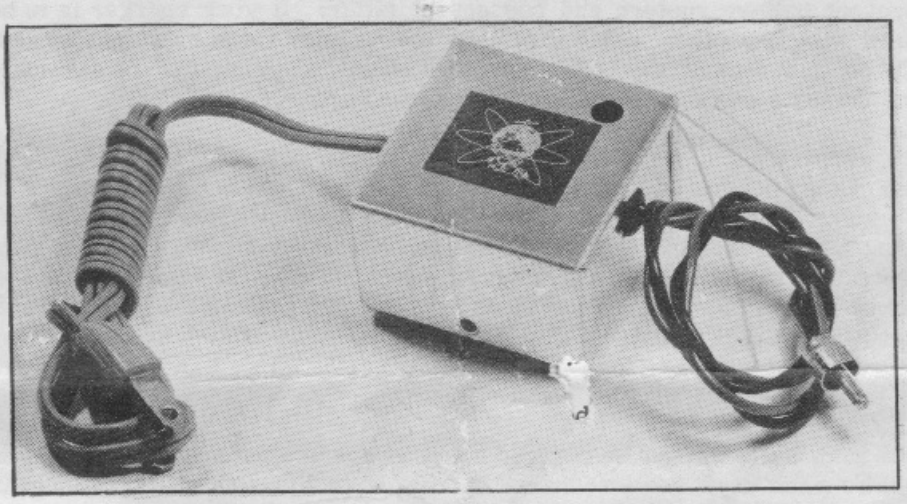
CONTROLAIRE

Nickle Cadmium Battery Charger



INSTRUCTIONS

FOR BOTH KIT & ASSEMBLED MODEL

Made In U.S.A.

Controlaire Electronics Division

World Engines, Inc.

8206 Blue Ash Road - Cincinnati 36, Ohio

CONTROLAIRE NICKEL CADMIUM BATTERY CHARGER

OPERATING INSTRUCTIONS

The Controlaire charger has the following design features, the use of an isolation transformer to eliminate shock hazard; a series connected charge indicator light that tells when batteries are charging; easy modification to allow charging of any combination of 500 mah cells from 1 to 7 cells. The last feature makes the charger universal by simple replacement and selection of a series dropping resistor in the charger output circuit.

All factory assembled chargers are supplied with a 22 ohm resistor in the output circuit and are intended for charging a 5 cell 500 mah, 6 volt, receiver battery pack. The charge rate with the 22 ohm resistor will be approximately 25 milliamperes. This rate is slightly lower than the common 1/10 capacity charge rate used by others but is considered safer and will prevent battery rupture and consequent failure. If your charger is to be used with any other member of cells the resistor value must be changed. To do this consult the "resistor guide chart" as printed in the assembly instructions and select your resistor accordingly.

To prepare the charger for use install a disconnect plug of your choice to the ends of the red and black output wires. Red is positive. Black is negative. Observe this same polarity when connecting to your batteries. Plug AC line chord into 110 volt outlet and observe indicator lamp for glow indicating batteries are charging. At the 25 ma rate the lamp will glow at about half brilliance. If lamp does not glow this indicates an open circuit condition. Check serviceability of 110 volt outlet, also your connections to your batteries or, for burned out indicator lamp. Lamp replacement is to be made only with No 49 pilot lamp.

500 mah cells should be charged about 24 hours when new. After this and before each days use a recharge of from 10 to 20 hours will keep them in top condition. Recharge time depends upon previous use. If you are in doubt, charge for 24 hours.

RESISTOR GUIDE CHART

Use 1/2 Watt

No. of Cells	Voltage	Resistance OHMS	COLOR CODE
7	8.4	0	
6	7.4	10	Brown Black Black
5	6.0	22	Red Red Black
4	4.8	47	Yellow Violet Black
3	3.6	68	Blue Gray Black
2	2.4	100	Brown Black Brown
1	1.2	120	Brown Red Brown

Charge rate about 25 ma. - (4th Band is Tolerance)

Resistors available World Engines @ 10¢ ea.

CONTROLAIRE NICKEL CADMIUM BATTERY CHARGER

KIT ASSEMBLY INSTRUCTIONS

( ) 1. Install transformer to lower housing case using 4/40 screws, nuts and lockwashers. Lockwashers not shown on drawings but should be used under nuts.

( ) 2. Bend mounting bracket of lamp holder so lamp will have a tilt toward top of case then install lamp holder. Use 4/40 screws, nuts and lockwasher. Lockwasher again is not shown but should be used under nut.

( ) 3. Cut one of the rubber grommets so it will fit over A.C. line cord then install grommet and cord into rear case slot. Cut or open portion of grommet should face top of slot in case. Use care and do not damage or cut line cord.

( ) 4. Install other rubber grommet in hole provided in front portion of case.

Notice the 1/2 watt resistor shown attached between lug "A" of lamp holder and red wire coming from transformer. The value of this resistor is selected depending on number of cells to be charged. To charge a 5 cell 6 volt receiver pack install the 22 ohm resistor supplied in the kit. To charge a 7 cell 8.4 volt transmitter pack omit installation of any resistor. To charge any other number of cells consult the "resistor guide chart" and select value accordingly. Only the 22 ohm resistor is supplied in the kit. Other values if needed can be purchased locally.

( ) 5. After the resistor has been selected cut each lead to a length of 5/16". Place a 1/2" length of spaghetti tubing over the red lead coming from transformer then wrap and solder the red transformer lead to one end of the resistor. After soldering, slide tubing over joint. Attach and solder other end of resistor to lug "A" of lamp holder. If resistor is omitted attach red wire from transformer direct to lug "A".

( ) 6. Remove 1/8" insulation from one end of a 12" length of red stranded wire and, after threading through front grommet, solder to lug "B" of lamp holder. Inspect lug "B" for a condition of touching or shorting to front case. If it does, or is close, bend it forward toward lamp to provide clearance.

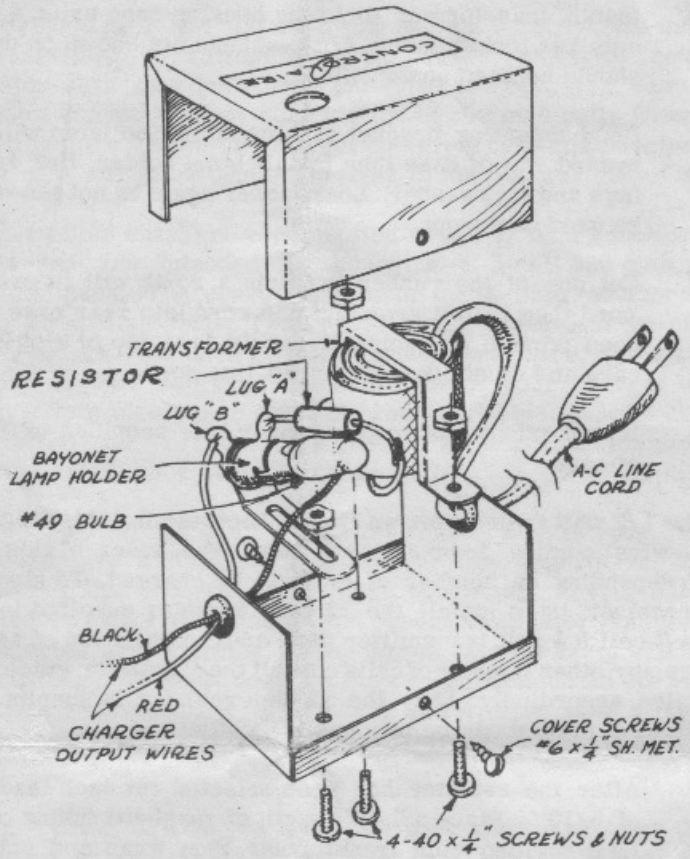
( ) 7. Route black wire from transformer through front grommet as shown.

( ) 8. Install No. 49 pilot lamp into lamp holder.

( ) 9. Remove paper backing from Controlaire emblem then affix emblem to top lid. Install top lid and secure with two No. 6x1/4" sheetmetal screws. Charger is now ready for use. Test and operate as per information contained in the Operating Instructions.

NOTICE - For those who would question, the rectifier diode needed for such a charger is installed internally within the transformer. None are installed externally.

Controlaire CHARGER



CHARGER PARTS LIST

		Price Each
1 ea.	Housing Case - Top and Bottom	1.50
1 ea.	Transformer Assembly	3.00
1 ea.	Pilot Lamp Holder	.25
1 ea.	No. 49 Pilot Lamp	.35
3 ea.	4/40 x 5/16'' Binder Head Screws	.02
3 ea.	4/40 Nuts	.02
3 ea.	No. 4 Lockwashers	.02
1 ea.	12'' length No. 22 Stranded red wire	.05
2 ea.	No. 6 x 134 Sheetmetal Screws	.02
1 ea.	Controlaire emblem	.20
2 ea.	1/4 x 5/16 Rubber Grommets	.05
1 ea.	2'' length Solder	.03
1 ea.	1/2'' length Spaghetti Tubing	.02
1 ea.	Operating & Assembly Instructions	.25