

8450-8650 Tractors



TECHNICAL MANUAL 8450-8650 Tractors

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ENGLISH



8450 - 8650 TRACTORS TECHNICAL MANUAL TM-1355 (DEC-85)

CONTENTS—REPAIR SECTIONS

PUBLICATION NUMBER CHANGE

This technical manual was formerly TM-1255. The number was changed to TM-1355 when engine information was removed. Some pages still carry the old publication number. For engine information, refer to engine component technical manual, CTM-1, 6466 Engines. This machine technical manual covers removal and installation of the engine components. The component manual covers basic repair of the engine.

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admin@servicemanualperfect.com**

INTRODUCTION

This manual is part of a total service support program.

FOS Manuals—reference

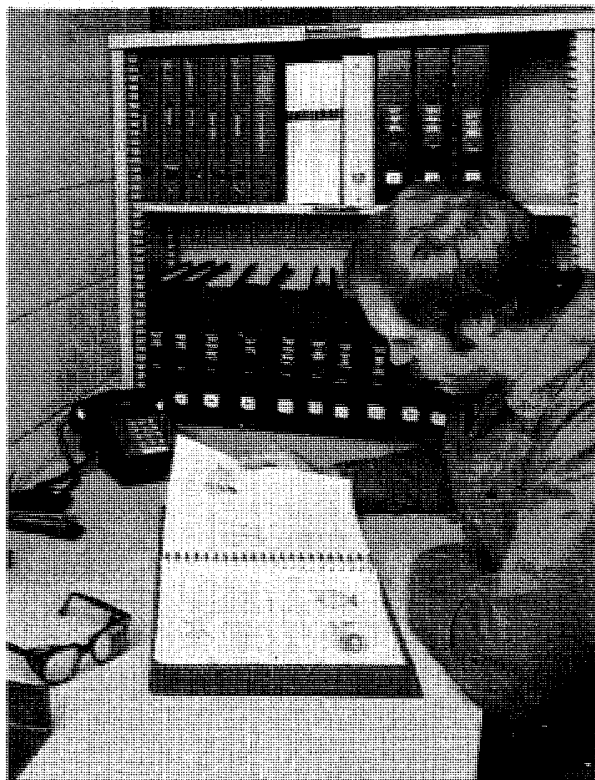
Technical Manuals—machine service

Component Manuals—component service

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand alone manuals covering multiple machine applications.



AB6;RW5559 053;INTRO2 030785

FEATURES OF THIS TECHNICAL MANUAL

John Deere ILLUSTRATION format emphasizing illustrations and concise instructions in easy-to-use modules.

Emphasis on diagnosis, analysis, and testing so you can understand the problem and correct it.

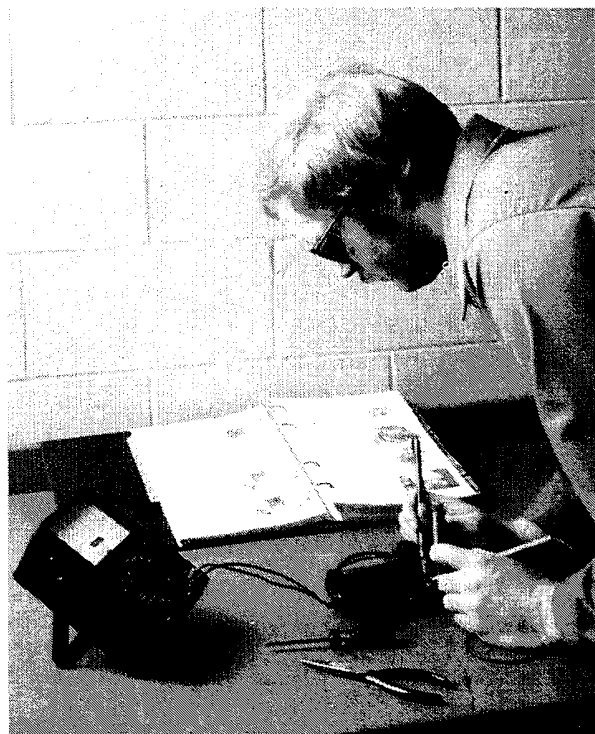
Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

Step-by-step instructions for teardown and assembly.

Summary listing at the beginning of each group of all applicable specifications, wear tolerances, torque values, essential tools, and materials needed to do the job.

An emphasis throughout on safety—so you do the job right without getting hurt.

This technical manual was planned and written for you—an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.



AB6;RW5560 053;INTRO3 071085

SAFETY AND YOU

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



AB6;T81389 053;TMSAFE 071085

IMPORTANT

The **IMPORTANT** message identifies potential problems which may cause consequential damage to tractor. Following recommended procedure will instruct technician how to avoid problem.

U10;0101NT D 101281

NOTES

The word *NOTE* is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinent to, but not directly related to previous statement.

U10;0101NT E 101281

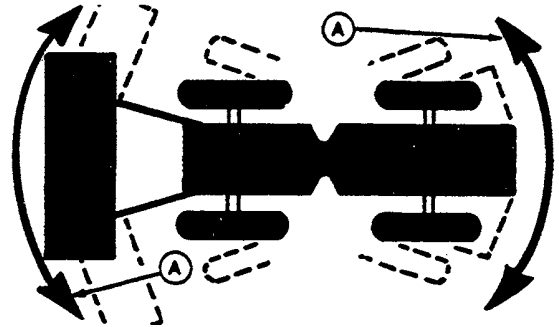
STAY CLEAR OF MOVING TRACTOR

Always place transmission in PARK before dismounting. Leaving transmission in gear with engine stopped will NOT prevent the tractor from moving.

Be sure everyone is clear of tractor and attached equipment before starting engine or moving steering wheel. Tractor and equipment move (A), even with transmission in PARK. Some steering movement often occurs as engine starts.

Never try to get on or off a moving tractor.

When tractor is left unattended, lower implements to the ground, stop the engine, and remove the key.



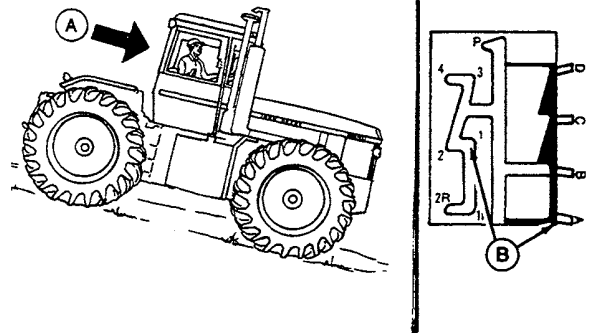
AJ7;RW8078 U01;STAY CLEAR1 281085

SHIFT TO LOW GEAR ON HILLS

Shift to a low gear (B) before descending a steep hill (A), to improve your control of the tractor with little or no braking. Never coast downhill.

When driving on icy or graveled surfaces, reduce speed and be sure tractor is properly ballasted to avoid skidding and loss of steering control.

Additional ballast may be needed for transporting heavy integral implements. When implement is raised, drive slowly over rough ground, regardless of how much ballast is used.



AJ7;RW4421 U01;DRIVE SAFE 281085

KEEP RIDERS OFF MACHINE

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

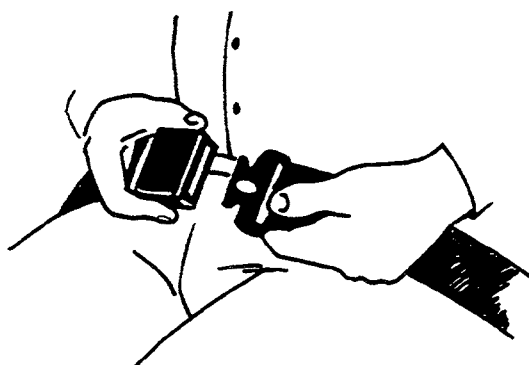


AB6;TS173 053;RIDER 261184

USE SEAT BELT PROPERLY

Use a seat belt when you operate with a roll-over protective structure (ROPS) to minimize chance of injury from an accident such as an overturn.

Do not use a seat belt if operating without a ROPS.

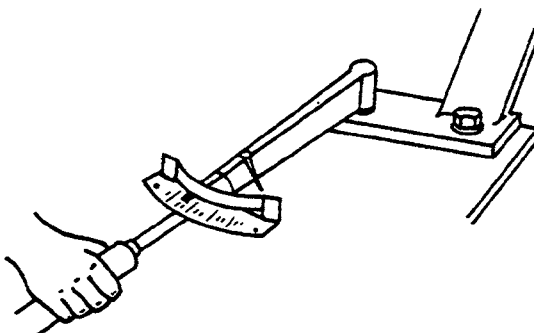


AB6;TS175 053;ROPS1 261184

KEEP ROPS INSTALLED PROPERLY

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered. A damaged ROPS should be replaced, not reused.



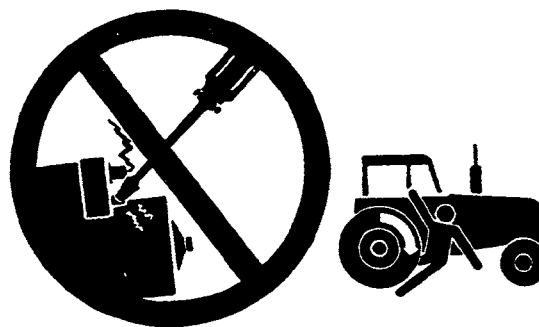
AB6;TS176 053;ROPS3 261184

PREVENT MACHINE RUNAWAY

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is by passed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.



AB6;TS177 053;BYPAS1 210585

TOW EQUIPMENT PROPERLY

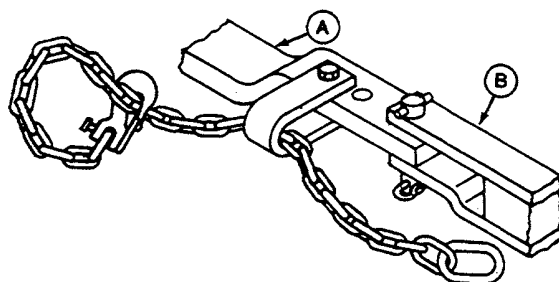
Use caution when towing loads at transport speeds. Reduce speed if towed load weighs more than the tractor and is not equipped with brakes. Avoid hard braking applications. (Consult implement operator's manual for recommended transport speeds.)

Use additional caution when transporting towed loads under adverse surface conditions, when turning, or on inclines.

U01;TOW 061284

USE A SAFETY CHAIN

A safety chain will help control drawn equipment (B) should it accidentally separate from the drawbar (A) while transporting. Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine.



AB6;TS163 053;CHAIN 310884

USE ADEQUATE SERVICE FACILITIES

Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Be sure all electrical outlets and tools are properly grounded.

Periodically check shop exhaust system for leakage. Engine exhaust gas is dangerous.

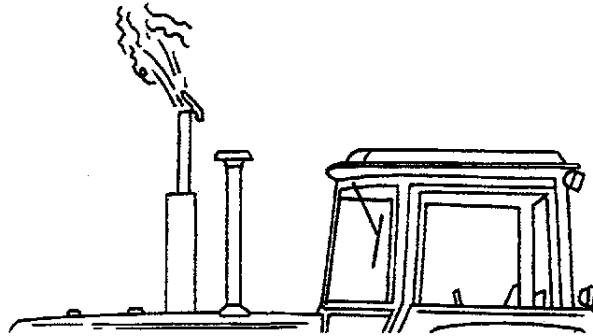
Use adequate light for job at hand.

Use lifting equipment and safety stands which have adequate strength for the job being performed.

U10;010INT BX1 261185

AVOID EXHAUST FUMES

Never run engine in a closed building. Make sure service area is adequately ventilated.



AJ7;RW5703 L U01;AVOID FUMES 090585

WEAR PROTECTIVE CLOTHING

Wear fairly tight clothing, and safety equipment.



AB6;TS184 053;WEAR2 080785

SERVICE TRACTOR SAFELY

Do not service the tractor while it is in motion or while the engine is running.

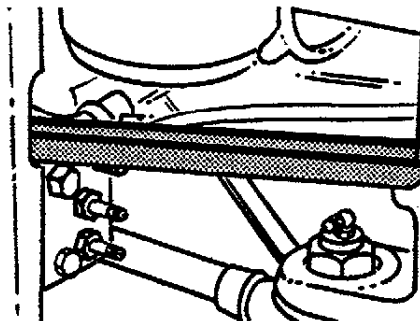
Stay clear of hinge area when engine is running. Stop engine and remove key before working near hinge.

Drive Shaft does not turn at engine start-up until clutch pedal is depressed and released. Be aware of sudden rotation of drive shaft as clutch is actuated.

Install lock bars (A) on tractor hinge before performing service work in hinge area. Be sure lock bars are removed before operating tractor.

Disconnect the battery ground cable before working on the electrical system or working in any area when you might accidentally contact electrical components. A short circuit could cause burns as well as damaging the electrical system.

Reinstall all shields removed during service.



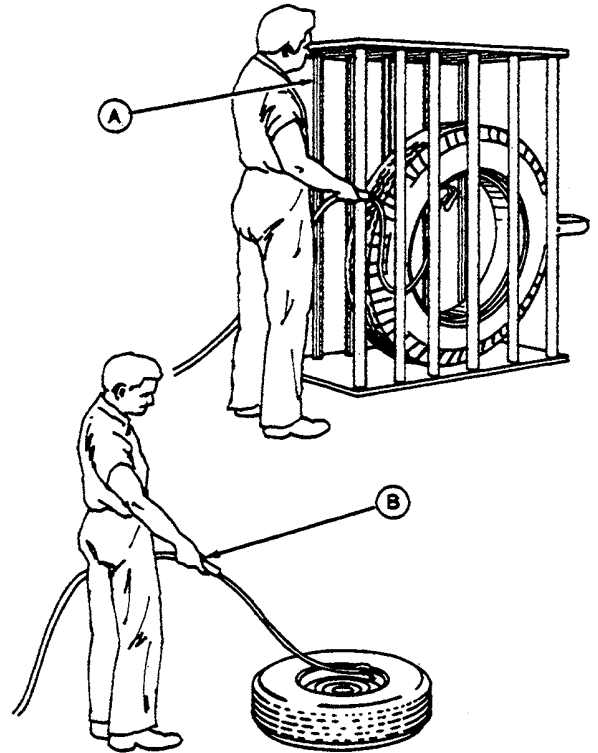
AC9;RW8194 U10;0101NT K 220283

SERVICE TIRES SAFELY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

When sealing tire beads on rims, never exceed 240 kPa (2.4 bar) (35 psi) or maximum inflation pressures specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

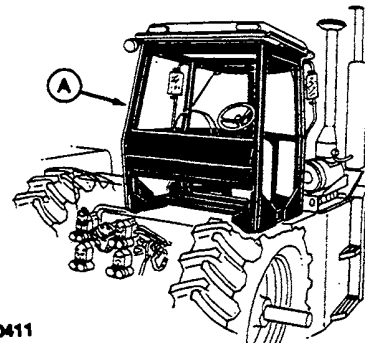
Detailed agricultural tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55. Such information is also available from the Rubber Manufacturers Association and from tire manufacturers.



AC3;TS0123 U10;010INT L 030484

DO NOT MODIFY TRACTOR

Never modify structural members of the roll-over protective structure (ROPS) (A) of the SOUND-GARD body by welding, bending, drilling or cutting as this might weaken the structure. If any structural member is damaged, replace the entire structure. Do not attempt repairs.



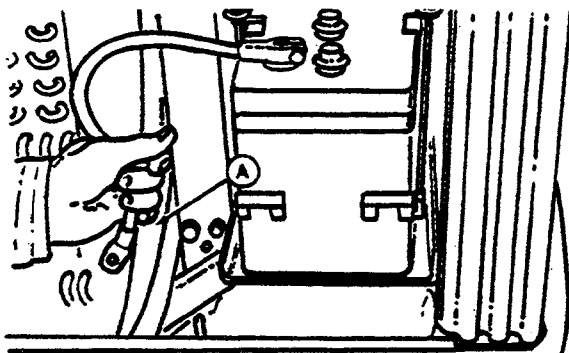
RW10411

AJ7;RW1041 1 U01;MODIFY 4WD 061185

OBSERVE ELECTRICAL SERVICE PRECAUTIONS

Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. To avoid sparks, connect ground cable (A) last and disconnect it first. When using a booster battery, follow instructions in operator's manual.

Disconnect battery ground cable before working in an area where you might accidentally contact electrical components, causing shocks, burns, or damage to electrical system.



AJ7;RW8196 U10;010INT N 250285

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

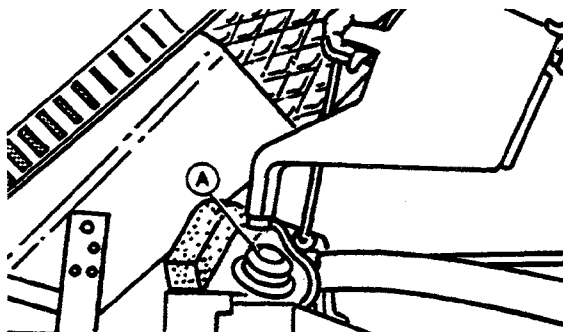
If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



AB6;X9811 053;FLUID 100584

SERVICE COOLING SYSTEM SAFELY

Do not remove radiator cap (A) when engine is hot. Shut the engine off and wait until it cools. Then turn the cap slowly to the first stop to relieve pressure before removing it completely.

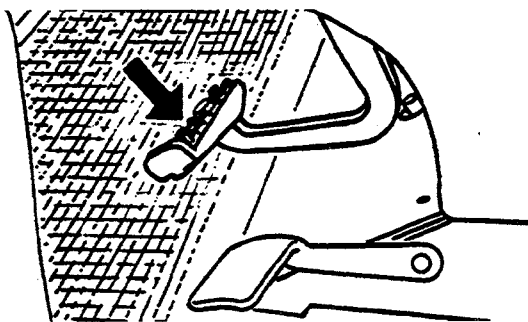


AJ7;RW8195 U01;COOL IT1 111185

SERVICE BRAKE ACCUMULATOR SAFELY

Accumulator contains gas and oil under pressure. To avoid injury from escaping fluid, relieve all pressure from accumulator before disconnecting brake accumulator or brake valve. To do so open bleed screws and pump brake pedal with engine stopped, until pedal easily goes all the way down.

The accumulator is charged with dry nitrogen to a pressure of 500 psi (3450 kPa) (35 bar). If it needs recharging, have job done only by a qualified service person and only with dry nitrogen.



AC3;RW8103 U01;FIX BRAKE1 311085

AVOID EXPLOSIONS OR FIRE

Batteries produce explosive gas. Before using booster batteries, read instructions in operator's manual.

Before connecting or disconnecting battery charger, turn the charger off to avoid sparks. See instructions in operator's manual.

Be careful with starting fluid or any type of fuel.

Never smoke while handling fuel.

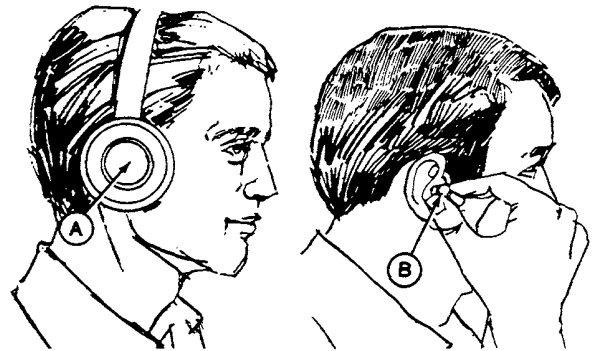


AC3;RW5895 U01;FIRE 091184

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

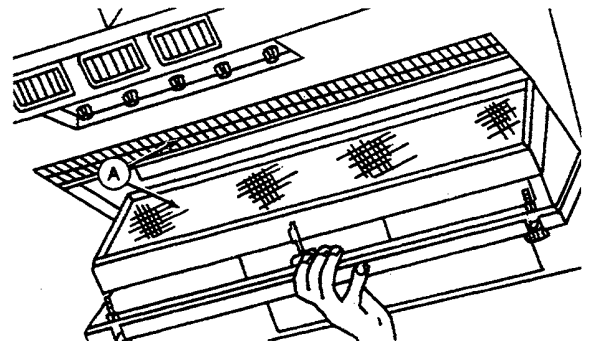
Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable uncomfortable loud noises.



AB6;X7662 053;NOISE 150584

HANDLE CHEMICALS PROPERLY

SOUND-GARD body air filters (A) are not designed to filter out harmful chemicals. Follow instructions given in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.



AJ7;RW5704 L U01;HANDLE CHEM 090585

PREVENT BATTERY EXPLOSIONS

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.



AB6;TS181 053;EXPLO 180485

AVOID ACID BURNS

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:

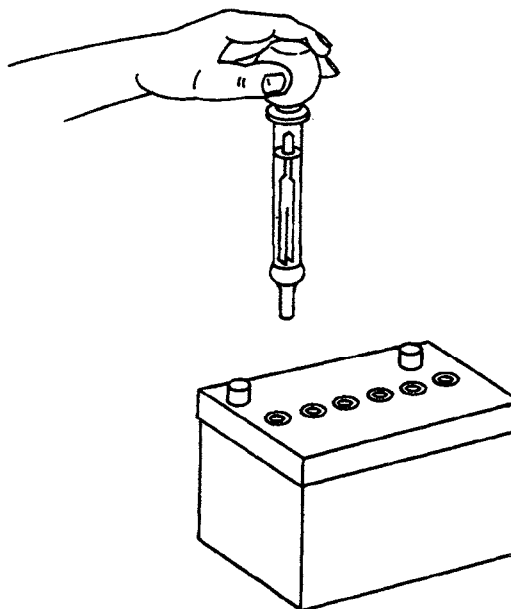
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.

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.



AB6;TS182 053;ACID 180485

HANDLE FUEL SAFELY—AVOID FIRES

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.



AB6;TS185 053;FIRE1 240785

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguishers handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



AB6;TS186 053;FIRE2 080785

HANDLE STARTING FLUID SAFELY

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.



AB6;T6089A U 053;FIRE3 080785

Introduction and Safety Information

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Inspect Steering And Brakes	10-05-21
Do Brakes Operate Correctly	
With Engine On And Off	10-05-21
Does Steering Operate Correctly	
Both Left And Right	10-05-22
Inspect Operator Station	10-05-22
Are SGB Or ROPS Mounting	
Tight And Properly Installed	10-05-22
Is Seat Operating Correctly	10-05-23
Are All Gauges And Indicator	
Lights Operating Correctly	10-05-23
Are Following Fluid Levels Correct:	10-05-23
Engine Crankcase	10-05-24
Engine Coolant	10-05-24
Hydraulic System	10-05-24
Battery	10-05-24

Does Customer Understand	
Proper Operation and Maintenance	
Of Tractor	10-05-25

GROUP 10 - TUNE-UP

Preliminary Engine Tests	10-10-01
Remove and Inspect Air Cleaner	
Elements	10-10-02
Cleaning Element	10-10-03
Washing Element	10-10-03
Inspect Element	10-10-04
Tighten Air Intake Connections	10-10-04
Check Air Intake Vacuum	10-10-04
Clean Crankcase Vent Tube	10-10-05
Cleaning Grille Screens, Radiator and Oil	
Cooler	10-10-06
Yearly Cooling System Flush	10-10-07
Engine Cooler-Conditioner Filter	10-10-08
Test Radiator Cap	10-10-09
Adjusting Fan Belt Tension	10-10-10
Adjusting Compressor or Alternator	
Belt Tension	10-10-10
Check Fuel Filters	10-10-10
Bleeding Fuel Lines	10-10-10
Check and Adjust Injection Pump	
Timing	10-10-11
Check and Adjust Slow and Fast Idle	
Speeds	10-10-12
Servicing Battery	10-10-13
Make Final Engine Test	10-10-14

GROUP 15 - LUBRICATION

Lubricate Tractor Properly	10-15-01
Engine Oil	10-15-01
Transmission - Hydraulic Oils	10-15-02
Grease	10-15-02
Use Approved Alternative Lubricants	10-15-03
Store Lubricants Correctly	10-15-03
Lubrication Services (Chart)	10-15-04
Check Engine Oil Level	10-15-05
Change Engine Oil and Oil Filter	10-15-05
Clean Crankcase Vent Tube	10-15-06
Check Transmission-Hydraulic Oil	
Level	10-15-06

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CONTENTS—CONTINUED

GROUP 15 - LUBRICATION - Continued

Replace Hydraulic Oil Filter	10-15-06	Lubricate Steering Feedback Cylinder	
Change Transmission-Hydraulic Oil	10-15-06	Rear Pivot Pin	10-15-09
Clean Transmission-Hydraulic Oil		Lubricate Remote Grease Fittings	10-15-10
Filter Screens	10-15-07	Lubricate Wide Swing Drawbar	10-15-10
Replace Transmission Oil Filter	10-15-07	Lubricate Outer Bearing Supports	10-15-10
Lubricate Axle Bearings	10-15-08	Lubricate Lift Arms	10-15-10
Lubricate Hinge Pins	10-15-08	Lubricate Center Link	10-15-11
Lubricate U-Joints	10-15-09	Lubricate Front Differential Rear Pivot ...	10-15-11
Lubricate Steering Cylinder Rear		Lubricate Front Differential Front	
Pivot Pins	10-15-09	Pivot	10-15-11