5105 and 5205 Tractors

For complete service information also see:

Component Technical Manuals 3029

John Deere Augusta Works
TM1792 (20MAR00)

LITHO IN U.S.A
ENGLISH

Introduction

Foreword

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

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

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

DX,TMIFC –19–29SEP98–1/1

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

Section 10
General Information

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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.

T81389 –UN–07DEC88

DX,ALERT –19–29SEP98–1/1

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.

TS187 –19–30SEP88

DX,SIGNAL –19–03MAR93–1/1

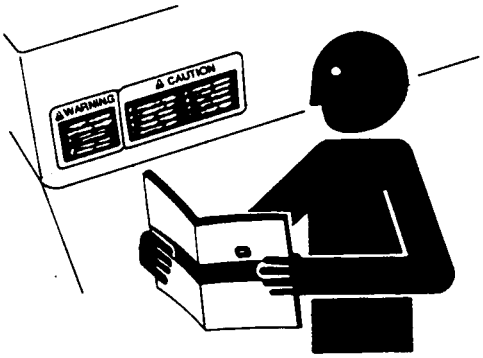
Follow Safety Instructions

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

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

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

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



TS201 –UN–23AUG88

DX,READ –19–03MAR93–1/1

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Handle Fluids Safely—Avoid Fires

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

TS227 –UN–23AUG88

DX,FLAME –19–29SEP98–1/1

Prevent Battery Explosions

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

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

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

TS204 –UN–23AUG88

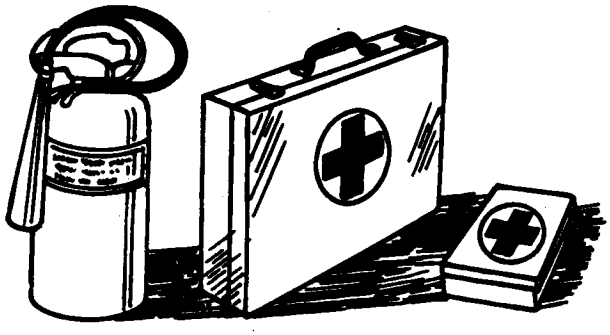
DX,SPARKS –19–03MAR93–1/1

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–23AUG88

DX,FIRE2 –19–03MAR93–1/1

Prevent Acid Burns

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

Avoid the hazard by:

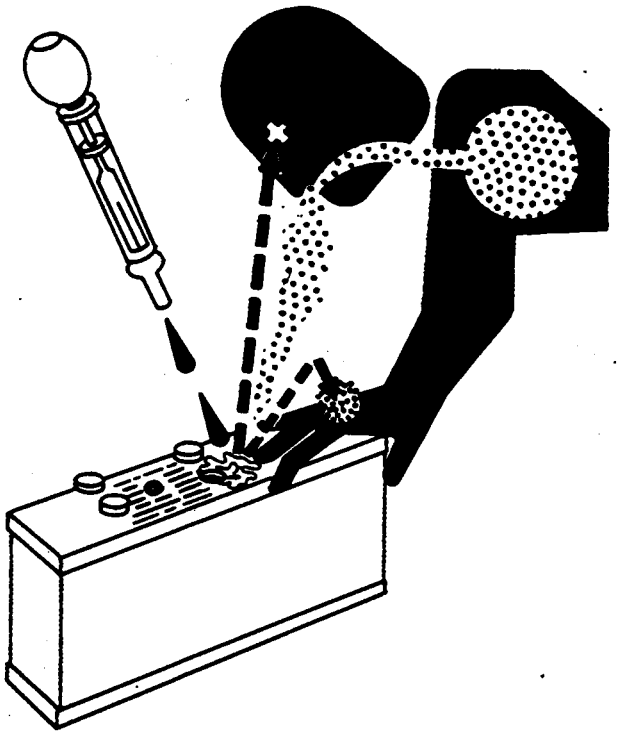
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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.



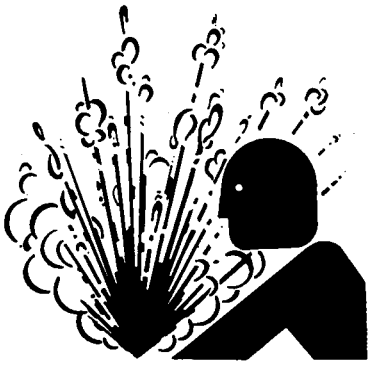
TS203 –UN–23AUG88

DX,POISON –19–21APR93–1/1

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.



TS281 –UN–23AUG88

DX,RCAP –19–04JUN90–1/1

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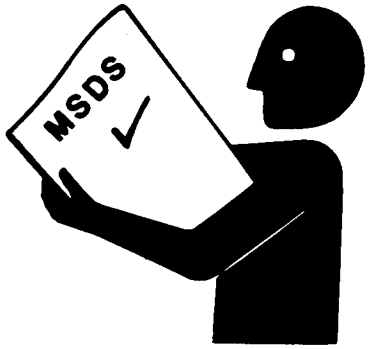
Handle Chemical Products Safely



TS1132 –UN–26NOV90

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

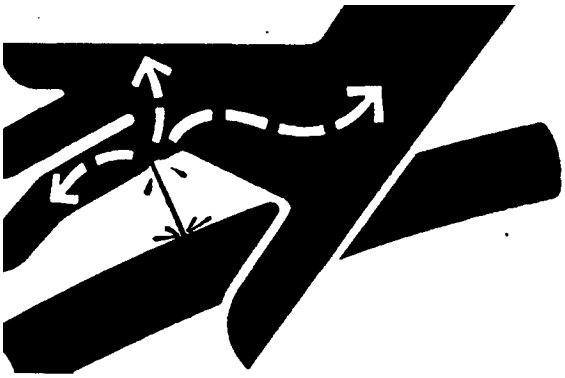
A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)

DX,MSDS,NA –19–03MAR93–1/1

Avoid High-Pressure Fluids



X9811 –UN–23AUG88

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.

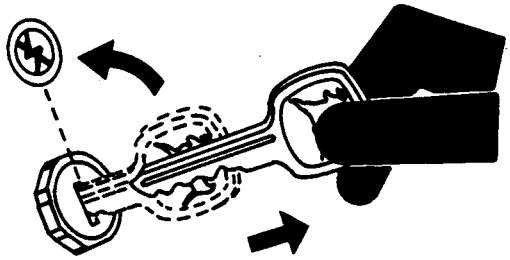
If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical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

DX,FLUID –19–03MAR93–1/1

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.



TS230 –UN–24MAY89

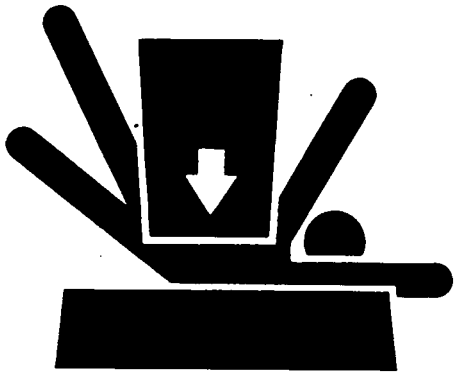
DX,PARK –19–04JUN90–1/1

Support Machine Properly

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment. 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 tractor, always follow safety precautions listed in the implement operator's manual.



TS229 –UN–23AUG88

DX,LOWER –19–17FEB99–1/1

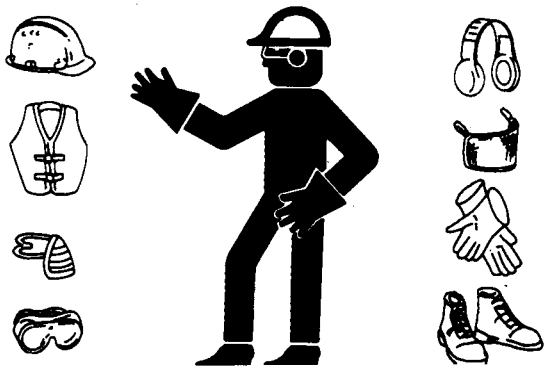
Wear Protective Clothing

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

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.

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



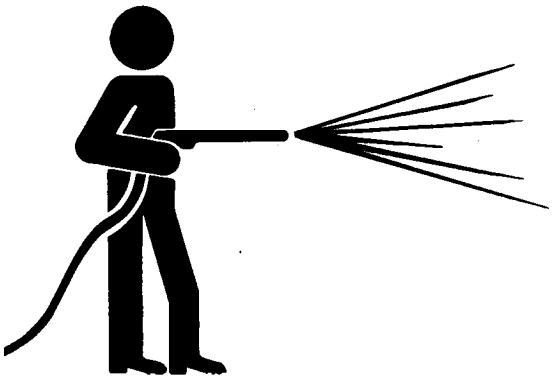
TS206 –UN–23AUG88

DX,WEAR –19–10SEP90–1/1

Work in Clean Area

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



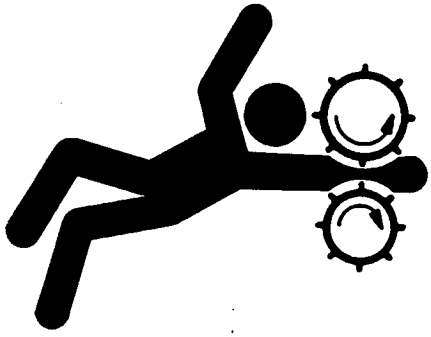
T6642EJ –UN–18OCT88

DX,CLEAN –19–04JUN90–1/1

Service Machines Safely

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



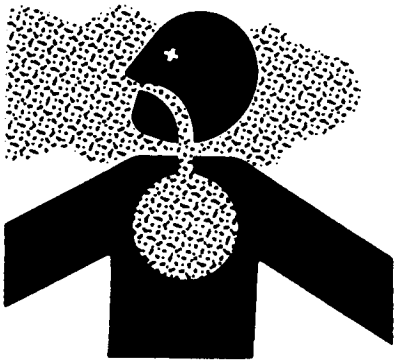
TS228 –UN–23AUG88

DX,LOOSE –19–04JUN90–1/1

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

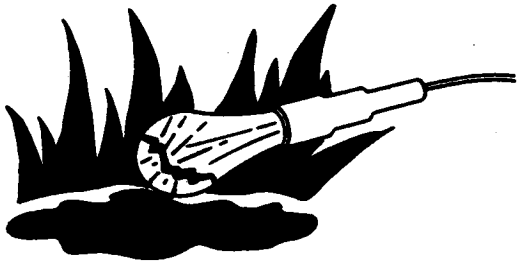


TS220 –UN–23AUG88

DX,AIR –19–17FEB99–1/1

Illuminate Work Area Safely

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

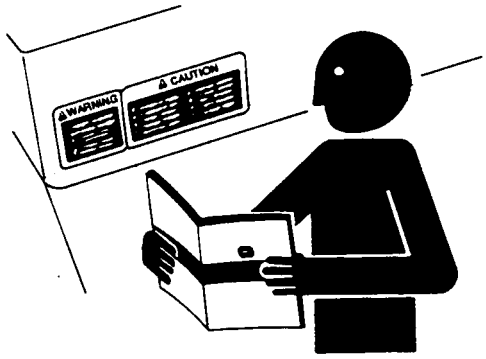


TS223 –UN–23AUG88

DX,LIGHT –19–04JUN90–1/1

Replace Safety Signs

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



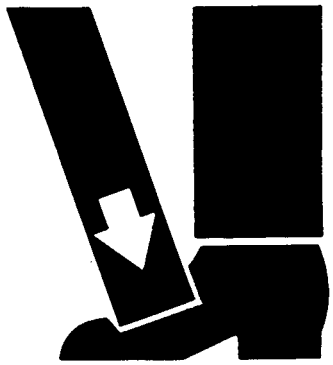
TS201 –UN–23AUG88

DX,SIGNS1 –19–04JUN90–1/1

Use Proper Lifting Equipment

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



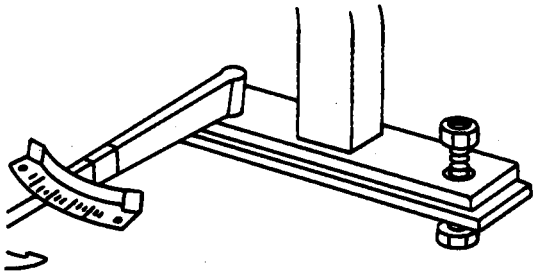
TS226 –UN–23AUG88

DX,LIFT –19–04JUN90–1/1

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.



TS212 –UN–23AUG88

DX,ROPS3 –19–03MAR93–1/1

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Service Tires Safely

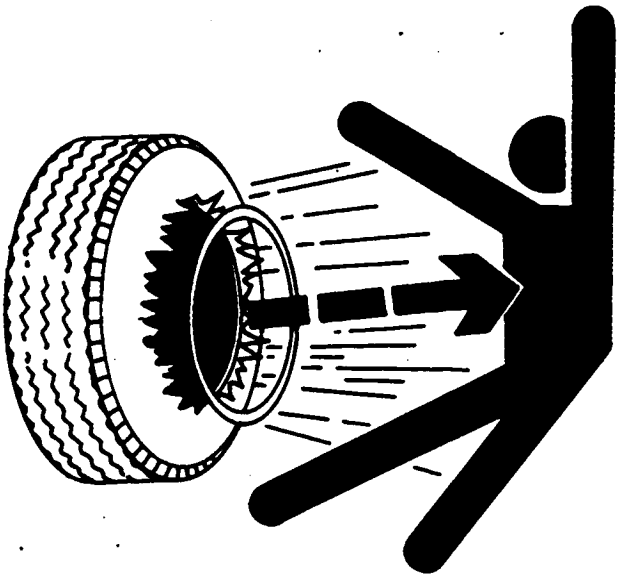
Explosive separation of a tire and rim parts can cause serious injury or death.

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.



TS211 –UN–23AUG88

DX,RIM –19–24AUG90–1/1

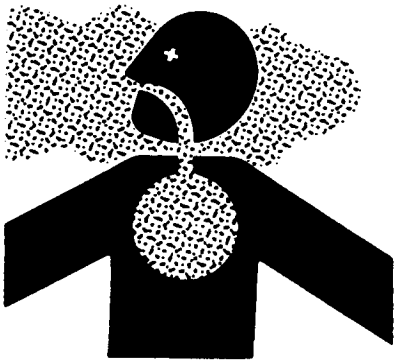
Avoid Harmful Asbestos Dust

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos.

Keep bystanders away from the area.



TS220 –UN–23AUG88

DX,DUST –19–15MAR91–1/1

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 be accidentally cut when heat goes beyond the immediate flame area.

TS953 –UN–15MAY90

DX,TORCH –19–03MAR93–1/1

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.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- 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.

TS220 –UN–23AUG88

DX,PAINT –19–03MAR93–1/1

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Use Proper Tools

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

TS779 –UN–08NOV89

DX,REPAIR –19–17FEB99–1/1

Dispose of Waste Properly

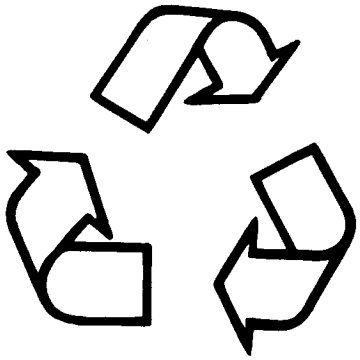
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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–26NOV90

DX,DRAIN –19–03MAR93–1/1

Live With Safety

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

TS231 –19–07OCT88

DX,LIVE –19–25SEP92–1/1

Machine Specifications

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

Item	Measurement	Specification
5105—3029D *POWERTECH*® Engine, Naturally Aspirated		
Factory Observed PTO	Power	29.8 kW (40 hp) at 2300 rpm
Maximum Engine	Torque	170 N•m at 1400 rpm
Cylinders	Quantity	3
Bore	Distance	106 mm (4.17 in.)
Stroke	Distance	110 mm (4.33 in.)
Displacement	Volume	2.9 L (179 cu in.)
Compression	Ratio	17.4:1
Cylinder Firing	Order	1—2—3
Intake Valve	Clearance	0.35 mm (0.014 in.)
Exhaust Valve	Clearance	0.45 mm (0.018 in.)
Slow Idle	Speed	825 ± 25 rpm
Fast Idle	Speed	2500 ± 25 rpm
Operating Range	Speed	1400—2300 rpm
Injection Pump Timing	Position	16.5° BTDC (TimeTrac)
5205—3029D *POWERTECH*® Engine, Naturally Aspirated		
Factory Observed PTO	Power	35.8 kW (48 hp) at 2300 rpm
Maximum Engine	Torque	188 N•m at 1400 rpm
Cylinders	Quantity	3

POWERTECH is a registered trademark of Deere & Company

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Item	Measurement	Specification
Bore	Distance	106 mm (4.17 in.)
Stroke	Distance	110 mm (4.33 in.)
Displacement	Volume	2.9 L (179 cu. in.)
Compression	Ratio	17.4:1
Cylinder Firing	Order	1—2—3
Intake Valve	Clearance	0.35 mm (0.014 in.)
Exhaust Valve	Clearance	0.45 mm (0.018 in.)
Slow Idle	Speed	825 ± 25 rpm
Fast Idle	Speed	2500 ± 25 rpm
Operating Range	Speed	1400—2300 rpm
Injection Pump Timing	Position	16.5° BTDC (TimeTrac)
Electrical System—12-Volt, Negative Ground		
Battery	Voltage Cold Cranking Amps BCI Group Size	12-volt 700 CCA 28 H
Alternator	Amperage	40 amps
Starting Motor	Voltage	12 volts

Item	Measurement	Specification
Power Take-Off		
Engine—540	Speed	2200 rpm

Item	Measurement	Specification
Hydraulic System		
Pump Displacement—Steering	Displacement	11.9 cu cm (0.73 cu in.)

Continued on next page

Item	Measurement	Specification
Pump Displacement—Implement	Displacement	20 cu cm (1.22 cu in.)
Steering[1]	Flow Rate	24.6 L/min. (6.5 gpm)
Implement[1]	Flow Rate	41.3 L/min. (10.9 gpm)
Steering (Maximum)	Pressure	13 000—13 500 kPa (130—135 bar) (1885—1955 psi)
Implement (Maximum)	Pressure	19 000—19 700 kPa (190—197 bar) (2755—2855 psi)
Hitch Lift	Capacity	1355 kg (2990 lb)

[1] Flow rate at 90% pump efficiency and engine at rated speed.

AG,OUO1032,2637 –19–15SEP99–3/3

Drain and Refill Capacities

Item	Measurement	Specification
Fuel Tank	Capacity	85.5 L (22.6 gal) Approximate
Cooling System	Capacity	8.93 L (2.4 gal) Approximate
Crankcase (including filter change)	Capacity	7.5 L (7.9 qt) Approximate
SyncReverser™ Transmission	Capacity	33 L (8.7 gal) Approximate
Mechanical Front Wheel Drive (MFWD)—If Equipped		
Wheel Hubs (Each)	Capacity	0.5 L (0.53 qt) Approximate
Axle Housing	Capacity	4 L (4.2 qt) Approximate

SyncReverser is a trademark of Deere & Company

AG,OUO1032,2638 –19–15SEP99–1/1

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Machine Dimensions

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

NOTE: All dimensions are of a machine equipped with standard tires.

Item	Measurement	Specification
5105 with 2-Wheel Drive		
Standard Front Tire	Size	7.5-16
Standard Rear Tire	Size	14.9-28
Overall Width (Outside Edge of Tires)	Width	1753 mm (69.0 in.) minimum
Overall Length (Including Hitch Draft Links)	Length	2766 mm (108.9 in.)
Overall Height from Ground-to-Top of Hood	Height	1303 mm (51.3 in.)
Overall Height from Ground-to-Top of Steering Wheel	Height	1551 mm (61.1 in.)
Overall Height from Ground-to-Top of Roll-Gard ROPS	Height	2296 mm (90.4 in.)
Overall Height from Ground-to-Top of Folded ROPS	Height	1900 mm (74.8 in.)
Overall Height from Ground-to-Top of Drawbar	Height	424 mm (16.7 in.)
Overall Height from Ground-to-Crop Clearance—Front Axle	Height	480 mm (18.9 in.)
Centerline of Rear Axle to Folded ROPS	Distance	1257 mm (49.5 in.)
Wheelbase	Distance	1950 mm (76.8 in.)
Turning Radius with Brakes	Radius	2.44 m (8.8 ft)
Turning Radius without Brakes	Radius	3.29 m (10.8 ft)

Continued on next page

Item	Measurement	Specification
Average Shipping Weight, Unballasted	Weight	1848 kg (4075 lb)
5105 with MFWD		
Standard Front Tire	Size	9.5-24
Standard Rear Tire	Size	14.9-28
Overall Width (Outside Edge of Tires)	Width	1753 mm (69.0 in.) Minimum
Overall Length (Including Hitch Draft Links)	Length	3261 mm (128.4 in.)
Overall Height from Ground-to-Top of Hood	Height	1303 mm (51.3 in.)
Overall Height from Ground-to-Top of Steering Wheel	Height	1552 mm (61.1 in.)
Overall Height from Ground-to-Top of Roll-Gard ROPS	Height	2296 mm (90.4 in.)
Overall Height from Ground-to-Top of Folded ROPS	Height	1900 mm (76.8 in.)
Overall Height from Ground-to-Top of Drawbar	Height	424 mm (16.7 in.)
Overall Height from Ground-to-Crop Clearance—Front Axle	Height	368 mm (14.5 in.)
Centerline of Rear Axle to Folded ROPS	Distance	1257 mm (49.5 in.)
Wheelbase	Width	1950 mm (76.8 in.)
Turning Radius with Brakes[1]	Radius	3.02 m (9.9 ft)

[1] With MFWD disengaged.

Continued on next page

Item	Measurement	Specification
Turning Radius without Brakes	Radius	3.32 m (10.9 ft)
Average Shipping Weight, Unballasted	Weight	2030 kg (4475 lb)

Item	Measurement	Specification
5205 with 2-Wheel Drive		
Standard Front Tire	Size	7.5-16
Standard Rear Tire	Size	14.9-28
Overall Width (Outside Edge of Tires)	Width	1753 mm (69.0 in.) minimum
Overall Length (Including Hitch Draft Links)	Length	2766 mm (108.9 in.)
Overall Height from Ground-to-Top of Hood	Height	1303 mm (51.3 in.)
Overall Height from Ground-to-Top of Steering Wheel	Height	1551 mm (61.1 in.)
Overall Height from Ground-to-Top of Roll-Gard ROPS	Height	2296 mm (90.4 in.)
Overall Height from Ground-to-Top of Folded ROPS	Height	1900 mm (74.8 in.)
Overall Height from Ground-to-Top of Drawbar	Height	424 mm (16.7 in.)
Overall Height from Ground-to-Crop Clearance—Front Axle	Height	480 mm (18.9 in.)
Centerline of Rear Axle to Folded ROPS	Distance	1257 mm (49.5 in.)
Wheelbase	Distance	1950 mm (76.8 in.)
Turning Radius with Brakes	Radius	2.44 m (8.8 ft)
Turning Radius without Brakes	Radius	3.29 m (10.8 ft)

Continued on next page

Item	Measurement	Specification
Average Shipping Weight, Unballasted	Weight	1848 kg (4075 lb)
5205 with MFWD		
Standard Front Tire	Size	9.5-24
Standard Rear Tire	Size	14.9-28
Overall Width (Outside Edge of Tires)	Width	1753 mm (69.0 in.) Minimum
Overall Length (Including Hitch Draft Links)	Length	3261 mm (128.4 in.)
Overall Height from Ground-to-Top of Hood	Height	1303 mm (51.3 in.)
Overall Height from Ground-to-Top of Steering Wheel	Height	1552 mm (61.1 in.)
Overall Height from Ground-to-Top of Roll-Gard ROPS	Height	2296 mm (90.4 in.)
Overall Height from Ground-to-Top of Folded ROPS	Height	1900 mm (76.8 in.)
Overall Height from Ground-to-Top of Drawbar	Height	424 mm (16.7 in.)
Overall Height from Ground-to-Crop Clearance—Front Axle	Height	368 mm (14.5 in.)
Centerline of Rear Axle to Folded ROPS	Distance	1257 mm (49.5 in.)
Wheelbase	Width	1950 mm (76.8 in.)
Turning Radius with Brakes[1]	Radius	3.02 m (9.9 ft)

[1] With MFWD disengaged.

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Item	Measurement	Specification
Turning Radius without Brakes	Radius	3.32 m (10.9 ft)
Average Shipping Weight, Unballasted	Weight	2030 kg (4475 lb)

CED,OUO1032,2593 –19–25AUG99–5/5

Ground Speed Estimates

NOTE: Ground Speed—km/h (mph) at 2300 rpm engine speed.

Item	Measurement	Specification
Rear Tires—14.9-28 R1		
Gear A-1	Speed	3.0 km/h (1.86 mph)
Gear A-2	Speed	4.29 km/h (2.67 mph)
Gear A-3	Speed	6.07 km/h (3.77 mph)
Gear A-4	Speed	8.50 km/h (5.28 mph)
Gear B-1	Speed	10.48 km/h (6.51 mph)
Gear B-2	Speed	14.99 km/h (9.32 mph)
Gear B-3	Speed	21.19 km/h (13.17 mph)
Gear B-4	Speed	29.70 km/h (18.46 mph)
Gear R-1	Speed	3.58 km/h (2.23 mph)
Gear R-2	Speed	5.12 km/h (3.18 mph)
Gear R-3	Speed	7.24 km/h (4.50 mph)
Gear R-4	Speed	10.15 km/h (6.31 mph)
Rear Tires—16.9-28 R1		
Gear A-1	Speed	3.14 km/h (1.94 mph)
Gear A-2	Speed	4.48 km/h (2.79 mph)
Gear A-3	Speed	6.34 km/h (3.94 mph)
Gear A-4	Speed	8.88 km/h (5.52 mph)
Gear B-1	Speed	10.95 km/h (6.80 mph)
Gear B-2	Speed	15.66 km/h (9.74 mph)
Gear B-3	Speed	22.14 km/h (13.76 mph)

Continued on next page

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Item	Measurement	Specification
Gear B-4	Speed	31.04 km/h (19.29 mph)
Gear R-1	Speed	3.74 km/h (2.33 mph)
Gear R-2	Speed	5.35 km/h (3.32 mph)
Gear R-3	Speed	7.56 km/h (4.70 mph)
Gear R-4	Speed	10.61 km/h (6.59 mph)
Rear Tires—13.6-28 R1		
Gear A-1	Speed	2.87 km/h (1.78 mph)
Gear A-2	Speed	4.11 km/h (2.56 mph)
Gear A-3	Speed	5.82 km/h (3.62 mph)
Gear A-4	Speed	8.15 km/h (5.06 mph)
Gear B-1	Speed	10.05 km/h (6.24 mph)
Gear B-2	Speed	14.38 km/h (8.94 mph)
Gear B-3	Speed	20.32 km/h (12.63 mph)
Gear B-4	Speed	28.48 km/h (17.70 mph)
Gear R-1	Speed	3.43 km/h (2.14 mph)
Gear R-2	Speed	4.16 km/h (3.05 mph)
Gear R-3	Speed	6.94 km/h (4.32 mph)
Gear R-4	Speed	9.73 km/h (6.05 mph)
Rear Tires—16.9-24 R1		
Gear A-1	Speed	2.91 km/h (1.80 mph)
Gear A-2	Speed	4.16 km/h (2.59 mph)
Gear A-3	Speed	5.89 km/h (3.66 mph)
Gear A-4	Speed	8.24 km/h (5.12 mph)

Continued on next page

Item	Measurement	Specification
Gear B-1	Speed	10.16 km/h (6.32 mph)
Gear B-2	Speed	14.54 km/h (9.04 mph)
Gear B-3	Speed	20.55 km/h (12.77 mph)
Gear B-4	Speed	28.80 km/h (17.90 mph)
Gear R-1	Speed	3.47 km/h (2.16 mph)
Gear R-2	Speed	4.97 km/h (3.08 mph)
Gear R-3	Speed	7.02 km/h (4.37 mph)
Gear R-4	Speed	9.85 km/h (6.12 mph)
Rear Tires—16.9-24 R3		
Gear A-1	Speed	2.86 km/h (1.77 mph)
Gear A-2	Speed	4.09 km/h (2.55 mph)
Gear A-3	Speed	5.79 km/h (3.60 mph)
Gear A-4	Speed	8.11 km/h (5.04 mph)
Gear B-1	Speed	10.00 km/h (6.21 mph)
Gear B-2	Speed	14.30 km/h (8.89 mph)
Gear B-3	Speed	20.22 km/h (12.56 mph)
Gear B-4	Speed	28.33 km/h (17.61 mph)
Gear R-1	Speed	3.42 km/h (2.13 mph)
Gear R-2	Speed	4.88 km/h (3.03 mph)
Gear R-3	Speed	6.91 km/h (4.29 mph)
Gear R-4	Speed	9.68 km/h (6.02 mph)
Rear Tires—16.9-24 R4		
Gear A-1	Speed	2.87 km/h (1.78 mph)

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Item	Measurement	Specification
Gear A-2	Speed	4.10 km/h (2.55 mph)
Gear A-3	Speed	5.80 km/h (2.25 mph)
Gear A-4	Speed	8.13 km/h (5.05 mph)
Gear B-1	Speed	10.02 km/h (6.22 mph)
Gear B-2	Speed	14.33 km/h (8.91 mph)
Gear B-3	Speed	20.26 km/h (12.59 mph)
Gear B-4	Speed	28.39 km/h (17.65 mph)
Gear R-1	Speed	3.42 km/h (2.13 mph)
Gear R-2	Speed	4.89 km/h (3.04 mph)
Gear R-3	Speed	6.92 km/h (4.30 mph)
Gear R-4	Speed	9.70 km/h (6.03 mph)
Rear Tires—21.5L-16.1 R3		
Gear A-1	Speed	2.27 km/h (1.41 mph)
Gear A-2	Speed	3.25 km/h (2.02 mph)
Gear A-3	Speed	4.59 km/h (2.85 mph)
Gear A-4	Speed	6.43 km/h (4.00 mph)
Gear B-1	Speed	7.93 km/h (4.93 mph)
Gear B-2	Speed	11.35 km/h (7.06 mph)
Gear B-3	Speed	16.04 km/h (10.50 mph)
Gear B-4	Speed	22.48 km/h (13.97 mph)
Gear R-1	Speed	2.71 km/h (1.69 mph)
Gear R-2	Speed	3.88 km/h (2.41 mph)
Gear R-3	Speed	5.48 km/h (3.41 mph)
Gear R-4	Speed	7.68 km/h (4.78 mph)

Continued on next page

Item	Measurement	Specification
Rear Tires—22.5LL-16.1 Turf Special		
Gear A-1	Speed	2.78 km/h (1.72 mph)
Gear A-2	Speed	3.97 km/h (2.47 mph)
Gear A-3	Speed	5.61 km/h (3.49 mph)
Gear A-4	Speed	7.86 km/h (4.88 mph)
Gear B-1	Speed	9.69 km/h (6.02 mph)
Gear B-2	Speed	13.87 km/h (8.62 mph)
Gear B-3	Speed	19.60 km/h (12.18 mph)
Gear B-4	Speed	27.47 km/h (17.08 mph)
Gear R-1	Speed	3.31 km/h (2.06 mph)
Gear R-2	Speed	4.74 km/h (2.94 mph)
Gear R-3	Speed	6.70 km/h (4.16 mph)
Gear R-4	Speed	9.39 km/h (5.84 mph)
Rear Tires—19.5L-24 R4		
Gear A-1	Speed	2.85 km/h (1.77 mph)
Gear A-2	Speed	4.08 km/h (2.54 mph)
Gear A-3	Speed	5.77 km/h (3.51 mph)
Gear A-4	Speed	8.08 km/h (5.02 mph)
Gear B-1	Speed	9.96 km/h (6.18 mph)
Gear B-2	Speed	14.24 km/h (8.85 mph)
Gear B-3	Speed	20.13 km/h (12.51 mph)
Gear B-4	Speed	28.22 km/h (17.54 mph)
Gear R-1	Speed	3.40 km/h (2.12 mph)
Gear R-2	Speed	4.86 km/h (3.02 mph)

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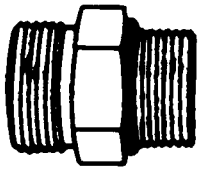
Item	Measurement	Specification
Gear R-3	Speed	6.88 km/h (4.28 mph)
Gear R-4	Speed	9.64 km/h (5.99 mph)
Rear Tires—14.9-24 R1		
Gear A-1	Speed	2.73 km/h (1.69 mph)
Gear A-2	Speed	3.90 km/h (2.43 mph)
Gear A-3	Speed	5.52 km/h (3.43 mph)
Gear A-4	Speed	7.73 km/h (4.80 mph)
Gear B-1	Speed	9.53 km/h (5.92 mph)
Gear B-2	Speed	13.63 km/h (8.47 mph)
Gear B-3	Speed	19.26 km/h (11.97 mph)
Gear B-4	Speed	27.00 km/h (16.78 mph)
Gear R-1	Speed	3.25 km/h (2.03 mph)
Gear R-2	Speed	4.65 km/h (2.89 mph)
Gear R-3	Speed	6.58 km/h (4.09 mph)
Gear R-4	Speed	9.23 km/h (5.74 mph)

AG,OUO1032,2653 –19–23SEP99–6/6

Service Recommendations for O-Ring Boss Fittings

Straight Fitting

1. Inspect O-ring boss seat for dirt or defects.
2. Lubricate O-ring with petroleum jelly. Place electrical tape over threads to protect O-ring. Slide O-ring over tape and into O-ring groove of fitting. Remove tape.
3. Tighten fitting to torque value shown on chart.



T6243AE –UN–18OCT88

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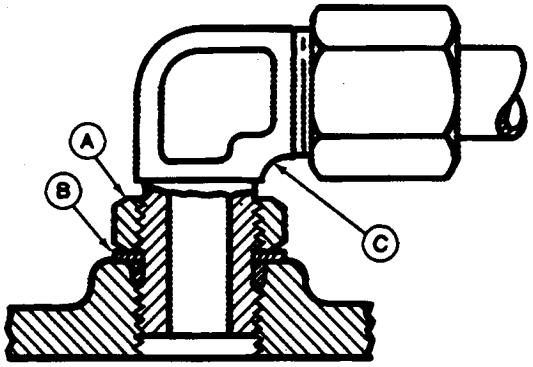
04T,90,K66 –19–19MAR96–1/2

Angle Fitting



T6520AB –UN–18OCT88

1. Back-off lock nut (A) and back-up washer (B) completely to head-end (C) of fitting.
2. Turn fitting into threaded boss until back-up washer contacts face of boss.
3. Turn fitting head-end counterclockwise to proper index (maximum of one turn).

NOTE: Do not allow hoses to twist when tightening fittings.

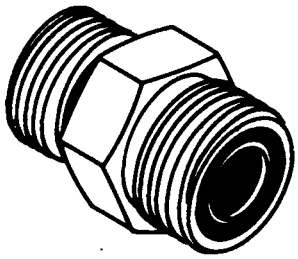
4. Hold fitting head-end with a wrench and tighten locknut and back-up washer to proper torque value.

STRAIGHT FITTING OR SPECIAL NUT TORQUE CHART		
Thread Size	**N•m**	**lb-ft**
3/8-24 UNF	8	6
7/16-20 UNF	12	9
1/2-20 UNF	16	12
9/16-18 UNF	24	18
3/4-16 UNF	46	34
7/8-14 UNF	62	46
1-1/16-12 UN	102	75
1-3/16-12 UN	122	90
1-5/16-12 UN	142	105
1-5/8-12 UN	190	140
1-7/8-12 UN	217	160

NOTE: Torque tolerance is ± 10%.

04T,90,K66 –19–19MAR96–2/2

Service Recommendations for Flat Face O-Ring Seal Fittings



T6243AD –UN–18OCT88

1. Inspect the fitting sealing surfaces. They must be free of dirt or defects.
2. Inspect the O-ring. It must be free of damage or defects.
3. Lubricate O-rings and install into groove using petroleum jelly to hold in place.
4. Push O-ring into the groove with plenty of petroleum jelly so O-ring is not displaced during assembly.
5. Index angle fittings and tighten by hand pressing joint together to insure O-ring remains in place.
6. Tighten fitting or nut to torque value shown on the chart per dash size stamped on the fitting. Do not allow hoses to twist when tightening fittings.

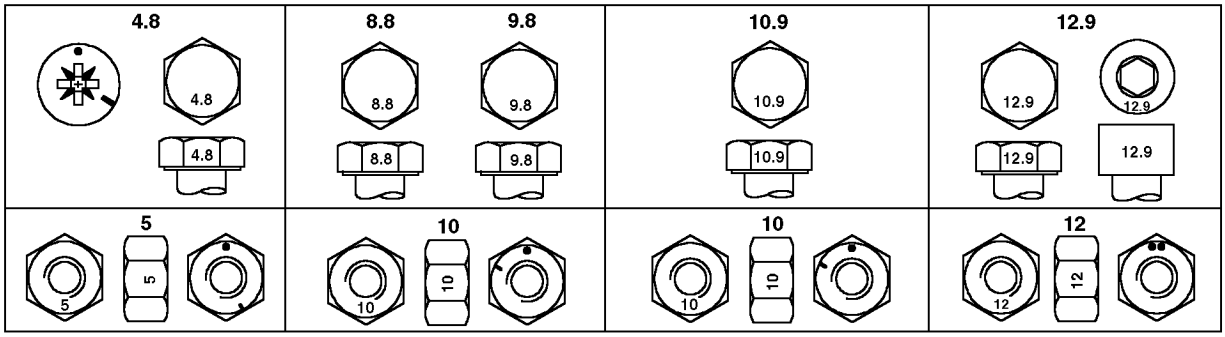
FLAT FACE O-RING SEAL FITTING TORQUE

Nominal Tube O.D.		Dash Size	Thread Size in.	Swivel Nut		Bulkhead Nut	
mm	in.	N•m	lb-ft	N•m	lb-ft		
6.35	0.250	-4	9/16-18	16	12	5.0	3.5
9.52	0.375	-6	11/16-16	24	18	9.0	6.5
12.70	0.500	-8	13/16-16	50	37	17.0	12.5
15.88	0.625	-10	1-14	69	51	17.0	12.5
19.05	0.750	-12	1 3/16-12	102	75	17.0	12.5
22.22	0.875	-14	1 3/16-12	102	75	17.0	12.5
25.40	1.000	-16	1 7/16-12	142	105	17.0	12.5
31.75	1.250	-20	1 11/16-12	190	140	17.0	12.5
38.10	1.500	-24	2-12	217	160	17.0	12.5

NOTE: Torque tolerance is +15 -20%.

04T,90,K67 –19–01AUG94–1/1

Metric Bolt and Cap Screw Torque Values



TORQ2 –UN–07SEP99

Top, Property Class and Head Markings; Bottom, Property Class and Nut Markings

	Class 4.8		Class 8.8 or 9.8		Class 10.9		Class 12.9	
Size	**Lubricated[a] N•m(lb-ft)**	**Dry[b] N•m(lb-ft)**	**Lubricated[a] N•m(lb-ft)**	**Dry[b] N•m(lb-ft)**	**Lubricated[a] N•m(lb-ft)**	**Dry[b] N•m(lb-ft)**	**Lubricated[a] N•m(lb-ft)**	**Dry[b] N•m(lb-ft)**
M6	4.7 (3.5)	6 (4.4)	9 (6.6)	11.5 (8.5)	13 (9.5)	16.5 (12.2)	15.5 (11.5)	19.5 (14.5)
M8	11.5 (8.5)	14.5 (10.7)	22 (16)	28 (20.5)	32 (23.5)	40 (29.5)	37 (27.5)	47 (35)
M10	23 (17)	29 (21)	43 (32)	55 (40)	63 (46)	80 (59)	75 (55)	95 (70)
M12	40 (29.5)	50 (37)	75 (55)	95 (70)	110 (80)	140 (105)	130 (95)	165 (120)
M14	63 (46)	80 (59)	120 (88)	150 (110)	175 (130)	220 (165)	205 (150)	260 (190)
M16	100 (74)	125 (92)	190 (140)	240 (175)	275 (200)	350 (255)	320 (235)	400 (300)
M18	135 (100)	170 (125)	265 (195)	330 (245)	375 (275)	475 (350)	440 (325)	560 (410)
M20	190 (140)	245 (180)	375 (275)	475 (350)	530 (390)	675 (500)	625 (460)	790 (580)
M22	265 (195)	330 (245)	510 (375)	650 (480)	725 (535)	920 (680)	850 (625)	1080 (800)
M24	330 (245)	425 (315)	650 (480)	820 (600)	920 (680)	1150 (850)	1080 (800)	1350 (1000)
M27	490 (360)	625 (460)	950 (700)	1200 (885)	1350 (1000)	1700 (1250)	1580 (1160)	2000 (1475)
M30	660 (490)	850 (625)	1290 (950)	1630 (1200)	1850 (1350)	2300 (1700)	2140 (1580)	2700 (2000)
M33	900 (665)	1150 (850)	1750 (1300)	2200 (1625)	2500 (1850)	3150 (2325)	2900 (2150)	3700 (2730)
M36	1150 (850)	1450 (1075)	2250 (1650)	2850 (2100)	3200 (2350)	4050 (3000)	3750 (2770)	4750 (3500)

[a] *"Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.*

[b] *"Dry" means plain or zinc plated without any lubrication.*

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

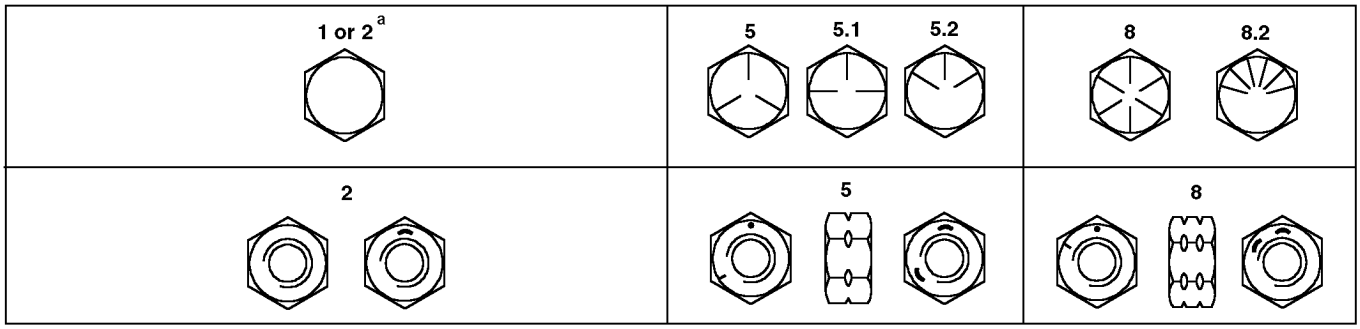
Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

DX,TORQ2 –19–01OCT99–1/1

Unified Inch Bolt and Cap Screw Torque Values



TORQ1A –UN–27SEP99

Top, SAE Grade and Head Markings; Bottom, SAE Grade and Nut Markings

	Grade 1 (No Mark)		Grade 2[a] (No Mark)		Grade 5, 5.1 or 5.2		Grade 8 or 8.2	
Size	**Lubricated[b] N•m(lb-ft)**	**Dry[c] N•m(lb-ft)**	**Lubricated[b] N•m(lb-ft)**	**Dry[c] N•m(lb-ft)**	**Lubricated[b] N•m(lb-ft)**	**Dry[c] N•m(lb-ft)**	**Lubricated[b] N•m(lb-ft)**	**Dry[c] N•m(lb-ft)**
1/4	3.8 (2.8)	4.7 (3.5)	6 (4.4)	7.5 (5.5)	9.5 (7)	12 (9)	13.5 (10)	17 (12.5)
5/16	7.7 (5.7)	9.8 (7.2)	12 (9)	15.5 (11.5)	19.5 (14.5)	25 (18.5)	28 (20.5)	35 (26)
3/8	13.5 (10)	17.5 (13)	22 (16)	27.5 (20)	35 (26)	44 (32.5)	49 (36)	63 (46)
7/16	22 (16)	28 (20.5)	35 (26)	44 (32.5)	56 (41)	70 (52)	80 (59)	100 (74)
1/2	34 (25)	42 (31)	53 (39)	67 (49)	85 (63)	110 (80)	120 (88)	155 (115)
9/16	48 (35.5)	60 (45)	76 (56)	95 (70)	125 (92)	155 (115)	175 (130)	220 (165)
5/8	67 (49)	85 (63)	105 (77)	135 (100)	170 (125)	215 (160)	240 (175)	305 (225)
3/4	120 (88)	150 (110)	190 (140)	240 (175)	300 (220)	380 (280)	425 (315)	540 (400)
7/8	190 (140)	240 (175)	190 (140)	240 (175)	490 (360)	615 (455)	690 (510)	870 (640)
1	285 (210)	360 (265)	285 (210)	360 (265)	730 (540)	920 (680)	1030 (760)	1300 (960)
1-1/8	400 (300)	510 (375)	400 (300)	510 (375)	910 (670)	1150 (850)	1450 (1075)	1850 (1350)
1-1/4	570 (420)	725 (535)	570 (420)	725 (535)	1280 (945)	1630 (1200)	2050 (1500)	2600 (1920)
1-3/8	750 (550)	950 (700)	750 (550)	950 (700)	1700 (1250)	2140 (1580)	2700 (2000)	3400 (2500)
1-1/2	990 (730)	1250 (930)	990 (730)	1250 (930)	2250 (1650)	2850 (2100)	3600 (2650)	4550 (3350)

[a] Grade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

[b] "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

[c] "Dry" means plain or zinc plated without any lubrication.

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

DX,TORQ1 –19–01OCT99–1/1

Diesel Fuel

Use either Grade No. 1-D or Grade No. 2-D fuel as defined by ASTM Designation D975 for diesel fuels. Find expected air temperature at time of start on thermometer scale in chart. Correct diesel fuel grade is shown to the right of scale.

NOTE: At altitudes above 1500 m (5000 ft) use grade 1-D for all temperatures.

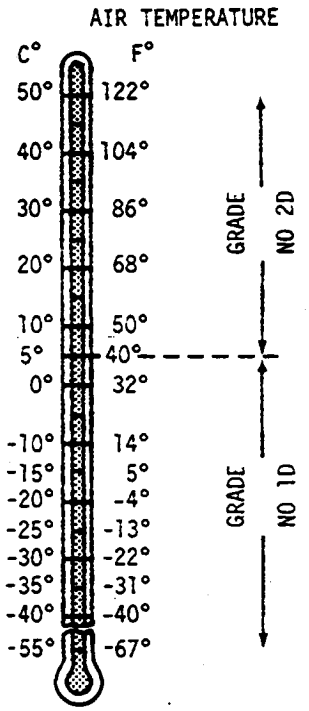
Fuel sulphur content should be less than 1.0 percent preferably less than 0.5 percent. Diesel fuel having sulphur content higher than 1.0 percent may cause increase wear on metal engine parts because of acids produced by sulphur during combustion.

IMPORTANT: If fuel sulphur content exceeds 0.7 percent, the engine oil drain interval must be reduced by 50 percent to 125 hours.

Cetane number should be no less than 40 to assure satisfactory starting and overall performance.

Cloud point should be at least 6°C (10°F) below lowest expected air temperature at time of starting. Wax can separate from fuel when temperature decreases to cloud point and may plug filter.

If you operate your tractor at temperatures below the limits shown, consult your dealer for special lubricants and starting aids.



E20380 –19–13MAR89

MX,FLIP,CA2 –19–24JUL95–1/1

Fuel Storage

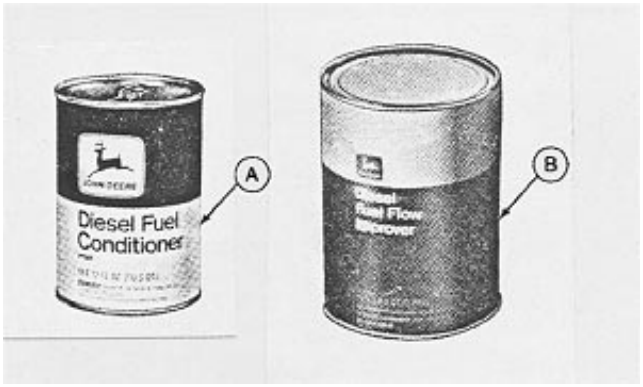
Buy good quality, clean fuel from a reputable supplier.

Proper fuel storage is critically important. Use clean storage and transfer tanks. Periodically drain water and sediment from bottom.

Avoid storing fuel over long periods of time. If there is a very slow turnover of fuel in the fuel tank or supply tank, it may be necessary to add John Deere Diesel Fuel Conditioner (A) to prevent water condensation. (See your John Deere dealer for proper service or maintenance recommendations.)

Store fuel in a convenient place away from buildings.

NOTE: To reduce fuel gelling and control wax separation during cold weather, John Deere Fuel Flow Improver (B), or equivalent, may be added to fuel or bulk storage tank.



A—John Deere Diesel Fuel Conditioner
B—John Deere Fuel Flow Improver

MX,FLIP,AA1 –19–26JUL94–1/1

Do Not Use Galvanized Containers

IMPORTANT: Diesel fuel stored in galvanized containers reacts with zinc coating on the container to form zinc flakes. If fuel contains water, a zinc gel will also form. The gel and flakes will quickly plug fuel filters and damage fuel injectors and fuel pumps.

DO NOT USE a galvanized container to store diesel fuel.

Store fuel in:

- plastic containers.
- aluminum containers.
- specially coated steel containers made for diesel fuel.

DO NOT USE brass-coated containers: brass is an alloy of copper and zinc.

M21,FLQ,B1 –19–02AUG85–1/1

Fill Fuel Tank

CAUTION: Handle fuel carefully. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine.

Fill fuel tank at end of each day's operation. Fill fuel tank only to bottom of filler neck.

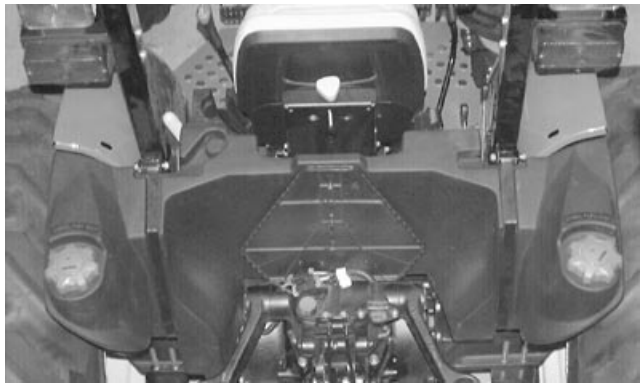
The tractor's fuel tank can be filled from the left or right side of tractor.

Specification

Fuel Tank Capacity ..... 84.8 L (22.4 U.S. gal)

IMPORTANT: The fuel tank uses vented filler caps. If a new filler cap is required, always replace it with a vented cap.

TS202 –UN–23AUG88



LV4284 –UN–16SEP99

AG,OUO1032,2844 –19–18JAN00–1/1

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4

Diesel Engine Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oil is preferred:

- John Deere PLUS-50®

The following oil is also recommended:

- John Deere TORQ-GARD SUPREME®

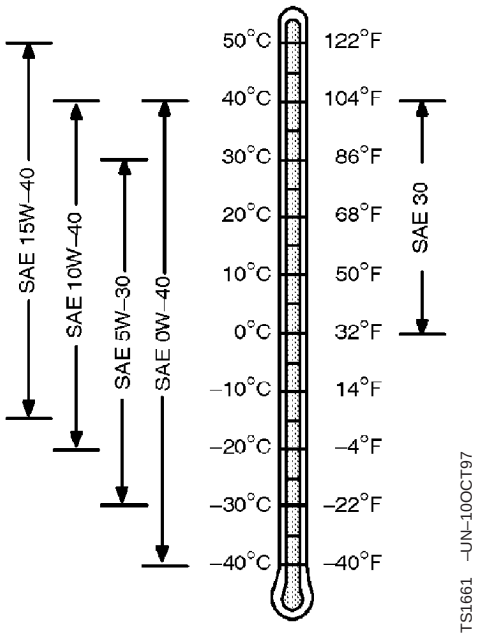
Other oils may be used if they meet one or more of the following:

- API Service Classification CG-4
- API Service Classification CF-4
- ACEA Specification E3
- ACEA Specification E2

Multi-viscosity diesel engine oils are preferred.

If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval by 50%.

Extended service intervals may apply when John Deere preferred engine oils are used. Consult your John Deere dealer for more information.



PLUS-50 is a registered trademark of Deere & Company.
TORQ-GARD SUPREME is a registered trademark of Deere & Company

DX,ENOIL –19–10OCT97–1/1

Engine Coolant

John Deere Low Silicate Antifreeze is recommended.

Also recommended is low silicate antifreeze formulated to GM6038M or equivalent.

Other antifreezes that may be used:

- Ethylene-glycol type.
- Those containing not more than 0.1 percent anhydrous metasilicate.
- Those meeting General Motors Performance Specification GM1899M

IMPORTANT: Some types of ethylene-glycol antifreeze are intended for automotive use. These products are often labeled for use in aluminum engines and usually contain more than 0.1 percent of anhydrous metasilicate.

Check container label or consult with antifreeze supplier before using.

Mix 50-67 percent low silicate antifreeze with 33-50 percent distilled or deionized water.

Low silicate antifreeze provides:

- Adequate heat transfer.
- Corrosion-resistant environment within the cooling system.
- Compatibility with cooling system hose and seal material.
- Protection during cold and hot weather operations.

Certain geographical areas may require special antifreeze or coolant practices. If you have any questions, consult your authorized servicing dealer to obtain the latest information and recommendations.

DX,COOL –19–04JUN90–1/1

Liquid Coolant Conditioner

John Deere Liquid Coolant Conditioner is recommended for wet-sleeve diesel engines not having a coolant filter option. Other conditioners may be used if it contains non-chromate inhibitors.

IMPORTANT: If engine is equipped with a John Deere Coolant Filter Conditioner, the correct inhibitors are contained in the filter. If both are used, a gel-type deposit is created which could inhibit heat transfer and block coolant flow. John Deere Liquid Coolant Conditioner does not protect against freezing.

Various sizes of coolant conditioners are available from your John Deere dealer.

RG4690 –UN–14DEC88

DX,COOL1 –19–04JUN90–1/1

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6

Transmission and Hydraulic Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

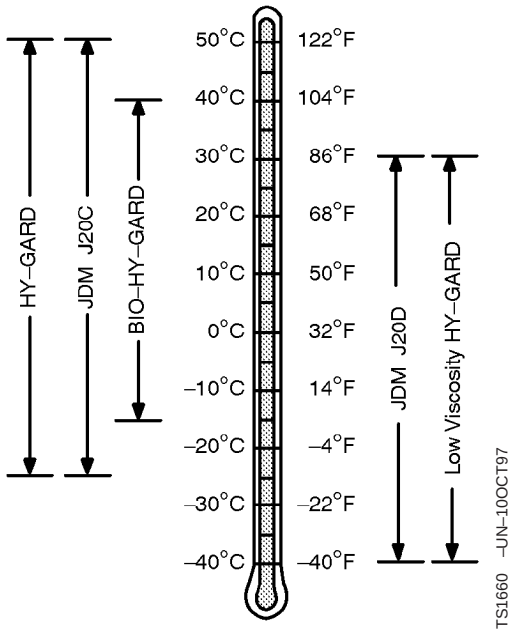
- John Deere HY-GARDHY-GARD®
- John Deere Low Viscosity HY-GARD HY-GARD®

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use the following oil when a biodegradable fluid is required:

- John Deere BIO-HY-GARD™[1]



HY-GARD is a registered trademark of Deere & Company.
BIO-HY-GARD is a trademark of Deere & Company.

[1]BIO-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,ANTI –19–10OCT97–1/1

MFWD Gear Oil

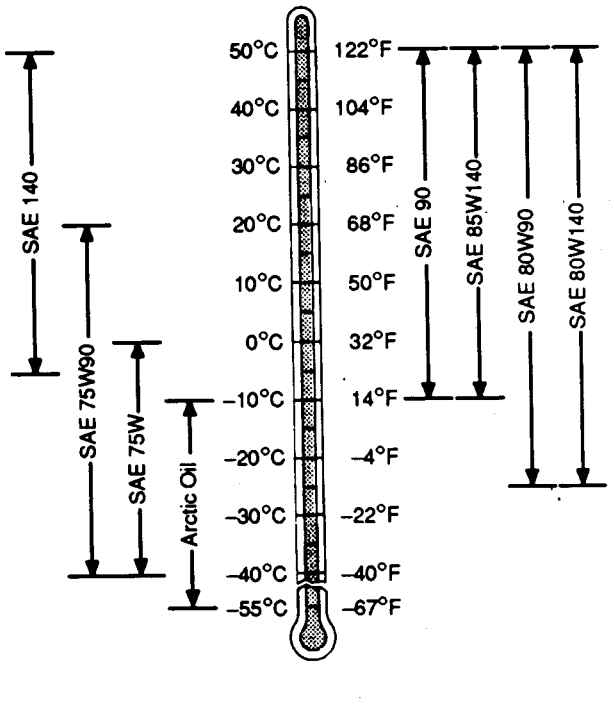
Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere GL-5 Gear Lubricant is recommended.

Other oils may be used if they meet one or more of the following:

- API Service Classification GL-5
- Military Specification MIL-L-2105D
- Military Specification MIL-L-2105C
- Military Specification MIL-L-2105B

Oils meeting Military Specification MIL-L-10324A may be used as arctic oils.



LV,1020HA,A3 –19–19JAN95–1/1

Grease (Specific Application)

Lithium Grease with Molybdenum Disulphide is recommended for use on internal components of transmission.

TY6333 or TY6347 John Deere Moly High Temperature EP Grease is recommended for use on the traction clutch and PTO clutch splines.

LV,1020HA,A4 –19–27JUN94–1/1

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

The following greases are preferred:

- John Deere SD POLYUREA GREASE

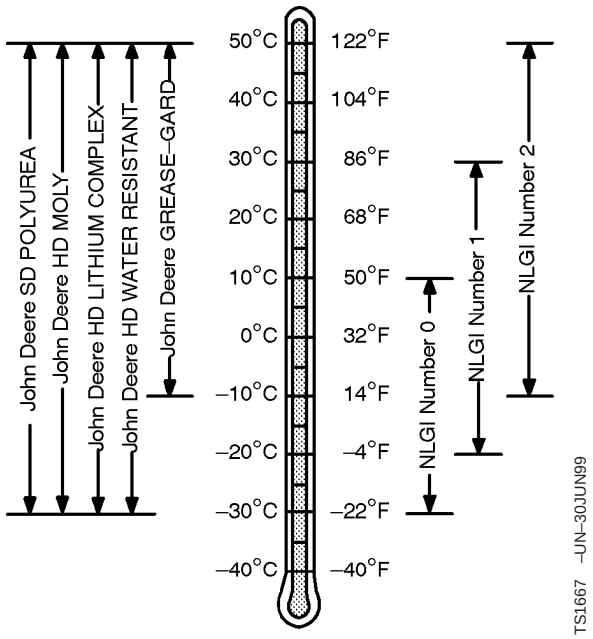
The following greases are also recommended:

- John Deere HD MOLY GREASE
- 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 thickener are not compatible with others.



DX,GREA1 –19–07JUL99–1/1

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 oils.

Re—refined base stock products may be used if the finished lubricant meets the performance requirements.

DX,ALTER –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.

Whenever possible, 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 –19–18MAR96–1/1

Serial Numbers

When working on machines or components that are covered by warranty, it is IMPORTANT that you include the machine's Product Identification Number and the component serial number on the warranty claim form.

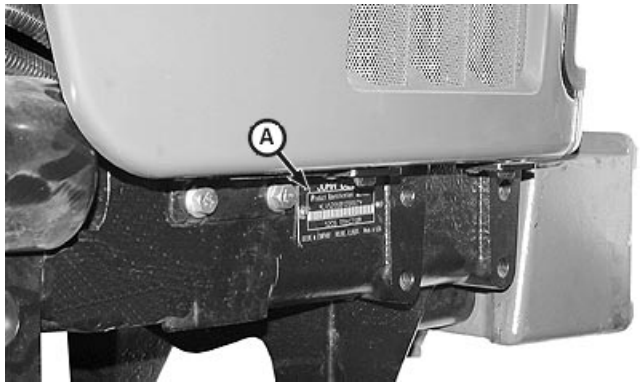
The location of component serial number plates are shown below.

MX,1025FT,A4 –19–15JAN91–1/1

Product Identification Number Location

The product identification number (PIN) plate (A) is located on the right-hand side of the front support.

A—Product Identification Number Plate



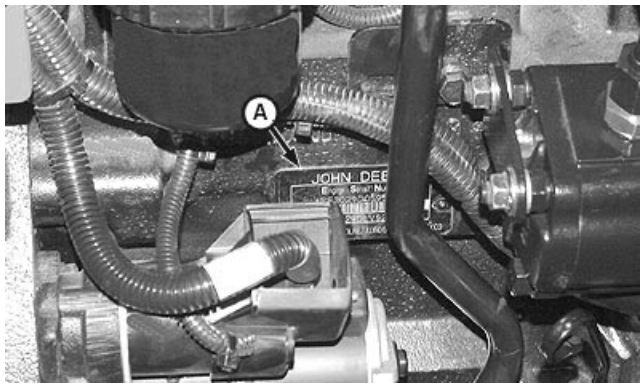
LV4285 –UN–16SEP99

AG,OUO1032,2845 –19–18JAN00–1/1

Engine Serial Number Location

The engine serial number plate (A) is located on the right-hand side of the engine block, between the starter and the hydraulic pump.

A—Engine Serial Number Plate



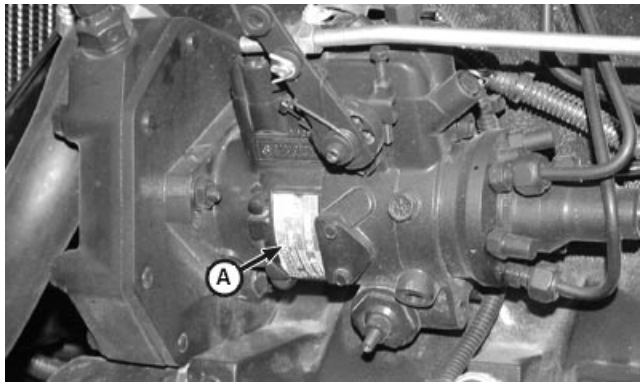
LV4286 –UN–16SEP99

AG,OUO1032,2846 –19–18JAN00–1/1

Fuel Injection Pump Serial Number Location

The fuel injection pump serial number plate (A) is located on the side of the pump.

A—Fuel Injection Pump Serial Number Plate



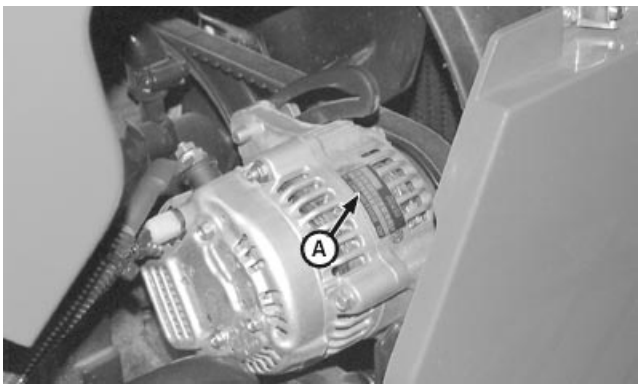
LV4288 –UN–16SEP99

AG,OUO1032,2848 –19–18JAN00–1/1

Alternator Serial Number Location

The alternator serial number plate (A) is located on the side of the housing.

1—Alternator Serial Number Plate

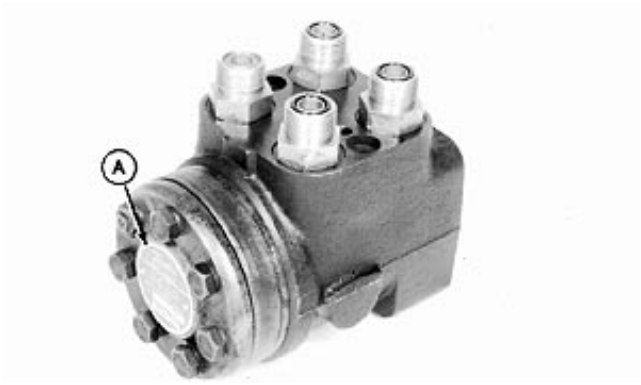


LV4289 –UN–16SEP99

AG,OUO1032,2847 –19–18JAN00–1/1

Power Steering Valve Serial Number Location

The power steering valve serial number plate (A) is located on the bottom of the valve.



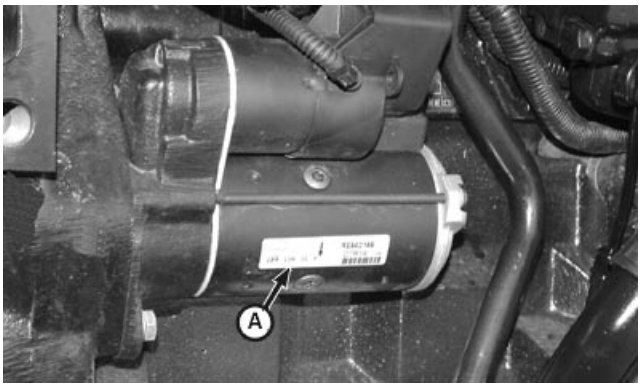
LV098 –UN–21NOV91

AG,OUO1032,2849 –19–18JAN00–1/1

Starter Serial Number Location

The starter serial number plate (A) is located on the side of the housing.

A—Starter Serial Number Plate



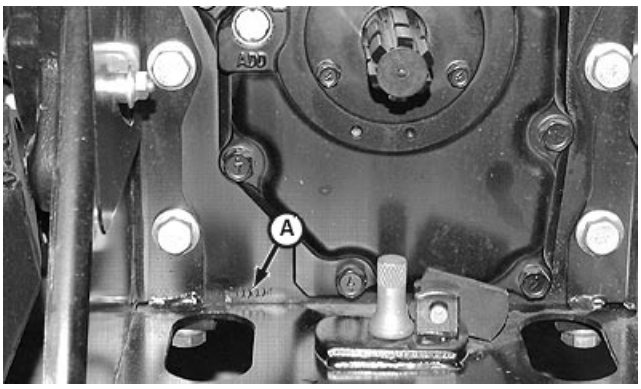
LV4290 –UN–16SEP99

AG,OUO1032,2850 –19–18JAN00–1/1

Transmission Serial Number Location

The transmission (drive train) serial number (A) is located at the rear of the machine on the bottom left-hand corner of the differential housing.

A—Transmission Serial Number



LV4291 –UN–16SEP99

AG,OUO1032,2851 –19–18JAN00–1/1

Front Axle (2WD) Serial Number Location

The 2-WD front axle serial number plate (A) is located on the rear right-hand side of the axle.

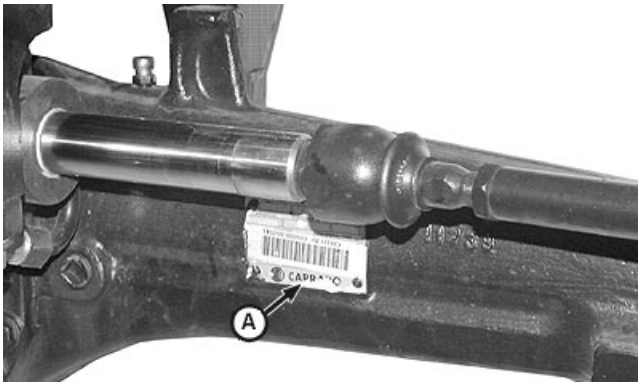
A—2-WD Front Axle Serial Number Plate

AG,OUO1032,2852 –19–18JAN00–1/1

Mechanical Front Wheel Drive (MFWD) Serial Number Location

The MFWD serial number plate (A) is located on the rear side of the right-hand axle housing.

A—MFWD Serial Number Plate



AG,OUO1032,2853 –19–18JAN00–1/1

Features and Accessories

The information covered in this group pertains to the features of the machines covered in this Technical Manual. It can be used in addition to the normal advertising literature or may help in determining which specific feature requires service. A list of all the available accessories and kits is also included.

LV,1030HA,A2 –19–07MAY96–1/1

10
30
2

Standard Features

John Deere 3000 Series Engine

- 5105—PE3029DLV51 34kw (45.6 hp)
- 5205—PE3029DLV52 39kw (53 hp)
- 3 cylinder diesel engine
- Wet sleeved
- Direct injection
- Key switch controlled fuel shut-off
- Naturally aspirated
- Vertical exhaust

SyncReverser™ Transmission

- Eight speeds forward, four reverse
- Inboard planetary final drives
- Differential lock

Dual Clutch

- Provides continuous live PTO
- Stops tractor without disengaging PTO

PTO

- Rear, 540 rpm
- Fully independent clutch

Hydrostatic Power Steering

- Power is supplied by a tandem gear hydraulic pump mounted to the engine

Mechanical Brakes

- Wet disk
- Individually mechanically controlled

Open-Center Hydraulic System

- Tandem gear hydraulic pumps
- Pumps are driven directly off engine timing gears
- The rear pump supplies oil to the power steering and lubricates top shaft of the transmission.
- The front pump supplies oil to the rockshaft and the selective control valves, if equipped.

LV4295 –UN–07FEB00

Slide LV4295

LV4296 –UN–07FEB00

Slide LV4296

Continued on next page

AG,OUO1032,2854 –19–18JAN00–1/2

Axles

- Adjustable front axle is standard

Hitch

- Category II three-point hitch
- Position control lever
- Rate of drop control lever

PTO Warning System

- Warning alarm sounds for 8—10 seconds when operator leaves seat with PTO engaged. Engine and PTO continue to run.

Fixed ROPS

Retractable seat belt

- Protects operator in the event of a tip-over

LV4297 –UN–31JAN00

Slide LV4297

AG,OUO1032,2854 –19–18JAN00–2/2

Factory Installed Optional Equipment

Mechanical Front Wheel Drive (MFWD) Axle

- Center line design
- High pivot point for better ground clearance and axle oscillation

Mid-Mount valve and Couplers (for front loader applications)

- Float and regenerative spool valves
- One lever “joystick” control

Single Selective Control Valve (SCV)

- Float spool valve

Dual Selective Control Valve (SCV)

- Float spool valve
- Regenerative spool valve

Hitch

- Rockshaft with draft and position control
- Telescoping draft links

Cold weather package (Includes the Following)

- 900 CCA battery
- Engine coolant heater
- Heavy duty intake heater

Foldable ROPS

LV4298 –UN–21SEP99

Slide LV4298

AG,OUO1032,2855 –19–18JAN00–1/1

Field Installed Optional Kits and Accessories

- Single or two Selective Control Valve (SCV)
- Mid-mount Valve and Joystick
- Power Beyond Kit
- Power Beyond End Cap
- Cold Weather Package
- Front Drive Shaft Coupler
- Seat Arm Rests
- Horn
- Front Weight Bracket and Weights
- Deluxe Canopy (used on foldable ROPS only.)
- Interchangeable, Category 2-to-Category 1 Hitch Bushings
- Offset Drawbar
- Rear Wheel Weight Set
- Rear Axle Extension (4 in. or 2 in.)
- Rear Work Light
- Right Hand Step with Handrail (used without mid-mount valve.)
- Hood Guard

LV,1030HA,A5 –19–07MAY96–1/1

Section 20
Engine Repair

Contents

Service Equipment and Tools

NOTE: Order tools according to information given in the U.S. SERVICEGARD™ Catalog or from the European Microfiche Tool Catalog (MTC). Some tools may be available from a local supplier.

SERVICEGARD is a trademark of Deere & Company

AG,OUO1008,399 –19–10MAR00–1/2

Lifting Bracket JT01748

Install to engine for removal.

Lifting Bracket JTG19

Install to engine for removal.

AG,OUO1008,399 –19–10MAR00–2/2

Specifications

Item	Measurement	Specification
Large Front Engine Mount Cap Screws	Torque	300 N•m (225 lb-ft)
Small Front Engine Mount Cap Screws	Torque	110 N•m (80 lb-ft)
Center Control Console Cap Screws	Torque	26 N•m (19 lb-ft)

AG,OUO1008,392 –19–06MAR00–1/1

John Deere Engine Repair—Use CTM8

For complete repair information the component technical manual (CTM) is also required. Use the component technical manual in conjunction with this machine manual.

TS225 –UN–17JAN89

LV,2005HA,A1 –19–09MAR92–1/1

Remove Engine

1. Disconnect battery. (See procedure in Section 40, Group 10.)
2. Remove air cleaner.
3. Remove radiator. (See procedure in Group 10.)

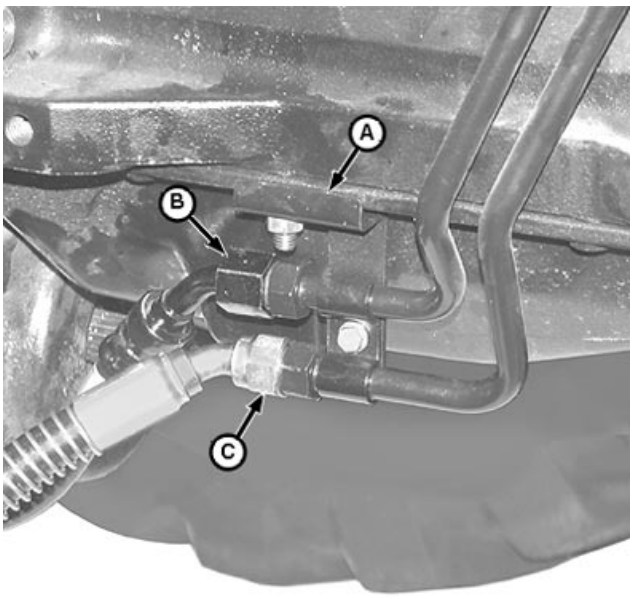
NOTE: The approximate capacity of transmission is 33 L (8.7 U.S. gal).

4. Drain transmission/hydraulic oil.
5. Remove dash panels and hood.
6. Remove muffler and exhaust stack.

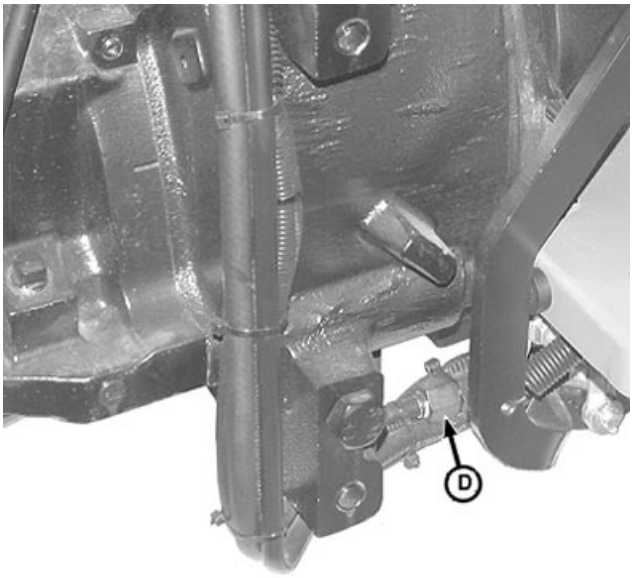
NOTE: Close all openings using caps and plugs.

7. Mark and disconnect hydraulic steering hoses (B and C).
8. Remove steering line bracket (A) from engine.
9. Disconnect steering return line (D).

A—Steering Line Bracket
B—Hydraulic Steering Hose
C—Hydraulic Steering Hose
D—Hydraulic Steering Return Line



LV4736 –UN–09MAR00



LV4732 –UN–09MAR00

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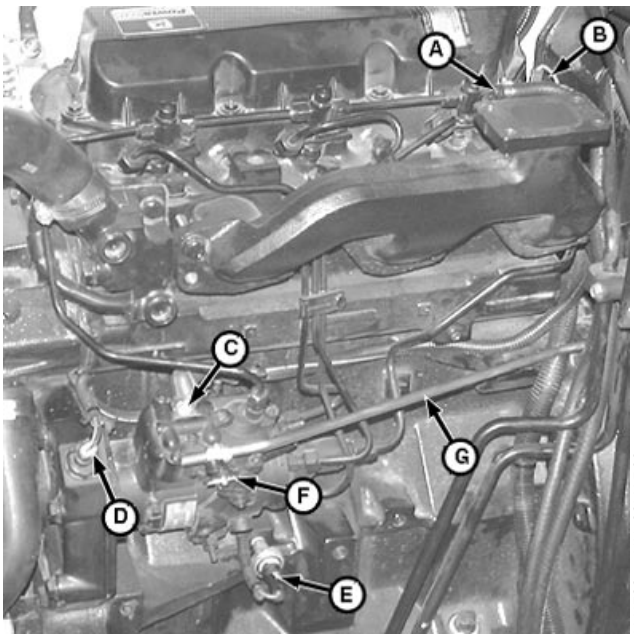
AG,OUO1008,224 –19–12OCT99–1/9

10. Remove cotter pin (F) and disconnect linkage rod (G) from fuel injection pump.

11. Mark and disconnect fuel return hose (A). Plug end of hose.

12. Disconnect electrical connectors (B—E), cut wire ties and remove wiring harness from left-side of engine-to-center control console.

A—Fuel Return Hose
B—Coolant Temperature Sender Connector
C—Fuel Injection Pump Connector
D—Engine Speed Sensor Connector
E—Oil Pressure Sensor Connector
F—Cotter Pin
G—Throttle Linkage Rod



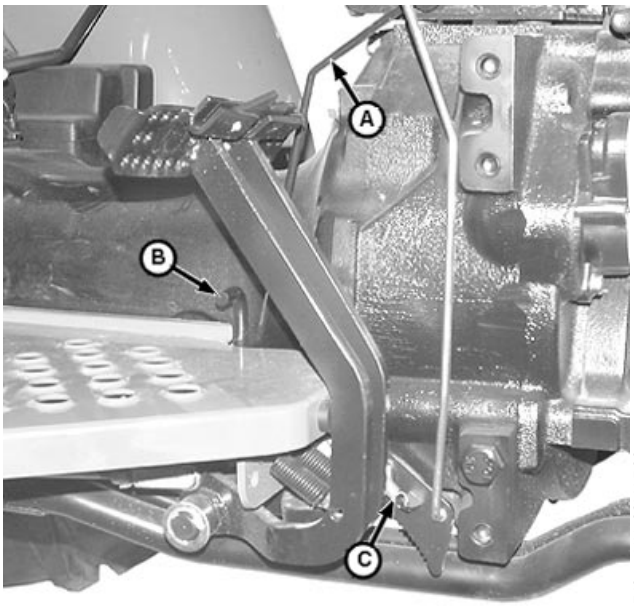
LV4733 –UN–09MAR00

AG,OUO1008,224 –19–12OCT99–2/9

13. Disconnect throttle linkage rod (A) from foot throttle (B).

14. Disconnect park brake return spring (C).

A—Foot Throttle Linkage Rod
B—Foot Throttle
C—Park Brake Return Spring



LV4740 –UN–09MAR00

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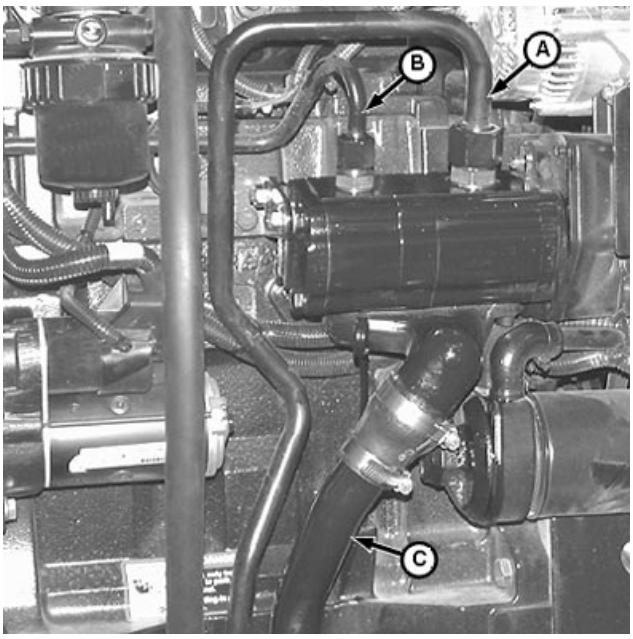
AG,OUO1008,224 –19–12OCT99–3/9

15. Remove hydraulic lines (A—C).

A—Inlet Valve Supply Line
B—Steering Valve Supply Line
C—Hydraulic Pump Supply Line

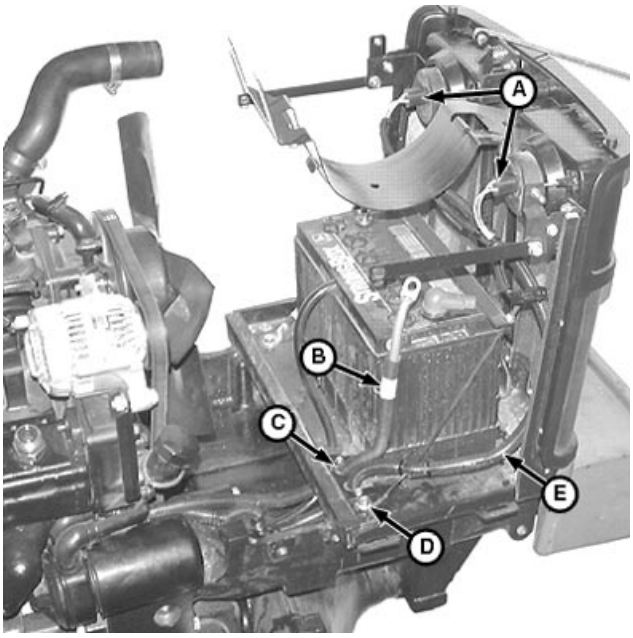


LV4734 –UN–09MAR00

AG,OUO1008,224 –19–12OCT99–4/9

16. Remove plate and gasket (C).
17. Disconnect headlight connectors (A).
18. Disconnect ground wiring connector (D).
19. Pull cable (B) and wiring harness (E) into engine bay compartment.

A—Headlight Connector (2 used)
B—Positive (+) Battery Cable
C—Plate and Gasket
D—Electrical Ground Wiring Connector
E—Wiring Harness



LV4735 –UN–09MAR00

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AG,OUO1008,224 –19–12OCT99–5/9

Thank you very much for your reading.

Please Click Here Then Get More Information.