the negative (BLACK) charger clamp to the negative (NEG, N, –) ungrounded battery terminal. Then, connect the positive (RED) charger clamp to the vehicle chassis or engine part (away from the battery). Do not connect the charger clamp to the carburetor, fuel lines or sheet metal body parts: connect only to a heavy gauge, stable metal part of the frame or engine block.

3. Connect the Battery Charger's power cord to a 110/120-volt AC power outlet.
   The digital display will show the battery's voltage by default;
   The Battery Type selector will be at Standard by default;
   The Charge Rate selector will be at the minimum rate by default after 10 seconds – 6V/2A or 12V/2A, depending on the battery's voltage.
   Note: **The Battery Charger cannot detect the battery's nominal voltage actually, the default charge rate selecting is just based on the battery's real-time voltage if it is lower than 8V, the charge rate selector will stay at 6V; if it is higher than 8V the selector will stay at 12V. To avoid mistake or damage, manually verify and select a proper charge rate by yourself.**
   The Charging LED Indicator will be lit after 10 seconds;
4. If the Battery Charger is connected correctly, the Reverse LED indicator will not be lit; if the cables are connected incorrectly, the Reverse LED will be red. Disconnect the Battery Charger and check your connections and battery.
5. Select the appropriate charge rate setting and battery type setting for your battery.
6. When the charging is complete, the green Charged LED will be lit.
7. After charging is complete, disconnect the Battery Charger plug from the 110/120-volt AC power outlet.
8. Disconnect the cables and clamps in the reverse order in which they were connected. Disconnect your first cable as far away from the battery as possible.

Charging if Battery Is Outside of Vehicle

1. Check polarity of battery terminals - For top-mounted battery connectors, the positive

terminal (marked POS, P, +) usually has a larger diameter than the negative battery terminal (marked NEG, N, –). For side-mounted battery connections the positive terminal is red, the negative terminal is black.

2. Attach a 24-in. (61 cm) (minimum length) 6 AWG insulated battery cable to the negative battery terminal (marked NEG, N, –).
3. Connect the positive (RED) charger clamp to the positive battery terminal (marked POS, P, + or red).
4. Stand as far back from battery as possible, and do not face battery when making final connection.
5. Position yourself and free end of cables as far away from battery as possible. Carefully connect the negative (BLACK) charger clamp to the free end of the battery cable connected to the negative terminal.
6. Connect the Battery Charger's power cord to a 110/120-volt AC power outlet.
   The digital display will show the battery's voltage by default;
   The Battery Type selector will be at Standard by default;
   The Charge Rate selector will be at the minimum rate by default after 10 seconds – 6V/2A or 12V/2A, depending on the battery's voltage.
   Note: **The Battery Charger cannot detect the battery's nominal voltage actually, the default charge rate selecting is just based on the battery's real-time voltage if it is lower than 8V, the charge rate selector will stay at 6V; if it is higher than 8V the selector will stay at 12V. To avoid mistake or damage, manually verify and select a proper charge rate by yourself.**
   The Charging LED Indicator will be lit after 10 seconds;
7. If the Battery Charger is connected correctly, the Reverse LED indicator will not be lit; if the cables are connected incorrectly, or if the battery is dead, the Reverse LED will be red. Disconnect the Battery Charger and check your connections and battery.
8. Select the appropriate charge rate setting and battery type setting for your battery.
9. When the charging is complete, the green Charged LED will be lit.
10. After charging is complete, disconnect the Battery Charger plug from the 110/120-volt AC power outlet.
11. Disconnect the cables and clamps in the reverse order in which they were connected. Disconnect your first cable as far away from the battery as possible.

A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

Use of Extension Cords

If it is necessary to use an extension cord, as is often the case, observe the following important safety information:

- Before using any extension cord, ensure that the wire size is at least 10 AWG or larger and 8 AWG for longer than 100 ft. (30.5 m).
- Use only a good quality, good condition, UL-approved extension cord, and ALWAYS connect Battery Charger to the extension cord before plugging the extension cord into a 110/120-volt AC power outlet. The use of a poor quality extension cord or one that is not in good repair could cause fire and/or electric shock.
- Use a three-wire extension cord with a three-prong plug, and connect to a three-conductor socket.

Charging Times

The Battery Charger is a fully automatic battery charger, it automatically stops charging when the battery is fully charged. To estimate charging time for a discharged battery, divide the AH rating of the battery by the charge rate selected. This is the number of

hours required to recharge the battery. For example, a 50 AH (12-volt) battery is discharged to 10 volts. How long should it be charged at the 12-amp rate? Divide the 50 AH by 12 A. The answer is approximately 4 hours. Always round up the charge time by 25% to ensure full charge. In most cases, battery recharge times will vary depending on the age and condition of the battery. Smaller batteries should be charged at the lower rate (2 amps) and add an extra hour to charge time.

Engine Starting

The engine start function can supply up to 75 amps of current during engine starting. This function is protected by an automatic reset protector, and there is a 5-second limit at this output level.

Do not make battery and chassis connections with the Battery Charger connected to AC power.

1. Check polarity of battery terminals - For top-mounted battery connectors, the positive terminal (marked POS, P, +) usually has a larger diameter than the negative battery terminal (marked NEG, N, –). For side-mounted battery connections, the positive terminal is red, the negative terminal is black.
2. Attach charger clamps to battery connections, as follows, ensuring a good connection (if there is a mistake, the Reverse indicator will light) when the Battery Charger is plugged in:

For Negative-Grounded Vehicles: Connect the positive (RED) charger clamp to the positive (POS, P, +) ungrounded battery terminal. Then, connect the negative (BLACK) charger clamp to the vehicle chassis, or the engine block (away from the battery). NOTE: Do not connect the charger clamp to the carburetor, fuel lines or sheet metal body parts: connect only to a heavy gauge metal part of the frame or engine block.

Negative-grounded type systems are the most common in today's vehicles.

For Positive-Grounded Vehicles: Connect the negative (BLACK) charger clamp to the negative (NEG, N, –) ungrounded battery terminal. Then, connect the positive (RED) charger clamp to the vehicle chassis or engine part (away from the battery). Do not connect the charger clamp to the carburetor, fuel lines or sheet metal body parts: connect only to a heavy gauge, stable metal part of the frame or engine block.

3. Connect the Battery Charger's power cord to a 110/120-volt AC power outlet, and select the charge rate button to "12V/75A".
4. The digital display will show the battery's voltage, and the battery charge will charge the battery with a current around 5A automatically, until you start cranking your engine.
5. Immediately crank the engine in 5-second bursts until the engine starts with a rest time of 3 minutes between each burst.

Do not crank the engine for more than 5 seconds at a time.

6. The Battery Charger allows 5 seconds maximum for each attempt, and then stops automatically for rest for 180 seconds. During the 180 seconds, the engine start function will be locked, and the digital display will count down. And during this period, the Battery Charger will continue charge the battery with 5A.
7. Once the engine starts, disconnect the Battery Charger plug from the 110/120-volt AC power outlet.
8. Disconnect the cables and clamps in the reverse order in which they were connected. Disconnect your first cable as far away from the battery as possible.