OM

Operator's Manual

John Deere Series 300 OEM Engines

OM-T76163
Issue H2

Engines for the Original Equipment Market

To the Purchaser

Read this manual carefully to learn how to operate and service your engine.

⚠ This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.

Read the contents to learn where each section is. Use the alphabetical index for fast reference.

Left, right, front, and rear in this manual are determined by facing the flywheel (rear) end of the engine.

Write your engine serial number and accessory codes in the spaces on page 1. Your distributor/dealer needs this information when you order parts.

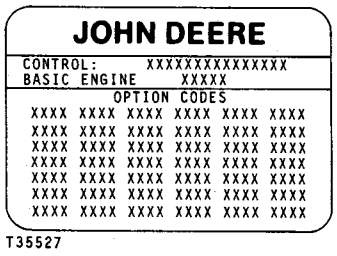
The warranty for this engine is on your copy of the engine registration.

This manual shows U.S. units of measure and their metric equivalents.

Contents

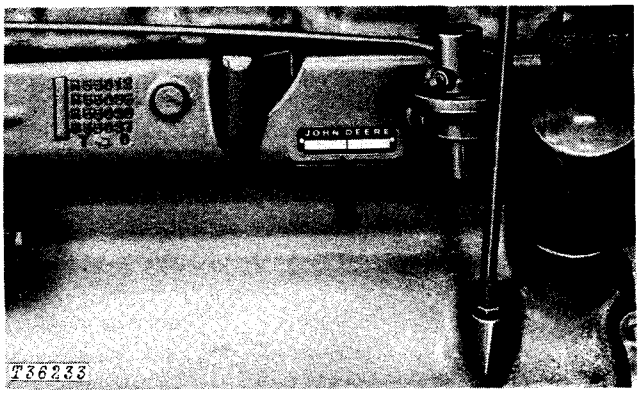
ACCESSORY CODE LIST AND ENGINE SERIAL NUMBER PLATE

An accessory code list and engine serial number plate are on your John Deere engine.



T35527

Accessory Code List
(on rocker arm cover)



T36233

Engine Type_____Engine Serial No._____
(6329 Engine)

The basic engine number shows the engine model.

Write the engine model number and serial number above.

Option codes give functional groups (first two digits) and specific options (last two digits).
For example: 11_____Rocker Arm Cover 1102 - Rocker Arm Cover, No Filler

Functional Group Codes	Description
11____.....	Rocker Arm Cover
12____.....	Oil Filler Cover and Inlet
13____.....	Crankshaft Pulley
14____.....	Flywheel Housing
15____.....	Flywheel
16____.....	Injection System
17____.....	Air Intake
18____.....	Air Cleaner
19____.....	Oil Pan
20____.....	Water Pump
21____.....	Thermostat Cover
22____.....	Thermostat
24____.....	Fan Belts
25____.....	Fan
27____.....	Radiator

Functional Group Codes	Description
28____.....	Exhaust System
29____.....	Vent System
30____.....	Starting System
31____.....	Alternator
32____.....	Instrumentation
33____.....	Tachometer
34____.....	Hour Meter
38——.....	Manuals
39——.....	Thermostat Housing
53——.....	Sheet Metal
55——.....	Engine Stand
56——.....	Paint Color
58——.....	Clutch and PTO
59——.....	Oil Cooler
60——.....	Oil Sight Gauge
61——.....	Muffler

Write the last two digits in spaces above from the option code numbers on your accessory code list.

Accessories not installed by John Deere will be listed 00 (last two digits) on the code list. For example:

3000 - No Starting Motor

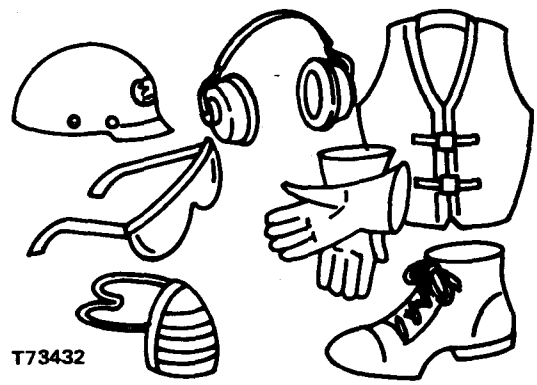
When you need engine parts or service, give your John Deere distributor/dealer the engine model number, engine serial number, and option code numbers.

Safety Rules

Safety Depends on You

MAKE SURE YOU OPERATE AND SERVICE YOUR ENGINE CORRECLTY.

Only qualified persons should operate the engine.



T73432

Wear safety equipment...

T45672

and fairly tight clothing.

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

T73433

Keep a first-aid kit and a fire extenguisher near the engine.

Keep the extinguisher fully charged. Learn to use it correctly.

Keep hands, feet, and controls free of water, grease, and mud.

Do not leave the engine while it is running unless it is designed to run unattended.

Safety Before You Start The Engine

Walk all the way around the engine. Make sure the area is clear before you start or service the engine.

Do not operate your engine if it has an unsafe condition. Put a tag on the engine so other operators will know it.

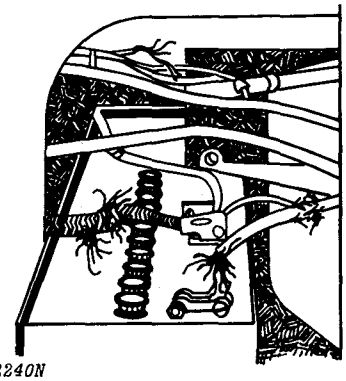
Start the engine ONLY in a well-ventilated place.

Remove trash from the engine and surrounding area daily.

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.

Electrical System Safety



T52240N

T52240N

Check daily for worn or frayed wires and loose connections.

Before you make adjustments on the engine or electrical system, disconnect the battery ground (−) cable unless the procedure calls for battery power.

Keep sparks and flames away from batteries.

Before you connect or disconnect a battery charger, turn off the charger.

Before you use a booster battery, read the instructions on page 5.

Safety During Service

Do not add grease or oil to the engine while it is running.

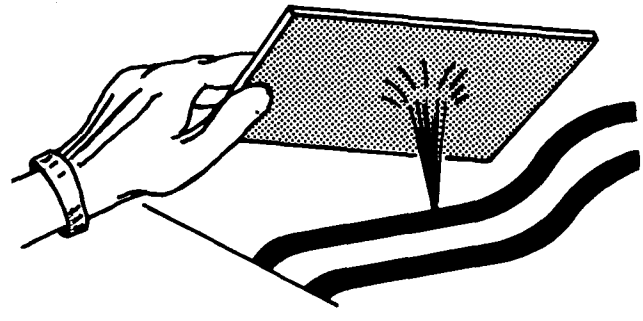
Do not run the engine while you make adjustments and repairs unless the procedure is approved.

Fuel Safety

BE CAREFUL when you work with fuel:

- Do not fill fuel tank if engine is hot or running.
- Do not smoke when you fill the fuel tank or work on the engine.

Safety with High Pressure Fluids



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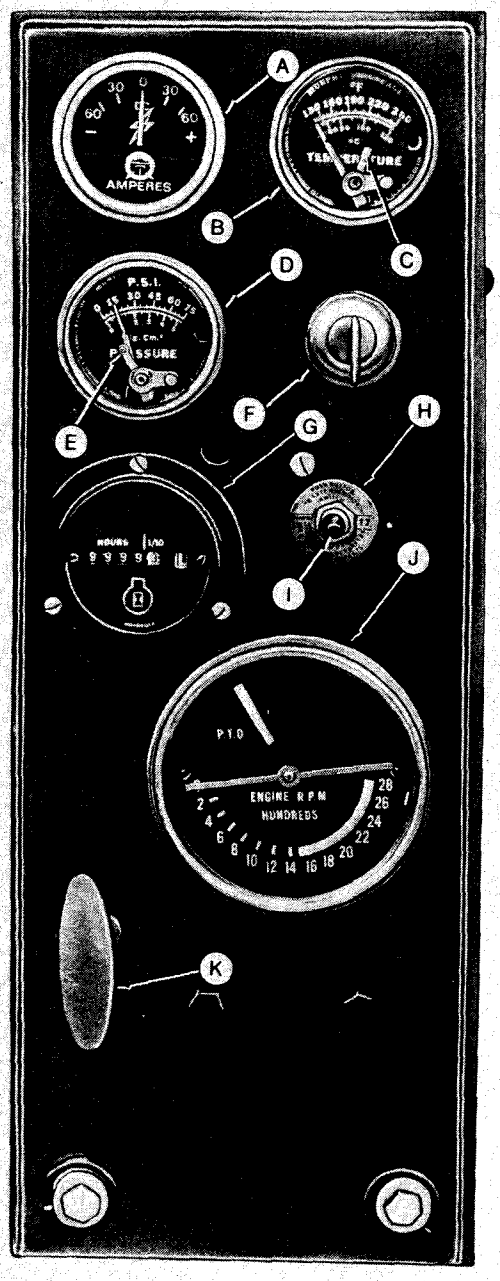
Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Instruments



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Instrument Panel
4219 Enclosed Engine

A—Ammeter

B—Coolant Temperature Gauge - If coolant temperature goes above 220°F (104°C), the contact will stop the engine.

C—Contact

D—Oil Pressure Gauge - If oil pressure goes below 15 psi (105 kPa), the contact will stop the engine.

E—Contact

F—Key Switch

G—Hour Meter

H—Safety Switch - This switch will stop engine:
- **If oil pressure goes below 15 psi (105 kPa).**
- **If coolant temperature goes above 220°F (104°C).**

If switch stops engine, find and correct the cause before you start engine.

I —Button

J —Tachometer

K—Throttle Knob

Operation

PRE-START INSPECTION

Before you start the engine for the first time each day, check the following:

1. Fluid levels: oil, coolant, fuel.
2. Air restriction indicator.
3. Turbocharger mounting and connections for air or oil leaks.
4. Hardware: loose or missing parts.
5. Components: bent, broken, or badly worn parts.

STARTING THE ENGINE

CAUTION: Do not start the engine unless it is safe to do so.

CAUTION: Start engine ONLY in a well-ventilated place.

1. Connect the fuel shut-off wire.
2. Move the throttle to one-third speed.
3. Turn the starter switch key on.
4. Push the safety switch button (p. 4).
5. Crank the engine. Do not crank the engine longer than 20 seconds. Wait 2 minutes before you try again.
6. When the engine starts, release the key and safety switch button.
7. Move the throttle to half speed.

Turbocharged Engines

If the engine has not run for several weeks:

1. Disconnect the electric shut-off wire from the injection pump to keep the engine from starting.
2. Crank the engine until the oil pressure gauge shows pressure. Do not crank engine more than 20 seconds.
3. Connect the shut-off wire.
4. Start the engine.
5. Do not run the engine faster than 1000 rpm until oil pressure is 14 psi (100 kPa).

Cold Weather Starting

During cold weather, use starting aids when necessary.

Starting Aid

Use the starting aid when the temperature is below 32°F (0°C).

CAUTION: Starting fluid is highly flammable.

Crank the engine several revolutions, then inject starting fluid into the air intake system.

IMPORTANT: Inject starting fluid ONLY while the engine is cold and cranking. Do not inject fluid for more than one or two seconds at a time. Stop injecting fluid as soon as the engine starts and runs smoothly.

Coolant Heater

Use coolant heater when temperature is below −4°F (−20°C).

Connect the coolant heater to 115-volt electrical power 10 hours before you start the engine.

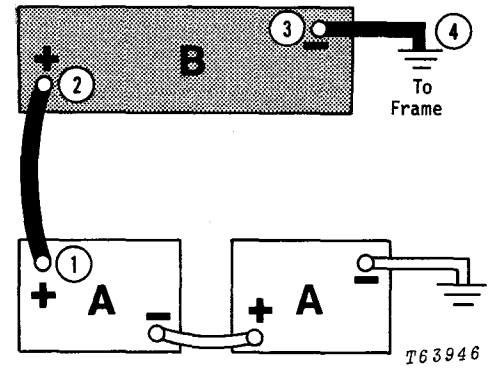
CAUTION: Use a heavy-duty grounded cord to connect coolant heater to electrical power.

Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.

Booster Batteries for 12-Volt Systems

Connect batteries in the order shown. Make the last connection (4) to the frame.

CAUTION: Keep flames and sparks away from batteries.



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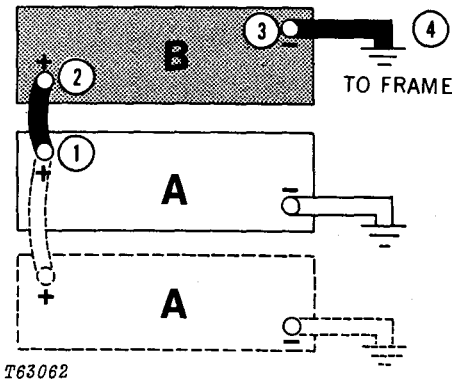
A—Machine Batteries (two 6-volt batteries in series)

B—Booster Battery (12 volt)



T63062

A —Machine Batteries (one or more 12-volt batteries)

B —Booster Battery (12 volt)

ENGINE WARM-UP

Run the engine at half speed 5 minutes.

Do not use slow or fast idle during warm-up.

Operate engine under lighter loads and lower speeds than normal for 30 minutes.

NORMAL OPERATING CONDITIONS

Coolant temperature should be 180° to 200°F (82° to 93°C).

Minimum oil pressure at slow idle (800 rpm) and normal operating temperature:
Three-cylinder engines: 20 psi (140 kPa)
All other engines: 14 psi (100 kPa)

STOPPING THE ENGINE

1. Run at half speed without load for 2 minutes.
2. Move the throttle to slow idle.
3. Stop the engine.

NOTE: Run a generator set engine 3 to 5 minutes without load before you stop it.

IMPORTANT: If the engine stops while operating under load, remove the load. Start the engine immediately. Run the engine at half speed for 30 seconds before you add a load.

ENGINE SPEEDS

See chart on page 37.

Do not run the engine at slow idle unless it is necessary.

Stationary Power Units

1. The engine runs at any speed from slow idle to fast idle. For constant operation keep speed above 1500 rpm.
2. Run standby units without load for 30 minutes every 2 weeks.
3. To break in the engine, run it under load.
4. Run the engine regularly under load.

Generator Set Engines

1. The engine runs at 1860 to 1900 rpm only.
2. Run standby units without load for 30 minutes every 2 weeks.
3. To break in the engine, run it under load.
4. Run the engine regularly under load.

Fuels and Lubricants

FUELS

Use only clean, high quality fuel.

Fuel Specifications

Use Grade No. 2-D fuel above 40°F (4°C).

Use Grade No. 1-D fuel at temperatures below 40°F (4°C). Use Grade 1-D fuel for all air temperatures at altitudes above 5000 ft. (1 500 m).

Use Grade 1-D fuel in standby engines.

Use fuel with less than 0.5% sulfur, if possible. If sulfur exceeds 0.5%, reduce oil drain interval.

For maximum filter life, sediment and water should not be more than 0.10%.

The cetane number should be 40 minimum. If you operate your engine where air temperatures are normally low or where altitudes are high, you may need fuel with a higher cetane number.

Cloud Point - For cold weather operation cloud point should be 10°F (6°C) below lowest normal air temperature.

Storing Fuels

Keep fuel in a clean container in a protected area.

Water and sediment must be removed before fuel gets to the engine. Do not use de-icers to remove water from fuel. Do not depend on fuel filters to remove water.

If possible, install a water separator-strainer at the storage tank outlet. See your John Deere distributor/dealer for this part.

Store fuel drums on their sides with plugs up.

IMPORTANT: Keep all dirt, scale, water, or other foreign material out of fuel.

Filling the Fuel Tank

To avoid condensation, fill the tank at the end of each day's operation, especially when days are warm and nights are cool and humid.

CAUTION: Handle fuel carefully. If the engine is hot or running, do not fill the fuel tank. Do not smoke while you fill fuel tank or service fuel system.

LUBRICANTS

Engine Oils

Depending upon the expected air temperature range during the drain interval, use oil viscosity shown on the adjoining temperature chart.

John Deere TORQ-GARD SUPREME® engine oil is recommended. Other oils used must meet a minimum of API Service Class CD/SC (MIL-L-2104C).

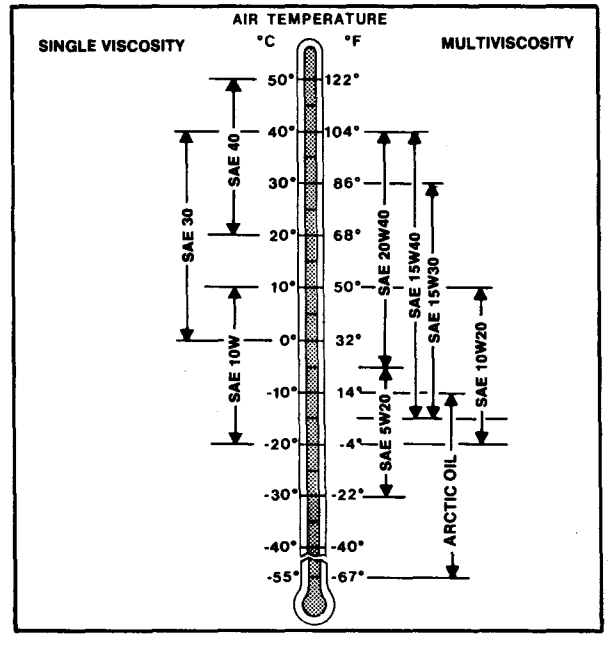
If oils above are not available, oils meeting the following specifications may be used for low temperature operation at shorter drain intervals:

- API Service Classification: CC/SC
- Military Specification: MIL-L-46152

For temperatures below −22°F (−30°C), use arctic oils meeting the following specifications at half the normal drain interval:

- API Service Classification: CC/SC
- Military Specification: MIL-L-46167

Quality oils are blended. Additives are not required or recommended.



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If you use SAE 5W-20 or SAE 5W oil, check the oil level often.

Special Conditions

Conditions in certain areas may require use of lubricants or procedures which are not in this manual. See your John Deere dealer for information.

Storing and Handling Lubricants

Store lubricants in clean containers in an area protected from dust, moisture, and other contamination.

When you handle lubricants, use clean containers.

Periodic Maintenance

SERVICE INTERVALS

The Series 300 OEM engines need regular service. Read this section carefully to learn the correct services for your engine.

Use the engine hour meter to determine when your engine needs service.

Intervals on the periodic maintenance chart are for operation under normal conditions. If you run the engine under difficult conditions, then you should service it at shorter intervals.

BREAK-IN PERIOD

NOTE: If air temperatures are above 50°F (10°C), engine oil can be replaced with seasonal viscosity oil earlier than 100 hours.

Operate engine at normal loads.

Avoid excessive engine idling.

Check engine oil level daily. If oil must be added, use seasonal viscosity oil.

Drain oil at 100 hours maximum.

PERIODIC MAINTENANCE CHART

AS REQUIRED

Item	Service	Material
1. Air cleaner	Check restriction indicator. Clean primary element or install new elements.	JDFE
2. Belt(s)	Check tension.	
3. Injection nozzles	See your John Deere distributor/dealer for service.	

DAILY OR EVERY 10 HOURS

4. Engine oil	Check level: between marks on dipstick.	EO
5. Radiator	Check coolant level: half-way between radiator core and filler neck. Check for leaks. Clean radiator fins if necessary.	Soft water Antifreeze

EVERY 100 HOURS

6. Batteries	Check electrolyte level: to bottom of filler neck. Clean terminals. Tighten clamps.	Distilled water
7. Engine oil	Drain and fill.	EO

EVERY 200 HOURS

8. Engine oil filter	Install new filter.	JDF

Material Key:
EO —Engine Oil
DF —Diesel Fuel
JDFE—John Deere Filter Element

EVERY 500 HOURS

Item	Service	Material
9. Fuel filter	Install new element.	JDFE
10. Air intake hoses	Check for cracks and loose connections.	
11. Radiator	Add non-chromate rust inhibitor.	Rust inhibitor
12. Fuel transfer pump*	Clean strainer.	DF

EVERY 1000 HOURS

13. Engine valves	Check and adjust valve clearance.	
14. Engine speeds	Check idle speeds.	
15. Engine breather	Remove and clean	DF

EVERY SPRING AND FALL

16. Cooling system	Drain, flush, and fill. Clean radiator fins.	Soft water Antifreeze
17. Engine oil	Drain and fill. Install new filter.	EO JDF

**For 3179D, 4239D and T, and 6359D and T engines only.*

DETAILED PERIODIC MAINTENANCE

AS REQUIRED

1. Air Cleaner

Check the restriction indicator. If indicator shows red, or if engine smokes too much or loses power, clean the primary element and the cup.

Before you service the air cleaner, stop the engine.

IMPORTANT: Install a new primary element:

1. **If the element shows damage.**
2. **If the element will not clean.**

IMPORTANT: Install a new safety element:

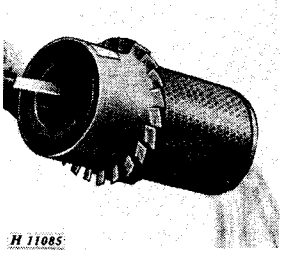
1. **If a primary element is damaged and needs to be replaced.**
2. **If the element is visibly dirty.**

IMPORTANT: Do not clean a safety element. Install a new element.

Oily or Sooty Element

H11084

Washing Element



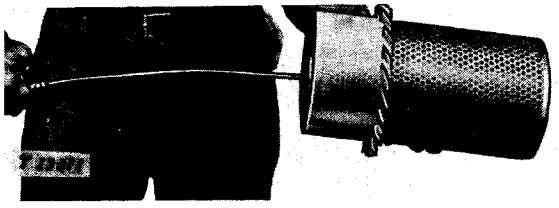
H11085

Rinsing Element

IMPORTANT: Do not wash the element in fuel oil, oil, gasoline, or solvent. Do not use compressed air to dry an element.

1. Add John Deere R36757 Filter Element Cleaner or an equivalent non-sudsing detergent to water. Move the element up and down in this solution to loosen dirt.
2. Flush the element with clean water. Use water pressure under 40 psi (280 kPa).
3. Shake water from element. Do not install the element until it is dry.

Dusty Element



T13511

Cleaning the Element with Compressed Air

Remove element. Pat element with the palm of your hand, NOT ON HARD SURFACE.

If this does not remove dust, use compressed air under 30 psi (210 kPa).

Blow clean, dry air up and down the pleats, from inside to outside. Be careful not to make a break in the element.

After Cleaning

Inspect element for damage. Put a lighted bulb inside element. Throw away an element that shows slightest break.

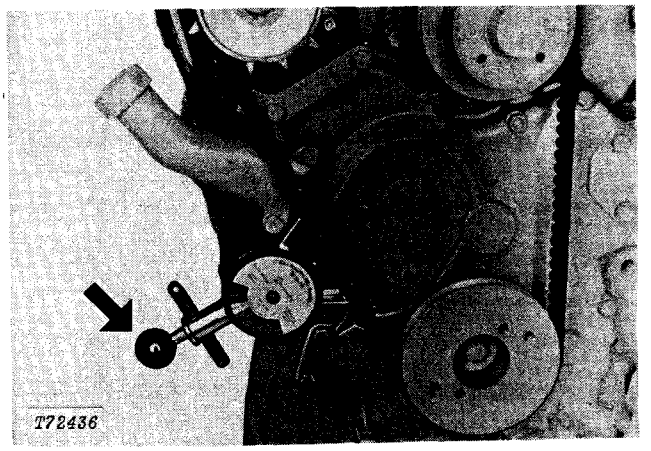
Inspect element gasket for damage. Install a new element if gasket is missing or damaged.

Clean inside of air cleaner body with clean, damp cloth. Put element in cleaner body. Fasten it with wing nut. Be sure gasket is in place between element and wing nut. Tighten wing nut finger tight.

Push the reset button of the filter indicator.

2. Belt(s)

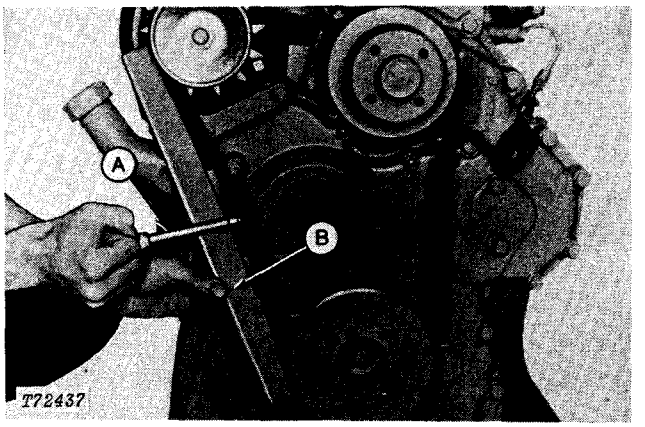
Check and adjust alternator-fan belt tension.



T72436

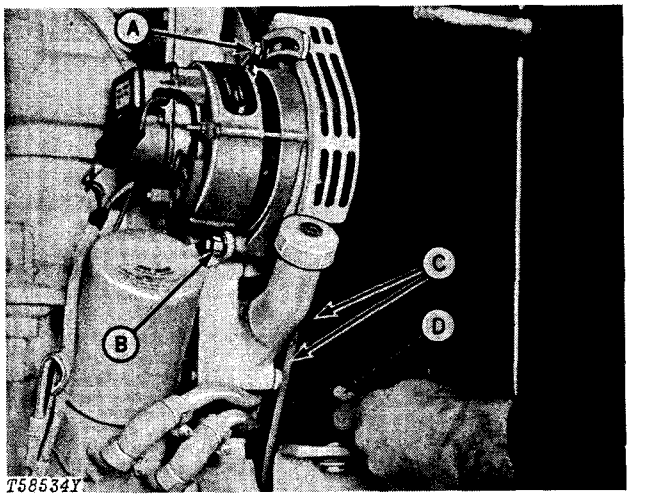
Strand Tension Gauge

Strand tension gauge: Immediately after the engine stops (run the engine at least 5 minutes), check the belt tension. If tension is less than 50 lb. (223 N), let the engine cool 10 to 15 minutes. Then make tension 90 lb. (400 N).



T72437

A—Tension Tester **B—Straight Edge**



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A—Adjusting Strap Cap Screw
B—Bracket Cap Screw
C—Fan Belts
D—Tension Tester

Tension Tester on 6239 Engine

NOTE: If your engine has two belts (C), check and adjust front belt only.

Tension tester: A force of 20 lb. (89 N) halfway between the pulleys should move the belt 3/4 in. (19 mm). Use a straight edge to measure distance belt moves.

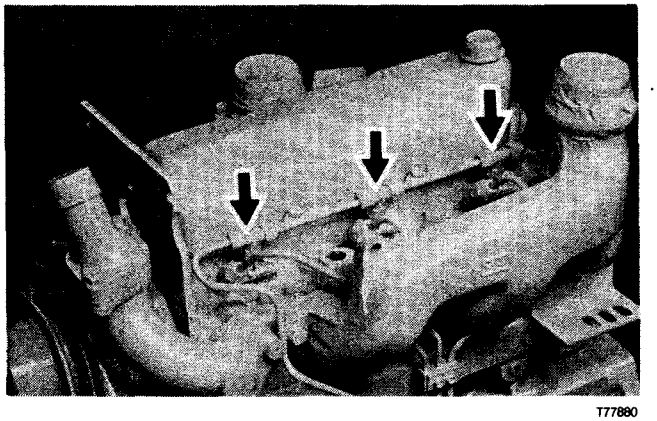
Adjustment: Loosen the alternator bracket and adjusting strap cap screws. PULL THE FRONT ALTERNATOR FRAME ONLY to tighten the belt. Tighten the cap screws.

Inspect belts regularly for wear or damage. If your engine has two belts and needs a new belt, always install two new belts.

3. Injection Nozzles

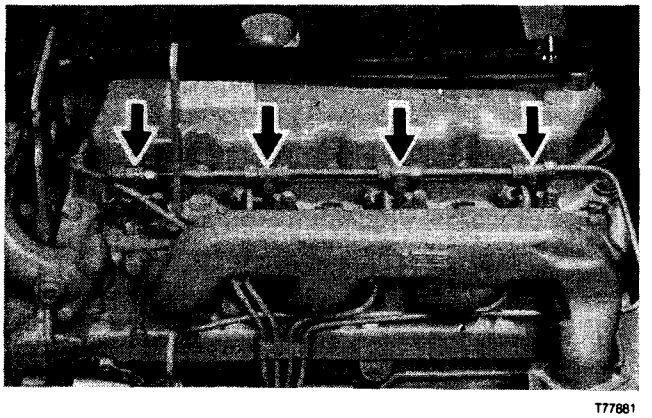
If injection nozzles are not operating correctly, the engine will not run normally. See your John Deere distributor/dealer for service on the injection nozzles.

IMPORTANT: Do not remove injection nozzles.



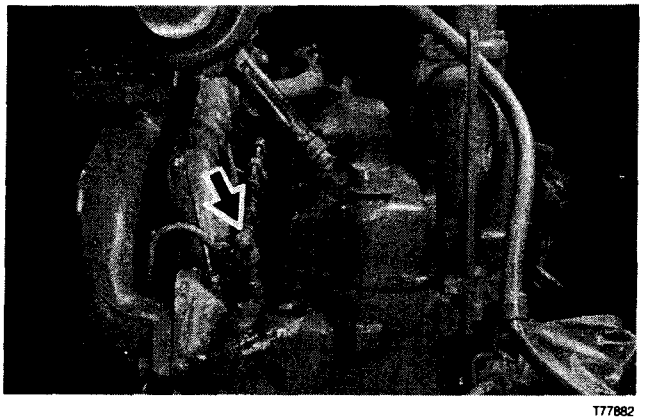
T77880

Fuel Injection Nozzles (3164 Engine)



T77881

Fuel Injection Nozzles (4219 Engine)



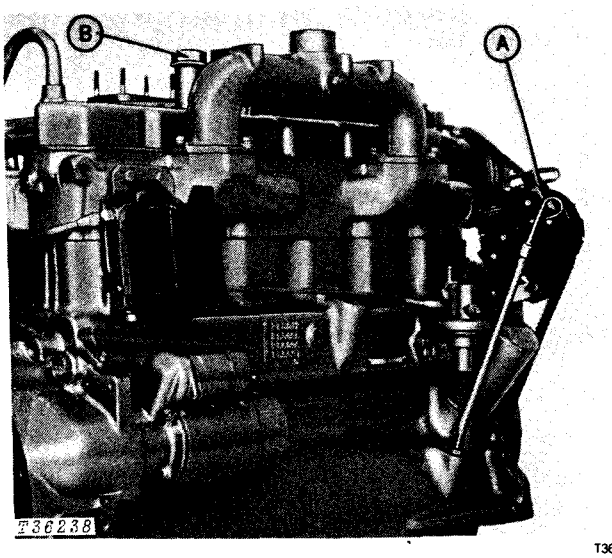
T77882

Fuel Injection Nozzles (6329 Engine)

DAILY OR EVERY 10 HOURS

4. Engine Oil

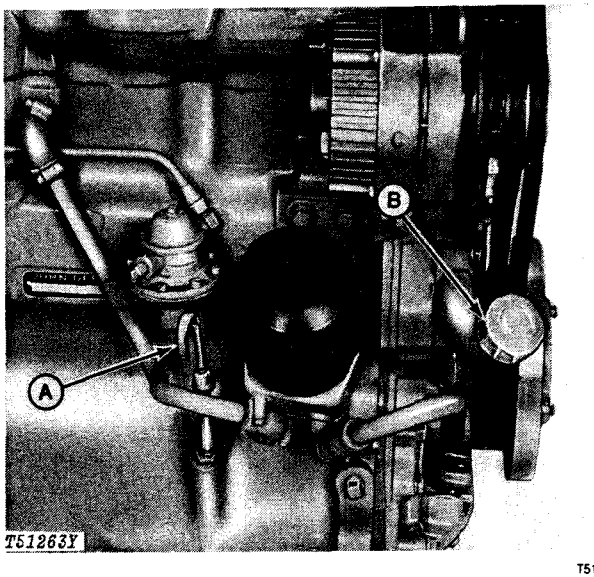
Check the engine oil level.



T36238

A—Dipstick **B—Filler Cap**

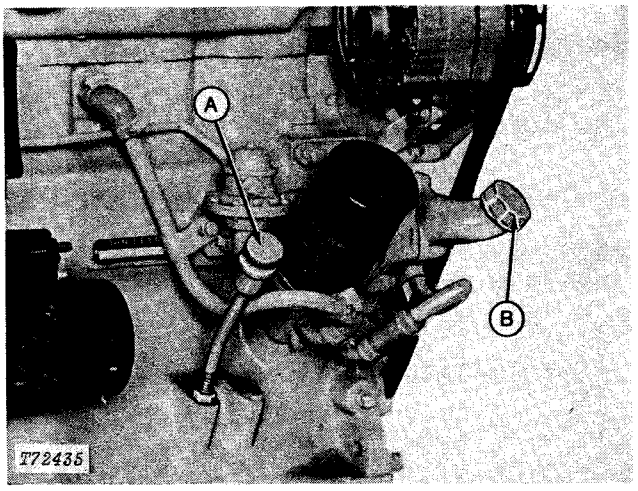
6329 Engine



T51263Y

A—Dipstick **B—Filler Cap**

6359 Engine



T72435

A—Dipstick **B—Filler Cap**

4239 Engine

Stop the engine.

Wait 10 minutes for oil to drain down.

Oil should be between marks on dipstick.

If not, remove filler cap.

Add oil specified on page 8.

If oil is below bottom mark on dipstick, do not run engine.

5. Radiator

CAUTION: Do not remove radiator cap unless engine is cool. Then turn the cap slowly to the stop. Release all pressure before you remove cap.

Check the coolant level daily before you start the engine. Coolant should be halfway between the radiator core and the filler neck.

If not, add coolant specified on page 23.

Tighten filler cap.

Clean trash from radiator.

Check for leaks.

EVERY 100 HOURS

6. Battieres

Check electrolyte level. Fill each cell to bottom of filler neck with distilled water.

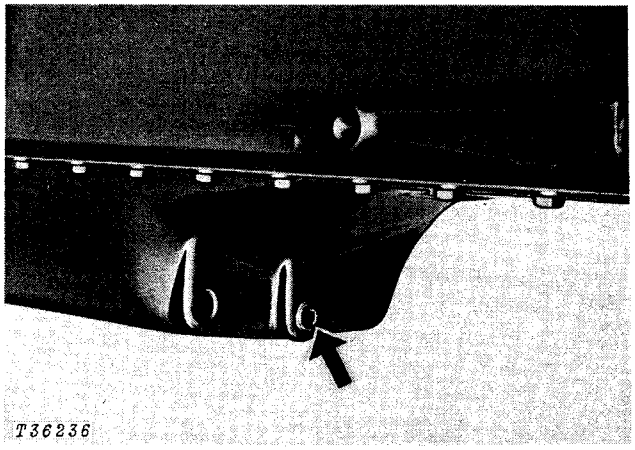
IMPORTANT: If you add water to battery in freezing weather, run the engine two or three hours or charge the battery.

Clean terminals with a stiff brush. Tighten clamps. Apply petroleum jelly to terminals.

7. Engine Oil

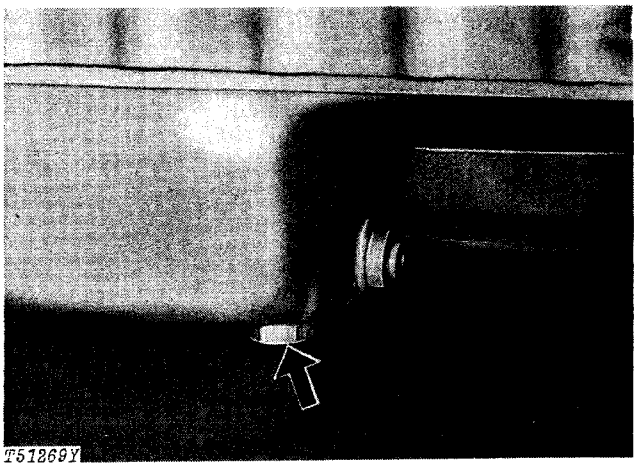
Change engine oil.

NOTE: If fuel has more than 0.5% sulfur, change oil every 50 hours.



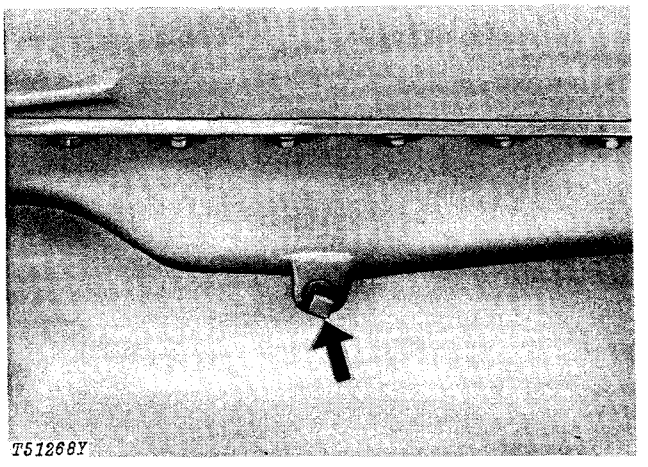
T36236

Engine Oil Drain Plug (6329 Engine)



T51269Y

Engine Oil Drain Plug (4219 Engine)



T51268Y

Engine Oil Drain Plug (6359 Engine)

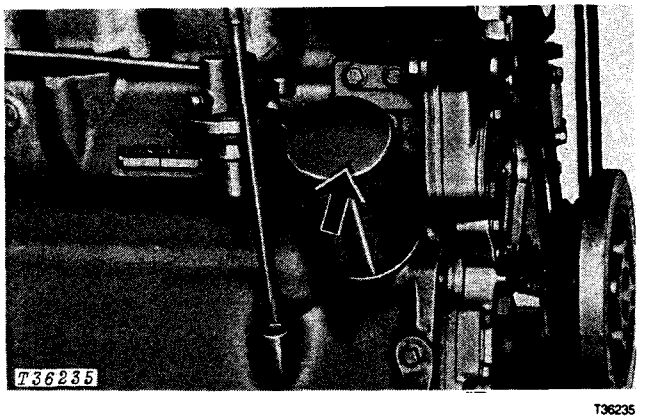
1. Warm the engine.
2. Stop the engine.
3. Remove engine oil drain plug.
4. Drain oil.
5. Install plug.
6. Fill engine with oil specified on page 8.

See specifications chart on page 37 for oil capacity of your engine.

EVERY 200 HOURS

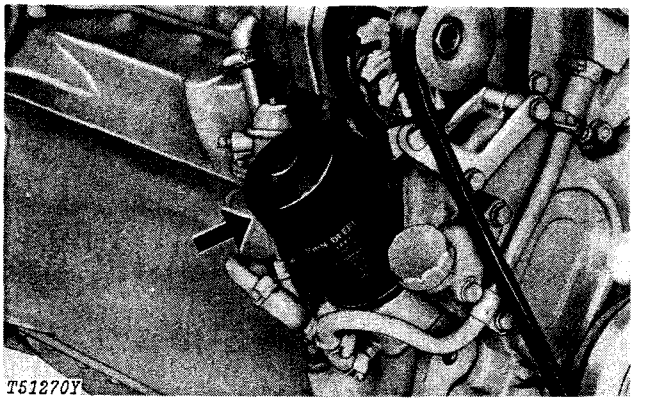
8. Engine Oil Filter

Install a new engine oil filter.



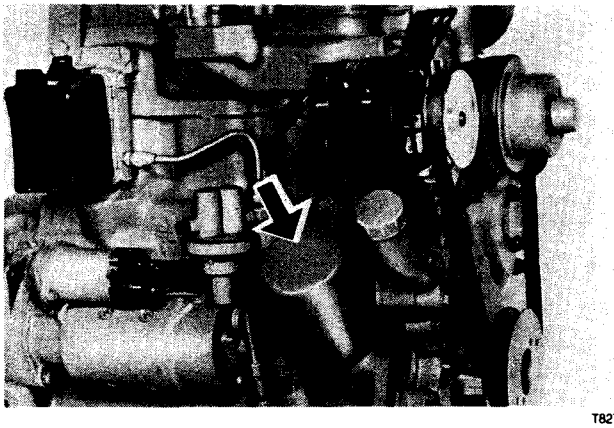
T36235

Oil Filter (6329 Engine)



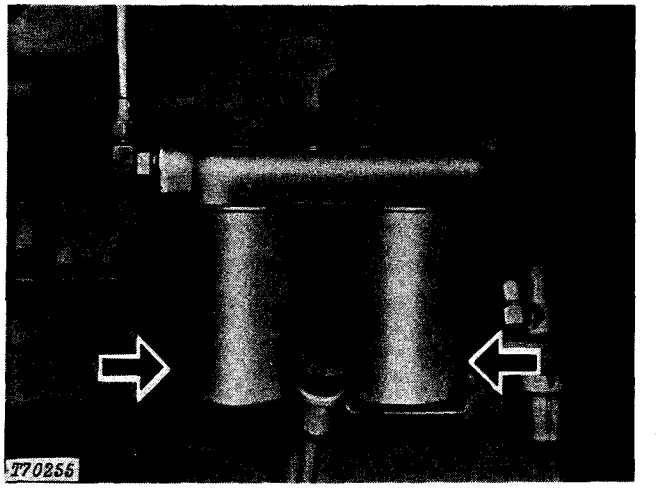
T51270Y

Oil Filter (6359 Engine)



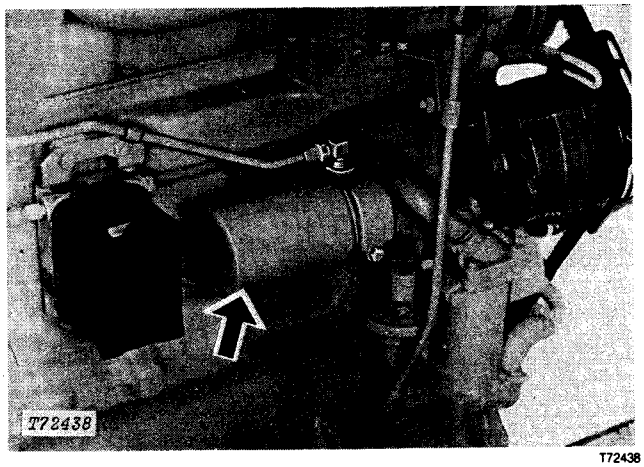
T82769

Oil Filter (3164 Engine)



T70255

Oil Filters (6414 Engine)



T72438

Oil Filter (4276 Engine)

1. Turn the filter counterclockwise to remove it. Throw it away.
2. Clean the mounting surface.
3. Put a film of oil on the gasket of the new filter.
4. Tighten the filter clockwise until the gasket touches the mounting surface.
5. Tighten the filter 1/2 to 3/4 turn more.

IMPORTANT: Before you start a turbocharged engine after a filter change, disconnect the electric shut-off wire from the injection pump. Crank the engine for 20 seconds. Connect the shut-off wire.

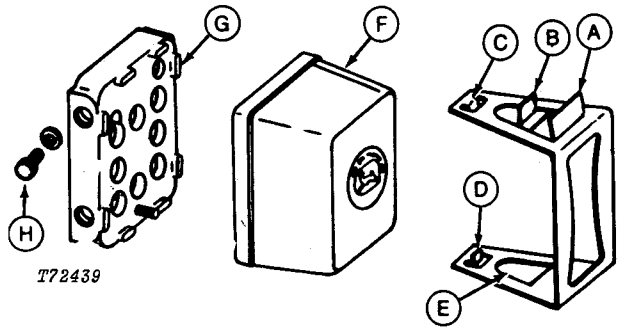
6. Start the engine. Check for leaks around the filter. Tighten the filter again, if necessary, but only enough to stop leaks.
7. Check the engine oil level.

EVERY 500 HOURS

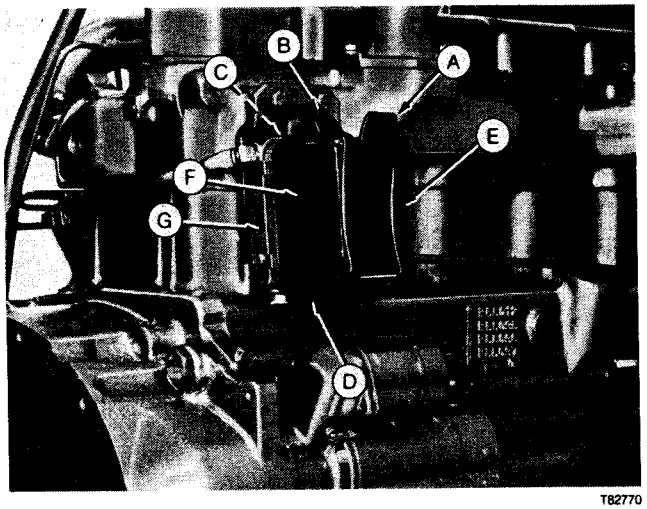
9. Fuel Filter

Install a new fuel filter element.

NOTE: Change the element at 500 hours or once a year. If you operate the engine under difficult conditions, change the element more often.



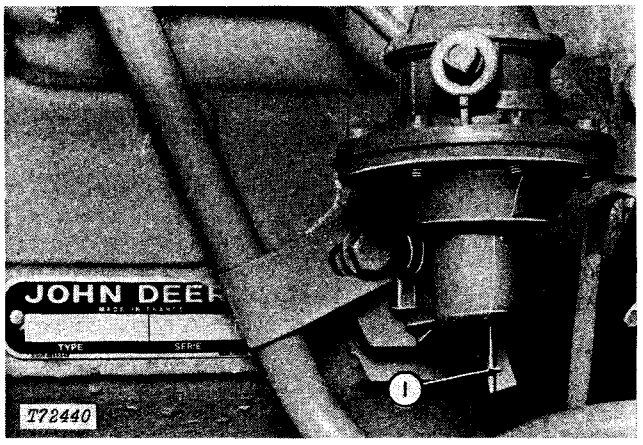
T72439



T82770

6329 Engine

1. Push tab A and pull tab B to disengage hook (C).
2. Disengage hook (D).
3. Remove spring (E).
4. Remove element (F).
5. Clean the filter body (G) and spring pin.
6. Install new element. Install spring.
7. Remove air from fuel system.
8. Loosen bleed screw (H).



T72440

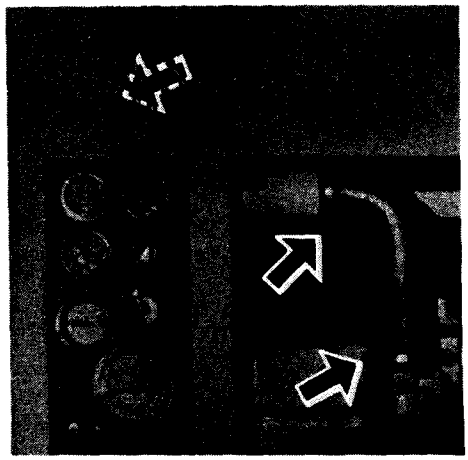
9. Pump the primer lever (I) until fuel without bubbles flows from around the bleed screw.

NOTE: See page 24 for more information on removing air from the fuel system.

10. Tighten the bleed screw.
11. Push the primer lever down.

10. Air Intake Hoses

Check the clamps on the hoses which connect the air cleaner and the engine. If necessary, tighten the hose clamps. Inspect the hoses for cracks.



T86728

Air Intake Hose Clamps (4219 Engine)

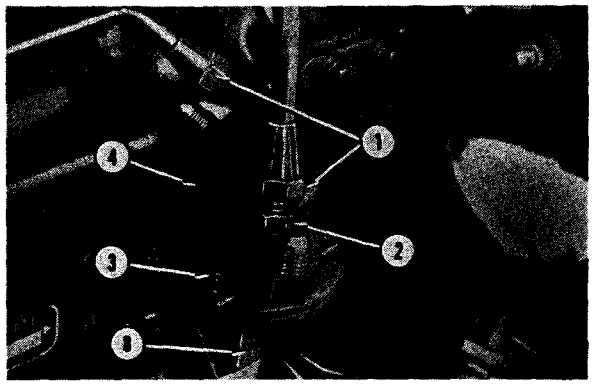
11. Radiator

Add non-chromate rust inhibitor to coolant. See page 23 for more information on rust inhibitor.

12. Fuel Transfer Pump (for 3179D, 4239D and T, and 6359D and T Engines only)

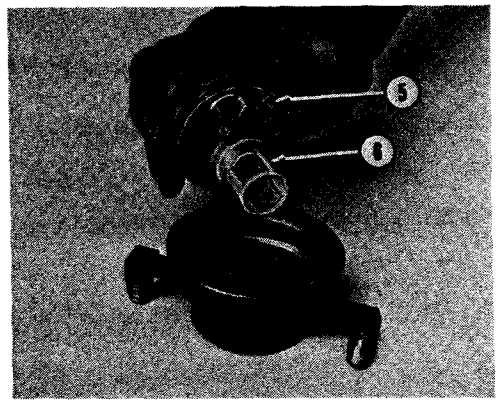
Clean the strainer.

Corona (BCD) Pump



T86729

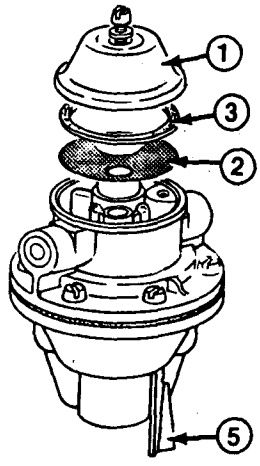
1. Disconnect fuel lines.
2. Plug fuel tank line.
3. Loosen cap screws.
4. Remove bowl.



T86730

5. Remove valve plate.
6. Clean strainer with diesel fuel. If strainer is damaged, install a new one.
7. Assemble pump.
8. Pump the primer lever until bowl is full of fuel.

AC Pump



T86731

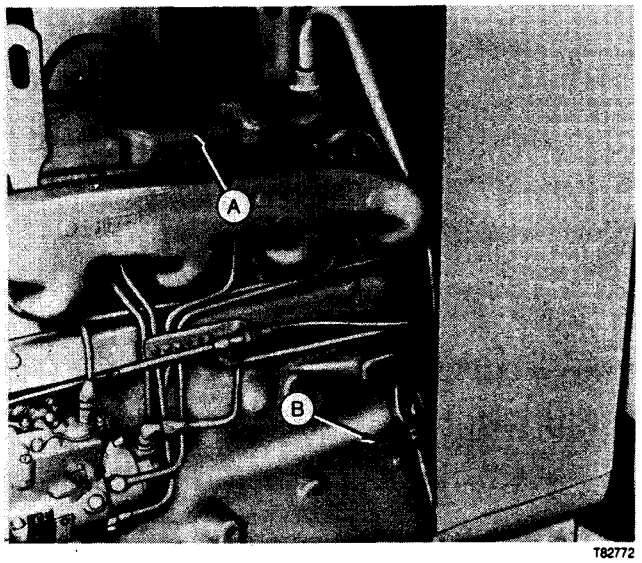
1. Remove and clean bowl.
2. Remove strainer. Wash it in diesel fuel.
3. If gasket is damaged, install a new one.
4. Install bowl and strainer loosely.
5. Pump the primer lever until bowl is full of fuel. Push lever down on final stroke.
6. Tighten the bowl.

EVERY 1000 HOURS

13. Engine Valves

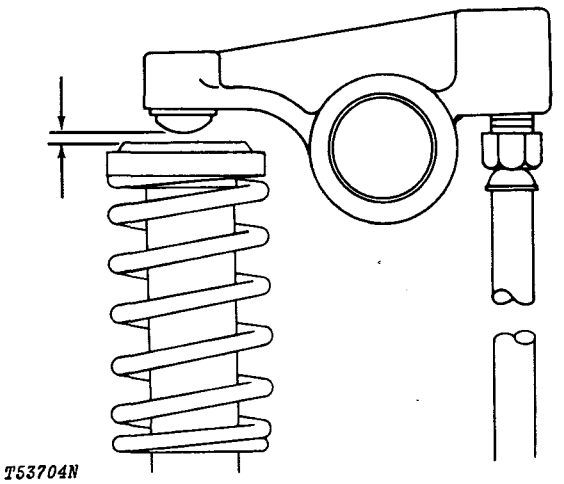
Check valve clearance. Adjust valves if necessary.

NOTE: Check or adjust valves when engine is hot or cold.



T82772

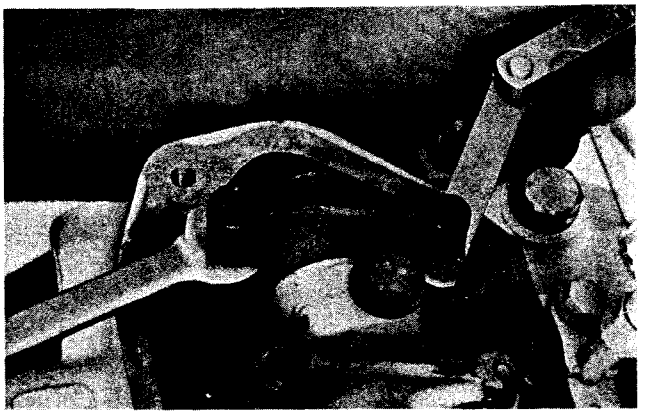
1. Remove valve cover (A).
2. Remove timing pin (B).
3. Turn flywheel until timing pin (in reverse position) engages flywheel when No. 1 piston is at top dead center (TDC) of its compression stroke. Both valves on No. 1 cylinder will be closed.



T53704N T53704N

Valve Clearance

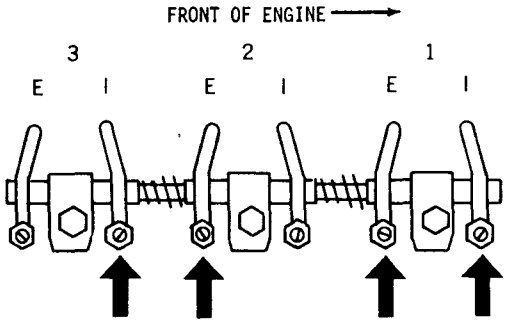
Intake valve clearance: 0.014 in. (0.36 mm)
Exhaust valve clearance: 0.018 in. (0.46 mm)



T81224

Use a feeler gauge to measure clearance. Turn nut to adjust clearance.

Three-Cylinder Engine



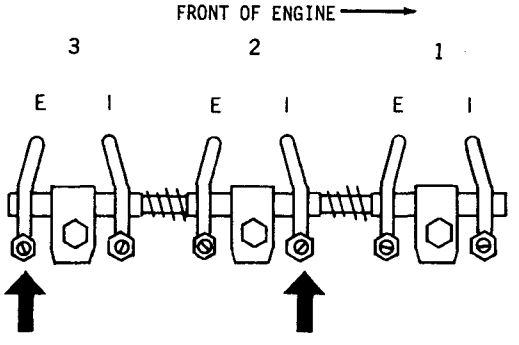
NO. 1 TDC COMPRESSION STROKE

T53705N

T53705N

Adjust valve clearance:
Exhaust valves: 1E, 2E
Intake valves: 1I, 3I

Remove timing pin. Turn flywheel 360°. Install pin.



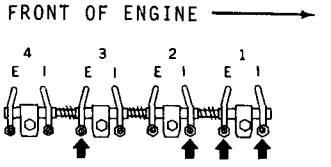
NO. 1 TDC EXHAUST STROKE

T53706N

T53706N

Adjust valve clearance:
Exhaust valve: 3E
Intake valve: 2I

Four-Cylinder Engine



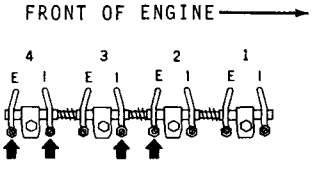
NO. 1 TDC COMPRESSION STROKE

T48312N

T48312N

Adjust valve clearance:
Exhaust valves: 1E, 3E
Intake valves: 1I, 2I

Remove timing pin. Turn flywheel 360°. Install pin.



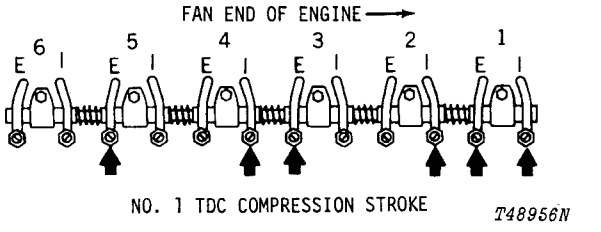
NO. 4 TDC COMPRESSION STROKE

T48313N

T48313N

Adjust valve clearance:
Exhaust valves: 2E, 4E
Intake valves: 3I, 4I

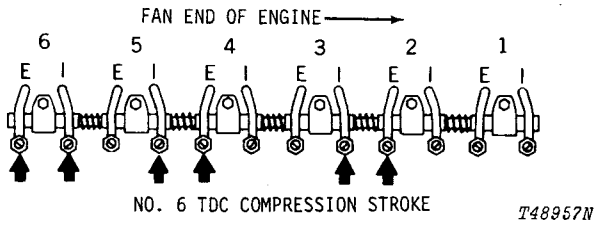
Six-Cylinder Engine



T48956N

Adjust valve clearance:
Exhaust valves: 1E, 3E, 5E
Intake valves: 1I, 2I, 4I

Remove timing pin. Turn flywheel 360°. Install pin.



T48957N

Adjust valve clearance:
Exhaust valves: 2E, 4E, 6E
Intake valves: 3I, 5I, 6I

14. Engine Speeds

Warm the engine. Use a tachometer to check engine speeds.

See engine speeds on page 37.

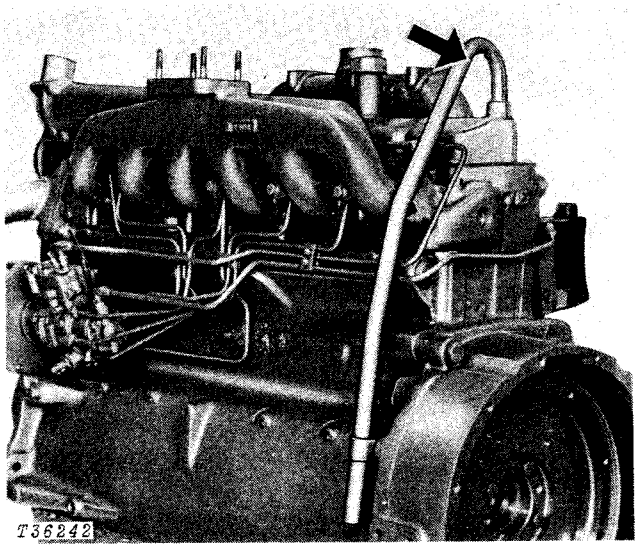
If engine speeds are not correct, see your John Deere distributor/dealer for service.

15. Engine Breather

Remove the vent tube. Clean it with diesel fuel.

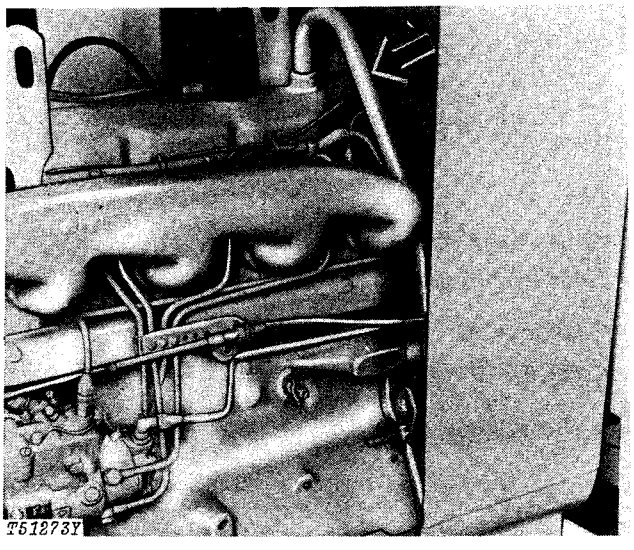
If you operate the engine in dusty conditions, clean the tube at shorter intervals.

Install the tube. Be sure the O-ring fits correctly in the rocker arm cover.



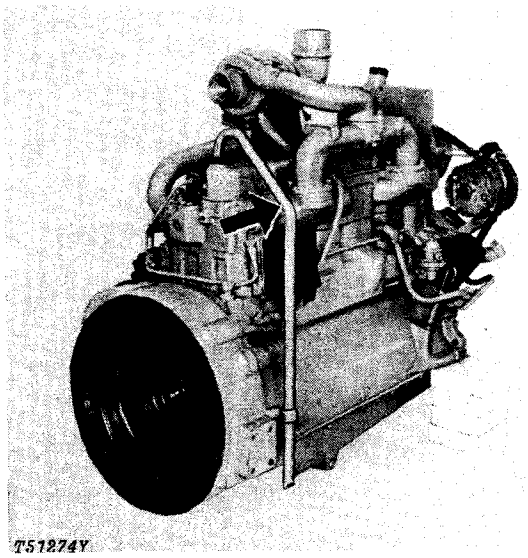
T36242

Vent Tube (6359 Engine)



T51273Y

Vent Tube (4219 Engine)



T51274Y

Vent Tube (6359 Engine)

EVERY SPRING AND FALL

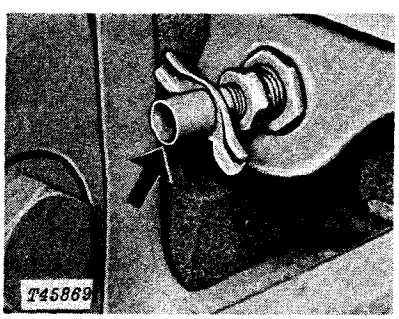
16. Cooling System

Drain, flush, and fill the cooling system with correct coolant.

⚠ CAUTION: Do not remove the radiator cap unless the engine is cool. Then loosen the cap slowly to the stop. Release all pressure before you remove the cap.

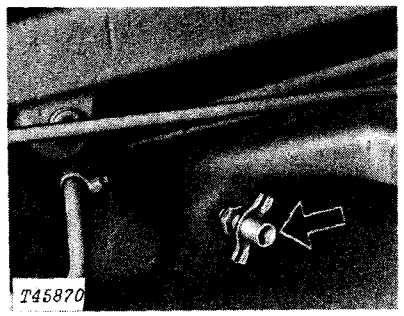
To drain the cooling system completely:

1. Open the radiator drain cock.
2. Open the cylinder block drain cock.
3. Remove the coolant drain plug of the engine oil cooler (if equipped).



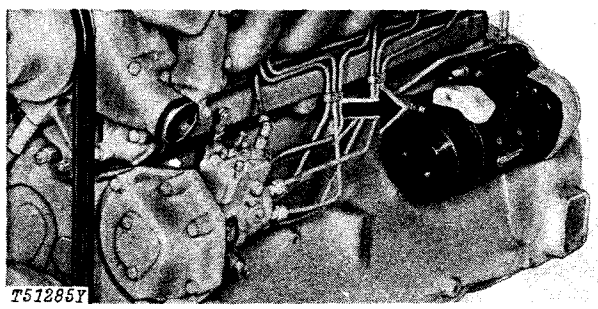
T45869

Radiator Drain (4219 Engine)



T45870

Cylinder Block Drain (4219 Engine)

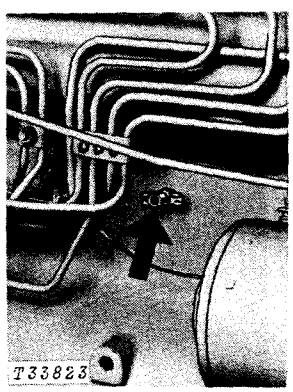


T51285Y

Cylinder Block Drain Cock (6359 Engine)

T33822

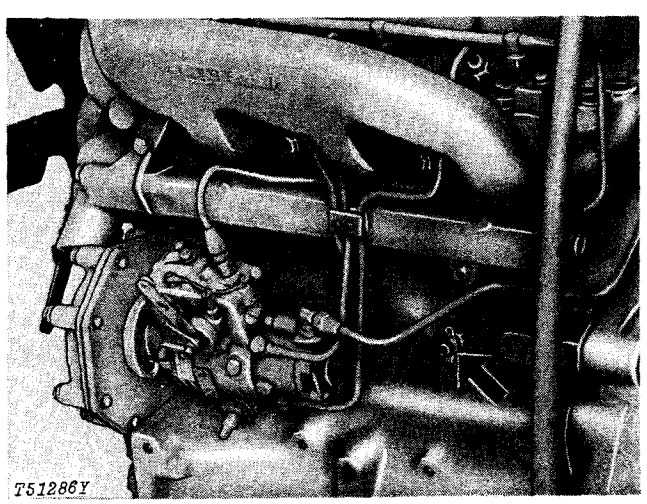
Radiator Drain Cock



T33823

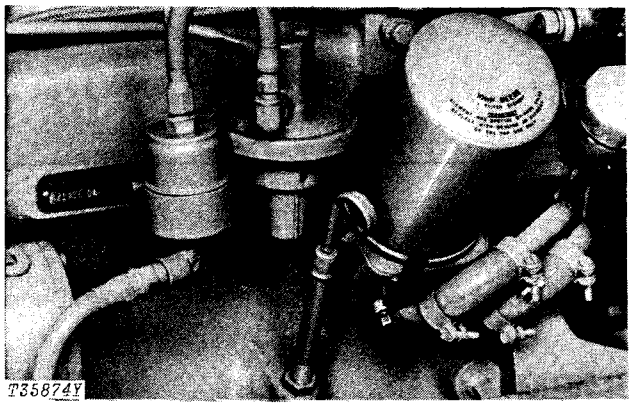
Cylinder Block Drain Cock

6414 Engine



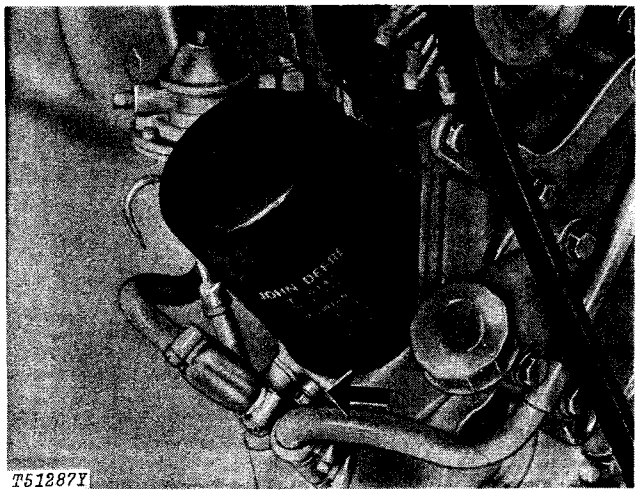
T51286Y

Cylinder Block Drain Cock (3164 Engine)



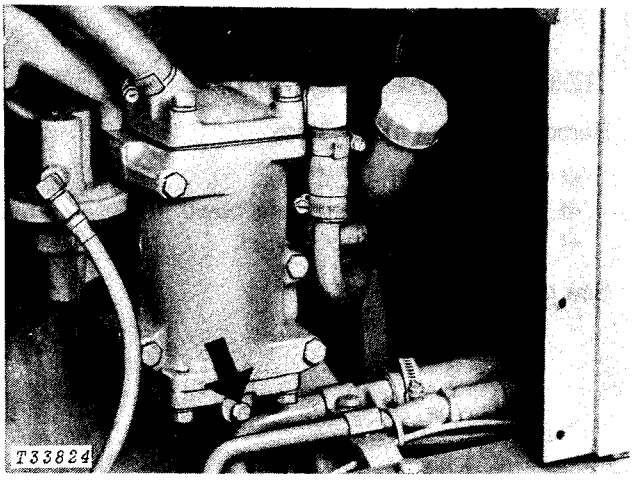
T35874Y

Engine Oil Cooler Drain Plug (4219 Engine)



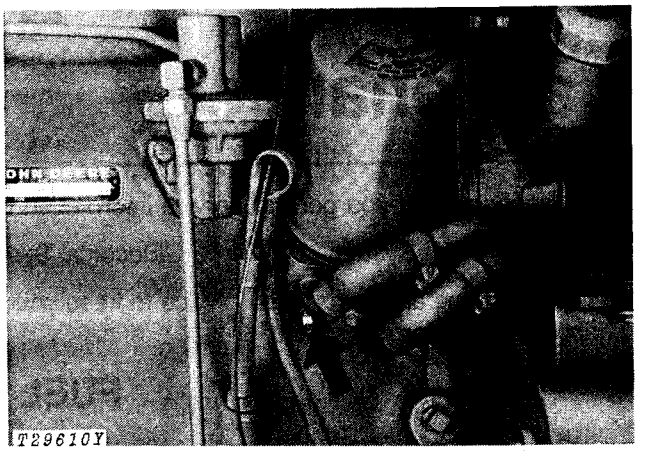
T51287Y

Engine Oil Cooler Drain Plug (6359 Engine)



T33824

Engine Oil Cooler Drain Plug (6414 Engine)



T29610Y

Engine Oil Cooler Drain Plug (6329 Engine)

Flush the cooling system with John Deere Cooling System Cleaner, John Deere Cooling System Quick Flush, or an equivalent radiator cleaning compound.

For cold weather, use a solution of ethylene glycol antifreeze and clean, soft water. A chart on the antifreeze can will tell you how much antifreeze to use for the freeze protection needed in your area.

If you operate your engine in extremely cold temperatures, see your John Deere distributor/dealer for information on arctic operation.

For temperatures above freezing, fill the cooling system with clean, soft water.

Add a non-chromate rust inhibitor every 500 hours or 6 months after you change coolant. Add inhibitor when you fill cooling system with water, or if you replace 1/3 or more of coolant. If you install antifreeze, do not add inhibitor for 500 hours or 6 months.

Add John Deere Cooling System Sealer or an equivalent to seal minor leaks in the cooling system.

Keep radiator fins clean. Use compressed air or water pressure.

Check hoses, clamps, and connections. Install new hoses periodically.

17. Engine Oil

Drain and fill engine with oil specified on page 8. Install a new oil filter.

NOTE: If you have not run the engine 100 hours before the season changes, change the oil and oil filter.

Maintenance

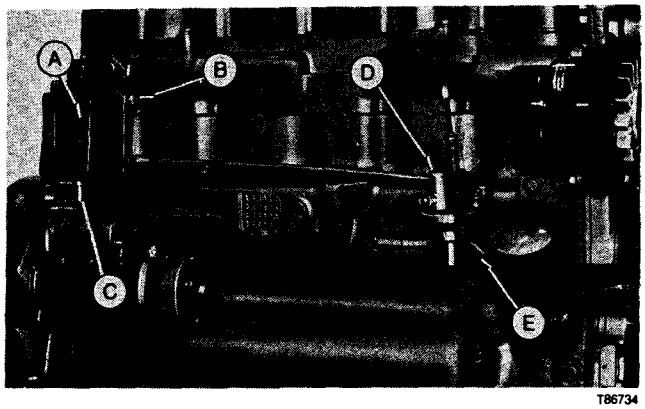
This section gives you general service information on the following:

Fuel System Electrical System Miscellaneous Components

These systems and parts need service to keep your engine in the best possible condition. See your John Deere distributor/dealer for assistance.

FUEL SYSTEM

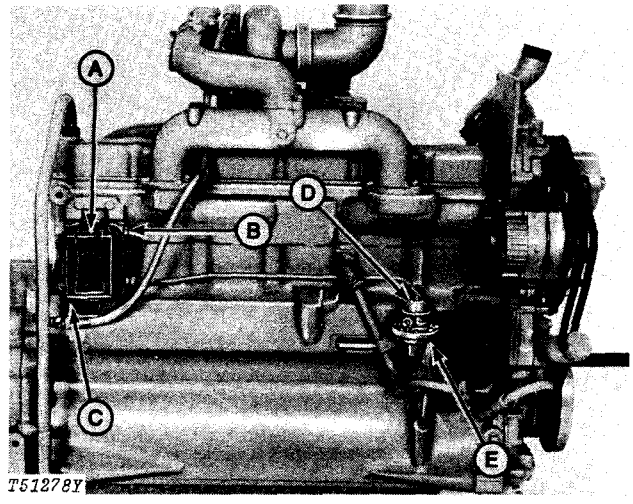
COMPONENTS



T86734

A—Fuel Filter
B—Bleed Screw
C—Fuel Drain Plug
D—Fuel Transfer Pump
E—Fuel Transfer Pump Primer Lever

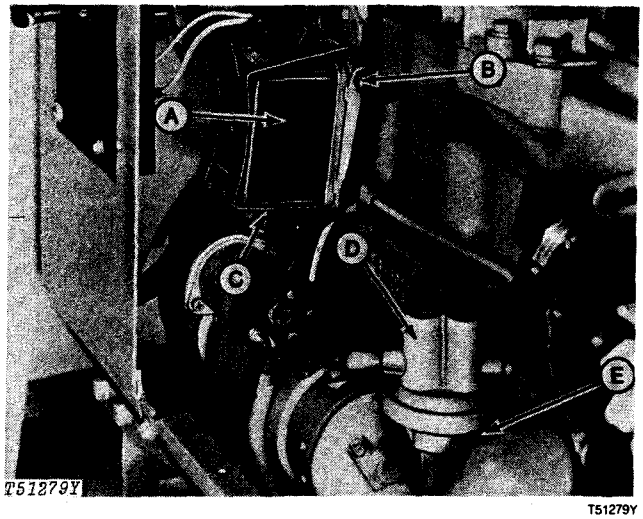
Fuel System Components (6329 Engine)



T51278Y

A—Fuel Filter
B—Bleed Screw
C—Fuel Drain Plug
D—Fuel Transfer Pump
E—Fuel Transfer Pump Primer Lever

Fuel System Components (6359 Engine)



T51279Y

A—Fuel Filter
B—Bleed Screw
C—Fuel Drain Plug
D—Fuel Transfer Pump
E—Fuel Transfer Pump Primer Lever

Fuel System Components (4219 Engine)

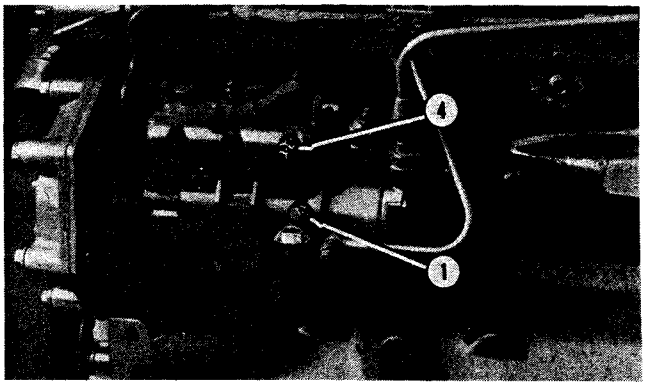
REMOVING AIR FROM FUEL SYSTEM

Remove air from fuel system:

- If you remove the fuel filter.
- If you remove the sediment bowl.
- If the engine runs out of fuel.

See page 17 for procedure.

If 3179 engine will not start after you remove air from fuel system, remove air from Roto Diesel Injection Pump.



T86732

Removing Air From Injection Pump (3179 Engine)

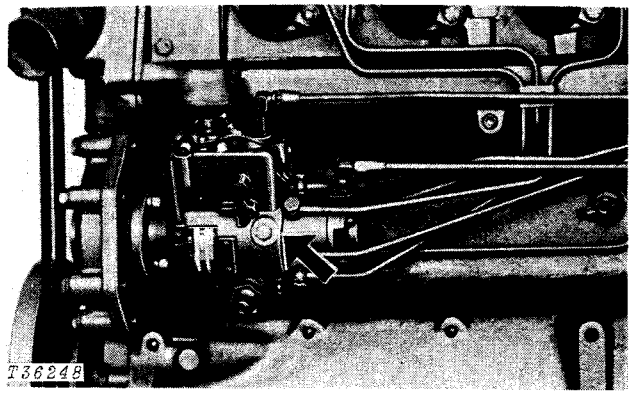
1. Loosen lower bleed screw.
2. Pump primer lever until fuel free of bubbles flows from around screw. Push lever down.
3. Tighten bleed screw to 2.5 lb-ft (3.5 N·m).
4. Loosen upper bleed screw.
5. Repeat steps 3 and 4.

FUEL INJECTION PUMP

If you change the injection pump in any way not approved by the manufacturer, the warranty could be affected. See your copy of the John Deere warranty.

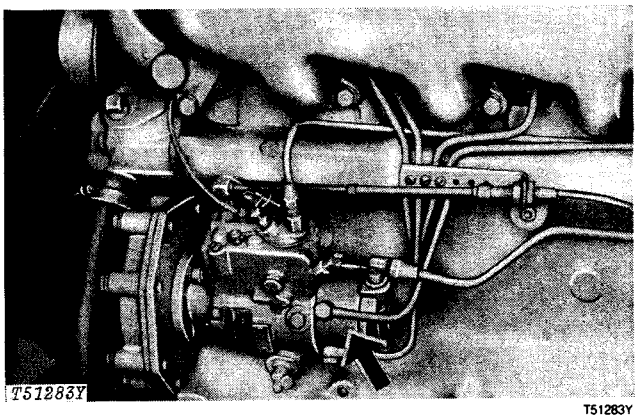
Do not work on an injection pump that is not operating correctly. See your John Deere distributor/dealer for service.

IMPORTANT: Do not clean a warm injection pump with steam or water.



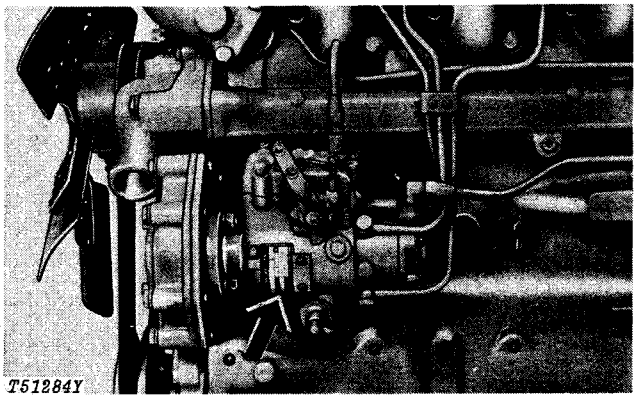
T36248

Fuel Injection Pump (6329 Engine)



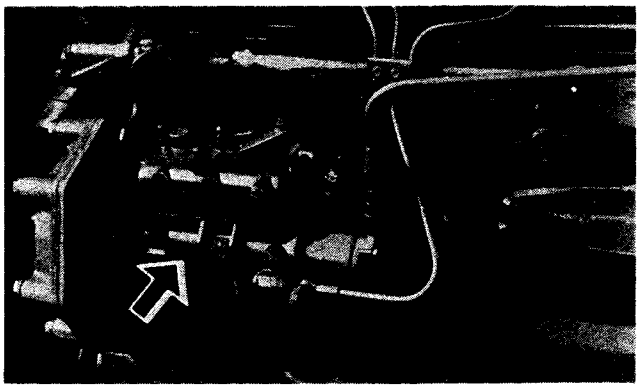
T51283Y

Fuel Injection Pump (4219 Engine)



T51284Y

Fuel Injection Pump (3164 Engine)



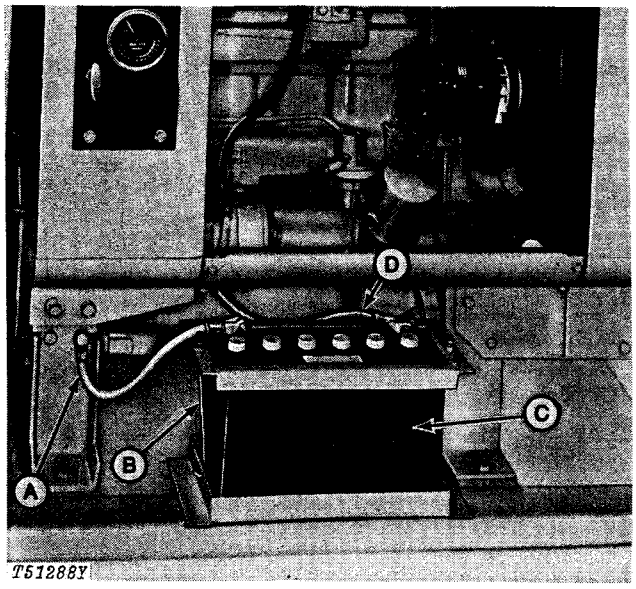
T86733

Fuel Injection Pump (3179 Engine)

ELECTRICAL SYSTEM

BATTERIES

IMPORTANT: Before you work on the electrical system, disconnect the battery negative (−) cable.



T51288Y

A—Negative Ground Cable
B—Battery Hold-Down
C—Battery
D—Positive Cable To Starter

Battery (4219 Engine)

CAUTION: Sulfuric acid in batteries is a poison and could cause severe burns. Avoid contact with skin, eyes, and clothes. When you work around batteries, protect eyes and face from battery fluid and explosion.

Antidotes for Sulfuric Acid:

External

1. **Flush skin well with water.**
2. **Flush eyes for 15 minutes.**
3. **Get medical attention immediately.**

Internal

1. **Drink a large amount of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical treatment immediately.**

Battery gases can explode. Keep cigarettes, sparks, and flames away from batteries.

CAUTION: Do not use booster cables or adjust post connections unless you know the correct procedure. See page 5.

When you charge a battery or use a battery in a closed space, be sure there is enough ventilation.

Keep batteries where children cannot reach them.

Keep vent caps tight and level.

Cleaning Batteries

Keep the batteries clean. Wipe them with a damp cloth. Be sure vent plugs are tight.

To remove corrosion from terminals, remove the battery cables. Wash the terminals with a solution of 1/4 lb. (0.1 L) of baking soda and 1 qt. (0.9 L) of water. Flush batteries and compartment with water.

Checking Specific Gravity

Check the specific gravity of electrolyte in each battery cell.

A fully charged battery will have a corrected specific gravity reading of 1.260. If the reading is below 1.200, charge the battery.

NOTE: In tropical areas use 1.225 for the full-charged reading. In cold areas, use 1.280 for the full-charge reading.

Cold Weather Battery Service

Keep the electrolyte at the correct level. Keep batteries fully charged.

Storing Batteries

If the engine will be stored for more than 30 days, remove the battery. Store the battery in a cool place. Keep the battery fully charged.

BOOSTER BATTERIES

A battery charger may be used as a booster to start the engine if the specific gravity of the battery is above 1.150.

IMPORTANT: If the reading of the specific gravity of the battery is below 1.150, do not use a battery charger as a booster.

STARTER

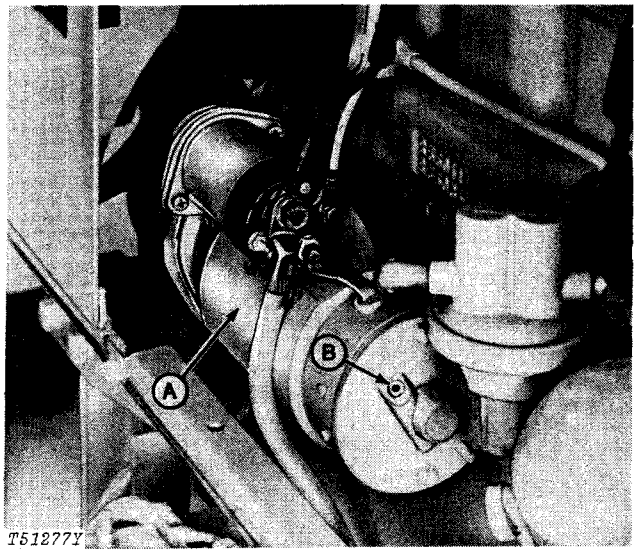
Slow Starter Operation

If the starter cranks the engine slowly, check for the following:

1. Too small or weak battery.
2. Dirty, loose, or corroded cables or wires.
3. Wrong engine oil.
4. Low air temperature.
5. Battery cables too small.

Lubricating Wicks (Delco-Remy Only)

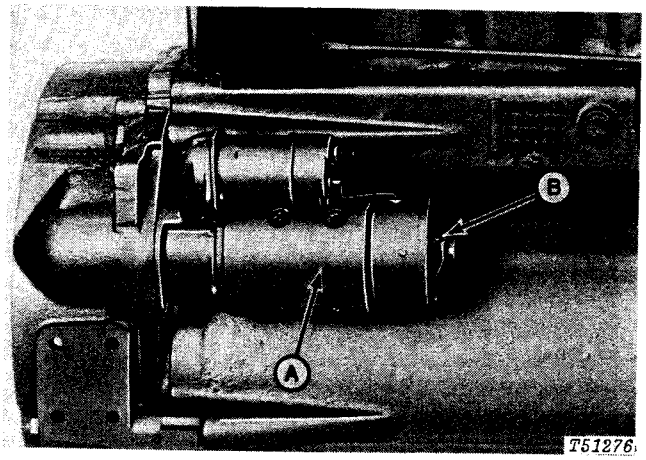
Lubricate wicks approximately every 1000 hours.



T51277Y

A—Starter Motor **B—Pipe Plug**

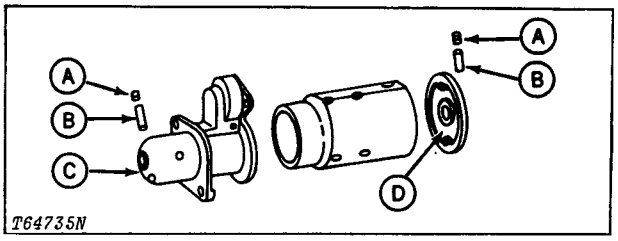
4219 Engine



T51276

A—Starter Motor **B—Pipe Plug**

6329 Engine



T64735N

A—Pipe Plugs
B—Wicks
C—Drive End Housing
D—Commutator End Frame

Delco-Remy Starter

1. Remove starter.
2. Remove pipe plugs (A).
3. Lubricate wicks (B) with John Deere TORQ-GARD SUPREME engine oil or equivalent. Wicks should be full of oil.
4. Install pipe plugs.
5. Install starter.

ALTERNATOR AND REGULATOR

Precautions For Alternator and Regulator

When battery is connected, follow these rules:

1. Before you work on or near the alternator or regulator, disconnect the ground strap.
2. DO NOT TRY TO POLARIZE THE ALTERNATOR OR REGULATOR.
3. BEFORE you connect the battery, be sure the alternator wires are correctly connected.
4. DO NOT ground the alternator output terminal.
5. If the battery is connected, or if the alternator is charging, DO NOT disconnect or connect any alternator or regulator wires.
6. Connect battery or a booster battery in the correct polarity.
7. If the engine is running and if the alternator is charging, DO NOT disconnect the battery.
8. Before you charge the battery, disconnect positive (+) cable.

IMPORTANT: Connect electrical wires only as shown on the wiring diagram, page 30.

MISCELLANEOUS COMPONENTS

Fire Extinguisher

T74091

Check fire extinguisher gauge (shown) regularly for correct charge.

Keep the extinguisher fully charged.

Electric Cold-weather Starting Aid

CAUTION: Use a heavy-duty grounded cord to connect coolant heater to electrical power.

Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.

Torque Values

Regularly check tightness of all accessible nuts, bolts, and cap screws.

Plain Head: regular machine bolts and cap screws.

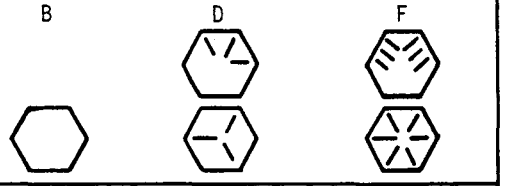
3-Dash Head: tempered steel high-strength bolts and cap screws.

6-Dash Head: tempered steel extra-high-strength bolts and cap screws.

NOTE: All torques are dry torque unless noted.

Tighten hardware to standard torque unless a special torque is given.

RECOMMENDED TORQUE IN LB-FT (Nm)
COARSE AND FINE THREADS

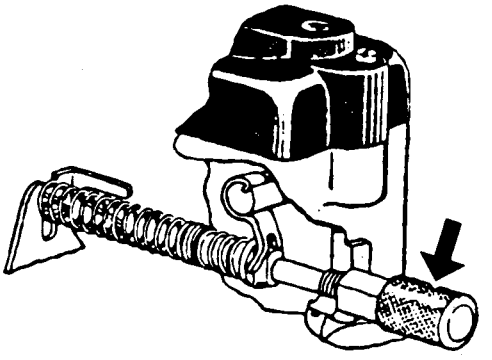


Bolt Diameter	Plain Head	Three Dashes	Six Dashes
1/4	Not used	10 (14)	14 (19)
5/16	Not used	20 (27)	30 (41)
3/8	Not used	35 (47)	50 (68)
7/16	35 (47)	55 (75)	80 (108)
1/2	55 (75)	85 (115)	120 (163)
9/16	75 (102)	130 (176)	175 (237)
5/8	105 (142)	170 (230)	240 (325)
3/4	185 (251)	300 (407)	425 (576)
7/8	160 (217)	445 (603)	685 (929)
1	250 (339)	670 (908)	1030 (1396)
1-1/8	330 (447)	910 (1234)	1460 (1979)
1-1/4	480 (651)	1250 (1695)	2060 (2793)

T41359

Standard Torque Chart

Variable Speed Adjustment (generator set engines only)



T86735

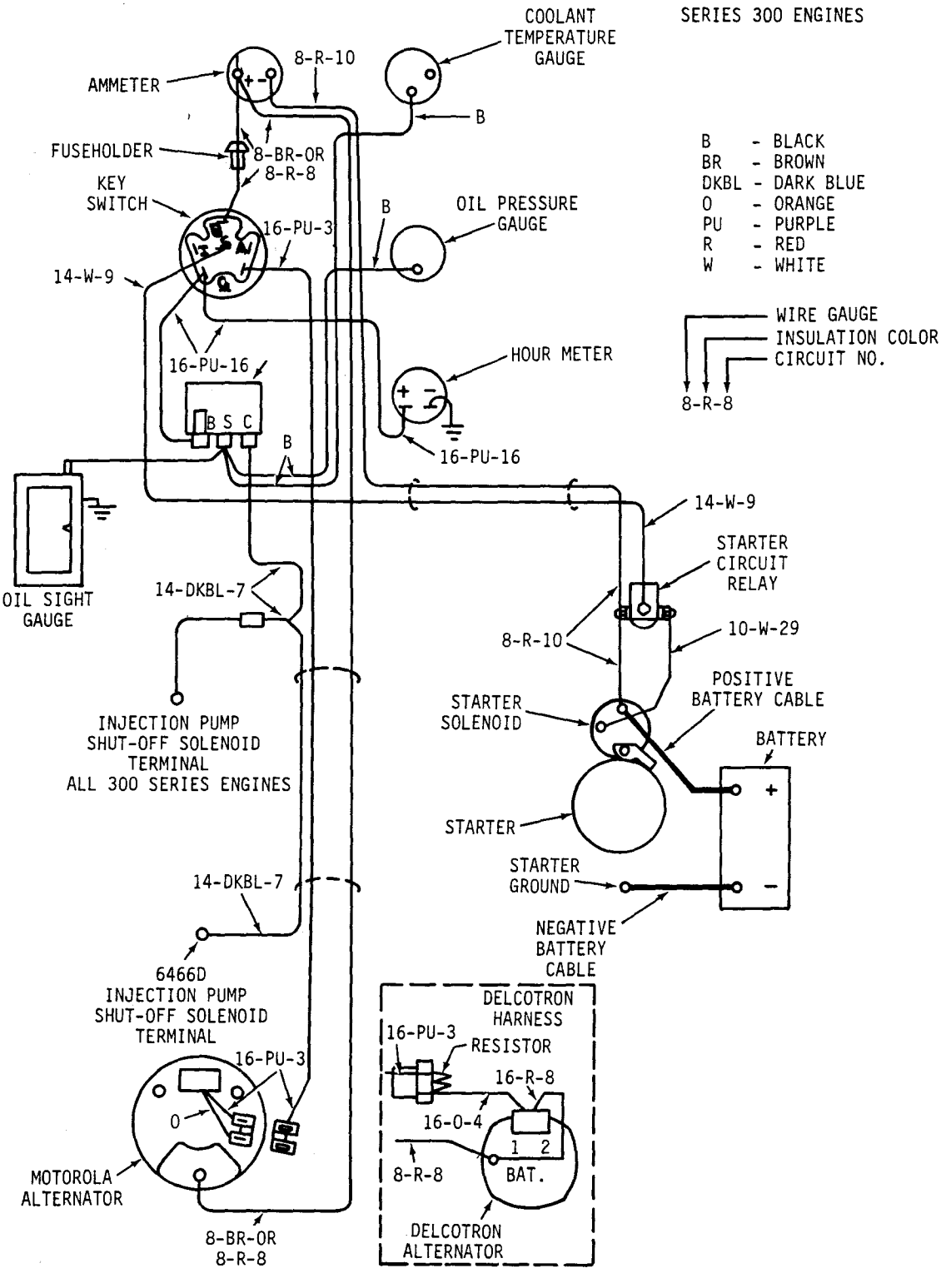
For precise adjustment of generator set engine speeds:

1. Warm engine to normal operating temperature.
2. Run engine at rated speed.
3. Apply full load
4. Remove load.
5. Note the no-load speed or frequency.
6. Disconnect throttle linkage or cable.

NOTE: Spring-loaded type throttle lever (shown) need not be disconnected.

7. Turn knob (shown) to adjust droop.
8. Adjust and connect throttle linkage or cables.

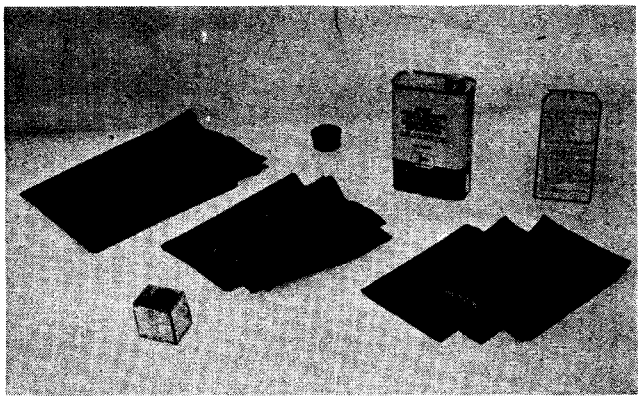
ELECTRICAL WIRING DIAGRAM



T82908

Storage

STORING THE ENGINE



T85452

Before you store your engine, see your John Deere distributor/dealer for an Engine Storage Protection Kit (AR41785) or equivalent.

Follow directions on the tag in this kit.

IMPORTANT: Inhibitor easily changes to gas. Seal or tape an opening immediately after you use inhibitor.

Also, follow these steps:

1. Repair worn or damaged parts. Install new parts if necessary.
2. Loosen the alternator and fan belts.
3. Clean the air cleaner element.
4. Put grease or corrosion preventive on unpainted metal surfaces.
5. Paint areas that need it.
6. Store the engine in a dry, protected place. If the unit must be stored outside, cover it.

REMOVING THE ENGINE FROM STORAGE

1. Follow instructions on the tag of the Engine Storage Protection Kit.
2. Remove grease and corrosion preventive from engine.
3. Adjust alternator and fan belts.
4. Fill fuel tank. Bleed fuel system.

CAUTION: Start engine ONLY in a well-ventilated place.

To start and warm the engine:

1. Disconnect the electric shut-off wire from the injection pump.
2. Crank the engine until the oil pressure gauge shows pressure.

IMPORTANT: Do not crank the engine for more than 20 seconds.

3. After the gauge shows pressure, connect the shut-off wire.
4. Start the engine.
5. Run the engine several minutes at one-third speed.

IMPORTANT: Before you run the engine under load, check carefully operation of all engine systems.

NOTE: After extended storage follow these steps:

1. *Check condition of all hoses and connections.*
2. *Warm the engine.*
3. *Stop the engine.*
4. *Install new fuel filter, engine oil filter, and engine oil.*

Trouble Shooting

Problem	Cause	Solution	Page
Engine hard to start, or will not start.	Wrong Starting procedure	Use correct procedure	5
	No fuel.	Add fuel.	
	Low battery power.	Check electrolyte level and specific gravity of battery.	15 26
	Too much resistance in starting circuit.	Clean and tighten connections on batteries. and starter.	15
	Wrong engine oil.	Use correct oil.	8
	Wrong fuel.	Use correct fuel.	7
	Water, dirt, or air in fuel system.	Drain, flush, fill, and remove air from system.	17
	Plugged fuel filter.	Install a new filter element.	17
	Injection nozzles dirty or faulty.	See your John Deere distributor/dealer.	14
	Fuel pump primer lever is up.	Push lever down.	17
	Faulty fuel shut-off.	Turn key switch on. Listen for injection pump click. If not corrected, see your John Deere distributor/dealer.	
Engine runs irregularly or stops.	Low coolant temperature.	See "Coolant temperature to low".	33
	Plugged fuel filter.	Install a new filter element.	17
	Water, dirt, or air in fuel system.	Drain, flush, fill, and remove air from system.	17
	Injection nozzles dirty or faulty.	See your John Deere distributor/dealer.	14
	Faulty speed advance.	See your John Deere distributor/dealer.	
	Wrong fuel.	Use correct fuel.	7
	Restricted fuel return line.	Check for restriction.	

Problem	Cause	Solution	Page
Coolant temperature too low.	Thermostat faulty.	Remove and check thermostat.	
	Faulty temperature gauge.	Check gauge.	
Coolant temperature too high.	Engine working too hard.	Reduce load.	
	Low coolant level.	Fill radiator to correct level.	15
		Check radiator and hoses for loose connections and leaks.	
	Fan belt loose or faulty.	Tighten belt or install new belt.	13
	Dirty radiator core.	Clean the radiator core.	22
	Cooling system needs flushing.	Flush cooling system.	22
	Faulty thermostat.	Remove and check thermostat.	22
	Temperature gauge faulty.	Check coolant temperature with thermometer.	
		Install new gauge if necessary.	
Engine has little power.	Engine working too hard.	Reduce load.	
	Plugged air intake system.	Clean primary element.	12
	Plugged fuel filter.	Install new filter element.	17
	Wrong fuel.	Use correct fuel.	7
	Engine too hot.	See "Coolant temperature too high" above.	
	Below normal engine temperature.	Remove and check thermostat.	
	Wrong valve clearance.	Adjust clearance.	19
	Injection nozzles dirty or faulty.	See your John Deere distributor/dealer.	14
	Injection pump out of time.	See your John Deere distributor/dealer.	25
	Leaks in air intake system (turbocharged engines)	Tighten exhaust manifold and turbocharger mounting cap screws. Install new parts, if necessary.	

Problem	Cause	Solution	Page
	Faulty speed advance.	See your John Deere distributor/dealer.	
Engine knocks.	Low oil level.	Add correct oil.	8
	Injection pump out of time.	See your John Deere distributor/dealer.	25
	Low coolant temperature.	See "Coolant temperature too low".	33
	Coolant temperature too high.	See "Coolant temperature too high".	33
Engine uses too much fuel.	Wrong fuel.	Use correct fuel.	7
	Plugged or dirty air cleaner.	Clean air cleaner.	12
	Engine working too hard.	Reduce load.	
	Wrong valve clearance.	Adjust clearance.	19
	Injection nozzles dirty.	See your John Deere distributor/dealer.	14
	Injection pump out of time.	See your John Deere distributor/dealer.	25
	Engine not at correct temperature.	Check thermostats.	
	Leak in intake or exhaust system (turbocharged engines).	Check both systems. Install new parts if necessary.	17
Exhaust gas is black or gray.	Plugged or dirty air cleaner.	Clean primary element.	12
	Muffler faulty.	Check muffler.	
	Wrong fuel.	Use correct fuel.	7
	Engine working too hard.	Reduce load.	
	Injection nozzles dirty.	See your John Deere distributor/dealer.	14
	Engine out of time.	See your John Deere distributor/dealer.	
	Leak in intake or exhaust system (turbocharged engines).	Check both systems. Install new parts if necessary.	
	Faulty speed advance.	See your John Deere distributor/dealer.	

Problem	Cause	Solution	Page
Exhaust gas is white.	Wrong fuel.	Use correct fuel.	7
	Cold engine.	Warm engine to normal operating temperature.	6
	Thermostat faulty.	Remove and check thermostat.	
	Engine out of time.	See your John Deere distributor/dealer.	
Engine uses too much oil.	Wrong engine oil.	Use correct oil.	8
	Oil leaks.	Check for leaks in lines around gaskets and drain plug.	
	Coolant temperature too high.	See "Coolant temperature too high".	
	Air intake system plugged.	Check air cleaner and hoses.	12 17
Low oil pressure.	Low oil level.	Add oil.	14
	Wrong oil.	Drain and fill engine with correct oil.	8
	Plugged oil filter.	Install new filter.	16
	ELECTRICAL SYSTEM		
Battery will not take a charge.	Loose or corroded connections.	Clean and tighten connections.	15 26
	Worn out battery.	Install new battery.	26
	Alternator-fan belt loose or faulty.	Tighten belt or install new belt.	13
	Alternator not charging.	Check belt tension. See your John Deere distributor/dealer.	13

Problem	Cause	Solution	Page
Starter not working.	Loose or corroded connections.	Clean and tighten connections.	15 26
	Low battery power.	Check specific gravity of each cell.	26
		Check electrolyte level of each cell.	15
	Electrical system ground wire faulty.	Repair or install new wire.	
Starter turns slowly.	Low battery power.	Battery too small.	
		Battery cable too small.	
		Check specific gravity of each cell.	26
		Check electrolyte level of each cell.	15
	Wrong engine oil.	Use correct oil.	8
	Loose or corroded connections.	Clean and tighten connections.	15 26
	Battery cables too small.	Change to correct size.	
Electrical system does not work.	Battery connections faulty.	Clean and tighten connections.	15
	Worn-out battery.	Install new battery.	15

SPECIFICATION	UNIT OF MEASURE	Series 300 3164DF	3179DF	4219DF	4239DF	4239TF	4276DF	4276TF	6329DF	6359DF	6329TF	6414DF	6414TF
Number of cylinders		3	3	4	4	4	4	4	6	6	6	6	6
Fuel		Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Bore	in	4.02	4.19	4.02	4.19	4.19	4.19	4.19	4.02	4.19	4.19	4.19	4.19
	(mm)	(102)	(106)	(102)	(106)	(106)	(106)	(106)	(102)	(106)	(106)	(106)	(106)
Stroke	in.	4.33	4.33	4.33	4.33	4.33	5.00	5.00	4.33	4.33	4.33	5.00	5.00
	(mm)	(110)	(110)	(110)	(110)	(110)	(127)	(127)	(110)	(110)	(110)	(127)	(127)
Displacement	cu. in.	164	179	219	239	239	276	276	329	359	359	414	414
	cm^3	(2690)	(2940)	(3590)	(3917)	(3917)	(4520)	(4520)	(5390)	(5885)	(5885)	(6780)	(6780)
Compression ratio		16.8:1	16.8:1	16.8:1	16.8:1	16.2:1	16.3:1	16.3:1	16.8:1	16.8:1	16.2:1	16.8:1	16.8:1
Rated speed	RPM	2500	2500	2500	2500	2500	2500	2200	2500	2500	2500	2200	2200
Power (maximum intermittent)	hp	52	56	70	75	94	80	95	104	113	142	115	142
@ RS without fan	kW	(38)	(42)	(53)	(56)	(70)	(60)	(72)	(77)	(84)	(106)	(87)	(107)
Power (continuous)	hp	44	46	56	64	76	67	82	83	95	114	103	120
@ 2200 rpm without fan	kW	(33)	(34)	(42)	(48)	(57)	(50)	(62)	(62)	(71)	(85)	(77)	(89)
Fast idle	RPM	2700	2700	2700	2700	2700	2700	2400	2700	2700	2700	2400	2400
Slow idle	RPM	800	800	800	800	800	800	800	800	800	800	800	800
Torque @ RPM	lb/ft	128 (174)	144 (195)	168 (228)	187 (254)	226 (306)	206 (279)	263 (357)	243 (330)	280 (380)	338 (459)	320 (434)	396 (537)
(max.) without fan	(N·m)	@ 1500	@ 1300	@ 1400	@ 1300	@ 1600	@ 1100	@ 1500	@ 1400	@ 1200	@ 1400	@ 1100	@ 1500
Basic Weight	lb	695	695	845	845	975	950	975	1145	1145	1250	1220	1250
	(kg)	(315)	(315)	(383)	(383)	(442)	(431)	(442)	(519)	(519)	(567)	(553)	(567)
Flywheel housing				2	2	2	2	2	2	2	2		
and flywheel		2		3	3	3	3	3	3	3	3	2	2
(SAE No.)		4	4	4	4	4	4	4	4			3	3
Nozzles	mm	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Fuel filter	$in.^2$	860/490	860/490	860/490	860/490	860/490	860/490	860/490	860/490	860/490	860/490	860/490	860/490
area	cm^2	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)	(5549/3161)
Dimensions:													
Width	in.	19.88	19.88	19.72	19.72	19.72	19.72	19.72	19.62	19.62	19.62	19.62	19.62
	(mm)	(505)	(505)	(500.9)	(500.9)	(500.9)	(500.9)	(500.9)	(498.5)	(498.5)	(498.5)	(498.5)	(498.5)
Height	in.	32.01	32.01	32.03	31.9	37.16	33.31	37.16	31.78	36.58	42.15	36.58	42.15
	(mm)	(813)	(813)	(812.6)	(810.3)	(943.9)	(846.1)	(943.9)	(807.2)	(929.1)	(1070.6)	(929.1)	(1070.6)
Length	in.	27.64	27.64	32.68	32.72	33.58	32.72	34.74	45.81	43.63	43.63	43.63	43.63
	(mm)	(702.1)	(702.1)	(830)	(830)	(852.9)	(831.1)	(882.4)	(1163.6)	(1108.2)	(1108.2)	(1108.2)	(1108.2)
Engine oil capacity	qt.	9	9	9	9	15	15*	15	12	18	18	18	18
with filter change	(L)	(8.5)	(8.5)	(8.5)	(8.5)	(14)	(14)	(14)	(11.4)	(17)	(17)	(17)	(17)
without filter change	qt.	8	8.5	8	8	14	14*	14	11	17	17	17	17
	(L)	(7.6)	(8)	(7.6)	(7.6)	(13.2)	(13.2)	(13.2)	(10.4)	(16)	(16)	(16)	(16)

**Optional oil pan capacity is 9 qt. (8.5 L) with filter change and 8 qt. (7.6 L) without filter change.*

Index

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SP-319 Litho in U.S.A. OCT-83

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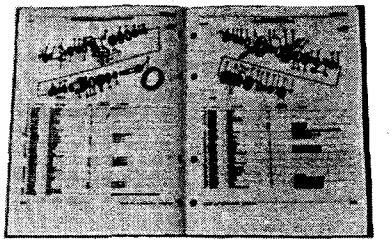
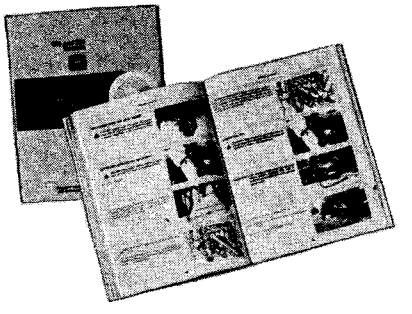
PARTS CATALOG



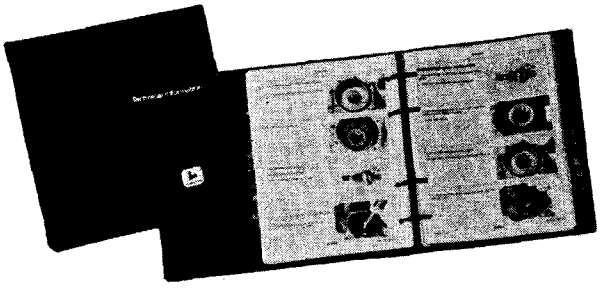
A parts catalog containing exploded view illustrations and lists of all parts is useful when purchasing service parts. Helps identify the correct parts. Useful in assembling and disassembling.

OPERATOR'S MANUAL



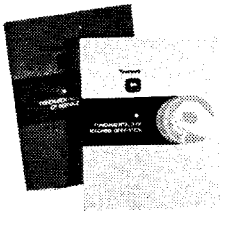
An extra copy of the operator's manual may be important if the copy furnished with your machine is misplaced.

TECHNICAL MANUAL



The technical manual is a service guide for your machine. Included in the manual are specifications, diagnosis and adjustments, illustrations of special assembly and disassembly procedures, hydraulic oil flows, and wiring diagrams.

FMO AND FOS MANUALS



These are basic manuals covering most all types and makes of agricultural machinery. FMO manuals tell ycu how to *operate* machines; FOS manuals tell you how to *service* machines. Each manual starts with basic theory and is fully illustrated with colorful diagrams and photographs. Both the"whys" and "hows" of adjustments and repairs are covered in this reference library.

NOTICE!

TO PURCHASER

THE WARRANTY COVERAGE ON JOHN DEERE ENGINES VARIES BY APPLICATION

To ensure that proper warranty coverage is extended to the owner of this engine, it is necessary that the attached card be filled out COMPLETELY and ACCURATELY and returned to JOHN DEERE.

THE WARRANTY PERIOD WILL START ON THE DELIVERY DATE ENTERED BELOW

The Engine Warranty Information Card below must be completed and signed by the purchaser upon receipt of delivery of equipment powered by a John Deere engine.

For future reference when ordering parts, parts catalogs, or technical manuals for this engine, record the following information:
Engine Model _____ Engine Serial No. _____ Delivery Date _____

The following is valid in the USA only:

The Purchaser has received the Warranty statement which sets forth the obligations of John Deere Industrial Equipment Company or John Deere Company with respect to the John Deere engine in the above-described original equipment and such Warranty and the limitations thereof are hereby accepted by the Purchaser. Where permitted by law, neither seller, the original equipment manufacturer, John Deere nor any corporation affiliated therewith makes any other representations or warranties, express or implied with respect to such engine (AND EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS) or has any obligations to the Purchaser except as provided in the statement of warranty.

ENGINE WARRANTY INFORMATION CARD (Please Type or Print)

Sold by _____ (Name)
_____ (Address)
_____ (City State/Cty Zip)

Sold to _____ (Name)
_____ (Address)
_____ (City State/Cty Zip)
_____ (Signature of Purchaser)

APPLICATION (Check PRIMARY Application Only)

] FA Agricultural Mobile
] FB Agricultural Stationary
] FC Industrial Mobile
] FD Industrial Stationary
] FGP Generator - Primary
] FGS Generator - Standby
] FI Other (Please Specify)
_____

DESCRIPTION OF EQUIPMENT BEING POWERED

ENGINE MODEL	ENGINE SERIAL NO.	DELIVERY DATE

SP-337 (Oct-79)

JOHN DEERE OEM WARRANTY INFORMATION

What you should do to get service on your John Deere engine:

- ○ It is always best to locate an authorized John Deere distributor/dealer before service is needed.
- ○ Advise the authorized John Deere distributor/dealer that you are the owner of a John Deere engine.
- ○ If you have a service need that may be covered by warranty, make sure to have your warranty certificate available.
- ○ Always have model and serial number available when asking for service and when ordering parts.

Additional information for customers outside the USA:

- ○ Contact your local authorized John Deere distributor/dealer.
- ○ If unable to locate an authorized John Deere distributor/dealer contact: (Write or Telex)

John Deere OEM Sales
John Deere Road
Moline, Illinois 61265
USA

- ○ The warranty card should be mailed in an air mail envelope.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATE

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 1, MOLINE, ILLINOIS 61265

POSTAGE WILL BE PAID BY ADDRESSEE

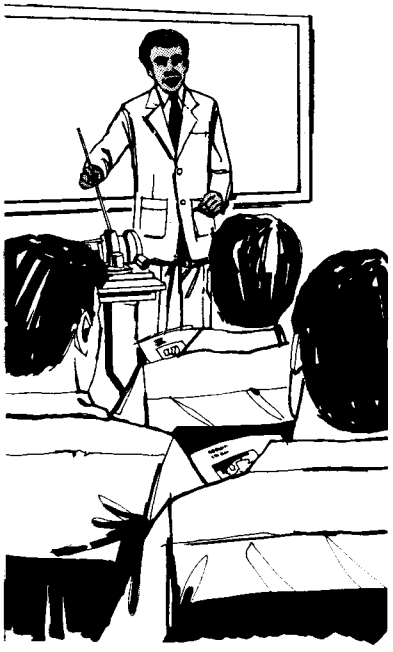
John Deere OEM Sales
John Deere Rd.
Moline, Illinois 61265

Service to keep you on the job

We, at your John Deere dealers, pride ourselves in having what it takes to help keep you on the job...

John Deere Parts.
We help minimize downtime by putting the right parts in your hands in a hurry. That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

The right tools.
Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly... to save you time and money.



Well-trained technicians.
School is never out for John Deere service technicians. Training schools are held regularly to be sure our personnel know your equipment and how to maintain it. Result? Experience you can count on!

Prompt service.
Our goal is to provide prompt, efficient care when you want it and where you want it. We can make repairs at your place or at ours, depending on the circumstances. See us. Depend on us.

John Deere Service Superiority: We'll be around when you need us