

5065M and 5075M (Stage IIIB), 5085M, 5095M, 5095MH, 5105M and 5105ML (Stage IIIA) Tractors Maintenance Guide (Export, December 2010)



MAINTENANCE GUIDE

**5065M-5075M (Stage IIIB), 5085M-5105M
(Stage IIIA) Tractors (Export,
December 2010)**

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John Deere Augusta Works

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Introduction

Foreword

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 and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

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 given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification or Identification Numbers 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. 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 or statement 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. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURER'S warranty supplied with your machine may not apply outside the U.S.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC1 -19-03APR09-1/1

Service Information

This maintenance guide contains service procedures and schedules for your tractor. To obtain the best performance, economy and service life from your tractor, ensure service is carried out according to the maintenance and service intervals and recorded in this manual. It is recommended that your John Deere dealer carry out this service work and stamp this record book.

Keeping an accurate account of all service performed on your tractor will help you to obtain the best price when replacing it. A prospective purchaser for your tractor will see that this tractor has been serviced on a regular basis. It also serves as a security measure (the history of the tractor can be quickly traced).

John Deere oils, grease and service products have been formulated to give maximum protection performance for

your tractor. We recommend only genuine John Deere service products and replacement parts.

To protect your rights under the warranty ensure all scheduled services are carried out and recorded. If your tractor is covered by extended warranty (Customer Protection Plan), it is important to maintain this record for the duration of the warranty.

As a valued John Deere customer you are part of our "Satisfaction First" program. You will receive two questionnaires during the first year of ownership and we would appreciate you taking the time to complete them.

OUO1023.00027CF -19-08MAR06-1/1

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Safety

Recognize Safety Information

This is a 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.



DX,ALERT -19-29SEP98-1/1

T81389 —UN—28JUN13

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 -19-03MAR93-1/1

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.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

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 -19-16JUN09-1/1

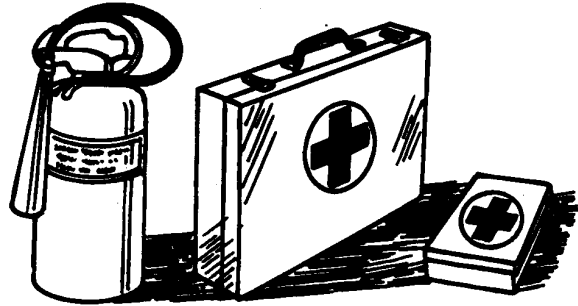
TS201 —UN—15APR13

Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



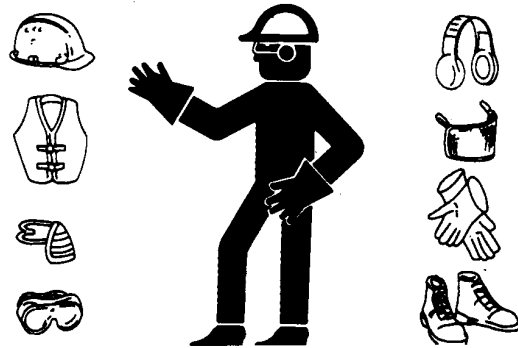
TS291 —UN—15APR13

DX,FIRE2 -19-03MAR93-1/1

Wear Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



TS206 —UN—15APR13

DX,WEAR2 -19-03MAR93-1/1

Protect Against Noise

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

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



TS207 —UN—23AUG88

DX,NOISE -19-03MAR93-1/1

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.

Use only an approved fuel container for transporting flammable liquids.

Never fill fuel container in pickup truck with plastic bed liner. Always place fuel container on ground before refueling. Touch fuel container with fuel dispenser nozzle before removing can lid. Keep fuel dispenser nozzle in contact with fuel container inlet when filling.



Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1 -19-12OCT11-1/1

TS202 —UN—23AUG88

Handle Starting Fluid Safely

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

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.

Do not use starting fluid on an engine equipped with glow plugs or an air intake heater.



DX,FIRE3 -19-14MAR14-1/1

TS1356 —UN—18MAR92

Fire Prevention

To reduce the risk of fire, your tractor should be regularly inspected and cleaned.

- Birds and other animals may build nests or bring other flammable materials into the engine compartment or onto the exhaust system. The tractor should be inspected and cleaned prior to the first use each day.
- A build up of grass, crop material and other debris may occur during normal operation. This is especially true when operating in very dry conditions or conditions where airborne crop material or crop dust is present. Any such build up must be removed to ensure proper machine function and to reduce the risk of fire. The tractor must be inspected and cleaned periodically throughout the day.
- Regular and thorough cleaning of the tractor combined with other routine maintenance procedures listed in the

Operator's Manual greatly reduce the risk of fire and the chance of costly downtime.

- Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.
- Check fuel lines, tank, cap, and fittings frequently for damage, cracks or leaks. Replace if necessary.

Follow all operational and safety procedures posted on the machine and the Operator's Manual. Be careful of hot engine and exhaust components during inspection and cleaning. Before carrying out any inspection or cleaning, always shut OFF the engine, place the transmission in PARK or set parking brake, and remove the key. Removal of the key will prevent others from starting the tractor during inspection and cleaning.

DX,WW,TRACTOR,FIRE,PREVENTION -19-12OCT11-1/1

In Case of Fire

CAUTION: Avoid personal injury.

Stop machine immediately at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. Because fire grows and spreads rapidly, get off the machine immediately and move safely away from the fire. Do not return to the machine! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

Read the fire extinguisher instructions and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

If your extinguisher does not have instructions, follow these general guidelines:



1. Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

DX,FIRE4 -19-22AUG13-1/1

TS227 —UN—15APR13

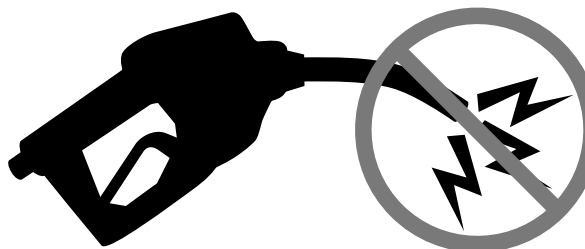
Avoid Static Electricity Risk When Refueling

The removal of sulfur and other compounds in Ultra-Low Sulfur Diesel (ULSD) fuel decreases its conductivity and increases its ability to store a static charge.

Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery system is in compliance with fueling standards for proper grounding and bonding practices.



DX,FUEL,STATIC,ELEC -19-12JUL13-1/1

RG22142 —UN—17MAR14

RG21992 —UN—21AUG13

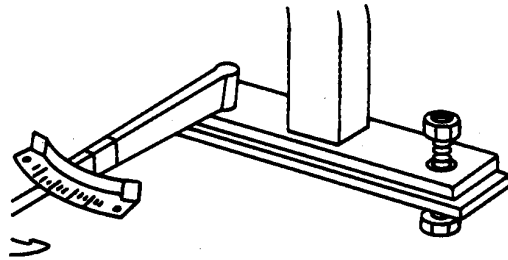
Keep ROPS Installed Properly

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 by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

The seat is part of the ROPS safety zone. Replace only with John Deere seat approved for your tractor.

Any alteration of the ROPS must be approved by the manufacturer.



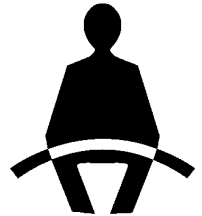
DX,ROPS3 -19-12OCT11-1/1

TS212 —UN—23AUG88

Use Foldable ROPS and Seat Belt Properly

Avoid crushing injury or death during rollover.

- If this machine is equipped with a foldable rollover protective structure (ROPS), keep the ROPS in the fully extended and locked position. USE a seat belt when you operate with a ROPS in the fully extended position.
 - Hold the latch and pull the seat belt across the body.
 - Insert the latch into the buckle. Listen for a click.
 - Tug on the seat belt to make sure that the belt is securely fastened.
 - Snug the seat belt across the hips.
- If this machine is operated with the ROPS folded (for example, to enter a low building), drive with extreme caution. DO NOT USE a seat belt with the ROPS folded.
- Return the ROPS to the raised, fully extended position as soon as the machine is operated under normal conditions.



DX,FOLDROPS -19-22AUG13-1/1

TS1729 —UN—24MAY13

Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

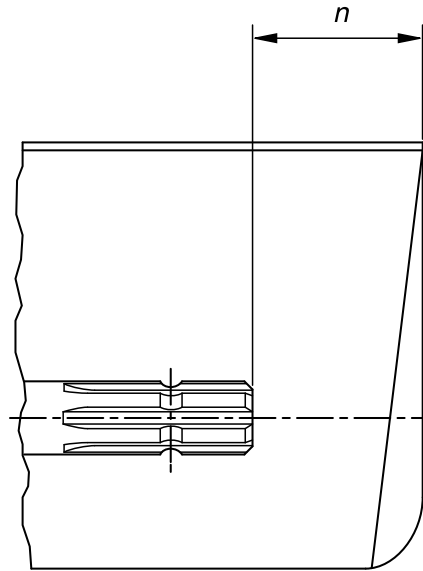
Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO drive shaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

PTO Type	Diameter	Splines	$n \pm 5 \text{ mm (0.20 in.)}$
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)



TS1644 —UN—22AUG95

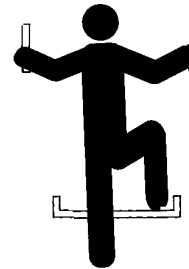
H96219 —UN—29APR10

DX,PTO -19-30JUN10-1/1

Use Steps and Handholds Correctly

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.



T133488 —UN—15APR13

DX,WWW,MOUNT -19-12OCT11-1/1

Read Operator Manuals for ISOBUS Implements

In addition to GreenStar Applications, this display can be used as a display device for any implement that meets ISO 11783 standard. This includes capability to control ISOBUS implements. When used in this manner, information and implement control functions placed on the display are provided by the implement and are the

responsibility of the implement manufacturer. Some of these implement functions could provide a hazard either to the Operator or a bystander. Read the operator manual provided by the implement manufacturer and observe all safety messages in manual and on implement prior to use.

NOTE: ISOBUS refers to the ISO Standard 11783

DX,WWW,ISOBUS -19-19AUG09-1/1

Use Seat Belt Properly

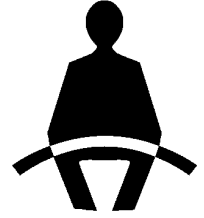
Avoid crushing injury or death during rollover.

This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear,



discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

DX,ROPS1 -19-22AUG13-1/1

TS1729 —UN—24MAY13

Operating the Tractor Safely

You can reduce the risk of accidents by following these simple precautions:

- Use your tractor only for jobs it was designed to perform, for example, pushing, pulling, towing, actuating, and carrying a variety of interchangeable equipment designed to conduct agricultural work.
- This tractor is not intended to be used as a recreational vehicle.
- Read this operator's manual before operating the tractor and follow operating and safety instructions in the manual and on the tractor.
- Follow operation and ballasting instructions found in the operator's manual for your implements/attachments, such as front loaders
- Make sure that everyone is clear of machine, attached equipment, and work area before starting engine or operation.
- Keep hands, feet, and clothing away from power-driven parts

Driving Concerns

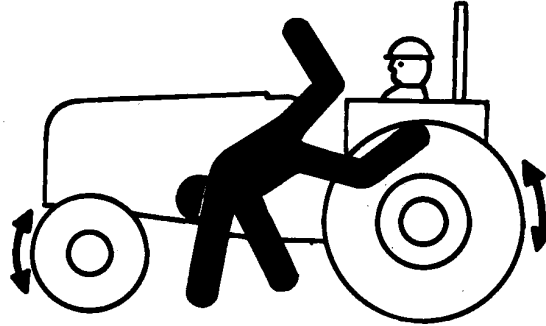
- Never get on or off a moving tractor.
- Keep all children and nonessential personnel off tractors and all equipment.
- Never ride on a tractor unless seated on a John Deere approved seat with seat belt.
- Keep all shields/guards in place.
- Use appropriate visual and audible signals when operating on public roads.
- Move to side of road before stopping.
- Reduce speed when turning, applying individual brakes, or operating around hazards on rough ground or steep slopes.
- Couple brake pedals together for road travel.
- Pump brakes when stopping on slippery surfaces.

Towing Loads

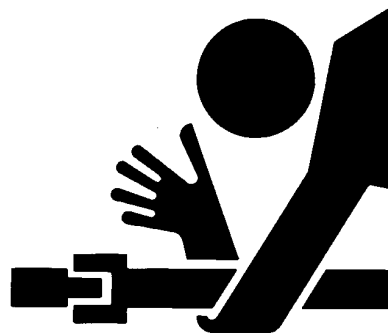
- Be careful when towing and stopping heavy loads. Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control.
- Consider the total weight of the equipment and its load.
- Hitch towed loads only to approved couplings to avoid rearward upset.

Parking and Leaving the Tractor

- Before dismounting, shut off SCVs, disengage PTO, stop engine, lower implements/attachments to ground



TS290—UN—23AUG88



TS276—UN—23AUG88

and securely engage park mechanism, including the park pawl and park brake. In addition, if tractor is left unattended, remove key.

- Leaving transmission in gear with engine off will NOT prevent the tractor from moving.
- Never go near an operating PTO or an operating implement.
- Wait for all movement to stop before servicing machinery.

Common Accidents

Unsafe operation or misuse of the tractor can result in accidents. Be alert to hazards of tractor operation.

The most common accidents involving tractors:

- Tractor rollover
- Collisions with motor vehicles
- Improper starting procedures
- Entanglement in PTO shafts
- Falling from tractor
- Crushing and pinching during hitching

DX,VW,TRACTOR -19-21AUG09-1/1

Avoid Backover Accidents

Before moving machine, be sure that all persons are clear of machine path. Turn around and look directly for best visibility. Use a signal person when backing if view is obstructed or when in close quarters.

Do not rely on a camera to determine if personnel or obstacles are behind the machine. The system can be limited by many factors including maintenance practices, environmental conditions, and operating range.



PC10857XW —UN—15APR13

DX,AVOID,BACKOVER,ACCIDENTS -19-30AUG10-1/1

Limited Use in Forestry Operation

The intended use of John Deere tractors when used in forestry operations is limited to tractor-specific applications like transport, stationary work such as log splitting, propulsion, or operating implements with PTO, hydraulic, or electrical systems.

These are applications where normal operation does not present a risk of falling or penetrating objects. Any forestry

applications beyond these applications, such as forwarding and loading, requires fitment of application-specific components including Falling Object Protective Structure (FOPS) and/or Operative Protective Structures (OPS). Contact John Deere dealer for special components.

DX,WW,FORESTRY -19-12OCT11-1/1

Operating the Loader Tractor Safely

When operating a machine with a loader application, reduce speed as required to ensure good tractor and loader stability.

To avoid tractor rollover and damage to front tires and tractor, do not carry load with your loader at a speed over 10 km/h (6 mph).

To avoid tractor damage do not use a front loader or a sprayer tank if the tractor is equipped with a 3 Meter Front Axle.

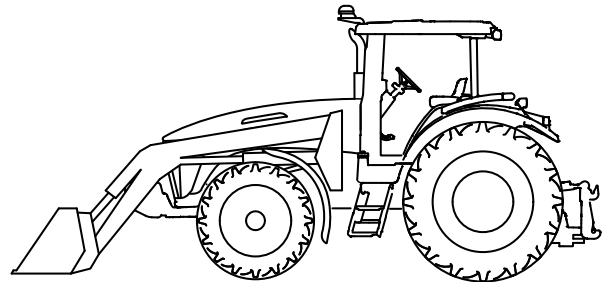
Never allow anyone to walk or work under a raised loader.

Do not use loader as a work platform.

Do not lift or carry anyone on loader, in bucket, or on implement or attachment.

Lower loader to ground before leaving operators station.

The Rollover Protective Structure (ROPS) or cab roof, if equipped, may not provide sufficient protection from load



TS1692 —UN—09NOV09

falling onto the operators station. To prevent loads from falling onto the operators station, always use appropriate implements for specific applications (that is, manure forks, round bale forks, round bale grippers, and clammers).

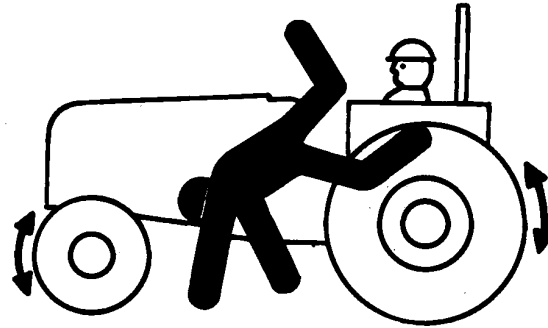
Ballast tractor in accordance to Ballast Recommendations in PREPARE TRACTOR section.

DX,WW,LOADER -19-18SEP12-1/1

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.

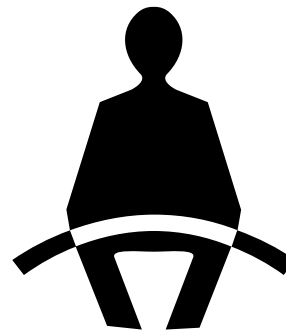


TS290 —UN—23AUG88

DX,RIDER -19-03MAR93-1/1

Instructional Seat

The instructional seat, if so equipped, has been provided only for training operators or diagnosing machine problems.



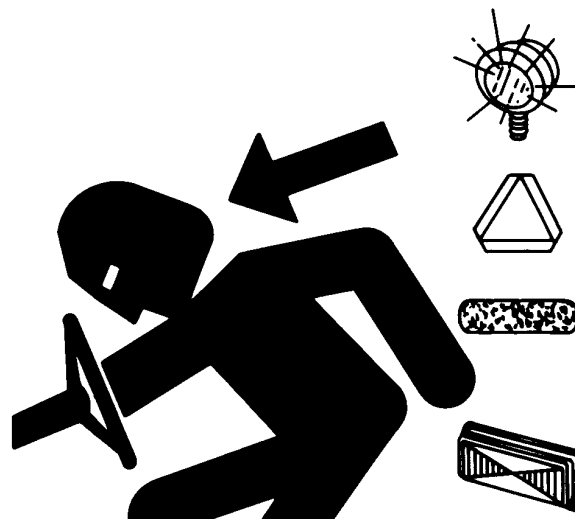
TS1730 —UN—24MAY13

DX,SEAT,NA -19-22AUG13-1/1

Use Safety Lights and Devices

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.



TS951 —UN—12APR90

DX,FLASH -19-07JUL99-1/1

Transport Towed Equipment at Safe Speeds

Do not exceed the maximum transport speed. This tractor is capable of operating at transport speeds that exceed the maximum allowable transport speed for most towed implements.

Before transporting a towed implement, determine from signs on the implement or information provided in the implement's operator manual the maximum transport speed. Never transport at speeds that exceed the implement's maximum transport speed. Exceeding the implement's maximum transport speed can result in:

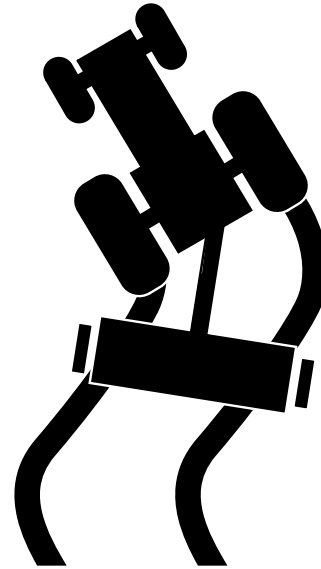
- Loss of control of the tractor/implement combination
- Reduced or no ability to stop during braking
- Implement tire failure
- Damage to the implement structure or its components

Implements without brakes:

- Do not transport at speeds greater than 32 km/h (20 mph).
- Must weigh less than 1.5 times the tractor weight and less than 1.5 t (3300 lb) when fully loaded.

Implements with brakes:

- If the manufacturer does not specify a maximum transport speed, do not tow at speeds greater than 40 km/h (25 mph).
- When transporting at speeds up to 40 km/h (25 mph) the fully loaded implement must weigh less than 4.5 times the tractor weight.



- When transporting at speeds between 40—50 km/h (25—31 mph) the fully loaded implement must weigh less than 3.0 times the tractor weight.

DX,TOW1 -19-12OCT11-1/1

TS1686 —UN—27SEP06

Use Caution On Slopes and Uneven Terrain

Avoid holes, ditches, and obstructions which cause the tractor to tip, especially on slopes. Avoid sharp uphill turns.

Driving forward out of a ditch, mired condition, or up a steep slope could cause tractor to tip over rearward. Back out of these situations if possible.

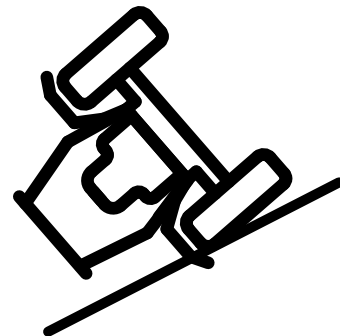
Danger of overturn increases greatly with narrow tread setting, at high speed.

Not all conditions that can cause a tractor to overturn are listed. Be alert for any situation in which stability may be compromised.

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution

Never drive near the edge of a gully, drop-off, ditch, steep embankment, or a body of water. The machine could suddenly roll over if a wheel goes over the edge or the ground caves in

Choose a low ground speed so you will not have to stop or shift while on a slope.



Avoid starting, stopping or turning on a slope. If the tires lose traction, disengage the PTO and proceed slowly, straight down the slope.

Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.

DX,WW,SLOPE -19-12OCT11-1/1

RXA0103437 —UN—01JUL09

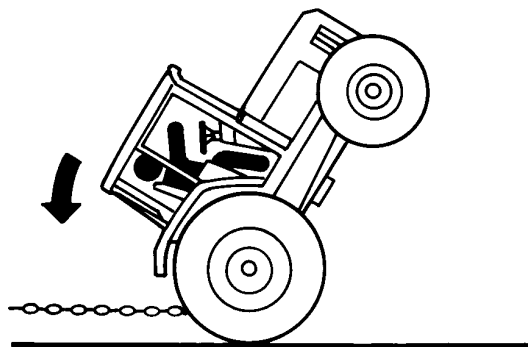
Freeing a Mired Machine

Attempting to free a mired machine can involve safety hazards such as the mired tractor tipping rearward, the towing tractor overturning, and the tow chain or tow bar (a cable is not recommended) failing and recoiling from its stretched condition.

Back your tractor out if it gets mired down in mud. Unhitch any towed implements. Dig mud from behind the rear wheels. Place boards behind the wheels to provide a solid base and try to back out slowly. If necessary, dig mud from the front of all wheels and drive slowly ahead.

If necessary to tow with another unit, use a tow bar or a long chain (a cable is not recommended). Inspect the chain for flaws. Make sure all parts of towing devices are of adequate size and strong enough to handle the load.

Always hitch to the drawbar of the towing unit. Do not hitch to the front pushbar attachment point. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.



DX,MIREO -19-07JUL99-1/1

TS1645—UN—15SEP95

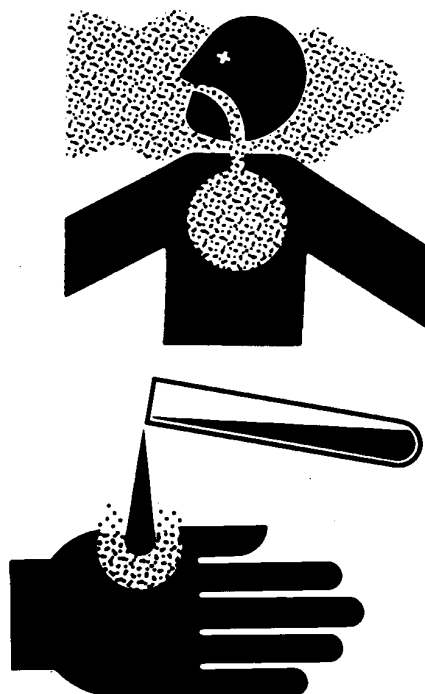
TS263—UN—23AUG88

Avoid Contact with Agricultural Chemicals

This enclosed cab does not protect against inhaling vapor, aerosol or dust. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

Before leaving the cab, wear personal protective equipment as required by the pesticide use instructions. When re-entering the cab, remove protective equipment and store either outside the cab in a closed box or some other type of sealable container or inside the cab in a pesticide resistant container, such as a plastic bag.

Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.



DX,CABS -19-25MAR09-1/1

TS220—UN—15APR13

TS272—UN—23AUG88

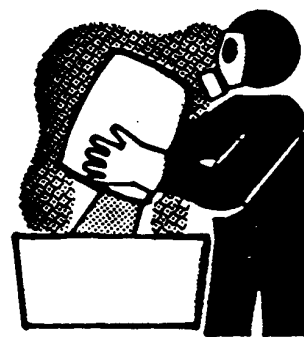
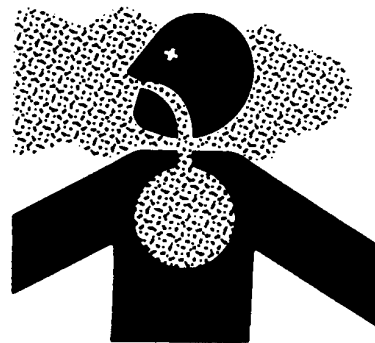
Handle Agricultural Chemicals Safely

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.



A34471

DX,WW,CHEM01 -19-24AUG10-1/1

TS220 —UN—15APR13

A34471 —UN—11OCT88

Handling Batteries Safely

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 grounded clamp last.

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

Avoid hazards by:

- Filling batteries in a well-ventilated area
- Wearing eye protection and rubber gloves
- Avoiding use of air pressure to clean batteries
- Avoiding breathing fumes when electrolyte is added
- Avoiding spilling or dripping electrolyte
- Using correct battery booster or charger procedure.

If acid is spilled on skin or in eyes:

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes. Get medical attention immediately.

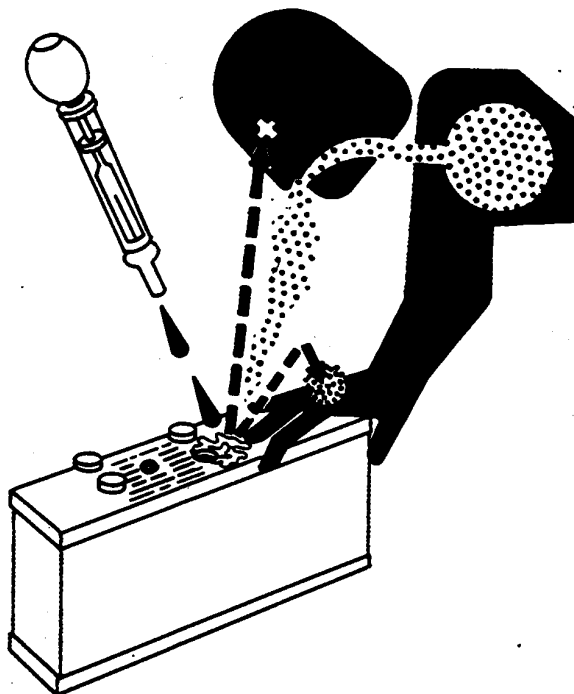
If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 qt.).
3. Get medical attention immediately.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**



TS204 —UN—15APR13



TS203 —UN—23AUG88

DX,WW,BATTERIES -19-02DEC10-1/1

Avoid Heating Near Pressurized Fluid Lines

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.



TS953 —UN—15MAY90

DX,TORCH -19-10DEC04-1/1

Remove Paint Before Welding or Heating

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.



Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT -19-24JUL02-1/1

TS220 —UN—15APR13

Handle Electronic Components and Brackets Safely

Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

If installing or servicing a RTK base station on a tower or other tall structure, use a certified climber.

If installing or servicing a global positioning receiver mast used on an implement, use proper lifting techniques and wear proper protective equipment. The mast is heavy and can be awkward to handle. Two people are required when mounting locations are not accessible from the ground or from a service platform.



DX,WW,RECEIVER -19-24AUG10-1/1

TS249 —UN—23AUG88

Practice Safe Maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



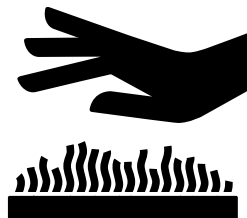
TS218 —JUN—23AUG88

DX,SERV -19-17FEB99-1/1

Avoid Hot Exhaust

Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.



RG17488 —JUN—21AUG09

DX,EXHAUST -19-20AUG09-1/1

Clean Exhaust Filter Safely

During exhaust filter cleaning operations, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.

Keep machine away from people, animals, or structures which may be susceptible to harm or damage from hot exhaust gases or components. Avoid potential fire or explosion hazards from flammable materials and vapors near the exhaust. Keep exhaust outlet away from people and anything that can melt, burn, or explode.

Closely monitor machine and surrounding area for smoldering debris during and after exhaust filter cleaning.

Adding fuel while an engine is running can create a fire or explosion hazard. Always stop engine before refueling machine and clean up any spilled fuel.

Always make sure that engine is stopped while hauling machine on a truck or trailer.

Contact with exhaust components while still hot can result in serious personal injury.

Avoid contact with these components until cooled to safe temperatures.

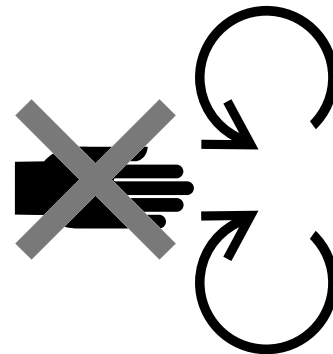
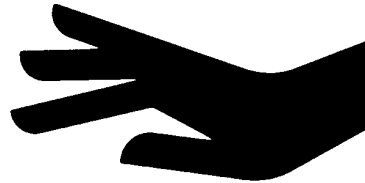
If service procedure requires engine to be running:

- Only engage power-driven parts required by service procedure
- Ensure that other people are clear of operator station and machine

Keep hands, feet, and clothing away from power-driven parts.

Always disable movement (neutral), set the parking brake or mechanism and disconnect power to attachments or tools before leaving the operator's station.

Shut off engine and remove key (if equipped) before leaving the machine unattended.



TS227 —UN—15APR13

TS271 —UN—23AUG88

TS1693 —UN—09DEC09

TS1695 —UN—07DEC09

DX,EXHAUST,FILTER -19-12JAN11-1/1

Work In Ventilated Area

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



TS220 —UN—15APR13

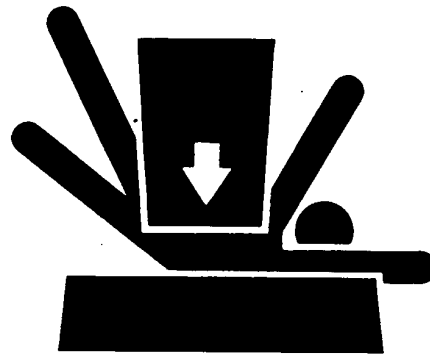
DX,AIR -19-17FEB99-1/1

Support Machine Properly

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.



TS229 —UN—23AUG88

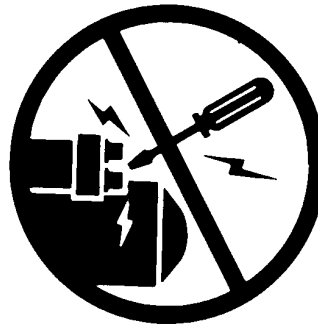
DX,LOWER -19-24FEB00-1/1

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 bypassed.

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



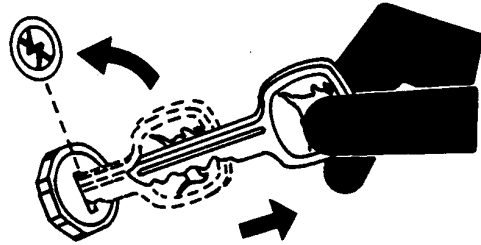
TS177 —UN—11JAN89

DX,BYPAS1 -19-29SEP98-1/1

Park Machine Safely

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



DX,PARK -19-04JUN90-1/1

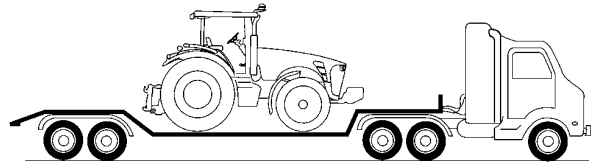
TS230 —UN—24MAY89

Transport Tractor Safely

A disabled tractor is best transported on a flatbed carrier. Use chains to secure the tractor to the carrier. The axles and tractor frame are suitable attachment points.

Before transporting the tractor on a low-loader truck or flatbed rail wagon, make sure that the hood is secured over the tractor engine and that doors, roof hatch (if equipped) and windows are properly closed.

Never tow a tractor at a speed greater than 10 km/h (6 mph). An operator must steer and brake the tractor under tow.



DX,WW,TRANSPORT -19-19AUG09-1/1

RXA0103709 —UN—01JUL09

Service Cooling System Safely

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



DX,WW,COOLING -19-19AUG09-1/1

TS281 —UN—15APR13

Service Accumulator Systems Safely

Escaping fluid or gas from systems with pressurized accumulators that are used in air conditioning, hydraulic, and air brake systems can cause serious injury. Extreme heat can cause the accumulator to burst, and pressurized lines can be accidentally cut. Do not weld or use a torch near a pressurized accumulator or pressurized line.

Relieve pressure from the pressurized system before removing accumulator.

Relieve pressure from the hydraulic system before removing accumulator. Never attempt to relieve hydraulic system or accumulator pressure by loosening a fitting.

Accumulators cannot be repaired.



TS281 —UN—15APR13

DX,WW,ACCLA2 -19-22AUG03-1/1

Service Tires Safely

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.

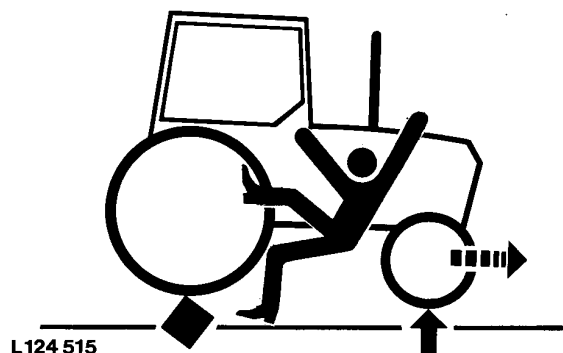


RXA0003438 —UN—11JUN09

DX,WW,RIMS -19-19AUG09-1/1

Service Front-Wheel Drive Tractor Safely

When servicing front-wheel drive tractor with the rear wheels supported off the ground and rotating wheels by engine power, always support front wheels in a similar manner. Loss of electrical power or transmission hydraulic system pressure will engage the front driving wheels, pulling the rear wheels off the support if front wheels are not raised. Under these conditions, front drive wheels can engage even with switch in disengaged position.



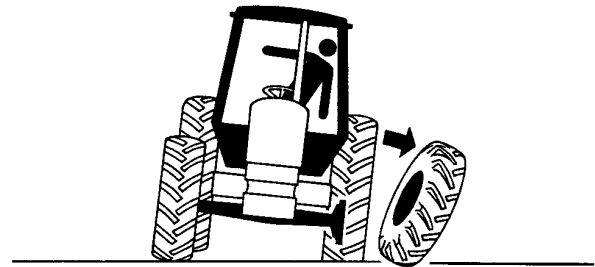
L124 515

L124515 —UN—06AUG94

DX,WW,MFWD -19-19AUG09-1/1

Tightening Wheel Retaining Bolts/Nuts

Torque wheel retaining bolts/nuts at the intervals specified in section Break-In Period and Service.



L124 516

L124516 —UN—03JAN95

DX,WW,WHEEL -19-12OCT11-1/1

Avoid High-Pressure Fluids

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

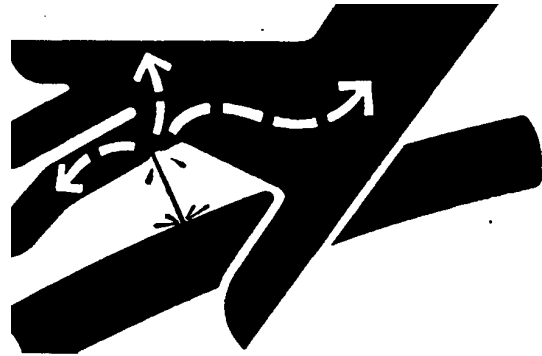
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar



with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

X9811 —UN—23AUG88

DX,FLUID -19-12OCT11-1/1

Do Not Open High-Pressure Fuel System

High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

Only technicians familiar with this type of system can perform repairs. (See your John Deere dealer.)



TS1343 —UN—18MAR92

DX,WW,HPCR1 -19-07JAN03-1/1

Store Attachments Safely

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



TS219 —UN—23AUG88

DX,STORE -19-03MAR93-1/1

Dispose of Waste Properly

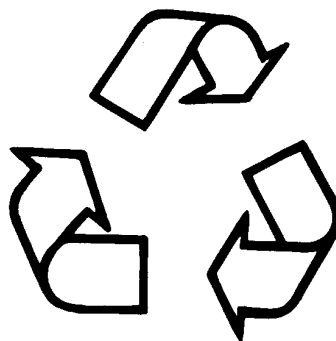
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.



TS1133 —UN—15APR13

DX,DRAIN -19-03MAR93-1/1

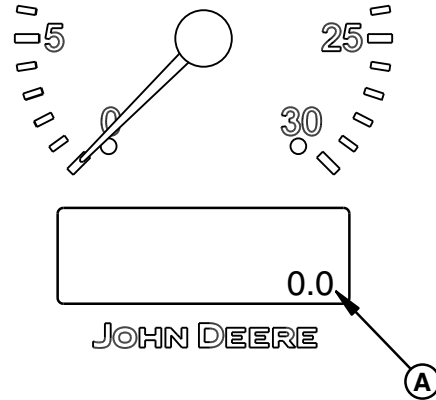
Maintenance and Service Intervals

Maintenance and Service Intervals

Using hour meter (A) as a guide, perform all services at the hourly intervals indicated on the Service Interval Charts in this section. Record the service performed. (See section 90 Service and Maintenance Record.)

IMPORTANT: Recommended service intervals are for average conditions. Service MORE OFTEN if tractor is operated under adverse conditions.

A—Hour Meter



PULV000649—UN—05MAY08

SH20560,00001CB -19-21MAR08-1/1

Break-In Service

IMPORTANT: Keep wheel hardware tight for safety. Check wheel hardware torque before operating, twice during first ten hours of operation and thereafter every week/50 hours of operation.

For 5065M and 5075M: New engines are filled with John Deere Plus-50™ oil. If oil is required in first 300 hours, be sure to use John Deere Plus-50™ oil. Change oil and filter after first 300 hours of operation.

For 5085M, 5095M, 5095MH, 5105M and 5105ML: New engines are filled with John Deere DIESEL ENGINE BREAK-IN OIL. If oil is required in first 100 hours, be sure to use BREAK-IN oil. Change oil and filter after first 100 hours of operation.

For 5085M, 5095M, 5095MH, 5105M and 5105ML: If tractor is used under light load conditions

during first 100 hours, refill with John Deere Break-In oil for an additional 100 hours to allow engine to break-in properly.

After first 100 hours of operation:

- ☐ **For 5085M, 5095M, 5095MH, 5105M and 5105ML:** Replace engine oil after first 100 hours of operation.¹
- ☐ Tighten Air Intake System and Cooling System Hose Clamps
- ☐ Inspect Tractor for Loose Hardware

After first 300 hours of operation:

- ☐ **For 5065M and 5075M:** Replace engine oil after first 300 hours of operation.²

Plus-50 is a trademark of Deere & Company

¹See DIESEL ENGINE OIL—5085M, 5095M, 5095MH, 5105M and 5105ML in Fuel, Lubricants and Coolant section for additional information.

²See DIESEL ENGINE OIL—5065M and 5075M in Fuel, Lubricants and Coolant section for additional information.

AJ20558,00002B1 -19-18JUN09-1/1

Service Interval Chart

Item	Daily or 10 Hours	Weekly or 50 Hours	First 100 Hours	First 300 Hours	Every 300 Hours	Every 500 Hours
Check Engine Oil Level	•					
Drain Water and Sediment from Fuel Filter ^a	•					
Check Coolant Level		•				
Check Transmission-Hydraulic System Oil Level		•				
Look for Oil Leak at MFWD		•				
Inspect Tires and Check Inflation Pressure		•				
Lubricate MFWD Front/Rear Axle Trunnion ^b		•				
Lubricate Adjustable Front (2WD) Axle Steering Spindles and Cylinder Ends ^b		•				
Lubricate Front Axle Pivot Point ^b		•				
Lubricate Hitch Linkage and 3-Point Hitch Bushing ^c		•				
Inspect Tractor for Loose Hardware		•	•			
5085M, 5095M, 5095MH, 5105M and 5105ML INITIAL Change Engine Oil and Filter (Change Break-In Oil to John Deere Plus-50™)			•			
Tighten Air Intake System and Coolant System Hose Clamps			•			
5065M and 5075M INITIAL Engine Oil and Filter Change (When USING or NOT USING John Deere Plus-50™)				•		
5085M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML SCHEDULED Engine Oil and Filter Change (When NOT using John Deere Plus-50™ oil and filter) ^d					•	
Check MFWD Axle Housing and Wheel Hub Oil Level					•	
Lubricate Draft Sensing Shaft Seal					•	
Drain and Flush Fuel Tank					•	
Check Battery Electrolyte					•	
5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML Change Engine Oil and Filter SCHEDULED Engine Oil and Filter Change (When USING John Deere Plus-50™ oil and filter)						•
Replace Fuel Filter ^e						•

Service Chart — Daily (10 Hours) to 500 Hours

^aIf water is found, run engine for 20 seconds; if more water is collected, drain fuel tank. The fuel filter must be drained when the sediment bowl contains water or sediments.

^bDaily service if operating in extremely wet and muddy conditions.

^cService more often if operated in extremely dusty conditions.

^dSCHEDULED engine oil and filter change interval (300 hours) can be extended to 500 hours if John Deere Plus-50™ oil and John Deere filter are used.

^eIf diesel fuel has a high sulfur content, ask John Deere dealer for proper service interval.

Plus-50 is a trademark of Deere & Company

AJ20558,00002B2 -19-18JUN09-1/1

Service Interval Chart

Item	Every 600 Hours	Every 1200 Hours	Annually	Every 2000 Hours	Every 3000 Hours/Three Years ^{a,b}	Every 4500 Hours/Five Years ^{a,b}
Clean Cab Air Filters ^c	•					
Check Neutral Start System	•					
5065M and 5075M Service Air Cleaner Elements	•					
Change MFWD Hub and Axle Housing Oil	•					
Clean Engine Crankcase Vent Tube	•					
Repack Adjustable Front (2WD) Axle Wheel Bearings	•					
Lubricate Rear Axle Bearings	•					
Check Front Axle Pivot Pin End Play ^d	•					
Tighten Air Intake System and Coolant System Hose Clamps	•					
Change Transmission-Hydraulic Oil and Filter	•					
5095MH Change Hi-Crop Rear Axle Oil ^e		•				
Check Belt Tensioner ^e		•				
5085M, 5095M, 5095MH, 5105M and 5105ML Service Air Cleaner Elements		•				
Clean Cab Air Filters ^c			•			
Lubricate PTO Stub Shaft—1000 rpm			•			
Check Coolant Properties ^d			•			
Inspect Seat Belt			•			
5085M, 5095M, 5095MH, 5105M and 5105ML Adjust Engine Valve Clearance ^d				•		
5085M, 5095M and 5095MH Test Injection Nozzles				•		
Drain, Flush and Refill Engine Cooling System ^d when coolant is NOT checked annually or NOT serviced with the pre-diluted John Deere COOL-GARD™ ^f					•	
Test or Replace Thermostat ^d					•	
5085M, 5095M, 5095MH, 5105M and 5105ML Replace Transmission Damper						•
Drain, Flush and Refill Engine Cooling System ^d when coolant is checked annually and serviced with the pre-diluted John Deere COOL-GARD™						•

Service Chart — 600 Hours to 4500 Hours

^aIf COOL-GARD is not used, service interval is 2000 hours/two years.^bFor COOL-GARD™ used outside North America, please consult the dealer for proper interval, service and testing requirements.^cService more often if operated in extremely dusty conditions.^dSee your John Deere dealer for service.^eCan be delayed up to 1500 hours.^fService interval can be extended to five years and 4500 hours thereafter if tractor coolant has been checked annually and serviced with pre-diluted John Deere COOL-GARD™.

COOL-GARD is a trademark of Deere & Company

AJ20558,00002B3 -19-18JUN09-1/1

Service—As Required

- Service Engine Air Cleaner—Service after Air Restriction Indicator is ON^{1 2}
- Adjust PTO Speed Shift Lever—Open Operator's Station³
- Lubricate Axle Pivot Point—2WD⁴
- Lubricate Steering Spindles and Steering Cylinder Ends—Adjustable Front Axle⁴
- Lubricate Rear Axle Bearings⁴
- Lubricate Draft Sensing Shaft Seal⁴
- Adjust PTO Speed Shift Lever—Cab³
- Adjust Hand Throttle Friction Linkage—5085M, 5095M and 5095MH³
- Adjust Hand and Foot Throttle Cable—5085M, 5095M and 5095MH³
- Adjust Clutch Pedal Cable—If Equipped with SyncShuttle Plus™ Transmission³
- Adjust Park Position Bracket³
- Adjust Rear Fender—Open Operator's Station and Low Profile
- Service Air Conditioner—If Equipped³
- Test Injection Nozzles—5085M, 5095M and 5095MH³
- Drain and Flush Fuel Tank³
- Clean and Check Battery Condition
- Clean Cab Air Filters—If Equipped²
- Clean Grille Screens, Radiator, Oil Cooler, Radiator Screen (If Equipped) and A/C Condenser (Cab)
- Keep ROPS Installed Properly—Open Operator's Station
- Keep ROPS Installed Properly—Low Profile
- Keep Cab Protection System Installed Properly
- Bleed Fuel System—5065M and 5075M
- Bleed Fuel System—5085M, 5095M, 5095MH, 5105M and 5105ML
- Replace Battery
- Locate Fusible Links
- Locate Fuses—Open Operator's Station
- Locate Fuses—Low Profile
- Locate Fuses—Cab
- Fuse and Relay Size and Function
- Replace Headlight Bulb
- Replace Warning Light Bulb—Cab
- Replace Turn/Warning Light Bulb—Low Profile
- Replace Tail Light Bulb—Cab, Deluxe OOS and Low Profile
- Replace Tail Light and/or Warning Light Bulb—Open Operator's Station
- Replace Work Light Bulb—Open Operator's Station and Low Profile
- Replace Work Light Bulb—Cab
- Replace Fender Light Bulb—Open Operator's Station
- Replace Loader Light Bulb—If Equipped
- Replace Dome Light Bulb—Cab
- Replace Controls Illumination Light Bulb—Cab
- Replace Rotary Beacon Light Bulb—If Equipped

SyncShuttle Plus is a trademark of Deere & Company

¹The primary element can be cleaned up to five times. Thereafter or at the latest after one year of operation, it must be replaced.

²Service more often if operated in extremely dusty conditions.

³See your John Deere dealer for service.

⁴Daily service if operating in extremely wet and muddy conditions.

AJ20558,00002B4 -19-02DEC10-1/1

Maintenance—Every 10 Hours/Daily

Check Engine Oil Level

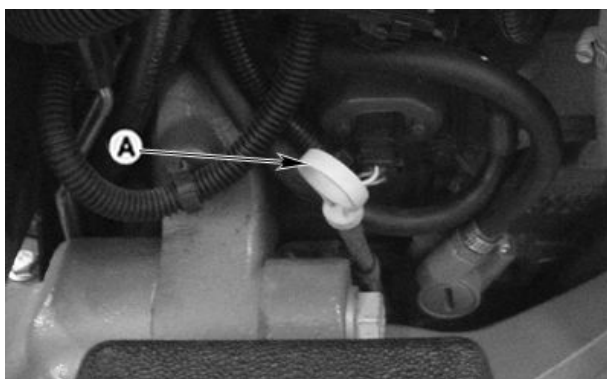
IMPORTANT: 5065M and 5075M: During the first 300 hours of operation, fill with John Deere Plus-50™ oil. (See Fuel, Lubricants, and Coolant Section 85 for oil specifications.)

5085M, 5095M, 5095MH, 5105M and 5105ML: During the first 100 hours of operation, fill with John Deere DIESEL ENGINE BREAK-IN

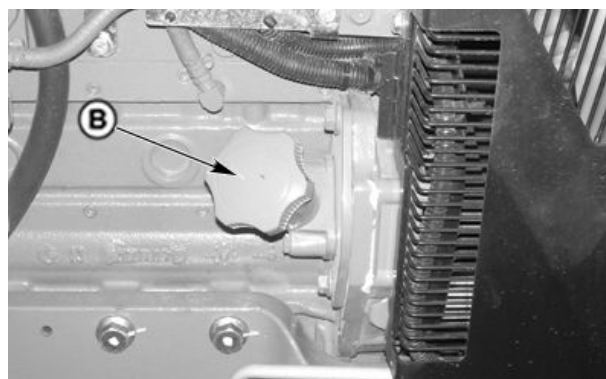
OIL. (See Fuel, Lubricants, and Coolant Section 85 for oil specifications.)

Do not operate engine with oil level below low mark on dipstick.

NOTE: Make sure to push dipstick all the way in to check oil level.



5065M and 5075M

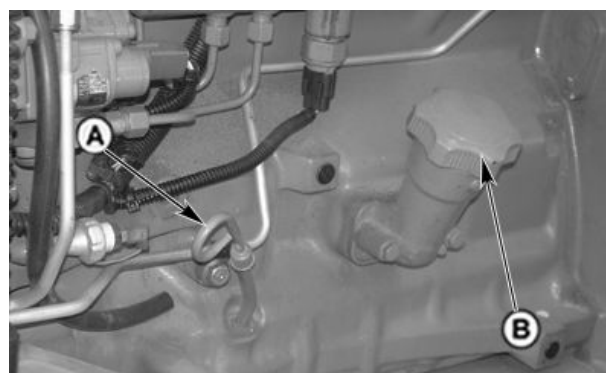


5065M and 5075M

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Pull out dipstick (A). Oil level should be between two marks on dipstick.
3. If level is low, add oil through oil filler hole (B) until even with upper mark. DO NOT overfill. Use seasonal viscosity grade oil. (See Diesel Engine Oil in Section 85 Fuel, Lubricants, and Coolant.)

A—Engine Oil Dipstick

B—Engine Oil Filler Hole



5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

Plus-50 is a trademark of Deere & Company

SH20560,0000036 -19-18JUN09-1/1

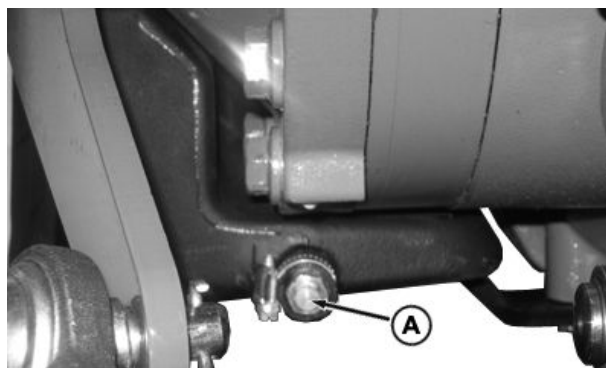
Drain Water and Sediment from Fuel Filter

IMPORTANT: Place suitable sized container under fuel drain locations (filters, water separator, and tanks). Dispose of waste properly.

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Raise hood and open fuel filter/water separator drain (B) and drain (C) of glass bowl (if equipped) to bleed accumulated moisture and sediment from filter. Tighten drain when clear fuel runs from drain.
3. Run engine for minimum of 20 seconds and again check fuel filter drain (B) and drain (C) of glass bowl (if equipped) for moisture and sediments.
4. If moisture or sediments are found, drain fuel tank.
5. Open fuel tank drain plug (A) to bleed accumulated moisture and sediment from fuel tank.
6. Apply TEFLON® or equivalent to threads of drain plug (A).
7. Tighten plug when clear fuel runs from fuel tank drain plug (A).
8. Lower hood.

A—Fuel Tank Drain Plug
B—Fuel Filter/Water Separator
Drain

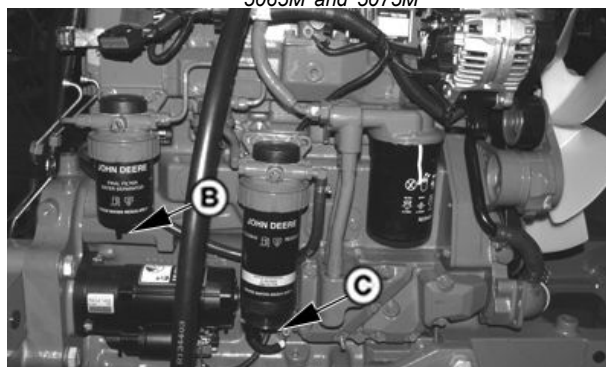
C—Water Glass Bowl Drain



Rear, Bottom, Left Side View



5065M and 5075M



5085M, 5095M, 5095MH, 5105M and 5105ML

TEFLON is a trademark of Du Pont Co.

SH20560,00002E2 -19-25NOV10-1/1

PULV007221—UN—18NOV10

PULV00603—UN—19MAR08

PULV00604—UN—19MAR08

Cleaning Air Filter Dust Unloading Valve

IMPORTANT: Avoid damage! Prevent damage to the engine. Never operate engine without air cleaner elements and rubber dust unloading valve installed.

1. Park machine safely.
2. Raise hood.
3. Clean out dust unloading valve (A) by squeezing the end to open and remove any excessive buildup of dust and dirt. Replace if damaged.
4. Lower hood.

A—Dust Unloading Valve



LV14647 —UN—17AUG11

DP51502,0001652 -19-07FEB14-1/1

Maintenance—Every Week/50 Hours

Check Coolant Level

⚠ CAUTION: Avoid injury from hot, spraying fluid. Add make-up coolant through the coolant recovery tank, not directly to the radiator. If cap must be removed, do not remove when engine is hot. **SHUT OFF** engine and wait until cap is cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.

IMPORTANT: Periodically check coolant level in recovery tank.

1. PARK tractor on level ground and **SHUT OFF** engine. Remove key.
2. Raise hood and check level in coolant recovery tank (B), **BEFORE** starting tractor.

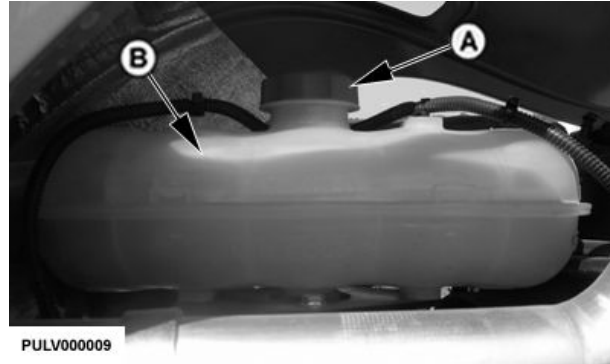
NOTE: Coolant level should be checked when engine is COOL.

3. If engine is COOL and level is below "**MIN**" mark, remove cap (A) and add coolant to recovery tank to bring level between "**MIN**" and "**MAX**" mark. (See Diesel Engine Coolant in section 85 Fuel, Lubricants, and Coolant.)

NOTE: Coolant is replaced after three years or every 3000 hours thereafter. It can be extended to six years or every 6000 hours thereafter if coolant is checked annually and serviced using COOL-GARD™ II.

4. Lower hood.

COOL-GARD is a trademark of Deere & Company



A—Cap

B—Coolant Recovery Tank

TS281 —UN—15APR13

PULV000009 —UN—27SEP07

MK41968,0000238 -19-03APR09-1/1

Check Transmission-Hydraulic System Oil Level

IMPORTANT: Oil level below mark can result in power loss and heat generation during transport.

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Wait a minimum of five minutes for oil to settle.

NOTE: Tractor should be on level ground, hitch and any other hydraulic implements in lowered or retracted position, engine stopped and transmission in park when checking oil level.

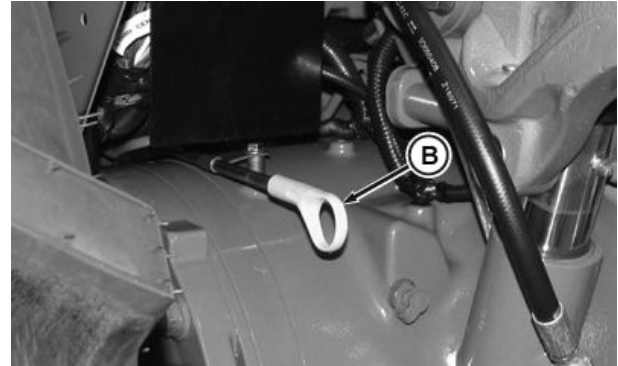
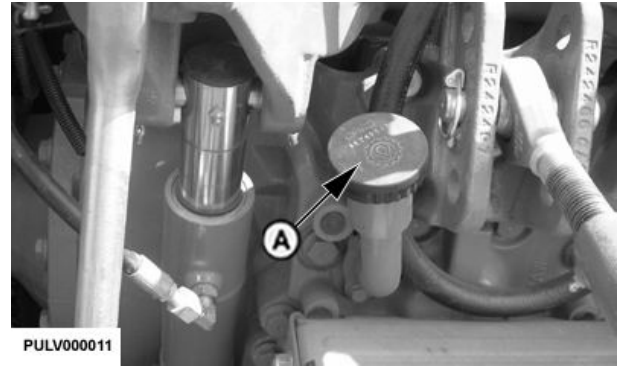
3. Check level at mark on dipstick. Level should be at full oil level mark.

NOTE: Oil level may be above mark if multiple or large hydraulic implements are attached. More accurate measurement may be obtained with all auxiliary hydraulics removed from vehicle.

4. Add oil to filler port if level is low. (Refer to Transmission and Hydraulic Oil in section 85 Fuel, Lubricants, and Coolant.)

NOTE: While towing tractor with front wheels on carrier, oil level should be above full oil level mark on dipstick.

5. If towing tractor with front wheels on carrier, add 1 L (0.26 gal) for each 90 mm (3-1/2 in.) front wheels are raised off the ground.



A—Oil Filler Cap

B—Dipstick

MK41968,0000239 -19-29DEC08-1/1

Check MFWD for Oil Leaks

Check MFWD axle housing and MFWD axle wheel hub for leaks.

Make sure that no oil leaks from drain plug and fill port.

NOTE: If oil leaks replace drain plug and fill port.

If oil leaks in excess, see your John Deere Dealer.

SH20560,00002CB -19-17APR08-1/1

Inspect Tires

1. Check tires daily for damage or noticeably low pressure.
2. Have any cuts or breaks repaired as soon as possible.
3. Protect tires from exposure to sunlight, petroleum products and chemicals.
4. Drive carefully. Try to avoid rocks and sharp objects.

IMPORTANT: Minimum pressures may be used only for light loads and only if tractor has

no added weight. If you install ballast or mounted implements, or if you pull heavy loads, increase pressure.

5. At least every 50 hours of operation, check tires with an accurate gauge having 10 kPa (0.1 bar) (1 psi) graduations. If tires contain liquid ballast, use a special air-water gauge and measure with valve stem at bottom. Refer to TIRE INFLATION PRESSURE CHARTS in Wheels, Tires and Treads section.

SH20560,0000455 -19-28JUL09-1/1

Check Tire Inflation Pressure

Check tires daily for damage or noticeably low pressure.

At least every 50 hours of operation, check inflation pressure with a gauge. Use an accurate gauge having 10 kPa (0.1 bar) (1 psi) graduations.

If tires contain liquid ballast, use a special air-water gauge and measure with valve stem at bottom.

NOTE: When furrow plowing or during hillside operation, tire pressure can be increased 28 kPa (0.28 bar) (4 psi) ABOVE maximum to prevent tire wrinkling or buckling.

IMPORTANT: Always check inflation pressure with an accurate tire gauge to prevent over-inflation. Over-inflation reduces performance and increases strain of both tire and rim.

NOTE: Following inflation information applies to both front and rear tires and Tire Inflation Pressure Charts.

1. All inflation pressures are calculated for 29 km/h (18 mph) travel speeds for both diagonal (bias) ply and radial ply tires.
2. Operating tires at the inflation pressures listed on the chart will provide optimum tractive performance of the

tire/vehicle system. Correctly inflated radial tires will show a large deflection of the sidewall or "cheeks." This is normal and will not damage the tire if the inflation pressure is maintained.

3. Regularly monitor inflation pressures less than 80 kPa (12 psi) because of the increased risk of low pressure air leaks (especially due to leaking valve cores).
4. When operating tractors on steep side slopes, increase inflation pressures 28 kPa (0.28 bar) (4 psi) above the values listed to compensate for lateral weight transfer.
5. Tires run in high traction conditions sometimes experience bead slip. Increasing the inflation pressure will compensate for this condition but will cause reduced traction. Consult your tire dealer if this problem occurs.
6. If higher load capacities are needed, contact your John Deere dealer for tire manufacturers load and inflation table information.

NOTE: For tire inflation pressure refer to *Tire Inflation Pressure Charts in Wheels, Tires and Treads* section.

JZ81662,0000497 -19-26OCT11-1/1

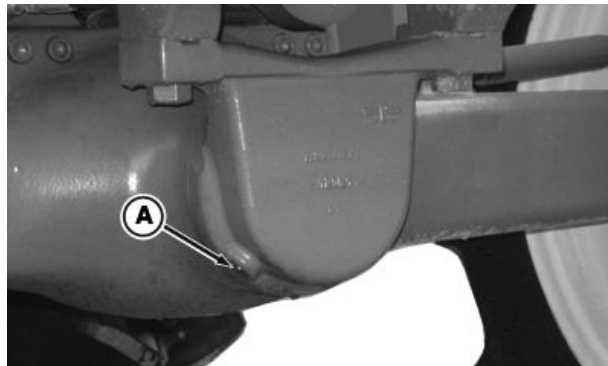
Lubricate MFWD Axle Trunnion

Apply several shots of multi-purpose grease (see Grease, in Section 85) to trunnion.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—Trunnion grease points



Front side trunnion of MFWD axle



Back side trunnion of MFWD axle

SH20560,00002CA -19-18MAR09-1/1

PUPX000109 —UN—13MAR09

PULV000606 —UN—19MAR08

Lubricate Steering Spindles and Steering Cylinder Ends—Adjustable Front Axle

Apply several shots of general-purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to steering spindle and cylinder end grease point.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—Lubrication Point



RXA0112694 —UN—14DEC10

SH20560,00002E3 -19-14DEC10-1/1

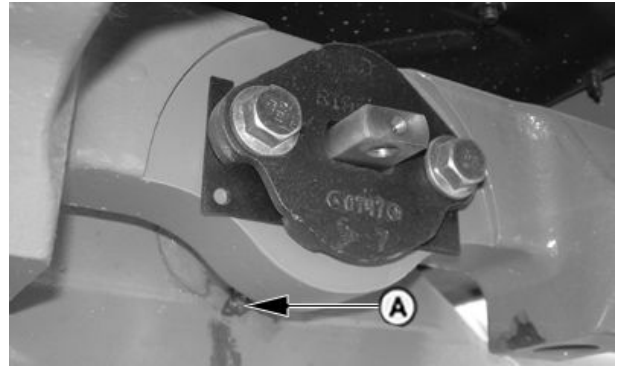
Lubricate Axle Pivot Point—2WD

Apply several shots of general purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to 2WD axle pivot point.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—2WD Grease Point



PULV000173 —UN—15NOV07

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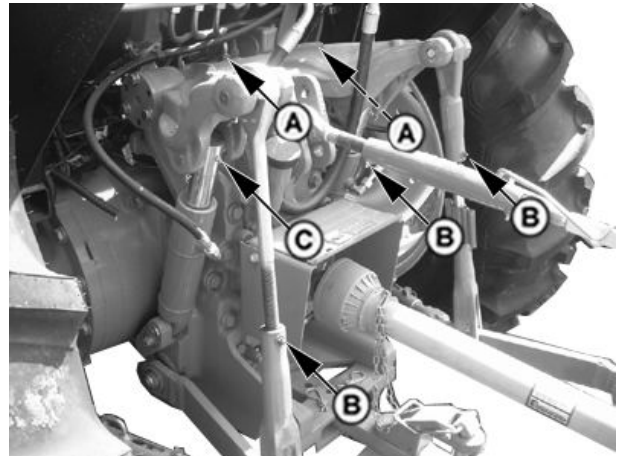
Lubricate Hitch Linkage and Hitch Bushing

Apply several shots of general purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to hitch linkage and hitch bushing.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—Hitch Bushing Grease Point C—Lift Cylinder Grease Point
B—Hitch Linkage Grease Point



Rear Side View

PULV000656 —UN—05MAY08

SH20560,00002CC -19-25APR08-1/1

Inspect Tractor for Loose Hardware

Tighten all wheel bolts and adjustable front axle to front support cap screws.



PULV000607 —UN—19MAR08

MK41968,000023D -19-08MAY08-1/1

Maintenance—First 100 Hours

Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere **DIESEL ENGINE BREAK-IN OIL**. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If tractor is used under light load conditions during first 100 hours, refill with **DIESEL ENGINE BREAK-IN OIL** for an additional 100 hours to allow engine to break in properly.

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
 2. PARK tractor on level ground and SHUT OFF engine. Remove key.
 3. Remove oil drain plug (A) and drain oil.
 4. Open hood.
 5. Remove engine oil filter (B).
- NOTE: Make sure old filter gasket is completely removed from housing before installing new filter.*
6. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
 7. Install drain plug (A).
 8. Add oil to filler (C). (See Diesel Engine Oil in section 85 Fuel, Lubricants and Coolant.)

Specification

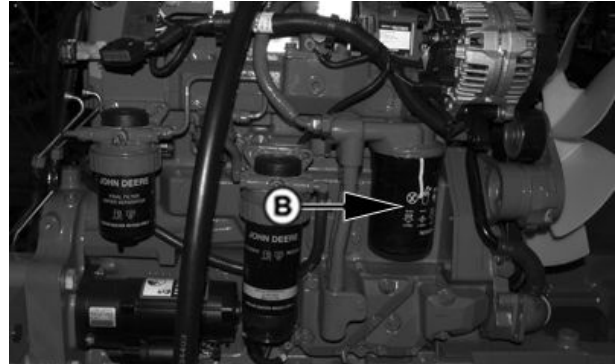
Engine Crankcase
Oil—Capacity..... 13 L
(3.5 gal)

9. Start engine and keep running for some time.
10. SHUT OFF engine.
11. Inspect drain plug (A) and filter (B) for leaks.

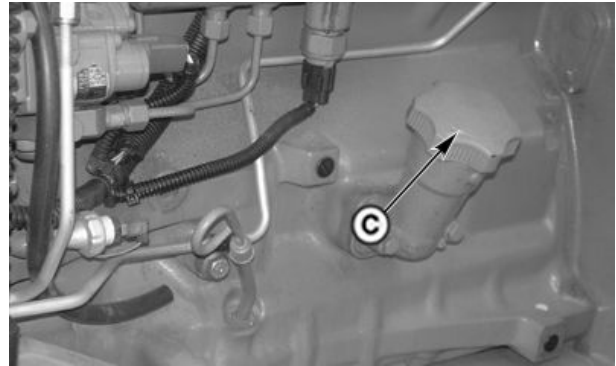
NOTE: If oil leaks in excess see your John Deere dealer.

12. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Right Side View



Left Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

13. Lower hood.

NOTE: 5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

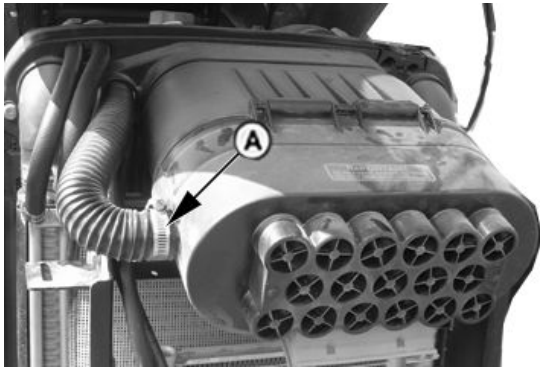
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PULV000608 —UN—19MAR08

PULV000021 —UN—26OCT07

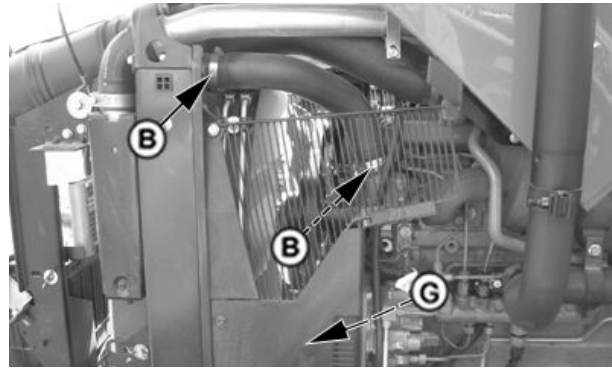
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Tighten Air Intake System and Engine Cooling System Hose Clamps



Air Cleaner

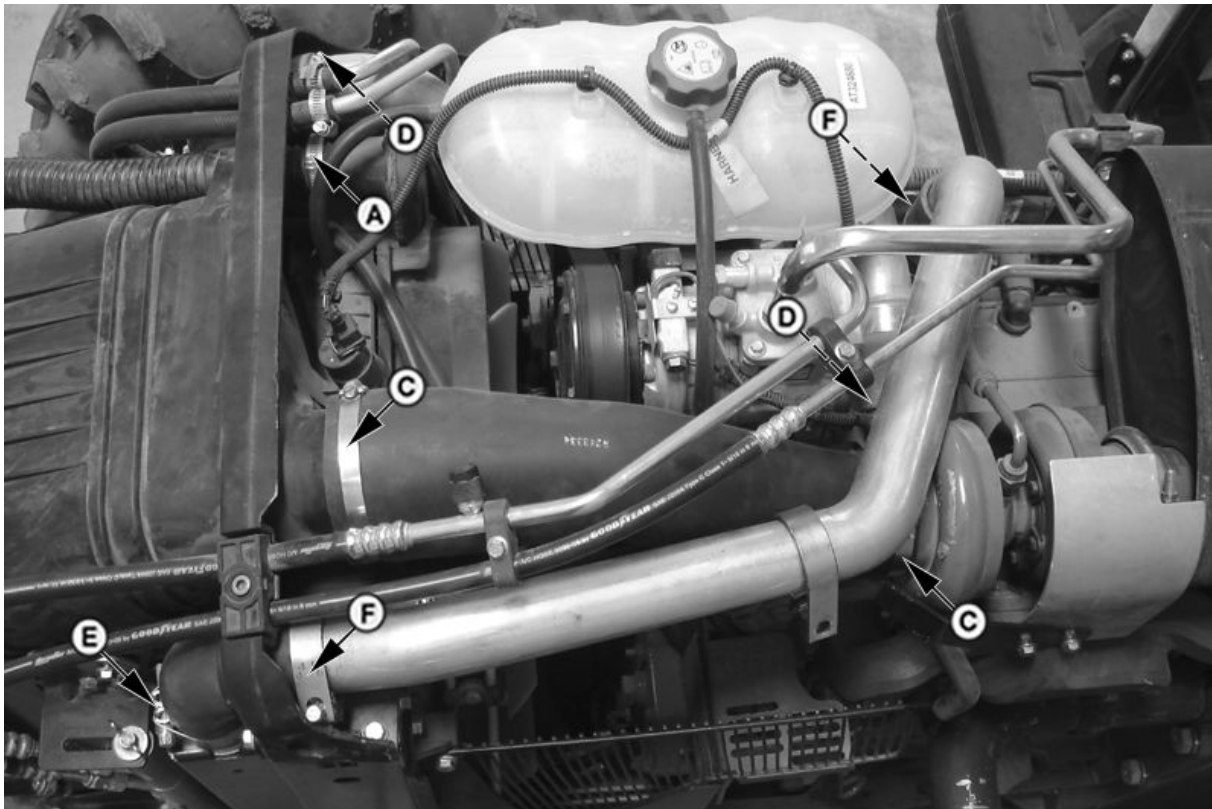
PULV000174—UN—15NOV07



Left Side View

PULV000610—UN—19MAR08

SH20560,0000046 -19-22SEP08-1/2



Top View

PULV000609—UN—19MAR08

- | | | |
|--|--|--|
| A—Air Aspirator Hose Clamp | C—Air Cleaner to Turbocharger Hose Clamp | E—Charge Air Cooler Outlet Hose Clamp |
| B—Engine to Radiator Cooling System (Radiator Supply) Hose Clamp | D—Turbocharger to Charge Air Cooler Hose Clamp | F—Engine Intake Hose Clamp |
| | | G—Radiator to Engine Cooling System (Water Pump Supply) Hose Clamp |

Inspect hose clamps of air intake system and engine cooling system for loose and tighten if found.

SH20560,0000046 -19-22SEP08-2/2

Inspect Tractor for Loose Hardware

Tighten all wheel bolts and adjustable front axle to front support cap screws.



PULV000607 —UN—19MAR08

MK41968,000023D -19-08MAY08-1/1

Maintenance—First 300 Hours

Change Engine Oil and Filter—5065M and 5075M

SERVICE INTERVAL

INITIAL — 300 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 300 hours of operation, fill with John Deere Plus-50™ oil. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
2. PARK tractor on level ground and SHUT OFF engine. Remove key.
3. Remove oil drain plug (A) and drain oil.
4. Open hood and remove engine oil filter (B).

IMPORTANT: Clean area around filler to prevent dirt from entering the system.

NOTE: Make sure that old filter gasket is removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug (A).
7. Add oil to filler (C) (See Diesel Engine Oil in section 85 Fuel, Lubricants, and Coolant.) and lower hood.

Specification

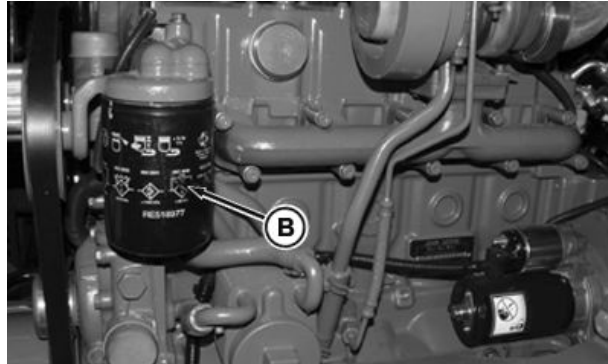
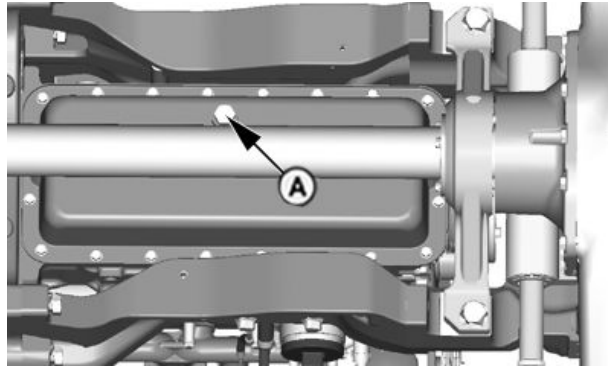
Engine Crankcase
Oil—Capacity..... 10 L
(2.6 gal)

8. Start engine and keep running for some time.
9. SHUT OFF engine.
10. Check drain plug (A) and filter for leaks.

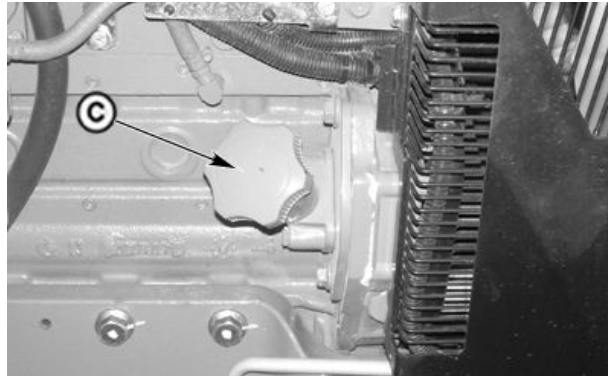
NOTE: If oil leaks in excess see your John Deere dealer.

11. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Left Side View



Right Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

12. Lower hood.

PULV000646—UN—26MAR08

PULV007315—UN—24NOV10

PULV000019—UN—26OCT07

AI68620,0000301 -19-25NOV10-1/1

Maintenance—Every 300 Hours

Change Engine Oil and Filter—5065M and 5075M

SERVICE INTERVAL

INITIAL — 300 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 300 hours of operation, fill with John Deere Plus-50™ oil. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
2. PARK tractor on level ground and SHUT OFF engine. Remove key.
3. Remove oil drain plug (A) and drain oil.
4. Open hood and remove engine oil filter (B).

IMPORTANT: Clean area around filler to prevent dirt from entering the system.

NOTE: Make sure that old filter gasket is removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug (A).
7. Add oil to filler (C) (See Diesel Engine Oil in section 85 Fuel, Lubricants, and Coolant.) and lower hood.

Specification

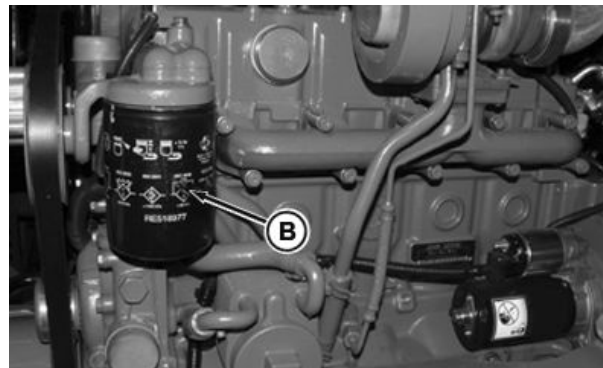
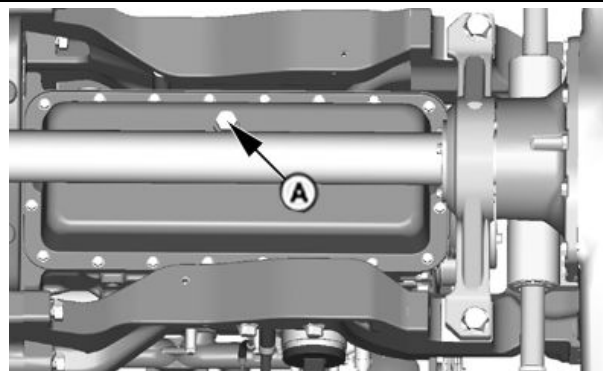
Engine Crankcase
Oil—Capacity..... 10 L
(2.6 gal)

8. Start engine and keep running for some time.
9. SHUT OFF engine.
10. Check drain plug (A) and filter for leaks.

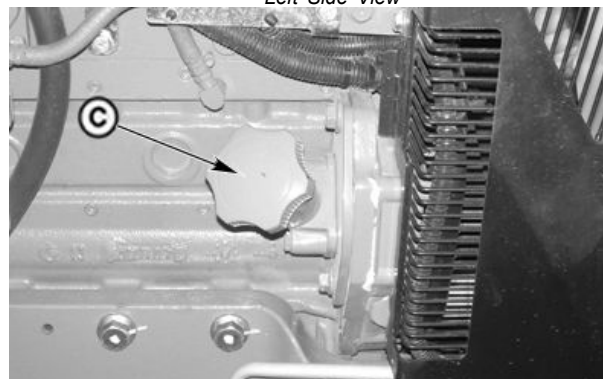
NOTE: If oil leaks in excess see your John Deere dealer.

11. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Left Side View



Right Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

12. Lower hood.

PULV000646 —UN—26MAR08

PULV007315 —UN—24NOV10

PULV000019 —UN—26OCT07

AI68620,0000301 -19-25NOV10-1/1

Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere **DIESEL ENGINE BREAK-IN OIL**. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If tractor is used under light load conditions during first 100 hours, refill with **DIESEL ENGINE BREAK-IN OIL** for an additional 100 hours to allow engine to break in properly.

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
2. PARK tractor on level ground and SHUT OFF engine. Remove key.
3. Remove oil drain plug (A) and drain oil.
4. Open hood.
5. Remove engine oil filter (B).

NOTE: Make sure old filter gasket is completely removed from housing before installing new filter.

6. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
7. Install drain plug (A).
8. Add oil to filler (C). (See Diesel Engine Oil in section 85 Fuel, Lubricants and Coolant.)

Specification

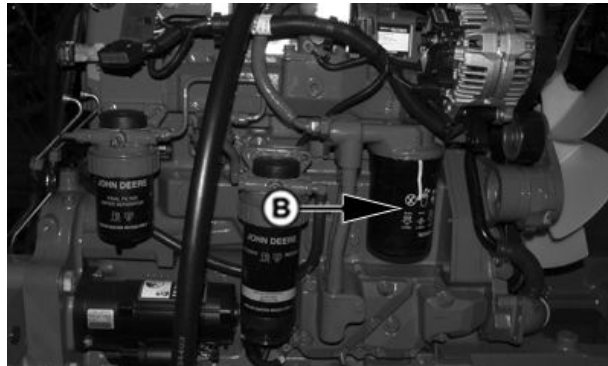
Engine Crankcase
Oil—Capacity..... 13 L
(3.5 gal)

9. Start engine and keep running for some time.
10. SHUT OFF engine.
11. Inspect drain plug (A) and filter (B) for leaks.

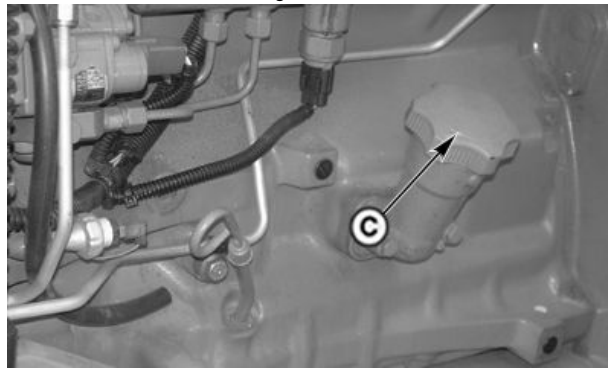
NOTE: If oil leaks in excess see your John Deere dealer.

12. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Right Side View



Left Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

13. Lower hood.

NOTE: 5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

SH20560,0000037 -19-07AUG09-1/1

PULV000608 —UN—19MAR08

PULV000021 —UN—26OCT07

PULV000016 —UN—26OCT07

Check MFWD Axle Housing Oil Level—If Equipped

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Remove check/fill plug (A). Oil level should be even with bottom of the fill plug hole.
3. If level is low, add oil through same hole. John Deere HY-GARD oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in section 85 Fuel, Lubricants, and Coolant.)

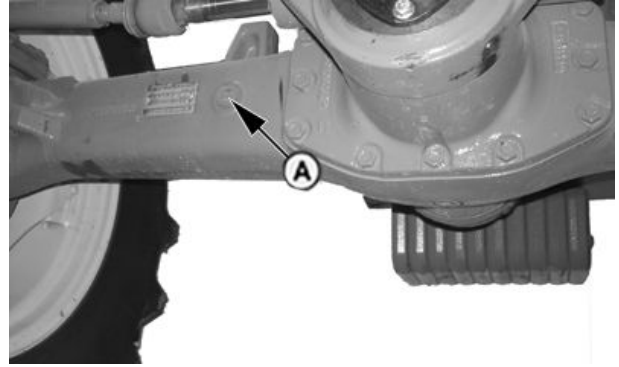
NOTE: Approximate MFWD axle housing oil capacity is 5 L (1.32 gal).

4. Apply TEFLON® or equivalent to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug to Axle
Housing—Torque.....70 N·m
(52 lb-ft)

TEFLON is a trademark of Du Pont Co.



A—Oil Level Check/Fill Plug

PULV000611—UN—19MAR08

SH20560,0000411 -19-22APR08-1/1

Check MFWD Axle Wheel Hub Oil Level—If Equipped

NOTE: 5065M, 5075M, 5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

1. Park tractor so that oil fill mark (A) on MFWD hub is level with the ground.
2. Remove fill plug (B). Oil level should be even with bottom of the fill plug hole.
3. If level is low, add oil through same hole. John Deere HY-GARD oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in section 85 Fuel, Lubricants, and Coolant.)

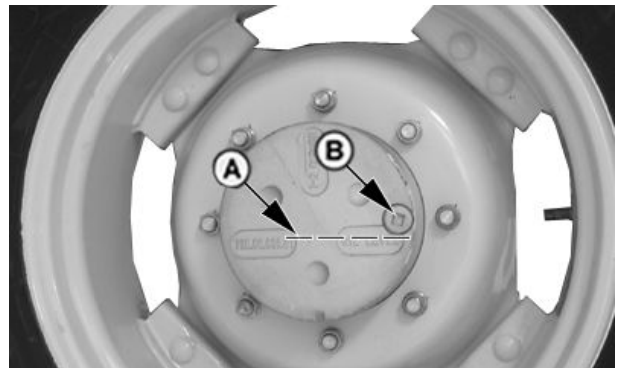
NOTE: Approximate MFWD wheel hub oil capacity is 0.8 L (0.2112 gal).

4. Apply TEFLON® or equivalent to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug-to-Hub—Torque.....70 N·m
(52 lb-ft)

TEFLON is a trademark of Du Pont Co.



Oil Fill Mark and Filler Plug

A—Oil Fill Mark

B—Oil Fill Plug

PULV000612—UN—19MAR08

AJ20558,00002B7 -19-19JUN09-1/1

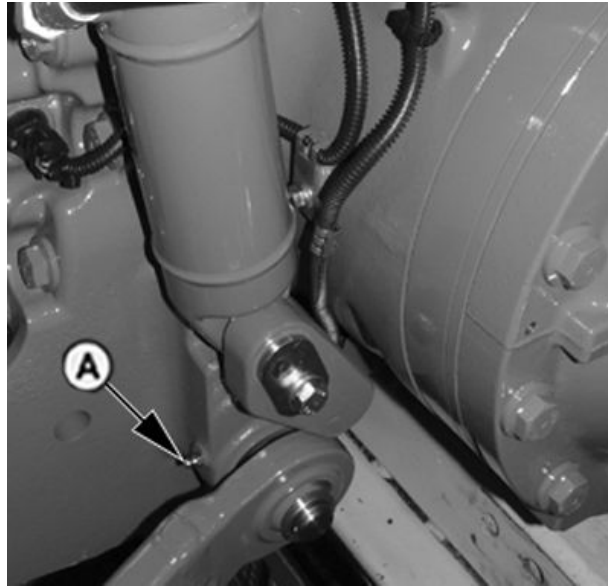
Lubricate Draft Sensing Shaft Seal

NOTE: Grease point on right side of PTO housing shown, similar present on left side.

Apply several shots of general purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to draft sensing shaft grease point (A).

NOTE: Service more often if operated in extremely wet and muddy conditions.

A—Grease Point



Right Side of Hitch Shown

PULV007226 —UN—16NOV10

SH20560,0000057 -19-16NOV10-1/1

Clean and Check Battery Condition

⚠ 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:

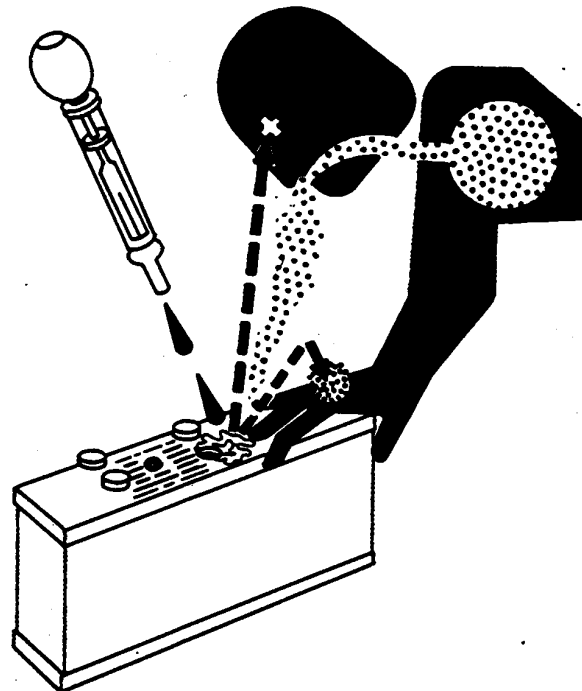
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.



TS203 —UN—23AUG88

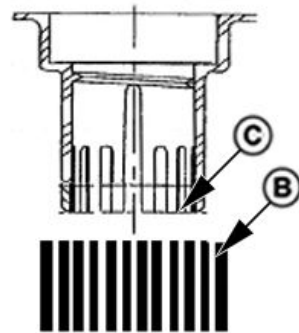
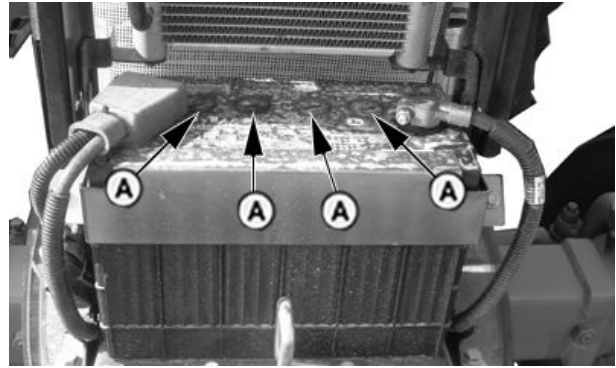
Continued on next page

SH20560,000003B -19-19SEP08-1/2

1. Check level of electrolyte in each cell (A) at least every 300 hours. Ensure that every cell has fluid level **HIGHER** than top of plates. Only use **CLEAN, SOFT** water to fill up electrolyte level.

IMPORTANT: DO NOT add water in freezing weather unless tractor will be run at least 30 minutes to assure thorough mixing.

2. Use a battery hydrometer to check specific gravity of electrolyte in each cell. Charge battery if reading is below 1.215. Replace battery if difference between cells is more than 0.050 or if battery will not charge above 1.225.
3. Always correct specific gravity reading for electrolyte temperature variation. Add 0.004 to the reading obtained in step one for every 10°F above 80°F (add 0.007 to the reading for every 10° above 27°C). Subtract at same rate if electrolyte temperature is below 80°F (27°C). Corrected specific gravity of a fully charged battery is from 1.265 to 1.280.
4. A battery is considered fully charged when three consecutive hydrometer readings, taken at hourly intervals, show no rise in specific gravity.
5. Wipe battery with a damp cloth. Clean and tighten connections if needed.
6. Coat terminals with a small amount of grease.



A—Cell
B—Plates

C—Electrolyte Level

SH20560,000003B -19-19SEP08-2/2

PULV000177 —UN—16NOV07

PULV000655 —UN—05MAY08

Drain and Flush Fuel Tank

Ask your John Deere dealer to drain and flush fuel tank.

SH20560,00002C6 -19-18MAR08-1/1

Maintenance—Every 500 Hours

Change Engine Oil and Filter—5065M and 5075M

SERVICE INTERVAL

INITIAL — 300 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 300 hours of operation, fill with John Deere Plus-50™ oil. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
2. PARK tractor on level ground and SHUT OFF engine. Remove key.
3. Remove oil drain plug (A) and drain oil.
4. Open hood and remove engine oil filter (B).

IMPORTANT: Clean area around filler to prevent dirt from entering the system.

NOTE: Make sure that old filter gasket is removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug (A).
7. Add oil to filler (C) (See Diesel Engine Oil in section 85 Fuel, Lubricants, and Coolant.) and lower hood.

Specification

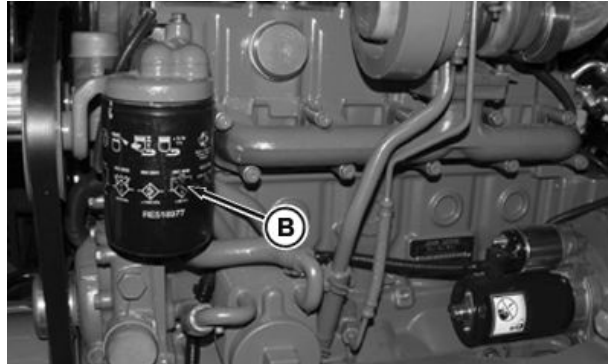
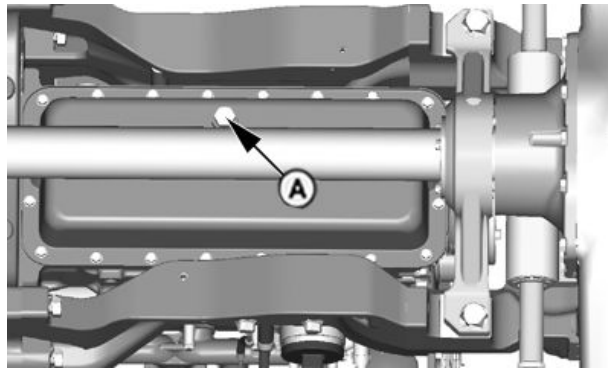
Engine Crankcase
Oil—Capacity..... 10 L
(2.6 gal)

8. Start engine and keep running for some time.
9. SHUT OFF engine.
10. Check drain plug (A) and filter for leaks.

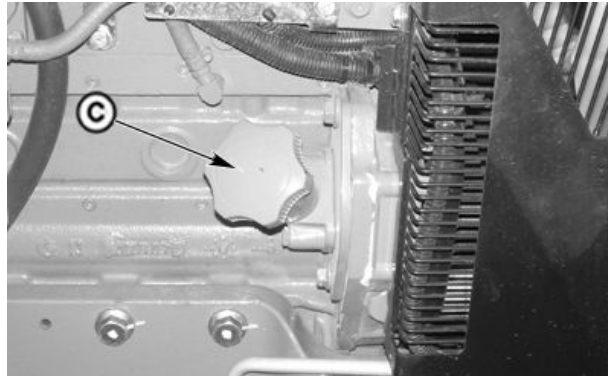
NOTE: If oil leaks in excess see your John Deere dealer.

11. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Left Side View



Right Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

12. Lower hood.

PULV000646—UN—26MAR08

PULV007315—UN—24NOV10

PULV000019—UN—26OCT07

AI68620,0000301 -19-25NOV10-1/1

Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere **DIESEL ENGINE BREAK-IN OIL**. (See section 85 Fuel, Lubricants, and Coolant for oil specifications.)

If tractor is used under light load conditions during first 100 hours, refill with **DIESEL ENGINE BREAK-IN OIL** for an additional 100 hours to allow engine to break in properly.

If diesel fuel has a high sulfur content, refer to **DIESEL ENGINE OIL** in section 85 Fuel, Lubricants, and Coolant.

1. Operate engine to warm oil.
 2. PARK tractor on level ground and SHUT OFF engine. Remove key.
 3. Remove oil drain plug (A) and drain oil.
 4. Open hood.
 5. Remove engine oil filter (B).
- NOTE: Make sure old filter gasket is completely removed from housing before installing new filter.*
6. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
 7. Install drain plug (A).
 8. Add oil to filler (C). (See Diesel Engine Oil in section 85 Fuel, Lubricants and Coolant.)

Specification

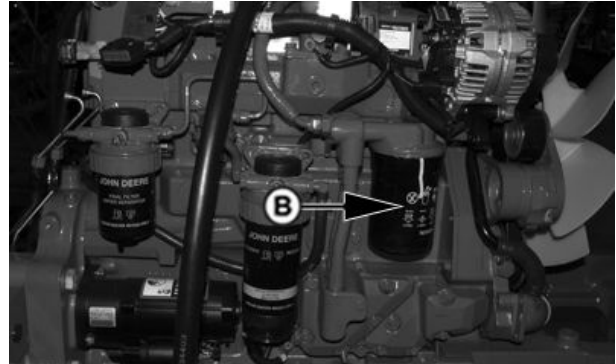
Engine Crankcase
Oil—Capacity..... 13 L
(3.5 gal)

9. Start engine and keep running for some time.
10. SHUT OFF engine.
11. Inspect drain plug (A) and filter (B) for leaks.

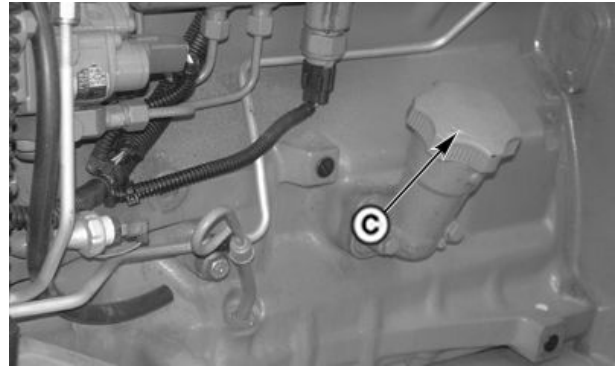
NOTE: If oil leaks in excess see your John Deere dealer.

12. Recheck oil level, add if necessary.

Plus-50 is a trademark of Deere & Company



Right Side View



Left Side View

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Crankcase Filler

13. Lower hood.

NOTE: 5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

SH20560,0000037 -19-07AUG09-1/1

PULV000608 —UN—19MAR08

PULV000021 —UN—26OCT07

PULV000016 —UN—26OCT07

Replace Fuel Filter—5065M and 5075M

IMPORTANT: Be sure characteristics of new filter match the original filter.

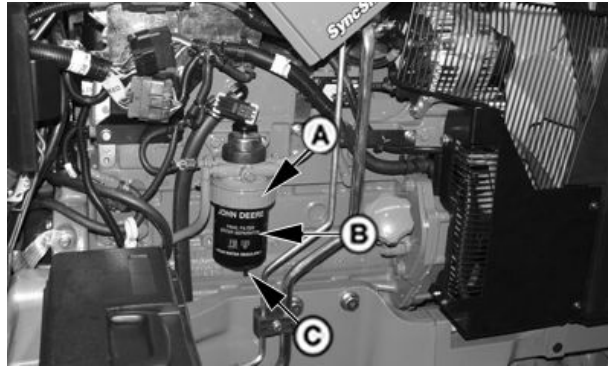
1. PARK tractor on level ground and SHUT OFF engine. Remove key. Let engine to cool.

2. Raise hood.

3. Open drain plug (C) and drain fuel.

NOTE: Place suitable sized collection container under fuel drain. Dispose of waste properly.

4. Lift up and rotate retaining ring (A) counterclockwise. Remove ring with fuel filter (B).
5. Install new filter assembly. Tighten retaining ring hand-tight.
6. Bleed the fuel system. (See Bleed Fuel System—5065M and 5075M in Section 75.)
7. Start engine and keep running for some time.
8. SHUT OFF engine.



A—Retaining Ring
B—Fuel Filter

C—Drain Plug

9. Inspect drain plug (C) and filter (B) for leaks.
10. Lower hood.

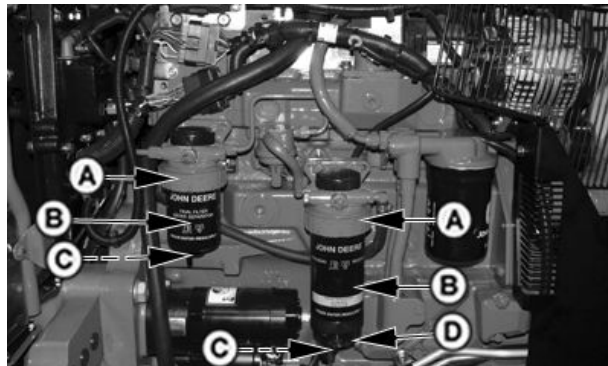
SH20560,000041D -19-17JUL08-1/1

PULV000616—JUN—19MAR08

Replace Fuel Filter—5085M, 5095M, 5095MH, 5105M and 5105ML

IMPORTANT: Be sure characteristics of new filter match the original filter.

1. Place tractor in PARK and SHUT OFF engine. Remove key. Let engine to cool.
2. Raise hood.
3. Open drain plug (C) and drain fuel.
4. Lift up and rotate retaining ring (A) counterclockwise. Remove ring with filter (B).
5. Remove water separator bowl (D) from pre-filter.
6. Clean separator. Dry with compressed air. Install water separator bowl (D) on new filter.
7. Install new filter assembly. Tighten retaining ring hand-tight.
8. Bleed the fuel system. (See Bleed Fuel System—5085M, 5095M, 5095MH, 5105M and 5105ML in Section 75.)
9. Start engine and keep running for some time.
10. SHUT OFF engine.



A—Retaining Ring
B—Fuel Filter

C—Drain Plug
D—Water Separator Bowl

11. Inspect drain plug (C) and filter (B) for leaks.
12. Lower hood.

NOTE: Two fuel filters (B) are different, do not interchange. Replace one after another to avoid interchange.

AI68620,0000302 -19-25NOV10-1/1

PULV007316—JUN—24NOV10

Maintenance—Every 600 Hours

Check Neutral Start System

Tractor is equipped with interlocks to prevent inadvertent movement when engine is cranked to start.

Transmission Controls

1. Depress clutch pedal and brake pedals.
2. Place speed shift lever (A) in any position EXCEPT neutral or park.

If equipped with reverser, place reverser lever (B) or (C) into forward or reverse direction position.
3. Attempt to start engine. If engine starts when transmission controls are not in neutral or park position, neutral start system should be repaired. See your John Deere dealer **immediately**.

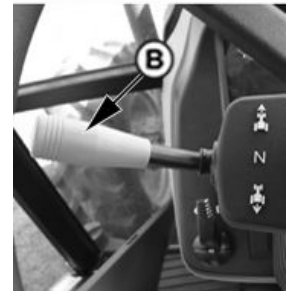
Engine should start in NEUTRAL or PARK positions only.

A—Speed Shift Lever
B—PowrReverser™ Lever

C—SyncReverser™ Lever



PULV000020 —UN—26OCT07



PULV000038 —UN—26OCT07



PULV000037 —UN—26OCT07

Continued on next page

SH20560.000003C -19-05JAN10-1/2

PTO Controls

1. Depress clutch pedal and brake pedals.
2. Place transmission speed shift lever in NEUTRAL or PARK position.

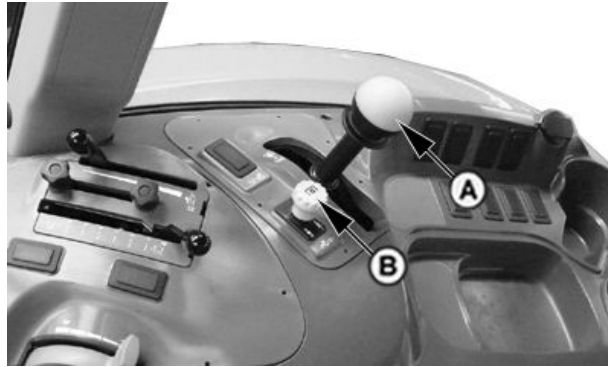
IMPORTANT: Do NOT move lever (A) with PTO engaged.

3. If equipped, place shiftable PTO speed lever (A) into any position.
4. Place PTO engagement switch (B) in engaged position.
5. Start engine. Engine will start but PTO will not rotate. If PTO rotates in any position, neutral start system should be repaired. See your John Deere Dealer **immediately**.

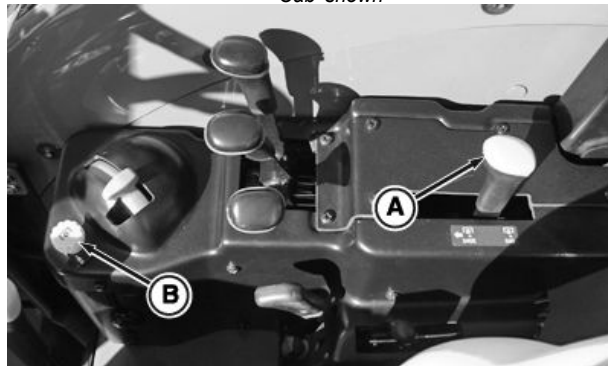
CAUTION: Do not leave seat with engine running and PTO engaged. PTO will not disengage automatically, but provide audible alarm for approximately 8 seconds.

A—540/540E PTO Lever

B—PTO Engagement Switch



Cab shown



5105ML Shown

SH20560,000003C -19-05JAN10-2/2

PULV000074 —UN—10MAR08

PULV004676 —UN—16DEC09

Clean Cab Air Filters—If Equipped

CAUTION: The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.

A—Filter Cover—Upper Right Side Shown (Left Side Similar)

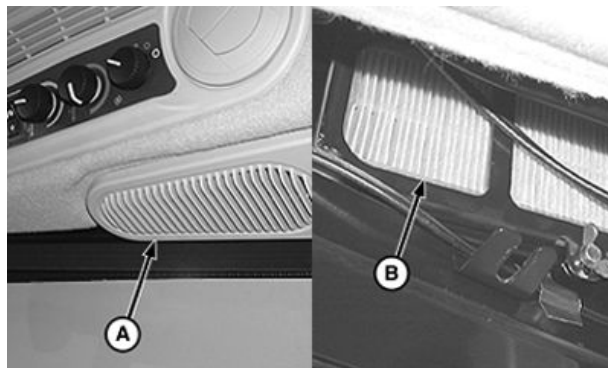
B—Recirculated Air Filters

C—Screws (2 used)

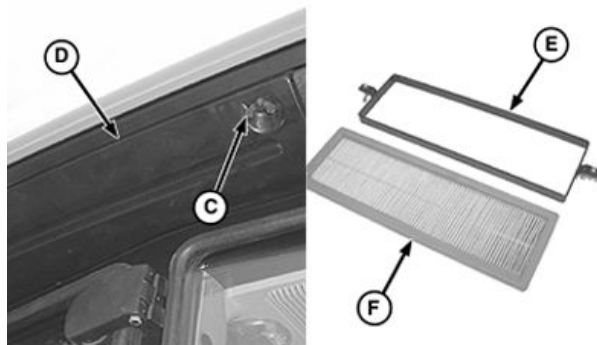
D—Filter Cover

E—Retainer Plate (2 used)

F—Fresh Air Filter (2 used)



Under Cab Headliner



Under Roof

SH20560,000003D -19-19SEP08-1/1

PULV000657 —UN—05MAY08

PULV000658 —UN—05MAY08

Service Air Cleaner Elements—5065M and 5075M

CAUTION: Dirty air cleaner element is indicated when air cleaner restriction indicator (A) illuminates. Dirty air cleaner results in loss of power or excessive smoke.

1. Open hood.

NOTE: Tap evacuator to expel dust from canister.

2. Remove latch (B), cover (C) and pull out primary air cleaner element.

IMPORTANT: If primary element does not pull out with ease, move side-to-side to remove safely. Do not remove secondary element of air cleaner unless you are replacing it.

3. When primary air cleaner element must be serviced in the field, tap it on the palm of your hand as a temporary measure.

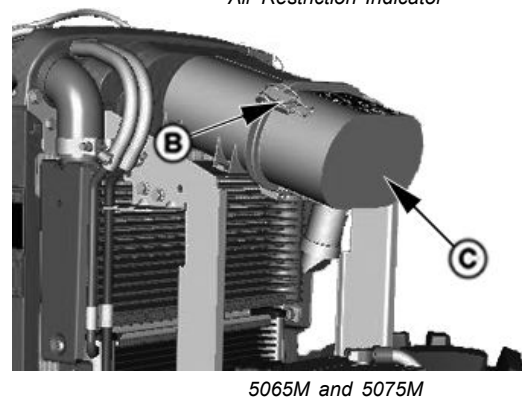
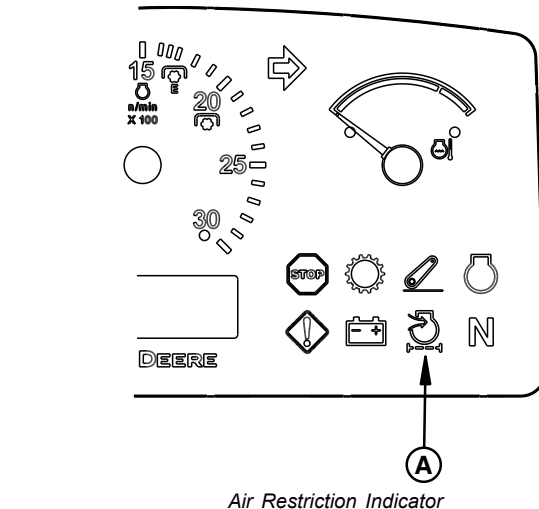
IMPORTANT: The guide ring must not be damaged or deformed.

CAUTION: High pressure compressed air or vibration may damage primary air cleaner element.

4. If tapping primary air cleaner element does not remove dust, blow out dust with low pressure compressed air. Do NOT exceed 600 kPa (6 bar [90 psi]). Blow air from engine end of element (guide ring) to outside air end. Do NOT insert nozzle into element material.
5. Replace both elements (primary and secondary) after they have been cleaned five times. Clean out and inspect canister interior before installing new elements.

IMPORTANT: Before installation, review decals on canister and primary cleaner.

6. Replace elements if core material or seals (both ends) are damaged, or if air cleaner restriction indicator remains illuminated after elements have been cleaned.
7. Install elements as necessary and latch cover.



A—Air Restriction Indicator C—Cover
B—Latch

8. Lower hood.

NOTE: If frequency of restriction increases, replace air cleaner elements.

Service air cleaner more often in extremely dusty condition.

SH20560,000003E -19-19SEP08-1/1

PULV000614—UN—19MAR08

PULV000651—UN—05MAY08

Change MFWD Axle Wheel Hub Oil—If Equipped

NOTE: 5065M, 5075M, 5085M, 5095M, 5095MH and 5105M shown, 5105ML similar.

1. Park tractor on level surface, with wheel rotated until drain/fill port plug (A) at bottom of hub.
2. Remove plug (A) and drain oil.
3. After oil has drained, move and park tractor so that "OIL LEVEL" mark at drain/fill port (A) is parallel to ground.
4. Add oil until it reaches level (B) at bottom of drain/fill plug (A). (See MFWD Axle Housing and Wheel Hub Oil in Section 85 Fuel, Lubricants and Coolants.)

NOTE: Approximate MFWD wheel hub oil capacity is 0.8 L (0.2112 gal).

5. Apply pipe sealant with TEFLON® or equivalent to threads of plug (A).
6. Install plug and tighten to specifications.

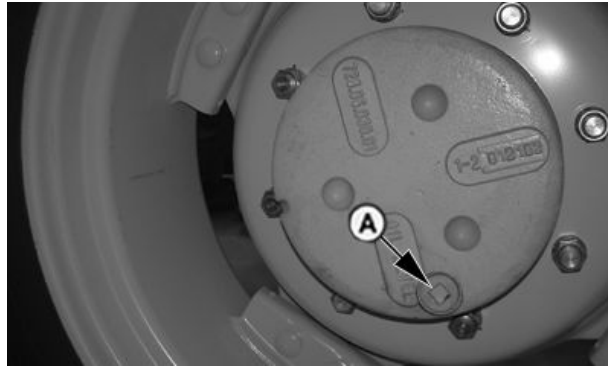
Specification

Plug to Hub—Torque..... 70 N·m (52 lb-ft)

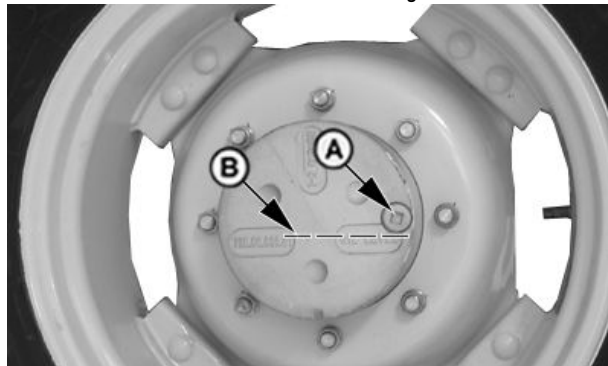
A—Drain/Fill Plug

B—Oil Level

TEFLON is a trademark of Du Pont Co.



Drain and Fill Plug



Oil Level

PULV000619—UN—19MAR08

PULV000620—UN—19MAR08

AJ20558,00002B8 -19-07JUL09-1/1

Change MFWD Axle Housing Oil—If Equipped

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Open both plugs (A and B).
3. After oil drained, apply TEFLON® or equivalent on threads of drain plug (B).
4. Install plug (B) and tighten to specifications.
5. Add oil until even with bottom of fill plug (A). (See MFWD Axle Housing and Wheel Hub Oil in Section 85 Fuel, Lubricants and Coolants.)

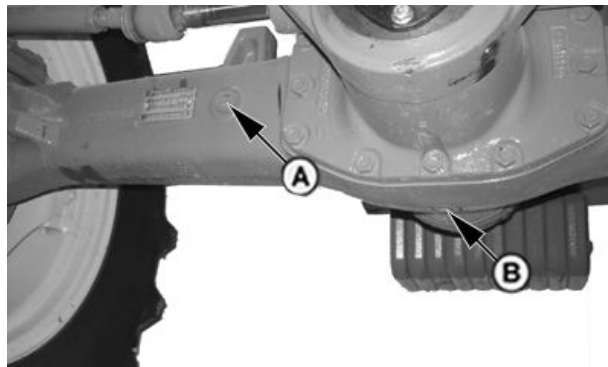
NOTE: Approximate MFWD axle housing oil capacity is 5 L (1.32 gal).

6. Apply TEFLON® or equivalent on threads of fill plug (A).
7. Install fill plug (A) and tighten to specification.

Specification

Plug to Housing—Torque..... 70 N·m (52 lb-ft)

TEFLON is a trademark of Du Pont Co.



A—Fill Plug

B—Drain Plug

PULV000621—UN—19MAR08

SH20560,0000040 -19-19SEP08-1/1

Clean Engine Crankcase Vent Tube

⚠ CAUTION: Reduce compressed air to less than 210 kPa (2 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment including eye protection.

Remove crankcase vent tube (A) from engine. Wash in solvent or blow clean with compressed air. Install vent tube to engine. Be sure that vent tube is not kinked or pinched.

A—Crankcase Vent Tube



5065M and 5075M—Right Side



5085M, 5095M, 5095MH, 5105M and 5105ML—Right Side

PULV000024 —UN—26OCT07

PULV000025 —UN—26OCT07

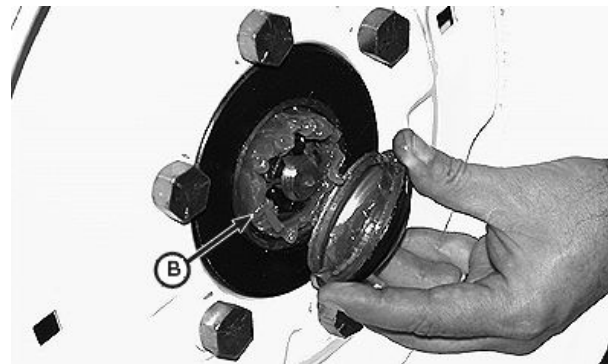
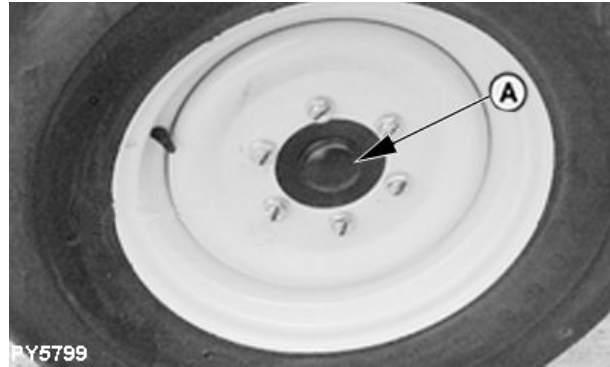
SH20560,0000041 -19-19JUN09-1/1

Pack Front Wheel Bearings—2WD

1. Park tractor on level ground, place transmission in park, SHUT OFF engine and remove key.
2. Block rear wheels.
3. Jack up front end of tractor.

CAUTION: Support tractor securely on stands before removing a wheel.

4. Remove hub cap (A), cotter pin and wheel nut.
5. Remove washer and wheel bearings. Clean all parts in solvent and blow dry with compressed air. Replace any worn or damaged parts.
6. Pack bearing with multipurpose grease (B). (See Grease in section 85 Fuel, Lubricants, and Coolant.) Coat seal with grease.
7. Install bearings, washer and wheel nut.
8. Tighten wheel nut until a slight drag is felt when hub is turned. Back nut off just enough to install cotter pin in hole in wheel spindle.
9. Install hub cap (A) and wheels. Tighten lug bolts to specification. Tighten bolts again after driving tractor 100 m (109 yd) and again after three hours and 10 hours of use.



A—Hub Cap

B—Multipurpose Grease

Specification

2WD Front Axle Wheel	
Bolt—Torque.....	175 N·m (130 lb-ft)

SH20560,0000042 -19-19SEP08-1/1

PY5799—UN—08JUN06

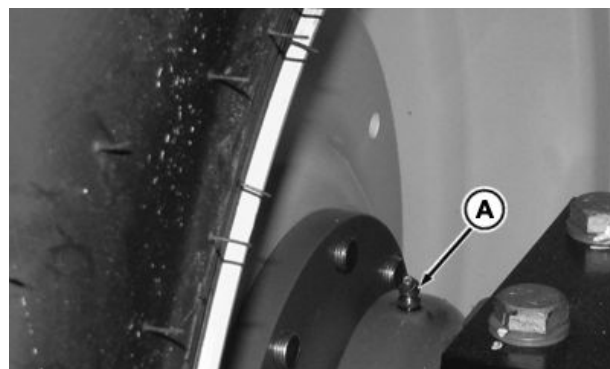
LV4411—UN—06OCT99

Lubricate Rear Axle Bearings

Lubricate rear axle grease point (A) with several shots of multipurpose grease. (See Grease in section 85 Fuel, Lubricants, and Coolant.)

NOTE: Service more often if operated in extremely wet and muddy conditions.

A—Grease Point



Right-hand side

SH20560,0000043 -19-16NOV10-1/1

PULV007225—UN—17NOV10

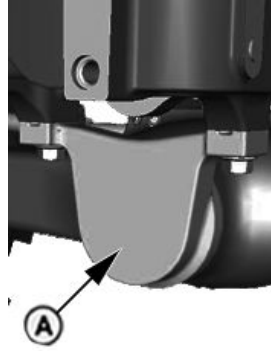
Check Front Axle Pivot Pin End Play

Ask your John Deere dealer to check the front axle pivot pin (A) for correct end play.

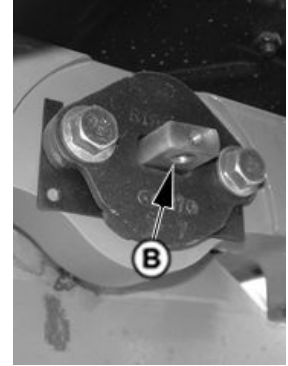
A—Front Axle Pivot
Pin—MFWD Axle

B—Front Axle Pivot
Pin—Adjustable Front Axle

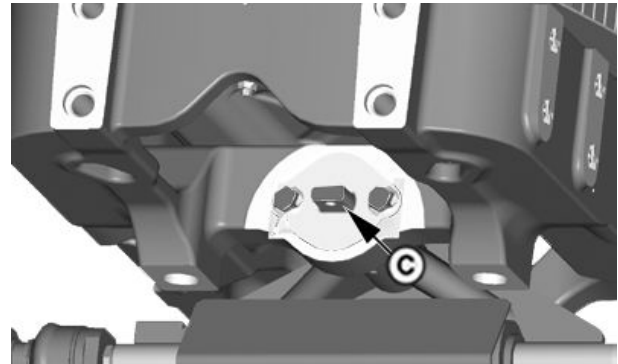
C—Front Axle Pivot
Pin—Adjustable Front Axle
(Hi-Crop)



PULV000652 —UN—05MAY08



PULV000030 —UN—26OCT07

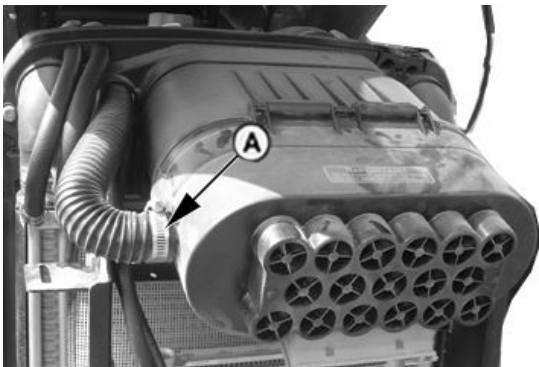


PULV000617 —UN—19MAR08

Adjustable Front Axle—5095MH Tractor

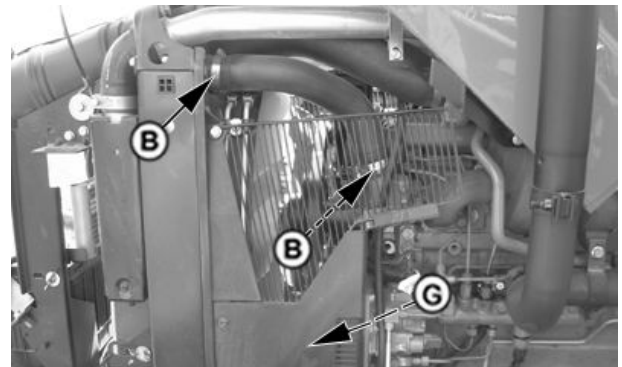
SH20560,0000044 -19-19SEP08-1/1

Tighten Air Intake System and Engine Cooling System Hose Clamps



Air Cleaner

PULV000174 —UN—15NOV07

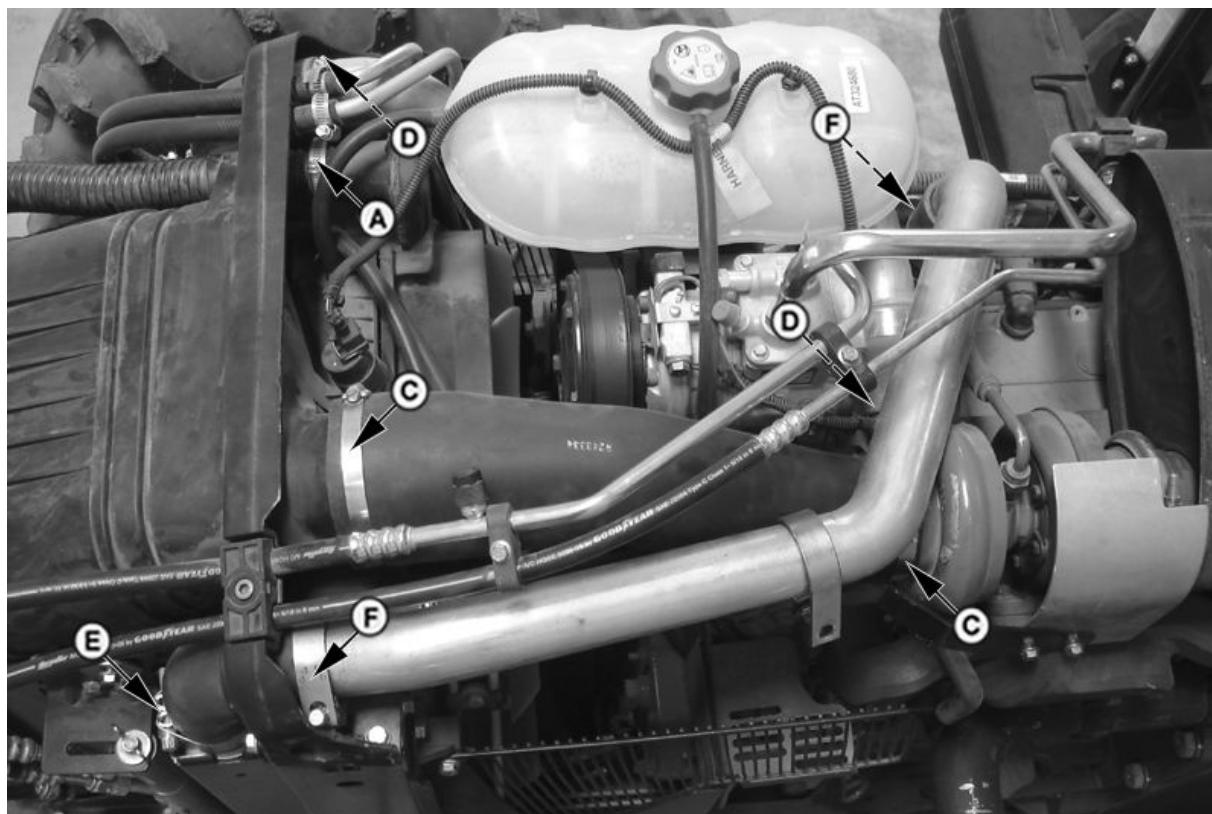


Left Side View

PULV000610 —UN—19MAR08

Continued on next page

SH20560,0000046 -19-22SEP08-1/2



Top View

A—Air Aspirator Hose Clamp
B—Engine to Radiator Cooling System (Radiator Supply) Hose Clamp

C—Air Cleaner to Turbocharger Hose Clamp
D—Turbocharger to Charge Air Cooler Hose Clamp

E—Charge Air Cooler Outlet Hose Clamp
F—Engine Intake Hose Clamp
G—Radiator to Engine Cooling System (Water Pump Supply) Hose Clamp

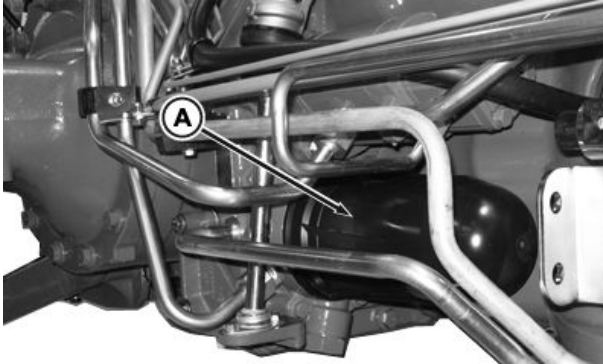
Inspect hose clamps of air intake system and engine cooling system for loose and tighten if found.

SH20560,0000046 -19-22SEP08-2/2

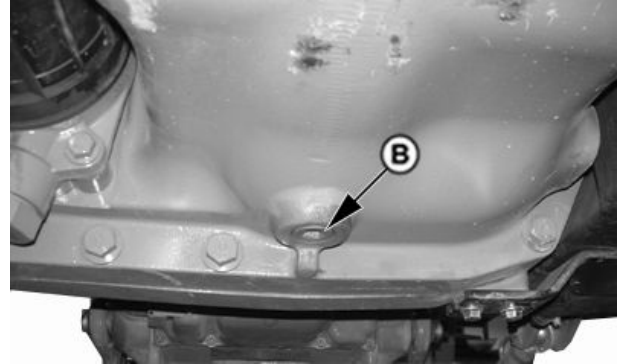
PULV000609—UN—19MAR08

Change Transmission-Hydraulic Oil and Filter

IMPORTANT: Use a drain pan to capture oil from reservoir and filter. Dispose of waste oil properly.



PULV004937 —UN—19JUN09



PULV000042 —UN—29OCT07

1. Lower rear hitch to remove trapped oil.
2. PARK tractor on level ground and SHUT OFF engine. Remove key.
3. Remove transmission-hydraulic drain plug (B). Drain out oil.
4. Remove transmission-hydraulic filter (A) from filter base.
5. Clean threads on filter base and on new filter with transmission-hydraulic oil.

IMPORTANT: DO NOT over tighten filter.

6. Apply oil to new filter seal and install filter (A). Tighten filter by hand, then tighten an additional 1/8 turn.
7. Install drain plug (B).
8. Fill system with transmission-hydraulic oil.

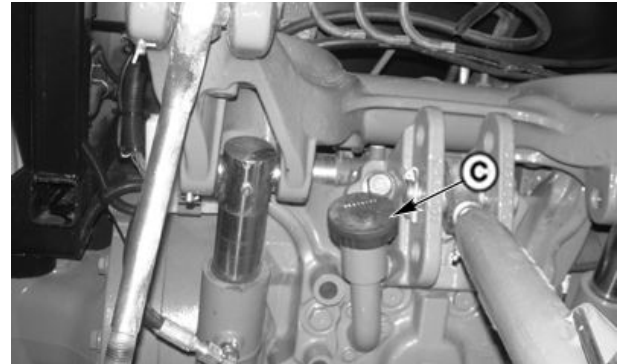
Specification

Transmission
Oil—Capacity..... 53 L (14 gal)

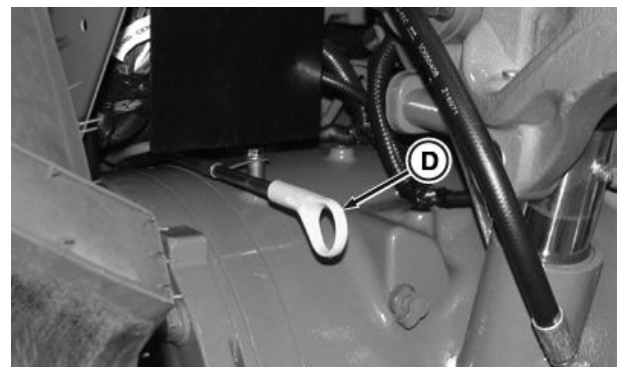
9. Check oil level with dipstick (D) after filling and again after operating for five minutes.

A—Transmission Oil Filter
B—Transmission Drain Plug

C—Transmission Oil Filler
D—Transmission Oil Dipstick



PULV000120 —UN—08OCT07



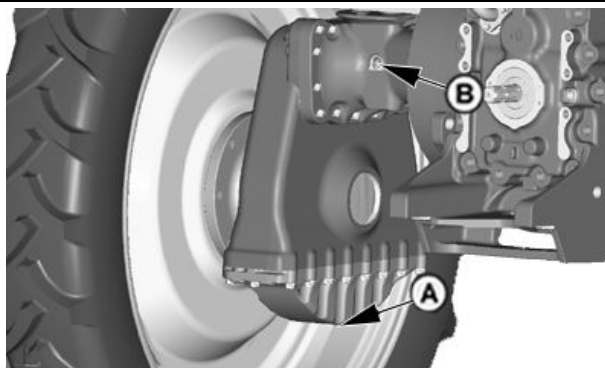
PUPX000170 —UN—30APR09

SH20560,0000047 -19-06FEB14-1/1

Maintenance—Every 1200 Hours

Change Hi-Crop Rear Axle Oil—5095MH

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Remove drain plug (A) and fill port (B). Drain oil into pan and dispose of waste oil properly.
3. Apply TEFLON® or equivalent on thread of drain plug (A).
4. Install drain plug (A).
5. Fill system with transmission-hydraulic oil. (See Transmission and Hydraulic Oil in Section 85.)



PULV000622—UN—19MAR08

Specification

Hi-Crop Drop Box

Oil—Capacity..... 18.5 L (4.89 gal)

6. Apply TEFLON® or equivalent on thread of fill port (B).
7. Install fill port (B).

TEFLON is a trademark of Du Pont Co.

A—Drain Plug

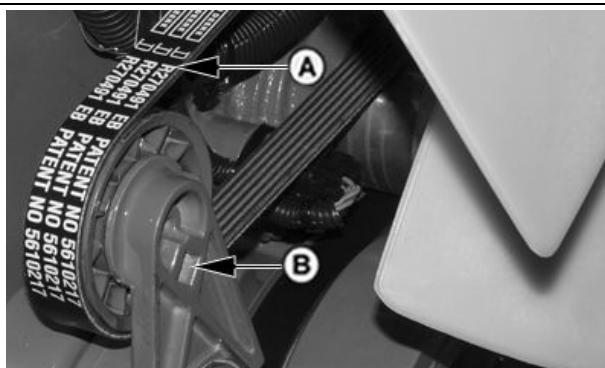
B—Fill Port

SH20560,0000048 -19-19SEP08-1/1

Inspect Fan Belt Tensioner—5065M and 5075M

NOTE: A belt tension gauge will not give an accurate measurement of the belt tension. Measure tensioner spring tension using a torque wrench.

1. Place tractor in PARK and SHUT OFF engine. Remove key.
2. Remove fan guard.
3. Remove fan belt. (Refer to Replace Fan Belt—5065M and 5075M in this section.)
4. Put a mark on tensioner swing arm.
5. Measure 21 mm (0.83 in.) from swing arm mark and make a mark on tensioner mounting base.
6. Rotate swing arm using a torque wrench installed at tensioner (B) [use a 3/8 in. drive inserted in square hole] until mark on swing arm aligns with mark on mounting base.
7. Record torque wrench measurement and compare with specification. If recorded measurement is below specifications, have your John Deere dealer replace tensioner assembly.



PULV000155—UN—29OCT07

A—Belt

B—Tensioner

Specification

Belt Tensioner—Torque..... 18—22 N·m
(159—195 lb·in.)

8. Install fan belt. (Refer to Replace Fan Belt—5065M and 5075M in this section.)
9. Install fan guard.

SH20560,0000049 -19-19SEP08-1/1

Replace Fan Belt—5065M and 5075M

NOTE: Fan drive belt is equipped with an automatic tensioner which does not require adjustment.

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Remove cap screws (A), two from bottom and one from left side of right fan guard.
3. Remove cap screw (B) from right wire-formed fan guard.

A—Cap Screw (3 used)

B—Cap Screw



Right Side

PULV000647—UN—26MAR08

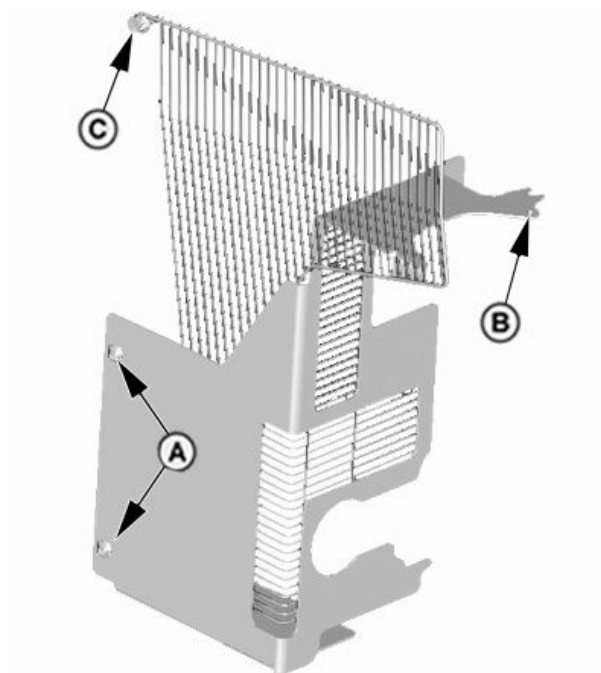
SH20560,000004A -19-19SEP08-1/3

4. Remove cap screws (A) from bottom of left fan guard.
5. Loosen cap screw (B) from left fan guard.
6. Remove cap screw (C) from left wire-formed fan guard.

A—Cap Screw (2 used)

C—Cap Screw

B—Cap Screw



Left Side

PULV000049—UN—29OCT07

Continued on next page

SH20560,000004A -19-19SEP08-2/3

7. Using a 3/8 in. drive breaker bar inserted in square hole (B) of tensioner, push tensioner in towards engine and release tension on fan belt (A). Remove fan belt from alternator pulley.
8. Release tension on tensioner and remove breaker bar.
9. Remove belt.
10. Install new belt in reverse order of removal.

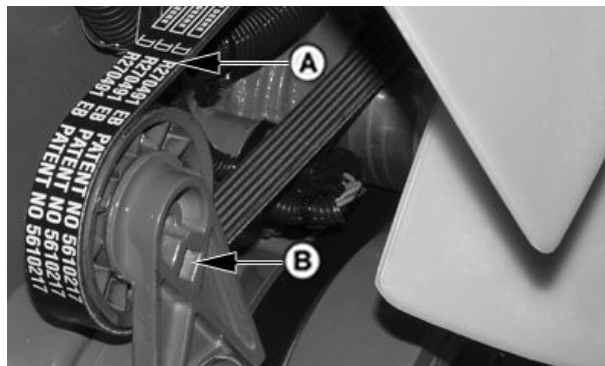
Belt Routing	
1	Alternator
2	Air Conditioning Compressor ^a
3	Idler
4	Crankshaft Pulley
5	Coolant Pump
6	Tensioner
7	Fan Drive

^aCab only.

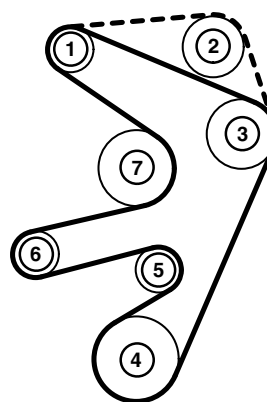
11. Use breaker bar to push tensioner into position for belt installation. (Refer to Inspect Fan Belt Tensioner—5065M and 5075M in this Section.)
12. Install left and right fan guards in reverse order of removal.

A—Fan Belt

B—Square Hole



Belt Tensioner



5065M and 5075M

PULV000155—UN—29OCT07

LV9586—UN—06AUG04

SH20560,000004A -19-19SEP08-3/3

Inspect Fan Belt Tensioner—5085M, 5095M, 5095MH, 5105M and 5105ML

NOTE: A belt tension gauge will not give an accurate measurement of the belt tension. Measure tensioner spring tension using a torque wrench.

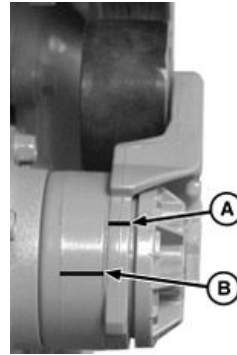
1. Place tractor in PARK and SHUT OFF engine. Remove key.
2. Remove fan guard.
3. Remove fan belt. (Refer to Replace Fan Belt—5085M, 5095M, 5095MH, 5105M and 5105ML in this section.)
4. Put a mark (A) on swing arm of tensioner as shown.
5. Measure 21 mm (0.83 in.) from (A) and put a mark (B) on tensioner mounting base.
6. Rotate the swing arm using a torque wrench until marks (A and B) are aligned.

PULL tensioner with torque wrench away from engine.

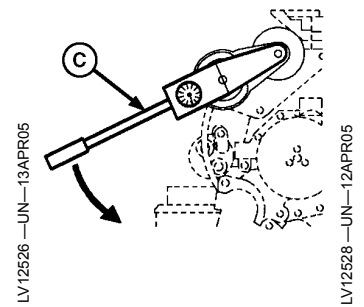
7. Record torque wrench measurement and compare with specification. If recorded measurement is below specifications, have your John Deere dealer replace tensioner assembly.

Specification

Belt Tensioner—Torque..... 18—22 N·m
(159—195 lb-in.)



A—Mark on Swing Arm
B—Mark on Tensioner Mounting Base



C—Torque Wrench

8. Install fan belt. (Refer to Replace Fan Belt—5085M, 5095M, 5095MH, 5105M and 5105ML in this section.)
9. Install fan guard.

SH20560,000004B -19-19JUN09-1/1

Replace Fan Belt—5085M, 5095M, 5095MH, 5105M and 5105ML

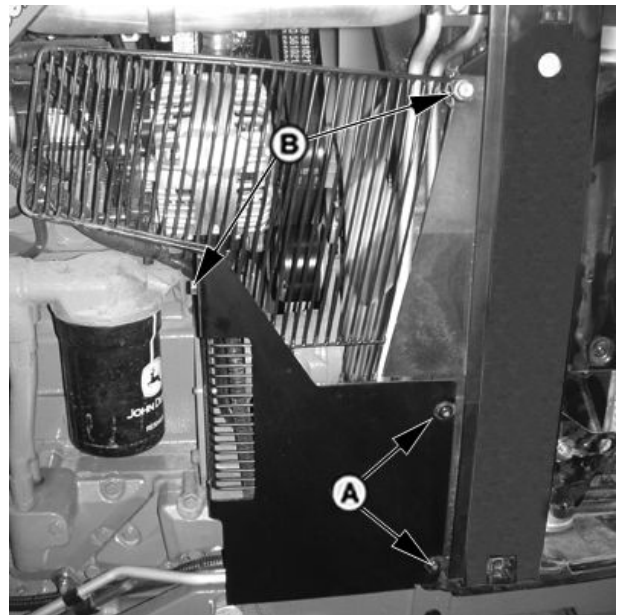
NOTE: Fan drive belt is equipped with an automatic tensioner which does not require adjustment.

IMPORTANT: Cab Tractors: DO NOT remove belt guard fastened to air conditioner compressor. Compressor will be loose if cap screws are removed.

1. Place tractor in PARK and SHUT OFF engine. Remove key.
2. Remove cap screws (A) from right fan guard.
3. Remove cap screws (B) from left side of right fan guard.
4. Remove two cap screws (B) from right wire-formed fan guard.

A—Cap Screw (2 used)

B—Cap Screw (2 used)



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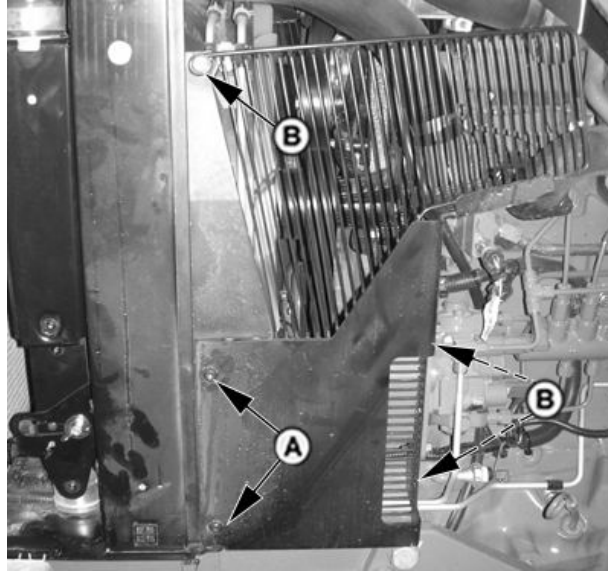
AI68620,0000303 -19-25NOV10-1/3

PULV004555 —UN—16JUN09

5. Remove cap screw (A) from left fan guard.
6. Remove cap screws (B) from right side of left fan guard.
7. Remove cap screw (B) from left wire-formed fan guard.

A—Cap Screw (2 used)

B—Cap Screw (3 used)



PULV000151—UN—29OCT07

AI68620,0000303 -19-25NOV10-2/3

8. Release tension on belt using a long-handle 1/2 in. drive breaker bar (B) to pull tensioner away from engine.
- Remove belt (A) from alternator pulley.
9. Release tension on tensioner and remove breaker bar.
10. Remove belt.
11. Install new belt in reverse order of removal.

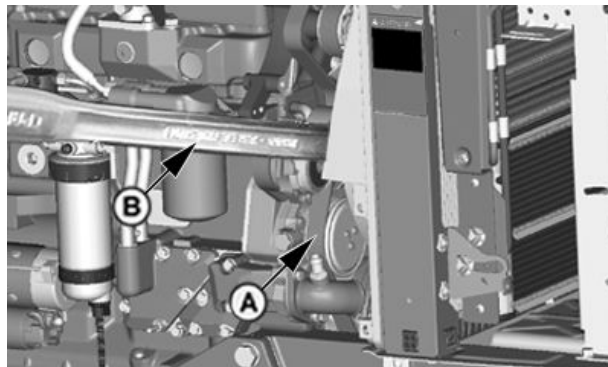
Belt Routing	
1	Alternator
2	Air Conditioning Compressor ^a
3	Idler ^a
4	Crankshaft Pulley
5	Coolant Pump
6	Tensioner
7	Fan Drive

^aCab only.

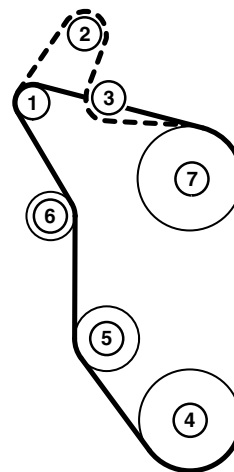
12. Use breaker bar to push tensioner into position for belt installation. (Refer to Inspect Fan Belt Tensioner—5085M, 5095M, 5095MH, 5105M and 5105ML in this section.)
13. Install left and right fan guards in reverse order of removal.

A—Belt

B—Breaker Bar



Remove Belt



5085M, 5095M, 5095MH, 5105M and 5105ML

PULV000623—UN—19MAR08

LV9587—UN—06AUG04

AI68620,0000303 -19-25NOV10-3/3

Service Air Cleaner Elements—5085M, 5095M, 5095MH, 5105M and 5105ML

CAUTION: Dirty air cleaner element is indicated when air cleaner restriction indicator (A) illuminates. Dirty air cleaner results in loss of power or excessive smoke.

1. Open hood.
2. Remove latch (B), cover (C) and pull out primary air cleaner element (D).

IMPORTANT: If primary element does not pull out with ease, move side-to-side to remove safely. Do not remove secondary element of air cleaner unless you are replacing it.

3. When primary air cleaner element (D) must be serviced in the field, tap it on the palm of your hand as a temporary measure.

IMPORTANT: The guide ring (E) must not be damaged or deformed.

CAUTION: High pressure compressed air or vibration may damage primary air cleaner element (D).

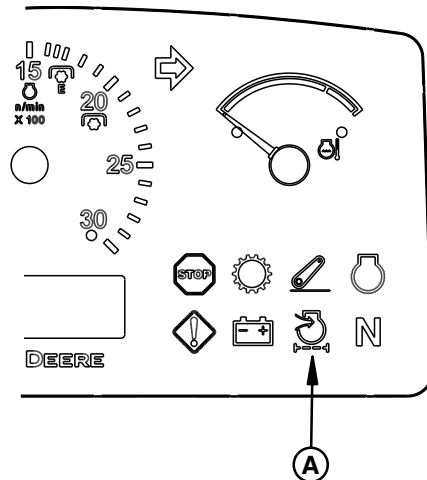
4. If tapping primary air cleaner element (D) does not remove dust, blow out dust with low pressure compressed air. Do NOT exceed 600 kPa (6 bar; 90 psi). Blow air from engine end of element (guide ring [E]) to outside air end. Do NOT insert nozzle into element material.
5. Replace both elements (primary and secondary) after they have been cleaned five times. Clean out and inspect canister interior before installing new elements.

IMPORTANT: Before installation, review decals on canister and primary cleaner.

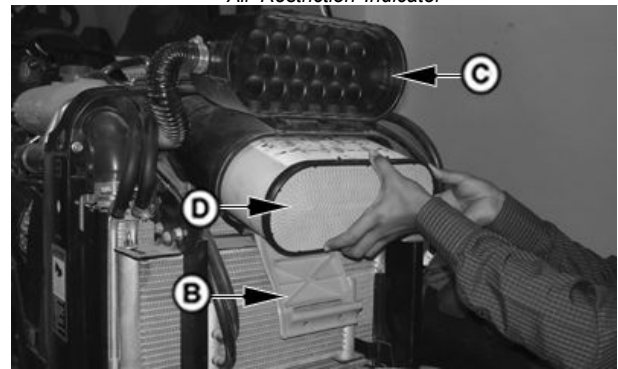
6. Replace elements if core material or seals (both ends) are damaged, or if air cleaner restriction indicator remains illuminated after elements have been cleaned.
7. Install elements as necessary and latch cover.
8. Lower hood.

NOTE: If frequency of restriction increases, replace air cleaner elements.

Service air cleaner more often in extremely dusty condition.



Air Restriction Indicator



5085M, 5095M, 5095MH, 5105M and 5105ML



A—Air Restriction Indicator
B—Latch
C—Cover

D—Primary Air Cleaner Element
E—Guide Ring

AJ20558,00002B9 -19-19JUN09-1/1

PULV000614—UN—19MAR08

PULV000615—UN—19MAR08

PULV000650—UN—05MAY08

Maintenance—Annually

Clean Cab Air Filters—If Equipped

CAUTION: The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.

A—Filter Cover—Upper Right Side Shown (Left Side Similar)

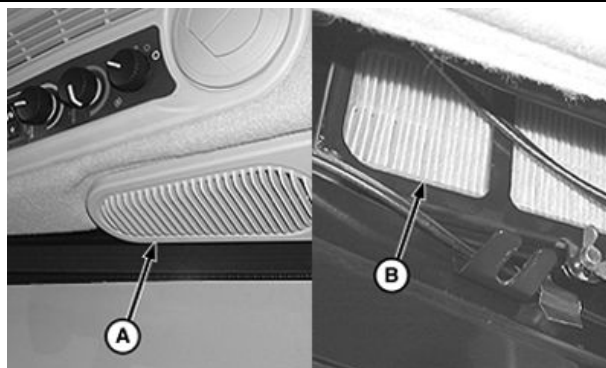
B—Recirculated Air Filters

C—Screws (2 used)

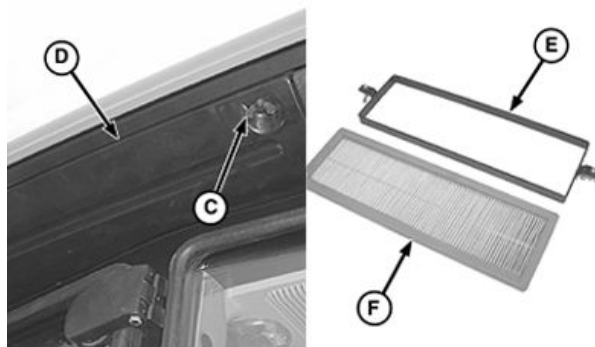
D—Filter Cover

E—Retainer Plate (2 used)

F—Fresh Air Filter (2 used)



Under Cab Headliner



Under Roof

PULV000657 —JUN—05MAY08

PULV000658 —JUN—05MAY08

SH20560,000003D -19-19SEP08-1/1

Lubricate PTO Stub Shaft—1000 RPM Option

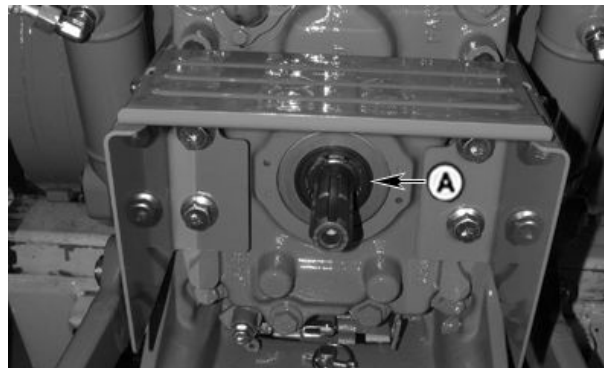
1. Place tractor in PARK position and SHUT OFF engine. Remove key.

IMPORTANT: Be sure PTO driveline is stopped before making adjustments, connection or cleaning out PTO driven equipment.

Allow PTO shaft to cool before changing, it may be hot due to operation. To avoid injury, wear gloves and safety glasses.



2. Remove the snap ring (A) with the PTO shaft (B). If the 6-splined end is facing out, align the snap ring ends with the access flat first.
3. Clean PTO shaft thoroughly and coat with grease. Make sure end bore (C) is clean.
4. Insert PTO shaft back into PTO housing:
 - If the 6-splined end (540 rpm) needs to face out, put the snap ring in the groove of the shaft. Align the ends to the access flat before the shaft is in PTO housing. Move the shaft with the snap ring in PTO housing until the snap ring snaps into the groove.
 - If the 21-splined end (1000 rpm) needs to face out, the snap ring can be assembled after the PTO shaft is inserted PTO housing.



A—Snap Ring
B—Stub Shaft

C—Bore



SH20560,00002B9 -19-14JUL08-1/1

Check Engine Coolant Properties

NOTE: Coolant replacement period is after three years or 3000 hours thereafter. It can be extended to six years or 6000 hours thereafter if coolant is checked annually and replaced by COOL-GARD™ II.

COOL-GARD is a trademark of Deere & Company

Ask your John Deere dealer to check engine coolant properties. (Refer to Diesel Engine Coolant, in Section 85.)

SH20560,0000431 -19-03APR09-1/1

Inspect Seat Belt

⚠ CAUTION: If the seat belt system, including the mounting hardware, buckle, belt, or retractor shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloring or abrasion, the entire seat belt system should be replaced immediately. Replace the belt system only with replacement parts approved for your machine.

Inspect seat belt (A) and mounting hardware. If seat belt needs to be replaced, see your John Deere dealer.

A—Seat Belt



Cab

PULV000224—JUN—06MAR08

SH20560,00001A7 -19-27AUG09-1/1

Maintenance—Every 2000 Hours

Adjust Engine Valve Clearance—5085M, 5095M, 5095MH, 5105M and 5105ML

Have your John Deere dealer check and adjust engine valve clearance.

SH20560,00002BF -19-19JUN09-1/1

Test Injection Nozzles—5085M, 5095M and 5095MH

Have your John Deere dealer check and adjust fuel injection nozzles.

SH20560,00002BB -19-21APR08-1/1

Maintenance—First 3 Years or 3000 Hours

Flush Cooling System and Replace Thermostat

IMPORTANT: Service interval can be extended to six years or 6000 hours thereafter if tractor coolant has been checked annually and serviced with pre-diluted John Deere COOL-GARD™ II.

COOL-GARD is a trademark of Deere & Company

Have your John Deere dealer drain old coolant, flush the entire system, install new thermostat and fill with clean antifreeze solution after first three years and after every 3000 hours of operation.

SH20560,00002BC -19-03APR09-1/1

Maintenance—First 5 Years or 4500 Hours

Replace Engine Crankshaft Damper—5065M and 5075M

Ask your John Deere dealer to replace engine crankshaft damper.

SH20560,0000435 -19-30MAY08-1/1

Flush Cooling System and Replace Thermostat

Have your John Deere dealer drain old coolant, flush the entire system, install new thermostat and fill with clean

COOL-GARD is a trademark of Deere & Company

¹If coolant is checked annually and replaced by COOL-GARD™ II.

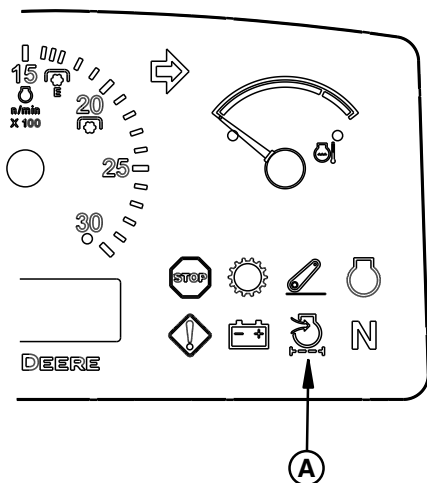
antifreeze solution COOL-GARD™ II after first six years or after every 6000 hours¹ of operation.

SH20560,0000436 -19-02JUN08-1/1

Maintenance—As Required/Per Condition

Service Engine Air Cleaner

CAUTION: Dirty air cleaner element is indicated when air cleaner restriction indicator (A)



Air Restriction Indicator

1. Open hood.

NOTE: For 5065M and 5075M: Tap evacuator to expel dust from canister.

2. Remove latch (B), cover (C) and pull out primary air cleaner element (D).

IMPORTANT: If primary element does not pull out with ease, move side-to-side to remove safely. Do not remove secondary element of air cleaner unless you are replacing it.

3. When primary air cleaner element (D) must be serviced in the field, tap it on the palm of your hand as a temporary measure.

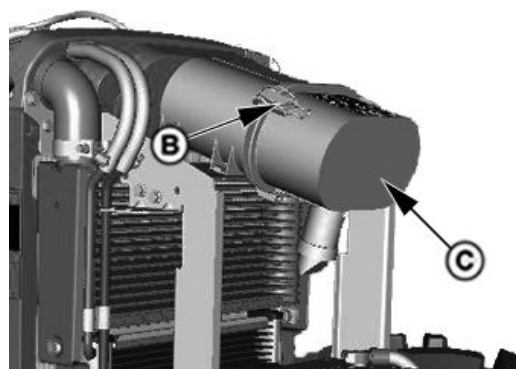
IMPORTANT: The guide ring (E) must not be damaged or deformed.

CAUTION: High pressure compressed air or vibration may damage primary air cleaner element (D).

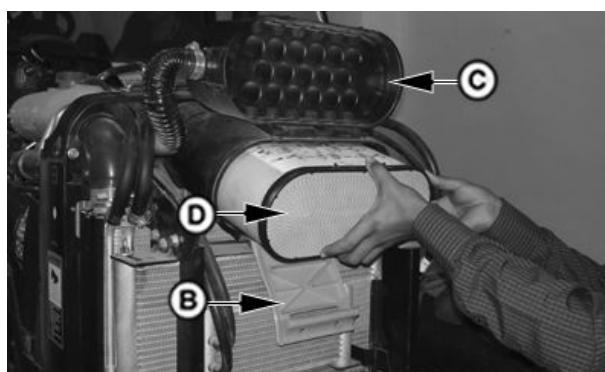
4. If tapping primary air cleaner element (D) does not remove dust, blow out dust with low pressure compressed air. Do NOT exceed 600 kPa (6 bar [90 psi]). Blow air from engine end of element (guide ring [E]) to outside air end. Do NOT insert nozzle into element material.
5. Replace both filter elements (primary and secondary) after the primary filter has been cleaned five times. Clean out and inspect canister interior before installing new elements.

IMPORTANT: Before installation, review decals on canister and primary cleaner.

illuminates. Dirty air cleaner results in loss of power or excessive smoke.



5065M and 5075M



5085M, 5095M, 5095MH, 5105M and 5105ML



A—Air Restriction Indicator
B—Latch
C—Cover

D—Primary Air Cleaner Element
E—Guide Ring

6. Replace elements if core material or seals (both ends) are damaged, or if air cleaner restriction indicator remains illuminated after elements have been cleaned.

Continued on next page

SH20560,000041A -19-14DEC09-1/2

7. Install elements as necessary and latch cover.
8. Lower hood.

Service air cleaner more often in extremely dusty condition.

NOTE: If frequency of restriction increases, replace air cleaner elements.

SH20560,000041A -19-14DEC09-2/2

Adjust PTO Speed Shift Lever—Open Operator's Station

Have your John Deere dealer check and adjust PTO speed shift lever.

SH20560,0000448 -19-18APR08-1/1

Adjust PTO Speed Shift Lever—Cab

Have your John Deere dealer check and adjust PTO speed shift lever.

SH20560,000043D -19-18APR08-1/1

Adjust Hand Throttle Friction Linkage—5085M, 5095M and 5095MH

Have your John Deere dealer check and adjust hand throttle friction linkage.

SH20560,0000451 -19-21APR08-1/1

Adjust Hand and Foot Throttle Cable—5085M, 5095M and 5095MH

Have your John Deere dealer check and adjust hand and foot throttle cable.

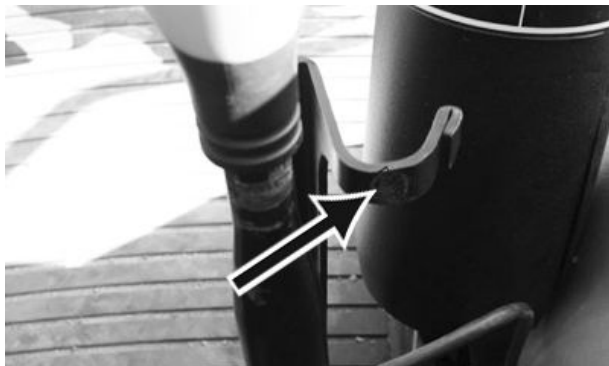
SH20560,0000452 -19-21APR08-1/1

Adjust Clutch Pedal Cable—If Equipped with SyncShuttle Plus™ Transmission

Have your John Deere dealer check and adjust clutch pedal cable.

SH20560,0000453 -19-22JUN09-1/1

Adjust Park Position Bracket



PULV002245 —UN—08JAN09

Park Position Bracket - Cab



PULV002244 —UN—06JAN09

Park Position Bracket - Cab



PULV002243 —UN—08JAN09

Park Position Bracket - OOS



PULV004684 —UN—05JAN10

Park Position Bracket - Low Profile

Have your John Deere dealer check and adjust park position bracket.

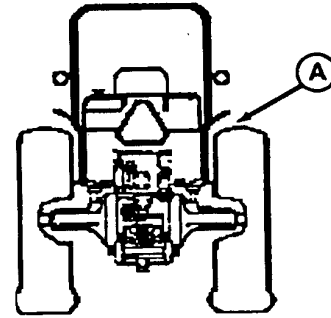
AJ20558,00002E1 -19-05JAN10-1/1

Adjust Rear Fender—Open Operator's Station and Low Profile

IMPORTANT: Tires must have at least 25 mm (1 in.) clearance with fenders (A). When large diameter rear tires are installed, check clearance between tire and fenders.

Have your John Deere dealer check and adjust rear fender.

A—Rear Wheel to Fender Clearance



AJ20558,00002E3 -19-23JUL09-1/1

M47179 —UN—31JAN92

Service Air Conditioner—If Equipped

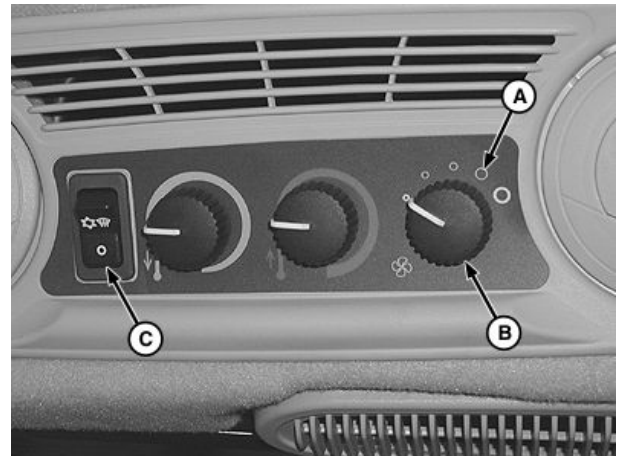
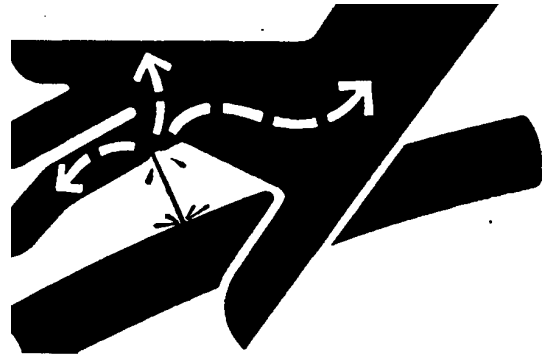
Check the following if air conditioner will not cool, or if cooling is intermittent:

CAUTION: Refrigerant is under pressure. Improper servicing may cause refrigerant to penetrate eyes and skin or cause burns.

IMPORTANT: R134a refrigerant must be used. This requires special equipment and procedures. See your John Deere dealer.

NOTE: Some oil seepage from compressor shaft seal, on the lower front, is normal.

1. If air conditioner clutch slips after tractor has been in storage, compressor may be stuck.
 - a. Place tractor in PARK position and SHUT OFF engine. Remove key.
 - b. Raise hood and remove fan belt. (Refer to Replace Fan Belt—5065M and 5075M or Replace Fan Belt—5085M, 5095M, 5095MH and 5105M in this section.)
 - c. Rotate clutch hub back and forth to free compressor.
 - d. Install fan belt and lower hood. (Refer to Replace Fan Belt—5065M and 5075M or Replace Fan Belt—5085M, 5095M, 5095MH and 5105M in this section.)
2. Run engine at 2000 rpm. Push top half of A/C and defrost switch (C) and set blower control knob (B) to HIGH position (A). If cooling is intermittent, clean front grille, radiator and condenser. (See Clean Grille Screens, Radiator, Oil Cooler—If Equipped in this section. If problem is not solved, see your John Deere dealer.)



A—High Position
B—Blower Control Knob

C—A/C and Defrost Switch

3. Inspect operator enclosure (cab) filters for restriction. Clean filters. (See Clean Cab Air Filters—If Equipped in Section 41.) If problem persists, see your John Deere dealer to have evaporator core cleaned.

SH20560,000043E -19-25APR08-1/1

X9811 —UN—23AUG88

LV8577 —UN—14AUG03

Test Injection Nozzles—5085M, 5095M and 5095MH

Have your John Deere dealer check and adjust fuel injection nozzles.

SH20560,00002BB -19-21APR08-1/1

Clean and Check Battery Condition

⚠ 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:

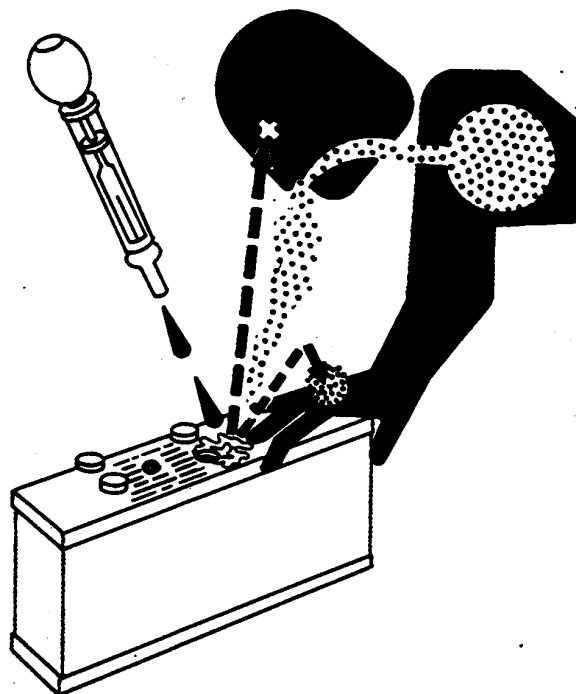
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.



TS203 —UN—23AUG88

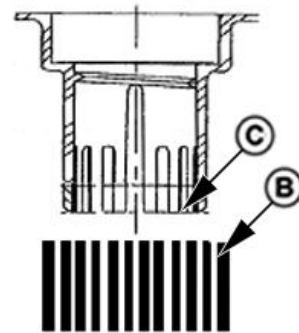
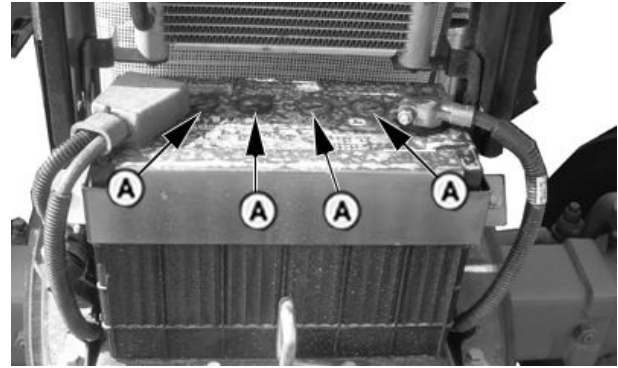
Continued on next page

SH20560,000003B -19-19SEP08-1/2

1. Check level of electrolyte in each cell (A) at least every 300 hours. Ensure that every cell has fluid level HIGHER than top of plates. Only use CLEAN, SOFT water to fill up electrolyte level.

IMPORTANT: DO NOT add water in freezing weather unless tractor will be run at least 30 minutes to assure thorough mixing.

2. Use a battery hydrometer to check specific gravity of electrolyte in each cell. Charge battery if reading is below 1.215. Replace battery if difference between cells is more than 0.050 or if battery will not charge above 1.225.
3. Always correct specific gravity reading for electrolyte temperature variation. Add 0.004 to the reading obtained in step one for every 10°F above 80°F (add 0.007 to the reading for every 10° above 27°C). Subtract at same rate if electrolyte temperature is below 80°F (27°C). Corrected specific gravity of a fully charged battery is from 1.265 to 1.280.
4. A battery is considered fully charged when three consecutive hydrometer readings, taken at hourly intervals, show no rise in specific gravity.
5. Wipe battery with a damp cloth. Clean and tighten connections if needed.
6. Coat terminals with a small amount of grease.



A—Cell
B—Plates

C—Electrolyte Level

SH20560,000003B -19-19SEP08-2/2

PULV000177 —UN—16NOV07

PULV000655 —UN—05MAY08

Clean Cab Air Filters—If Equipped

CAUTION: The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.

A—Filter Cover—Upper Right Side Shown (Left Side Similar)

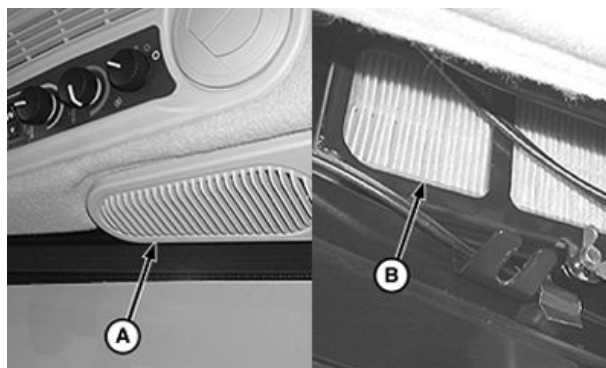
B—Recirculated Air Filters

C—Screws (2 used)

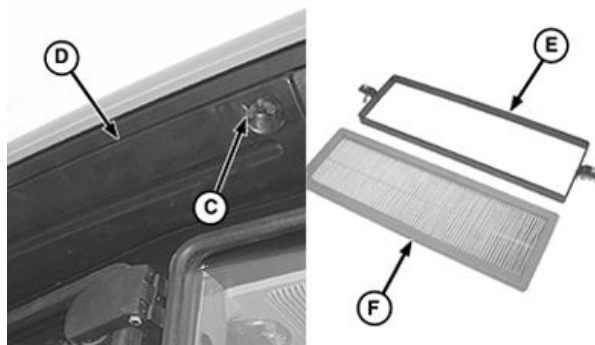
D—Filter Cover

E—Retainer Plate (2 used)

F—Fresh Air Filter (2 used)



Under Cab Headliner



Under Roof

PULV000657 —UN—05MAY08

PULV000658 —UN—05MAY08

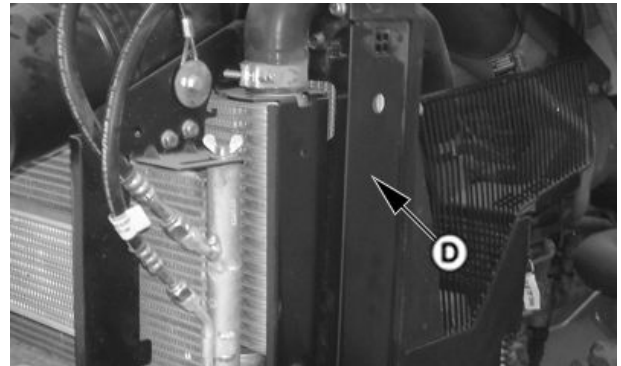
SH20560,000003D -19-19SEP08-1/1

Clean Grille Screens, Radiator, Oil Cooler, Radiator Screen (If Equipped) and A/C Condenser (Cab)



Front Grille

PULV004599 —UN—06JUL09



PULV000661 —UN—07JUN09

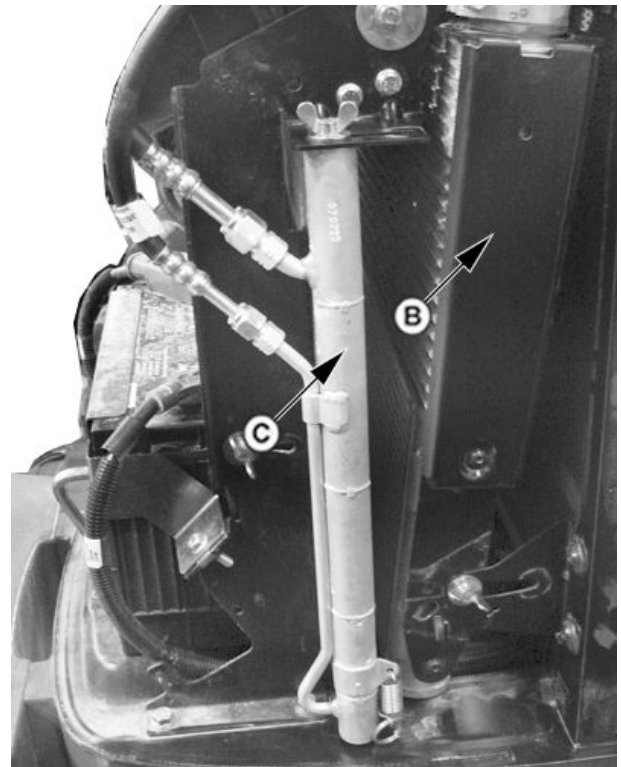
1. Whenever trash builds up on front grille (A), stop engine and brush clean.

CAUTION: Reduce compressed air to less than 210 kPa (2 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment including eye protection.

2. Raise hood and see if trash has built up on charge air cooler (B), oil cooler (if equipped), radiator screen (if equipped) or A/C condenser (cab) (C). If so, remove it using a brush or compressed air.
3. If a more thorough cleaning is necessary, clean radiator from behind with compressed air or water. Straighten any bent fins.

A—Grille
B—Charge Air Cooler

C—A/C Condenser (Cab)
D—Radiator



PULV000660 —UN—07JUN09

Swing Out Feature

SH20560,000044C -19-07JUL09-1/1

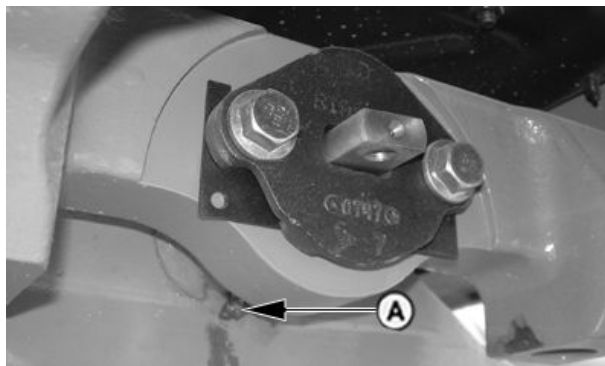
Lubricate Axle Pivot Point—2WD

Apply several shots of general purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to 2WD axle pivot point.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—2WD Grease Point



PULV000173 —UN—15NOV07

SH20560,00002E4 -19-21APR08-1/1

Lubricate Steering Spindles and Steering Cylinder Ends—Adjustable Front Axle

Apply several shots of general-purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to steering spindle and cylinder end grease point.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

Greasing too frequently can cause seal fatigue.

A—Lubrication Point



RXA0112694 —UN—14DEC10

SH20560,00002E3 -19-14DEC10-1/1

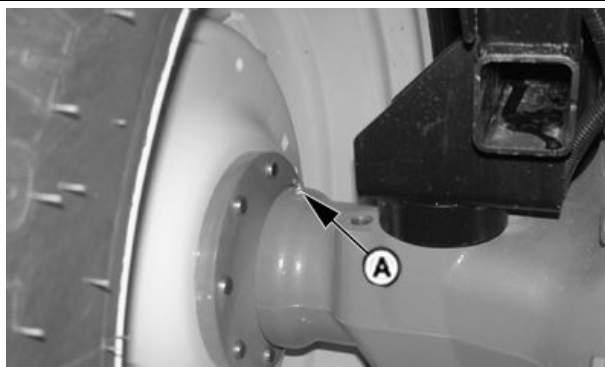
Lubricate Rear Axle Bearings

Lubricate rear axle grease point (A) with several shots of multipurpose grease. (See Grease in section 85 Fuel, Lubricants, and Coolant.)

NOTE: Service more often if operated in extremely wet and muddy conditions.

NOTE: Low profile similar.

A—Grease Point



Left Side Shown

PULV000028 —UN—26OCT07

AJ20558,00002BB -19-19JUN09-1/1

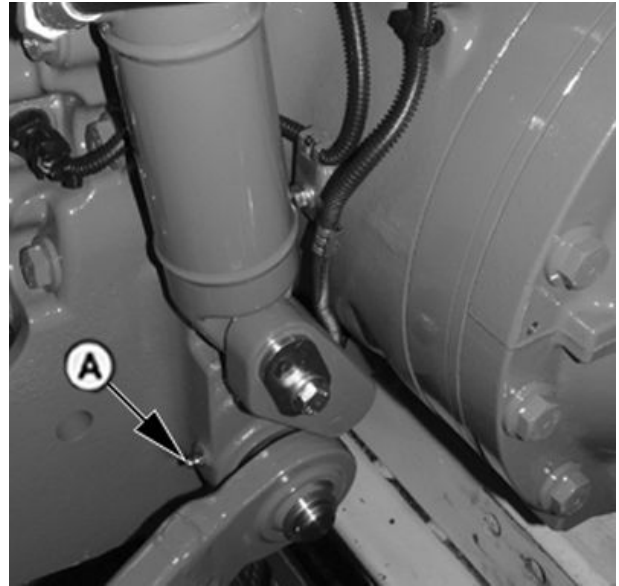
Lubricate Draft Sensing Shaft Seal

NOTE: Grease point on right side of PTO housing shown, similar present on left side.

Apply several shots of general purpose grease (see Grease in section 85 Fuel, Lubricants, and Coolant) to draft sensing shaft grease point (A).

NOTE: Service more often if operated in extremely wet and muddy conditions.

A—Grease Point



Right Side of Hitch Shown

PULV007226 —UN—16NOV10

SH20560,0000057 -19-16NOV10-1/1

Drain and Flush Fuel Tank

Ask your John Deere dealer to drain and flush fuel tank.

SH20560,00002C6 -19-18MAR08-1/1

Keep ROPS Installed Properly—Open Operator's Station

SERVICE INTERVAL —

INITIAL — 10 HOURS

REGULAR — WEEKLY OR 50 HOURS

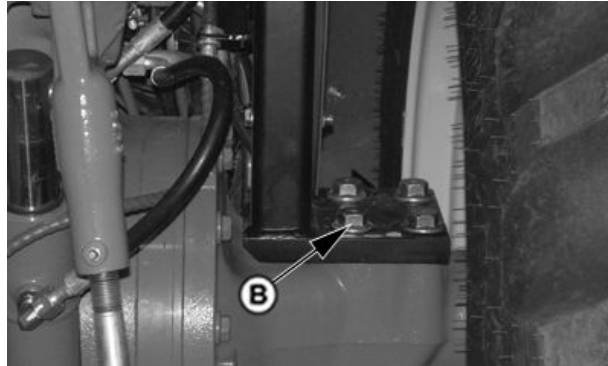
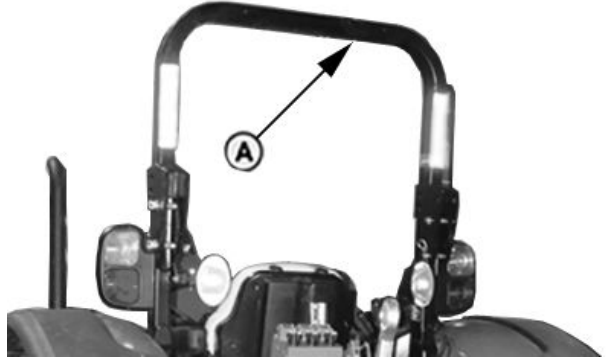
CAUTION: Make certain all parts are installed correctly if roll-over protective structure (ROPS) is loosened or removed for any reason. Replace and tighten mounting cap screws to specification.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused. Any alteration to the ROPS must be approved by the manufacturer.

When installation of equipment on a machine necessitates loosening or removing roll-over protective structure (ROPS) (A), replace and tighten mounting cap screws (B) to specification.

Specification

ROPS Mounting Cap	
Screws—Torque.....	365 N·m (284 lb-ft)



OOS Shown

A—ROPS Crossbar

B—Mounting Cap Screws (8 used)

SA61034,0000339 -19-21APR08-1/1

PULV000631 —JUN—21MAR08

PULV000153 —JUN—29OCT07

Keep ROPS Installed Properly—Low Profile**SERVICE INTERVAL —**

INITIAL — 10 HOURS

REGULAR — WEEKLY OR 50 HOURS

⚠ CAUTION: Make certain all parts are installed correctly if roll-over protective structure (ROPS) is loosened or removed for any reason. Replace and tighten mounting screws to specification.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused. Any alteration to the ROPS must be approved by the manufacturer.

When installation of equipment on a machine necessitates loosening or removing roll-over protective structure (ROPS) (A or B), replace and tighten mounting screws (C and D) to specification.

Specification

ROPS Mounting

Screws—Horizontal

Orientation—Torque.....500 N·m
(369 lb-ft)

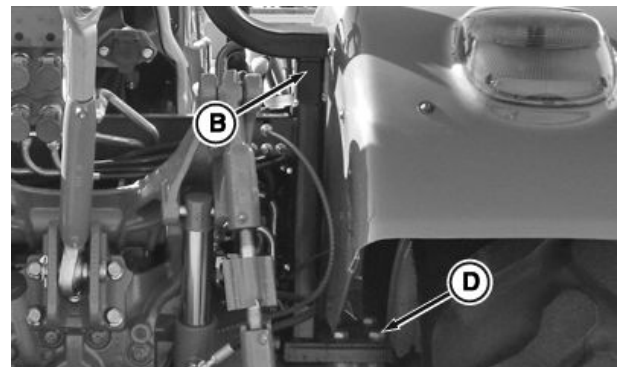
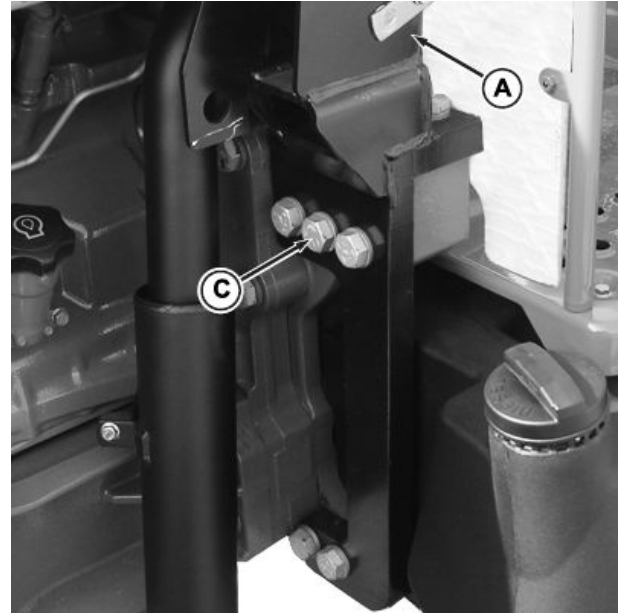
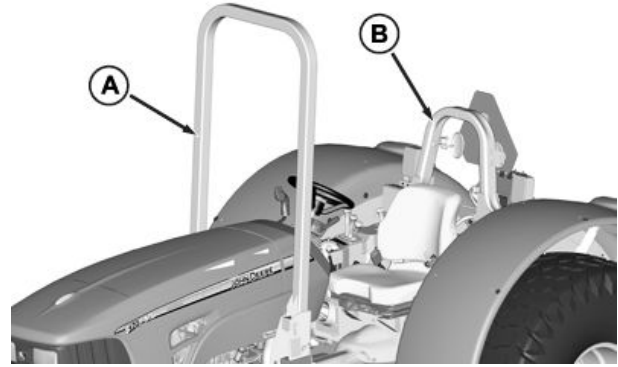
ROPS Mounting

Screws—Vertical

Orientation—Torque.....385 N·m
(284 lb-ft)

A—Front ROPS Crossbar
B—Rear ROPS Crossbar

C—Mounting Screws
D—Mounting Screws



Rear ROPS

AJ20558,00002BC -19-17DEC09-1/1

PULV004569 —UN—19JUN09

PULV004570 —UN—19JUN09

PULV004681 —UN—16DEC09

Keep Cab Protection System Installed Properly

SERVICE INTERVAL —

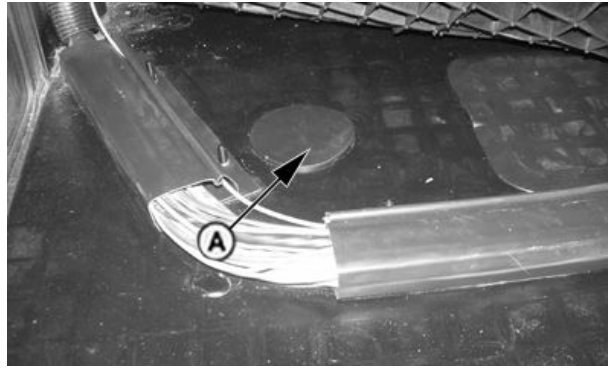
INITIAL — 10 HOURS

REGULAR — WEEKLY OR 50 HOURS

CAUTION: Make certain all parts are installed correctly if cab protection system is loosened or removed for any reason. Replace and tighten mounting cap screws to specification.

The protection offered by cab protection system will be impaired if cab protection system is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged cab protection system should be replaced, not reused. Any alteration to the cab protection system must be approved by the manufacturer.

When installation of equipment on a machine necessitates loosening or removing cab protection system, replace and tighten mounting cap screws to specification.



Plug—Front Mount (Left-Hand Side Shown)

A—Plug

Inspect cab protection system mounting hardware every week or 50 hours for proper torque or replacement.

Lift up rubber floor mat and pry out plugs (A) to access FRONT mounting hardware.

PULV000152—JUN—29OCT07

Continued on next page

AI68620,0000307 -19-30NOV10-1/2

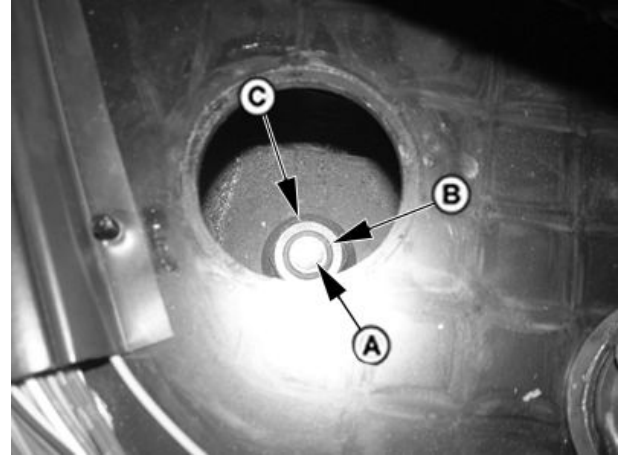
Check front and rear mounting hardware (A—C) for proper torque.

Specification

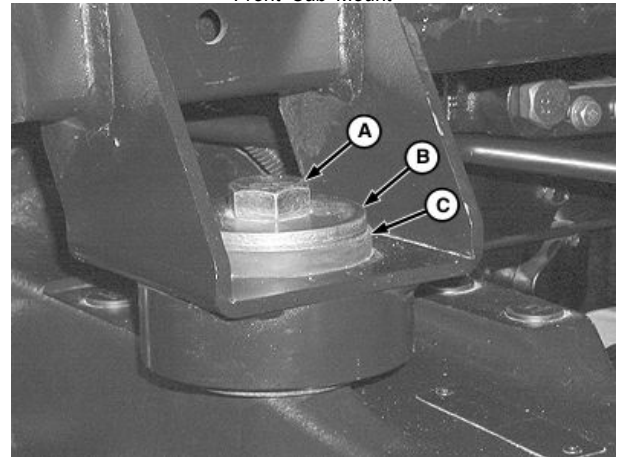
Cab Protection	
System Mounting Cap	
Screws—Front—Torque.....	350 N·m (284 lb-ft)
Cab Protection	
System Mounting Cap	
Screws—Rear—Torque.....	220 N·m (162 lb-ft)

A—Cap Screw (4 used)
B—Washer (4 used)

C—Isolator (4 used)



Front Cab Mount



Rear Cab Mount

AI68620,0000307 -19-30NOV10-2/2

PULV000164 —UN—29OCT07

LV8682 —UN—26AUG03

Bleed Fuel System—5065M and 5075M

⚠ CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

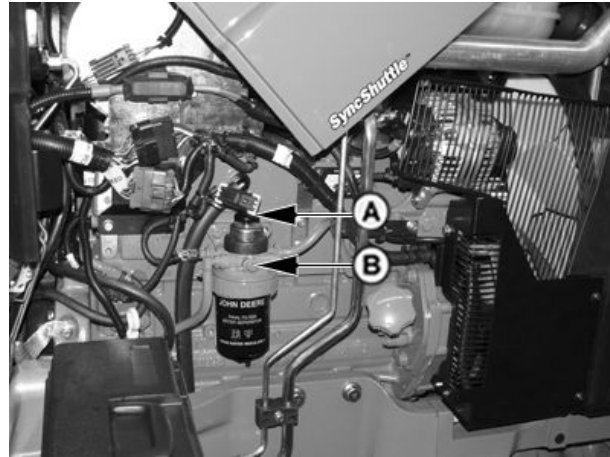
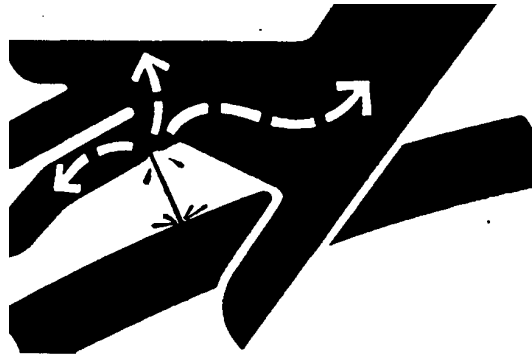
If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 18008228262 or +1 3097485636.

IMPORTANT: To avoid injection pump damage, **DO NOT** attempt to start the engine while bleeding the fuel system.

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Check fuel level. Fuel tank must be full. Add if necessary.
3. Raise hood and loosen bleed screw (B) two full turns.
4. Push priming pump (A) until fuel runs out smoothly without spitting, then tighten bleed screw (B).

NOTE: Capture the discharged waste and dispose of properly.

5. Push priming pump several times until resistance is felt. Continue pushing pump and open bleed screw again.
6. Close bleed screw and push priming pump several times until resistance is felt again.



A—Priming Pump

B—Bleed Screw

7. Lower hood.

X9811—UN—23AUG88

PULV000157—UN—29OCT07

SA61034,000033B -19-11AUG09-1/1

Bleed Fuel System—5085M, 5095M, 5095MH, 5105M and 5105ML

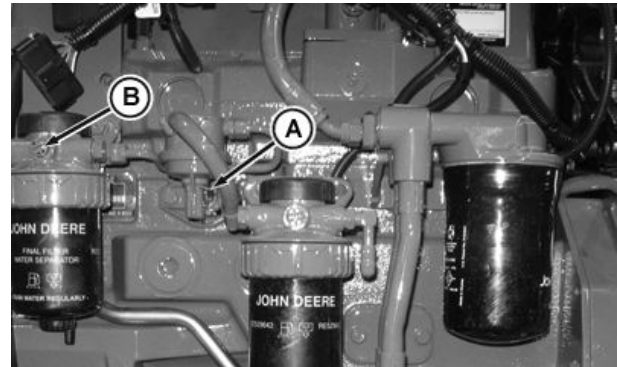
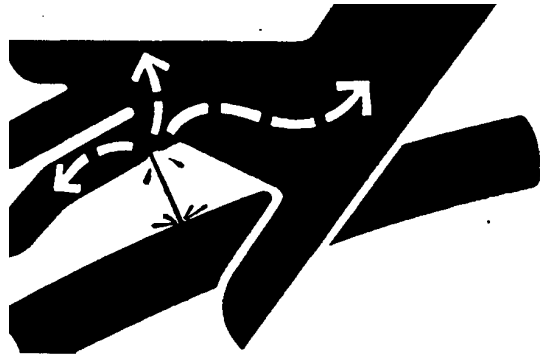
⚠ CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 18008228262 or +1 3097485636.

IMPORTANT: To avoid injection pump damage, **DO NOT** attempt to start the engine while bleeding the fuel system.

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Check fuel level. Add if necessary.
3. Raise hood and loosen filter base bleed screw (B).
4. Push priming pump (A) until fuel runs out smoothly without spitting, then tighten bleed screw (B).

NOTE: Capture the discharge waste and dispose of properly.



A—Priming Pump
B—Bleed Screw

C—Fuel Return Line
D—Bleed Screw

5. Lower hood.

SA61034,000033C -19-11AUG09-1/1

X9811 —UN—23AUG88

PULV002236 —UN—29DEC08

Replace Battery

1. Raise hood.

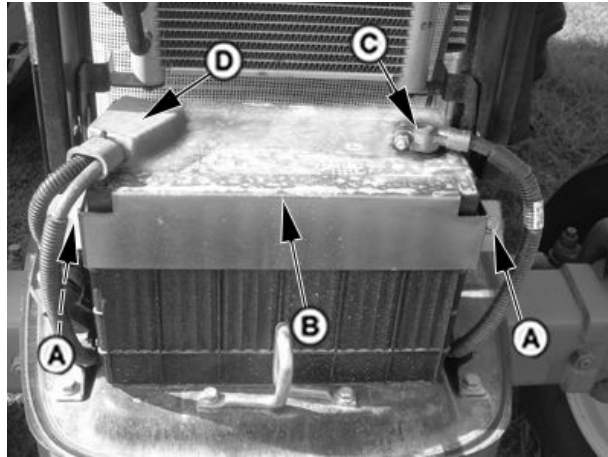
CAUTION: To avoid sparks, disconnect negative (ground) cable first and connect it last.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

2. Remove nut and disconnect negative (ground) battery cable (C).
3. Remove nut and disconnect positive cable (D).
4. Remove cap screws (A) and battery hold-down (B).
5. Remove battery.
6. When replacing battery, use John Deere battery or equivalent. (See your John Deere dealer.)

Specification

Battery—Volts.....	12 Volts
BCI Group.....	31
Cold Cranking Amps (CCA) at —18°C (0°F)—5065M and 5075M.....	750
Cold Cranking Amps (CCA) at —18°C (0°F)—5085M, 5095M, 5095MH, 5105M and 5105ML.....	900



Battery—Front of Tractor

A—Cap Screw (2 used)
B—Battery Hold-Down

C—Negative (—) Cable
D—Positive (+) Cable

7. Install battery in reverse order of removal.

PULV000689 —UN—16JUN08

SH20560,000044D -19-20JUN09-1/1

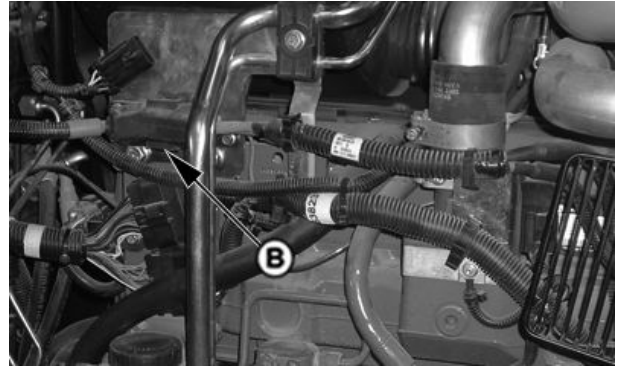
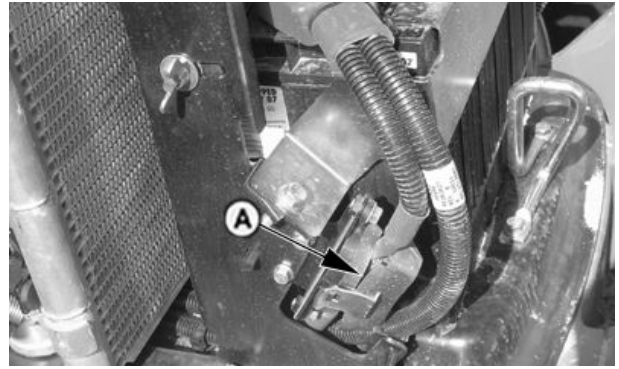
Locate Fusible Links

Electrical circuits are protected by two fusible links:

- Fusible link (A) is located under hood along right side of battery.
- Fusible link (B) is located on right-hand side of engine.

A—Fusible Link

B—Fusible Link



Cab Shown

SA61034,000033F -19-21APR08-1/1

PULV000160—UN—30OCT07

PULV000632—UN—21MAR08

Locate Fuses—Open Operator's Station

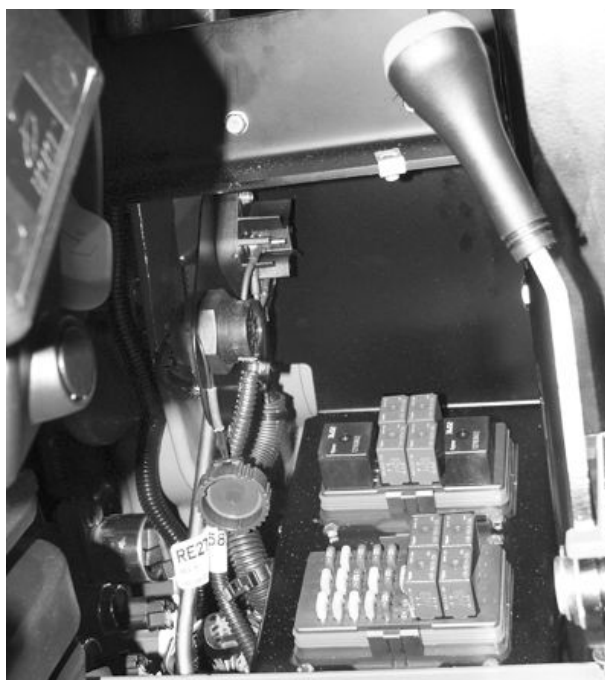
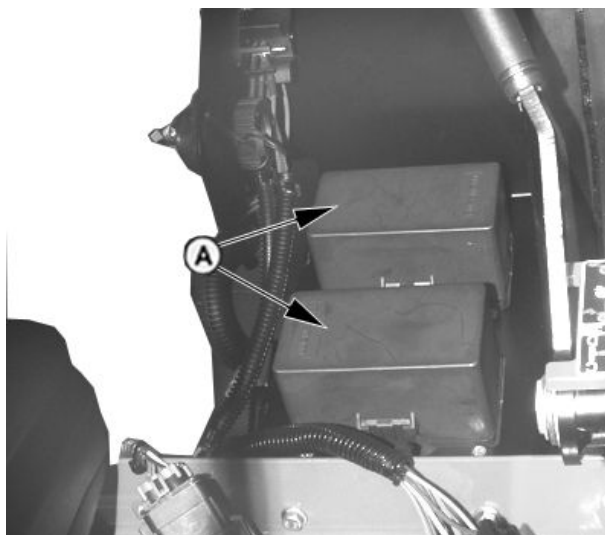
Remove cover (A) to access main fuse and relay load center.

All electrical circuits are protected by fuses. Amperage rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

Fuse Rating	Color
5 Amp	Orange
10 Amp	Red
15 Amp	Blue
20 Amp	Yellow
30 Amp	Green

IMPORTANT: DO NOT replace original fuse with higher rated fuse or machine damage may occur. If original size fuse will not carry electrical load and continues to blow, have the electrical system checked by your John Deere dealer.

A—Cover



Main Fuse and Relay Load Center (Left-Hand Side Bottom of Seat)

PULV000648 —UN—07JUN09

PULV000634 —UN—18JUN09

SA61034,0000340 -19-14JUL08-1/1

Locate Fuses—Low Profile

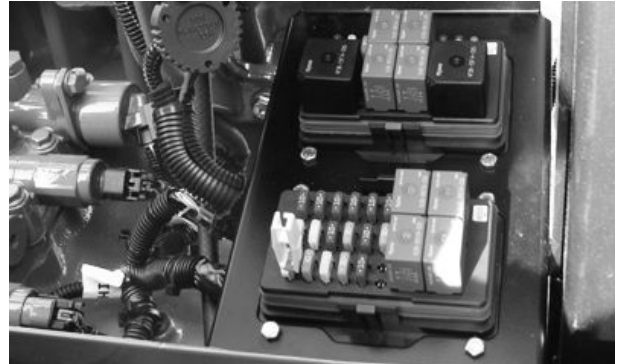
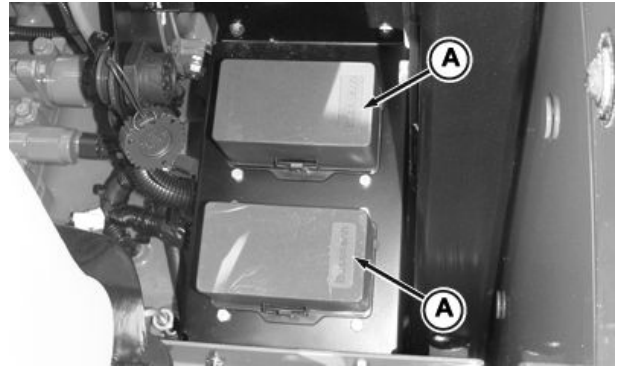
Remove cover (A) to access main fuse and relay load center.

All electrical circuits are protected by fuses. Amperage rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

Fuse Rating	Color
5 Amp	Orange
10 Amp	Red
15 Amp	Blue
20 Amp	Yellow
30 Amp	Green

IMPORTANT: DO NOT replace original fuse with higher rated fuse or machine damage may occur. If original size fuse will not carry electrical load and continues to blow, have the electrical system checked by your John Deere dealer.

A—Cover



PULV004572—UN—19JUN09

PULV004573—UN—19JUN09

AJ20558,00002BD -19-19JUN09-1/1

Locate Fuses—Cab

NOTE: A fuse and relay reference label is provided inside cover.

1. Remove portable "Field Office", if equipped.
2. Remove cover (A) to access main fuse and relay load center and fuse/relay block.

All electrical circuits are protected by fuses. Amperage rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

Fuse Rating	Color
5 Amp	Orange
10 Amp	Red
15 Amp	Blue
20 Amp	Yellow
30 Amp	Green

IMPORTANT: DO NOT replace original fuse with higher rated fuse or machine damage may occur. If original size fuse will not carry electrical load and continues to blow, have the electrical system checked by your John Deere dealer.

A—Cover



Main Fuse and Relay Load Center (Left Console)



Fuse/Relay Block

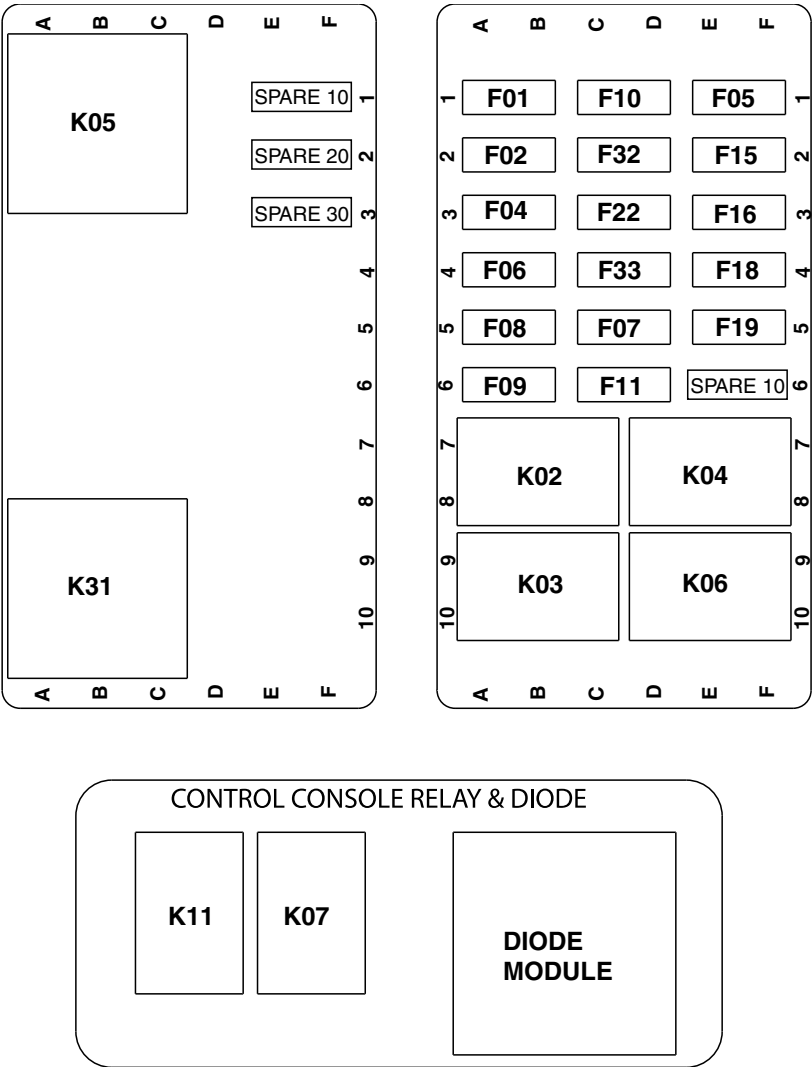
PULV000163 —UN—30OCT07

PULV000635 —UN—21MAR08

SA61034,0000341 -19-21APR08-1/1

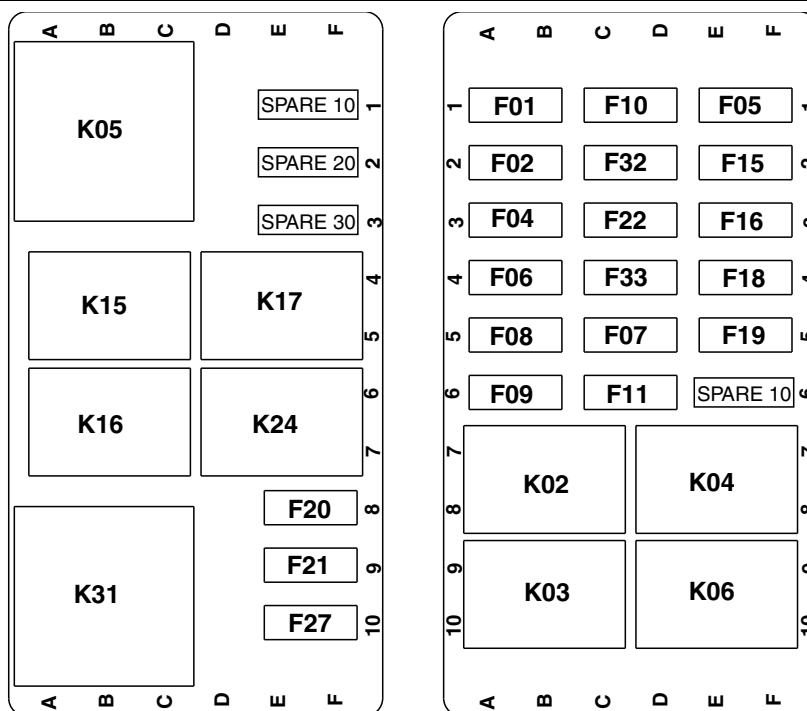
Fuse and Relay Size and Function

NOTE: Diode module, relay K11 and relay K07 are located in front console.



OOS with SyncShuttle Plus™ Transmission

PULV007323—UN—30NOV10



CONTROL CONSOLE RELAY & DIODE

K11

K07

DIODE
MODULE

OOS with SyncReverser™ Transmission or PowrReverser™ Transmission or PowrReverser Plus™ Transmission

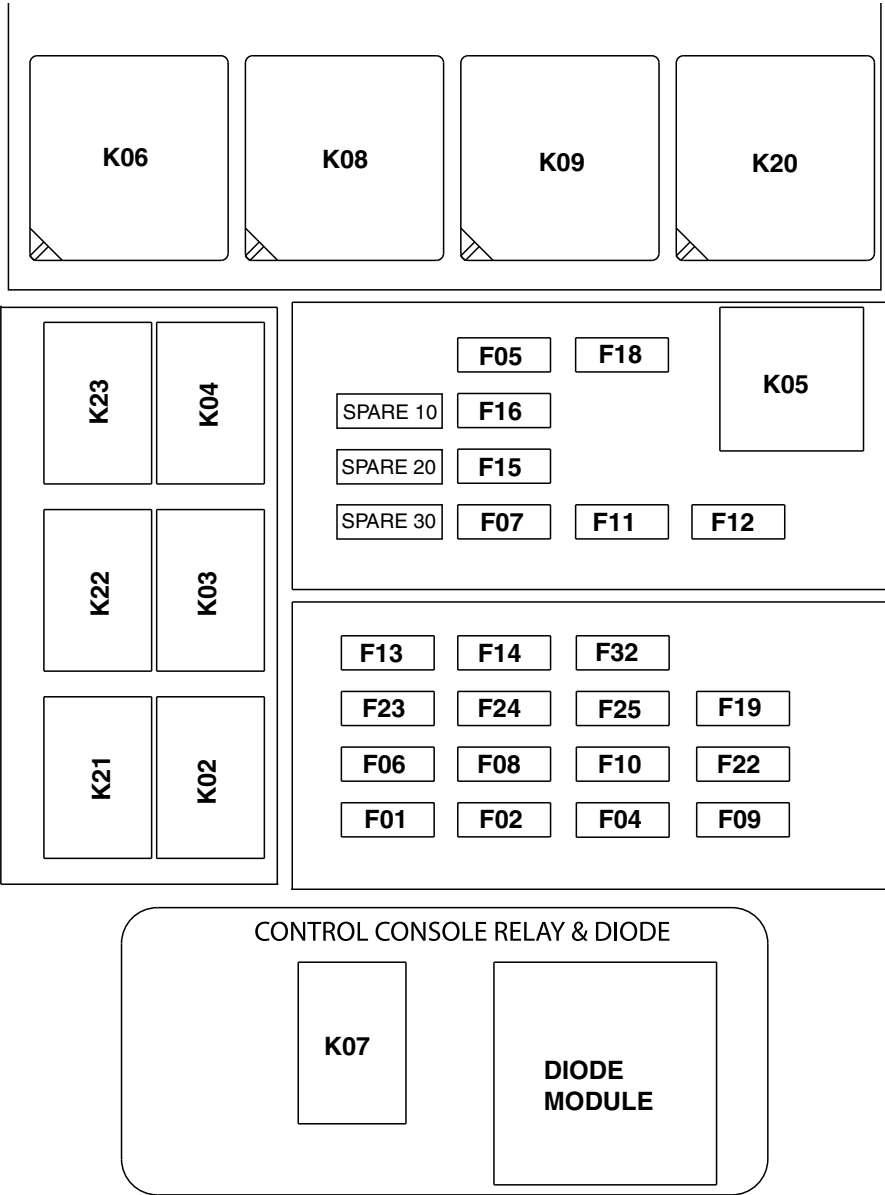
F01— Key Switch Fuse	F11— Junction Block Fuse	F27— Backup Alarm Fuse	K11— Neutral Relay
F02— Turn Light/Warning Light Relay Fuse	F15— Tail/Turn Light Fuse	F32— Engine Control Unit Fuse	K15— Electrohydraulic System Power
F04— Light Switch Fuse	F16— High Beam Light Fuse	F33— Work Light Relay Fuse	K16— Not Neutral Relay
F05— Low Beam Headlights Fuse	F18— ELX Fuse	K02— Left Turn Relay	K17— Transmission Enable Relay
F06— Junction Block Fuse	F19— Electronic Control Unit Fuse	K03— Right Turn Relay	K24— Forward High Speed Relay
F07— Turn Switch	F20— Electrohydraulic System Relay Fuse	K04— Flash Logic Relay	K31— Work Light Relay
F08— Instrument Cluster Fuse	F21— Electrohydraulic System Relay Fuse	K05— Turn/Warning Light Relay	
F09— Diagnostic Fuse	F22— Horn Fuse	K06— Trailer Power Relay	
F10— Trailer Power Relay Fuse		K07— Accessory Controller Relay	

NOTE: F09 to be used only for Diagnostic, spare 10A fuse to be used for this purpose.

Continued on next page

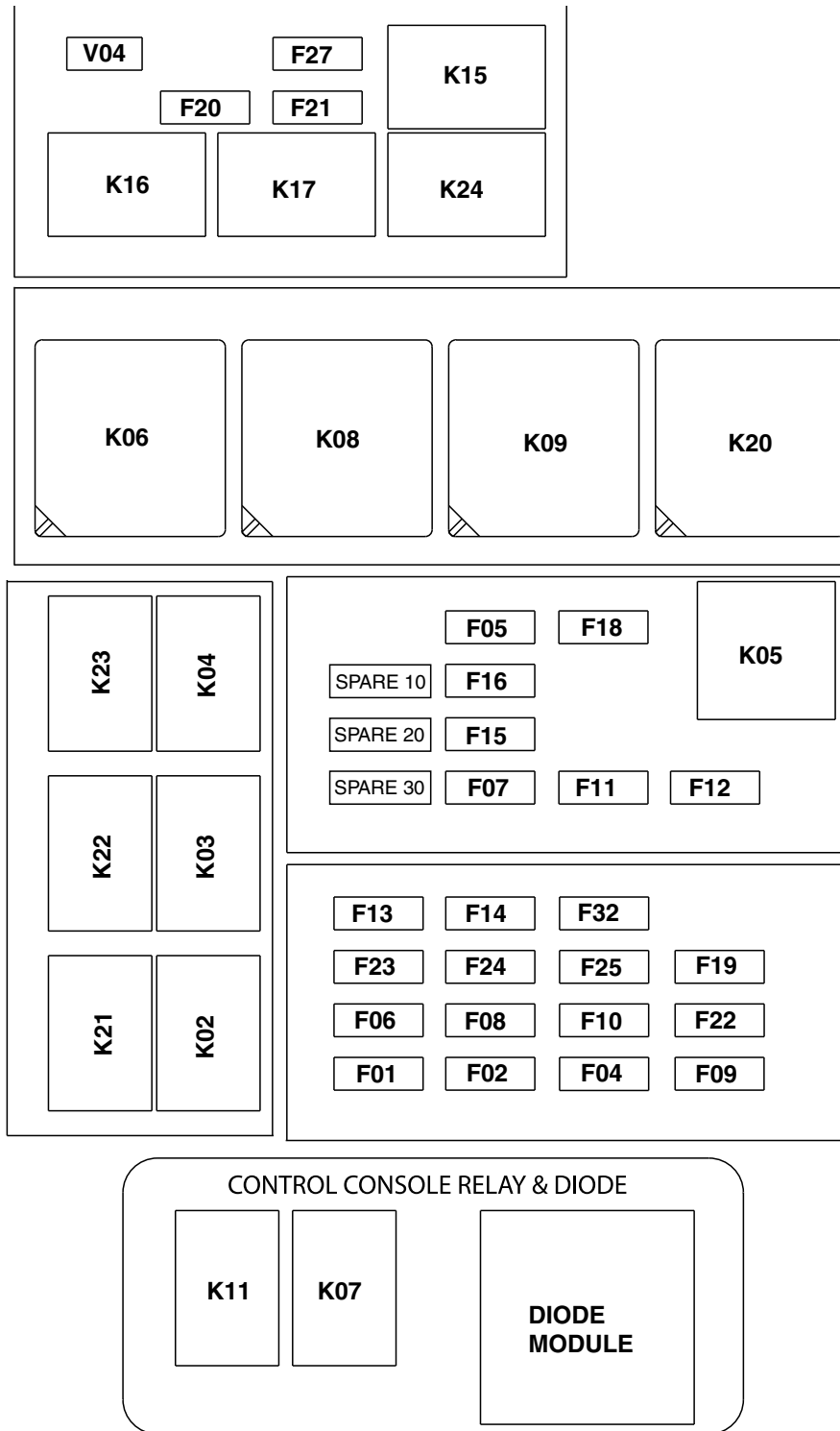
AJ20558,00002C3 -19-30NOV10-2/4

PULV007324 —UN—30NOV10



Cab with SyncShuttle Plus™ Transmission

PULV007325 —UN—30NOV10



Cab with SyncReverser™ Transmission or PowrReverser™ Transmission

PULV007326 —JUN—30NOV10

F01— Key Switch Fuse	F14— Front Work Light	F24— Wiper Motor Fuse	K11— Neutral Relay
F02— Turn Light/Warning Light Relay Fuse	F15— Tail/Turn Light Fuse	F25— Blower Fuse	K15— Electrohydraulic System Power
F04— Light Switch Fuse	F16— High Beam Light Fuse and Loader Light Fuse	F27— Backup Alarm Fuse	K16— Not Neutral Relay
F05— Low Beam Light	F18— ELX Fuse	F32— Engine Control Unit Fuse	K17— Transmission Enable Relay
F06— Junction Block Fuse	F19— Electronic Control Unit Fuse	K02— Left Turn Relay	K20— Heater, Ventilation and Air Conditioner Relay
F07— Turn Switch	F20— Electrohydraulic System Relay Fuse	K03— Right Turn Relay	K21— Wiper Relay
F08— Instrument Cluster Fuse	F21— Electrohydraulic System Relay Fuse	K04— Flash Logic Relay	K22— Left Blower Relay
F09— Diagnostic Fuse	F22— Horn Fuse	K05— Turn/Warning Light Relay	K23— Right Blower Relay
F10— Trailer Power Relay Fuse	F23— Heater, Ventilation and Air Conditioner	K06— Trailer Power Relay	K24— Forward High Speed Relay
F11— Junction Block Fuse		K07— Accessory Power Relay	
F12— Radio/Clock Fuse		K08— Rear Work Light Relay	
F13— Rear Work Light		K09— Front Work Light Relay	

NOTE: Diode module, relay K11 and relay K07 are located in front console.

NOTE: F09 to be used only for Diagnostic, spare 10A fuse to be used for this purpose.

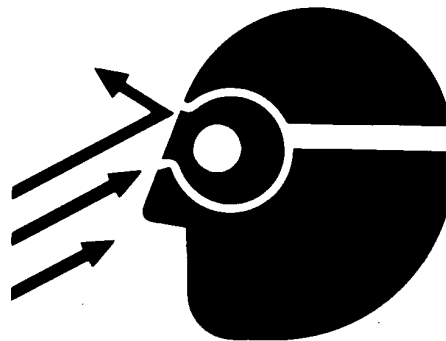
AJ20558,00002C3 -19-30NOV10-5/4

Handle Halogen Light Bulbs Safely

CAUTION: Halogen bulbs (A) contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. To avoid possible injury:

- Handle bulb by its base. Keep bulb oil free; wear gloves to avoid touching glass.
- Turn light switch off and allow bulbs to cool before changing. Leave switch off until bulb change is done.
- Wear eye protection.
- Do not drop or scratch bulb. Keep moisture away.
- Place used bulb in the new bulb's carton and dispose of properly. Keep out of reach of children.

A—Halogen Bulb



TS266 —UN—23AUG88

H39474 —UN—30JUN00

SA61034,0000343 -19-21APR08-1/1

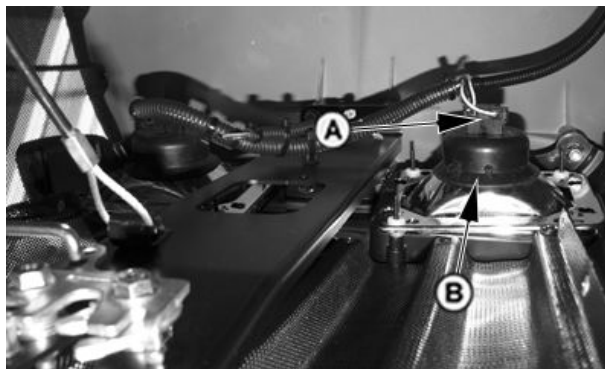
Replace Headlight Bulb

⚠ CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handle Halogen Light Bulbs Safely in this section.)

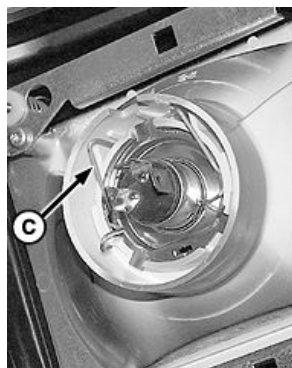
1. Raise hood.
2. Disconnect wiring harness plug (A).
3. Remove dust boot (B).
4. Unlatch retaining spring (C) and remove light bulb (D).
5. Install new bulb in reverse order of removal.
6. Adjust headlights, if necessary.

A—Wiring Harness Plug
B—Dust Boot

C—Retaining Spring
D—Light Bulb



PULV000162—UN—30OCT07



LV9511—UN—01AUG04

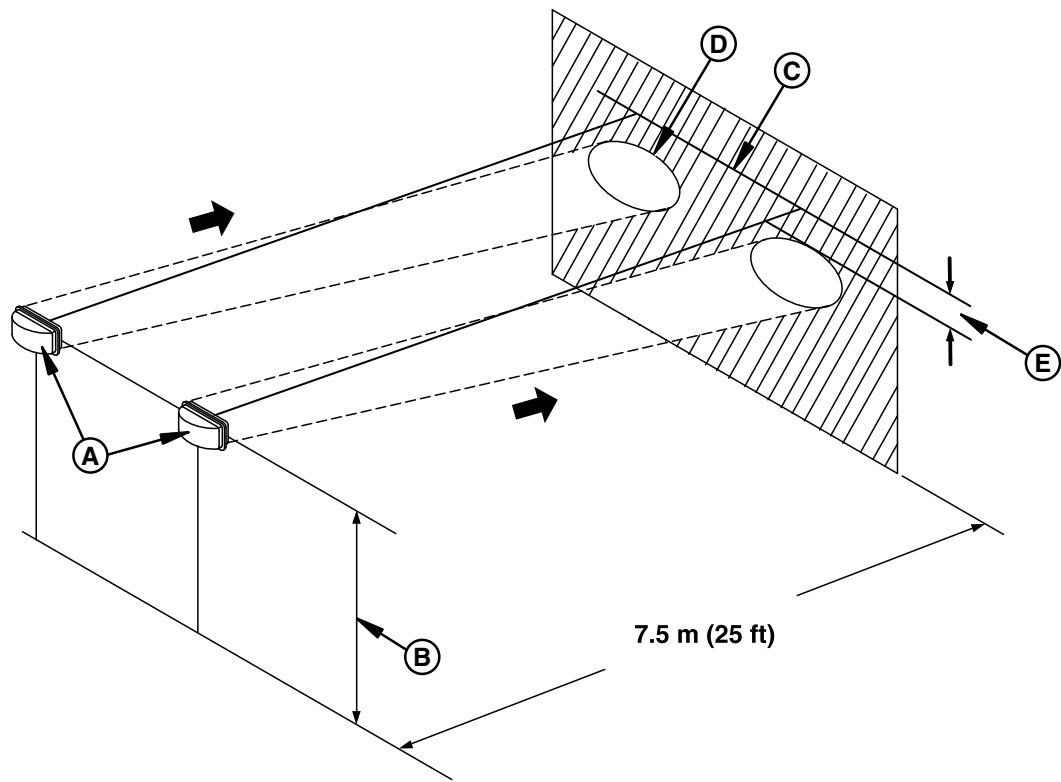


LV9512—UN—01AUG04

Continued on next page

SA61034,0000344 -19-28APR08-1/2

Adjust Head Light



Headlight Aiming Diagram

A—Headlights
B—Distance from Center of
Headlight to Ground

C—Horizontal Line on Wall
D—Border of Bright Area

E—10% of Distance (B)

1. Park tractor on a level surface with headlights (A) 7.5 meters (25 ft) from a vertical wall.
2. Measure the distance (B) from the center of a headlight to the ground.
3. Mark a horizontal line (C) on the wall, the same distance from the ground as (B).
4. Set headlights on low beam and observe bright areas on the wall.
5. Use screws at the back of lights for adjustment.

SA61034,0000344 -19-28APR08-2/2

PULV000659 —UN—05MAY08

Replace Warning Light Bulb—Cab

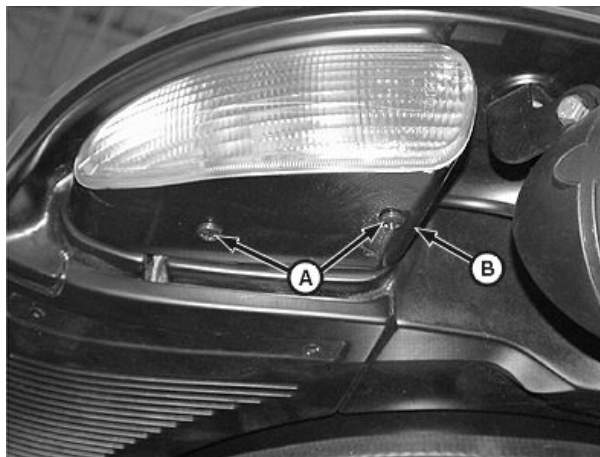
NOTE: Bulb replacement procedures for front and rear warning lights are the same. Rear left side shown.

1. Remove mounting screws (A) securing housing (B) to cab roof.
2. Remove bulb and socket (C) from housing.
3. Pull bulb from socket.
4. Install new bulb and socket into housing.

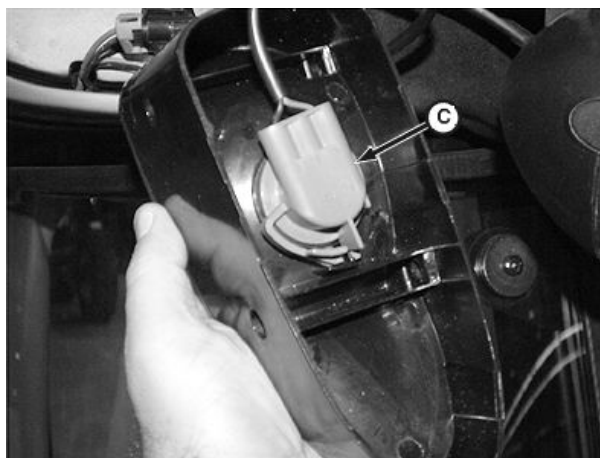
NOTE: If equipped with auxiliary work light kit: Apply thread lock and sealer (medium strength) to threads of mounting screws (A).

5. Install housing and screws to cab roof.

A—Mounting Screw (2 used) C—Bulb and Socket
B—Housing



LV5559—UN—29NOV00



LV5560—UN—29NOV00

SA61034,0000346 -19-21APR08-1/1

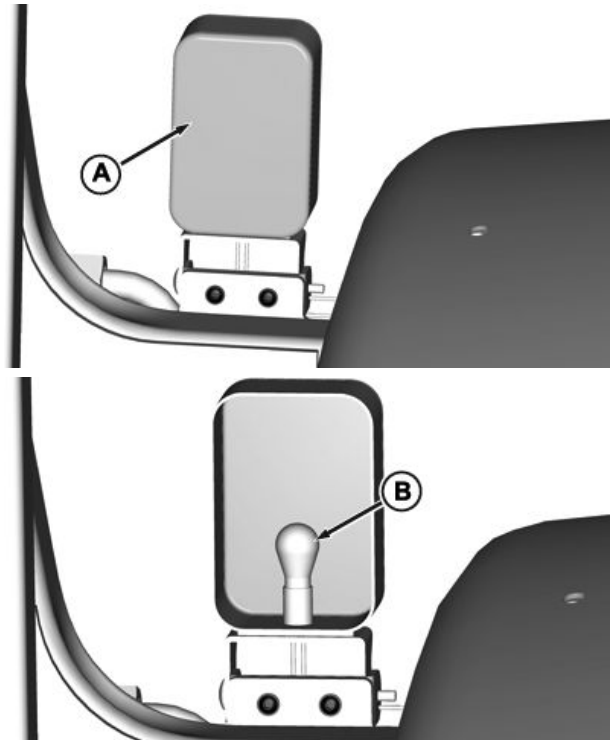
Replace Turn/Warning Light Bulb—Low Profile

NOTE: Bulb replacement procedures for front and rear warning lights are the same. Left side shown.

1. Remove screws and lens housing (A).
2. Push and twist bulb (B) to remove from socket.
3. Install new bulb, lens housing and screws.

A—Lens Housing

B—Warning Light Bulb



PULV004574 —UN—19JUN09

PULV004575 —UN—19JUN09

AJ20558,00002BF -19-19JUN09-1/1

Replace Tail Light Bulb—Cab, Deluxe OOS and Low Profile

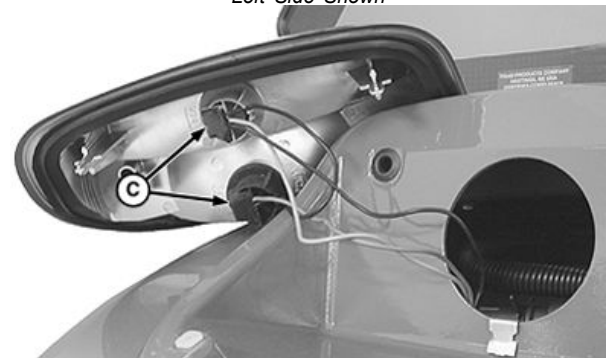
1. Remove screws (A).
2. Pull housing (B) away from fender.
3. Rotate socket (C) and remove from housing.
4. Pull bulb to remove from socket.
5. Install new bulb and socket in housing.
6. Install housing and screws to fender.

A—Screw (2 used)
B—Housing

C—Socket (2 used)



Left Side Shown



LV12531 —UN—13APR05

LV12532 —UN—13APR05

AJ20558,00002C0 -19-19JUN09-1/1

Replace Tail Light and/or Warning Light Bulb—Open Operator's Station and Low Profile

NOTE: Bulb replacement is the same for tail light and warning light. Left side shown.

1. Remove screws and lens housing (A).
2. Push and twist bulb (B or C) to remove from socket.
3. Install new bulb, lens housing and screws.

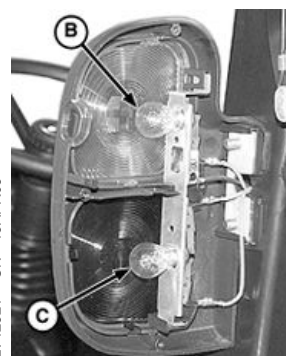
A—Lens Housing

B—Warning Light Bulb

C—Tail Light Bulb



LV12521 —UN—13APR05



LV12522 —UN—13APR05

SA61034,0000348 -19-06OCT11-1/1

Replace Work Light Bulb—Open Operator's Station and Low Profile

1. Disconnect wiring harness connector (A).
2. Rotate bulb (B) counterclockwise and remove from housing (C).
3. Install new bulb into housing and rotate clockwise.
4. Connect wiring harness connector.

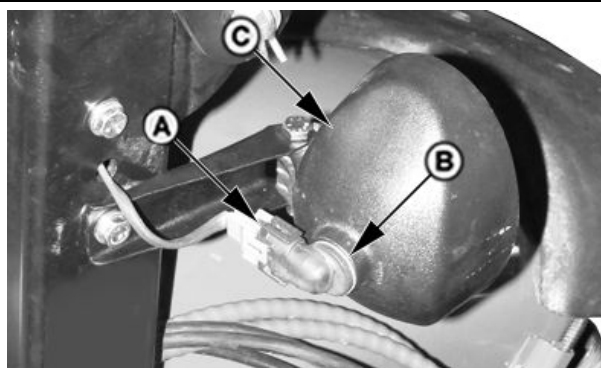
NOTE: Deluxe OOS will have two work lights.

NOTE: Deluxe OOS shown, low profile similar

A—Wiring Harness Connector

C—Housing

B—Bulb



Left-Hand Side

PULV007318 —UN—29NOV10

AJ20558,00002C1 -19-29NOV10-1/1

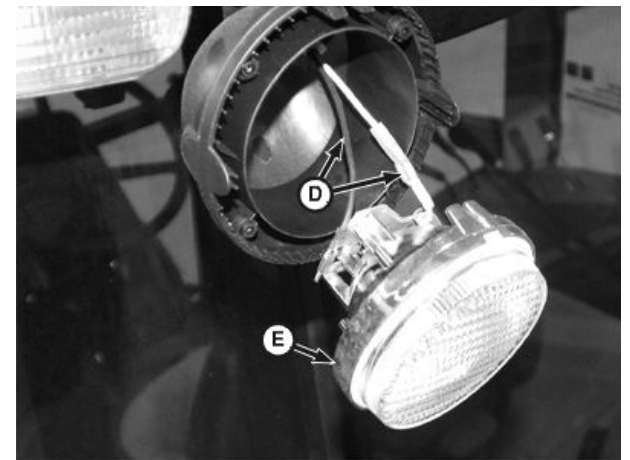
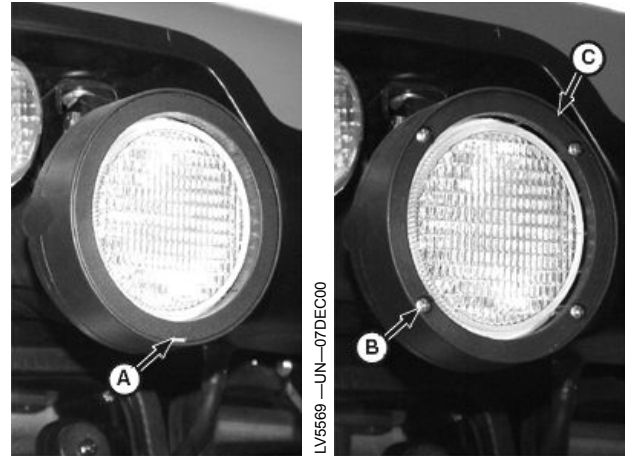
Replace Work Light Bulb—Cab

CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handle Halogen Light Bulbs Safely in this section.)

NOTE: Bulb replacement procedures for front and rear work lights and optional auxiliary work lights are the same. Rear left side shown.

1. Remove screw cover by prying in screw cover slot (A) with a screwdriver.
2. Remove retaining ring screws (B), retaining ring (C) and lens (E).
3. Disconnect wiring connectors (D).
4. Install new bulb and connect wiring connectors.
5. Install lens, retaining ring and screws.
6. Install cover.

A—Screw Cover Slot
B—Retaining Ring Screw (4 used)
C—Retaining Ring
D—Wiring Connector (2 used)
E—Lens

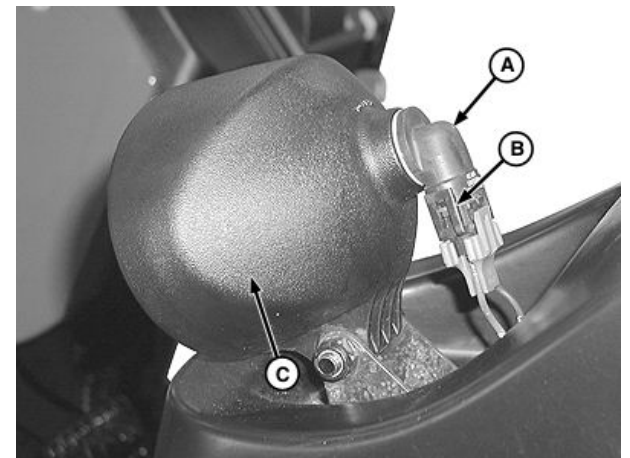


SA61034,000034A -19-21APR08-1/1

Replace Fender Light Bulb—Open Operator's Station

1. Disconnect wiring harness connector (B) from bulb (A).
2. Rotate bulb counterclockwise and remove from housing (C).
3. Install new bulb into housing and rotate clockwise.
4. Connect wiring harness connector.

A—Bulb
B—Wiring Harness Connector
C—Housing



Left Side Shown

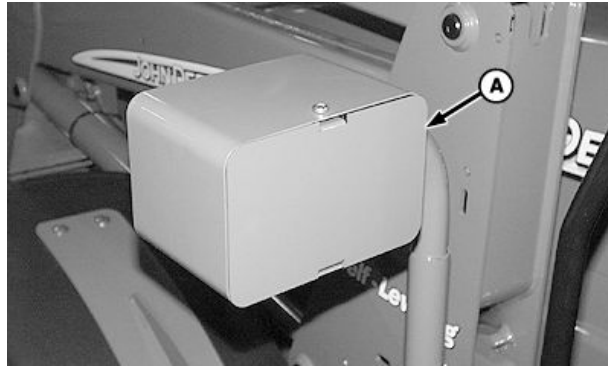
SA61034,000034B -19-21APR08-1/1

Replace Loader Light Bulb—If Equipped

⚠ CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handle Halogen Light Bulbs Safely in this section.)

1. Remove two screws and cover (A).

A—Cover



LV9548 —UN—03AUG04

SA61034,000034C -19-21APR08-1/2

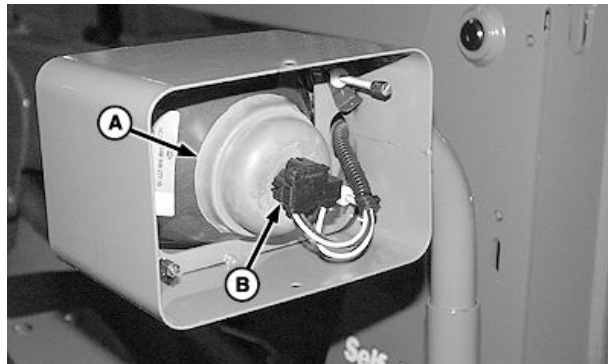
2. Disconnect wiring harness plug (B).
3. Remove dust boot (A).
4. Unlatch retaining spring (C) and remove light bulb (D).
5. Install new bulb in reverse order of removal.
6. Adjust, if necessary.

A—Dust Boot

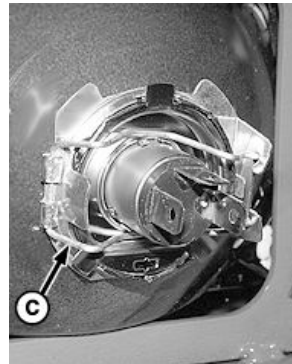
B—Wiring Harness Plug

C—Retaining Spring

D—Light Bulb



LV9549 —UN—03AUG04



LV9550 —UN—03AUG04



LV9512 —UN—01AUG04

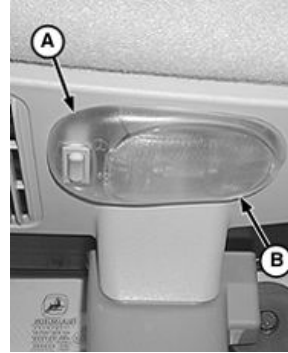
SA61034,000034C -19-21APR08-2/2

Replace Dome Light Bulb—Cab

1. Remove cover (B) from housing (A) using a screwdriver.
2. Pull bulb (C) from socket.
3. Install new bulb and cover.

A—Housing
B—Cover

C—Bulb



LV12533 —UN—13APR05



LV12534 —UN—13APR05

SA61034,000034D -19-21APR08-1/1

Replace Controls Illumination Light Bulb—Cab

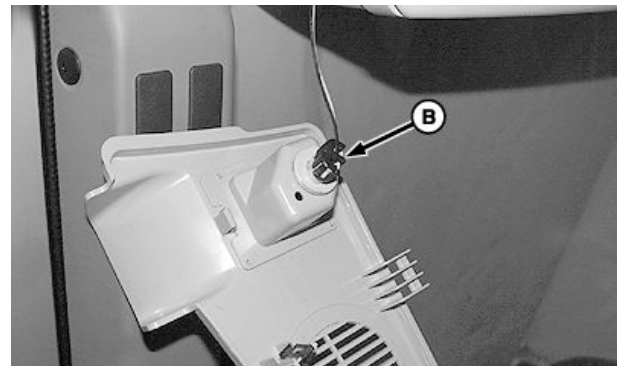
1. Pry off panel (A).
2. Rotate light bulb retainer (B) counterclockwise approximately 1/4 turn and remove.
3. Pull out light bulb.
4. Install new bulb in reverse order of removal.

A—Panel

B—Light Bulb Retainer



LV9515 —UN—07AUG04



LV9598 —UN—07AUG04

SA61034,000034E -19-21APR08-1/1

Replace Rotary Beacon Light Bulb—If Equipped

CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handle Halogen Light Bulbs Safely in this section.)

1. Loosen wing nut (A) and remove rotary beacon light assembly.
2. Install rubber cap (B).

A—Wing Nut

B—Rubber Cap



LV12523 —UN—13APR05



LV12524 —UN—13APR05

SA61034,000034F -19-21APR08-1/2

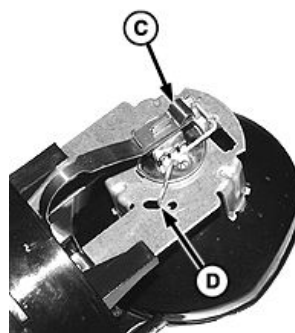
3. Depress tab (A) and rotate lens (B) counterclockwise to remove.
4. Pull tab (C) away from bulb.
5. Unlatch retaining spring (D) and remove light bulb (E).
6. Install new bulb in reverse order of removal.

A—Tab
B—Lens
C—Tab

D—Retaining Spring
E—Bulb



LV9695 —UN—19AUG04



LV9696 —UN—19AUG04



LV9697 —UN—19AUG04

SA61034,000034F -19-21APR08-2/2

Wheels, Tires and Treads

Service Tires Safely

⚠ CAUTION: Explosive separation of a tire and rim parts can cause serious injury or death.

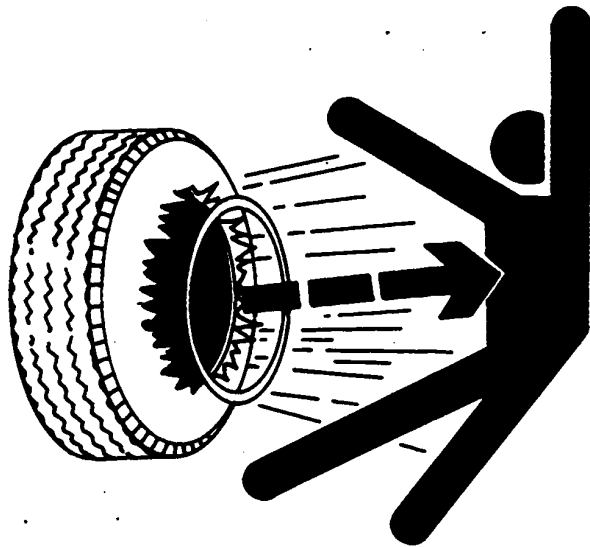
Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.

Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



TS211 —UN—15APR13

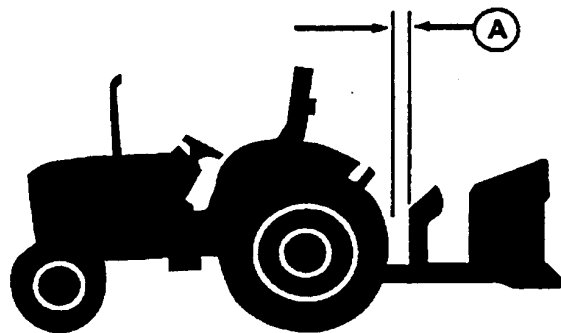
DX,RIM1 -19-27OCT08-1/1

Check Implement-to-Tire Clearance

IMPORTANT: When large diameter rear tires are installed on a tractor with a 3-Point Hitch, a quick coupler or similar device is required to provide adequate implement-to-tire clearance.

Check for adequate clearance (A) between outside diameter of the tire and implement with hitch in raised position.

A—Clearance



M47177 —UN—31JAN92

MX,WTIP,AA1 -19-07DEC06-1/1

Check Tire Inflation Pressure

Check tires daily for damage or noticeably low pressure.

At least every 100 hours of operation, check inflation pressure with a gauge. Use an accurate gauge having 10 kPa (0.1 bar) (1 psi) graduations.

If tires contain liquid ballast, use a special air-water gauge and measure with valve stem at bottom.

NOTE: When furrow plowing or during hillside operation, tire pressure can be increased 28 kPa (0.28 bar) (4 psi) ABOVE maximum to prevent tire wrinkling or buckling.

IMPORTANT: Always check inflation pressure with an accurate tire gauge to prevent over-inflation. Over-inflation reduces performance and increases strain of both tire and rim.

NOTE: Following inflation information applies to both front and rear tires and Tire Inflation Pressure Charts.

1. All inflation pressures are calculated for 29 km/h (18 mph) travel speeds for both diagonal (bias) ply and radial ply tires.
2. Operating tires at the inflation pressures listed on the chart will provide optimum tractive performance of the tire/vehicle system. Correctly inflated radial tires will show a large deflection of the sidewall or "cheeks." This is normal and will not hurt the tire if the inflation pressure is maintained.
3. Regularly monitor inflation pressures less than 80 kPa (12 psi) because of the increased risk of low pressure air leaks (especially due to leaking valve cores).
4. When operating tractors on steep side slopes, increase inflation pressures 28 kPa (4 psi) above the values listed to compensate for lateral weight transfer.
5. Tires run as singles in high traction conditions sometimes experience bead slip. Increasing the inflation pressure will compensate for this condition but will cause reduced traction. Consult your tire dealer if this problem occurs.
6. If higher load capacities are needed, contact your John Deere dealer for tire manufacturers load and inflation table information.

MX,WTIP,BA1 -19-07DEC06-1/1

Tire Inflation Pressure Charts

NOTE: Pressures listed are the standard factory inflations.
For additional tire pressure information for your

specific application, refer to the tire manufacturer information or contact your John Deere dealer.

Front Tires—Standard Factory Inflation					
Tire Size	Ply Rating	Tread	kPa	bar	psi
11.2-24	6/8	R1	179	1.8	26
11.2R24	115A8	R1	165	1.7	24
11LL-15	8	F2/F3	303	3.0	44
12.4R24	122A8	R1	248	2.5	36
12.5-20	10	I3	248	2.5	36
12.5/80-18	6	I3	310	3.1	45
12LL-16	6	R3	207	2.1	30
13.6R24	125A8	R1W	207	2.1	30
13.6-38	6	R2	207	2.1	30
230/95R32	128A8	R1W	207	2.1	30
230/95R40	122A8	R1	207	2.1	30
27/12LL-15	6	Turf	207	2.1	30
340/85R38	133A8	AC85	207	2.1	30
44x18-20	4	R3	207	2.1	30
7.50-16	6	F2	303	3.0	44
9.5-16	6	R3	207	2.1	30
9.5-24	6	R1	207	2.1	30

Rear Tires—Standard Factory Inflation					
Tire Size	Ply Rating	Tread	kPa	bar	psi
13.6-38	6	R2	207	2.1	30
14.9-28	6	R1	207	2.1	30
15.5R38	125A8	R1W	207	2.1	30
16.9-28	6 8	R1 R4	207	2.1	30
16.9-30	6	R1	207	2.1	30
18.4R30	145A8	R1	207	2.1	30
19.5L-24	10	R4/Sod	207	2.1	30
21.5LL-16.1	6	R3/Turf	207	2.1	30
23.1-26	8	R3	207	2.1	30
230/95R40	122A8	R1	207	2.1	30
230/95R48	136A8	R1W	207	2.1	30
340/85R38	133A8	AC85	207	2.1	30
420/85R34	147A8	R1W	207	2.1	30
420/90R30	142A8	R1	207	2.1	30
480/80R30	143A8	R1W	207	2.1	30

JZ81662,000073F -19-06FEB14-1/1

Permissible Load Specifications

IMPORTANT: Always consult your tire's manufacturer information as permissible load is influenced

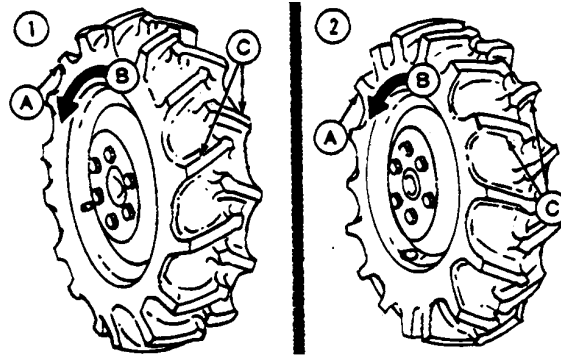
by tire manufacturer, inflation pressure, speed-radius index, and travel speed.

The load capacities quoted here apply only for 16.9-30 6PR R1 tires.

Description	Specification kg (lb)
Maximum Permissible Axle Load	
2WD	1470 (3240)
MFWD	1980 (4365)
Rear	3960 (8730)
Maximum Permissible Loads — 2-Wheel Drive	
Maximum Ballast	1470 (3240)
With Loader and Payload	3893 (8528)
Maximum Permissible Loads — Mechanical Front Wheel Drive	
Maximum Ballast	1980 (4365)
With Loader and Payload	

MB33986,0000017 -19-29SEP11-1/1

Select Front Tire Rolling Direction



Left Tire (Viewed From Rear)

A—Front Tire (Viewed from Rear) B—Rolling Direction of Tire

C—Tire Lugs

(1)—Under most conditions, front tires (A) should be mounted with the direction of tire lugs (C) the same as the tire rolling direction (B).

(2)—If tractor is mainly used for loader operations, lug direction may be reversed on the MFWD axle for improved tire wear.

SH20560,00001D7 -19-31OCT07-1/1

Tighten Wheel/Axle Hardware Correctly

CAUTION: NEVER operate tractor with a loose rim, wheel, hub, or axle.

Any time hardware is loosened, tighten to specified torque.

NOTE: Follow checking procedure when a new tractor is first used, or wheels have been off.

1. After driving tractor about 100 m (109 yd), and before placing it under load, tighten hardware to specified torque.
2. Check hardware after working three hours and again after 10 hours.
3. Check all hardware frequently and keep it tight.

LV,5010WT,I -19-07DEC06-1/1

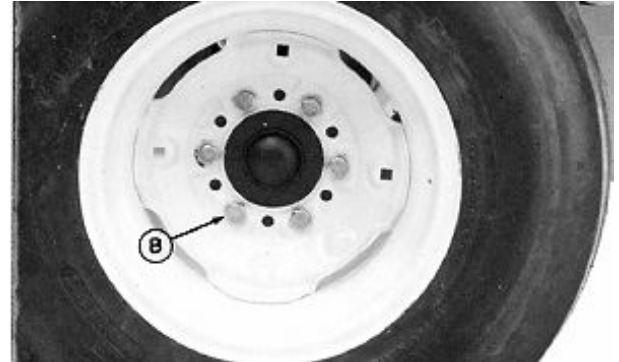
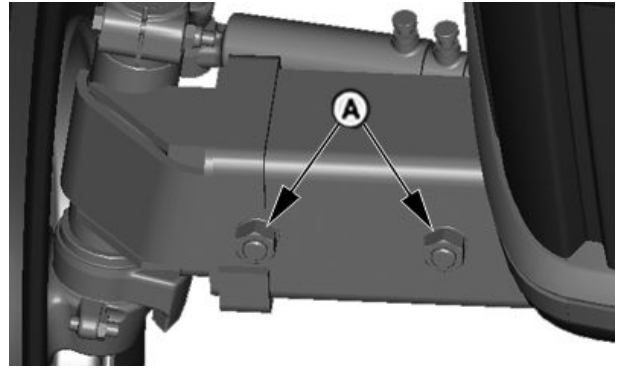
Tighten Bolts—Adjustable Front Axle

Tighten bolts (A and B) to specifications.

	Specification
Adjustable Front Axle-to-Knee Bolts	
(A)—Torque.....	400 N·m (295 lb·ft)
Adjustable Front Axle Disk-to-Flange Bolts	
(B)—Torque.....	175 N·m (130 lb·ft)

A—Axle-to-Knee Bolts

B—Disk-to-Flange Bolts



AJ20558,0000330 -19-05JAN10-1/1

PULV000545—UN—21MAR08

M46420—UN—31JAN92

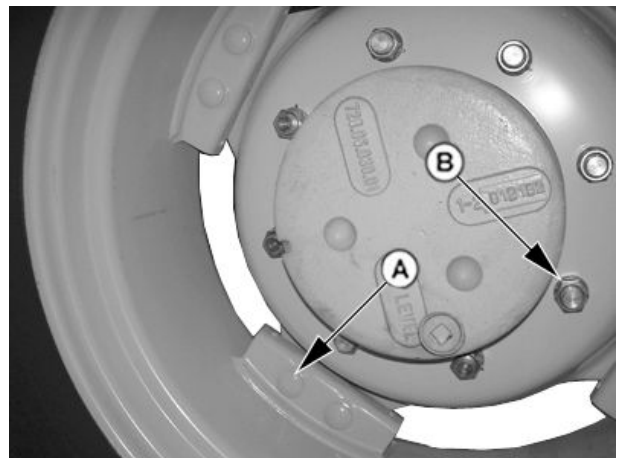
Tighten Bolts—MFWD Axle

Tighten hardware (A and B) to specifications.

	Specification
MFWD Wheel Rim-to-Disk Bolts	
(A)—Torque.....	245 N·m (180 lb·ft)
MFWD Wheel Disk-to-Hub Nuts	
(B)—Torque.....	300 N·m (220 lb·ft)

**A—MFWD Wheel Rim-to-Disk
Bolts**

**B—MFWD Wheel Disk-to-Hub
Nuts**



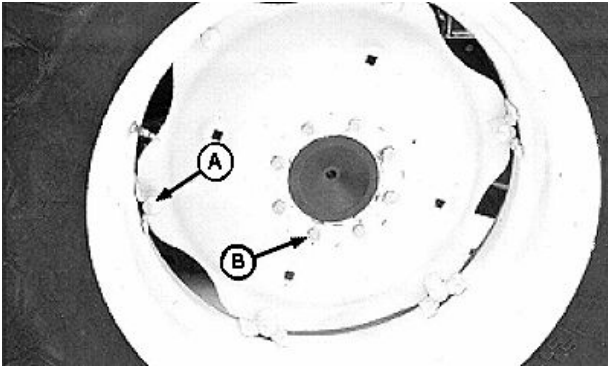
SA61034,0000321 -19-21MAR08-1/1

PULV000630—UN—07JUN09

Tighten Bolts—Rear Axle

Tighten bolts (A and B) to specifications.

Specification	
Rear Wheel Rim-to-Disk (Steel 24 in. and 28 in. Wheels)—Torque.....	245 N·m (180 lb-ft)
Rear Wheel Rim-to-Disk (Steel 30 in. and 38 in. Wheels)—Torque.....	350 N·m (255 lb-ft)
5085M, 5095M, and 5105M—Rear Steel Wheel Disk-to-Hub M20 Bolts—Torque.....	600 N·m (445 lb-ft)
5095MH— Rear Steel Wheel Disk-to-Hub M18 Bolts—Torque.....	410 N·m (302 lb.-ft.)



LV1947—UN—28APR97

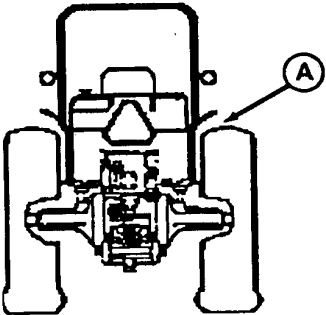
A—Rear Wheel Rim-to-Disk Bolts **B—Rear Wheel Disk-to-Hub Bolts**

GS25068,0001AB5 -19-22JUN15-1/1

Observe Rear Wheel Tread Width Limitations

IMPORTANT: Tires must have at least 25 mm (1 in.) clearance with fenders (A). When large diameter rear tires are installed, check clearance between tire and fenders.

A—Rear Wheel-to-Fender Clearance



M47179—UN—31JAN92

MX,WTIP,DA1 -19-07DEC06-1/1

Set Tread—Two-Position Rear Wheels

Wheel tread can be adjusted by exchanging the wheels from side-to-side and by using spacers.

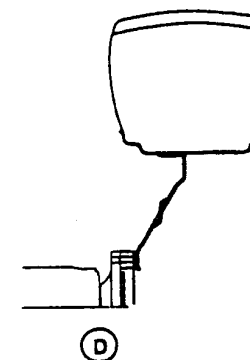
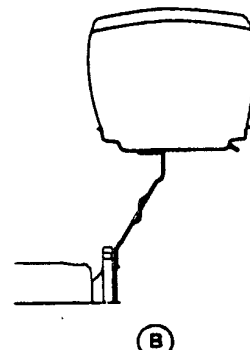
IMPORTANT: After setting wheel spacing, tighten rear wheel disk-to-hub bolts to specification. Drive tractor 100 m (109 yd) and tighten again.

Specification

Rear Steel Wheel

Disk-to-Hub M20

Bolts—Torque.....600 N·m
(445 lb-ft)



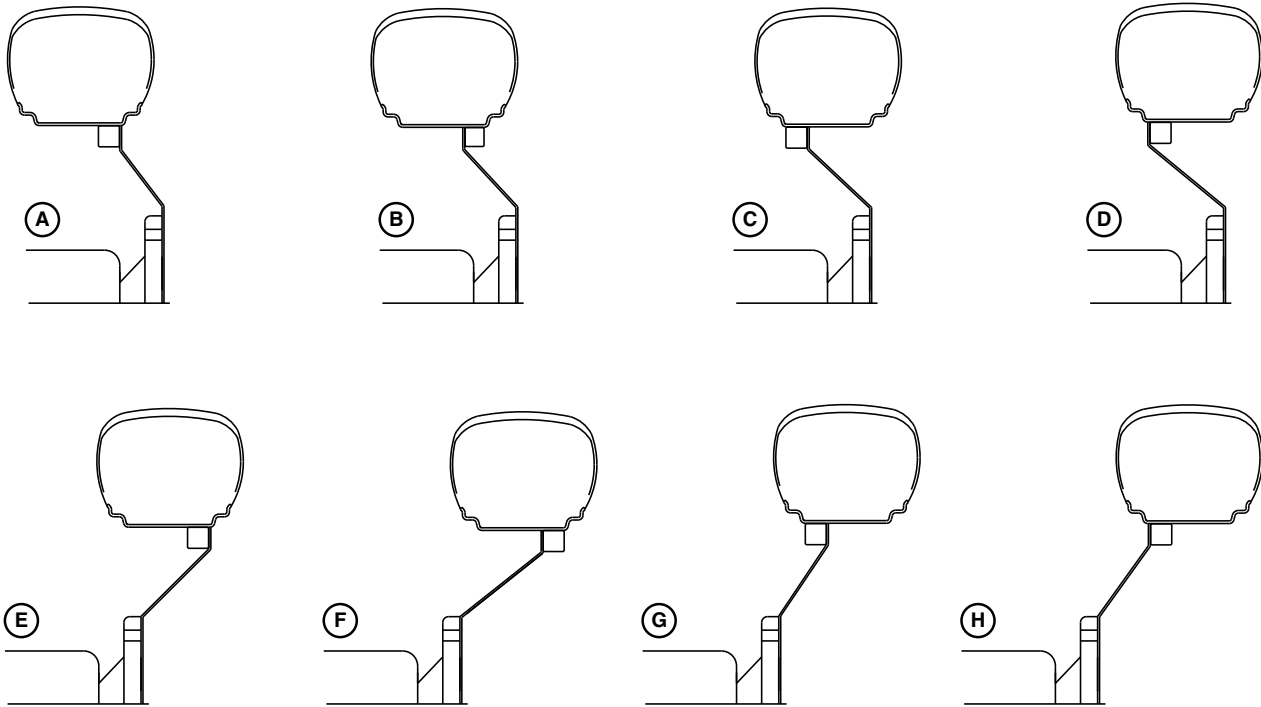
M47178—UN—31JAN92

TWO-POSITION REAR WHEELS—TREAD WIDTH (Centerline-to-Centerline)								
Tire	No Spacer		30 mm Spacer		44 mm Spacer		111 mm Spacer	
	A	B	C	D	C	D	C	D
21.5L-16.1 6PR R3 Bias (5ML Only)								
22.5LL-16.1 6PR R3 Bias (Turf)	1268 mm (49.9 in.)	1658 mm (65.3 in.)	INT ^a	INT ^a	INT ^a	INT ^a	INT ^a	INT ^a
23.1-26 8PR R3 Bias (Turf)	INT ^a	1658 mm (65.3 in.)	1307 mm (51.5 in.)	INT ^a	1321 mm (52.0 in.)	INT ^a	1388 mm (54.7 in.)	INT ^a

^aInterference (Do not use)

SH20560,00001D8 -19-31AUG09-1/1

Set Tread—Multi-Position Rear Wheels



LV8610—JUN—28AUG03

Wheel tread on rear axle with multi-position wheels can be adjusted by repositioning or exchanging the rims or by reversing the wheel disks.

Wheel tread can also be adjusted by exchanging the complete wheel to the opposite side of the tractor (this maneuver permits the change from disk-dished-in to disk-dished-out operations without disassembling the wheel). When changing rear wheels from one side to the other, the arrow on side wall of tire points in the direction of forward rotation.

IMPORTANT: After setting wheel spacing, tighten rear wheel rim-to-disk bolts and rear wheel disk-to-hub bolts to specification. Drive tractor 100 m (109 yd) and tighten again.

Specification

Rear Wheel Rim-to-Disk (Steel 24 in. and 28 in. Wheels)—Torque.....	245 N·m (180 lb·ft)
Rear Wheel Rim-to-Disk (Steel 30 in. and 38 in. Wheels)—Torque.....	350 N·m (255 lb·ft)
Rear Steel Wheel Disk-to-Hub M20 Bolts—Torque.....	600 N·m (445 lb·ft)

MULTI-POSITION REAR WHEELS—TREAD WIDTH (Centerline-to-Centerline)

Tire	Diagram							
	A	B	C	D	E	F	G	H
14.9-28 6PR R1 Bias	INT ^a	INT ^a	INT ^a	1416 mm (55.8 in.) ^b	1510 mm (59.4 in.)	1619 mm (63.7 in.)	1713 mm (67.4 in.)	1822 mm (71.7 in.)
16.9-28 6PR R1 Bias	INT ^a	INT ^a	INT ^a	INT ^a	1509 mm (59.4 in.)	1619 mm (63.7 in.)	1713 mm (67.4 in.)	1823 mm (71.7 in.)
16.9-30 6PR R1 Bias (Also 5ML)	INT ^a	INT ^a	INT ^a	INT ^a	1515 mm (59.5 in.)	1613 mm (63.5 in.)	1715 mm (67.5 in.)	1813 mm (71.4 in.)
420/90R30 142A8 R1 Radial	INT ^a	INT ^a	INT ^a	INT ^a	1515 mm (59.6 in.)	1617 mm (63.7 in.)	1719 mm (67.7 in.)	1813 mm (71.4 in.)
18.4R30 143A8 R1 Radial (480/80R30 145A8 R1)	INT ^a	INT ^a	INT ^a	INT ^a	1515 mm (59.6 in.)	1617 mm (63.7 in.)	1719 mm (67.7 in.)	1813 mm (71.4 in.)

Continued on next page

SH20560,00001D9 -19-31AUG09-1/2

Wheels, Tires and Treads

MULTI-POSITION REAR WHEELS—TREAD WIDTH (Centerline-to-Centerline)								
	Diagram							
Tire	A	B	C	D	E	F	G	H
15.5R38 125A8 R1 Radial	INT ^a	INT ^a	INT ^a	1433 mm (56.4 in.)	1495 mm (58.9 in.)	1593 mm (62.7 in.)	1735 mm (68.3 in.)	1833 mm (72.2 in.)
16.9R34 146A8 R1W Radial	INT ^a	INT ^a	INT ^a	INT ^a	1506 mm (59.3 in.)	1610 mm (63.4 in.)	1725 mm (67.9 in.)	1830 mm (72.1 in.)
19.5L-24 10PR R4 Bias (Also 5ML)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)	1455 mm (57.3 in.)
19.5L-24 10PR R4 Bias (Sod Only)	1106 mm (43.5 in.)	1210 mm (47.6 in.)	1325 mm (52.2 in.)	1430 mm (56.3 in.)	1506 mm (59.3 in.)	1610 mm (63.4 in.)	1725 mm (67.9 in.)	1830 mm (72.1 in.)
16.9-24 8PR R4 Bias	INT ^a	INT ^a	INT ^a	INT ^a	1509 mm (59.4 in.)	1619 mm (63.7 in.)	1713 mm (67.4 in.)	1823 mm (71.7 in.)
230/95R48 134A8/134B R1 (Four Star) Radial	1146 mm (45.1 in.)	1185 mm (46.7 in.)	1349 mm (53.1 in.)	1388 mm (54.7 in.)	1546 mm (60.9 in.)	1585 mm (62.4 in.)	1749 mm (68.9 in.)	1788 mm (70.4 in.)
13.6-28 4PR R1	INT ^a	INT ^a	INT ^a	1416 mm (55.8 in.)	1510 mm (59.4 in.)	1619 mm (63.7 in.)	1713 mm (67.4 in.)	1822 mm (71.7 in.)
13.6-38 6PR R2 Tube Bias (Hi Crop Only)	INT ^a	1522 mm (59.9 in.)	1620 mm (63.8 in.)	1722 mm (67.8 in.)	1820 mm (71.7 in.)	1922 mm (75.7 in.)	2020 mm (79.5 in.)	2122 mm (83.5 in.)
230/95R40 122A8 R1 Radial (Hi Crop Only)	1416 mm (55.7 in.)	1449 mm (57.1 in.)	1689 mm (66.5 in.)	1722 mm (67.8 in.)	1798 mm (70.8 in.)	1849 mm (72.8 in.)	2089 mm (82.2 in.)	2122 mm (83.5 in.)

^aInterference (do not use)

^bNot available with Cab or Deluxe OOS.

SH20560,00001D9 -19-31AUG09-2/2

Set Tread—Multi-Position MFWD Wheels

Wheel tread on MFWD axle with multi-position wheels can be adjusted by repositioning or exchanging the rims or by reversing the wheel disks.

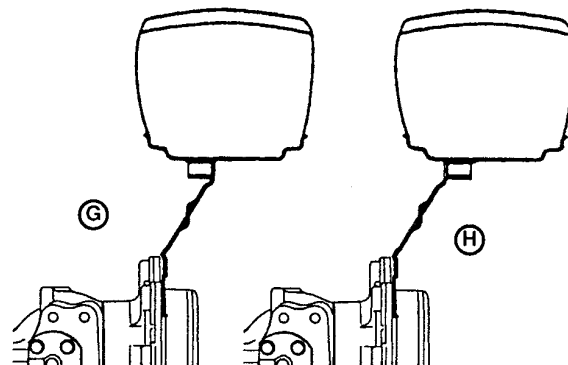
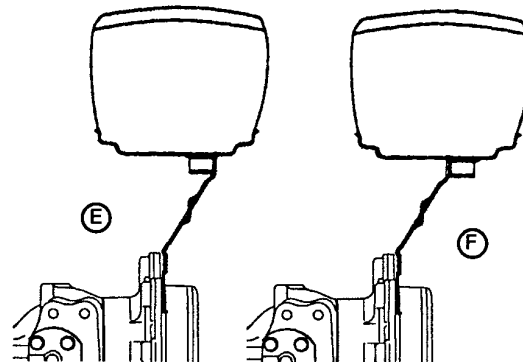
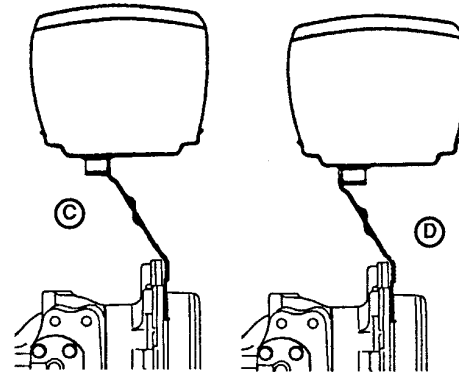
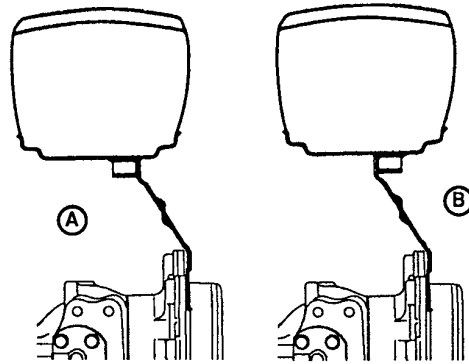
Wheel tread can also be adjusted by exchanging the complete wheel to the opposite side of the tractor. (This maneuver permits the change from disk-dished-in to disk-dished-out operations without disassembling the wheel). When changing MFWD wheels from one side to the other, the arrow on side wall of tire points in the direction of forward rotation. In certain applications, MFWD equipped tractors may operate with the arrows in the opposite direction. (See Selecting Front Tire Rolling Direction in this section.)

Tread settings are measured at the middle of the tires **at axle height**.

IMPORTANT: After setting wheel spacing, tighten MFWD wheel rim-to-disk bolts and MFWD wheel disk-to-hub bolts to specification. Drive tractor 100 m (109 yd) and tighten again.

Specification

MFWD Wheel Rim-to-Disk Bolts—Torque.....	245 N·m (180 lb-ft)
MFWD Wheel Disk-to-Hub Nuts—Torque.....	300 N·m (220 lb-ft)



LV601—UN—22APR94

LV602—UN—22APR94

Continued on next page

SH20560,00001DA -19-31AUG09-1/2

Wheels, Tires and Treads

MULTI-POSITION MFWD WHEELS—TREAD WIDTH (Centerline-to-Centerline)								
	Diagram							
Tire	A	B	C	D	E	F	G	H
9.5-16 6PR R3 Bias (5ML Only)	INT ^a	N/A	N/A	N/A	1730 mm (68.1 in.)	N/A	N/A	N/A
9.5-24 6PR R1 Bias	1367 mm (53.8 in.)	1480 mm (58.3 in.)	1519 mm (59.8 in.)	1632 mm (64.3 in.)	1667 mm (65.6 in.)	1780 mm (70.1 in.)	1819 mm (71.6 in.)	1932 mm (76.1 in.)
11.2-24 6PR R1 Bias	1342 mm (52.8 in.)	1454 mm (57.2 in.)	1545 mm (60.8 in.)	1657 mm (65.2 in.)	1642 mm (64.6 in.)	1754 mm (69.1 in.)	1845 mm (72.6 in.)	1957 mm (77.0 in.)
11.2-24 8PR R1 Bias (5ML Only)	1299 mm (51.1 in.)	1395 mm (54.9 in.)	1501 mm (59.1 in.)	1597 mm (62.9 in.)	1699 mm (66.9 in.)	1795 mm (70.7 in.)	1901 mm (74.8 in.)	1997 mm (78.6 in.)
11.2R24 115A8 R1 Radial	1299 mm (51.1 in.)	1395 mm (54.9 in.)	1501 mm (59.1 in.)	1597 mm (62.9 in.)	1699 mm (66.9 in.)	1795 mm (70.7 in.)	1901 mm (74.8 in.)	1997 mm (78.6 in.)
12.4R24 122A8 R1 Radial	1342 mm (52.8 in.)	1454 mm (57.2 in.)	1545 mm (60.8 in.)	1657 mm (65.2 in.)	1642 mm (64.6 in.)	1754 mm (69.1 in.)	1845 mm (72.6 in.)	1957 mm (77.0 in.)
13.6R24 125A8 R1W Radial	1354 mm (53.3 in.)	1453 mm (57.2 in.)	1546 mm (60.9 in.)	1645 mm (64.8 in.)	1654 mm (65.1 in.)	1753 mm (69.0 in.)	1846 mm (72.7 in.)	1945 mm (76.6 in.)
12LL-16 6PR R3 Bias (Turf)	INT ^a	N/A	N/A	N/A	1691 mm (66.6 in.)	N/A	N/A	N/A
44x18-20 4PR R3 Bias								
12.5/80-18 12PR I3 Bias (R4 type) (Also 5ML)	1585 mm (62.4 in.)	N/A	N/A	N/A	1714 mm (67.5 in.)	N/A	N/A	N/A
230/95R32 126A8/126B R1 Radial (Four Star, crop clearance)	1365 mm (53.7 in.)	1404 mm (55.3 in.)	1500 mm (59.1 in.)	1539 mm (60.2 in.)	1765 mm (69.5 in.)	1804 mm (71.0 in.)	1900 mm (74.8 in.)	1939 mm (76.3 in.)
13.6-38 6PR R2 Tube Bias (Hi Crop Only)	1303 mm (51.3 in.)	1403 mm (55.2 in.)	1501 mm (59.1 in.)	1603 mm (63.1 in.)	1701 mm (67.0 in.)	1803 mm (71.0 in.)	1901 mm (74.8 in.)	2003 mm (78.9 in.)
230/95R40 122A8 R1 Radial (Hi Crop Only)	1296 mm (51.0 in.)	1330 mm (52.4 in.)	1570 mm (61.8 in.)	1603 mm (63.1 in.)	1679 mm (66.1 in.)	1730 mm (68.1 in.)	1970 mm (77.6 in.)	2003 mm (78.9 in.)

^aInterference (do not use)

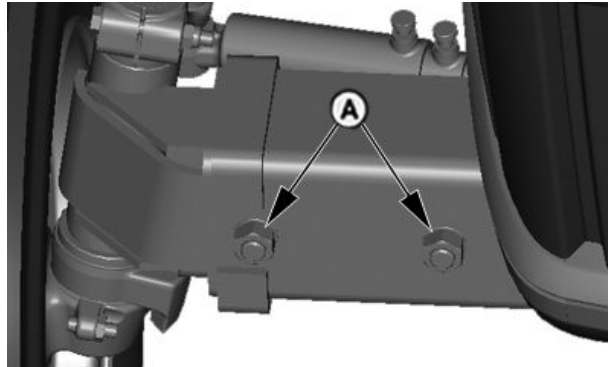
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Set Tread—Adjustable Front Axle

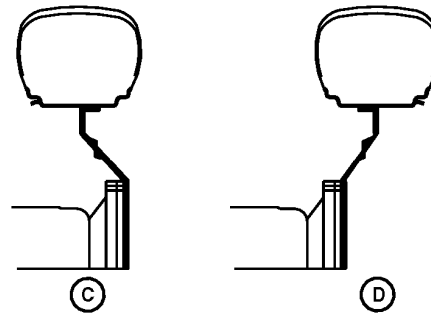
Front rims are offset. With some tires, this provides two tread spacings at each axle setting.

Tread settings are measured at the middle of the tires **at axle height**.

A—Adjustment Holes



PULV000545—UN—21MAR08



LV1515—UN—05MAR96

ADJUSTABLE FRONT AXLE TREAD SETTINGS

Diagram C
Centerline-to-Centerline

Tire	Tread Position ^a					
	1	2	3	4	5	6
7.50-16 6PR F2 Bias	1466 mm (57.7 in.)	1566 mm (61.7 in.)	1666 mm (65.6 in.)	1766 mm (69.5 in.)	1866 mm (73.5 in.)	1966 mm (77.4 in.)
11L-15 8PR F2 Bias 11LL-15 8PR F3 Bias (Truck type) 27/12LL-15 6PR R3 Bias (Turf)	1488 mm (58.6 in.)	1588 mm (62.5 in.)	1688 mm (66.5 in.)	1788 mm (70.4 in.)	1888 mm (74.3 in.)	1988 mm (78.3 in.)

^aTread position 1 is with axle adjustment at its most inward location. See *ADJUST FRONT AXLE TREAD WIDTH* in this section.

ADJUSTABLE FRONT AXLE TREAD SETTINGS

Diagram D
Centerline-to-Centerline

Tire	Tread Position ^a					
	1	2	3	4	5	6
7.50-16 6PR F2	1595 mm (62.8 in.)	1695 mm (66.7 in.)	1795 mm (70.7 in.)	1895 mm (74.6 in.)	1995 mm (78.5 in.)	2095 mm (82.5 in.)
11L-15 8PR F2 11LL-15 8PR F3 27/12LL-15 6PR R3	1572 mm (61.9 in.)	1672 mm (65.8 in.)	1772 mm (69.7 in.)	1872 mm (73.7 in.)	1972 mm (77.6 in.)	2072 mm (81.5 in.)

^aNumber 1 position is with axle adjustment at its most inward location. See *ADJUST FRONT AXLE TREAD WIDTH* in this section.

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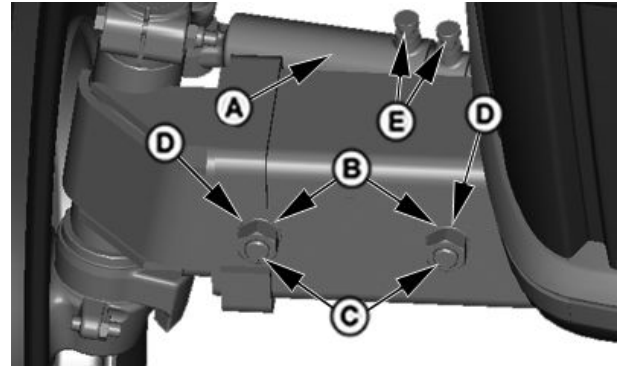
Adjust Front Axle Tread Width

IMPORTANT: DO NOT place jack under engine oil pan.

1. Jack up front end of tractor.
2. When making large tread adjustments, loosen cap screws (E) and adjust the tie rod (A) length with axle length.
3. Remove two nuts (B), sleeves (D) and cap screws (C) from front axle (2 on each side).
4. Slide axle knees to desired position. Both sides should be adjusted to same spacing.
5. Install sleeves (if equipped), cap screws and nuts on each side. Tighten cap screws to specification.

Specification

Adjustable Front	
Axle-to-Knee	
Bolts—Torque.....	400 N·m (295 lb·ft)



A—Tie Rod
B—Axle Nut (4 used)
C—Cap Screw (4 used)

D—Sleeve (4 used)
E—Tie Rod Cap Screws

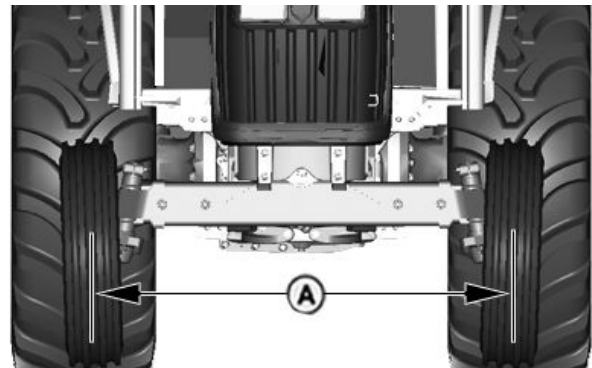
6. Set toe-in. (See Check Toe-In—MFWD Axle or Check Toe-In—Adjustable Front Axle and Adjust Toe-In—MFWD Axle or Adjust Toe-In—Adjustable Axle in this section.)

SH20560,00001DC -19-31OCT07-1/1

PULV000544 —UN—21MAR08

Check Toe-In—Adjustable Front Axle

1. Park machine on level surface.
2. Turn steering wheel so front wheels are in the straight-ahead position. Stop engine.
3. Measure distance (A) between tires at hub level in front of axle. Record measurement and mark the tires.
4. Move tractor back about 1 m (3 ft), so mark is at hub level behind the axle. Again, measure distance between tires at same point on tire. Record measurement.
5. Determine the difference between front and rear measurements. If the front measurement is smaller, toe is in. If the rear is smaller, toe is out.
6. Distance (A) at front of tires should be 3—6 mm (1/8—1/4 in.) less than distance measured at rear of tires. Adjust toe-in if necessary. (See Adjust Toe-In—Adjustable Front Axle in this section.)



A—Front Axle Toe-In Distance

SH20560,00001DD -19-31OCT07-1/1

PULV000543 —UN—28AUG08

Adjust Toe-In—Adjustable Front Axle

1. Loosen tie rod jam nut (C) on left and right tie rods (A).
2. Adjust left and right sides equally by rotating the inner rod (B) to lengthen or shorten tie rod, as needed, to obtain toe-in of 3–6 mm (1/8–1/4 in.).

Tie Rod Rotation	Approximate Change in Toe-In
1/2 turn	8 mm (5/16 in.)
1 turn	16 mm (5/8 in.)

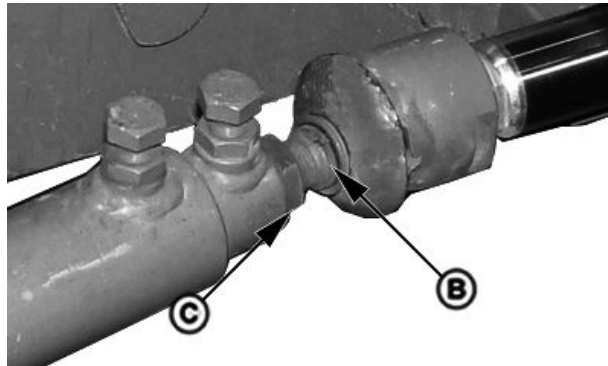
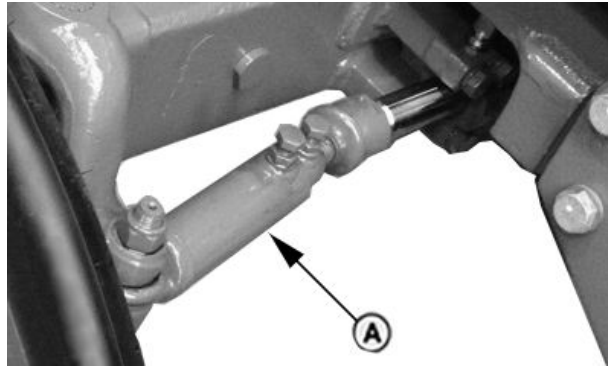
3. Tighten jam nuts to specification.

Specification

Adjustable Front Axle Tie
Rod Jam Nut—Torque..... 120 N·m
(88 lb-ft)

A—Tie Rod
B—Inner Rod

C—Tie Rod Jam Nut



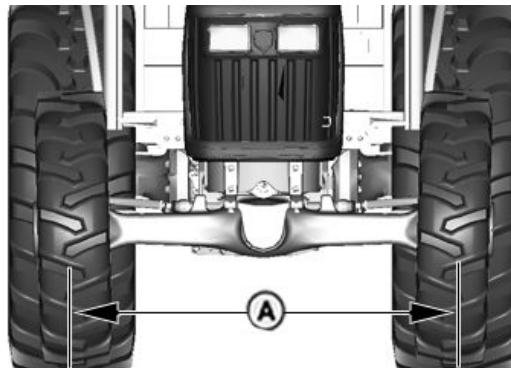
PULV000542—UN—21MAR08

PULV000541—UN—21MAR08

SH20560,00001DE -19-31OCT07-1/1

Check Toe-In—MFWD Axle

1. Disengage MFWD and park tractor on smooth, level surface. Steer front wheels straight ahead. Stop engine.
2. Measure distance (A) between centerline of tires at hub level in front of axle, using an outside lug of each tire or an inside lug of each tire. Record measurement and mark the tires.
3. Move tractor back about 1 m (3 ft), so mark is at hub level behind the axle. Again, measure distance between tires at same point on tire. Record measurement.
4. Determine the difference between front and rear measurements. If the front measurement is smaller, toe is in. If the rear is smaller, toe is out. The difference may be in either direction (toe-in or toe-out), but should be less than 3 mm (1/8 in.). Adjust toe-in if necessary. (See Adjust Toe-In—MFWD Axle in this section.)



A—MFWD Axle Toe-In Distance

PULV000540—UN—21MAR08

SH20560,00001DF -19-31OCT07-1/1

Adjust Toe-In—MFWD Axle

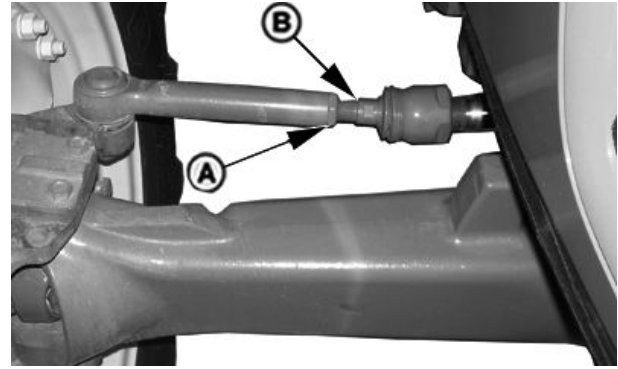
1. Loosen jam nuts (A) on both ends of tie rod.
2. Adjust both sides equally by rotating the inner rod (B) to lengthen or shorten tie rod, as needed, to obtain toe-in or toe-out of less than 3 mm (1/8 in.).

Tie Rod Rotation	Approximate Change
1/8 turn	4 mm (3/16 in.)
1/4 turn	8 mm (3/8 in.)
1/2 turn	16 mm (5/8 in.)

3. Tighten jam nuts to specification.

Specification

Jam Nuts—Torque.....220 – 240 N·m
(162 – 177 lb-ft)



A—Tie Rod Jam Nuts

B—Inner Rod

PULV000539 —UN—21MAR08

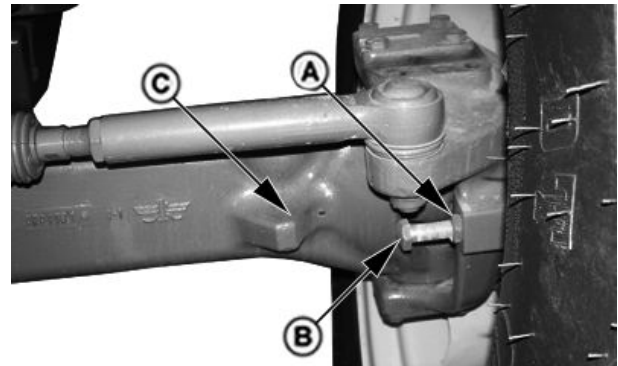
SH20560,00001E0 -19-13AUG10-1/1

Set MFWD Steering Stops Turn Radius

1. Raise and support front of tractor so MFWD axle can be oscillated to its stops.
2. Slowly turn steering wheel to the left until steering cylinder travel has reached its limit, the steering stops, or the tires are within 25 mm (1 in.) of grille screen or side panels.
3. Raise left side of axle against its stop and measure clearance between tire and nearest tractor component. The distance should not be less than 25 mm (1 in.).
4. Loosen lock nut (A) on steering stop and adjust steering stop bolt (B) so it touches steering stop (C). It may be necessary to shorten stop bolt (B) in order to obtain maximum turning angle.
5. Tighten steering stop bolt retaining lock nut (A) to specifications.

Specification

Steering Stop Bolt
Retaining Lock
Nut—Torque.....125 N·m
(92 lb-ft)



A—Steering Stop Lock Nut

B—Steering Stop Bolt

C—Steering Stop

PULV000538 —UN—21MAR08

7. Tighten steering stop bolt retaining nuts again to specification.

8. Repeat above steps for right side.

NOTE: Wide tread settings and large tire sizes will increase turn radius slightly.

6. Turn wheel fully to the left. Impact knuckle housing to steering stop five times.

SH20560,00001E2 -19-31OCT07-1/1

Use Correct Tire Combinations

In order to achieve maximum drawbar pull, maintain proper steerability, and reduce tire wear and fuel consumption, comply with the correct tire combinations.

Should mechanical front wheel drive front tires show excessive wear in comparison with rear tire, the front tires must be replaced in order to maintain the predetermined tire ratio.

IMPORTANT: When replacing tires, consult your tire dealer. Mixing worn and new tires, bias

and radial, or tires of different diameters or loaded radii can reduce tire life and overall tractor performance.

Using any tire combination, other than those listed on the Tire Compatibility Chart, could result in premature tire and driveline wear due to excessive underspeed or overspeed.

AJ20558,00002D8 -19-25JUN09-1/1

Fuel, Lubricants, and Coolant

Fill Fuel Tank

⚠ CAUTION: Handle fuel with care: It is highly flammable. DO NOT refuel the machine while smoking or when near open flame or sparks.

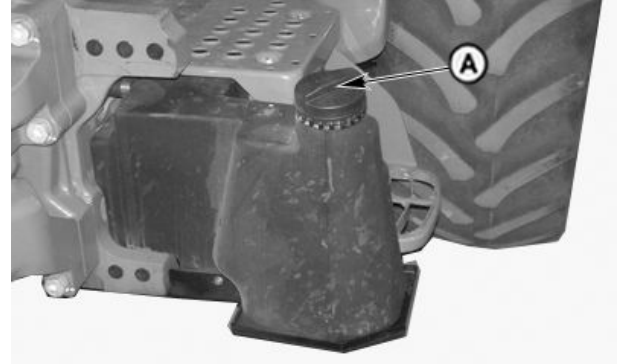
Always stop engine before refueling machine.
Fill fuel tank outdoors.

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

Fill fuel tank at end of each day's operation. This prevents condensation in tank as moist air cools.

5065M and 5075M	Open Operator's Station	84 L (22.3 gal)
		Optional Tank 32 L (8.5 gal)
5065M and 5075M	Cab	117 L (31.0 gal)
5085M, 5095M, 5105M and 5105ML	Open Operator's Station	115 L (30.3 gal)
5085M, 5095M and 5105M	Cab	154 L (40.7 gal)
5095MH - Hi-Crop	Open Operator's Station Cab	102 L (27 gal)

NOTE: To reduce fuel gelling and control wax separation during cold weather, John Deere Fuel Flow Improver, or equivalent, may be added to fuel or bulk storage tank.



A—Fuel Tank

SH20560,0000459 -19-22JUN09-1/1

TSS202 —UN—23AUG88

PULV000166 —UN—31OCT07

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic lubricants.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

DX,ALTER -19-11APR11-1/1

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Preferred Coolants

The following pre-mix engine coolants are preferred:

- John Deere COOL-GARD™ II
- John Deere COOL-GARD II PG

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II pre-mix	Freeze Protection Limit
COOL-GARD II 20/80	-9 °C (16 °F)
COOL-GARD II 30/70	-16 °C (3 °F)
COOL-GARD II 50/50	-37 °C (-34 °F)
COOL-GARD II 55/45	-45 °C (-49 °F)
COOL-GARD II PG 60/40	-49 °C (-56 °F)
COOL-GARD II 60/40	-52 °C (-62 °F)

Not all COOL-GARD II pre-mix products are available in all countries.

Use COOL-GARD II PG when a non-toxic coolant formulation is required.

Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere COOL-GARD II Concentrate in a 40—60% mixture of concentrate with quality water.

IMPORTANT: When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.

Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet the following specification:

- Pre-mix coolant meeting ASTM D6210 requirements

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- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

Water Quality

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When COOL-GARD II or COOL-GARD II PG is used, the drain interval is 6 years or 6000 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.

IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

DX,COOL3 -19-15MAY13-1/1

Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

IMPORTANT: Water may be used as coolant in emergency situations only.

Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.

Drain cooling system and refill with recommended engine coolant as soon as possible.

DX,COOL6 -19-15MAY13-1/1

John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

Test the coolant solution at intervals of 12 months and whenever excessive coolant is lost through leaks or overheating.

IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.

COOL-GARD II Coolant Extender is a chemically matched additive system for use with all COOL-GARD II coolants.

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COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- John Deere COOL-GARD II
- John Deere COOL-GARD II PG

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

Add the recommended concentration of COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

DX,COOL16 -19-15MAY13-1/1

Water Quality for Mixing with Coolant Concentrate

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total solids	<340 mg/L
Total dissolved I hardness	<170 mg/L
pH	5.5—9.0

IMPORTANT: Do not use bottled drinking water because it often contains higher concentrations of total dissolved solids.

Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

Ethylene Glycol	Freeze Protection Limit
40%	-24 °C (-12 °F)
50%	-37 °C (-34 °F)
60%	-52 °C (-62 °F)
Propylene Glycol	Freeze Protection Limit
40%	-21 °C (-6 °F)
50%	-33 °C (-27 °F)
60%	-49 °C (-56 °F)

DO NOT use a coolant-water mixture greater than 60% ethylene glycol or 60% propylene glycol.

DX,COOL19 -19-15MAY13-1/1

Testing Coolant Freeze Point

The use of a handheld coolant refractometer is the quickest, easiest, and most accurate method to determine coolant freeze point. This method is more accurate than a test strip or a float-type hydrometer which can produce poor results.

A coolant refractometer is available through your John Deere dealer under the SERVICEGARD™ tool program. Part number 75240 provides an economical solution to accurate freeze point determination in the field.

To use this tool:

1. Allow cooling system to cool to ambient temperatures.
2. Open radiator cap to expose coolant.
3. With the included dropper, collect a small coolant sample.
4. Open the lid of the refractometer, place one drop of coolant on the window and close the lid.
5. Look through the eyepiece and focus as necessary.
6. Record the listed freeze point for the type of coolant (ethylene glycol coolant or propylene glycol) being tested.



SERVICEGARD™ Part Number 75240

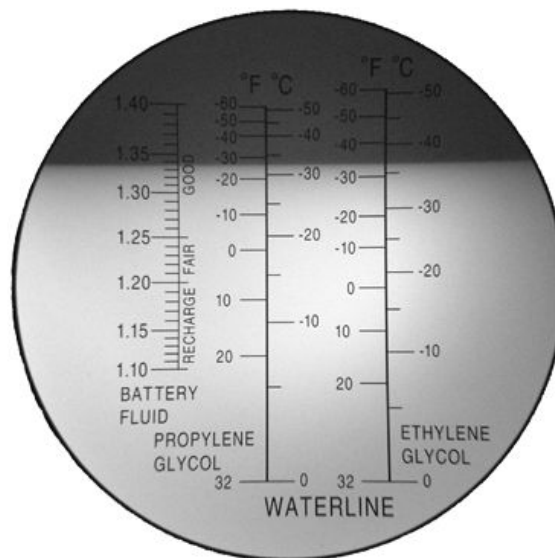


Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

SERVICEGARD is a trademark of Deere & Company

DX,COOL,TEST -19-13JUN13-1/1

TS1732—UN—04SEP13

TS1733—UN—04SEP13

Diesel Engine Break-In Oil — Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III

New engines are filled at the factory with either John Deere Break-In™ or John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In™ or Break-In Plus™ Engine Oil, respectively, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

If John Deere Break-In™ Engine Oil is used during the initial operation of a new or rebuilt engine, change the oil and filter at a maximum of 100 hours.

If John Deere Break-In Plus™ Engine Oil is used, change the oil and filter at a minimum of 100 hours and a maximum equal to the interval specified for John Deere Plus-50™ II or Plus-50™ oil.

After engine overhaul, fill the engine with either John Deere Break-In™ or Break-In Plus™ Engine Oil.

If John Deere Break-In™ or Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following and change the oil and filter at a maximum of 100 hours of operation:

- API Service Classification CE
- API Service Classification CD

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Break-In Plus is a trademark of Deere & Company

Plus-50 is a trademark of Deere & Company.

- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

IMPORTANT: Do not use Plus-50™ II, Plus-50™, or engine oils meeting any of the following for the initial break-in of a new or rebuilt engine:

API CJ-4	ACEA E9
API CI-4 PLUS	ACEA E7
API CI-4	ACEA E6
API CH-4	ACEA E5
API CG-4	ACEA E4
API CF-4	ACEA E3
API CF-2	
API CF	

These oils do not allow the engine to break in properly.

John Deere Break-In Plus™ Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II, John Deere Plus-50™, or other diesel engine oil as recommended in this manual.

DX,ENOIL4 -19-15MAY13-1/1

Extended Diesel Engine Oil Service Intervals

When John Deere PLUS-50™ oil is used with the specified John Deere filter, the service interval for engine oil and filter changes may be increased by 50% but not to exceed a maximum of 500 hours.

When ACEA E7, ACEA E6, ACEA E5, or ACEA E4 oils are used with specified John Deere filter, use engine oil analysis to determine if the service interval for engine oil and filter changes may be increased by a maximum of 50% but not to exceed 500 hours.

If John Deere PLUS-50™, ACEA E7, ACEA E6, ACEA E5, or ACEA E4 oils are used with other than the specified

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TORQ-GARD SUPREME is a trademark of Deere & Company

John Deere filter, change the engine oil and filter at the normal service interval.

If John Deere TORQ-GARD SUPREME™, API CJ-4, API CI-4 PLUS, API CI-4, API CH-4, or ACEA E3 oils are used, change the engine oil and filter at the normal service interval.

If API CG-4, API CF-4, or ACEA E2 oils are used, change the engine oil and filter at 50% of the normal service interval.

DX,ENOIL8 -19-13SEP06-1/1

Diesel Engine Oil — Tier 3 and Stage III

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere Plus-50™ II oil is preferred.

John Deere Plus-50™ is also recommended.

Other oils may be used if they meet one or more of the following:

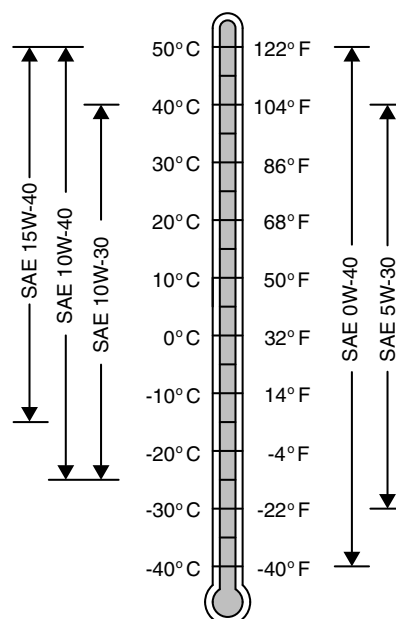
- John Deere Torq-Gard™
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4

Multi-viscosity diesel engine oils are preferred.

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

DO NOT use diesel fuel with sulfur content greater than 10000 mg/kg (10000 ppm).

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Torq-Gard is a trademark of Deere & Company



Oil Viscosities for Air Temperature Ranges

TS1691 —JUN—18JUL07

DX,ENOIL11 -19-15JUN10-1/1

Engine Oil and Filter Service Intervals — Tier 3 and Stage IIIA — PowerTech™ Engines

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depends on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

Diesel fuel sulfur content affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is **RECOMMENDED**.
- Use of diesel fuel with sulfur content 1000—5000 mg/kg (1000—5000 ppm) **REDUCES** the oil and filter change interval.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.
- **DO NOT** use diesel fuel with sulfur content greater than 10000 mg/kg (10000 ppm).

IMPORTANT: To avoid engine damage:

- **Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service interval.**
- **Use only approved oil types.**

Approved Oil Types:

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Torq-Gard is a trademark of Deere & Company*

- “Plus-50 Oils” include John Deere Plus-50™ II and John Deere Plus-50™
- “Other Oils” include John Deere Torq-Gard™, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4

NOTE: The 500 hour extended oil and filter change interval is only allowed if all of the following conditions are met:

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm).
- Use of John Deere Plus-50™ II or John Deere Plus-50™ oil.
- Use of an approved John Deere oil filter.

Engine Oil and Filter Service Intervals	
Fuel Sulfur	Less than 1000 mg/kg (1000 ppm)
Plus-50 Oils	500 hours
Other Oils	250 hours
Fuel Sulfur	1000—2000 mg/kg (1000—2000 ppm)
Plus-50 Oils	400 hours
Other Oils	200 hours
Fuel Sulfur	2000—5000 mg/kg (2000—5000 ppm)
Plus-50 Oils	350 hours
Other Oils	175 hours
Fuel Sulfur	5000—10000 mg/kg (5000—10000 ppm)
Plus-50 Oils	250 hours (see John Deere dealer)
Other Oils	125 hours (see John Deere dealer)
Oil analysis may extend the service interval of “Other Oils”, to a maximum not to exceed the interval of Plus-50 Oils.	

DX,ENOIL13,T3,PT,120to139 -19-17JUN13-1/1

Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, and Stage IV

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere Plus-50™ II is the recommended engine oil.

Extended service intervals may apply when John Deere Plus-50™ II engine oil is used. Refer to the engine oil drain interval table and consult your John Deere dealer for more information.

If John Deere Plus-50™ II engine oil is not available, engine oil meeting one or more of the following may be used:

- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

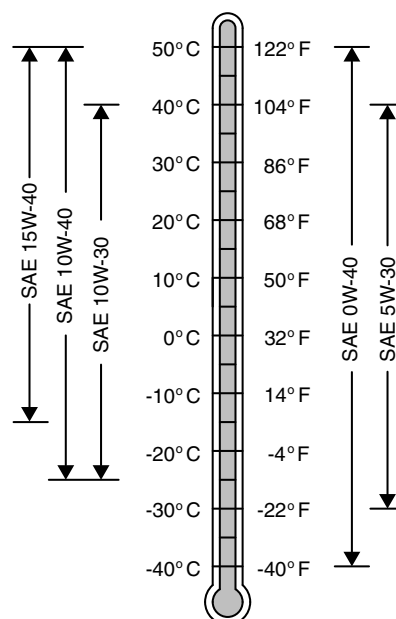
DO NOT use engine oil containing more than 1.0% sulfated ash, 0.12% phosphorus, or 0.4% sulfur.

Multi-viscosity diesel engine oils are preferred.

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

IMPORTANT: Use only ultra low sulfur diesel (ULSD) fuel with a maximum sulfur content of 15 mg/kg (15 ppm).

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Oil Viscosities for Air Temperature Ranges

TS1691—JUN—18JUL07

DX,ENOIL14 -19-15JUN10-1/1

Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, and Stage IV Engines

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

Diesel fuel sulfur content affects engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals.

Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm) is **REQUIRED**.

IMPORTANT: To avoid engine damage:

- **Reduce oil and filter service intervals by 50% when using BioDiesel blends greater than B20. Oil analysis may allow longer service intervals.**

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- **Use only approved oil types.**

Approved Oil Types:

- John Deere Plus-50™ II
- “Other Oils” include API CJ-4, ACEA E9, and ACEA E6

NOTE: The 500 hour extended oil and filter change interval is only allowed if all of the following conditions are met:

- Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm)
- Use of John Deere Plus-50™ II oil
- Use of an approved John Deere oil filter

Engine Oil and Filter Service Intervals	
John Deere Plus-50™ II	500 hours
Other Oils	250 hours
Oil analysis may extend the service interval of “Other Oils” to a maximum not to exceed the interval of Plus-50™ II oils.	

DX,ENOIL15,IT4,120toMAX -19-07FEB14-1/1

John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, and Stage IV

New engines are filled at the factory with John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In Plus™ Engine Oil, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

During the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and maximum equal to the interval specified for John Deere Plus-50™ II oil.

After engine overhaul, fill the engine with John Deere Break-In Plus™ Engine Oil.

If John Deere Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following:

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- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

If one of these oils is used during the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and a maximum of 250 hours.

IMPORTANT: Do not use any other engine oils during the initial break-in of a new or rebuilt engine.

John Deere Break-In Plus™ Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II or other diesel engine oil as recommended in this manual.

DX,ENOIL16 -19-15JUN10-1/1

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength

of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1 -19-11APR11-1/1

Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close

manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2 -19-14APR11-1/1

Diesel Fuel

Consult your local fuel distributor for properties of the diesel fuel available in your area.

In general, diesel fuels are blended to satisfy the low temperature requirements of the geographical area in which they are marketed.

Diesel fuels specified to EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590 or ASTM D975 is acceptable for use at all percentage mixture levels.

Required Fuel Properties

In all cases, the fuel shall meet the following properties:

Cetane number of 40 minimum. Cetane number greater than 47 is preferred, especially for temperatures below -20°C (-4°F) or elevations above 1675 m (5500 ft.).

Cold Filter Plugging Point (CFPP) should be at least 5°C (9°F) below the expected lowest temperature or **Cloud Point** below the expected lowest ambient temperature.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

Diesel fuel quality and sulfur content must comply with all existing emissions regulations for the area in which the engine operates. **DO NOT** use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Sulfur content for Interim Tier 4, Final Tier 4, Stage III B, and Stage IV Engines

- Use **ONLY** ultra low sulfur diesel (ULSD) fuel with a maximum of 15 mg/kg (15 ppm) sulfur content.

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is **RECOMMENDED**.
- Use of diesel fuel with sulfur content 1000—2000 mg/kg (1000—2000 ppm) **REDUCES** the oil and filter change interval.
- **BEFORE** using diesel fuel with sulfur content greater than 2000 mg/kg (2000 ppm), contact your John Deere dealer.

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm) is **RECOMMENDED**.
- Use of diesel fuel with sulfur content 2000—5000 mg/kg (2000—5000 ppm) **REDUCES** the oil and filter change interval.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.

Sulfur Content for Other Engines

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm) is **RECOMMENDED**.
- Use of diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) **REDUCES** the oil and filter change interval.

IMPORTANT: Do not mix used diesel engine oil or any other type of lubricating oil with diesel fuel.

Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1 -19-24OCT14-1/1

Handling and Storing Diesel Fuel

CAUTION: Reduce the risk of fire. Handle fuel carefully. DO NOT fill the fuel tank when engine is running. DO NOT smoke while you fill the fuel tank or service the fuel system.

Fill the fuel tank at the end of each day's operation to prevent water condensation and freezing during cold weather.

Keep all storage tanks as full as practicable to minimize condensation.

Ensure that all fuel tank caps and covers are installed properly to prevent moisture from entering. Monitor water content of the fuel regularly.

When using BioDiesel fuel, the fuel filter may require more frequent replacement due to premature plugging.

Check engine oil level daily prior to starting engine. A rising oil level may indicate fuel dilution of the engine oil.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented cap.

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel and prevent water condensation. Contact your fuel supplier or John Deere dealer for recommendations.

DX,FUEL4 -19-15FEB13-1/1

Lubricity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

Lubricity of BioDiesel Fuel

Fuel lubricity can improve significantly with BioDiesel blends up to B20 (20% BioDiesel). Further increase in lubricity is limited for BioDiesel blends greater than B20.

DX,FUEL5 -19-07FEB14-1/1

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as cetane number, fuel type, sulfur content, water content, appearance, suitability for cold weather

operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets specification.

Contact your John Deere dealer for more information on diesel fuel analysis.

DX,FUEL6 -19-14APR11-1/1

BioDiesel Fuel

BioDiesel fuel is comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats. BioDiesel blends are BioDiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing BioDiesel, review the BioDiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

All John Deere Engines with Exhaust Filter (Released 2011 and After)

While 5% blends (B5) are preferred, BioDiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. BioDiesel blends up to B20 can be used ONLY if the BioDiesel (100% BioDiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

BioDiesel concentrations above B20 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere approved fuel conditioners, which contain detergent and dispersant additives, are required when using BioDiesel blends from B10—B20, and are recommended when using lower BioDiesel blends.

All John Deere Engines Excluding Exhaust Filter (Primarily Released Prior to 2012)

While 5% blends (B5) are preferred, BioDiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. BioDiesel blends up to B20 can be used ONLY if the BioDiesel (100% BioDiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

These John Deere engines can operate on BioDiesel blends above B20 (up to 100% BioDiesel). Operate at levels above B20 ONLY if the BioDiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on BioDiesel blends above B20 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% BioDiesel.

John Deere approved fuel conditioners, which contain detergent and dispersant additives, are required when using BioDiesel blends from B10—B20, and are recommended when using lower BioDiesel blends.

BioDiesel Use Requirements and Recommendations

The petroleum diesel portion of all BioDiesel blends must meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standard.

BioDiesel users in the U.S. are strongly encouraged to purchase BioDiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National BioDiesel Board). Certified Marketers and Accredited Producers can be found at the following website: <http://www.bq9000.org>.

BioDiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement, when using BioDiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. BioDiesel blends up to B20 must be used within 90 days of the date of BioDiesel manufacture. BioDiesel blends above B20 must be used within 45 days from the date of BioDiesel manufacture.

When using BioDiesel blends up to B20, the following must be considered:

- Cold-weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)
- Possible filter restriction and plugging (usually a problem when first switching to BioDiesel on used engines)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for approved fuel conditioners to improve storage and performance with BioDiesel fuels.

The following must also be considered if using BioDiesel blends above B20:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere approved fuel conditioners are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling equipment

Continued on next page

DX,FUEL7 -19-15MAY13-1/2

- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to BioDiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because BioDiesel blends above B20 contain more ash, using blends above B20 can result in more rapid

ash loading and require more frequent cleaning of the Exhaust Filter (if present)

IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.

DX,FUEL7 -19-15MAY13-2/2

Minimizing the Effect of Cold Weather on Diesel Engines

John Deere diesel engines are designed to operate effectively in cold weather.

However, for effective starting and cold-weather operation, a little extra care is necessary. The following information outlines steps that can minimize the effect that cold weather may have on starting and operation of your engine. See your John Deere dealer for additional information and local availability of cold-weather aids.

Use Winter Grade Fuel

When temperatures fall below 0 °C (32 °F), winter grade fuel (No. 1-D in North America) is best suited for cold-weather operation. Winter grade fuel has a lower cloud point and a lower pour point.

Cloud point is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug. **Pour point** is the lowest temperature at which movement of the fuel is observed.

NOTE: On average, winter grade diesel fuel has a lower Btu (heat content) rating. Using winter grade fuel may reduce power and fuel efficiency, but should not cause any other engine performance effects. Check the grade of fuel being used before troubleshooting for low-power complaints in cold-weather operation.

Air Intake Heater

An air intake heater is an available option for some engines to aid cold weather starting.

Ether

An ether port on the intake is available to aid cold weather starting.

⚠ CAUTION: Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs or an air intake heater.

Coolant Heater

An engine block heater (coolant heater) is an available option to aid cold weather starting.

Seasonal Viscosity Oil and Proper Coolant Concentration

Use seasonal grade viscosity engine oil based on the expected air temperature range between oil changes and a proper concentration of low silicate antifreeze as recommended. (See DIESEL ENGINE OIL and ENGINE COOLANT requirements in this section.)

Diesel Fuel Flow Additive

Use John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula), which contains anti-gel chemistry, or equivalent fuel conditioner to treat non-winter grade fuel (No. 2-D in North America) during the cold-weather season. This generally extends operability to about 10 °C (18 °F) below the fuel cloud point. For operability at even lower temperatures, use winter grade fuel.

IMPORTANT: Treat fuel when outside temperature drops below 0 °C (32 °F). For best results, use with untreated fuel. Follow all recommended instructions on label.

BioDiesel

When operating with BioDiesel blends, wax formation can occur at warmer temperatures. Begin using John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) at 5 °C (41 °F) to treat BioDiesel fuels during the cold-weather season. Use B5 or lower blends at temperatures below 0 °C (32 °F). Use only winter grade petroleum diesel fuel at temperatures below -10 °C (14 °F).

Winterfronts

Use of fabric, cardboard, or solid winterfronts is not recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

If winterfronts are used, they should never totally close off the grill frontal area. Approximately 25% area in the center of the grill should remain open at all times. At no time should the air blockage device be applied directly to the radiator core.

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time the coolant reaches 93 °C (200 °F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

If air-to-air aftercooling is used, the shutters must be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

For more information, see your John Deere dealer.

DX,FUEL10 -19-15MAY13-1/1

Supplemental Diesel Fuel Additives

Diesel fuel can be the source of performance or other operational problems for many reasons. Some causes include poor lubricity, contaminants, low cetane number, and a variety of properties that cause fuel system deposits. These and others are referenced in other sections of this Operator's Manual.

To optimize engine performance and reliability, closely follow recommendations on fuel quality, storage, and handling, which are found elsewhere in this Operator's Manual.

To further aid in maintaining performance and reliability of the engine's fuel system, John Deere has developed a family of fuel additive products for most global markets. The primary products include Fuel-Protect Diesel Fuel Conditioner (full feature conditioner in winter and summer formulas) and Fuel-Protect Keep Clean (fuel injector deposit removal and prevention). Availability of these and other products varies by market. See your local John Deere dealer for availability and additional information about fuel additives that might be right for your needs.

DX,FUEL13 -19-07FEB14-1/1

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

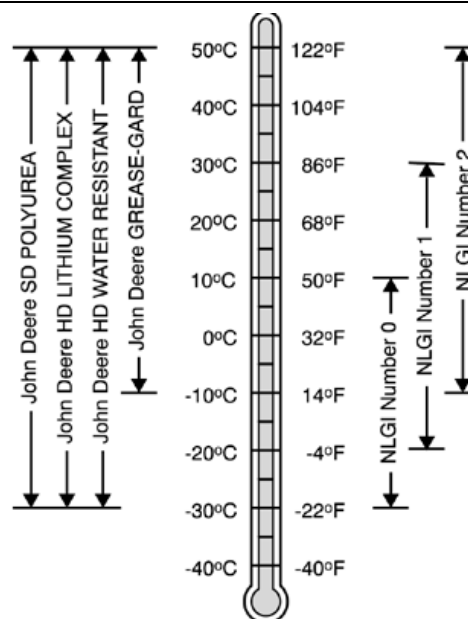
The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.



Greases for Air Temperature Ranges

TS1673—UN—31OCT03

GREASE-GARD is a trademark of Deere & Company

DX,GRE1 -19-14APR11-1/1

Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your John Deere dealer to obtain specific information and recommendations.

DX,LUBMIX -19-18MAR96-1/1

Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST -19-11APR11-1/1

Transmission, Steering, Brake, Hydraulic, and Gear Case Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

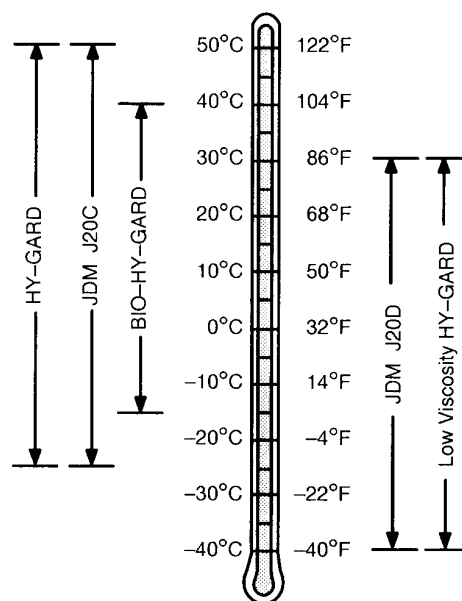
The following oils are preferred:

- John Deere Hy-Gard™
- John Deere Low Viscosity Hy-Gard™

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use John Deere Bio Hy-Gard™ oil when a biodegradable fluid is required.¹



Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company

¹Bio Hy-Gard meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. Bio Hy-Gard should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.

DX,OIL1 -19-14APR11-1/1

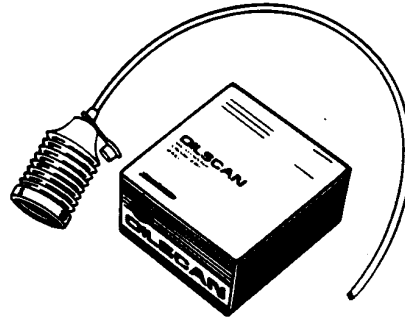
TS1651 —UN—14MAR96

Oilscan™ and CoolScan™

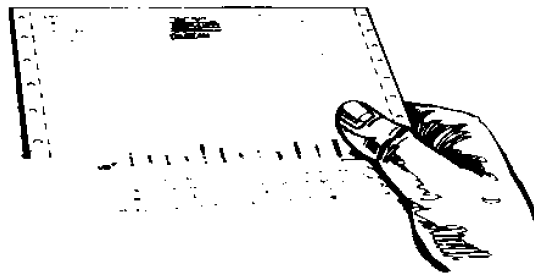
Oilscan™ and CoolScan™ are John Deere sampling programs to help you monitor machine performance and identify potential problems before they cause serious damage.

Oil and coolant samples should be taken from each system before its recommended change interval.

Check with your John Deere dealer for the availability of Oilscan™ and CoolScan™ kits.



T6828AB—UN—15JUN89



T6829AB—UN—26AUG11

Oilscan is a trademark of Deere & Company
CoolScan is a trademark of Deere & Company

DX,OILSCAN -19-13SEP11-1/1

Service and Maintenance Record

First 100 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML	☐ Tighten Air Intake System and Engine Cooling System Hose Clamps	
☐ Inspect Tractor for Loose Hardware		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

SH20560,0000051 -19-20JUN09-1/1

First 300 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

SH20560,000004E -19-19OCT11-1/1

300 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	☐ Check MFWD Axle Housing Oil Level—If Equipped	
☐ Check MFWD Axle Wheel Hub Oil Level—If Equipped	☐ Drain and Flush Fuel Tank	
☐ Lubricate Draft Sensing Shaft Seal	☐ Clean and Check Battery Condition	
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

^aWhen NOT using John Deere Plus-50 engine oil with John Deere filter

SH20560,000004F -19-20JUN09-1/1

500 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML	☐ Replace Fuel Filter—5065M and 5075M	
☐ Replace Fuel Filters—5085M, 5095M, 5095MH, 5105M and 5105ML		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

SH20560,0000050 -19-20JUN09-1/1

Service and Maintenance Record

600 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	☐ Clean Cab Air Filters—If Equipped	
☐ Check MFWD Oil Level	☐ Lubricate Draft Sensing Shaft Seal	
☐ Clean and Check Battery Condition	☐ Drain and Flush Fuel Tank	
☐ Check Neutral Start System	☐ Service Air Cleaner—5065M and 5075M	
☐ Change MFWD Axle Wheel Hub Oil—If Equipped	☐ Change MFWD Axle Housing Oil—If Equipped	
☐ Clean Engine Crankcase Vent Tube	☐ Pack Front Wheel Bearing—2WD	
☐ Lubricate Rear Axle Bearings	☐ Check Front Axle Pivot Pin End Play	
☐ Tighten Air Intake System and Engine Cooling System Hose Clamps	☐ Change Transmission-Hydraulic Oil and Filter	
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

^aWhen NOT using John Deere Plus-50 engine oil with John Deere filter

SH20560,0000052 -19-20JUN09-1/1

900 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	☐ Check MFWD Axle Housing Oil Level—If Equipped	
☐ Check MFWD Axle Wheel Hub Oil Level—If Equipped	☐ Drain and Flush Fuel Tank	
☐ Lubricate Draft Sensing Shaft Seal	☐ Clean and Check Battery Condition	
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

^aWhen NOT using John Deere Plus-50 engine oil with John Deere filter

SH20560,0000053 -19-20JUN09-1/1

1000 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML	☐ Replace Fuel Filter—5065M and 5075M	
☐ Replace Fuel Filters—5085M, 5095M, 5095MH, 5105M and 5105ML		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

SH20560,0000054 -19-20JUN09-1/1

1200 Hour Service**SERVICE PROCEDURE**

☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	☐ Clean Cab Air Filters—If Equipped
☐ Check MFWD Oil Level	☐ Lubricate Draft Sensing Shaft Seal
☐ Clean and Check Battery Condition	☐ Drain and Flush Fuel Tank
☐ Check Neutral Start System	☐ Service Air Cleaner—5065M and 5075M
☐ Change MFWD Axle Wheel Hub Oil—If Equipped	☐ Change MFWD Axle Housing Oil—If Equipped
☐ Clean Engine Crankcase Vent Tube	☐ Pack Front Wheel Bearing—2WD
☐ Lubricate Rear Axle Bearings	☐ Check Front Axle Pivot Pin End Play
☐ Tighten Air Intake System and Engine Cooling System Hose Clamps	☐ Service Air Cleaner Elements—5085M, 5095M, 5095MH, 5105M and 5105ML
☐ Change Transmission-Hydraulic Oil and Filter	☐ Change Hi-Crop Rear Axle Oil—5095MH

Hours:

Comments:

Date:

Work Carried Out By:

Dealer's Stamp

^aWhen NOT using John Deere Plus-50 engine oil with John Deere filter

SH20560,0000055 -19-20JUN09-1/1

1500 Hour Service**SERVICE PROCEDURE**

☐ Change Engine Oil and Filter—5065M, 5075M, 5085M, 5095M, 5095MH, 5105M and 5105ML	☐ Check MFWD Axle Housing Oil Level—If Equipped
☐ Check MFWD Axle Wheel Hub Oil Level—If Equipped	☐ Drain and Flush Fuel Tank
☐ Lubricate Draft Sensing Shaft Seal	☐ Clean and Check Battery Condition
☐ Replace Fuel Filter—5065M and 5075M	☐ Replace Fuel Filters—5085M, 5095M, 5095MH, 5105M and 5105ML

Hours:

Comments:

Date:

Work Carried Out By:

Dealer's Stamp

SH20560,0000056 -19-20JUN09-1/1

Annual Service**SERVICE PROCEDURE**

☐ Clean Cab Air Filters—If Equipped	☐ Lubricate PTO Stub Shaft—1000 RPM Option
☐ Check Engine Coolant Properties	☐ Inspect Seat Belt

Hours:

Comments:

Date:

Work Carried Out By:

Dealer's Stamp

SH20560,0000328 -19-22MAY08-1/1

Service and Maintenance Record

2000 Hour Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M and 5075M ^a	☐ Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	
☐ Check MFWD Oil Level	☐ Lubricate Draft Sensing Shaft Seal	
☐ Service Engine Air Cleaner	☐ Clean Cab Air Filters—If Equipped	
☐ Check Neutral Start System	☐ Test Injection Nozzles—5085M, 5095M and 5095MH	
☐ Service Fuel Filter—5065M and 5075M	☐ Drain and Flush Fuel Tank	
☐ Adjust Engine Valve Clearance—5085M, 5095M, 5095MH, 5105M and 5105ML		
Hours:	Comments:	
Date:		
Work Carried Out By:	Dealer's Stamp	

^aWhen using John Deere Plus-50 engine oil with John Deere filter

SH20560,0000329 -19-20JUN09-1/1

First 3 Years or 3000 Hours Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M and 5075M ^a	☐ Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	
☐ Check MFWD Oil Level	☐ Lubricate Draft Sensing Shaft Seal	
☐ Flush Cooling System and Replace Thermostat	☐ Check Neutral Start System	
☐ Replace Fuel Filter—5065M and 5075M	☐ Replace Fuel Filters—5085M, 5095M, 5095MH, 5105M and 5105ML	
☐ Drain and Flush Fuel Tank	☐ Clean Cab Air Filters—If Equipped	
Hours:	Comments:	
Date:		
Work Carried Out By:	Dealer's Stamp	

^aWhen using John Deere Plus-50 engine oil with John Deere filter

SH20560,000032A -19-20JUN09-1/1

First 5 Years or 4500 Hours Service

SERVICE PROCEDURE		
☐ Change Engine Oil and Filter—5065M and 5075M ^a	☐ Change Engine Oil and Filter— 5085M, 5095M, 5095MH, 5105M and 5105ML ^a	
☐ Check MFWD Oil Level	☐ Lubricate Draft Sensing Shaft Seal	
☐ Drain and Flush Fuel Tank	☐ Service Engine Air Cleaner	
☐ Check Neutral Start System	☐ Clean Cab Air Filters—If Equipped	
☐ Replace Fuel Filter—5065M and 5075M	☐ Replace Fuel Filters—5085M, 5095M, 5095MH, 5105M and 5105ML	
☐ Replace Engine Crankshaft Damper—5065M and 5075M	☐ Flush Cooling System and Replace Thermostat	
Hours:	Comments:	
Date:		
Work Carried Out By:	Dealer's Stamp	

^aWhen using John Deere Plus-50 engine oil with John Deere filter

SH20560,000032B -19-20JUN09-1/1

Change of Ownership

Serial Number																	
Engine Number																	
Previous Owner:																	
Address:																	
Purchase Date:																	
Hours at Purchase:																	

Machine Model:
Registration No.:
New Owner:
Address:
Dealer's Stamp (only if sold through dealer)

AG,KD21494,94 -19-24JUN10-1/1

Change of Ownership

Serial Number																	
Engine Number																	
Previous Owner:																	
Address:																	
Purchase Date:																	
Hours at Purchase:																	

Machine Model:
Registration No.:
New Owner:
Address:
Dealer's Stamp (only if sold through dealer)

AG,KD21494,94CONV1 -19-18MAY99-1/1

Change of Ownership

Serial Number																	
Engine Number																	
Previous Owner:																	
Address:																	
Purchase Date:																	
Hours at Purchase:																	

Machine Model:
Registration No.:
New Owner:
Address:
Dealer's Stamp (only if sold through dealer)

AG,KD21494,94CONV2 -19-18MAY99-1/1

Service and Maintenance Record

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