350D and 400D Series-II Articulated Dump Trucks

OPERATOR'S MANUAL

350D and 400D Series-II Articulated Dump Truck

OMT263511 ISSUE H9 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

Worldwide Construction And Forestry Division

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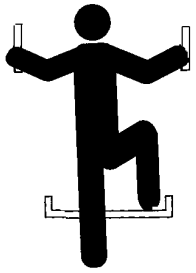
Continued on next page

Safety—Operating Precautions

Use Steps and Handholds Correctly

Prevent falls by facing the machine when you get on and off. Maintain 3-point contact with steps and handrails. Never use machine controls as handholds.

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



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Start Only From Operator's Seat

Avoid unexpected machine movement. Start engine only while sitting in operator's seat. Ensure all controls and working tools are in proper position for a parked machine.

Never attempt to start engine from the ground. Do not attempt to start engine by shorting across the starter solenoid terminals.

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Use and Maintain Seat Belt

Use seat belt when operating machine. Remember to fasten seat belt when loading and unloading from trucks and during other uses.

Examine seat belt frequently. Be sure webbing is not cut or torn. Replace seat belt immediately if any part is damaged or does not function properly.

The complete seat belt assembly should be replaced every 3 years, regardless of appearance.

T133716 —19—17APR13

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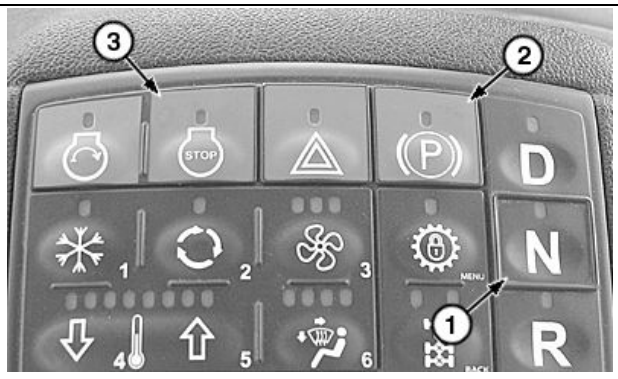
Prevent Unintended Machine Movement

Be careful not to accidentally actuate controls when co-workers are present.

Ensure bin (dump body) is lowered during work interruptions. Place transmission control in neutral (1), engage park brake (2) and press engine STOP switch (3) before allowing anyone to approach the machine.

Follow these same precautions before standing up, leaving the operator's seat, or exiting the machine.

1— Neutral Switch
2— Park Brake Switch
3— Ignition OFF/Engine STOP Switch



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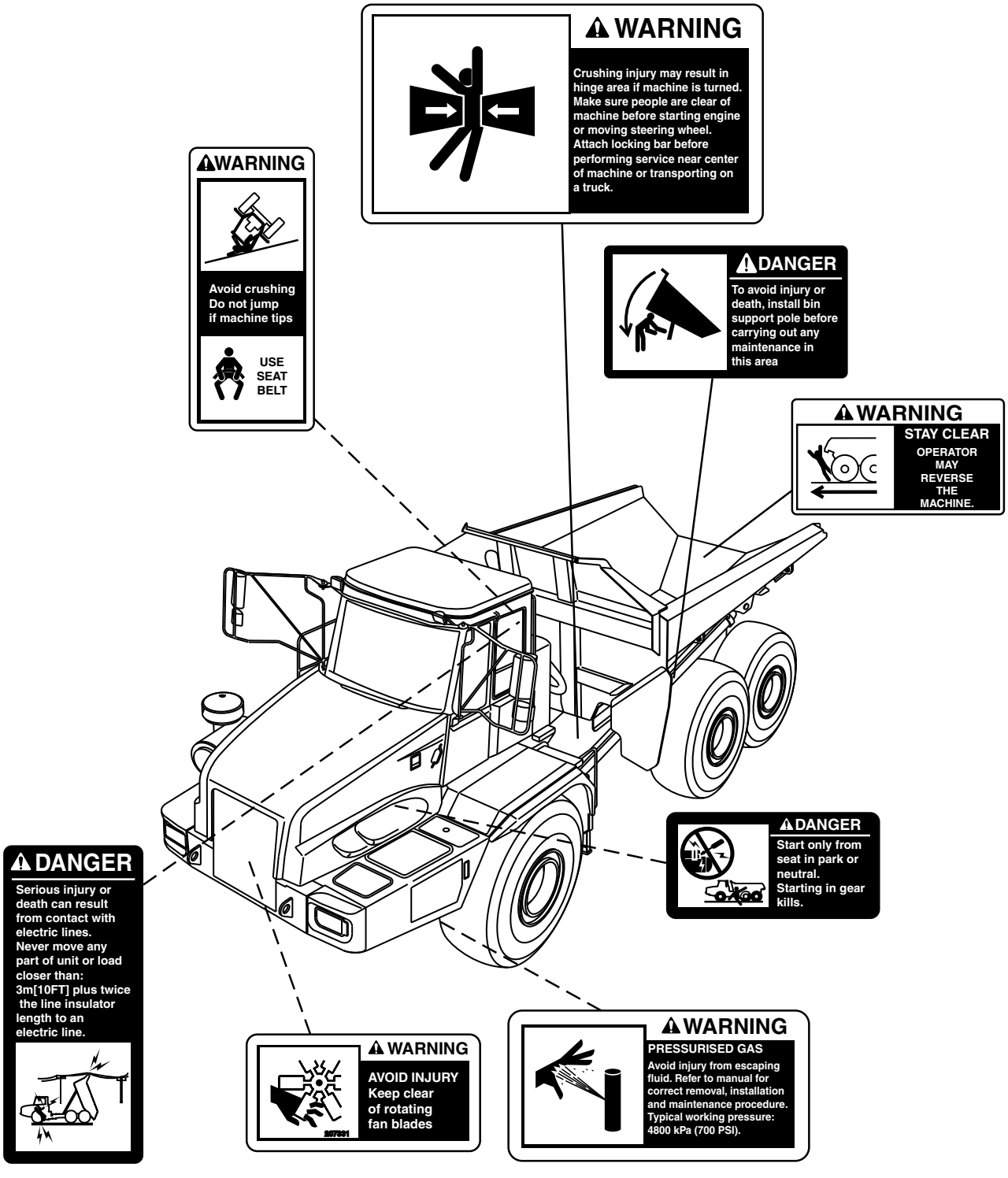

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19—Bin (Dump Body) Raised Indicator (Bin Up): The bin (dump body) raised indicator comes on when bin (dump body) is raised off the frame.

20—Engine Overspeed Indicator (n/min): When engine speed exceeds 2500 rpm, the engine overspeed indicator comes on and the transmission retarder is activated.

IMPORTANT: DO NOT exceed 2500 rpm or serious engine and/or transmission damage may occur. If engine overspeed indicator comes on, reduce engine speed immediately using the service brake.

21—Inter-Axle Differential Lock (IDL) Indicator: The IDL indicator will come on when the IDL function is activated.

NOTE: If the IDL and/or CTD indicators flash, it means that a request to engage the functions is active, but the functions have not engaged.

22—Differential Lock (CTD) Indicator: The CTD indicator will come on when the CTD function is activated.

23—Brake Oil Pressure Indicator: When brake oil pressure is low or brake accumulator charge pressure is too low, the brake oil pressure indicator and service required indicator will flash, and the audible alarm will activate. Stop machine immediately. Engage park brake and take corrective action.

CAUTION: Prevent personal injury or machine damage. Stop machine immediately when brake oil pressure indicator flashes.

24—High Speed Indicator: Not used.

25—Right Turn Indicator: Flashes when right turn signal is activated.

26—Hydraulic Oil Temperature Indicator: When hydraulic oil temperature is too high, the hydraulic oil temperature indicator and service required indicator will flash, and the audible alarm will activate. Stop operation and shift transmission into neutral. Allow engine to operate at 1500 rpm for 3 minutes. Allow oil to cool and warning indicators to turn off. Check the oil levels.

IMPORTANT: Prevent machine damage. Stop machine immediately when hydraulic oil temperature indicator flashes.

27—Brake Temperature Indicator (Wet Disk Brakes Only): When brake temperature becomes too high, the brake temperature indicator will come on.

28—Park Brake Indicator: The park brake indicator comes on when park brake is engaged. Indicator is off when park brake is released.

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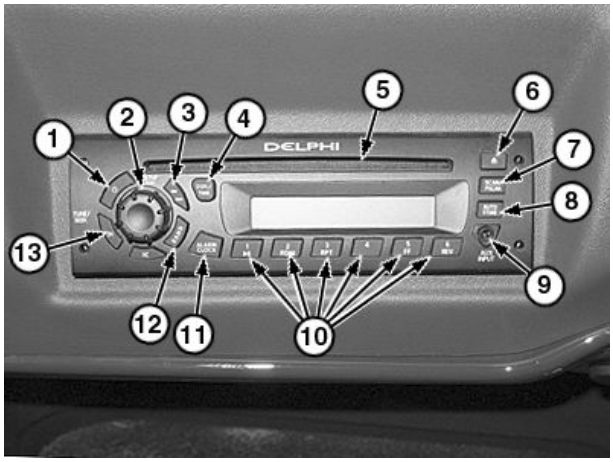
Radio Controls—If Equipped

1. **Power Button—**push power button to turn radio ON or OFF.
2. **Volume Control/Audio Control Knob—**adjusts volume and audio functions.
   - Volume Control—Push knob to turn the radio ON. Turning knob to the right increases volume. Turning knob to the left decreases volume.
   - Audio Control—Push knob to adjust bass, treble, balance, fader, two speaker or four speaker, and intensity of display light.
3. **SRC Button—**push to select the CD, radio, or AUX sources.
4. **Display/Time Button—**push to display time.
5. **CD Slot—**insert CD into slot.
6. **CD Eject Button—**push to eject CD.
7. **Scan Button—**push and hold for scan function.
8. **Auto Store Button—**push and hold for auto store function.
9. **Auxiliary Input—**used to connect an auxiliary source.
10. **Preset Button—**push any of the six preset buttons to program or access a preset station.
11. **Alarm Clock Button—**used to set the alarm clock.
12. **AM/FM/Weather Band Select Button—**push to select AM, FM, or weather band stations.
13. **Tune/Seek Button—**push the LEFT arrow or RIGHT arrow to manually change station. Push and hold down the LEFT arrow or RIGHT arrow to use the scan function.



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1— Power Button
2— Volume Control/Audio Control Knob
3— SRC Button
4— Display/Time Button
5— CD Slot
6— CD Eject Button
7— Scan Button
8— Auto Store Button
9— Auxiliary Button
10— Preset Button (6 used)
11— Alarm Clock Button
12— AM/FM/Weather Band Select Button
13— Tune/Seek Button

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Engine Block Heater—If Equipped

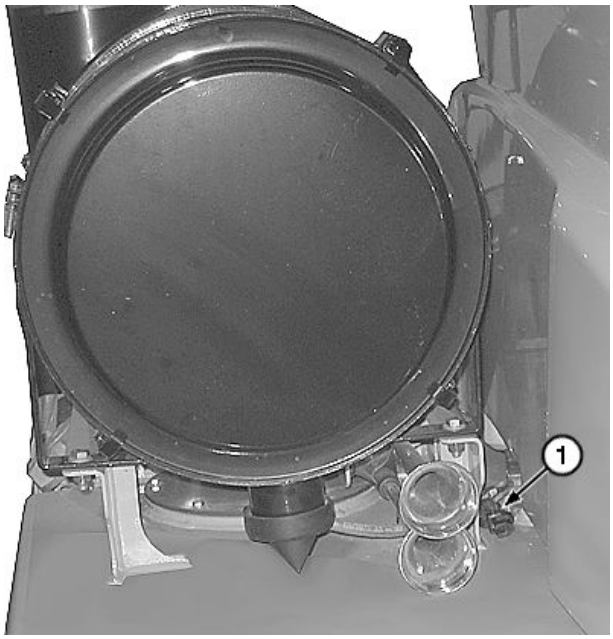
CAUTION: Prevent possible injury from electrical shock. Use grounded cord and inspect for damage before connecting to power source.

IMPORTANT: Prevent property damage as a result of possible fire from an overheated electrical cord. Use a heavy-duty, grounded cord to connect heater to electrical power.

Supply voltage for engine block heater can be 220 V or 110 V. Ensure the correct engine block heater is used for the correct supply voltage.

Connect engine block heater plug (1) to electrical power 10 hours before starting engine.

1— Engine Block Heater Plug



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Warming Hydraulic System

NOTE: The monitor can be used to display hydraulic oil temperature. See Monitor Display Unit—Actual Values. (Section 2-1.)

IMPORTANT: If machine temperature is below -18°C (0°F), start procedure with engine running at 1/2 speed. Failure to do this could cause pump cavitation. Once oil temperature is above -18°C (0°F) the engine speed can be increased to fast idle.

Below -18°C (0°F) an extended warmup period may be necessary. Hydraulic function will move slowly and lubrication of parts may not be adequate with cold oil. Do not attempt normal machine operation until hydraulic functions move at or close to normal cycle times.

Operate functions slowly and avoid sudden movements until engine and hydraulic oils are thoroughly warmed. Operate a function by moving it a short distance in each direction. Continue operating the function, increasing the distance traveled in each cycle until full stroke is reached.

NOTE: The oil cooler temperature is proportional, and thus regulates the cooling fan. If the fan is not running, using cardboard or other similar material to restrict air flow through oil cooler will not provide a faster warmup.

Use correct viscosity hydraulic oil to minimize warmup period. See Hydraulic Oil. (Section 3-1.)

1. Display hydraulic oil temperature using MDU. See Monitor Display Unit—Actual Values. (Section 2-1.)

CAUTION: Avoid possible serious injury from machine movement during warmup procedure. Clear the area of all bystanders before doing the warmup procedure.

2. Clear the area of all bystanders to allow for machine movement.
3. Start engine. Do not accelerate engine rapidly during warmup. Run engine at 1/2 speed for approximately five minutes before operating any functions.
4. Engage park brake.

IMPORTANT: Holding a function over relief for more than 10 seconds can cause damage to control valve.

5. Operate steering and bin (dump body) raise and lower functions over relief to heat hydraulic system.
6. Once oil temperature is above -18°C (0°F), increase engine speed to fast idle.
7. Stop periodically and operate all hydraulic functions to distribute the heated oil.

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NOTE: Standard equipped machines use switches, located on the sealed switch module (SSM), to control the bin (dump body) UP and DOWN modes. Refer to Sealed Switch Module (SSM). (Section 2-1.)

Optionally equipped machines use the bin (dump body) control lever to control bin (dump body) UP and DOWN modes.

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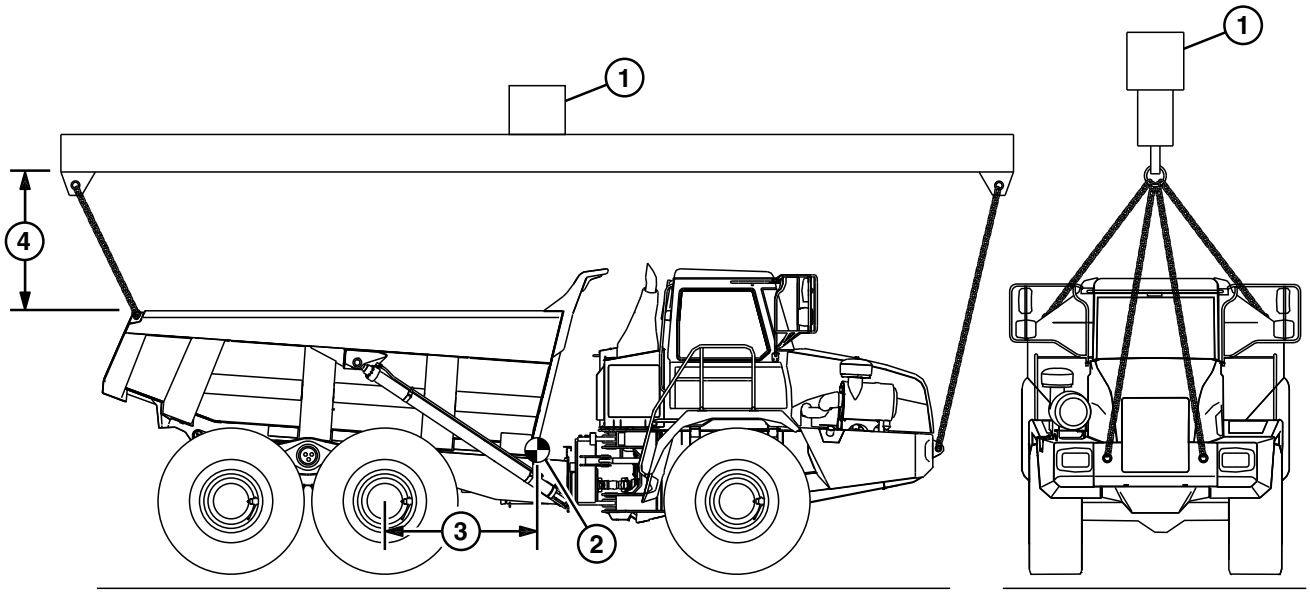
Lifting the Machine



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TX1065528

1— Lifting Eye
2— Center of Gravity
3— Distance—Middle Axle-to-Center of Gravity
4— Distance—Bin (Dump Body)-to-Lifting Beam

1. Park machine with frames straight.
2. Engage park brake and stop engine.

IMPORTANT: Prevent machine articulation during lift. Install the articulation locking bar prior to lifting machine.

3. Install articulation locking bar.

IMPORTANT: The crane and lifting beam must be able to carry total machine weight:

350D—30 300 kg (66 800 lb.)

400D—32 300 kg (71 200 lb.)

NOTE: Lifting beam must be at least 1032 cm (406 in.) in length.

4. Attach crane to lifting eye (1) of appropriate size lifting beam.
5. Measure distance (3) from the middle axle forward to find machine's center of gravity (2).

Specification	
350D Center of Gravity—Distance (center of middle axle forward)	1.65 m 5.4 ft.
400D Center of Gravity—Distance (center of middle axle forward)	1.78 m 5.8 ft.

6. Adjust lifting eye (1) on the lifting beam so it will be directly over the center of gravity of machine.

IMPORTANT: To prevent truck from oscillating, use four individual chains or straps when lifting.

To prevent damage to hood, use a nylon sling for front lifting points.

7. Attach chains or straps to the lifting beam.

NOTE: The machine lifting points are indicated on the machine.

8. Raise lifting beam over machine and lower it just enough to attach the chains or straps to the machine lift points.

Continued on next page

- Park Brake Solenoid (on/off)
- Overspeed Control (on/off)
- IDL Solenoid (on/off)
- CTD Solenoid (on/off)
- Pneumatic Blow Off (on/off)
- Mirror Heating (on/off)
- Hydraulic Cut Solenoid (on/off)
- D Plus (on/off)
- A/C Clutch Solenoid (on/off)
- Recirculation Flap (%)

OEU Outputs:

- Fan Cut Solenoid (on/off)
- Fan Low Solenoid (on/off)
- Fan Medium Solenoid (on/off)
- Gear Hold Control (on/off)
- Left Strut Up (%) (not used)
- Left Strut Down (%) (not used)
- Right Strut Up (%) (not used)
- Right Strut Down (%) (not used)
- Two-Speed Solenoid (not used)
- Automatic Neutral (not used)
- Pre-Sel Sec Gear (not used)
- Lock Up Clutch (on/off)
- Unladed (on/off)
- Blower Speed 1
- Blower Speed 2
- Blower Speed 3
- JD Starter (on/off)
- Feet Actuator (%)
- Mid/Demist Actuator (%)
- Heater Valve Actuator (%)
- Eng Cool Fan (not used)
- Load Light Yellow (on/off)
- Load Light Green (on/off)
- Load Light Red (on/off)
- Bonnet Fan 1 (not used)
- Bonnet Fan 2 (not used)
- Spare Pin 3 (on/off)
- Spare Pin 4(on/off)

6. **OBW Diagnostics—**displays the on board weighing (OBW) system data.
   - Payload
   - Gain
   - Mode
   - Offset (Carryback)
   - Raw Counts
   - Test Gain
   - Test Wgt
   - Test Off
7. **MM Diagnostics** (not used)
8. **CAN Diagnostics—**displays CAN monitored statistics and RX CAN messages.

   CAN Stats:
   - Bus Load
   - Tx Count
   - Rx Count
   - Error / sec
   - Total Errors
   - Bus Off Errors
   - Stuff Errors
   - Form Errors
   - Ack Errors
   - Bit1 Errors
   - Bit0 Errors
   - Crc Errors
   - Reset Errors (push select to reset CAN errors).

   RX CAN Messages:
   - OBW
   - ECU
   - TCU
   - TCU (Ret)
   - SSM
   - 19
   - CCU
   - GEAR
   - 11
   - MMU
   - OEU
   - TPM
9. **TPM Diagnostics—**displays the following tire information:
   - Tire Temperature
   - Gauge Pressure
   - Comp Set Pressure
   - Tire ID

   IMPORTANT: Avoid damage to tire pressure monitoring (TPM) system, if equipped. The TPM sensor may not function if liquids are present inside tire. Do not expose the TPM sensor to liquids (rust inhibitors, calcium chloride, etc.).

   NOTE: For trucks equipped with a Tire Pressure Monitoring (TPM) System, it may take 2 to 3 minutes for all six wheel sensors to register on the monitor after the ignition has been turned ON.

   NOTE: When the tire pressure is below the set alarm level, the tire pressure indicator on the instrument panel will light.

   Use the NEXT button to change to the next screen.
   - Left Front
   - Right Front
   - Left Middle
   - Right Middle
   - Left Rear
   - Right Rear
10. Task Times (not used)

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Diesel Engine Oil and Filter Service Intervals

The oil and filter service intervals in the following table should be used as guidelines. Actual service intervals also depend on operation and maintenance practices. It is suggested to use oil analysis to determine the actual useful life of the oil and to aid in selection of the proper oil and filter service interval.

Oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel.

Diesel fuel sulfur level will affect engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals as shown in the table.

- Use of diesel fuel with sulfur content less than 0.10% (1000 mg/kg) is strongly recommended.
- Use of diesel fuel with sulfur content 0.10% (1000 mg/kg) to 0.50% (5000 mg/kg) may result in REDUCED oil and filter change intervals as shown in the table.
- BEFORE using diesel fuel with sulfur content greater than 0.50% (5000 mg/kg), contact your John Deere dealer.
- DO NOT use diesel fuel with sulfur content greater than 1.00% (10 000 mg/kg).

IMPORTANT: When using biodiesel blends greater than B20, reduce the oil and filter service interval by 50% or monitor engine oil based on test results from Oilscan.

Oil types in the table include:

- John Deere Plus-50™ II and John Deere Plus-50
- “Other Oils” include John Deere Torq-Gard Supreme™, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, or ACEA E4 oils.

Use of lower specification oils in Tier 3 engines may result in premature engine failure.

NOTE: The 500 hour extended oil and filter change interval is only allowed if all the following conditions are met:

- *Engine equipped with an extended drain interval oil pan*
- *Use of diesel fuel with sulfur content less than 0.50% (5000 mg/kg)*
- *Use of John Deere Plus-50™ II or John Deere Plus-50 oil*
- *Use of an approved John Deere oil filter*

	U.S. Tier 3 and EU Stage III A - PowerTech Plus™				**U.S. Tier 3 and EU Stage III A -** PowerTech™		
	Oil Pan Size (L/kW)				Oil Pan Size (L/kW)		
Oil pan capacity	Greater than or equal to 0.10	Greater than or equal to 0.12	Greater than or equal to 0.14	Greater than or equal to 0.22	Greater than or equal to 0.10	Greater than or equal to 0.12	Greater than or equal to 0.14
Fuel Sulfur	Less than 0.10% (1000 mg/kg)				Less than 0.10% (1000 mg/kg)		
Plus-50	375 hours	500 hours	500 hours	500 hours	375 hours	500 hours	500 hours
Other Oils	250 hours	250 hours	250 hours	250 hours	250 hours	250 hours	250 hours
Fuel Sulfur	0.10 - 0.20% (1000 - 2000 mg/kg)				0.10 - 0.20% (1000 - 2000 mg/kg)		
Plus-50	300 hours	300 hours	500 hours	500 hours	300 hours	400 hours	500 hours
Other Oils	200 hours	200 hours	250 hours	250 hours	200 hours	200 hours	250 hours
Fuel Sulfur	0.20 - 0.50% (2000 - 5000 mg/kg)				0.20 - 0.50% (2000 - 5000 mg/kg)		
Plus-50	250 hours	250 hours	300 hours	500 hours	275 hours	350 hours	500 hours
Other Oils	150 hours	150 hours	200 hours	250 hours	150 hours	175 hours	250 hours
Fuel Sulfur	0.50 - 1.00% (5000 - 10 000 mg/kg)				0.50 - 1.00% (5000 - 10 000 mg/kg)		
Plus-50	Contact John Deere Dealer (dealer refers to DTAC solutions)				187 hours	250 hours	250 hours
Other Oils	Contact John Deere Dealer (dealer refers to DTAC solutions)				125 hours	125 hours	125 hours
The service interval of “Other Oils” may be extended only if oil analysis is performed to determine the actual service life, to a maximum not to exceed that of Plus-50.							

Plus-50 is a trademark of Deere & Company
Torq-Gard Supreme is a trademark of Deere & Company
PowerTech Plus is a trademark of Deere & Company
PowerTech is a trademark of Deere & Company

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Install Bin (Dump Body) Support Rod

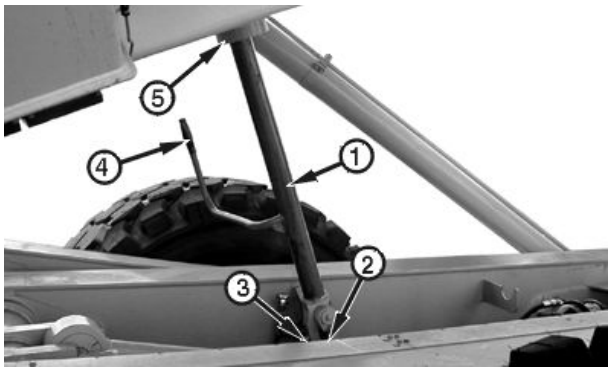
CAUTION: Avoid serious injury or death from crushing. Always use the bin (dump body) support rod when performing maintenance.

NOTE: Operate the bin (dump body) control lever in the operator's station to raise and lower the bin (dump body).

1. Raise bin (dump body) high enough to allow bin (dump body) support rod (1) to be fully raised.
2. Use handle (4) to raise bin (dump body) support rod. Ensure that stop bolt (3) is in firm contact with stop (2).

CAUTION: Avoid serious injury or death from crushing. Check to ensure that the bin support rod is seated securely in retaining cup.

3. Lower bin (dump body) until bin (dump body) support rod is seated securely in retaining cup (5).



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Bin (Dump Body) Support Rod

1— Bin (Dump Body) Support Rod
2— Stop
3— Stop Bolt
4— Handle
5— Retaining Cup

4. Relieve hydraulic pressure before servicing machine.

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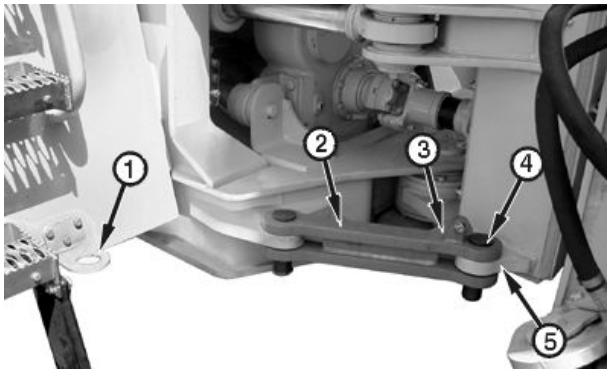
Install Articulation Locking Bar

1. Steer machine to straighten articulation joint.
2. Stop engine and engage park brake.
3. Attach a DO NOT OPERATE sign to steering wheel.
4. Remove pin (4) from articulation locking bar (2) and storage lug (1).
5. Swing articulation locking bar rearward to locked position. Ensure that holes line up on locking lug (5).
6. Install pin through articulation locking bar and locking lug. Ensure that pin retaining tab (3) is engaged.



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Locked Position Shown

1— Storage Lug
2— Articulation Locking Bar
3— Pin Retaining Tab
4— Pin
5— Locking Lug

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Clean and Inspect Breathers—Transmission, Transfer Case, Axles, and Wet Disk Brake Cooling Oil Reservoir

NOTE: Breathers should be checked daily in adverse working conditions. The amount of dust and dirt encountered will determine the frequency of breather cleaning.

The cab must be tilted to access the front axle, transmission, and transfer case breather.

1. Clean dirt, dust, and debris from area around each breather (1—5).

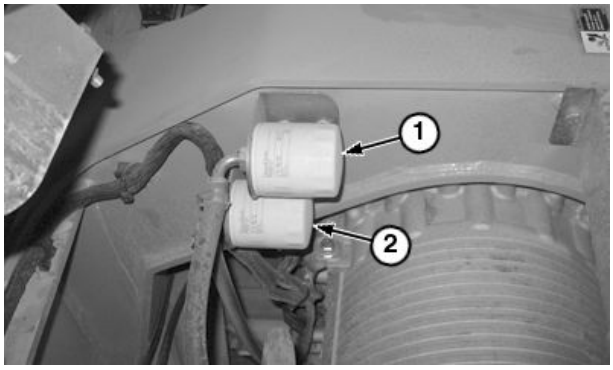
IMPORTANT: DO NOT crush or damage breathers during removal. Foreign matter may enter housings.

NOTE: Breathers should be replaced every 2000 hours or when they are damaged or clogged. See Periodic Maintenance Table. (Section 3-2.)

2. Inspect each breather for clogging, damage, and proper installation. Replace any breather that is damaged or clogged
3. Inspect axle breather hoses for clogging, damage, and proper installation.

   If necessary, clear clogs from breather hose(s). Replace any breather hose that appears damaged or cannot be unclogged.

1— Front Axle Breather
2— Transmission Breather
3— Transfer Case Breather
4— Rear Axle Breathers (2 used)
5— Wet Disk Brake Cooling Oil Reservoir Breather (if equipped)



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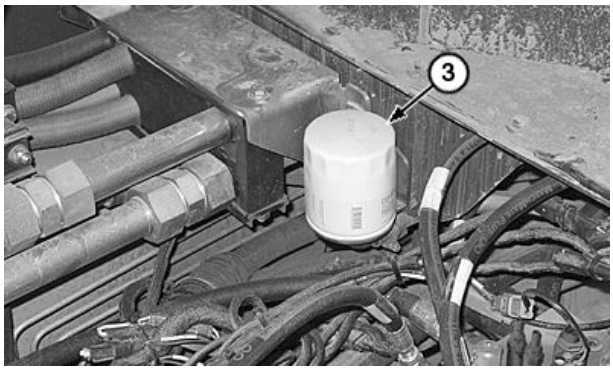

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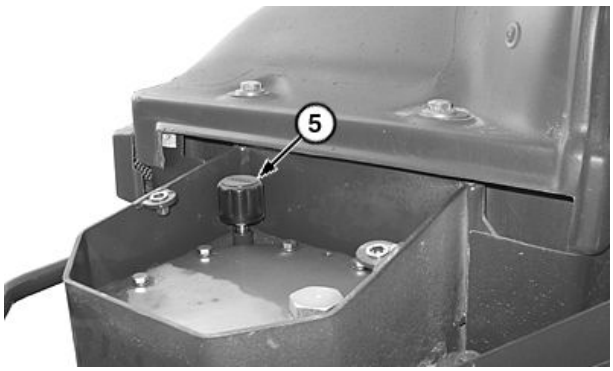

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5. Remove dipstick and check oil level. Oil should be between the high level mark (2) and low level mark (3).
6. Add oil, if necessary. See Change Engine Oil and Replace Filter. (Section 3-6.)

2— High Level Mark
3— Low Level Mark

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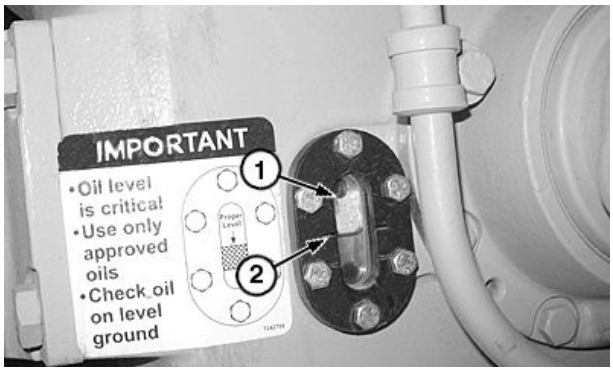
Check Transfer Case Oil Level

IMPORTANT: Avoid damage to machine. Do NOT overfill transfer case.

1. Check oil level at sight glass (1). Oil should be at level of indicated “full” groove (2) on sight glass.
2. Add oil, if necessary. See Change Transfer Case Oil. (Section 3-9.)

1— Sight Glass
2— “Full” Groove
3— “Full” Line
4— “Add Oil” Line



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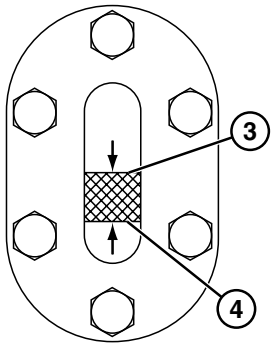

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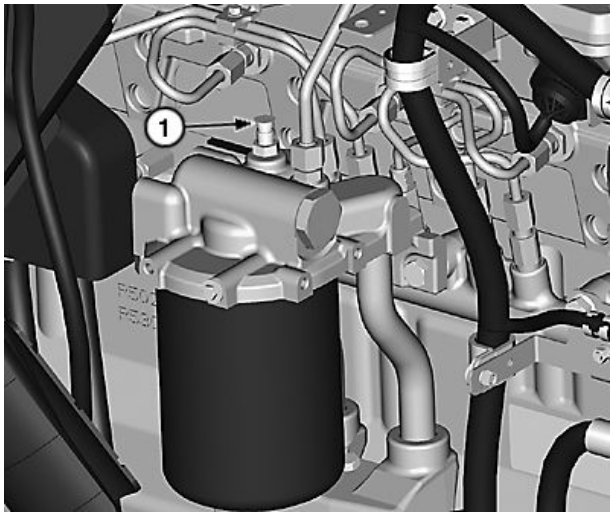
Take Engine Oil Sample

Obtain engine oil sample from oil sample port (1). See your authorized dealer.

1— Oil Sample Port



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Engine Oil Sample Port

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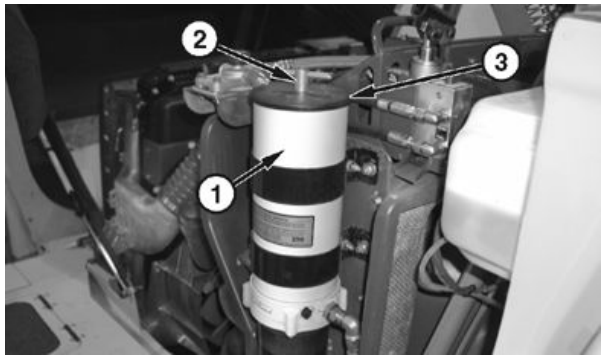
Replace Primary Fuel Filter (Water Separator)

NOTE: Replace primary fuel filter (water separator) after the first 100 hours of operation and at 1000 hour intervals thereafter.

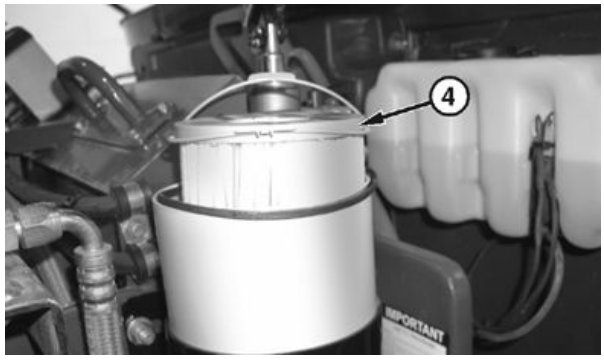
1. Open hood. Clean dirt and debris from primary fuel filter (1) and surrounding area.
2. Remove retaining screw (2) and lid (3).
3. Remove element (4).
4. Install new element. Be sure element is properly seated.

IMPORTANT: Do NOT prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

5. Install primary fuel filter.
6. Install lid and retaining screw.
7. Prime the fuel system. See Prime Fuel System. (Section 4-1.)
8. Start engine and let it run for 1 minute. Check for leaks around lid. Tighten retaining screw only enough to stop leaks.



TX1009640A —UN—05JUL06



TX1009639A —UN—05JUL06

1— Primary Fuel Filter
2— Retaining Screw
3— Lid
4— Element

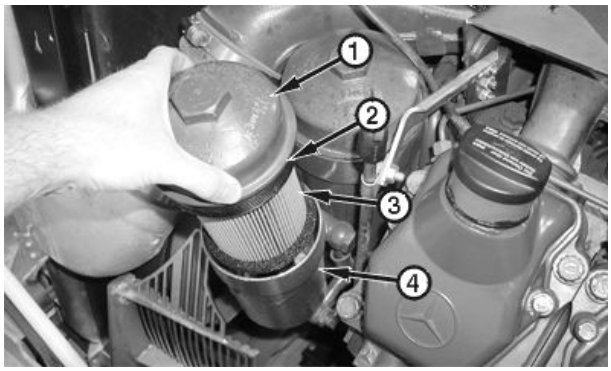
CS33148,000122E -19-11MAR11-1/1

Replace Secondary Fuel Filter

1. Open hood. Clean dirt and debris from filter cap (1) and surrounding area.
2. Remove filter cap and element (3). Lift slowly, to allow excess fuel to drain from element.
3. Remove element and O-ring (2) from filter cap. Discard element and O-ring.
4. Inspect filter cap and filter housing (4) for damage. Replace, if necessary. (See your authorized dealer.)
5. Install new O-ring and element on filter cap.
6. Apply a thin layer of fuel to O-ring.
7. Install element and filter cap. Tighten to specification.

Specification	
Final Filter Cap Tightening—Torque	25 N·m 18 lb-ft

8. Prime fuel system. See Prime Fuel System. (Section 3-1.)



T143935B —UN—16JUL01

1— Filter Cap
2— O-Ring
3— Element
4— Filter Housing

9. Start engine and let it run for 1 minute. Check for leaks at filter cap. Tighten only enough to stop leaks.

SJ25320,00001EF -19-26SEP06-1/1

Change Transfer Case Oil

NOTE: It is not necessary to change transfer case oil until a contaminated OILSCAN PLUS™ sample is indicated. Draw sample from transfer case oil at drain plug. For convenience, install a sampling valve in drain port.

If operating in wet or muddy conditions, change transfer case oil every 1000 hours or with an abnormal oil sample.

1. Remove fill plug and sealing ring (1). Clean fill plug and sealing ring. Inspect sealing ring. Replace sealing ring, if necessary.

NOTE: Dispose of waste properly.

2. Put a container under drain plug (2). Remove drain plug and drain oil into container.

Specification

Oil—Capacity..... 4.5 L
1.2 gal.

3. Clean drain plug thoroughly.
4. Install drain plug. Tighten to specification.

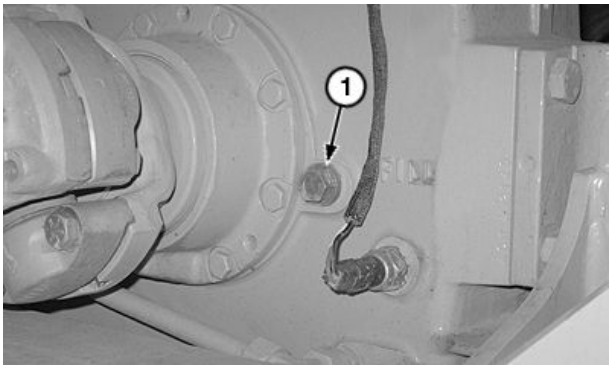
Specification

Drain Plug and Fill Plug
Tightening—Torque..... 25—32 N·m
18—24 lb-ft

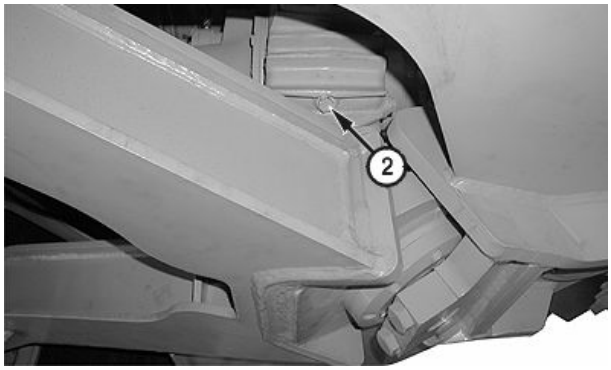
5. Add oil at fill port. Do not overfill. Oil should be level with the indicated groove (3) on sight glass (4).
6. Install fill plug and sealing ring.
7. Start engine. Drive machine in low gear for 1 minute. Stop engine.
8. Check for leaks at drain plug. Tighten only enough to stop leaks.
9. Check oil level at sight glass. Oil should be level with the top groove on sight glass and will appear half full. Add more oil, if necessary.

IMPORTANT: Avoid damage to the machine. Do NOT overfill transfer case.

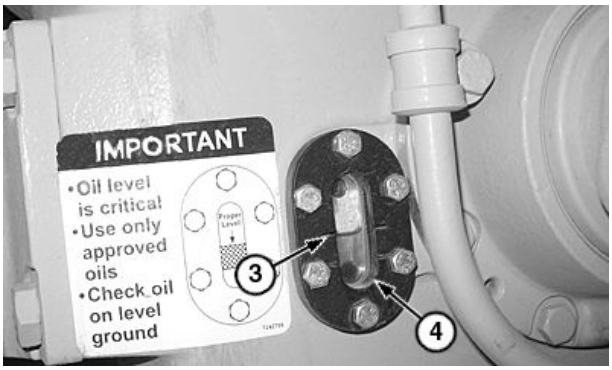
OILSCAN PLUS is a trademark of Deere & Company



TX1065438A —UN—02OCT09



T1436918 —UN—05JUL01



TX1065444A —UN—02OCT09

1— Fill Plug and Sealing Ring
2— Drain Plug
3— "Full" Groove
4— Sight Glass

AA95137,0001DFD -19-22APR15-1/1

See your John Deere dealer for JT05460 SERVICEGARD™ battery and coolant tester. Follow directions included with the tester.

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

T85402 —UN—10NOV88

SERVICEGARD is a trademark of Deere & Company

CS33148,0000B6D -19-09AUG06-2/2

Using Battery Charger

CAUTION: Prevent possible injury from exploding battery. Do not charge a battery if the battery is frozen or it may explode. Warm battery to 16°C (60°F) before charging.

Turn off charger before connecting or disconnecting it.

IMPORTANT: Do not use battery charger as a booster if a battery has a 1.150 specific gravity reading or lower.

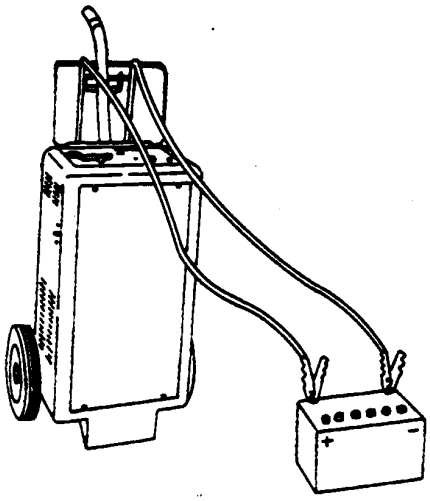
Disconnect battery ground (-) clamp before you charge batteries in the machine to prevent damage to electrical components.

A battery charger may be used as a booster to start engine.

Ventilate the area where batteries are being charged.

Stop or cut back charging rate if battery case feels hot, or is venting electrolyte. Battery temperature must not exceed 52°C (125°F).

TS204 —UN—15APR13



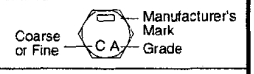
N36890 —UN—07OCT88

OUT4001,0000239 -19-17JUL07-1/1

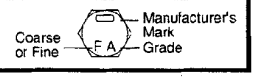
Imperial and SAE (Inch) Cap Screw and Nut Torque Values

IMPERIAL SIZES - BS GRADES

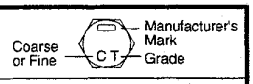
BS Grade A
28 tsi (432 Mpa)



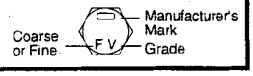
BS Grade S
50 tsi (772 Mpa)



BS Grade T
55 tsi (849 Mpa)



BS Grade V
65 tsi (1004 Mpa)



Unified Coarse (UNC) - Torques in N·m.

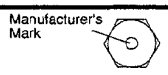
Size	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"
Threads/inch	20	18	16	14	13	12	11	10	9	8	7	7	6	6
T/Stress area (mm^2)	20.5	33.8	50	68.6	91.5	117.4	146	215	298	391	492	625	745	906
BS Grade A	4	9	16	25	38	56	78	138	221	335	467	670	861	1148
BS Grade S	12	24	43	66	108	150	209	371	586	885	1256	1735	2333	3051
BS Grade T	12	26	45	72	114	162	221	383	646	957	1376	1914	2512	3290
BS Grade V	16	31	55	90	138	191	263	479	766	1148	1615	2273	2991	4008

Unified Fine (UNF) up to 1", and UN-8 TPI for dia 1 1/8" and above. Torques in N·m.

Size	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"
Threads/inch	28	24	24	20	20	18	18	16	14	12	8	8	8	8
T/Stress area (mm^2)	23.5	37.4	56.6	76.6	103	131	165	241	328	428	510	645	795	963
BS Grade A	5	10	18	29	43	60	90	150	239	359	490	670	933	1196
BS Grade S	13	26	48	78	114	167	233	407	646	957	1316	1794	2452	3230
BS Grade T	14	29	51	84	126	179	239	431	694	1029	1376	1974	2632	3529
BS Grade V	17	35	60	96	150	215	299	526	837	1256	1675	2393	3230	4247

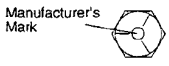
IMPERIAL SIZES - SAE GRADES

SAE Grade 1
26.8 tsi (414 Mpa)

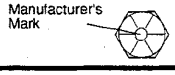


SAE Grade 5 (1 1/8" - 1 1/2")
46.9 tsi (724 Mpa)

SAE Grade 5 (1/4" - 1")
53.6 tsi (828 Mpa)



SAE Grade 8
67 tsi (1035 Mpa)



Unified Coarse (UNC) - Torques in N·m.

Size	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"
Threads/inch	20	18	16	14	13	12	11	10	9	8	7	7	6	6
T/Stress area (mm^2)	20.5	33.8	50	68.6	91.5	117.4	146	215	298	391	492	625	745	906
SAE Grade 1	4	9	16	25	38	56	78	138	221	335	467	670	861	1148
SAE Grade 5	11	22	40	62	101	140	196	348	550	830	1347	1860	2501	3270
SAE Grade 8	16	32	57	92	142	197	271	493	789	1184	1665	2343	3083	4131

Unified Fine (UNF) up to 1", and UN-8 TPI for dia 1 1/8" and above. Torques in N·m.

Size	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"
Threads/inch	28	24	24	20	20	18	18	16	14	12	8	8	8	8
T/Stress area (mm^2)	23.5	37.4	56.6	76.6	103	131	165	241	328	428	510	645	795	963
SAE Grade 1	5	10	18	29	43	60	90	150	239	359	490	670	933	1196
SAE Grade 5	12	25	45	73	107	157	219	382	606	898	1411	1924	2629	3463
SAE Grade 8	17	36	62	99	154	222	308	543	863	1295	1726	2466	3329	4378

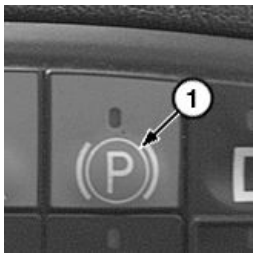
T121289

T121289 —19—16SEP99

CS33148,0000D1C -19-11AUG06-1/1

Park Brake Checks

CAUTION: Avoid possible injury. Machine may move forward when performing this check. Perform this check in an open area away from other people and machinery.



TX1064864A —UN—23SEP09

1— Park Brake Switch

Apply the service brakes.

Push D (drive) switch on the sealed switch module (SSM) to shift transmission into forward gear (switch LED on).

Push park brake switch (1) on the SSM to release park brake (switch LED off).

Release service brakes and slowly increase engine speed.

LOOK: Does machine move when engine speed is just above slow idle?

YES: Go to next step in this check.

LOOK: Does park brake indicator on MDU go OFF?

NO: See your authorized dealer.

CAUTION: Avoid possible injury. Machine will stop abruptly during this check. Fasten seat belt. Perform this check in an open area away from other people and machinery.

Apply the service brakes.

Transmission in drive, park brake released.

Release service brakes and allow machine to travel forward at slow speed.

When machine travel speed reaches approximately 5 km/h (3 mph), push park brake switch to engage park brake.

LOOK/FEEL: Does park brake engage and machine stops?

LOOK: Does park brake indicator on MDU come ON?

YES: Check complete.

LOOK/FEEL: Does transmission shift to neutral?

NO: See your authorized dealer.

Continued on next page

OUO1010,0000ED2 -19-30AUG10-15/26

Engine

Symptom	Problem	Solution
Starter Motor Turns Engine Too Slowly	Battery undercharged	Check battery charge. Charge or replace battery.
	Loose or dirty battery terminals	Tighten or clean battery terminals.
	Faulty engine ground connection	Repair, clean or tighten the connection.
	Incorrect grade of engine oil	Change oil. See Change Engine Oil and Replace Filter. (Section 3-6.)
Engine Hard Starting when Cold	Engine starter motor turns engine too slowly	Check battery charge. Charge or replace battery.
	Incorrect use of cold start function	Instruct operator on correct use.
Engine Turns, but Does Not Start	Insufficient fuel in fuel tank	Fill fuel tank and bleed fuel system. See Prime Fuel System. (Section 4-1.)
Engine Difficult to Start (Hot or Cold)	Starter motor turns too slowly	Check the battery charge. Charge or replace battery.
	Air in fuel system	Bleed fuel system. See Prime Fuel System. (Section 4-1.)
	Restricted air inlet	Service air filter system. See Service Engine Air Intake System. (Section 3-3.)
	Restricted exhaust system	Locate and repair restriction.
Engine Cuts Out Soon After Starting	Insufficient fuel in fuel tank	Fill fuel tank and bleed fuel system. See Prime Fuel System. (Section 4-1.)
	Air in fuel system	Bleed fuel system. See Prime Fuel System. (Section 4-1.)
	Blocked fuel tank air vent	Clean air vent and bleed fuel system. See Prime Fuel System. (Section 4-1.)
	Blocked fuel filters	Replace fuel filters. See Replace Primary Fuel Filter (Water Separator) and Replace Secondary Fuel Filter. (Section 3-8.)
	Air filter restriction	Service air filter system. See Service Engine Air Intake System. (Section 3-3.)
Engine Overheating	Engine coolant level too low	Fill radiator. See Check Engine Coolant Level. (Section 3-4.)

Continued on next page

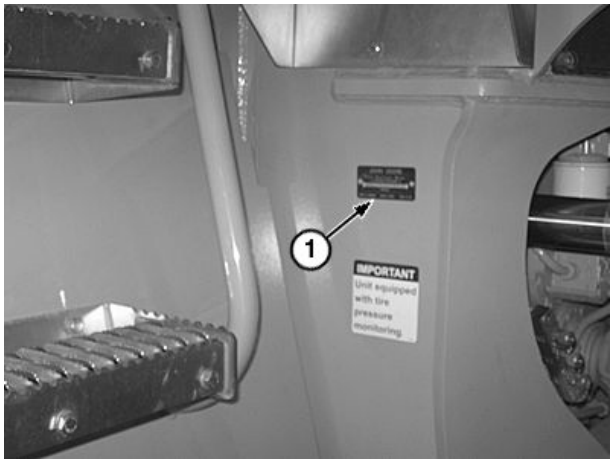
Miscellaneous—Serial Numbers

Record Product Identification Number (PIN)

PIN (1) _____
Purchase Date _____

NOTE: Record all 17 characters of the Product Identification Number.

1— PIN



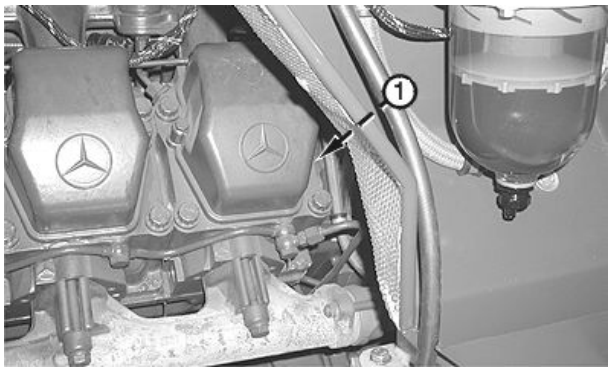
TX1065292A —UN—30SEP09

OU90V02,0000228 -19-14JAN11-1/1

Record Engine Serial Number

Engine Serial Number (1) _____

1— Engine Serial Number



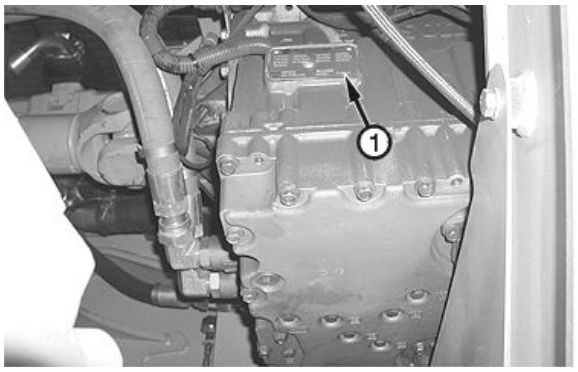
T144210B —UN—30JUL01

OU90V02,0000229 -19-30SEP09-1/1

Record Transmission Serial Number

Transmission Serial Number (1) _____

1— Transmission Serial Number



T144211B —UN—30JUL01

OU90V02,000022A -19-30SEP09-1/1

1— Height, Bin (Dump Body) Backsplash—Dumped
2— Height, Bin (Dump Body) Backsplash—Lowered
3— Height, Top of Bin (Dump Body) Side—Lowered
4— Height, Bin (Dump Body) Lip—Lowered
5— Height, Middle and Rear Axle Frame Oscillation Pivot
6— Height, Bin (Dump Body) Lip—Dumped
7— Clearance, Lower Articulation Pivot-to-Ground
8— Clearance, Front Axle Frame-to-Ground
9— Height, Cab Roof
10— Height, Exhaust Stack
11— Angle, Bin (Dump Body) Maximum
12— Angle, Maximum Approach
13— Length, Bin (Dump Body) Overall
14— Length, Bin (Dump Body) Lip-to-Rear Axle Centerline—Lowered
15— Length, Rear Axle Centerline-to-Middle Axle Centerline
16— Length, Middle and Rear Axle Frame Oscillation Pivot-to-Middle Axle Centerline
17— Length, Middle Axle Centerline-to-Front Axle Centerline—Articulation Frames Straightened
18— Length, Front Axle Centerline-to-Front of Bumper
19— Length, Bin (Dump Body) Lip-to-Front of Bumper—Lowered, Articulation Frames Straightened
20— Width, Bin (Dump Body) Overall
21— Width, Tire Tread Centerline-to-Tire Tread Centerline
22— Width, Tires Overall
23— Radius, Inside Turning
24— Radius, Outside Turning
25— Height, Machine Overall

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, specifications are based on a machine equipped with all standard equipment, 79 kg (175 lb) operator, and full fuel tank.

Item	Measurement	Specification
1—Bin (Dump Body) Backsplash—Dumped	Height	7240 mm 23 ft 9 in.
2—Bin (Dump Body) Backsplash—Lowered	Height	3810 mm 12 ft 6 in.
3—Top of Bin (Dump Body) Side—Lowered	Height	3200 mm 10 ft 6 in.
4—Bin (Dump Body) Lip—Lowered	Height	2378 mm 7 ft 10 in.
5—Middle and Rear Axle Frame Oscillation Pivot	Height	1410 mm 4 ft 8 in.
6—Bin (Dump Body) Lip—Dumped	Height	650 mm 2 ft 2 in.
7—Lower Articulation Pivot-to-Ground	Clearance	706 mm 2 ft 4 in.
8—Front Axle Frame-to-Ground	Clearance	560 mm 1 ft 10 in.
9—Cab Roof	Height	3810 mm 12 ft 6 in.
10—Exhaust Stack	Height	3890 mm 12 ft 9 in.
11—Bin (Dump Body) Maximum	Angle	70°
12—Maximum Approach	Angle	31°
13—Bin (Dump Body) Overall	Length	5820 mm 19 ft 1 in.
14—Bin (Dump Body) Lip-to-Rear Axle Centerline—Lowered	Length	1630 mm 5 ft 4 in.
15—Rear Axle Centerline-to-Middle Axle Centerline	Length	1960 mm 6 ft 5 in.
16—Middle and Rear Axle Frame Oscillation Pivot-to-Middle Axle Centerline	Length	978 mm 3 ft 3 in.

Continued on next page