

15/2 Amp and 30/2 Amp Battery Chargers and Engine Starters



JOHN DEERE

OPERATORS MANUAL

**15/2 Amp and 30/2 Amp Battery
Chargers
and Engine Starters**

OMTY21611 Issue K0 English

**John Deere Merchandise Division
OMTY21611 Issue K0**

**LITHO IN U.S.A.
ENGLISH**



Introduction

THANK YOU for purchasing a John Deere product.

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are U.S. customary units and their metric equivalents.

WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when

you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied.



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All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Safety

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE SAFETY INSTRUCTIONS—

This manual contains important safety and operating instructions for battery chargers Model TY6172 15/2 Amp and TY6173 30/2 Amp Battery Charger and Engine Starter.

Do not expose charger to rain or snow.

Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.

To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.

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

- That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
- That extension cord is properly wired and in good electrical condition; and
- That wire size is large enough for AC ampere rating of charger as specified in the following chart;

RECOMMENDED MINIMUM AWG SIZE FOR EXTENSION CORDS FOR BATTERY CHARGERS

AC Input Rating Amperes	AWG Size of Cord			
	Length of Cord			
	25 ft. (7.63 m)	50 ft. (15.25 m)	100 ft. (30.50 m)	150 ft. (45.72 m)
3.2 (15-Amp)	18 ga.	18 ga.	16 ga.	14 ga.
6.0 (30-Amp)	18 ga.	16 ga.	12 ga.	10 ga.

Do not operate charger with damaged cord or plug—replace them immediately.

Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified electrical technician.

Do not disassemble charger; take it to a qualified electrical technician when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

WARNING—RISK OF EXPLOSIVE GASES.

WORKING IN VICINITY OF A LEAD-ACID 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.

To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products and on engine.

PERSONAL PRECAUTIONS

Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.

Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.

NEVER smoke or allow a spark or flame in vicinity of battery or engine.



Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.

Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.

Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low-voltage electrical system other than in automotive or tractor applications. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

NEVER charge a frozen battery.

PREPARING TO CHARGE

If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.

Be sure area around battery is well ventilated while battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other nonmetallic material as a fan.

Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.

Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's recharging instructions.

Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

Determine voltage of battery by referring to car owner's manual and make sure that output voltage selector switch is set at correct voltage. If charger has adjustable charge rate, charge battery initially at lowest rate.

CHARGER LOCATION

Locate charger as far away from battery as DC cables permit.

Never place charger directly above battery being charged; gases from battery will corrode and damage charger.

Never allow battery acid to drip on charger when reading gravity or filling battery.

Do not operate charger in a closed-in area or restrict ventilation in any way.

Do not set a battery on top of charger.

DC CONNECTION PRECAUTIONS

Connect and disconnect DC output clamps only after setting any charger switches to off position and removing AC cord from electric outlet. Never allow clamps to touch each other.

Attach clamps to battery posts and twist or rock back and forth several times to make a good connection. This tends to keep clamps from slipping off terminals and helps to reduce risk of sparking.

FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

a. Position AC and DC cords to reduce risk of damage by hood, door, or moving engine part.

b. Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.

c. Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, -) post.

d. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see item e. If positive post is grounded to the chassis, see item f.

e. For negative-grounded vehicle, connect POSITIVE (RED) clamp from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clamp to vehicle chassis or engine block away from battery. Do not connect clamp to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.



f. For positive-grounded vehicle, connect **NEGATIVE (BLACK)** clamp from battery charger to **NEGATIVE (NEG, N, -)** ungrounded post of battery. Connect **POSITIVE (RED)** clamp to vehicle chassis or engine block away from battery. Do not connect clamp to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

g. When disconnecting charger, turn switches to off, disconnect AC cord, remove clamp from vehicle chassis, and then remove clamp from battery terminal.

h. See operating instructions for length of charge information.

FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

a. Check polarity of battery posts. **POSITIVE (POS, P, +)** battery post usually has a larger diameter than **NEGATIVE (NEG, N, -)** post.

b. Attach at least a 24-inch (610 mm) long 6-gauge (AWG) insulated battery cable to **NEGATIVE (NEG, N, -)** battery post.

c. Connect **POSITIVE (RED)** charger clamp to **POSITIVE (POS, P, +)** post of battery.

d. Position yourself and free end of cable as far away from battery as possible—then connect **NEGATIVE (BLACK)** charger clamp to free end of cable.

e. Do not face battery when making final connection.

f. When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.

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

Y05,30AMP,F -19-12OCT90



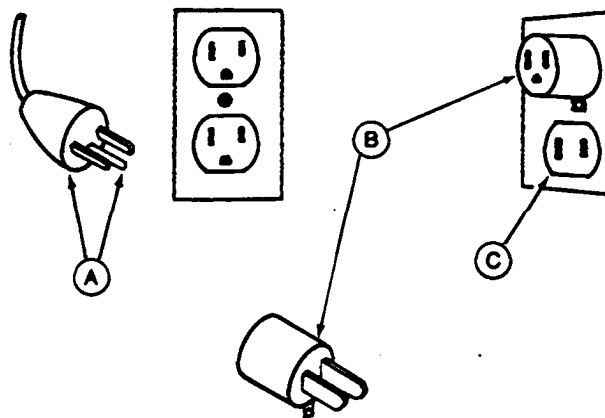
GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS—

Charger should be grounded to reduce risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER: Never alter AC cord or plug provided—if it will not fit outlet, have proper outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock.

This battery charger is for use on a nominal 120-volt circuit, and has a grounding plug that looks like the plug (A). A temporary adapter, which looks like the adapter (B) may be used to connect this plug to a two-pole receptacle (C) if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.

DANGER: Before using adapter as illustrated, be certain that center screw of outlet plate is grounded. The green-colored rigid ear of lug extending from adapter must be connected to a properly grounded outlet—make certain it is grounded. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet cover plate and make ground connection to grounded outlet.



-UN-02MAY89

TY6617

YO5,30AMP,FA -19-12OCT90

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



-UN-07DEC88

T81389

DX,ALERT -19-04JUN90



UNDERSTAND SIGNAL WORDS

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

⚠ DANGER

⚠ WARNING

⚠ CAUTION

DX,SIGNAL -19-04JUN90

TS187 -19-30SEP88

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.



TS201 -UN-23AUG88

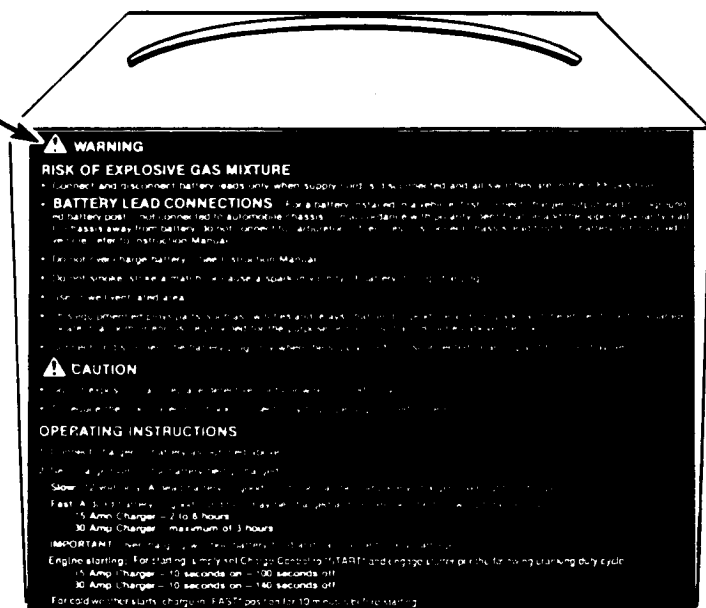
DX,READ -19-04JUN90



WARNING

RISK OF EXPLOSIVE GAS MIXTURE

- Connect and disconnect battery leads only when supply cord is disconnected and all switches are in OFF position.
- **BATTERY LEAD CONNECTIONS**—For a battery installed in a vehicle, first connect charger output lead to ungrounded battery post—not connected to automobile chassis—in accordance with polarity identification and the opposite polarity lead to chassis away from battery; do not connect to carburetor or fuel lines. Disconnect chassis lead first. For battery not installed in vehicle, refer to Instruction Manual.
- Do not over-charge battery—See Instruction Manual.
- Do not smoke, strike a match, or cause a spark in vicinity of battery during charging.
- Use in well ventilated area.
- This equipment employs parts, such as switches and relays, that tend to produce arcs or sparks and therefore, if used in garage, locate in a room or enclosure provided for the purpose or not less than 18 inches above the floor.
- Connect or disconnect the battery plug only when the supply cord is disconnected or arcing and burning may result.



-19-02OCT90

TY15381

Y70,86SAF,B -19-12OCT90

CAUTION

•Do not expose to rain, replace defective cords or wires immediately.

•To reduce the risk of electric shock, connect only to properly grounded outlets.

(Caution is located in middle of back panel).

Y70,86SAF,C -19-12OCT90

Controls and Instruments

RATE SELECTION SWITCH

The switch (A) offers two charging rates. In position (B), the output is 2 amps for 12 volt and 6 amps for 6 volt. In position (C), output is 15 amps on the 15/2 amp models or 30 amps on the 30/2 amp models.

IMPORTANT: The charger will continue to charge in either position until it is shut off and disconnected. **DO NOT** run charger for extended periods of time.

In position (C) the numbers 100 on 15/2 amp models and 150 on 30/2 amp models refer to the amount of output available for engine starting. This extra power, however, is only available when the vehicle's starter is engaged.

While charging, output will taper to 1/3 the charger rating—5 amps on 15 amp setting (15/2 amp model) or 10 amps on 30 amp setting (30/2 amp model). Regardless of the state of the battery charge, 5 amps will continually be provided and could harm the battery. On the 2 amp setting, output will taper to approximately 2/3 amp.



TYB656 -UN-26SEP90

Y70,86CI,A -19-12OCT90

VOLT SELECTION SWITCH

Switch has three positions; 6 volt, "OFF" and 12 volt.

In position (A) 6 volt batteries can be charged. In position (B) 12 volt batteries can be charged. Position (C) is "OFF".

IMPORTANT: Though charger output is stopped in "OFF", always unplug the charger before connecting or disconnecting from the battery.



TYB657 -UN-26SEP90

Y70,86CI,B -19-12OCT90

USING BOTH SWITCHES

With volt selection switch in 6 volt position (A) and rate selection switch in output position (B), low output will be 6 amps for 6 volt batteries. With rate selection switch in (C) position, 6 volt battery will be charged at high output of 15 amps (15/2 amp model) or 30 amps (30/2 amp model).

With volt selection switch in 12 volt position (D) and rate selection switch in output position (B), low output will be 2 amps for 12 volt batteries. With rate selection switch in (C) 12 volt batteries will be charged at high output of 15 amps (15/2 amp model) or 30 amps (30/2 amp model).



Y70,86Cl,C -19-12OCT90

AMMETER

Ammeter (A) indicates the amount of amperage flowing from the charger into the battery. The meter has amperage zones. These however, should be used for reference only. See "Operating the Charger" for more accurate methods of determining charging times.

Certain battery conditions such as cold, sulphated, or damaged batteries can cause ammeter to read incorrectly. When the charger is set on 2 amps, the meter will always read charged or OK even if the charger is still charging the battery.

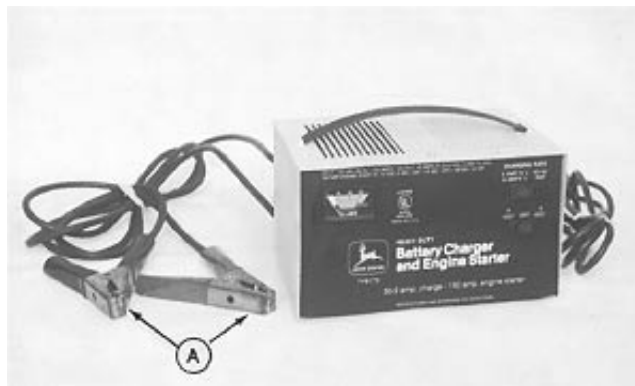


Y70,86Cl,D -19-12OCT90

Operating the Charger

CAUTION: Switches and relays in this charger may arc. If used in a garage, locate charger at least 18-inches (457.2 mm) above floor or in a special room or enclosure.

IMPORTANT: Carefully position battery clamps (A) so they are not touching each other or any other metal before operating charger.



Y70,86OP,A -19-12OCT90

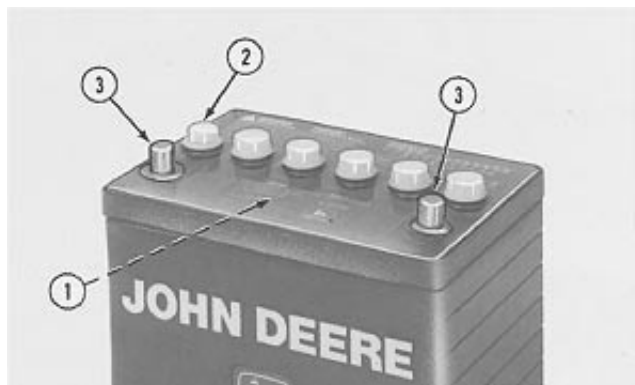
TYB660 -UN-26SEP90

PREPARE THE BATTERY

1. Before charging, make certain battery has enough electrolyte in each cell to cover top of plates.
2. If battery is equipped with vented caps, make certain they are properly installed.

CAUTION: Be careful to keep corrosion from coming in contact with eyes. Never smoke in vicinity of battery.

3. Clean battery terminals.



Y05,30AMP,I -19-10JUN81

TY6589 -UN-07SEP88

! CAUTION: Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

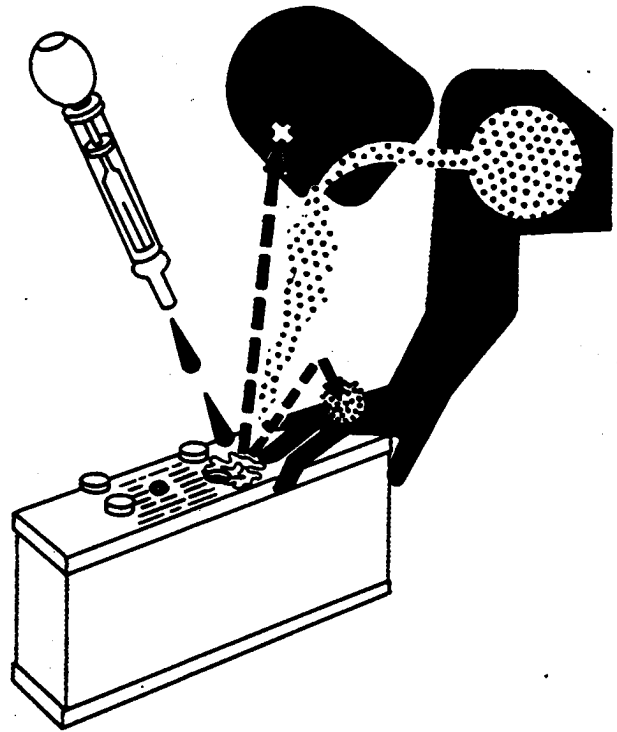
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10—15 minutes. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



TS203 -UN-23AUG88

O53,ACID1 -19-23MAR88

CHECK BATTERY SPECIFIC GRAVITY

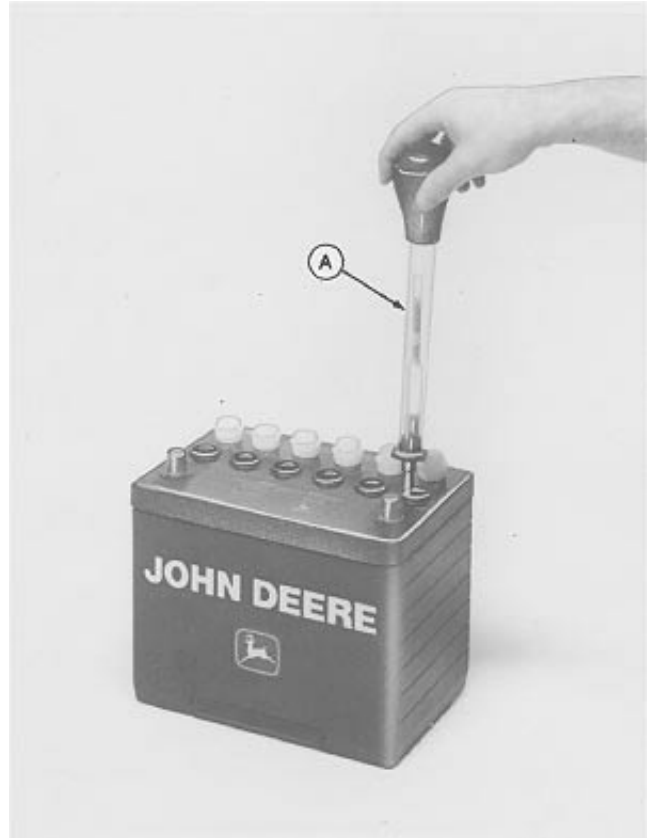
Use a hydrometer (A) to determine state of charge. Refer to chart to obtain percent of charge.

Hydrometer reading	Battery test reading
Specific gravity	Percent of charge
1.265	100%
1.225	75%
1.190	50%
1.155	25%
1.120	0%

NOTE: ANY battery 25% charged or lower may readily freeze and should be charged at once.

IMPORTANT: If battery has been charged, a surface charge may exist creating a false or higher than normal reading.

To eliminate surface charge, the battery must be discharged for 3 to 5 minutes by creating a load such as turning lights on.



TY6590 -UN-07SEP88

Y05,30AMP,J -19-12OCT90

CAUTION: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove grounded (-) battery clamp first and replace it last.



TS204 -UN-23AUG88

O53,EXPLO1 -19-24MAR88

CONNECT CHARGER TO BATTERY (NOT INSTALLED)

CAUTION: Remove battery from boat before charging.

1. Place the volt selection switch (A) in the "OFF" position.

CAUTION: Do not physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

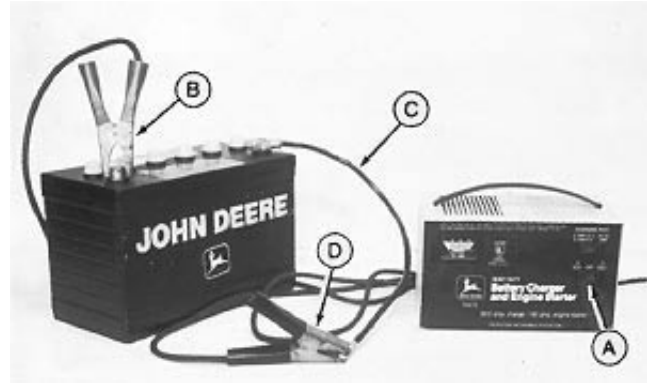
2. Connect red positive charger clamp (B) to the positive (+) battery post.

3. Attach at least a 24-inch (610 mm) long 6-gauge (AWG) insulated battery cable (C) to negative (-) battery post.

CAUTION: Do not face battery when making final connection.

4. Attach black negative charger clamp (D) to battery cable.

5. Set volt and rate selection switches to desired charging rate within the voltage range of the battery to be charged.



TYB661 -UN-26SEP90

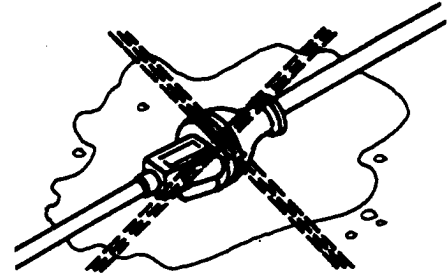
Y70,860P,B -19-12OCT90

CAUTION: If charger is to be plugged into extension cord, refer to the following chart to determine proper wire gauge. Be sure the connection between the power cord and the extension cord is not exposed to water.

Length of Cord	AWG Size of Cord	
	15 Amp.	30 Amp.
25 ft. (7.63 m)	18 ga.	18 ga.
50 ft. (15.25 m)	18 ga.	16 ga.
100 ft. (30.50 m)	16 ga.	12 ga.
150 ft. (45.72 m)	14 ga.	10 ga.

6. Plug in power cord to a properly grounded 120-volt AC outlet.

IMPORTANT: If sparking occurs between charger clamp and battery post when connecting the clamps, unplug charger immediately; clamp is being connected to wrong post. Check battery and wiring to correctly identify positive and negative battery post.



Y05,30AMP,L -19-12OCT90

TY3526 -UN-03MAY89

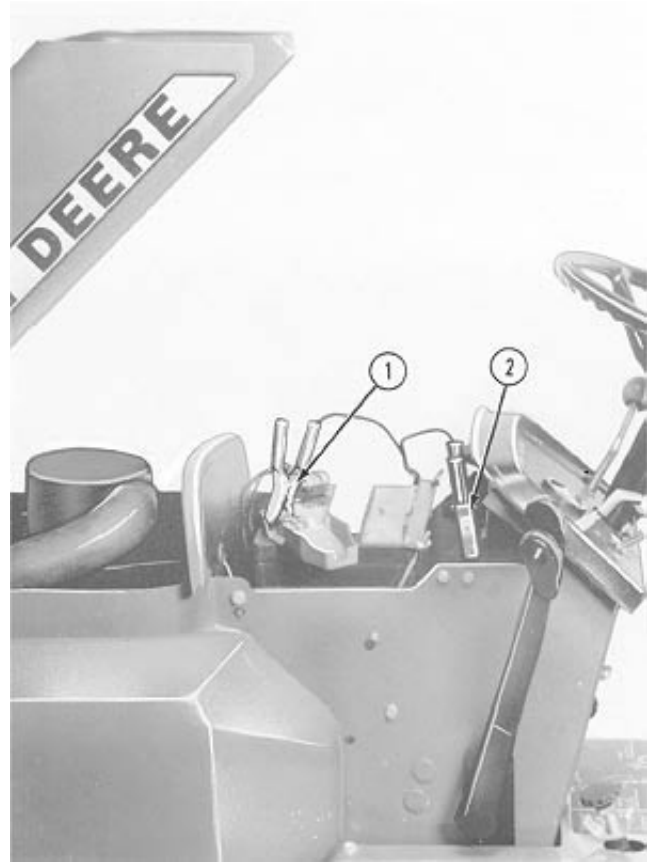
CONNECT CHARGER TO BATTERY (INSTALLED)

CAUTION: Do not physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

1. Connect red positive charger clamp to the positive (+) battery post.
2. Attach black negative charger clamp to clean, well grounded area on the chassis away from battery.

IMPORTANT: Make certain to check vehicle to determine if electrical system is positive or negative grounded. Connect clamps accordingly.

3. (Not illustrated) Set control switch to desired charging rate within the voltage range of the battery to be charged.



Y05,30AMP,M -19-10JUN81

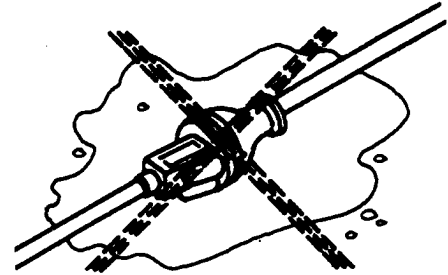
TY6610 -UN-07SEP88

CAUTION: If charger is to be plugged into extension cord, refer to the following chart to determine proper wire gauge. Be sure the connection between the power cord and the extension cord is not exposed to water.

Length of Cord	AWG Size of Cord	
	15 Amp.	30 Amp.
25 ft. (7.63 m)	18 ga.	18 ga.
50 ft. (15.25 m)	18 ga.	16 ga.
100 ft. (30.50 m)	16 ga.	12 ga.
150 ft. (45.72 m)	14 ga.	10 ga.

4. Plug in power cord to a properly grounded 120-volt AC outlet.

IMPORTANT: If sparking occurs between charger clamp and battery post when connecting the clamps, unplug charger immediately; clamp is being connected to wrong post. Check battery and wiring to correctly identify positive and negative battery post.



TY3526
-UN-03MAY89

Y05,30AMP,N -19-12OCT90

CHARGE RATE

The charging rate will be dependent on the amount of AC voltage received from the outlet (approximately 117 volts is normal) and on the internal condition of a chargeable battery as follows:

Hydrometer reading	Battery test reading
Specific gravity	Percent of charge
1.265	100%
1.225	75%
1.190	50%
1.155	25%
1.120	0%

Amperage Requirements

Discharged battery—Approx. 10 to 12 amperes.

Half-charged battery—Approx. 8 to 10 amperes.

Fully-charged battery—Approx. 5 to 6 amperes.

A very cold battery, or one that is sulfated will show a lower rate.

Y70,86OP,C -19-12OCT90

CHARGING TIME

To determine the approximate amount of time required to charge the battery, use the following formula:

$$\frac{\text{Amp Hour Size of Battery} \times \text{Percent of Charge Required}}{\text{Amp Rating of Charger}} = \text{Time to Charge}$$

For example: 60 amp hour battery that is 25% charged would require 75% charge:

$$\frac{60 \text{ Amp Hour} \times .75}{15 \text{ Amp Charger}} = 3 \text{ Hours}$$

Add 25% to time for battery efficiency and charging rate taper.

Y70,86OP,D -19-16OCT90

A small battery can be completely charged in 1 to 8 hours and a large battery in 2 to 24 hours.

After charging battery, use a hydrometer (A) to determine the specific gravity. Refer to "CHECK BATTERY SPECIFIC GRAVITY."

If a higher percent of charge is desirable, put the charger back on the battery until desired level is reached.

IMPORTANT: Do not leave charger on battery for indefinite long periods. Overcharging will boil battery electrolyte and can damage battery.

Do not allow current to exceed 1 % of CCA rating for extended or overnight charging.



TY6590 -UN-07SEP88

Y70,86OP,E -19-16OCT90

USING CHARGER AS ENGNE STARTER

1. Connect charger as previously described.
2. Set rate selection switch to 15/100 amp (15/2 amp model) or 30/150 amp (30/2 amp model) (A).
3. Set volt selection switch (B) to battery size.
4. Engage vehicle starter. Refer to chart for cranking cycle.



Charger	Cranking Cycle
15/2 amp	5 seconds on—115 seconds off
30/2 amp	5 seconds on—115 seconds off

NOTE: Thermal protection is provided which will shut off the charger to keep it from overheating. The charger will automatically turn on again within a few minutes.

Y70,86OP,F -19-12OCT90

CHARGING MULTIPLE BATTERIES

It may be desirable to charge several batteries at the same time. Multiple battery charging can be accomplished by:

1. Selecting batteries of the same voltage range, all 6-volt or all 12-volt, and not connected in an operating system.
2. Prepare batteries for charging. See "Preparing Battery."
3. Connect batteries in a parallel circuit (positive to positive and negative to negative.)
4. Connect charger to the first battery in the line, see "Connecting Charger to Battery."
5. Choose a charging rate and time on the basis of the number of batteries being charged. The time to charge increases in direct proportion to the number of batteries being charged. The rate of charge decreases in the same proportion.

NOTE: EXAMPLE: To charge six batteries will take six times as long, each battery receiving 1/6 of the amount of charge showing on the ammeter. Thus, if the ammeter shows a 30-amp charge, each battery is receiving a 5-amp charge.

Y05,30AMP,R -19-10JUN81

ACTIVATING AND CHARGING A DRY CHARGED BATTERY

1. Fill the battery with the prescribed electrolyte.
2. Connect the charger clamps to the battery. Refer to "CONNECT CHARGER TO BATTERY."
3. Set the control switch to the "FAST" position in the voltage range of the battery being activated.
4. Operate the charger for 20 minutes.
5. After 20 minutes, turn charger off. Check battery for percent of charge or specific gravity and make any charging rate corrections.
6. When battery is charged, disconnect power cord from electrical outlet and remove clamps from battery.

Y05,30AMP,S -19-10JUN81

STOP AND DISCONNECT CHARGER



CAUTION: Do not remove charger clamps from battery terminals while charger is operating. Sparks could ignite gases and cause an explosion.

1. When charging is complete, place volt selection switch in "OFF" position.
2. Disconnect power cord from AC outlet.
3. Remove clamps from battery.

Y70,86OP,G -19-24MAR88

Troubleshooting

Symptom	Problem	Solution
Charger operating erratically or not operating.	Battery has dead cells.	Replace battery.
	Wire nuts loose, frayed or broken connections.	Check all connections and make secure.*
	Cracked or broken parts.	Replace parts.*
No ammeter reading.	Bad connection between battery and charger.	Check and make certain connections are correct and secure.
	Low voltage.	Have line voltage checked.
	Using wrong extension cord.	Check for correct size.
	Control switch improperly set.	Select correct position for battery being charged.
	Faulty ammeter.	Check and replace if necessary.*
High ammeter reading.	Battery clamps reversed.	Make proper connection to battery.
	Battery has dead cells.	Replace battery.
	Control switch improperly set.	Select correct position for battery being charged.
Charger blows fuses.	Control switch shorted.	Check switch. Burned leads indicates it is shorted. Replace switch.*
	Transformer shorted.	Check transformer. Burned leads indicate it is shorted. Replace transformer.*
	Rectifiers shorted.	Check rectifiers. Burned or bubbled rectifiers indicate short. Replace rectifiers.*
Thermo-Protector cycles.	Maximum engine starting time is exceeded.	Start engine in accordance to instructions.
	Battery clamps reversed.	Make proper connection to battery.
	Battery has dead cells.	Replace battery.
	Control switch improperly set.	Select correct position for battery being charged.
Charger provides only low output.	Battery old or sulphated.	Try charger on good battery.

Continued on next page

Symptom	Problem	Solution
Charger does not operate in all positions of switch.	Rectifier connection bad.	Check and tighten all connections.*
	Faulty control switch.	Check and replace if necessary.*
	Faulty transformer.	Check and replace if necessary.*
	Faulty connection or switch.	Clean and tighten connection.*
*Any repair or service work must be performed by a qualified electrical technician.		
Y70,86TS,A -19-12OCT90		

Storing the Charger

Clean battery clamps each time the charger is used to prevent corrosion from battery electrolyte.

When the charger is not being used, wrap cords and secure with heavy rubber bands to prevent damage.

Store the charger in a clean area protected from dirt, moisture and damage.



TYB663 -UN-26SEP90

Y70,86ST,A -19-12OCT90

Specifications

Battery Charger Number Type	TY6193 15/2 Amp Battery Charger and Engine Starter	TY6193 30/2 Amp Battery Charger and Engine Starter
Maximum Amperage Input	3.2 Amps to 15 Amps Max.	6 Amps to 30 Amps Max.
Maximum Amperage Output Slow Charge (12-Volt Only)	Approx. 5 Amps	Approx. 5 Amps
Fast Charge	15 to 22 Amps	30 to 38 Amps
Engine Starting	Up to 100 Amps	Up to 150 Amps
Voltage Input	120-Volts	120-Volts
Voltage Output 6-Volt	7.3 Volts at 15 Amps	7.3 Volts at 30 Amps
12-Volt	14.2 Volts at 15 Amps	14.2 Volts at 30 Amps
Cycles (Hz)	60	60
Engine Starting Duty Cycle	5 seconds on—115 seconds off	5seconds on—115 seconds off
Power Cord	18 gauge 7-1/2 ft (2.29 m) long	18 gauge 7-1/2 ft (2.29 m) long
Charging Cables	10 gauge 6-1/2 ft (1.9 m) long	6 gauge 6-1/2 ft (1.9 m) long
Dimensions		
Width	11 inches (279.4 mm)	11 inches (279.4 mm)
Height (with handle)	9-1/2 inches (241.3 mm)	9-1/2 inches (241.3 mm)
Depth	10 inches (254 mm)	10 inches (254 mm)
Weight	22 pounds (9.9 kg)	28 pounds (12.7 kg)

B:-----
(Specifications and design subject to change without notice.)

John Deere Service Literature Available

PARTS CATALOG

The parts catalog lists service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.



TS189
-UN-17JAN89

O53,PARTS -19-26JAN90

OPERATOR'S MANUAL

The operator's manual provides safety, operating, maintenance, and service information about John Deere machines.

An extra copy of the operator's manual is important if the copy furnished with your machine is misplaced.



TS190
-UN-17JAN89

O53,OM -19-26JAN90

FUNDAMENTALS OF SERVICE MANUALS

These basic manuals cover most makes and types of machines. FOS manuals tell you how to SERVICE machine systems. Each manual starts with basic theory and is fully illustrated with colorful diagrams and photographs. Both the "whys" and "hows" of adjustments and repairs are covered in this reference library.



TS193
-UN-02DEC88

O53,FOS -19-26JAN90

John Deere Service Literature Available

John Deere Distribution Service Center
Department S/P
P.O. Box 186, Moline, IL 61266-0186

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Title	Order Number	Price Each	x Quantity	= Total
15/2 Amp and 30/2 Amp Battery Chargers				
Parts Catalog	PC-1483		X	=
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FOS Manual—Engines	FCP-80101B		X	=
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SP-317 Apr-89



John Deere is at your service when you need it

John Deere takes pride in providing superior service. We'll be around when you need us. To help minimize downtime, we maintain a large and varied parts inventory. Precision tools and testing equipment enable dealerships to locate and correct troubles quickly. We hold regular training schools for service technicians so they know your equipment and how to maintain it. Our goal is to provide prompt, efficient service through competent dealerships.

Your dealer is interested in your satisfaction and stands ready to help you with your service needs. When you need service:

- First, discuss the problem with your dealership service manager.
- If unable to resolve, see the dealership manager, explain the problem, and request assistance. Make sure your dealer is aware of your problem and has the opportunity to help you. Your dealer can request company assistance if needed.
- If you have a persistent problem that your dealership is unable to satisfy, contact the John Deere branch office within your geographic area on the map.

Be prepared with the following information:

- Machine model and product serial number (PIN)
- Date of purchase
- Selling/servicing dealer
- Nature of problem

Sales Branch

1. JOHN DEERE COMPANY
701 Georgeville Road
Columbus, OH 43228
614-275-1500

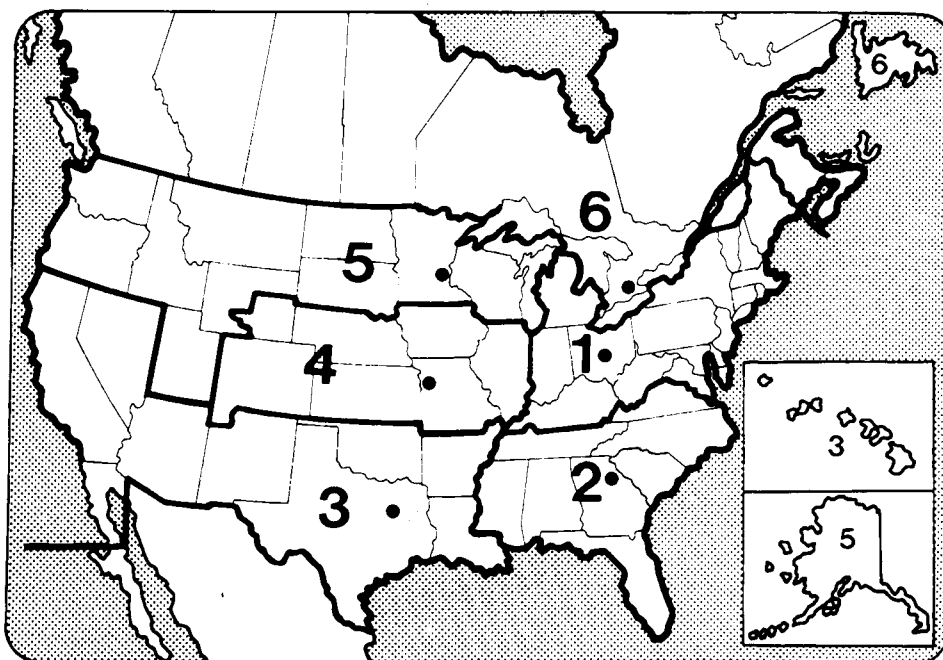
2. JOHN DEERE COMPANY
2001 Deere Dr.
Conyers, GA 30208
404-922-7040

3. JOHN DEERE COMPANY
10650 Hines Boulevard
Dallas, TX 75220-2635
214-352-1701

4. JOHN DEERE COMPANY
3210 East 85th Street
Southeast Station
Kansas City, MO 64132-2586
816-361-4000

5. JOHN DEERE COMPANY
2001 West 94th Street
Bloomington, MN 55431-2311
612-887-6200

6. JOHN DEERE COMPANY
South Service Road at Hunter
Grimsby, Ontario, Canada L3M 4H5
416-945-9281



TS-214

DX,IBC,2

-19-28AUG90

TS214
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