

**2050M**  
**Tier 4**  
**Crawler Dozer**

*PIN NCDC25000 and above*  
*PIN NDDC25000 and above*  
*PIN NEDC20000 and above*  
*PIN NFDC20000 and above*

**OPERATOR'S MANUAL**

**Part number 47713577**

2<sup>nd</sup> edition English

April 2015

Replaces part number 84512675



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## Product identification

### Model, Product Identification Number (PIN), and year of manufacture

Record the machine Product Identification Number (PIN) and additional machine information including the model and the component serial numbers in the spaces below. Always supply this information to your dealer when you order parts, obtain information, or require assistance. Keep a record of these numbers and your Manufacturer's Statement of Origin in a safe place. If the machine is stolen, report the numbers to your local law enforcement agency.

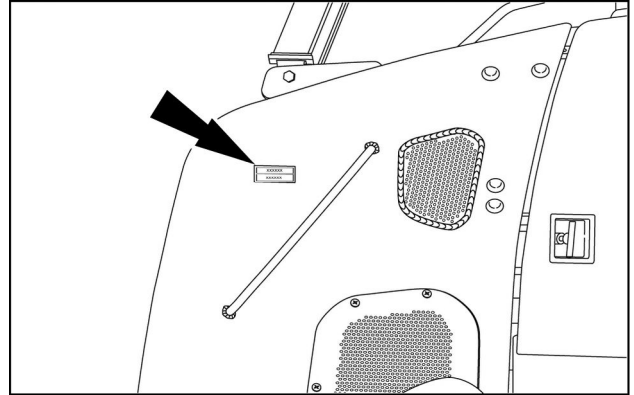
#### Machine identification

Model name

Product Identification Number (PIN)

Model year

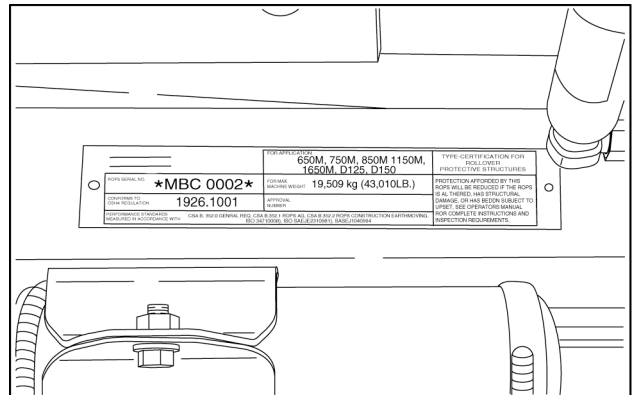
The PIN plate is located on the left-hand side of the machine in front of the engine access door.



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#### Roll-Over Protective Structure (ROPS)

The ROPS serial number plate is located in the left-hand rear access compartment.

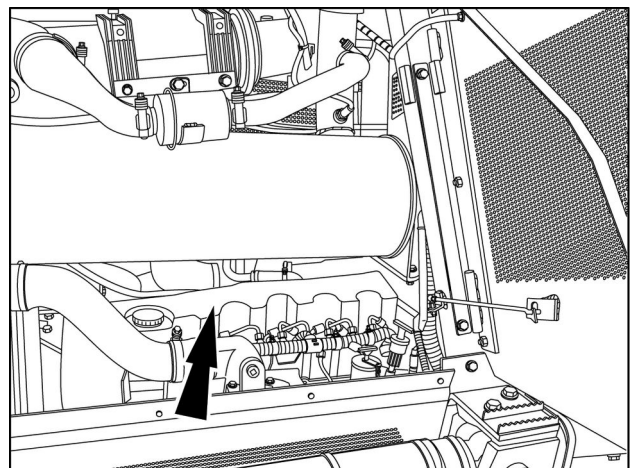


RAIL15DOZ0015AA 2

#### Engine make and model

#### Engine serial number

The serial number plate is on the engine valve cover.



RAIL13DOZ1693AA 3

## California Emission Control Warranty Statement

The California Air Resources Board and FPT Industrial S.p.A. are pleased to explain the emission control system warranty on your 2014 engine. In California, new heavy-duty off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. FPT Industrial S.p.A. must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, FPT Industrial S.p.A. will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts and labor.

### MANUFACTURER'S WARRANTY COVERAGE:

The 2014 and later heavy-duty off-road engines are warranted for 5 years or 3000 hours, whichever comes first. If any emission-related part on your engine is defective, the part will be repaired or replaced by FPT Industrial S.p.A.

### OWNER'S WARRANTY RESPONSIBILITIES:

- As the off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. FPT Industrial S.p.A. recommends that you retain all receipts covering maintenance on your off-road engine, but FPT Industrial S.p.A. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the off-road engine owner, you should however be aware that FPT Industrial S.p.A. may deny you warranty coverage if your off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- Your engine is designed to operate on (fuel) only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.
- You are responsible for initiating the warranty process. The ARB suggests that you present your off-road engine to a FPT Industrial S.p.A. dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact Technical Service at 630-917-0759.

### CALIFORNIA EMISSION CONTROL WARRANTY PARTS LIST

#### Fuel injection system:

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

#### Air induction system:

- Intake manifold
- Turbocharger system (includes exhaust manifold)
- Charge air cooler

#### Positive Crankcase Ventilation (PCV) system (if applicable)

- PCV valve
- Oil fill cap

#### Exhaust after treatment Devices (if applicable)

- Diesel Oxidation Catalyst (DOC)
- Diesel Particulate Filter (DPF)
- Selective Catalytic Reduction (SCR)
- Diesel Exhaust Fluid (DEF) tank and dispensing systems

#### Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

#### Cold Start Enrichment Systems

Electronic Control Units, Sensors, Solenoids, and Wiring harnesses used in above systems

## Safety rules — California Proposition 65 Warning

### 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.**

**Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.**

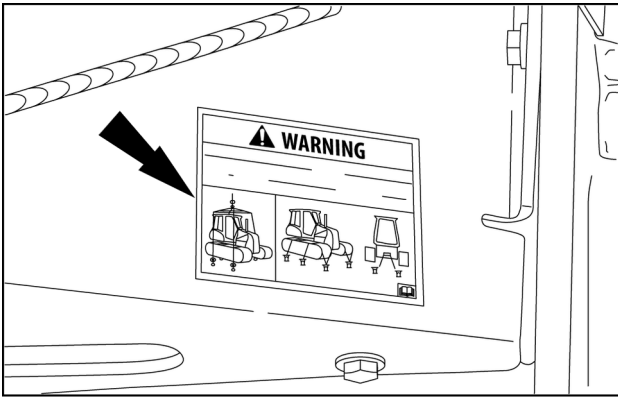
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#### California Proposition 65 Warning

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

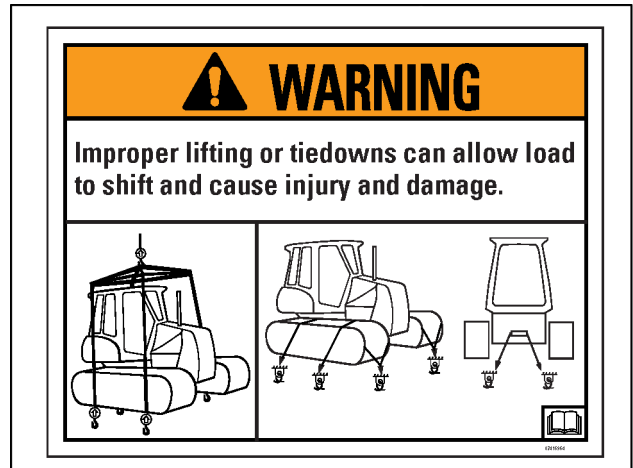
Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

**WARNING — Crush hazard**



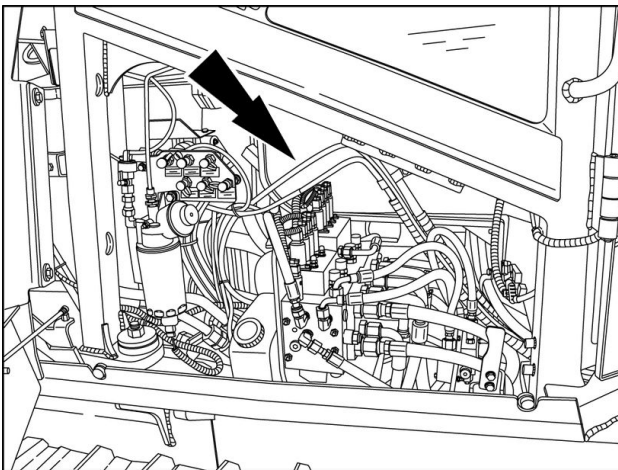
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This WARNING safety sign is located on the right-hand side of the machine above the tracks.  
**WARNING —** Improper lifting or tiedowns can allow load to shift and cause injury or damage. Failure to comply with this warning could result in death or serious injury.  
 English safety sign number: 87416964



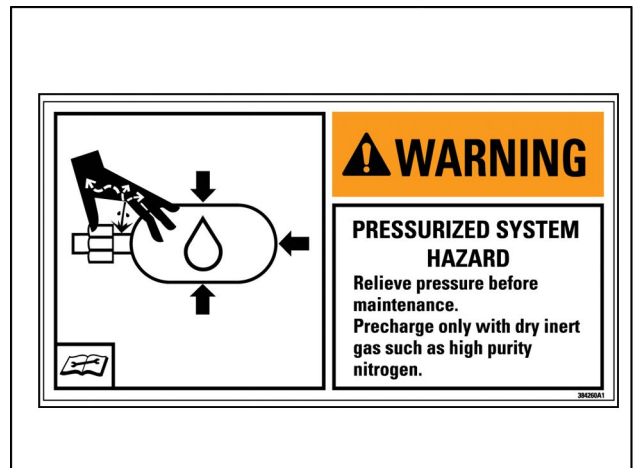
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**WARNING — Pressurized system hazard**



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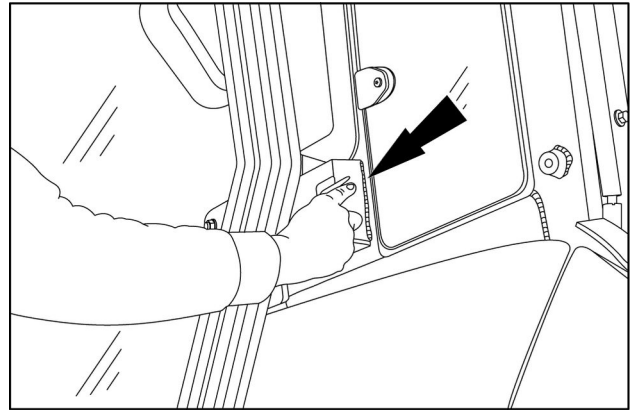
This WARNING safety sign is located inside the right rear service compartment.  
**WARNING —** Pressurized system hazard. Relieve pressure before maintenance. Precharge only with dry inert gas such as high purity nitrogen. Failure to comply with this warning could result in death or serious injury.  
 English safety sign number: 384260A1  
 French safety sign number: 328903A1  
 Spanish safety sign number: 328903A1



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### Exterior door latch

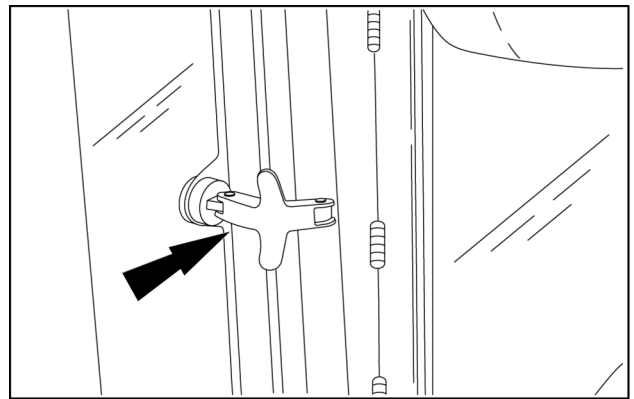
Push the lever down to unlatch the cab door from the open and locked position.



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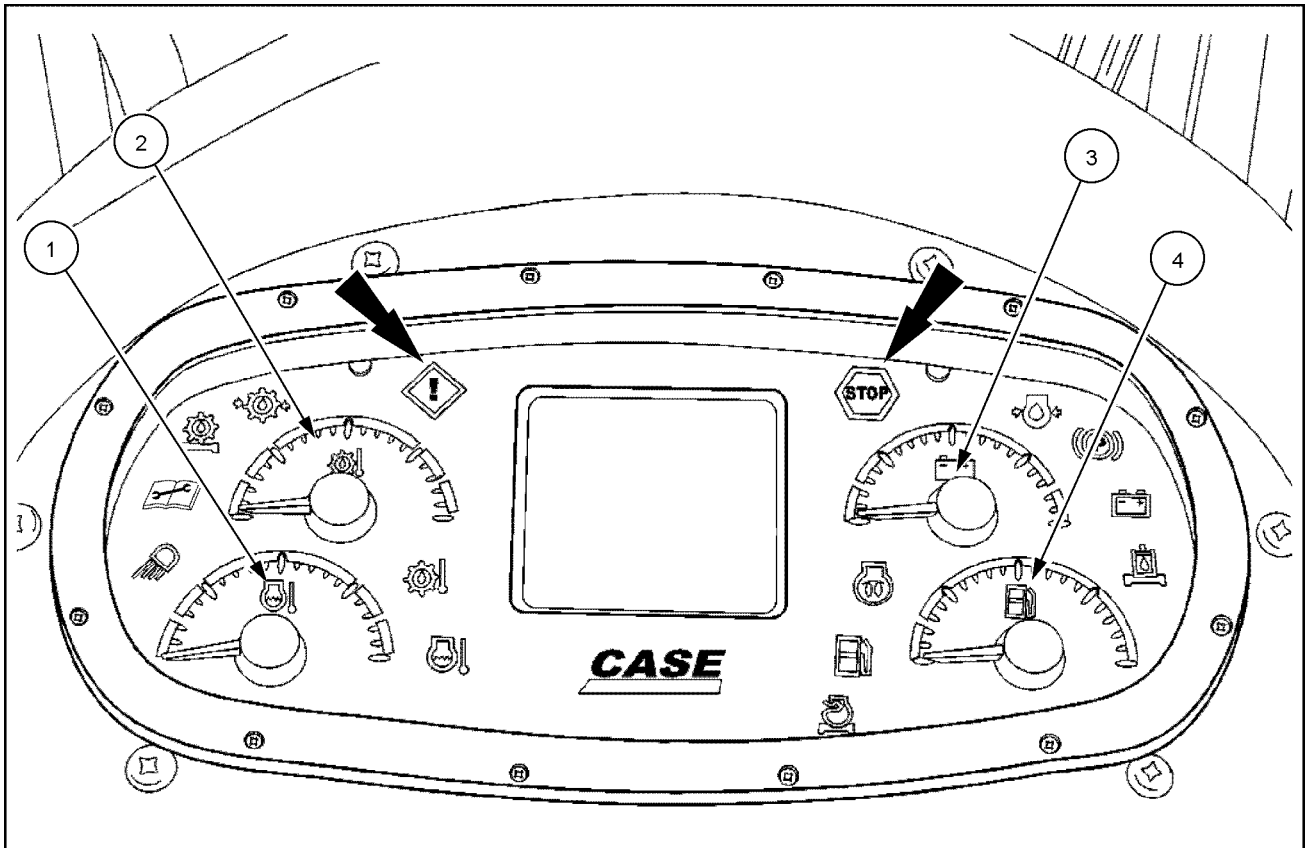
### Window latch

Rear side cab windows can be opened. Use the latch to open windows. Pull the latch towards the window to open.



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## Status and warning icons

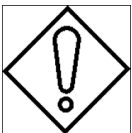


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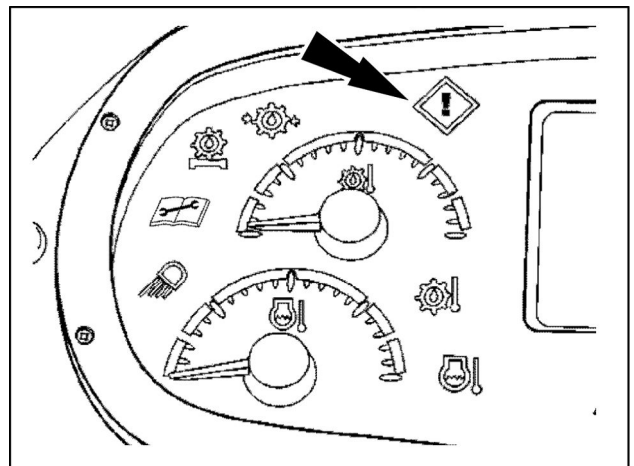
### Non-critical warnings

When a fault occurs, an audible alarm may sound and the caution master indicator will be yellow. The caution message will be displayed in the message area. If this occurs, return the machine to a service position, and turn the engine off. Take corrective action to help avoid expensive repairs.

#### Caution master indicator (Yellow-Non-critical)







The caution master indicator is a non-critical warning display. See the non-critical warning chart. When the caution master indicator is ON, change the operating method, schedule a shutdown for maintenance, or if the condition persists, contact your dealer. The non-critical warning table lists warning displays that may appear on the instrument cluster and the corrective action required.



RAPH12DOZ0138AA 2

**SCR system technical faults, failures, and engine power loss levels**

Visual display warning	Indicator light	Indicator light status	Audible alarm	Description
DEF/AdBlue Injection Failed Torque Limited"		Active	Active	SCR fault/failure detected. Up to <b>25 %</b> torque reduction within <b>25 min</b> of engine running time. Contact your local authorized dealer for repair.
DEF/AdBlue Injection Failed Power Limited"		Active	Active	SCR fault/failure detected <b>90 min</b> after the initial warning. Up to <b>65 %</b> torque reduction and <b>40 %</b> engine speed reduction within <b>40 min</b> of engine running time. Contact your local authorized dealer for repair.
DEF/AdBlue Injection Failed Power Limited"		Active	Active	SCR fault/failure detected <b>240 min</b> after the initial warning. Engine speed reduced to low idle within <b>30 min</b> of engine running time. Contact your local authorized dealer for repair.
DEF/AdBlue Injection Failed Power Limited"		Active	Active	Emergency re-start is active. No engine power loss. Engine will be reduced to low idle after <b>30 s</b> of continued operation. Contact your local authorized dealer for repair.

**Resetting the Selective Catalytic Reduction (SCR) system**

For DEF/AdBlue® storage tank fluid level faults, failures that can cause engine power loss:

- The DEF/AdBlue® tank level must be raised above **15 %** total volume.
- The key switch must be cycled to the Off position or throttle returned to low idle position.

For DEF/AdBlue® quality and SCR system technical faults, failures that can cause engine power loss:

- To fully reset the system, the component/failure causing the fault must be repaired or replaced.
- Switching off the engine will reset the system and the engine will restart at full power.
- If the same failure is re-detected within **40 h** of engine operation, the last active engine power loss level will be activated.
- If the same failure is detected three consecutive times within **40 h** of engine operation, maximum engine power loss will remain active after engine restart until the system is repaired.
- Please contact your authorized CASE CONSTRUCTION dealer for service.

**Emergency re-start**

**NOTE:** *Emergency re-starts are only enabled after the engine has been commanded to low idle.*

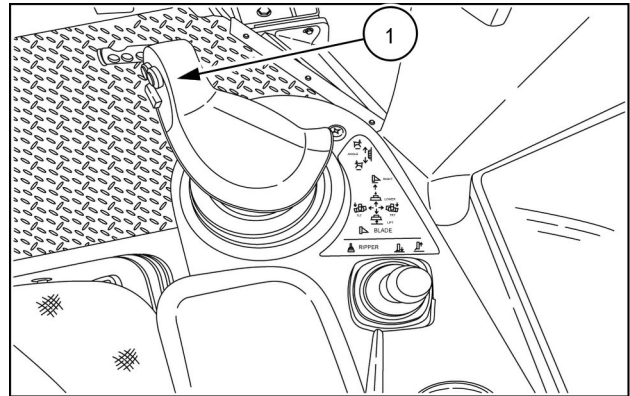
If full power loss is experienced, it may be impossible for the machine to move under its own power. Emergency re-starts are available to provide the capability to move the machine.

- Allows **30 s** of operation without power loss.
- After **30 s**, the engine is automatically reduced to low idle speed.
- There is no limit to the number of emergency re-starts

## RIGHT-HAND SIDE CONTROLS

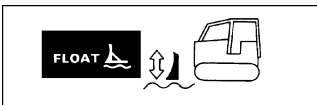
### Dozer blade control lever

The dozer blade control lever (1) is located on the right hand console. Position (A) FLOAT is the only position that the lever will remain in without the operator holding the lever. The blade will stop, and the lever will return to neutral or the HOLD position in any other position when the lever is released.



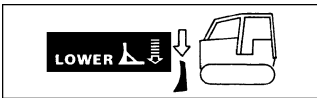
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#### Float



FLOAT (A) is a detent position. When in the FLOAT position, the blade can follow the level of the ground without movement of the control lever.

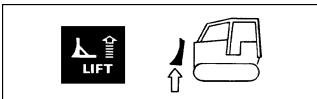
#### Lower



Push the control lever forward (B) to LOWER the blade. The control lever must be held in this position in order to lower the blade. When the lever is released, it will return to the HOLD position.

**NOTE:** A quick drop feature allows the blade to lower quickly. The further the joystick is moved forward, the more quickly the blade moves. To activate the quick drop, move the joystick to the end of blade down stroke before the float detent feel point.

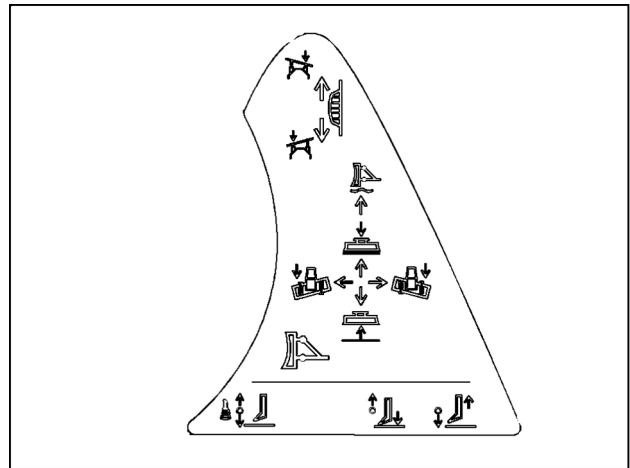
#### Raise



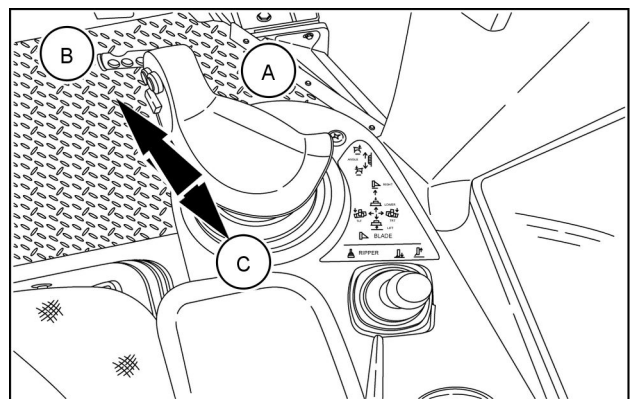
Move the control lever back to the RAISE (C) position to lift the blade. When the control lever is released, it will return to the neutral or HOLD position.

#### Hold

The blade will stop moving in the HOLD position. When released, the control lever will return automatically to the HOLD position. You must manually move the control lever from the FLOAT position to the HOLD position.



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## Telematics

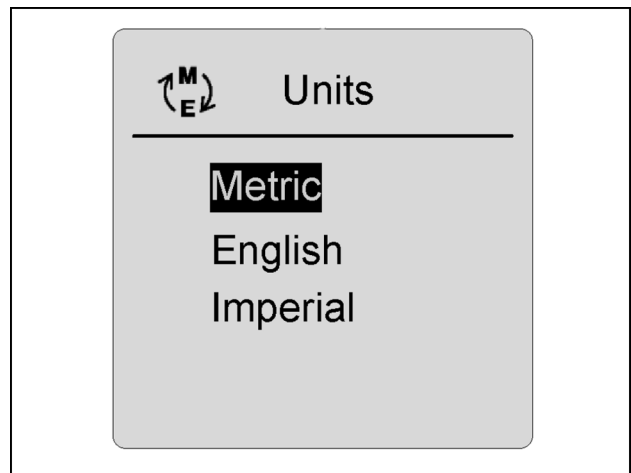
### **SiteWatch™**

This machine may be equipped with a telematics system. This is an asset-monitoring system that combines Internet, cellular, and GPS technologies. A transponder unit is mounted on the equipment that wirelessly communicates with the user interface CASE CONSTRUCTION **SiteWatch™** at [www.casesitewatch.com](http://www.casesitewatch.com). Using cellular technology, the transponder can send equipment data including location, on/off status, usage and production metrics, diagnostic data, movement alarms, and unauthorized usage to the interface. The system will help cut costs and keep accurate records. See the furnished guide for operating your telematics system.

**NOTE:** *The CASE CONSTRUCTION **SiteWatch™** website ([www.casesitewatch.com](http://www.casesitewatch.com)) will not be accessible until the CASE CONSTRUCTION **SiteWatch™** subscription for this machine is registered by an authorized CASE CONSTRUCTION dealer. Contact an authorized CASE CONSTRUCTION dealer for details.*

### Units

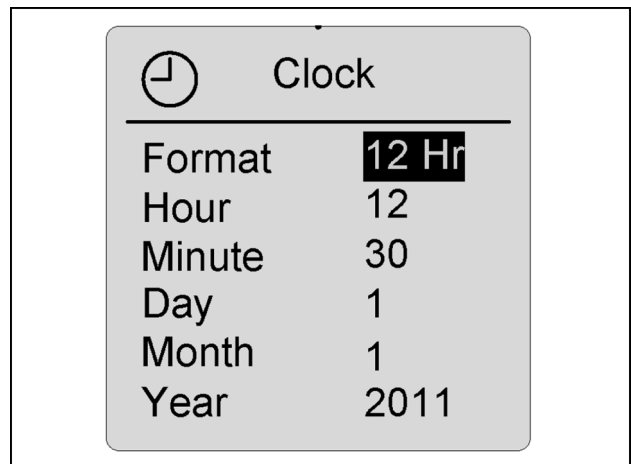
Units can be changed to metric, English, or Imperial units. Highlight the unit preference, and press the enter/confirm switch. Use to escape switch to lock the preference into memory.



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### Clock

Setting the hour and date - From the select screen, choose the clock designation, and press the enter/confirm switch. Use the arrow switch to show field for time and date by pressing the arrow switch. When the correct time and date have been entered by using the up and down arrow switch (up increases the numbers - down decreases the numbers), press the enter/confirm switch to lock in correct time. Press the escape switch to return to the main driving screen and lock selections into memory.



RCPH10WHL363BAH 4

### Display backlight menu

The display menu can be used to change the background and brightness of the screen. Use the arrow switch to make your selection from the display menu, and press the enter/confirm switch until the screen reverts to the main driving screen to lock the selection into memory. The screen display can be changed to suit working conditions. The screen will change to night function illumination when the head lamps are turned ON.



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## STOPPING THE UNIT

### Parking the machine

#### **⚠ WARNING**

##### **Fall hazard!**

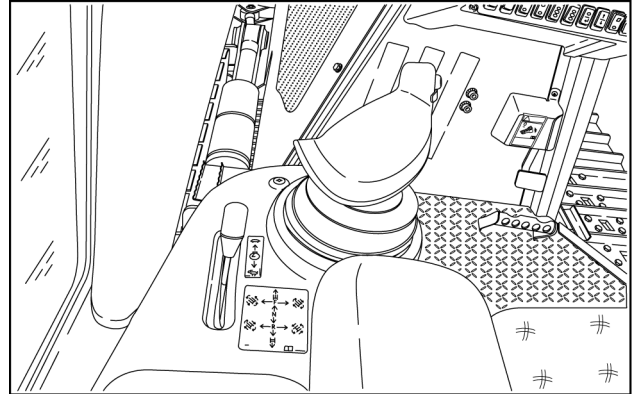
**Jumping on or off the machine could cause an injury. Always face the machine, use the handrails and steps, and get on or off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps. Failure to comply could result in death or serious injury.**

W0141A

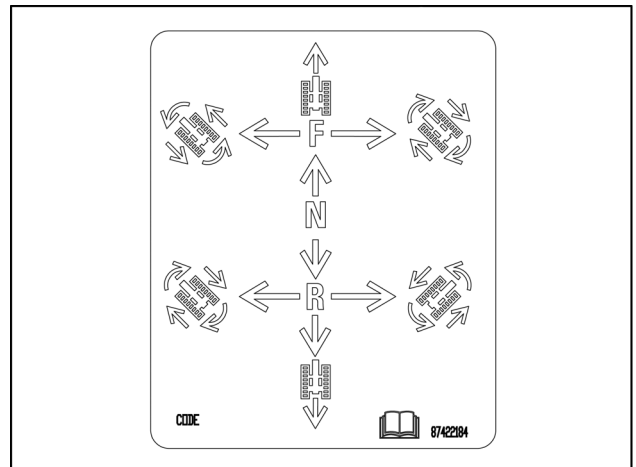
1. Park the machine on firm, level ground, and place the transmission in neutral.

**NOTICE:** *If you must temporarily park the machine on a hillside, put the front of the machine toward the bottom of the hill. Make sure the machine is behind an object that will not move.*

2. Lower the dozer blade and ripper (if equipped) to the ground.

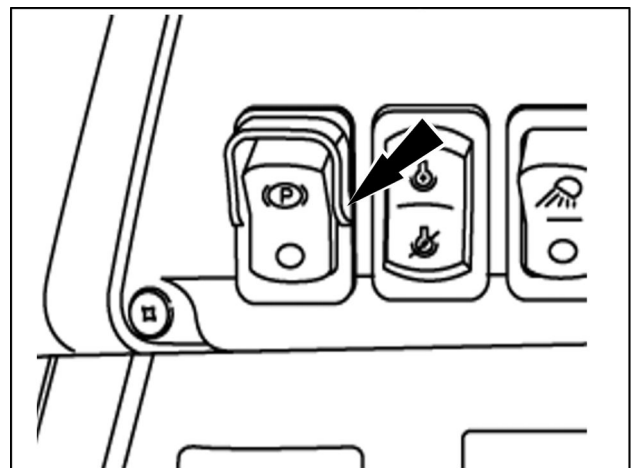


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RAPH12DOZ0149AA 2

3. Press the momentary toggle switch to engage the parking brake. The indicator light on the switch and instrument cluster will illuminate when the parking brake is engaged.
4. Run the engine at low idle speed for a few minutes if the engine has been working with a heavy load. This decreases the temperature of the engine parts evenly. The turbocharger may be damaged if the engine is not properly shut down.
5. Make sure the engine is at its lowest idle.
6. Turn the key switch to OFF to stop the engine.
7. When you park the machine, make sure the track system is clean. In cold weather, place the machine on planks. This will prevent the tracks from freezing to the ground.



RAPH12DOZ0133AA 3

## Hydrostatic drive speed controls

### ⚠ WARNING

#### Hazard to bystanders!

**Always sound the horn before starting the machine. Make sure the work area is clear of other persons, domestic animals, tools, etc. before you operate the machine. Never allow anyone in the work area during machine operation.**

**Failure to comply could result in death or serious injury.**

W0304A

The crawler has variable speed selections in either forward and reverse. Select a maximum speed in a range of 15 increments. Press the UP (1) or DOWN (2) button to move from one speed to another. This allows the operator to increase speed one increment at a time by each touch of the button. Move continuously through the drive speeds by holding the button in.

**NOTE:** The speed can only be increased to the maximum drive speed setting. The maximum drive speed setting can be adjusted. The highest speed from the factory is preset at 15.

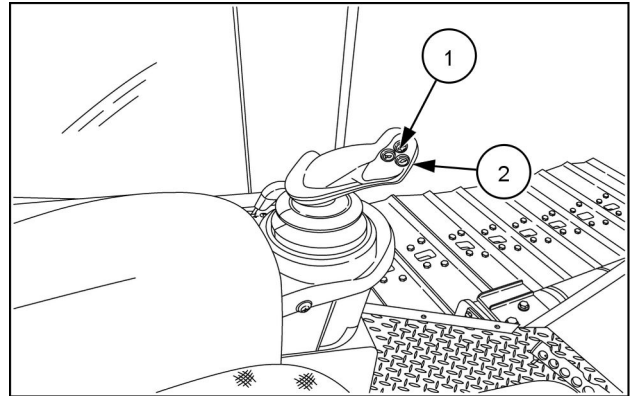
**NOTE:** The transmission speed will default to 8 when the crawler engine is turned off.

**NOTE:** The horn button is also located on the joystick. Always sound the horn before starting the machine.

The drive speed on the multi-function display shows the speed selected. When the crawler engine is initially turned on, the drive speed will default to 8.

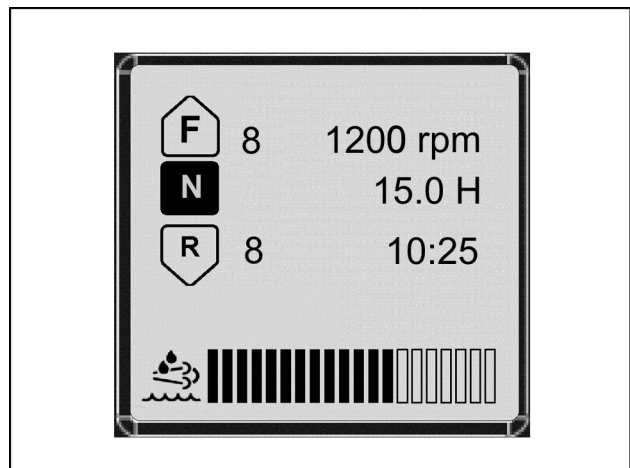
The multi-function display also shows the position of the direction control lever as Forward (F), Neutral (N), or Reverse (R). If the F or R flashes, the directional control lever must be returned to neutral before the crawler will move.

**NOTE:** The crawler will not move unless the engine speed is above approximately **1200 RPM**.



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1. Hydrostatic drive increase speed (Hare)
2. Hydrostatic drive decrease speed (Tortoise)



RAIL12DOZ0224AA 2

## Transporting by truck or trailer

### ⚠ WARNING

#### Driving hazard!

Know all rules, regulations, laws, and required safety equipment for transporting or operating this machine on a road or highway. See your dealer to obtain a rotating beacon, backup alarm, Slow Moving Vehicle (SMV) emblem, and other safety equipment.

Failure to comply could result in death or serious injury.

W0154A

### ⚠ WARNING

#### Transport hazard!

The machine can slip or fall from a ramp or trailer. Make sure the ramp and trailer are not slippery. Remove all oil, grease, ice, etc. Move the machine on or off the trailer with machine centered on the trailer or ramp.

Failure to comply could result in death or serious injury.

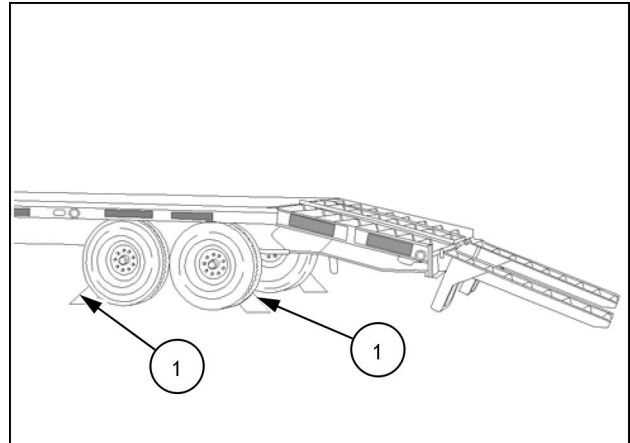
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## Transporting the machine by truck or trailer

**NOTICE:** Make certain the truck and trailer are adequate for the machine. The truck, trailer, and machine must be equipped with the correct safety equipment for transport. Wide load escorts may be required for some machines. Remove all dirt, mud, snow, ice, oil, or grease from the trailer and ramp before loading or unloading the machine.

Make sure you know the safety rules and regulations before transporting the machine. You must know the rules or laws for transportation and safety that are used in each area that you will be in. Make sure that the truck and machine are equipped with the correct safety equipment. Use care when loading a machine.

1. Put a block on both sides of the trailer wheels.
2. Move the crawler slowly onto the trailer. Place the direction control lever in the neutral position.
3. Lower the blade and ripper, if equipped, to the trailer.
4. Engage the parking brake.
5. Stop the engine, remove the key, and lock all access doors.



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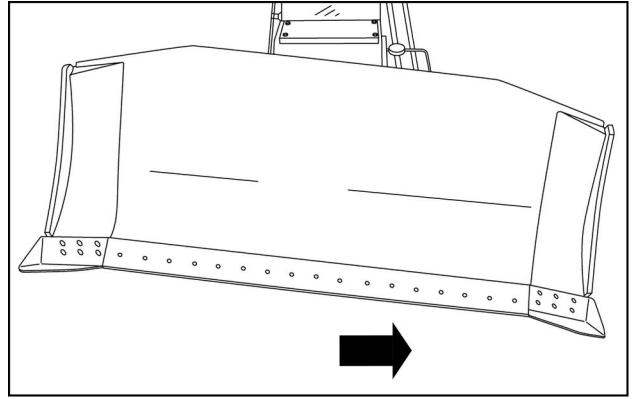


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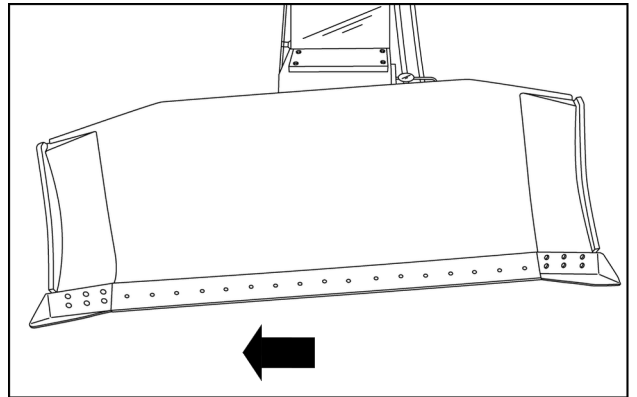
5. Tilt the blade fully to the left. Read and note the gauge information.

**NOTE:** Adjust the pitch link in or out to get a starting angle of about 7.0 °.



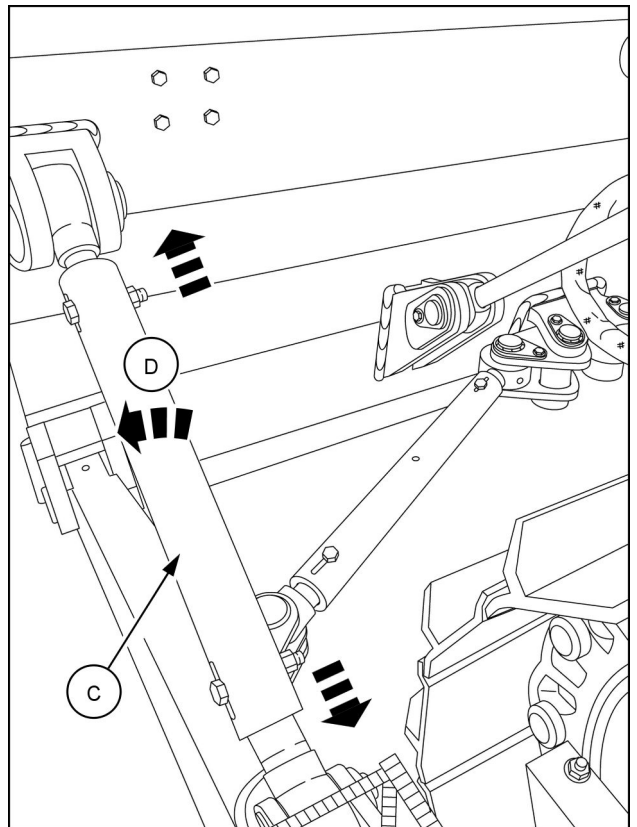
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6. Tilt the blade fully to the right. Read and note the gauge information.



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7. If the left-hand tilt angle is larger, adjust the pitch link (C) OUT (1/2 turn) (D).



RAIL14DOZ0529AA 6

## **Low Impact**

Track shoe grousers will completely penetrate the ground surface with little or no rock or other irregularities.

## **High Impact**

Track shoe grousers will not penetrate the ground surface. Large rock or large irregularities cause high impact on the undercarriage system. Rocky terrain causes bending, breaking, and chipping of the components. Reduce the machine speed, and use the smallest track shoes possible.

## **Packing**

Packing materials are materials that stick to or pack around the moving components. Tracks must be adjusted as often as required when working in this type of soil condition.

Packing materials cause a mismatch between components, particularly between the chain and sprocket. The packing materials tighten the chain causing increased stress and strain on links, pins, bushings, and the contact surfaces between mating parts. As mismatch occurs due to packing in the sprocket root, each track bushing rides higher in the sprocket. This condition causes rapid and severe forward and reverse wear, and a chain to sprocket "jumping" that is indicated by a loud "banging" and/or "popping" noise. This results in high impact loads that cause additional wear and cracking.

Packing conditions can also stop rollers from turning. When this happens, the track chain slides over that spot on the roller causing a flat spot. Packing materials increase the abrasive effect of most material by not allowing the material to escape. Wear will be accelerated.

When a packing problem continues, install relieved track sprockets.

Intermittent packing can also occur between some of the sprocket teeth. Intermittent packing can cause the track to tightened and release rapidly. This will cause the recoil spring to compress and release. A loud "banging" noise will result.

## **Extreme reverse loading**

Extreme reverse loading occurs when the machine backs uphill. The top of both track chains become tight, compressing the recoil springs. When the machine is driven forward, a loud "banging" noise may occur as one or both recoil springs release.

## **Track Shoes**

The shoes must provide adequate traction and flotation, but should be no wider than necessary. Flotation is the ability to stay on the surface of soft ground or mud. Correct flotation occurs when the grousers penetrate fully into the ground without letting the track shoes go below the surface.

Track shoes that are too wide can have a damaging effect on many of the undercarriage components. The middle of the track shoe is fastened to the track links, and the links act as a fulcrum and must absorb or transmit any leverage or twisting forces that occur as the machine moves over uneven or rocky terrain. All of the other components (sprockets, track rollers and idlers) resist and restrict the twisting forces of the links. This results in wear and damage caused by the twisting action. The twisting action can also damage the links, pins, bushings, and track plate mounting hardware.

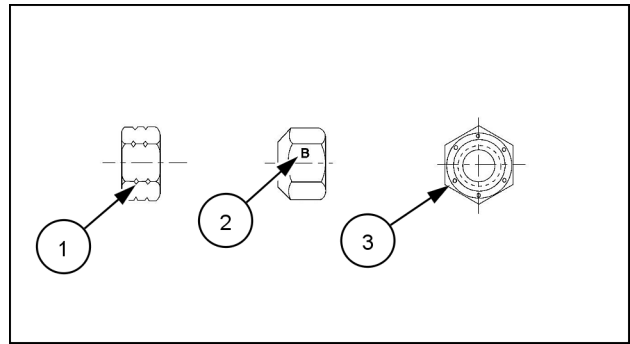
## **Wide track shoes effects:**

1. Resistance to turning - results in wear on the shoe corners and twists the track chain.
2. Bending, cracking or breaking the track shoes, shoe hardware and links.
3. Constant problems with loose shoe hardware that makes the bolt holes larger.
4. Increased wear on links, roller flanges and idler flanges caused by a constant twisting of the track chain.
5. Decreased pin and bushing life or decreased link life due to elongated pin and bushing bores. This is a result of the twisted links.
6. Possible loss of lubricant in the Lubricated Track pins. This will result in early pin and bushing wear.

**Inch locknuts, all metal (three optional methods)**

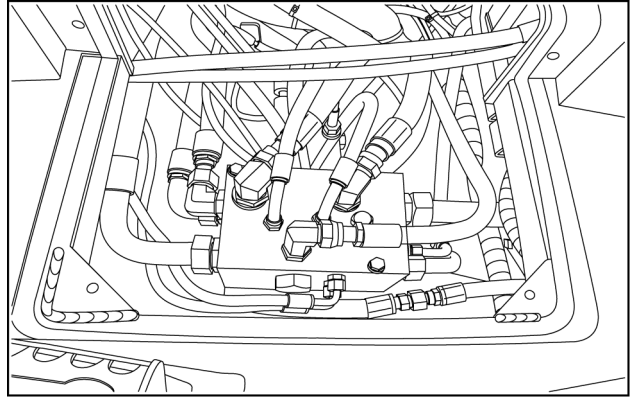
**Grade Identification**

Grade	Corner Marking Method (1)	Flats Marking Method (2)	Clock Marking Method (3)
Grade A	No Notches	No Mark	No Marks
Grade B	One Circumferential Notch	Letter B	Three Marks
Grade C	Two Circumferential Notches	Letter C	Six Marks



20090268 4

7. Remove bolts from the floor cover plate. This will allow access to valves and hoses beneath the cab.



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**MAINTENANCE CHART**

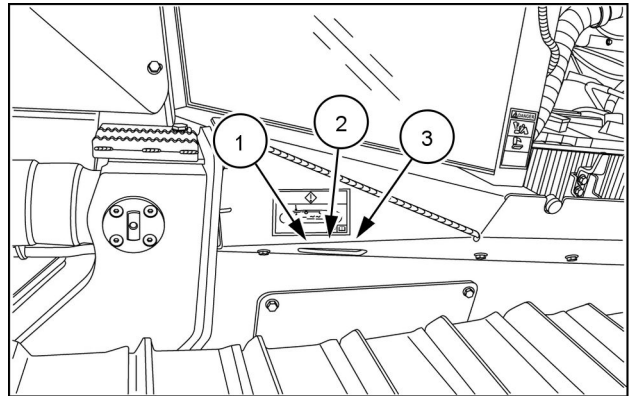
## Maintenance chart

Maintenance action	Cleaning					Change fluid		Page no.
	Check	Grease				Replace		
						Drain fluid		
Daily inspection								
General	x							7-27
Every 10 hours								
Engine oil	x							7-30
Engine coolant	x							7-31
Hydraulic oil	x							7-33
Grease points		x						7-34
Bulldozer blade (optional) grease points		x						7-39
Initial 20 hours								
Track shoe bolt torque	x							7-43
Every 50 hours								
Fuel pre-filter - Drain condensation			x					7-44
Initial 100 hours								
Change engine oil and filter (Initial)				x				7-45
Replace hydraulic oil filters (Initial)					x			7-48
Fuel filter (Initial)			x					7-50
Clean in-line Diesel Exhaust Fluid (DEF) supply filter (Initial)			x					7-52
Track tension (Initial)	x							7-54
Final drive oil (initial)							x	7-56
Every 500 hours								
Change engine oil and filter				x				7-58
Fuel filter					x			7-61
Battery electrolyte level	x							7-63
Every 1000 hours								
Fuel tank sediment							x	7-64
Fuel tank cap			x					7-66
Hydraulic reservoir breather			x					7-67
Final drive oil							x	7-69
Every 1500 hours								
Clean in-line Diesel Exhaust Fluid (DEF) supply filter	x							7-71
Drive belt						x		7-73
Engine breather filter and valve clearance						x		7-75
Every 2000 hours								
Engine coolant				x				7-76
Hydraulic and hydrostatic drive filter and fluid						x		7-79
Reservoir suction screen			x					7-82
Engine air filters						x		7-83
As required								
Track tension	x							7-87
Roll Over Protective Structure (ROPS)	x							7-89
Selective Catalytic Reduction (SCR) system - Replace supply module filter						x		7-92
Cab air filter - Recirculation filter						x		7-94
Selective Catalytic Reduction System (SCR) tank filter			x					7-96
Doors and windows		x						7-97
Ripper shanks and teeth						x		7-98
Battery service			x					7-100
Auxiliary battery connections	x							7-103

### Remote grease zerks

Left side

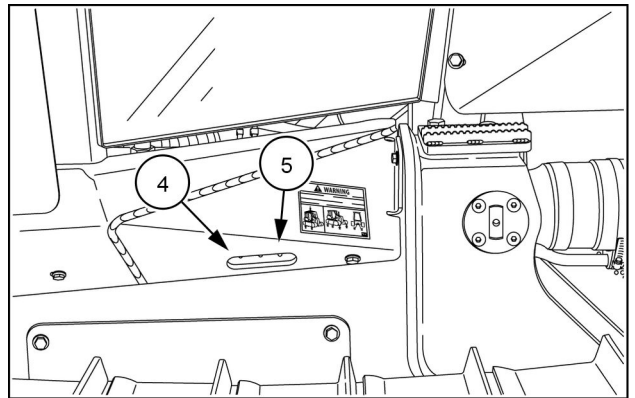
- (1) Left lift cylinder
- (2) C-frame
- (3) Equalizer beam



RAPH12DOZ0042AA 1

Right side

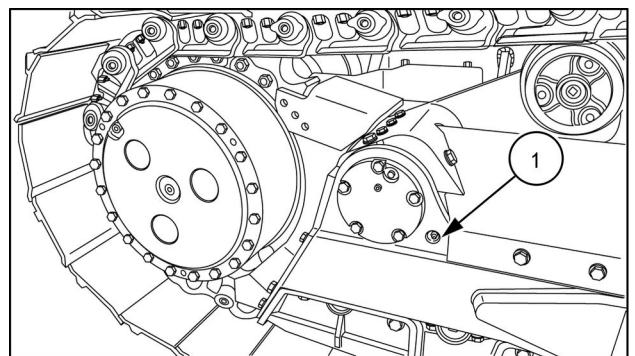
- (4) C-frame
- (5) Lift cylinder



RAPH12DOZ0061AA 2

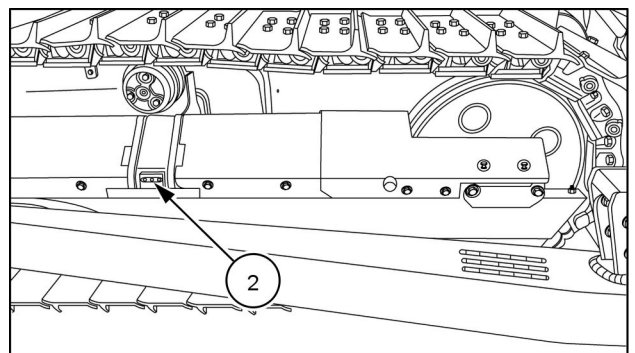
### Grease zerks

Pivot shaft (1)



RAIL14DOZ0400AA 3

Equalizer beam (2)



RAIL14DOZ0394AA 4

**Initial 100 hours**

**Change engine oil and filter (Initial)**

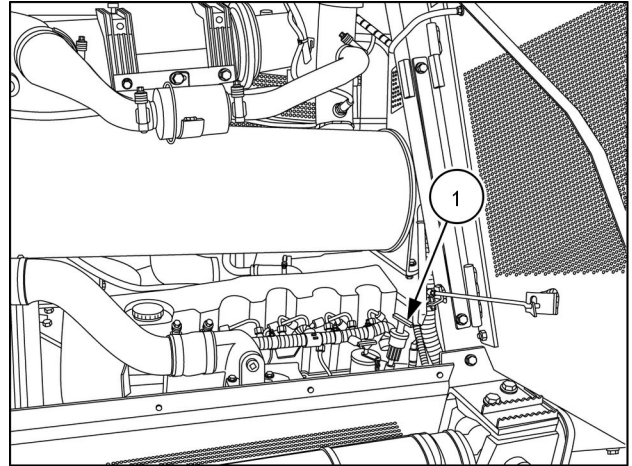
Change the engine oil and filter when the hour meter registers 100 hours for a new machine during the initial run-in period. The engine oil and filter should be changed every 500 hours thereafter or more frequently when the engine operating conditions are severe.

**Prior operation:**

Keep all unauthorized personnel clear of the area. Park the machine on level ground, in neutral with the parking brake applied, and the attachment lowered to the ground. Make sure that all residual pressure is relieved from circuits before beginning maintenance.

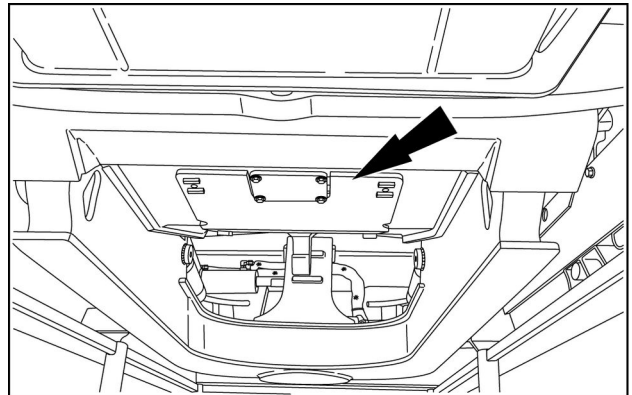
Service specifications	
Type of oil	CASE AKCELA UNITEK NO. 1™ SBL CJ-4 SAE 10W-40
Capacity (with filter change)	16.4 l (17.3 US qt)
Capacity (without filter change)	15.6 l (16.5 US qt)

1. Open the left front and right front access door and secure with door strut.
2. Oil will drain faster if the oil is warm (not hot) and the dipstick (1) is removed.
3. Use a suitable container to collect the drained oil.



RAIL13DOZ1693AA 1

4. Remove the bolts that secure the engine oil access plate under the engine.



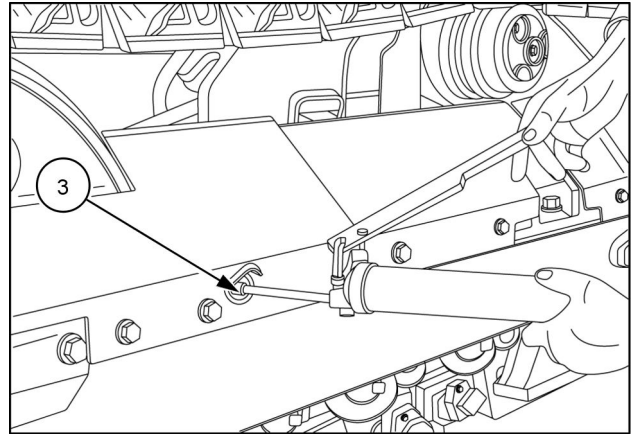
RAPH12DOZ0095AA 2

**NOTE:** If the machine is so equipped, and the special draining equipment is available, use the engine environmental drain located in the left side engine access door.

### Increase the track tension

Use the track adjuster grease fitting to adjust track tension. Adding grease will increase and tighten the track deflection.

1. Pump grease into the fitting **(3)** until deflection is correct.
2. Move the machine backward the length of the track, and then forward the length of the track. This will make the bottom of the track tight. Bring the machine slowly to a stop. Do not use the brakes to stop.
3. Check the deflection of the track again and adjust, if necessary.
4. Repeat the procedure for the other track.



RAIL12DOZ0374AA 3

### Decrease the track tension

**⚠ WARNING**

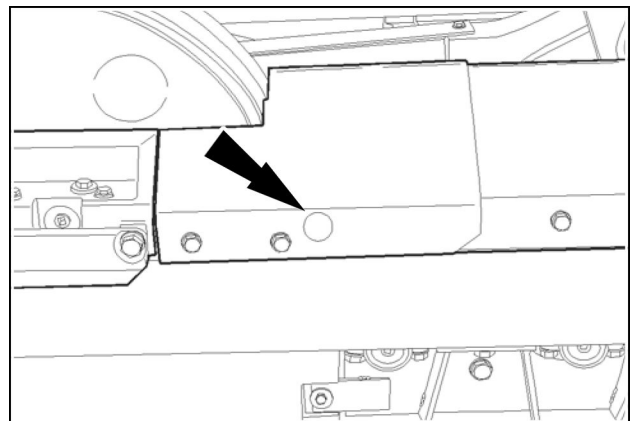
**Flying object!**  
**Always wear eye or full face protection when performing this procedure.**  
**Failure to comply could result in death or serious injury.**

W0313A

Decrease the track tension with an adjustment to the ball check fitting.

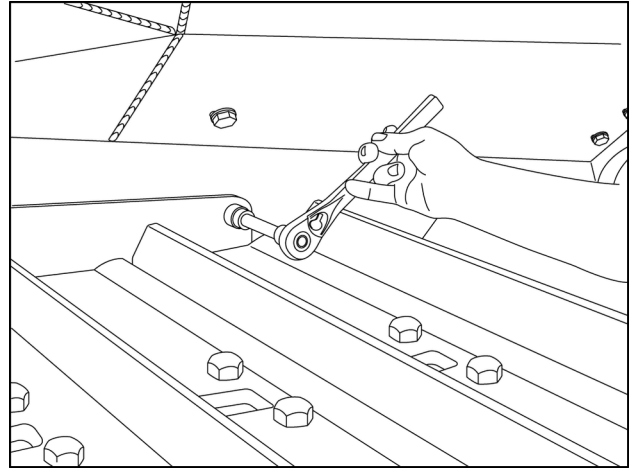
The grease is **UNDER EXTREME PRESSURE**. Be careful to back the ball check adjustment off **SLOWLY**. Wear full coverage face protection before proceeding.

1. Use a **3/4 in** deep socket, and loosen the ball check fitting **SLOWLY** about two turns. **DO NOT** remove the adapter. Allow the grease to evacuate until the track deflection is within the proper range.
2. When complete, re-torque the ball check to **59.7 - 74.6 N·m (44 - 55 lb ft)**.
3. Move the machine backward the length of the track, and then forward the length of the track. This will make the bottom of the track tight. Bring the machine slowly to a stop. Do not use the brakes to stop.
4. Recheck the track tension.
5. Repeat the procedure for the other track.



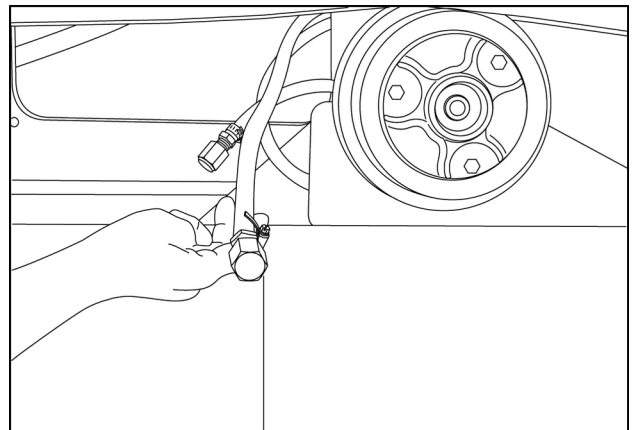
RCIL10CWL080AAL 4

2. Remove the bolts and remove the panel.



RAIL12DOZ0410AA 2

3. Pull the fuel tank drain hose forward, and remove the fitting.
4. Open the fuel shut off valve located on the fuel tank, and drain the water and sediment into a suitable container.



RAIL12DOZ0412AA 3

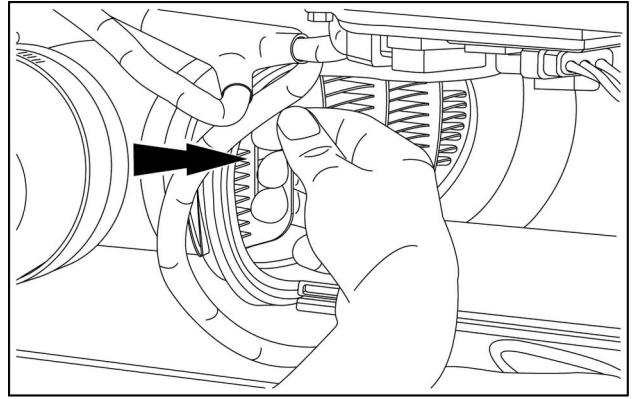
**NOTE:** The fuel tank shut off valve is accessible through the right rear access panel or by removing the cab floor access panel and tilting back the seat.

5. Turn the shut off valve to the closed position after only clean fuel is discharged. Replace the fitting on the hose.
6. Replace the hoses within the panel and wire tie, if necessary.
7. Check for leaks.
8. Replace the bolts and the cover panel.

## Engine breather filter and valve clearance

The crankcase breather filter should be replaced when the hour meter registers 1500 hours. The engine breather filter should be changed every 1500 hours thereafter or more frequently when operating conditions are severe. Check engine valve clearance at 1500 hours and every 1500 hours thereafter. See your authorized dealer for these procedures or refer to the Service Manual for this machine.

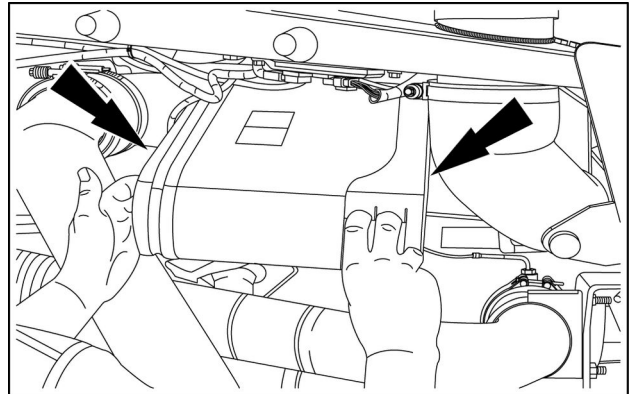
8. Snap the filter element in place with the handle facing toward the front of the machine.



RAIL13DOZ0784AA 8

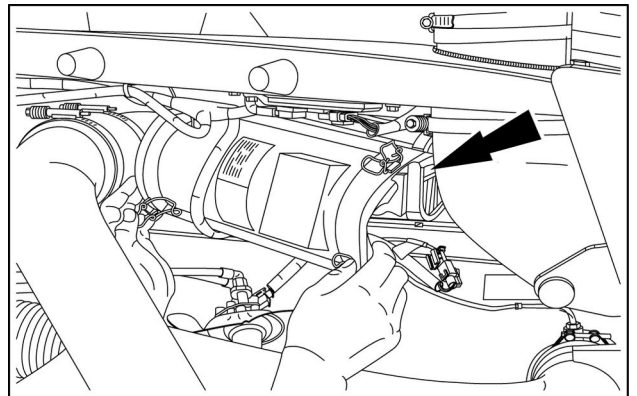
**NOTE:** Make sure the filter is sealed flush.

9. Fit the larger filter element inside the air cleaner housing. Slide the filter element in until it snaps into place.



RAIL13DOZ0782AA 9

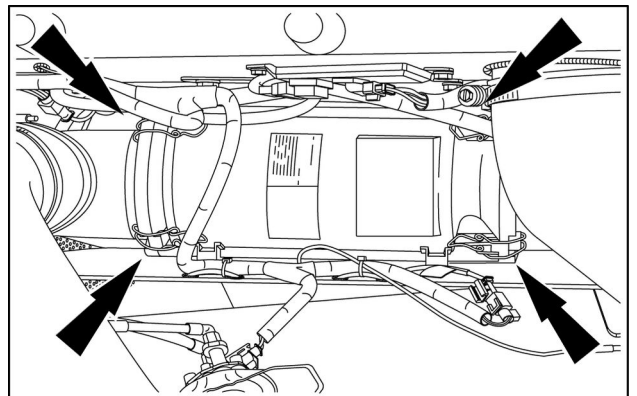
10. Place the air cleaner housing side cover over the pegs of the main housing.



RAIL13DOZ0780AA 10

**NOTE:** Do not force the U-clips to close. If the U-clips are difficult to close, check the housing cover for proper alignment.

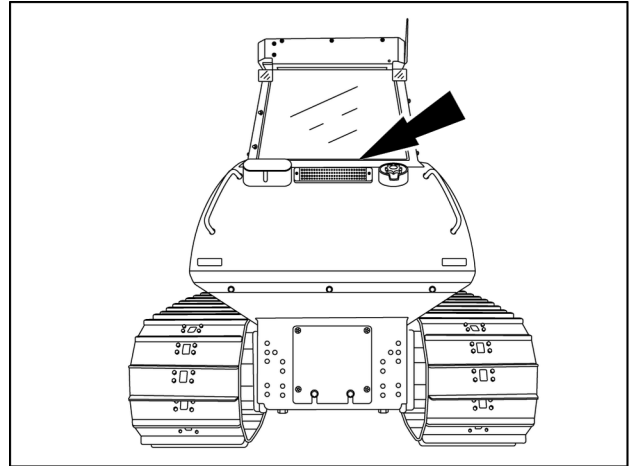
11. Engage the U-clips to secure the housing cover.



RAIL13DOZ0778AA 11

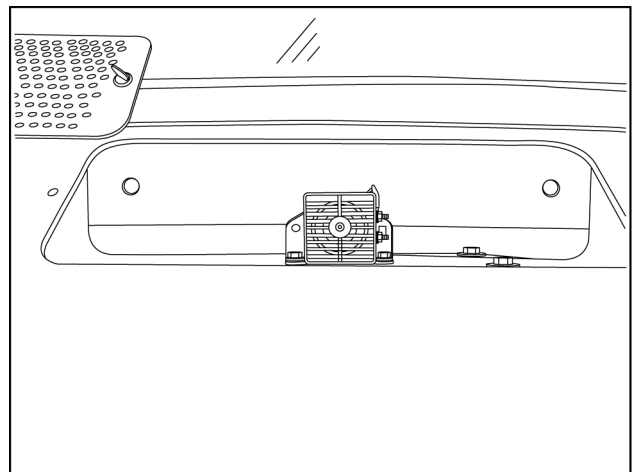
### Cab air filter

1. Locate the cab air filter behind the operator's compartment.
2. Remove the screws from the cab air filter cover, and remove the cab air filter cover.



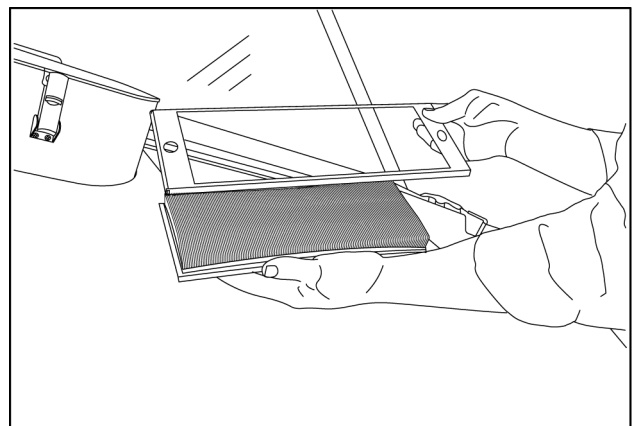
RAIL12DOZ0396AA 3

3. Remove the inner cover.
4. Remove the old filter and filter mounting bracket.
5. Wipe the inside of the cab air filter housing.



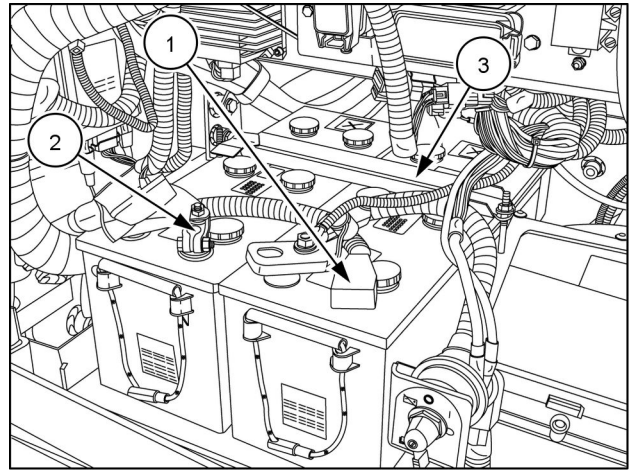
RAIL12DOZ0187AA 4

6. Replace the cab air filter with a new one, installing the filter into the cab air filter mounting bracket.
7. Replace inner air filter cover, tightening bolts securely.
8. Replace the outer metal cover and tighten screws.

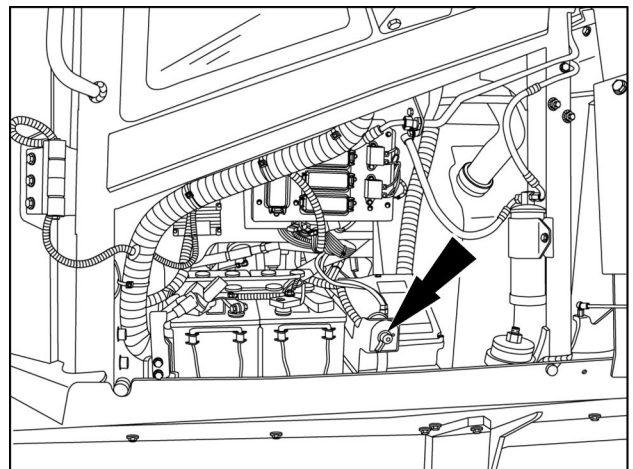


RAIL12DOZ0186AA 5

2. Remove the terminal protection caps (1) from the battery.
3. Disconnect the cables (2) from the negative terminal, then disconnect the cables from the positive terminal.
4. Remove the screws, the washers, and retainer bracket (3) from the battery.
5. Install a new battery of the correct voltage. Center the battery retainer bracket (3) evenly on both batteries. Torque the battery retainer bracket fasteners to **3.4 - 5.4 N·m (2.5 - 4.0 lb ft)**.
6. Clean the cables. Coat new battery terminals with grease or anti-sulfide spray.
7. Reconnect the positive cable end to positive terminal first. Reconnect the negative cable end to the negative terminal.
8. Torque the battery terminal nuts to **21.5 - 24.0 N·m (15.9 - 17.7 lb ft)**
9. Install the terminal protection caps (1).
10. Turn electronic disconnect to the ON position.



RAIL13DOZ1700AA 2



RAIL13DOZ1702AA 3

## 8 - SPECIFICATIONS

### Fluids and lubricants

#### Fluids and lubricants

Engine crankcase	
Capacity with filter change	16.4 L (17.3 US qt)
Capacity without filter change	15.6 L (16.5 US qt)
Specifications	CASE AKCELA UNITEK NO. 1™ SBL CJ-4 SAE 10W-40
Fuel tank	
Capacity	405 L (107 US gal)
Selective Catalytic Reduction System — DEF/AdBLUE®	
Capacity	52 L (14 US gal)
Cooling system	
Capacity	30.28 L (8.0 US gal)
Specifications	50 % Water and 50 % CNH XHD HEAVY DUTY COOLANT / ANTI-FREEZE or CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT. Depending on the date of manufacture, the machine could have either coolant type. Machines with OAT coolant will have a decal near the fill location. Never mix conventional coolant with OAT coolant. See 7-22 for instructions on switching coolant types.
Hydraulic reservoir/Transmission refill	
Capacity	210 L (55 US gal)
Specifications	TUTELA AUTO SUPREME™ ENGINE OIL SAE 10W-30
Final drives	
Capacity - Each Side	25.0 L (26.4 US qt)
Specifications	CASE AKCELA GEAR 135 H EP 85W-140
Grease fittings	
Quantity	As Required
Specifications	TUTELA MOLY GREASE GR-75

**NOTE:** If the ambient temperature is lower than -37 °C (-34.6 °F), adjust the mixture according to the coolant manufacturer specifications.

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