

15-AMP AND 30-AMP BATTERY CHARGERS AND BOOSTERS



JOHN DEERE

OPERATORS MANUAL 15-AMP AND 30-AMP BATTERY CHARGERS AND BOOSTERS

OMTY3827 G2 English

**JDM DIVISION
OMTY3827 G2**

LITHO IN THE U.S.A.
ENGLISH





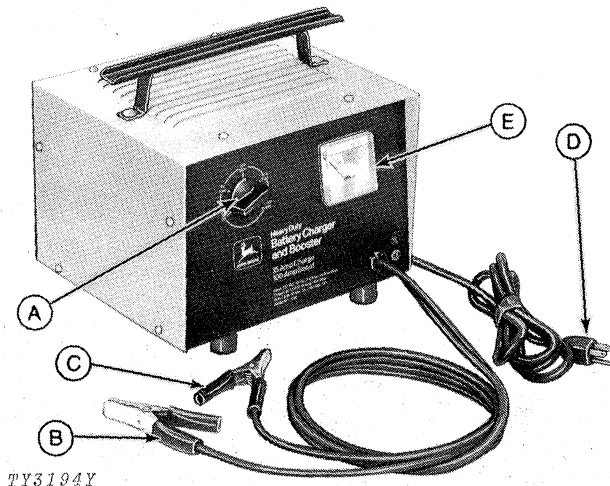
Introduction



This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

This operator's manual contains SI Metric equivalents which follow immediately after the U.S. customary units of measure.

- A - Control Switch
- B - Positive Clamp (Red)
- C - Negative Clamp (Black)
- D - Power Cord
- E - Ammeter



TY3194Y

TY3194Y

John Deere TY5104 15-Amp (Illustrated) and
TY5105 30-Amp Battery Charger and Booster

Record your charger model and serial number in the space provided. Your dealer needs this information to give you prompt, efficient service when you order parts.

JOHN DEERE BATTERY CHARGER AND BOOSTER

Model No. _____

Serial No. _____

Date Purchased _____

(To be filled in by purchaser.)

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Safety

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE SAFETY INSTRUCTIONS -

This manual contains important safety and operating instructions for battery chargers Model TY5104 15-Amp and TY5105 30-Amp Battery Charger and Booster.

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 non-metallic 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.

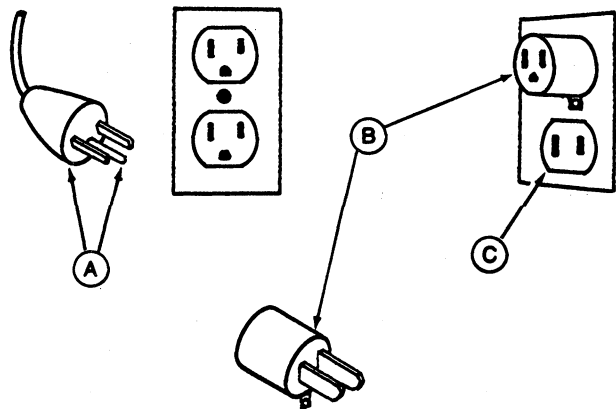
g. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

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.



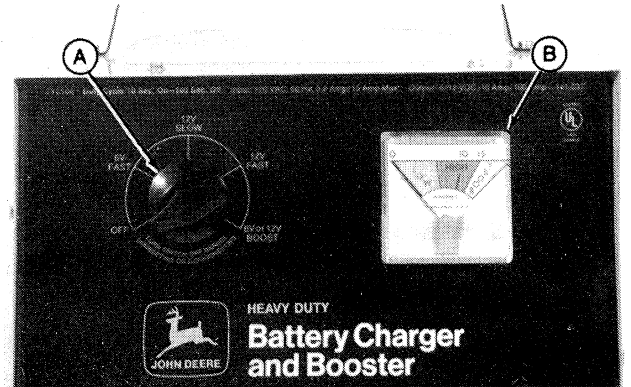
DANGER - Before using adapter as illustrated, be certain that center screw of outlet plate is grounded. The green-colored rigid ear of lug extending from adapter must be connected to a properly grounded outlet - make certain it is grounded. If necessary, replace original outlet cover plate screw with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

Controls and Instruments

CONTROL SWITCH AND AMMETER

The control switch (A) is used to select the charging voltage (6-volts, 12-volt or boost).

The ammeter (B) shows how much charge the battery is accepting.

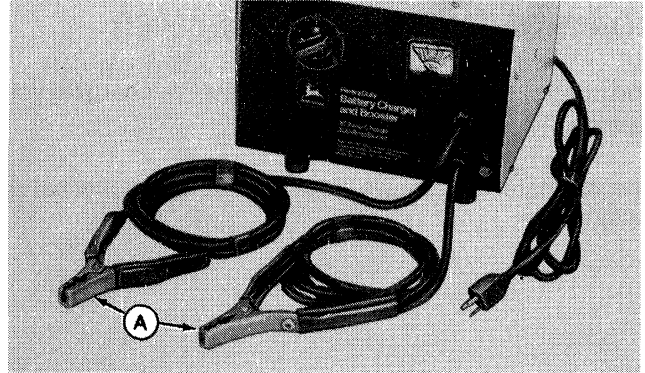


Operate the Charger



WARNING: 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.



1A2:TY6641 Y05:30AMP H 100681

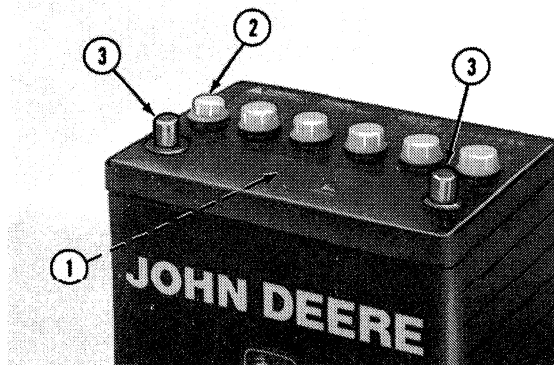
PREPARE THE BATTERY

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.



1A2:TY6589 Y05:30AMP I 100681

CHECK BATTERY SPECIFIC GRAVITY

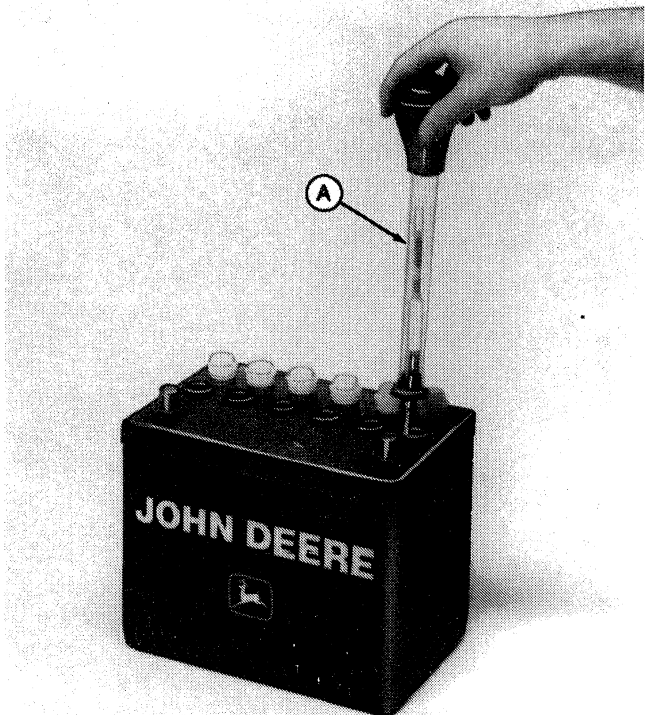
Use a hydrometer (A) to determine state of charge. Refer to chart to obtain percent of charge.

Hydrometer reading	Battery test reading
Specific gravity	Percent of charge
1.260	100%
1.220	75%
1.130	50%
1.140	25%
1.100	0%

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

IMPORTANT: If battery has just 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.



1A2:TY6647, TY6590 Y05:30AMP J 100681

CONNECT CHARGER TO BATTERY (Not Installed)

CAUTION: Remove battery from boat before charging.

1. Place the charger control switch in the "OFF" position.

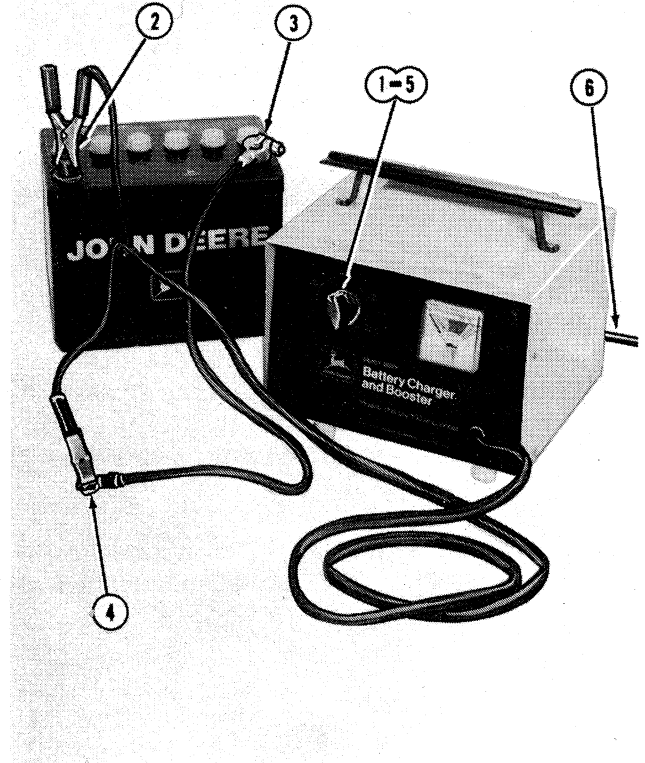
CAUTION: Do not physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

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

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

CAUTION: Do not face battery when making final connection.

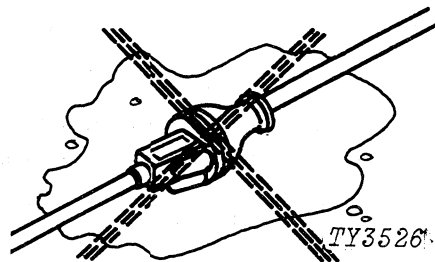
4. Attach black negative charger clamp to battery cable.
5. Set control switch to desired charging rate within the voltage range of the battery to be charged.



1A2;TY6642 Y05;30AMP K 100681

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. (7.63m)	18 ga.	18 ga.
50 ft. (15.25m)	18 ga.	16 ga.
100 ft. (30.50m)	16 ga.	12 ga.
150 ft. (45.72m)	14 ga.	12 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.

1A2;TY6648, TY3526 Y05;30AMP L 100681

CONNECT CHARGER TO BATTERY (Installed)

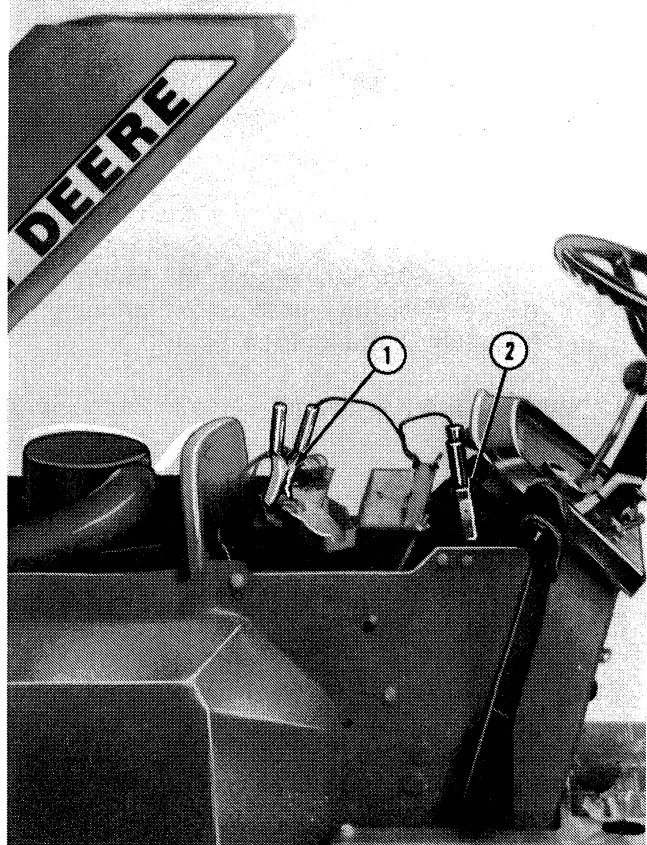


CAUTION: Do not physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

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.

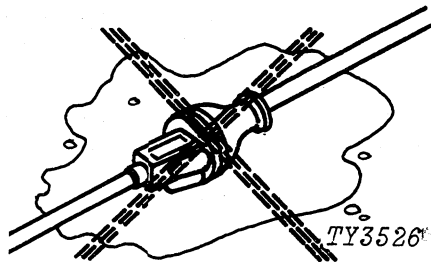


1A2/TY6610 Y05:30AMP M 100681



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. (7.63m)	18 ga.	18 ga.
50 ft. (15.25m)	18 ga.	16 ga.
100 ft. (30.50m)	16 ga.	12 ga.
150 ft. (45.72m)	14 ga.	12 ga.



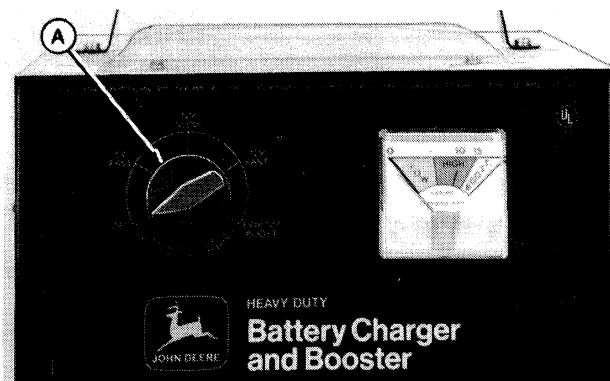
4. Plug in power cord to a properly grounded 120-volt AC outlet.

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.

1A2/TY6648, TY3526 Y05:30AMP N 100691

CHARGE RATE

Turn control switch (A) to the desired setting [6-volt Fast: 12-volt Slow or Fast or Boost (6 or 12-volt)].



1A2;TY6643 Y05;30AMP O 100681

CHARGE TIME

Refer to chart for maximum charging time for a dead battery in good condition.

	15 Amp.	30 Amp.
6-volt fast	2-6 hours	3 hours
12-volt slow	6-12 hours	6-12 hours
12-volt fast	2-6 hours	3 hours

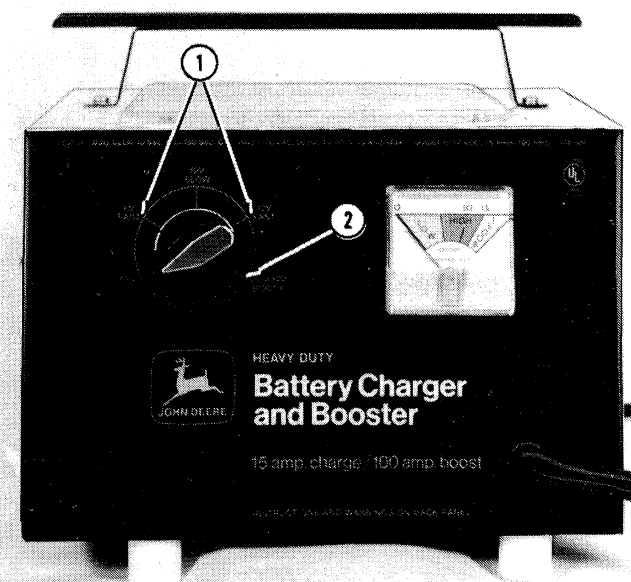
1A2;TY6649 Y05;30AMP P 100681

USING CHARGER AS BOOSTER

1. Set the control switch on "FAST" position within the voltage range of the battery and charge battery for approximately 10 minutes.
2. Turn control switch to "BOOST" position and engage starter. Refer to chart for cranking duty cycle.

Charger	Cranking Duty Cycle
15-Amp	10 seconds on - 100 seconds off
30-Amp	10 seconds on - 140 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.



1A2;TY6650, TY6646 Y05;30AMP Q 100681

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.

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.

1A2; Y05:30AMP R 100681

ACTIVATING AND CHARGING A DRY CHARGED BATTERY

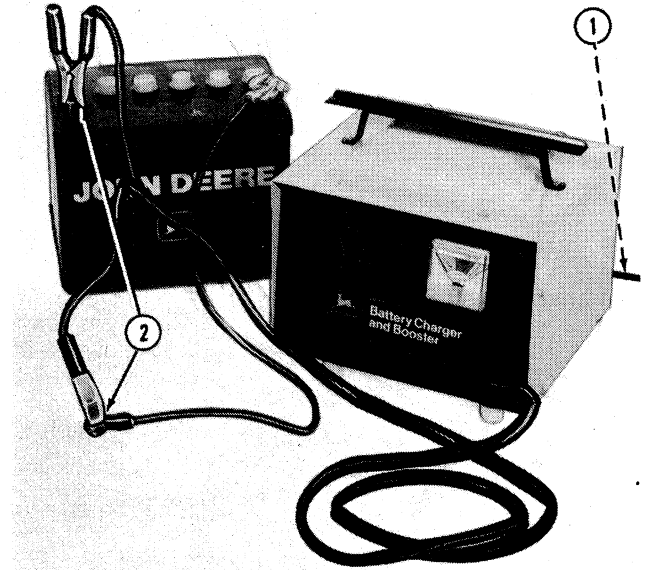
1. Fill the battery with the prescribed electrolyte.
2. Connect the charger clamps to the battery. Refer to "CONNECT CHARGER TO BATTERY."
3. Set the control switch to the "FAST" position in the voltage range of the battery being activated.
4. Operate the charger for 20 minutes.
5. After 20 minutes, turn 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.

1A2; Y05:30AMP S 100681

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, disconnect power cord from AC outlet.
2. Remove clamps from battery.



1A2:TY6644 Y05:30AMP T 100681

Trouble Shooting

Trouble	Possible Cause	Remedy	Page
Charger operating erratically or not operating.	Battery has dead cells. Wire nuts loose, frayed or broken connections. Cracked or broken parts.	Replace battery..... Check all connections and make secure.*..... Replace parts.*.....	— — —
No ammeter reading.	Bad connection between battery and charger. Low voltage. Using wrong extension cord. Control switch improperly set. Faulty ammeter.	Check and make certain connections are correct and secure. Have line voltage checked..... Check for correct size. Select correct position for battery being charged. Check and replace if necessary.*.	7, 8 — 7, 8 9 —
High ammeter reading.	Battery clamps reversed. Battery has dead cells. Control switch improperly set.	Make proper connection to battery. Replace battery. Select correct position for battery being charged.	7, 8 — 9
Charger blows fuses.	Control switch shorted. Transformer shorted. Rectifiers shorted.	Check switch. Burned leads indicate it is shorted. Replace switch.*..... Check transformer. Burned leads indicate it is shorted. Replace transformer.*..... Check rectifiers. Burned or bubbled rectifiers indicate short. Replace rectifiers.*.....	— — —
Thermo-Protector cycles.	Maximum boost charge time is exceeded. Battery clamps reversed. Battery has dead cells. Control switch improperly set.	Boost in accordance to instructions..... Make proper connection to battery. Replace battery. Select correct position for battery being charged.	9 7, 8 — 9
Charger provides only low output.	Battery old or sulphated. Rectifier connection bad.	Try charger on good battery. Check and tighten all connections.*.....	— —
Charger does not operate in all positions of switch.	Faulty control switch. Faulty transformer. Faulty connection or switch.	Check and replace if necessary.* Check and replace if necessary.* Clean and tighten connection.*	— — —

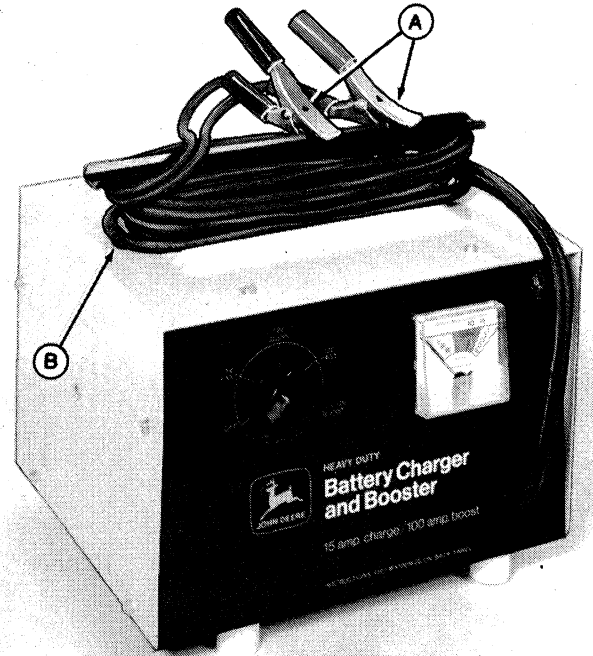
*Any repair or service work must be performed by a qualified electrical technician.

Store the Charger

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

When the charger is not being used, wrap cords (B) around handle to prevent damage.

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



1A2:TY6645 Y05:30AMP V 100681

Specifications

Battery Charger Number	TY5104	TY5105
Type	15-Amp Battery Charger and Booster	30-Amp Battery Charger and Booster
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
Boost	Up to 100 Amps	Up to 200 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
Boosting Duty Cycle	10 seconds on - 100 seconds off	10 seconds on - 140 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)

(Specifications and design subject to change without notice.)

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Battery Chargers & Boosters	PC-1483		x	=
Operator's Manual			x	=
15-Amp and 30-Amp Battery			x	=
Chargers & Boosters	OM-TY3827		x	=
			x	=
FOS Manual—Engines	FCP-80101B		x	=
FOS Manual—Electrical Systems	FCP-83101B		x	=
FOS Manual—Hydraulics	FCP-82101B		x	=
FOS Manual—Power Trains	FCP-81101B		x	=
Catalogs of Available Service Publications:				
Consumer Product Publications	CPC-1704			
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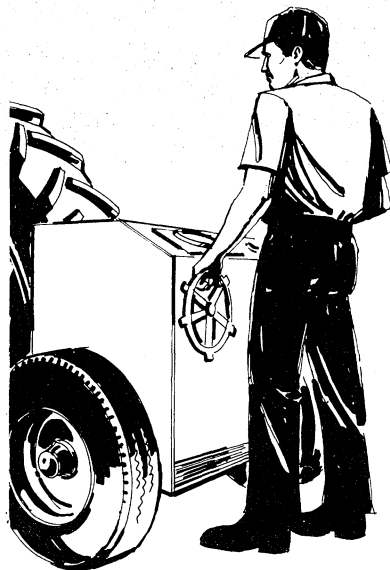
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