

10/2 Amp Battery Charger/Monitor and Engine Starter



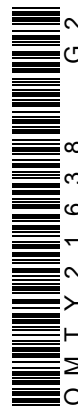
JOHN DEERE

OPERATORS MANUAL **10/2 Amp Battery Charger/Monitor and Engine Starter**

OMTY21638 Issue G2 English

John Deere Merchandise Division
OMTY21638 Issue G2

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.



-UN-16JUL92

TYB830

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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 TY5152 10/2 Amp Charger/Monitor 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:

- a. That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
- b. That extension cord is properly wired and in good electrical condition; and
- c. 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

Length of Cord	Min. AWG Size of Cord
25 ft. (7.63 m)	18 ga.
50 ft. (15.25 m)	18 ga.
100 ft. (30.50 m)	16 ga.
150 ft. (45.72 m)	14 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



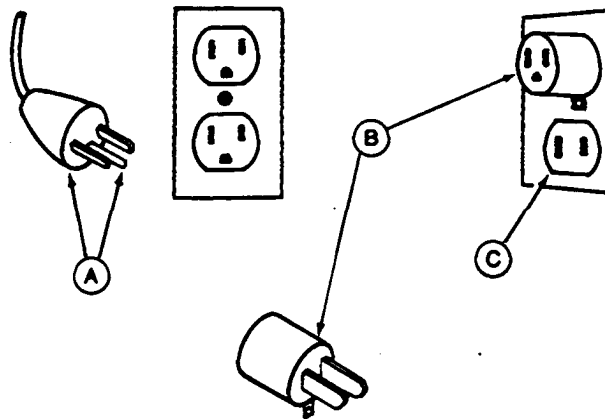
GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS—

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

TY,SAF,B -19-08JUL92

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 -19-09JAN92

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.



DX,READ -19-04JUN90

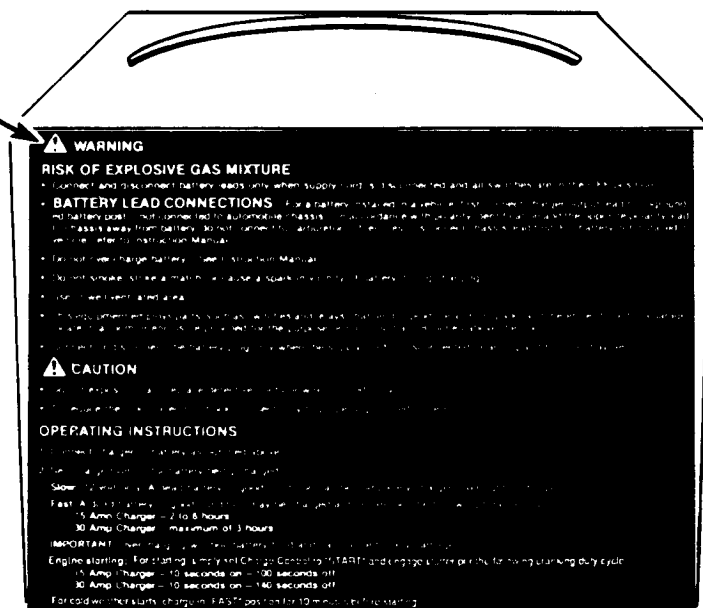
TS201 -UN-23AUG88



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

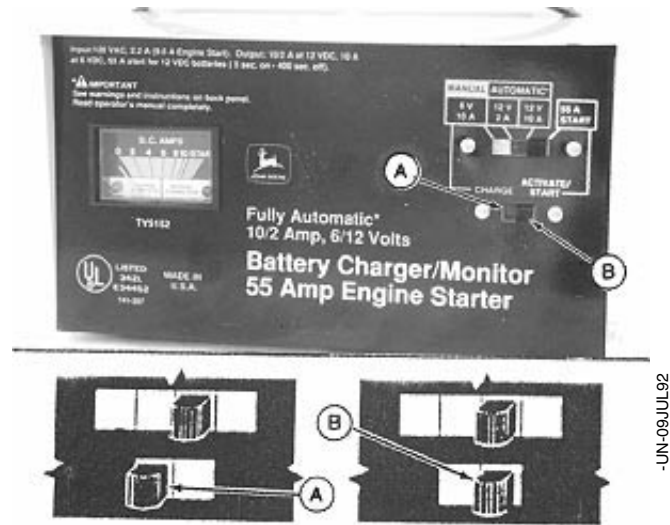
FUNCTION SELECTOR SWITCH

The function selector switch has two settings, CHARGE (A) and START/ACTIVATE (B).

Switch MUST be set in the CHARGE setting (A) when charging 6 or 12 volt batteries.

Move switch to START/ACTIVATE setting (B) ONLY when starting engines or for pre-charge activation.

IMPORTANT: If charging is attempted when switch is in the START/ACTIVATE setting (B), the AUTOMATIC charging is bypassed (not operable) and charging is MANUAL only.



TY,CONTR,A -19-31AUG92

RATE SELECTION SWITCH

NOTE: Rate switch offers four charging rates, 6 volt, 10 amp MANUAL (C); 12 volt, 2 amp AUTOMATIC (D); 12 volt, 10 amp AUTOMATIC (E); 6 or 12 volt START and **MUST** be set to match the same voltage as the battery being charged.

Use setting (C) when charging a 6 volt battery. The 6 volt setting is a 10 amp MANUAL charge rate.

IMPORTANT: The 6 volt setting is **NOT** automatic. The charge **MUST** be manually disconnected when a 6 volt battery reaches full charge to prevent over charging and battery damage.

NOTE: Discharged 12 volt batteries with voltages below 4 volts will require dead battery activation (See Dead Battery Activation) prior to use of the 12 volt AUTOMATIC charging rate.

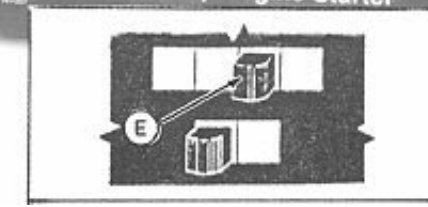
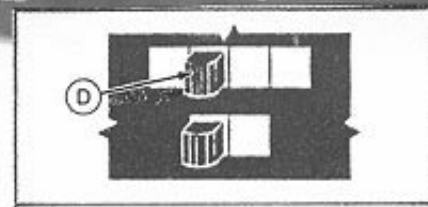
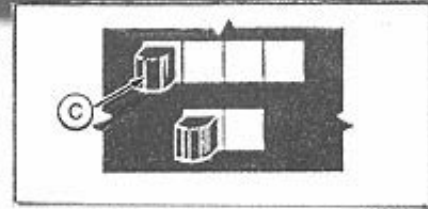
Two charge rate settings, 2 amp (D) or 10 amp (E) are available, when charging 12 volt batteries.

The 12 volt settings are AUTOMATIC charge rates.

The 2 amp setting (D) should be selected to **ONLY** charge small 12 volt batteries and prevent damage to the battery, unless stated otherwise on the battery.

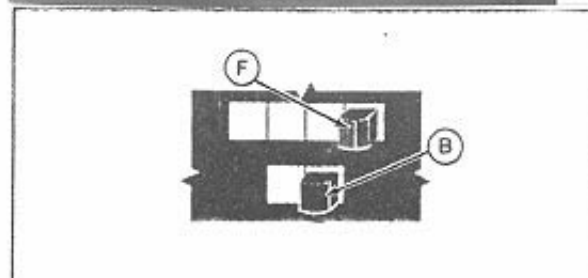
Small 12 volt batteries such as those used in motorcycles, lawn mowers and snow mobiles have a **MAXIMUM** charge limit and should **ALWAYS** be charged on the 2 amp setting (D).

NOTE: Full charge may **NEVER** be reached if the 2 amp setting (D) is used with automotive tractor or deep-cycle batteries.



55 amps of engine starting power is available when the amp selector switch is set at (F) 55A START.

NOTE: The **FUNCTION SELECTOR** switch must also be set at (B) **ACTIVE/START**.



TY,CONTR,AB -19-31AUG92

TYB798 -UN-09JUL92

AMMETER

Ammeter (A) indicates the amount of amperage flowing from the charger into the battery.

As the battery becomes more fully charged, the charge rate lessens and the needle will move toward the LOWER amp numbers on the meter.

CAUTION: DO NOT use ammeter to determine when full charge is reached.

When charging small 12 volt batteries on the 2 amp setting or when any battery nears FULL charge, the needle will be very close to zero.

When charging 12 volt batteries, the AUTOMATIC circuit is in control of the charging process. When FULL charge is reached, the output shuts off and the GREEN CHARGE complete indicator lights up.

When charging 6 volt batteries, OVERCHARGING can occur if the charger is not disconnected once full charge is reached.



TYB800 -UN-09JUL92

TY,CONTR,D -19-06JUL92

Certain battery conduction can cause ammeter to appear to indicate a battery near full charge, when in fact, charging has only begun:

- Cold battery
 - Sulfated battery
 - Deeply-Discharged Lead Battery
- (Many newer automotive batteries)



CAUTION: Do NOT attempt to charge a frozen battery.

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.

NOTE: Cold batteries (temperatures lower than 32 degrees F or 0 degrees C) will begin charging at a low rate of charge. But as the battery warms up through charging, the charge rate will increase. Then, as the battery charges up, the charge rate will decrease normally.

Sulfated and deeply-discharged batteries require a special activation procedure. Sulfated batteries cannot accept high charge rates initially because the battery plates are coated with electrically resistive lead sulfate. (See Dead Battery Activation.)

CHARGE COMPLETE INDICATOR/ REVERSE CONNECTION INDICATOR

When the switch is in AUTOMATIC mode, the automatic charging circuit controls 12 volt battery charging. When the battery nears full charge, the charger starts a PULSE charging mode to finish battery charging. The ammeter needle will jump rapidly during PULSE charging. As the charging is completed, the PULSE charging slows and then stops. The "Complete Charge" indicator will light (A) up. As long as the charge is connected to the battery and plugged in, it will monitor battery charge condition and will start charging automatically if battery discharges.

REVERSE HOOK-UP INDICATOR light (B) turns on when charger is connected to a battery in reverse. The light (B) will turn on whenever a reverse hook-up occurs, regardless of how the three switches are set and will NOT allow the charger to begin charging.



TY, CONTR, E -19-31AUG92

TYB801 -UN-09JUL92

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.



TY,OP,A

-19-06JUL92

TYB802 -UN-09JUL92

PREPARE THE BATTERY

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.

1. Before charging, make certain battery has enough electrolyte in each cell to cover top of plates (A). Add clean water, as necessary, to cover plates. NEVER add acid.

2. (Not Illustrated) 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 (B).

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.



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%

CAUTION: Do NOT attempt to charge a frozen battery.

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



TY6590 -UN-07SEP88

TY,OTC,AB -19-31AUG92

CONNECT CHARGER TO BATTERY (NOT INSTALLED IN VEHICLE)

CAUTION: DO NOT plug charger into power receptacle or set any charger controls until all battery connections have been attached.

DO NOT physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

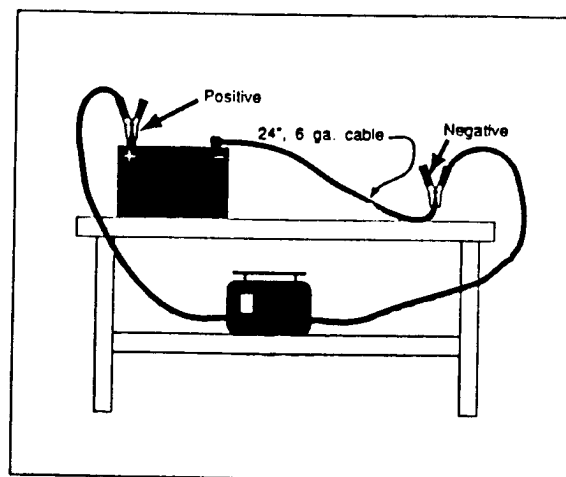
IMPORTANT: Check polarity of battery terminals. The **POSITIVE** terminal should be marked: **POSITIVE**, **POS**, **+**, or **P**. The **NEGATIVE** terminal should be marked: **NEGATIVE**, **NEG**, **-**, or **N**.

1. Attach AT LEAST 24 in. (610 mm) long and No. 6 AWG (American Wire Gauge) insulated battery cable to the **NEGATIVE (-)** battery post.
2. Connect **RED** positive charger clamp to the **POSITIVE (+)** battery post.

CAUTION: Do not face battery when making final connection.

3. Attach black **NEGATIVE** charger clamp to battery cable.
4. Set the **FUNCTION SELECTION** switch in **CHARGE** mode and **RATE SELECTION** switch to desired voltage and rate.

NOTE: If ammeter does **NOT** show a reading, check charger clamp connections and polarity.



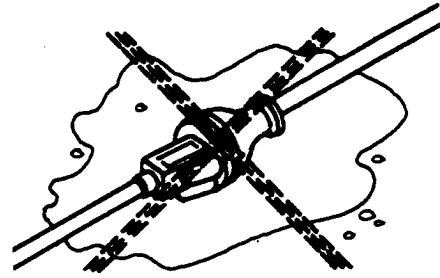
TYB803 -19-09JUL92

TY,OP,D -19-31AUG92



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	Min. AWG Size of Cord
25 ft. (7.63 m)	18 ga.
50 ft. (15.25 m)	18 ga.
100 ft. (30.50 m)	16 ga.
150 ft. (45.72 m)	14 ga.



5. 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.

6. When disconnecting charger, always unplug the charger; then remove clamps in REVERSE order of connecting procedure.

TY,OTC,AD -19-31AUG92

TY3526 -UN-03MAY89

CONNECT CHARGER TO BATTERY (INSTALLED IN VEHICLE)

CAUTION: Do NOT plug charger into power receptacle or set any charger controls until ALL battery connections have been attached.

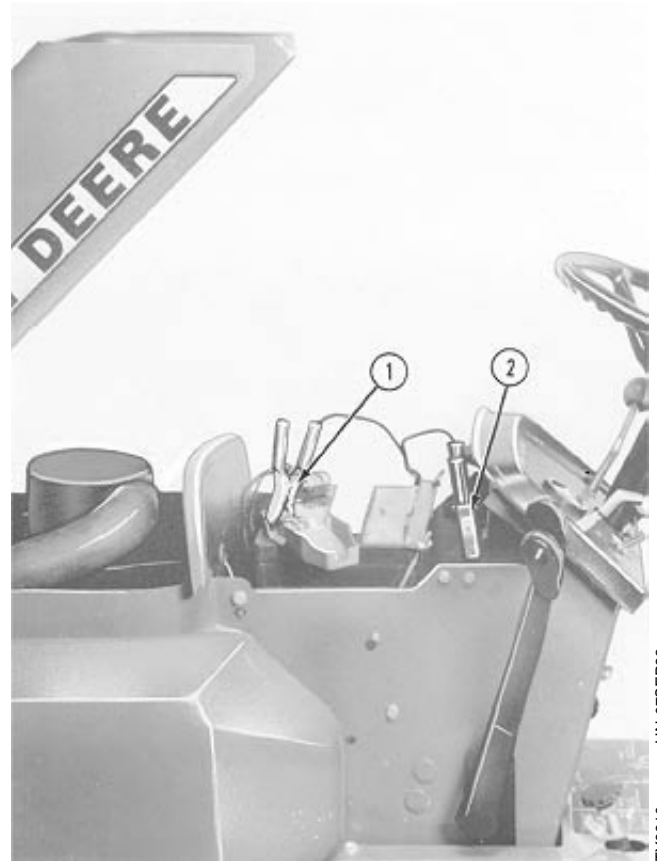
CAUTION: Do not physically touch charger clamp and battery post simultaneously. Injury can result from electrical shock.

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. Set the FUNCTION SELECTOR switch to charge and rate selection switch to desired voltage and rate.

IMPORTANT: If the battery is connected into an operating system, such as a car or tractor, turn off all systems (ignition, lights, radio, etc.) before connecting the charger.

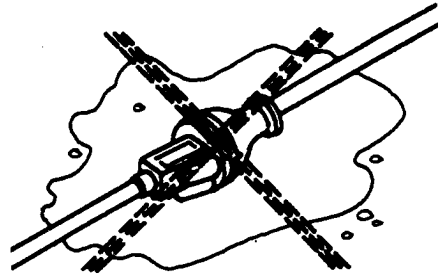


TY6610 -UN-07SEP88



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	Min. AWG Size of Cord
25 ft. (7.63 m)	18 ga.
50 ft. (15.25 m)	18 ga.
100 ft. (30.50 m)	16 ga.
150 ft. (45.72 m)	14 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.

5. When disconnecting charger, always unplug the connector from AC power first; then remove clamps in REVERSE order of connecting procedure.

TY,OTP,C -19-31AUG92

TY3526 -UN-03MAY89

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:

Volt Meter Reading	Hydrometer reading	Battery test reading
12 Volt Battery*	Specific gravity	Percent of charge
12.4 or greater	1.265	100%
12.39 to 12.25	1.225	75%
12.24 to 12.10	1.190	50%
12.09 to 11.96	1.155	25%
11.95 to 0	1.120	0%

*6 volt battery volt meter readings are one half of 12 volt battery readings.

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.

CHARGING TIME

6 VOLT BATTERY APPROXIMATE CHARGING TIMES *

Battery % of Charge	Time to Charge (Hours)
75	10
50	11
25	20
0	28

* Charge Amps = 10 amps

TYB804
-19-26AUG92

The 6 volt charge setting is a MANUAL process. The charger MUST be PROMPTLY unplugged and disconnected when battery reaches full charge. If this is not done, battery damage can result. Use the following chart to determine charging time:

NOTE: Always set a time warning device, such as an alarm clock to remind you to discontinue charging.

TY,OTC,H -19-31AUG92

BATTERY RESERVE CAPACITY RATING					
Battery % of Charge		75%	50%	25%	0%
80 or less	Charge Amps	APPROXIMATE TIME TO CHARGE (HOURS)			
	2	6 1/2	12	18	23
	10	1 2/3	3 1/3	5	6 1/2
81 to 125	2	NOT RECOMMENDED			
	10	3	4	6	7
126 to 180	2	NOT RECOMMENDED			
	10	4	6	8	10
181 to 260	2	NOT RECOMMENDED			
	10	5 1/2	6 1/2	11	14
261 to 400	2	NOT RECOMMENDED			
	10	10	11	20	28

12-VOLT DEEP-CYCLE BATTERY APPROXIMATE CHARGING TIMES					
Amp-Hour Size of Battery	Battery % of Charge	75%	50%	25%	0%
115 Amp/Hr	Hours to Charge (using 10 Amp. 12 Volt Setting)				
		3 1/2 Hrs	7 Hrs	10 Hrs	14 Hrs

The 12 volt charge setting is an AUTOMATIC CHARGING CIRCUIT and will prevent over charging of a 12 volt battery, so accurate calculation of length of charging is not necessary. When full charge is reached, the output of the charger will be turned off and the green CHARGE COMPLETE INDICATOR will turn on. If the charger is left connected to the battery, it will monitor the battery's state of charge and recharge the battery if the battery discharges.

Use the following chart for an idea as to how long the charging process will take:

1. Determine battery's present state of charge with hydrometer.
2. Convert hydrometer readings to percent of charge.

TYB805 -19-26AUG92

TYB806 -19-26AUG92

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

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

TY,OTC,AJ -19-31AUG92

USING CHARGER AS AN ENGINE STARTER

Charger can provide a high-current output to help start a vehicle that has a weak battery.

IMPORTANT: A vehicle on-board computer can be damaged if jump starting is tried. **ALWAYS READ THE VEHICLE OPERATOR'S MANUAL BEFORE JUMP STARTING.** Determine if jump starting can do damage to the vehicle.

CAUTION: Do not jump start a vehicle without a battery in it or the electrical system may be damaged.

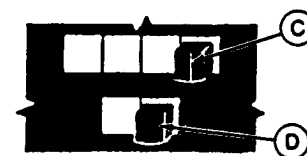
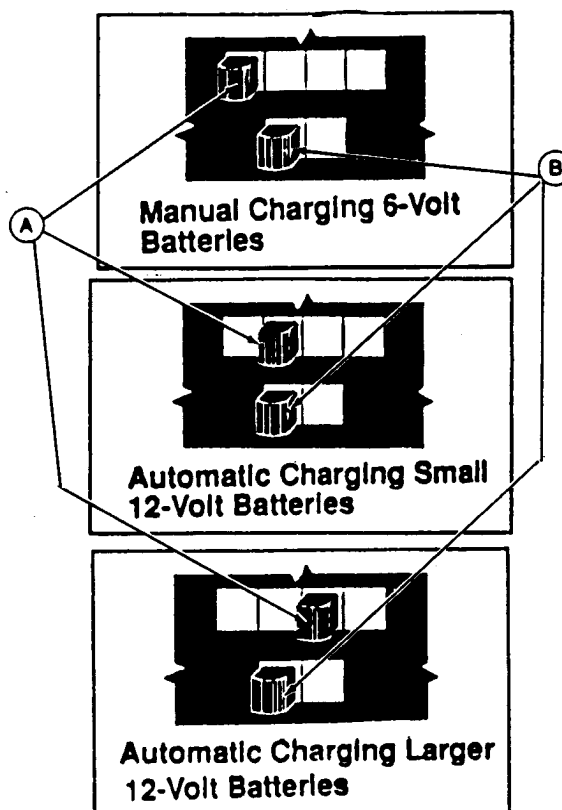
Do NOT plug charger into power receptacle or set any charge controls until ALL battery connections have been attached.

1. Connect charger clamps to battery. See "Connect Charger to Battery".
2. Set RATE SELECTOR (A) to desired rate.
3. Set FUNCTION SELECTOR (B) to charge. Charge battery for 5 to 10 minutes.
4. Set the AMP SELECTOR to 55A/START setting (C) and FUNCTION SELECTOR to START (D).
5. Try to start vehicle. If vehicle will not start after 2 to 3 seconds, STOP and wait 3 to 4 minutes. Repeat until engine starts.

CAUTION: Excessive engine jump starting can damage vehicle starter motors.

NOTE: Thermo-protection is provided which will shut off the charger after about 5 seconds of cranking at maximum charger output, but will automatically reset within a few minutes. This will prevent overheating and damage to the charger.

6. When the engine starts, unplug power cord from electrical outlet and then disconnect charger from vehicle.



-19-09JUL92

TYB807

-UN-09JUL92

TYB808

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 "LOWEST" 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.

TY,OTC,AK -19-31AUG92

DEAD BATTERY ACTIVATION

Dead battery activation should **ONLY** be used when charging sulfated or deeply-discharged batteries. The need is indicated when ammeter reads zero and neither the REVERSE HOOK-UP or CHARGE COMPLETE indicators are lit, or if battery is known to be dead and CHARGE COMPLETE light comes on after charging just a few minutes.

CAUTION: If CHARGE COMPLETE indicator (A) is lit, do not attempt pre-charge activation until verifying that the battery is discharged. Verify with hydrometer or electronic percent of charge tester.

1. With the AMP SELECTOR (B) set to the desired charge setting, move the FUNCTION SELECTOR (C) to ACTIVATE. The charger's automatic circuit is now bypassed and the charger in manual mode.

2. Charge the battery for 10 minutes, then move the FUNCTION SELECTOR (C) back to CHARGE. The charger is returned to automatic charge and is now in charge of the charging process.

NOTE: If the green light goes out and the ammeter falls back to zero, repeat steps 1 and 2.

The battery may continue to accept very low amperage for up to 8 hours until the sulfate barrier is broken and will accept higher amperage as charger returns to normal.

CAUTION: Do NOT leave charger unattended during pre-charge actuation process. Overcharging can be result in battery damage and/or explosion. Return to the CHARGE process within 10 to 15 minutes.



TYB809 -UN-16JUL92

CHARGING BATTERIES WITH HYDROMETER “EYE”

Many maintenance free lead-calcium and deep-cycle batteries have a built-in hydrometer “eye”. This indicates the battery’s state of charge. In order for the “eye” to indicate properly, at full charge, use the following:

1. It may take more than one hour for the “eye” to indicate full charge, after the CHARGE COMPLETE indicator comes on.
2. Always follow the battery manufacturer’s instructions. Tilting or lightly shaking the battery during charging helps mix the stratified acid during charging.

The battery is fully charged when the green CHARGE COMPLETE indicator comes on, regardless of what the hydrometer “eye” indicates.

TY,OTC,N -19-31AUG92

Troubleshooting

Symptom	Problem	Solution
Charger operating erratically or not operating.	Battery defective.	Replace battery.
	Wire nuts loose, frayed or broken connections.	Check all connections and make secure.*
	Battery voltage below 5 volts.	Use dead battery activator sequence.
	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.	Clean battery terminals.
		Have line voltage checked.
	Using too small extension cord.	Check for correct size.
	Control switch improperly set.	Select correct position for battery being charged.
	Faulty ammeter.	Check and replace if necessary.*
	Battery is sulfated	Allow sufficient charge time for sulfate to be broken down.
	Battery is reading full charge	Indicator light will come on soon.
	Battery clamps reversed.	Check reverse hook-up indicator, correct hook-up
High ammeter reading.	Battery clamps reversed.	Make proper connection to 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.
	Rectifiers shorted.	Check rectifiers. Burned or bubbled rectifiers indicate short.
Thermo-Protector cycles.	Maximum engine starting time is exceeded.	Start engine in accordance to instructions.

Continued on next page

Troubleshooting

Symptom	Problem	Solution
Charger does not operate in all positions of switch.	Battery clamps reversed.	Make proper connection to battery.
	Control switch improperly set.	Select correct position for battery being charged.
	Attempting to charge deeply discharged battery.	Allow adequate charging time. Charger will cycle during some of the charging time.
	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.		

TY,TRB,A -19-31AUG92

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 around holder.

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



TY,STC,AA -19-31AUG92

TYB868 -UN-10AUG92

Specifications

Battery Charger Number Type	TY5152 10/2 Amp Battery Charger/Monitor and 55 Amp Engine Starter
Maximum Amperage Output	Approx. 55 Amps
Engine Starting	55 Amps
Voltage Input	120 Volts AC
Cycles (Hz)	60
Engine Starting Duty Cycle	5 seconds on—400 seconds off
Power Cord	18 gauge 7-1/2 ft (2.29 m) long
Charging Cables	14 gauge 6 ft (1.8 m) long
Dimensions	
Width	9 1/4 inches (235 mm)
Height (with handle)	5 1/2 inches (140 mm)
Depth	6 inches (152 mm)
Weight	12.25 pounds (5.6 kg)

(Specifications and design subject to change without notice.)

TY,SPEC,A -19-31AUG92

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

DX,PARTS -19-04JUN90

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

DX,OM -19-04JUN90

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

DX,FOS -19-04JUN90

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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City _____ State _____

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To order these publications fill out this form and the payment information and mail it to the address above. Make checks payable to Deere & Co. Service Publications. Please allow three weeks for delivery. No COD orders, please. Do not send cash or stamps. To place credit card orders, call **1-800-522-7448**. If you want manuals or catalogs for equipment not shown on this list, provide the model number, serial number, and name of the product.

Title	Order Number	Price Each	x Quantity	= Total
10/2 Amp Battery Charger				
Parts Catalog	PC1483		x	=
Operator's Manual	OMTY21638		x	=
Service or Technical Manual	TM1173		x	=
			x	=
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			x	=
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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	=
FOS Set of 4 texts above	FCP-800		x	=
Catalogs of Available Service Publications:				
Consumer Product Publications	CPC-1704	No Charge		
Agricultural Product Publications	CPC-1703	No Charge		
Industrial Product Publications	CPC-1852	No Charge		
		Subtotal		

Publication Total	Shipping, Handling & Insurance
\$.50 to \$ 14.99	\$ 3.00
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30.00 to 49.99	5.50
50.00 to 74.99	7.00
75.00 to 99.99	8.50
100.00 to 249.99	12.50
250.00 and Over	22.00

Illinois state residents add 6.25% and Iowa state residents add 4% for Retail Occupation Tax or show tax exemption number.

Shipping, Handling, & Insurance

Check or money order in U.S.
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not send cash or stamps)

Prices subject to change without notice.
SP-317 Apr-89

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John Deere Service Keeps You On The Job



John Deere is at your service when you need it

CUSTOMER SATISFACTION is important to John Deere. We take pride in providing superior service. We'll be around when you need us:

- We maintain a large and varied parts inventory to help minimize downtime.
- Precision tools and testing equipment enable our dealerships to locate and correct troubles.
- 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.

COMPLAINT-RESOLUTION PROCEDURE

Your dealer is the best and fastest source to solving any problems you may experience with your product.

1. Be prepared with the following information:
 - > Machine model and product identification number
 - > Date of purchase
 - > Nature of problem
2. Discuss the problem with the service manager.
3. If unable to resolve, see the dealership manager, explain the problem and request assistance.
4. If you have a persistent problem that your dealership is unable to satisfy, ask your dealer to contact the John Deere area service manager for resolution.
5. If a problem is not resolved to your satisfaction, contact the appropriate John Deere sales branch for your area and ask to speak with the branch division service manager. (See the map below.)

Sales Branch

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

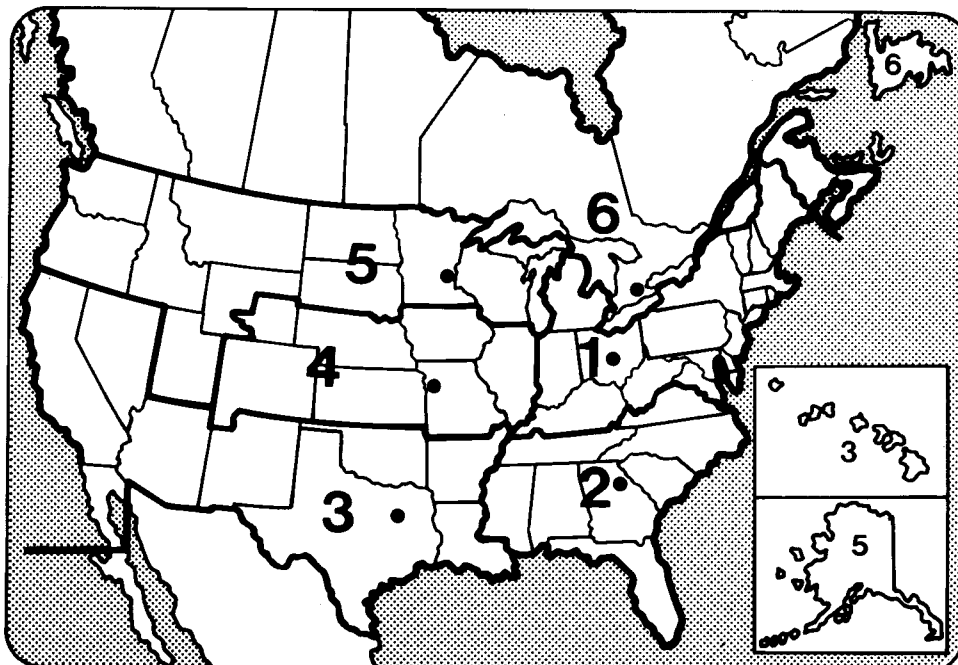
2. JOHN DEERE COMPANY
2001 Deere Dr.
Conyers, GA 30208
404-922-7040

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 49th Street
Bloomington, MN 55431-3211
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

-19-09AUG91

TS214
-19-31JUL91

