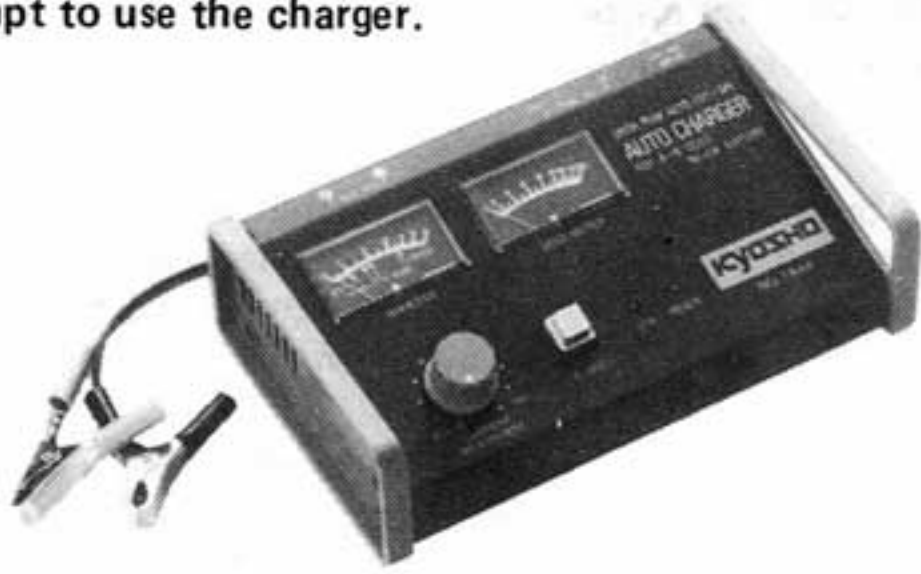


NOTICE: Read this manual thoroughly before you attempt to use the charger.

AUTO CHARGER



MODEL 1848

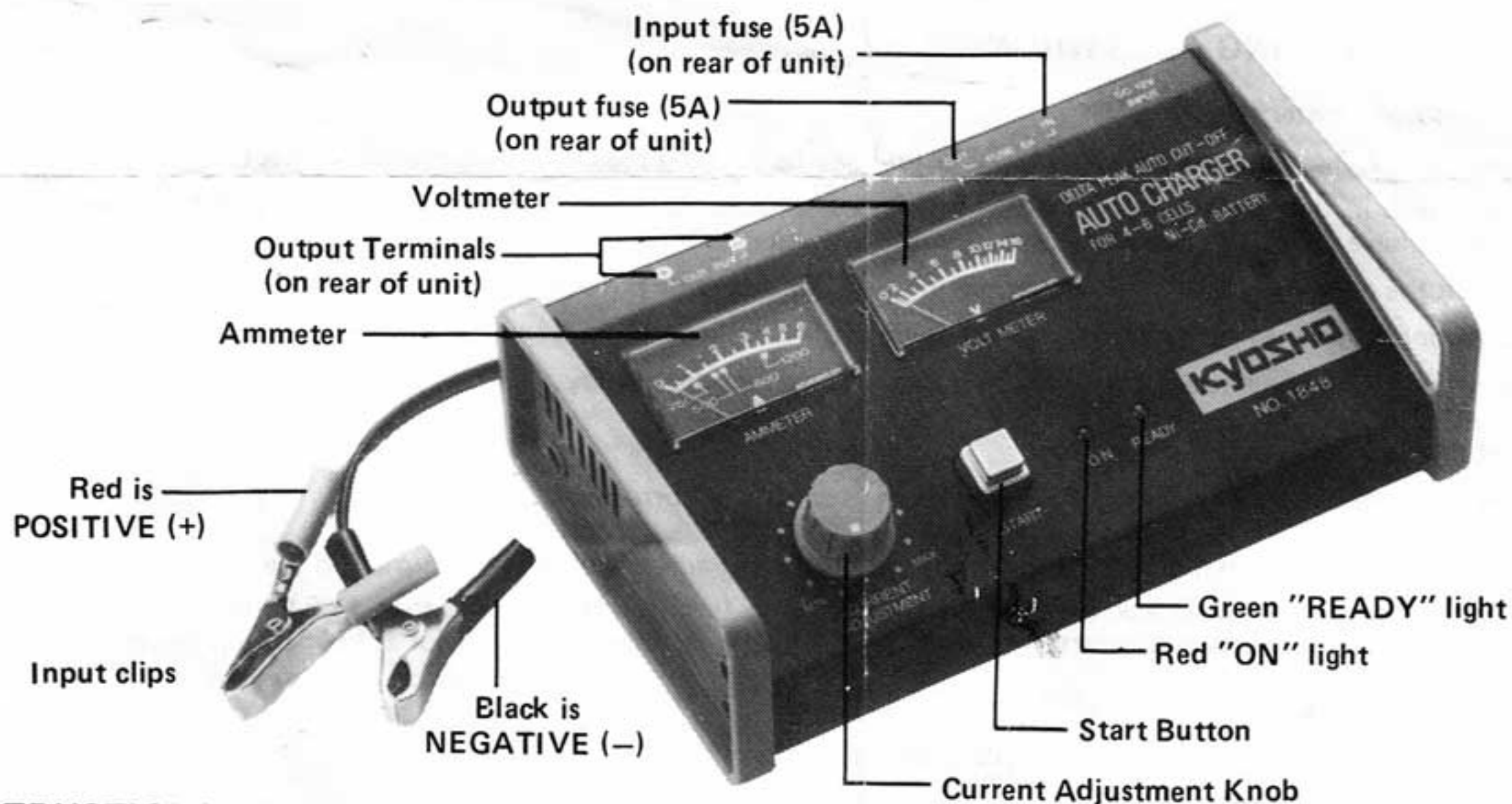
Congratulations on choosing the Kyosho model 1848 Auto Charger. The Auto Charger is a versatile, very high quality automatic quick charger designed to charge any 4.8 - 7.2 volt, 250-4000mah Nickel Cadmium (Ni-Cd) batteries to 100% capacity. Because of its high quality, ease of use and versatility the Auto Charger has become the choice of beginners and experts alike.

SPECIAL FEATURES OF THE AUTO CHARGER

- Safe, convenient automatic shut-off quick charging.
- Built-in ammeter AND voltmeter allow constant visual monitoring of charge rate and voltage.
- Safely charges batteries which are still partially charged to 100% capacity.
- Charges a wide variety of Ni-Cd types: 4.8-7.2 volts, 250-4000mah.
- Continuously variable range rate from 0-4 amp hours.
- Easy to use. Even beginners can charge their batteries with professional results.
- High quality design and construction for long term, continuous use.

SPECIFICATIONS

Type	Quick charger with delta voltage peak detection shutdown.
Will charge	Nickel-Cadmium (Ni-Cd) batteries 4.8 - 7.2 volts (4 to 6 cells) 250-4000 milliamps (mah)
Input Voltage	12 volts DC
Charging Current	0 - 4 amps (variable)
Input Connectors	Standard alligator clips
Output Terminals	Universal spring loaded snap-in type
Dimensions	200mm x 60mm x 123mm
Weight510 grams



INSTRUCTIONS FOR USE

1. Place the battery and charger on something like a piece of wood or cardboard. Never leave a battery on your car fender while charging. Ni-Cd batteries sometimes DO leak, and will damage the finish.
2. This charger comes equipped with universal, spring loaded output terminals designed to accept your connector lead (the extra pigtail type connector normally supplied with your battery.) Carefully strip off about 1/4 inch of insulation from each wire on the connector lead (this may already have been done for you.) Press down on the red output connector button, insert the positive lead and release the button. This will lock the lead into the connector securely. Repeat the procedure for the negative lead, inserting it into the black connector. Note that most manufacturers will color their positive leads red but sometimes just use a white stripe (on a black lead). If in doubt, consult the instructions from your battery. Reversing positive and negative MAY DAMAGE THE CHARGER, so be certain that your hook-up is correct.
3. Set the current adjustment knob to the "MAX" position. Attach the alligator type input clips to a 12 volt battery such as your automobile battery or a motorcycle battery (5 amps or better). Pay close attention to the "polarity" of the wires: RED goes on the POSITIVE (+) terminal and BLACK goes on the NEGATIVE (-) terminal. If you are using your automobile's battery BE SURE THAT THE CAR'S ENGINE IS TURNED OFF (a running engine actually produces a bit more than 13 volts and will damage your charger and battery).

Once connected, the green "READY" light will glow. To check the voltage of your power source, press the START button down for about one or two seconds and then release it (you should NOT have the battery to be charged hooked up just yet.) The red "ON" light should now glow. Check the reading on the voltmeter. If the voltage indicated is in the 11.5 - 13 volt range then it is safe to charge.

4. Set the current adjustment knob to the "MIN" position (the charger should then automatically switch from "ON" to "READY".) Carefully connect the battery to be charged to the connector lead that you hooked-up in step No. 1. These connectors are "keyed" so that they can only be inserted one way. If the connectors do not seem to mate properly DO NOT FORCE THEM. Always handle these connectors by their plastic body; never handle them by the wires.
5. Press the START button. Gradually turn the current adjustment knob clockwise until the ammeter needle points to the red square marked with the rating (in milliamp-hours) for the battery you are charging. The charge rate and time required for a full charge may vary depending upon the type of Ni-Cd you want to charge. For instance, a fully discharged 1200mah battery will take about 20 minutes at 3.6 amps, 25 minutes at 2.8 amps, or 30 minutes at 2.4 amps for a full charge. Never charge any battery at a higher rate than the highest rate shown for that battery type on the ammeter. Doing so will damage the battery and possibly the charger as well. The voltmeter should read a bit higher than the nominal rated voltage of the pack while charging. For instance, if you are charging a 7.2 volt battery the voltmeter should read at least 1/2 volt higher than 7.2 volts.
6. The battery will get warm while charging; this is normal. You may want to monitor the temperature of the pack. The Auto Charger has been designed to shut off automatically when the battery has reached a full charge so overcharging should not be a problem. However, if the battery pack ever becomes too hot to handle, makes a "popping" sound or leaks, discontinue charging immediately. Always charge in a well ventilated area.

When charging is finished, the charger will automatically switch off and the green "READY" light will come on. Disconnect the charger from its 12 volt source then disconnect the Ni-Cd battery from the charger. Make sure that the model's motor switch is OFF or speed control is at neutral before re-installing the pack.

Do not charge a pack that is hot from running. Let it cool down first before recharging. Never dispose of in fire. Never try to open the pack yourself.

WHAT TO DO IF SOMETHING GOES WRONG

1. If ammeter does not register any current.
 - Check the alligator clip connections. Battery corrosion may be keeping the clips from making contact.
 - One of the fuses in the charger may be out. Find out what caused the fuse to go out. Replace only with the same type and rating (we have provided two extra fuses for your convenience.)
 - The wires on the connector lead may not be making firm contact with the output terminals. Check the connections.
 - The actual connectors may be deformed, not allowing proper contact. Either repair or replace them.
 - The internal wiring of the battery pack may be damaged. Replace the battery.
2. If meter readings are jittery or unsteady.
 - Bad connection. Re-check all connectors. May be caused by dirt or corrosion.
3. If ammeter does not indicate an increase in current when the current adjustment knob is turned to the right.
 - Power source could be weak. Check the auto battery's voltage (see step No. 3.) Less than 11.5 volts will not be sufficient for charging. If using a portable battery, be sure that it is fully charged and rated for at least 5 amp/hours.
4. If charging stops prematurely.
 - Poor or intermittent connections. Check all plugs and clips.
 - Battery may be hot from running. Allow it to cool before charging.
 - Battery may be defective.

NOTES ABOUT CHARGING

It is interesting to note that the highest charge rates do not give the best performance. If you are going to competitively race (or just want the absolute best performance from your model), always choose a lower charging rate; unfortunately as you lower the charge rate, the time it takes for charging increases.

Thanks for purchasing the Auto Charger. We're sure it will give you excellent performance.

WARNING!

IMPROPER USE OF THIS PRODUCT
VOIDS ITS WARRANTY AND MAY RESULT
IN PERSONAL INJURY AND/OR DAMAGE
TO THE PRODUCT.
READ THESE INSTRUCTIONS CAREFULLY!

