DCT

Series 500 6619 Diesel Engines

JOHN DEERE

COMPONENT TECHNICAL MANUAL

Series 500 6619 Diesel Engines

CTM9 (25JAN96) English

Deere Power Systems Group
CTM9 (25JAN96)

LITHO IN U.S.A.
ENGLISH

CTM9 25JAN96

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.

Use this component technical manual in conjunction with the machine technical manual. An application listing in the introduction identifies product-model/component type-model relationship. See the machine technical manual for information on component removal and installation, and gaining access to the components.

This manual is divided in two parts: repair and operation and tests. Repair sections contain necessary instructions to repair the component. 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.

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

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.

JOHN DEERE DEALERS

IMPORTANT: The changes listed below make your current CTM obsolete. Discard CTM9, dated (2-87). Please copy this page and route through your service department.

• All safety information has been updated in Group 00. All persons using this manual should read and understand this information.

• Essential and Special Tools listings have been updated throughout the manual.

• Specifications listed at the beginning of each group have been updated.

• Basic engine specifications have been deleted from Group 01. Specifications are covered in detail in their respective groups. All specifications lists have been updated.

• Engine break-in oil information has been added. Engine coolant requirements and recommendations have been updated. (Group 02.)

• Methods for properly lifting of engines have been updated. (Group 03.)

• Information on recommended sealants, thread lock compounds, anti-seize compounds, gasket materials and adhesives has been updated. Generic material recommendations have been updated to provide more specific information. Also, Sealant Applications Guidelines that provide ordering information for these materials as well as helpful “where used” information. (Group 04.)

• Valve clearance checking and adjustment procedure updated to show that these procedures MUST BE done with engine COLD. Cylinder head removal, inspection, and installation procedures have been updated. (Group 05.)

• Cylinder head cap screw and tightening information have been updated. (Group 05.)

• Crankshaft gear removal and installation procedures, crankshaft grinding guidelindes and specifications chart have been updated. (Group 15.)

• Procedures for the removal, repair and installation of the fuel injection pumps have been updated. (Group 35.)

• Engine break-in procedures have been updated. (Group 100.)

• Most component identification illustrations and general system descriptions have been moved to Group 105, Engine System Operation and Tests.

• Dealer Fabricated Tools have been removed from the individual groups and consolidated in Group 199.

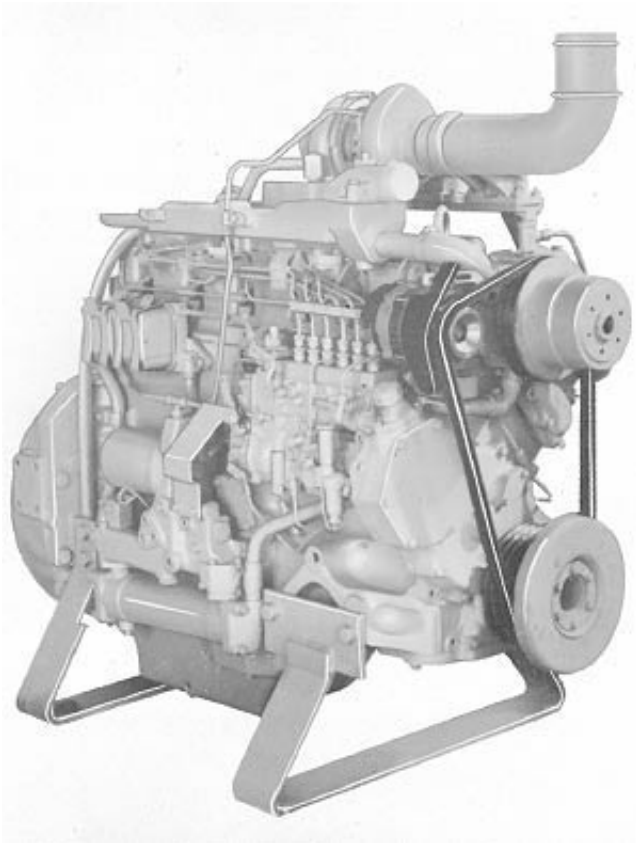
RG,CTM9,DW815 -19-31JAN96

ABOUT THIS MANUAL

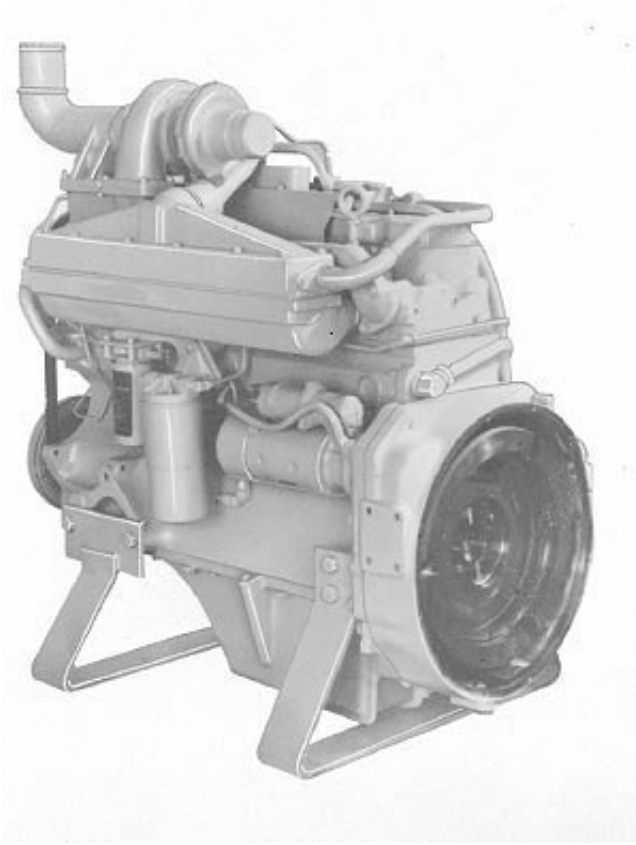
This component Technical Manual (CTM-9) covers the recommended repair procedure for all 10.1 L (619 cu. in.) Engines produced in Waterloo, Iowa. Before beginning repair of an engine, clean engine and mount in a safety approved repair stand. (See Group 03.)

This manual contains SI Metric units of measure, followed immediately by the U.S. customary units of measure.

Some components of this engine may be serviced without removing the engine from the machine. Refer to the specific machine technical manuals for information on components that can be serviced without removing the engine from the machine and for engine removal/installation procedures.



RG5207 -UN-19JAN90



RG5208 -UN-19JAN90

S11,2000,EK -19-25JAN96

Contents

Continued on next page

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.

CTM9-19-25JAN96

Continued on next page

Continued on next page

Continued on next page

Continued on next page

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 -19-04JUN90

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

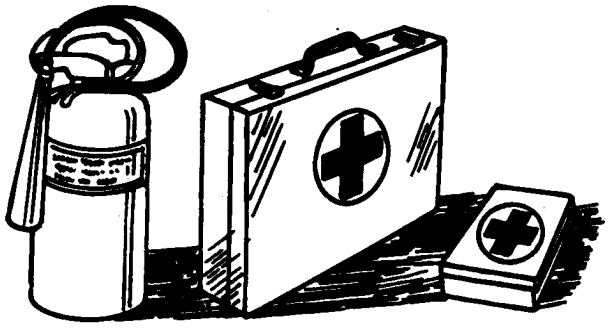
DX,SPARKS -19-03MAR93

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

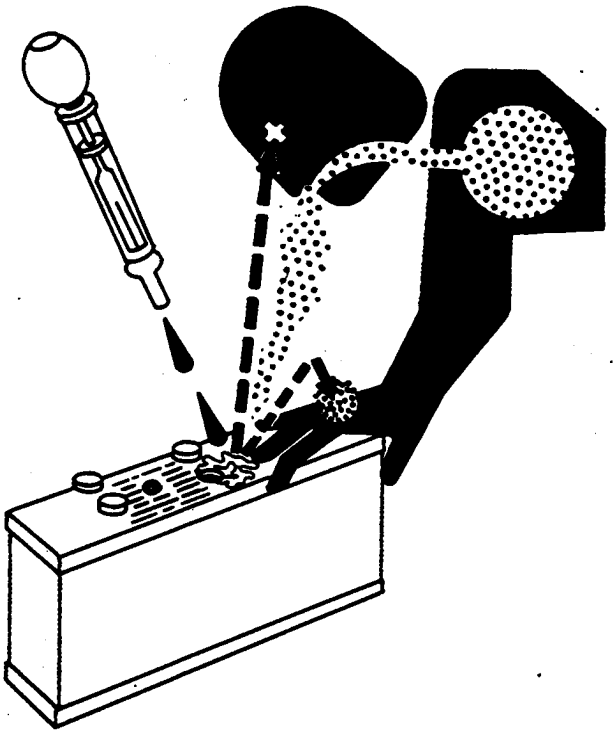
PREVENT ACID BURNS

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

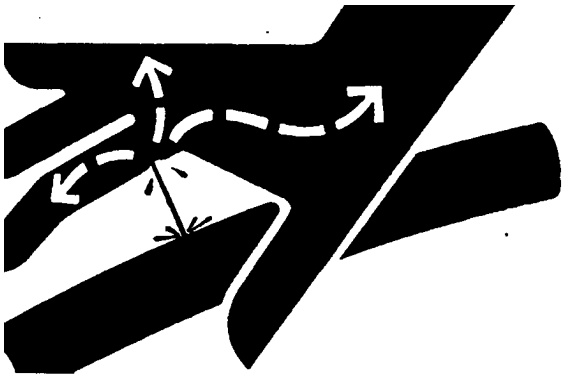
AVOID HIGH-PRESSURE FLUIDS

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.



X9811 -UN-23AUG88

DX,FLUID -19-03MAR93

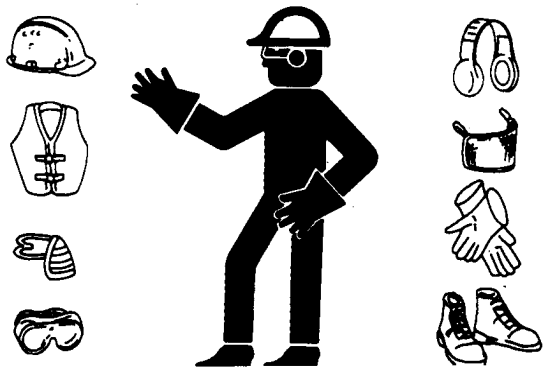
WEAR PROTECTIVE CLOTHING

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.

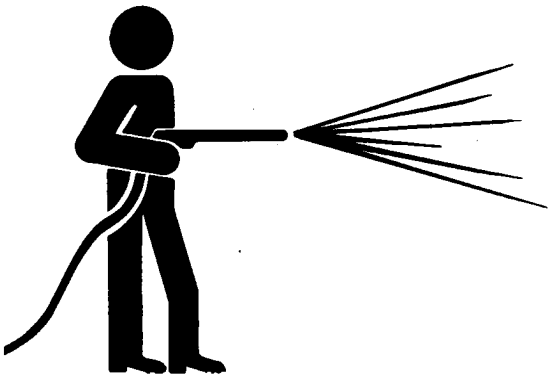


TS206 -UN-23AUG88

DX,WEAR -19-10SEP90

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.



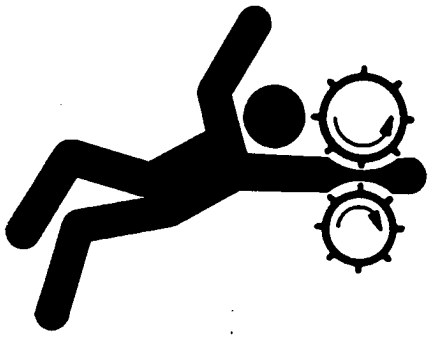
T6642EJ -UN-18OCT88

DX,CLEAN -19-04JUN90

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

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.

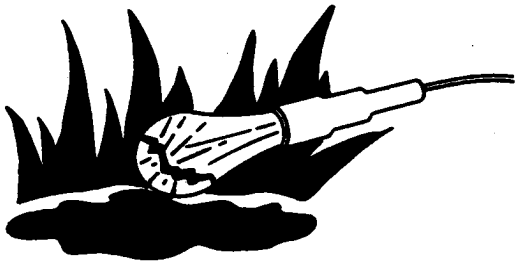
If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

TS220 -UN-23AUG88

DX,AIR -19-04JUN90

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.



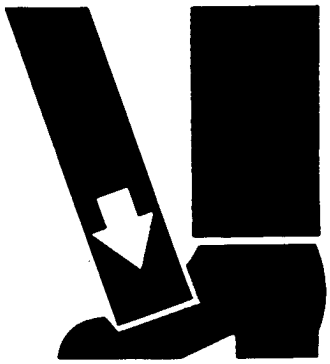
TS223 -UN-23AUG88

DX,LIGHT -19-04JUN90

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

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

REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes and dust.

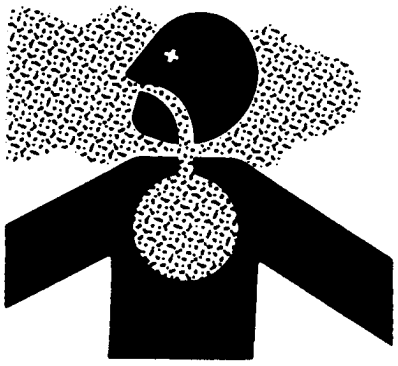
Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

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

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 -19-04JUN90

DISPOSE OF WASTE PROPERLY

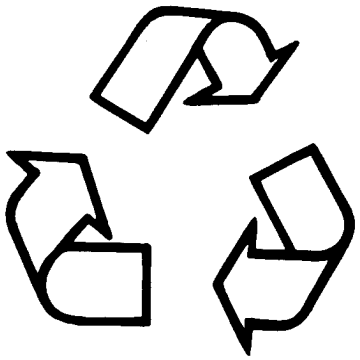
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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

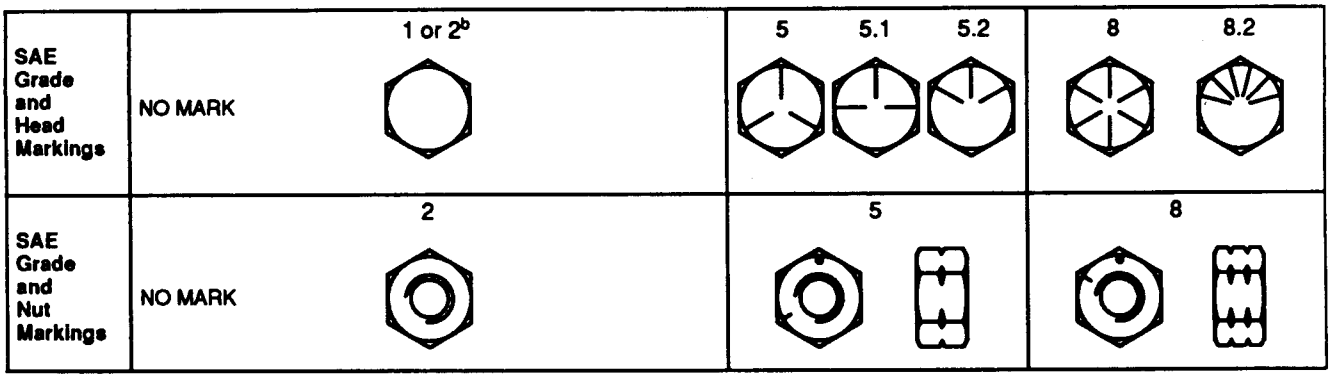
LIVE WITH SAFETY

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

UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES



TS1162 -19-04MAR91

Size	Grade 1				Grade 2[b]				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

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

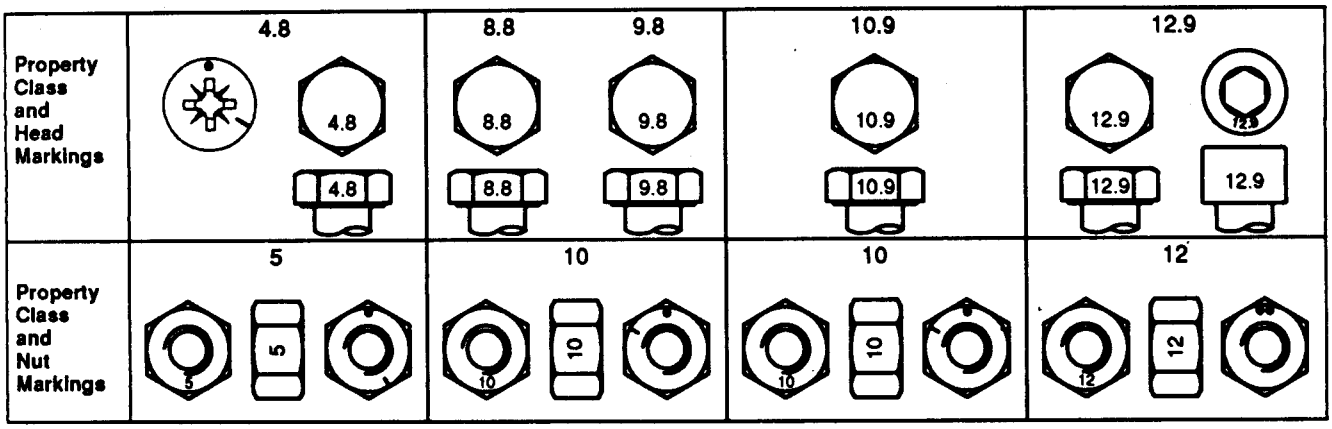
Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

[a] "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

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

DX,TORQ1 -19-20JUL94

METRIC BOLT AND CAP SCREW TORQUE VALUES



Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

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.

[a] "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

Make sure fasteners 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 -19-20JUL94

ENGINE MODEL DESIGNATION

1. JOHN DEERE ENGINE MODEL - 6619 ENGINE

Engine model designation includes number of cylinders, displacement in cubic inches, aspiration, and application code. For example:

6619AF-00 ENGINE

6 . . . . . Number of cylinders
619 . . . . . Cu. in. displacement
A . . . . . Aspiration code
F . . . . . User factory code
-00 . . . . . Application

ASPIRATION CODE

T . . . . . Turbocharged
A . . . . . Turbocharged and aftercooled

JD FACTORY/OEM USER FACTORY CODE

T . . . . . Dubuque
E . . . . . Ottumwa
R . . . . . Tractor
F . . . . . OEM

APPLICATION CODE

-00, -01 . . . . . Code for specific application

S11,0000,AF -19-25JAN96

2. DETROIT DIESEL ALLISON (DDA) ENGINE MODEL

DDA engine model designation cross-reference with the John Deere engine model. It includes the series, number of cylinders, application type, direction of rotation, aspiration, and application code. For example, the model 6619AF001 engine just previously discussed, becomes DDA model H0639600:

H0639600 Model Designation

H . . . . . Engine series
06 . . . . . Number of cylinders
3 . . . . . Application type
9 . . . . . Direction of rotation
6 . . . . . Aspiration
00 . . . . . Application code

Application Type

2 . . . . . Marine
3 . . . . . Industrial
4 . . . . . Power Base
5 . . . . . Generator Set
7 . . . . . Automotive
8 . . . . . Special

Direction of Rotation

9 . . . . . Right-Hand or clockwise (as viewed from FRONT of engine)
0 . . . . . Left-Hand or counterclockwise rotation

Aspiration

3 . . . . . Turbocharged
6 . . . . . Turbocharged and aftercooled

Application Code

00, 01, etc. . . . . Code for each specific application

S11,0000,AG -19-27MAY87

ENGINE SERIAL NUMBER PLATE INFORMATION

IMPORTANT: The engine serial number plate can be easily destroyed. Remove the plate, or record the informaton elsewhere, before "hot tank" cleaning the block.

1. ENGINE SERIAL NUMBER

Each engine has a 13-digit John Deere serial number (A) identifying the producing factory, engine model designation, and a 6-digit sequential number. The following is an example:

RG6619A000000

RG . . . . . Factory code producing engine
6619A . . . . . Engine model designation
000000 . . . . . Sequential number

Factory Code Producing Engine

RG . . . . . Waterloo

Engine Model Designation

6619A . . . . . Definition explained previously (See Engine Model Designation)

Sequential Number

000000 . . . . . 6-digit sequential number

2. ENGINE APPLICATION DATA

The second line of information on the nameplate (B) identifies the engine/machine or OEM relationship (See ENGINE APPLICATION CHART in this group).

NOTE: Current (later) engines will have a bar coded serial number plate (A, lower illustration) with the same information as detailed above.

John Deere Embossed Nameplate

John Deere Bar Coded Nameplate

RG,0000,AH -19-25JAN96

3. Unit Number

Engines marketed by Detroit Diesel Allison (DDA) have a third line of information on the nameplate. The unit number (A) is the DDA applied serial number and must be utilized for DDA service and customer reference purposes.

A typical unit number converts the 13-digit engine serial number into one that is 10-digits. It includes the number of cylinders, manufacturing factory location, and DDA model designation.

Example:

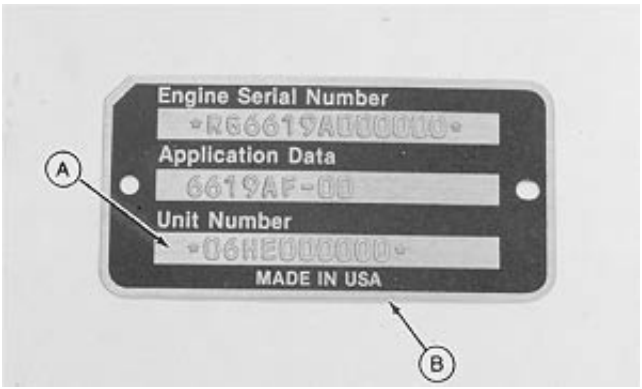
JD Engine Serial No.	DDA Unit No.
RG6619A000000	06HE000000
6	06
RG	H
RG6619A	**E
000000	000000

Model Codes

JD/DDA	Deere Engine Model	DDA Model Code ** (4th position of Unit No.)
RG/H	6619T	D
RG/H	6619A	E

NOTE: Some nameplates (B) are used which do not have the John Deere name printed.

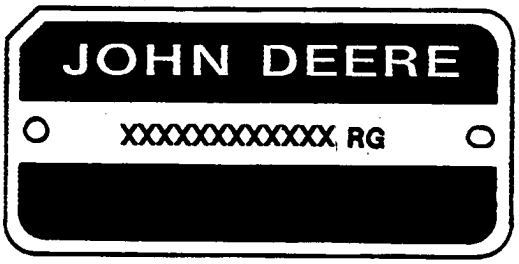
DDA Unit Number Plate



Generic Engine Nameplate

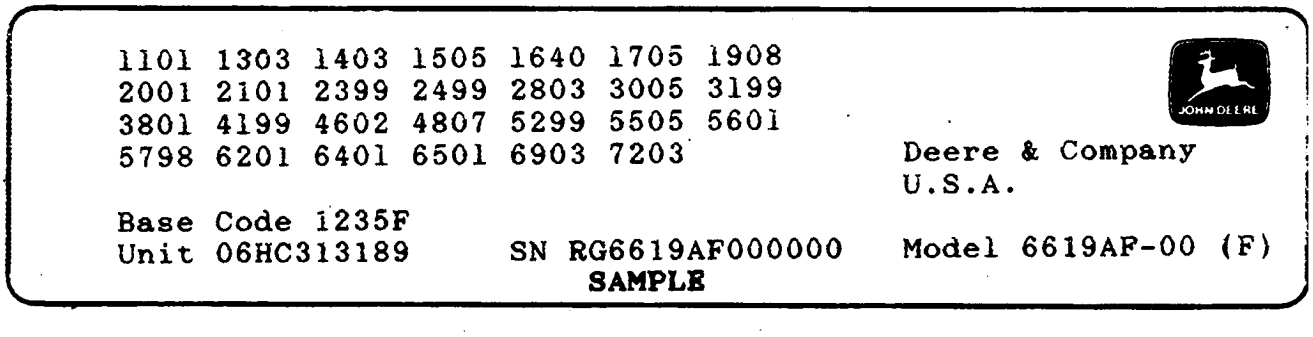
RG,0000,AJ -19-19MAY95

NOTE: Prior to Engine Serial No. (-047325), a one line engine name plate was used on production engines.



S11,0000,AT -19-27MAY87

OPTION CODE LABEL



An option code label is affixed to the rocker arm cover on all OEM engines. (Label is not installed on engines for John Deere machines.)

The label identifies only the factory-installed options on each engine. Distributor/Dealer installed kits would not be shown.

A four-digit number is used to identify a particular option. For example, Code 1403 indicates that the engine is equipped with an SAE No. 3 flywheel housing.

Always provide option code information when ordering repair parts. A listing of option codes is given in the Operator's Manual.

S11,0000,AK1 -19-26MAR87

ENGINE APPLICATION CHART

John Deere Agricultural Equipment Applications

Machine Model No.	Engine Model
Forage Harvesters	
5460	6619AE-01
5720	6619AE-02
5820	6619AE-02, 03
5830	6619AE-03
Tractors	
8630	6619AR-01, 10
8630 Export	6619AR-06, 13
8640	6619AR-08
8640 Export	6619AR-09
8650	6619AR-11, 14
8650 Export	6619AR-12

S11,0000,AL -19-27MAY87

John Deere Industrial Equipment Applications

Machine Model No.	Engine Model
Crawlers	
JD850, 850	6619TT-02
JD855, 855	6619AT-02
Excavator	
JD890,890	6619AT-03
890A	6619AT-05
992D	6619AT-07
Scraper	
JD762, 762	6619TT-01
JD860B	6619AT-01
JD862, 862	6619AT-04
862B	6619AT-04

RG,0000,AM -19-31JAN96

OEM Applications

Machine Model No.	Engine Model
OEM	6619AF-00
Repower	6619TF-01
Stationary Engines	6619AR-04

S11,0000,AN -19-27MAY87

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.

In all cases, the fuel must meet the following properties:

• **Cetane Number 40 minimum.** Cetane number greater than 50 is preferred, especially for temperatures below -20˚ C (-4˚ F) or elevations above 1500 m (5000 ft).

• **Cold Filter Plugging Point (CFPP)** below the expected low temperature OR **Cloud Point** at least 5˚ C (9˚ F) below the expected low temperature.

• **Sulfur Content**
— Sulfur content should not exceed 0.5%. Sulfur content less than 0.05% is preferred.
— If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval for engine oil and filter changes by 50%.
— DO NOT use diesel fuel with sulfur content greater than 1.0%.

Bio-diesel fuels meeting DIN 51606 or equivalent specification may be used.

RG,FUEL1 -19-25JAN96

LUBRICITY OF DIESEL FUELS

Diesel fuel must have adequate lubricity to ensure proper operation and durability of fuel injection system components.

Diesel fuels for highway use in the United States now require sulfur content less than 0.05%. Diesel fuel in the European Union will require sulfur content less than 0.05% by 1 October 1996.

Experience shows that some low sulfur diesel fuels may have inadequate lubricity and their use may reduce performance in fuel injection systems due to inadequate lubrication of injector components. The lower concentration of aromatic compounds in these fuels also adversely affects injection pump seals and may result in leaks.

Use of low lubricity diesel fuels may also cause accelerated wear, injection nozzle erosion or corrosion, engine speed instability, hard starting, low power, and engine smoke.

Fuel lubricity should pass a minimum of 3300 gram load level as measured by the BOCLE scuffing test.

ASTM D975 and EN 590 specifications do not require fuels to pass a fuel lubricity test. Diesel fuels meeting U.S. Military Specification VV—F—800E pass a fuel lubricity test.

If fuel of low or unknown lubricity is used, add John Deere PREMIUM DIESEL FUEL CONDITIONER or equivalent at the specified concentration. John Deere Premium Diesel Fuel Conditioner is available in winter and summer formulas. Consult your John Deere engine distributor or servicing dealer for more information.

RG,FUEL5 -19-25JAN96

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®

If John Deere PLUS-50 engine oil and a John Deere oil filter are used, the service interval for oil and filter changes may be extended by 50 hours.

The following oil is also recommended:

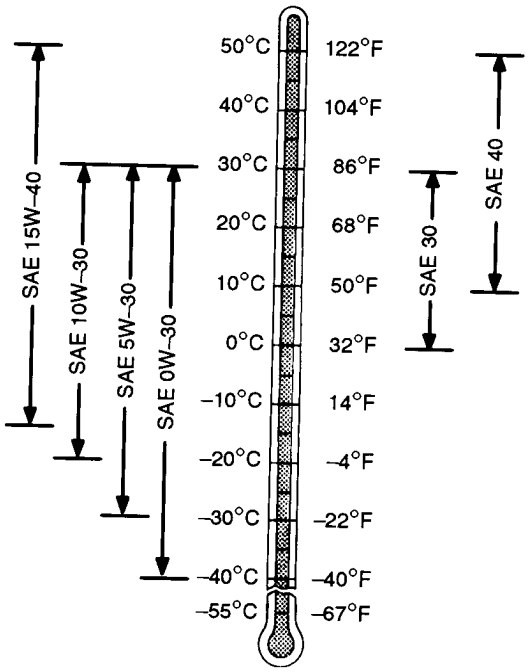
• John Deere TORQ-GARD SUPREME®

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

• John Deere UNI-GARD™
• API Service Classification CG-4
• API Service Classification CF-4
• API Service Classification CE
• CCMC Specification D5 and Mercedes Benz MB228.3
• CCMC Specification D4 and Mercedes Benz MB228.1

Viscosity grade SAE 15W-40 is preferred.

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



TS1619 -UN-12SEP94

DX,ENOIL -19-16SEP94

ENGINE BREAK-IN OIL

New engines are filled at the factory with John Deere ENGINE BREAK-IN OIL. During the break-in period, add John Deere ENGINE BREAK-IN OIL as needed to maintain the specified oil level.

Change the oil and filter after the first 100 hours of operation of a new or rebuilt engine.

After engine overhaul, fill the engine with John Deere ENGINE BREAK-IN OIL.

If John Deere ENGINE BREAK-IN OIL is not available, use a diesel engine oil meeting one of the following during the first 100 hours of operation:

- API Service Classification CE
- CCMC Specification D4

After the break-in period, use John Deere PLUS-50® or other diesel engine oil as recommended in this manual.

IMPORTANT: Do not use John Deere PLUS-50 oil or engine oils meeting API CG4, API CF4, or CCMC D5 performance levels during the first 100 hours of operation of a new or rebuilt engine. These oils will not allow the engine to break-in properly.

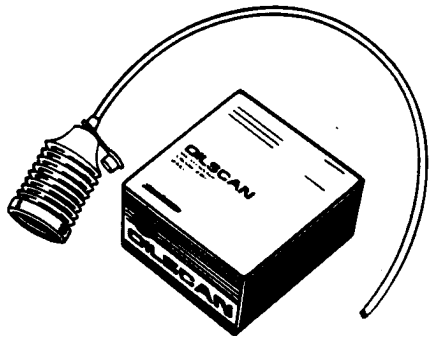
DX,ENOIL4 -19-17OCT94

OILSCAN® AND COOLSCAN™

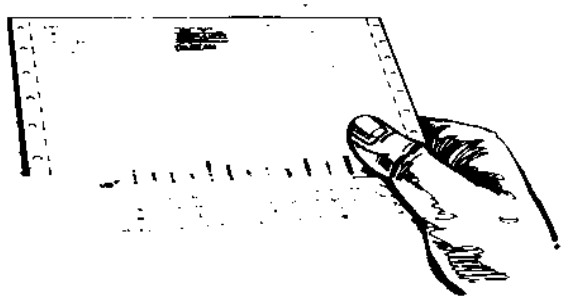
OILSCAN and COOLSCAN are John Deere sampling programs to help you monitor machine performance and identify potential problems before they cause serious damage.

Oil and coolant samples should be taken from each system prior to its recommended change interval.

Check with your John Deere dealer for the availability of OILSCAN and COOLSCAN kits.



T6828AB -UN-15JUN89



T6829AB -UN-18OCT88

DX,OILSCAN -19-16APR92

GREASE

Use grease based on the expected air temperature range during the service interval.

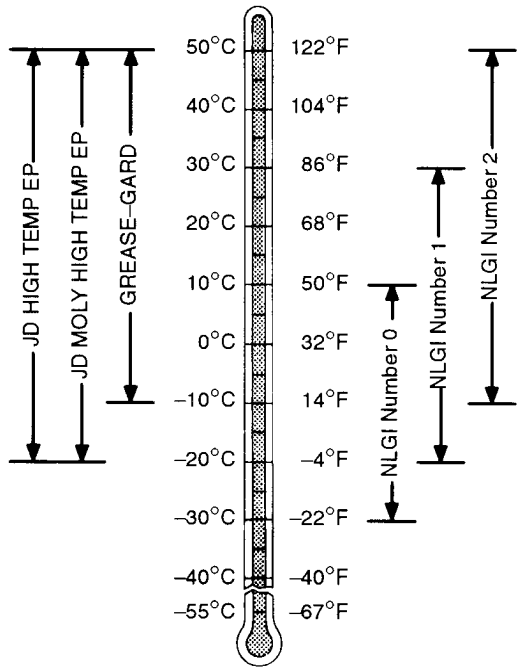
The following greases are preferred:

- John Deere MOLY HIGH TEMPERATURE EP GREASE
- John Deere HIGH TEMPERATURE EP GREASE
- John Deere GREASE-GARD™

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

- SAE Multipurpose EP Grease with a maximum of 5% molybdenum disulfide
- SAE Multipurpose EP Grease

Greases meeting Military Specification MIL-G-10924F may be used as arctic grease.



DX,GREA1 -19-02NOV94