YAH166B

6/12/24 VOLT BATTERY CHARGER

OPERATOR'S MANUAL

WARNING
Batteries produce explosive gases and can explode.

Wear safety goggles. (User and bystanders)

Keep flames and sparks away from batteries.

Read and follow instructions.
Battery explosion and ignited gases can cause injury.

WARNING
Battery acid can cause chemical burns.

Wear protective clothing. (User and bystanders)
Chemical burns can cause injury.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS: This manual contains important safety and operating instructions for the battery charger you have purchased. You may need to refer to these instructions at a later date.

CAUTION: To reduce the risk of injury, charge only lead acid type rechargeable batteries (Lead accumulator battery). Other types of batteries may burst, causing personal injury and property damage.

WARNING-RISK OF EXPLOSIVE GASES

WORKING IN THE VICINITY OF A LEAD-ACID OR OTHER AUTOMOTIVE BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.

An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in the risk of fire and electric shock. If an extension cord must be used, make sure:

- **a.** That it has a protective conductor (grounded) and a minimum cross section of 1.5mm^2 in accordance with local electrical safety codes.
- **b.** For industrial and agricultural usage, use only electrical extension cords approved for these operations.

1. PREPARING TO CHARGE:

- **a.** Be sure the area around the battery is well ventilated while the battery is being charged.
- **b.** Clean the battery terminals.
- **c.** Add distilled water in each cell until the battery acid reaches the level specified by the battery manufacturer. The normal level is usually 1 cm above the lead plates.
- **d.** Determine the voltage of the battery by referring to the vehicle owner's manual and make sure that the output voltage selector switches are set at the correct voltage. If the charger has an adjustable charge rate, charge the battery initially at the charger's lowest rate for the battery.

2. DC CONNECTION PRECAUTIONS

- **a.** Connect and disconnect the DC output clamps only after setting the Timer switch to the "O" (OFF) position and removing the AC cord from the electric outlet. Never allow the clamps to touch each other.
- **b.** When attaching a clamp to a battery post, twist or rock the clamp back and forth several times to make a good connection.

3. STOP/GO LITE INSTRUCTIONS

When used properly, the STOP/GO LITE will indicate whether the clamp connections will be correct. Connect the Positive (Red) clamp to the Positive (POS, P, +) battery post. Touch the contact button of the Negative (Black) clamp to the other battery post. Observe the LED lights in the STOP/GO LITE.
GREEN LIGHT: The first connection is correct. Make the second clamp connection per the instructions in section 4.
RED LIGHT: The first connection made with the Positive (RED) clamp to the battery is incorrect. Attach the Positive (RED) clamp to the other battery post and retest.
RED AND GREEN LIGHT: The battery charger is turned on. Turn the charger "OFF" (O) and retest.
NO LIGHT: Check for a shorted or open battery. Clean corrosion from the clamp jaws and battery posts. Retest. If still no light, use a voltmeter or other means to make certain you have property identified the polarity of the battery posts. Then attach the clamps per the instructions, disregarding the STOP/GO LITE.

4. FOLLOW THESE STEPS WHEN CONNECTING THE BATTERY

- **a.** Check the polarity of the battery posts. The Positive (POS, P, +) battery post usually has a larger diameter then the Negative (NEG, N, -) battery post.
- **b.** Determine which post of the battery is grounded (connected to the chassis). If the negative post is grounded to the chassis (as in most vehicles), see paragraph 4c. If the positive post is grounded to the chassis, see paragraph 4d.
- **c.** For a Negative ground vehicle, double check the polarity of the battery terminals, refer to the STOP/GO LITE instructions. Connect the Positive (Red) clamp from the battery charger to the Positive (POS, P, +) ungrounded post of the battery. Connect the Negative (Black) clamp to the vehicle chassis, a heavy gauge metal part of the frame or the engine block, away from the battery. Do not connect the clamp to the carburetor, fuel lines or sheet metal part of the frame.
- **d.** For a Positive ground vehicle, double check the polarity of the battery terminals, refer to the STOP/GO LITE instructions. Attach the Negative (Black) clamp to the Negative (NEG, N, -) ungrounded post of the battery. Attach the Positive (Red) clamp to the vehicle chassis, a heavy

gauge metal part of the frame or the engine block, away from the battery. Do not connect the clamp to the carburetor, fuel lines or sheet metal part of the frame.

e. When disconnecting the charger, follow these precautions:
- Turn the Timer Switch to the "**O**" (OFF) position.
- Disconnect the AC cord.
- Remove the clamp from the vehicle chassis.
- Remove the clamp from the battery terminal.

f. See section 5, **LENGTH OF CHARGE**, for information on length and rate of charge.

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

5. LENGTH OF CHARGE

a. Use a temperature compensating hydrometer or a voltmeter to determine the State of Charge of the battery. Do not charge a battery that is over 75% charged or if the battery is determined to be defective. Refer to the **STATE OF CHARGE TABLE**.

b. Determine the Battery Size (Small, Medium or Large). Refer to the **BATTERY SIZE** table.

c. Refer to the **CHARGE RATE Vs. MINUTES CHARGE** table to determine the recommended length of charge for the battery based on its size, state of charge and the charging amperes.

d. Discontinue charging when the specific gravity of the electrolyte reaches 1.260 or above. A temperature compensating hydrometer should be used for this reading. Discontinue charging if the battery begins to gas excessively or when the temperature of the electrolyte reaches approximately 50° C. Do not overcharge the battery.

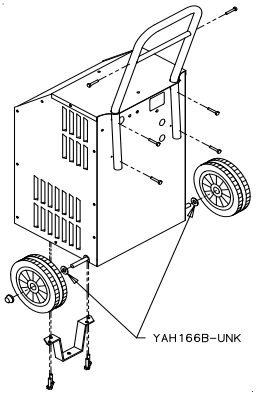
BATTERY SIZE TABLE			
BATTERY SIZE	SMALL	MEDIUM	LARGE
Ampere Hours	40	60	80+
Reserve Capacity	60	90	100+
Cold Cranking Amps	275	350	400+

STATE OF CHARGE TABLE				
STATE OF CHARGE	75%	50%	25%	DEAD
Specific Gravity	1.225	1.185	1.140	1.110
Open Circuit Voltage 6V	6.2	6.05	5.95	5.9
Open Circuit Voltage 12V	12.4	12.1	11.9	11.8
Open Circuit Voltage 24V	24.8	24.2	23.8	23.6

CHARGE RATE Vs. MINUTES CHARGE								
BATTERY SIZE	%CHARGE		MINUTES					
			15	30	45	60	75	90
SMALL	0-25	AMPERES	45	30	30	25	25	20
	25-50		30	20	20	15	15	10
	50-75		15	10	10	10	5	5
MEDIUM	0-25		70	50	45	40	35	30
	25-50		45	30	25	20	20	20
	50-75		25	15	15	10	10	10
LARGE	0-25		90	55	55	50	45	45
	25-50		60	40	35	30	30	30
	50-75		30	20	20	15	15	15

ASSEMBLY INSTRUCTIONS

Remove the four handle mounting screws from the back panel. Insert the handle through the two holes in the top panel and attach the handle to the rear of the charger using the four screws. Attach the front leg to the base with the four hex head screws provided. Attach the wheels and axle to the base. Tap one axle nut onto the axle with a hammer, slide one wheel onto the axle and push the axle through the base. Place the second wheel onto the axle and tap the remaining axle nut onto the axle.



USE OF THE INSTRUMENT PANEL

The TIMER has an "O" OFF position, a 0 to 90 minute TIMED CHARGE RANGE and a "**I**" (ON) CONTINUOUS CHARGE position.

a. "O" (OFF) - always make sure the timer is in the "O" (OFF) position before connecting or disconnecting the clamps from the battery. The charger will not operate with the timer in this position.

b. 0 to 90 TIMED CHARGE RANGE - The timer will automatically turn the charger off at the end of the pre-set charging time. Turn the timer past 20 before setting the desired time.

c. "I" CONTINUOUS CHARGE - The timer will not shut the charger OFF while in this position. Extended charging can be done if the operator is knowledgeable in determining the proper rate and length of charge and monitors the charging process to prevent overcharging.

d. Set the CHARGE SELECTOR switches to the correct NORMAL setting: B3 for 6V, B1 for 12V or D1 for 24V.

e. Turn the timer on and read the AMPS CHARGE meter.

f. If a higher rate of charge is desired for charging the battery, set the CHARGE SELECTOR switches to the correct FAST position; B2 for 6V, C1 for 12V or A1 for 24V.

g. Set the timer to the desired minutes charge.

DO NOT ATTEMPT TO CHARGE A BATTERY AT A VOLTAGE DIFFERENT THAN THAT OF THE BATTERY.

BOOST STARTING/ENGINE CRANKING ASSIST

- Turn off all the lights and accessories in the stalled vehicle.
- Connect the charger to the battery per the previous instructions.
- Set the CHARGE SELECTOR switches to the correct FAST position matching the vehicle's battery voltage.
- Charge the battery on FAST for at least five minutes before attempting to start the vehicle.
- Make sure battery is accepting current before starting vehicle.
- Start the vehicle with the charger connected to the battery.

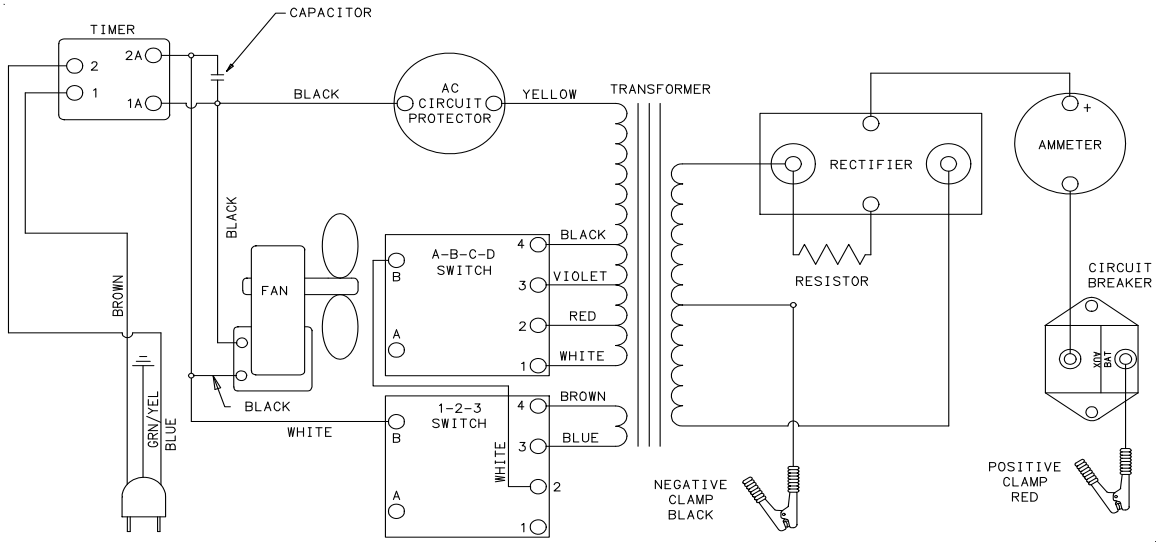
NOTE: Do not crank the engine more than 20 seconds in any five minute period; excessive cranking may overheat and damage the starter. If the vehicle fails to start, while waiting for the starter to cool, allow the charger to continue to charge the battery.

- Turn the timer to "**O**" (OFF) position before disconnecting the clamps.

MAINTENANCE INSTRUCTIONS

Worn clamps and jaws should be replaced. Worn parts can lead to poor connections and present a safety hazard. See the parts list for part number of jaw and clamp kits. Any maintenance or repair of this unit that involves disassembly of the cabinet should be done only by a qualified service technician.

WIRING DIAGRAM



REPAIR PARTS LIST

Item	Description	Part No.
1	Front Leg	605671
	Front Leg YAH166B-UNK	605183
2	Axle w/nuts	610052
3	Wheel w/nuts (2)	610553
	Wheel w/nuts (2) YAH166B-UNK	610849
4	Rectifier	610850
5	Transformer	610870
6	Fan Blade	610189
7	Fan Motor	610175
8	AC Circuit Breaker	610397
9	DC Circuit Breaker	610573
	DC Circuit Breaker YAH166B-AUS/-PP	610536
10	Ammeter	605204
11	Switch w/knob	610560
12	Timer w/knob	610555
13	AC Cord	
	YAH166B/-DF/-GER/-S	610548
	YAH166B-AUS	610599
	YAH166B-PP	610776
	YAH166B-UNK	610612
14	DC cable set w/clamps	610574
15	Stop/Go Lite	604579
16	Clamps (1 pair w/jaws)	6202
17	Jaw Kit (repairs 1 clamp)	610970
18	Base	610054
19	Front Panel	
	YAH166B/-UNK	611089
	YAH166B-AUS/-PP	611088
	YAH166B-DF	611091
	YAH166B-GER/-S	611093
20	Back Panel	610586
	Back Panel YAH166B-AUS/-PP	610597
21	Right Side Panel (facing charger)	611034

PARTS NOT SHOWN

Description	Part No.
Handle	605213
Top Panel	
YAH166B/-UNK	611090
YAH166B-AUS/-PP	611015
YAH166B-DF/-S	611092
YAH166B-GER	611094
Left Side Panel (facing charger)	611033
Capacitor Assembly	610785

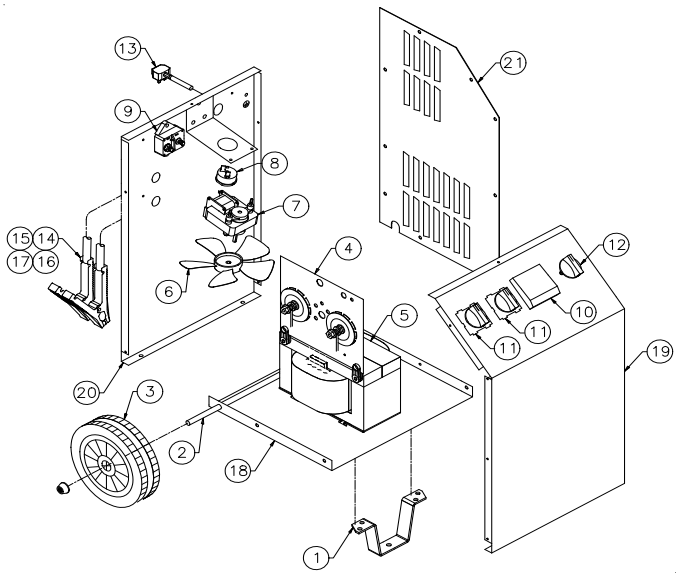


Fig	FILE NAME	DESCRIPTION
1	STOP-GO.WPG	STOP GO LITE ON BATTERY-ENGLISH
2	CHRGTABL.CXD	CHARGE RATE TABLE – ENGLISH LEVEL
3	27-779A. CXD	ASSEMBLY DRAWING
4	A4594-1.CXD	WIRING DIAGRAM-ENGLISH
5	27-705.CXD	EXPLODED ASSEMBLY-PARTS LIST

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