ORIGINAL INSTRUCTIONS

580N
580SN
580SN WT
590SN
Tier 3

Tractor Loader Backhoe

580N - PIN NHC741731 and above
580SN - PIN NHC744173 and above
580SN WT - PIN NHC745538 and above
590SN - PIN NHC747050 and above

OPERATOR'S MANUAL

Part number 51409967
2nd edition English
October 2017
Replaces part number 48096099

CASE CONSTRUCTION

CLICK HERE TO DOWNLOAD THE COMPLETE MANUAL

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Electro-Magnetic Compatibility (EMC)

Interference may arise as a result of add-on equipment which may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine.
- The add-on equipment must not interfere with the functioning of the onboard electronics.

Failure to comply with these rules will render the warranty null and void.

When, due to exceptional circumstances, you decide to keep the engine running after you leave the operator's station, then you must follow these precautions:

1. Bring the engine to low idle speed.
2. Disengage all drive systems.

⚠ WARNING

Some components may continue to run down after you disengage drive systems. Make sure all drive systems are fully disengaged.
Failure to comply could result in death or serious injury.

W0113A

3. Move the operator's seat to the backhoe operating position and choose one of the following backhoe positions:
   - Move the backhoe into the stowed position and from the operator's seat install the backhoe swing lock pin. See **6-25**.
   - Lower the backhoe bucket or other attachment to the ground.
4. Shift the transmission into neutral.
5. Apply the parking brake.

⚠ General maintenance safety ⚠

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

Close all access doors and install all panels after servicing the machine.

Always make sure that working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless the equipment is securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When you tow a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before you weld on the machine. Always wash your hands after you handle battery components.

Safety rules - Specific precautions to this machine

- From the operator's platform, install the backhoe swing lock pin when the backhoe is not in use and before all other operation.
- Keep operator's platform clean. Never transport items in the operator's platform.
- Keep the load or tool as low as possible while moving the machine around the work site.
- Adjust the rear window before actuating the backhoe hydraulics. The rear window could come into contact with the control lever.
- Pilot control machines are equipped with two backhoe control patterns. You must know which pattern the machine is in, before operating the machine (actuating the hydraulics).
- Release all hydraulic pressure before servicing the machine.
- You must know which circuits have accumulators and how to release pressure properly.
- Always use the lift arm support strut when servicing the machine with lift arms up.

When using the backhoe:

- Position the stabilizer pads for maximum stability.
- Install a guard rail and warning signs to keep other persons away from the machine if operating in an area with reduced visibility, such as a building.
- Place the direction control lever and the transmission in neutral and apply the parking brake before turning the operator's seat around to the backhoe position.
- Ensure the seat is locked into position.
- Know which control pattern is engaged before actuating the hydraulics (pilot control machines only).
- Use caution when swinging the backhoe completely to the side to prevent contact with the stabilizers.

Safety signs

⚠ WARNING

Avoid injury!
Make sure safety signs are legible. Clean safety signs regularly. Replace all damaged, missing, painted over, or illegible safety signs. See your dealer for replacement safety signs. If a safety sign is on a part that is replaced, make sure the new part has a safety sign.
Failure to comply could result in death or serious injury.

W0168A

The following safety signs are on your machine as a guide for your safety and for the safety of those working with you. Walk around the machine and note the content and the location of all safety signs before you operate your machine.

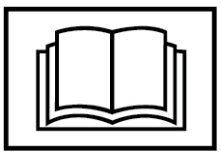
Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

NOTICE: *Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.*

Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

Read operator's manual symbol

Safety signs that display the "Read operator's manual" symbol direct you to the operator's manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety sign displays this symbol, consult the appropriate page of the operator's manual.



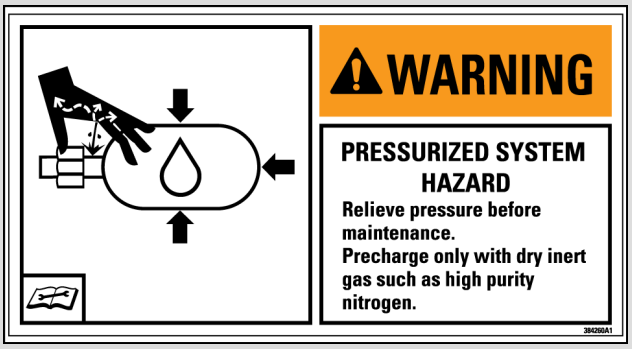
Read service manual symbol

Safety signs that display the "Read service manual" symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.

(11) Pressurized system. Machines with Ride Control™ only.

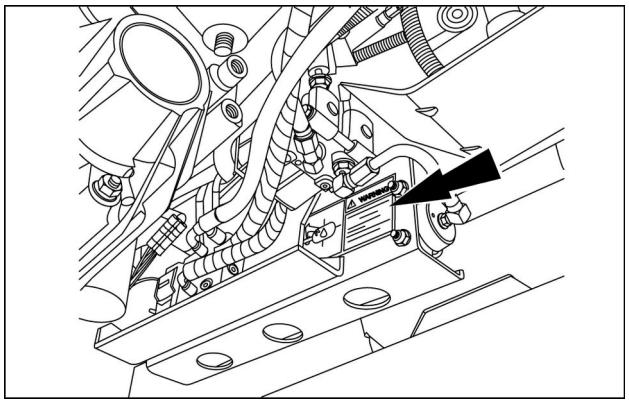
WARNING
Pressurized System hazard. Relieve pressure before maintenance. Precharge only with dry inert gas such as high purity nitrogen. Failure to comply could result in death or serious injury.

Quantity: 1
English 384260A1
Spanish 398572A1
French Canadian 398573A1
Portuguese 84149134



384260A1 24

Location:
On the **Ride Control™** mounting bracket.



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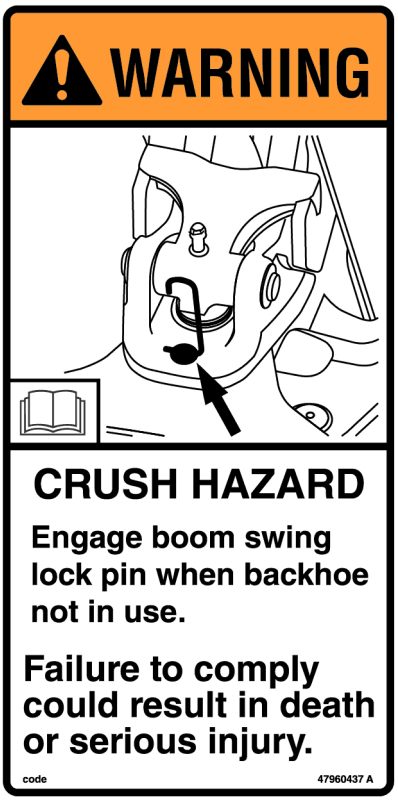
(25) Crush hazard

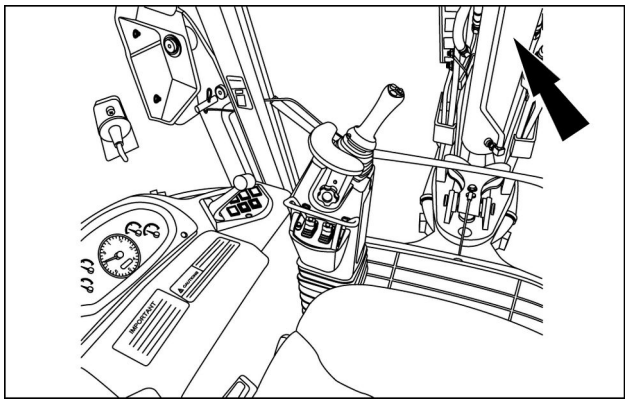
WARNING
CRUSH HAZARD
Engage boom swing lock pin when backhoe not in use. Failure to comply could result in death or serious injury.

Quantity: 1
English 47960437
Spanish 47961438
French Canadian 47961439
Portuguese 47819628



47960437A 52

Location:
On the boom cylinder.



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3 - CONTROLS AND INSTRUMENTS

Access to operator's platform

Machine access

⚠ 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

⚠ WARNING

Fall hazard!
Clean the steps and access handles to remove all traces of grease, oil, mud, and ice (in winter).
Failure to comply could result in death or serious injury.

W0139A

⚠ WARNING

Unexpected movement!
Always engage the parking brake and switch off the engine before exiting the machine.
Failure to comply could result in death or serious injury.

W0209A

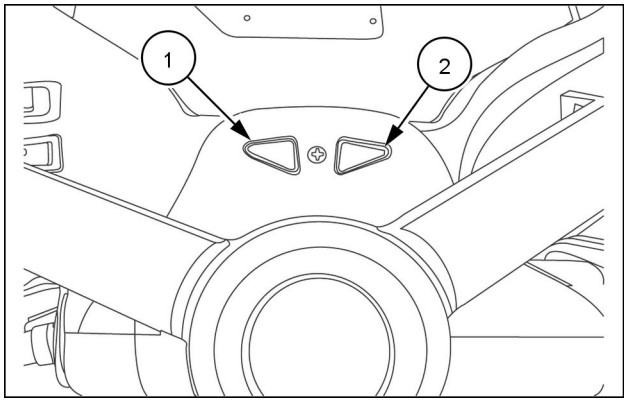
⚠ WARNING

Fall hazard!
When entering or exiting the cab, never use the control levers as handholds. Always mount and dismount the machine in a safe way. Maintain a three-point contact with steps, ladders, and/or handholds.
Failure to comply could result in death or serious injury.

W1340B

Turn signal display

When a turn signal direction is selected from the control lever, the corresponding green lamp in the display illuminates.



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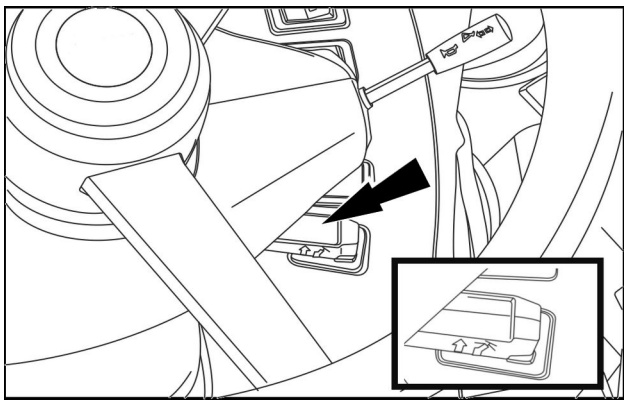
(1) Illuminates when the left turn signal is active.
(2) Illuminates when the right turn signal is active.

Steering wheel tilt lever, if equipped

Pull the lever up toward the operator to adjust the steering wheel. Release the lever when the desired position is reached. Gently pull and/or push on the steering wheel to confirm the steering wheel locks into position.



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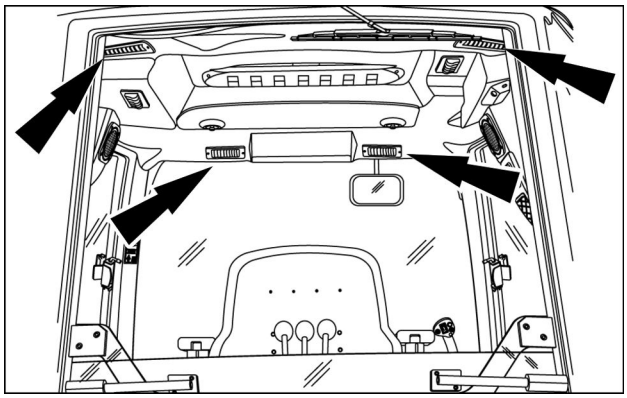
Air circulation control

The air louvers in this cab are adjustable and can be completely closed. Move the two bars in each louver to the center to stop air flow. Move each bar outward to start enable flow.

Defrost:

There are two louvers in the front of the cab and two in the rear of the cab. To get maximum air flow, close the recirculation grille in the center of the cab and the two main louvers by the center posts.



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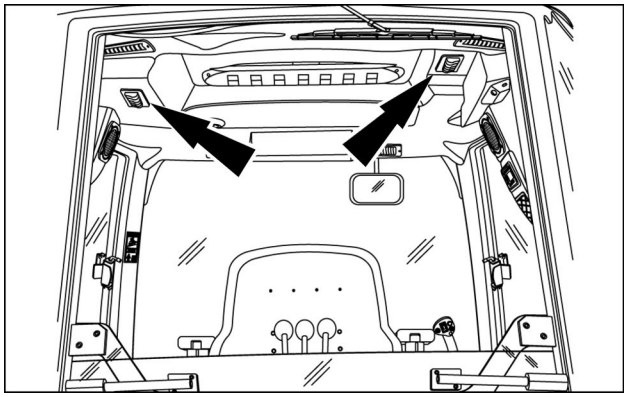
Main:

The two louvers by the B-posts are used to direct the flow of air for heating and cooling.



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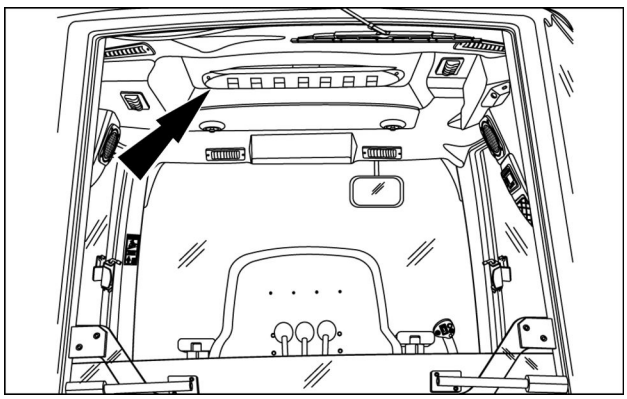
Recirculation grille:

The grille between the main louvers is used for recirculation of the cab air. To get maximum pressure in the cab, close the recirculation grille. To get maximum heat in the winter and maximum cooling in the summer, open the recirculation grille.



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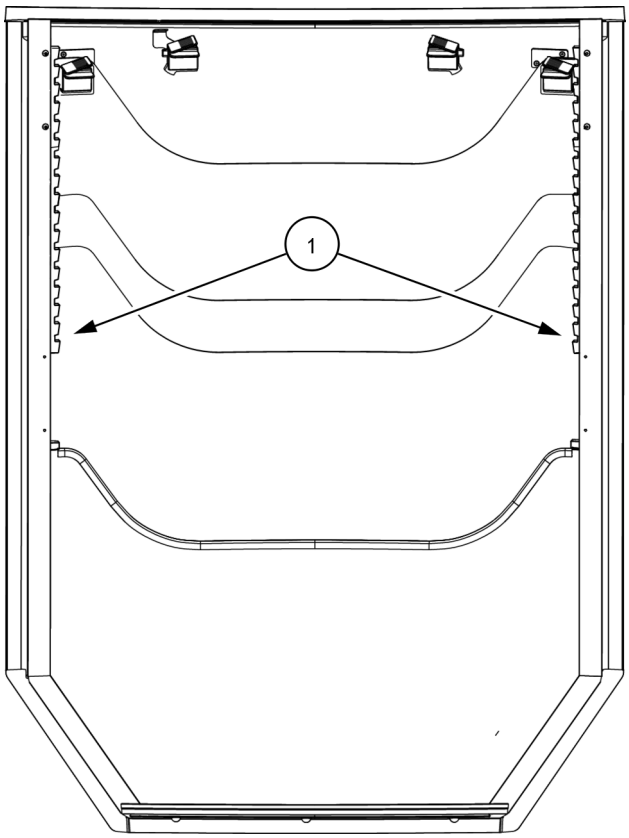
3. Slide the middle sections of the internal locking rail **(1)** upward into position and hold in place.



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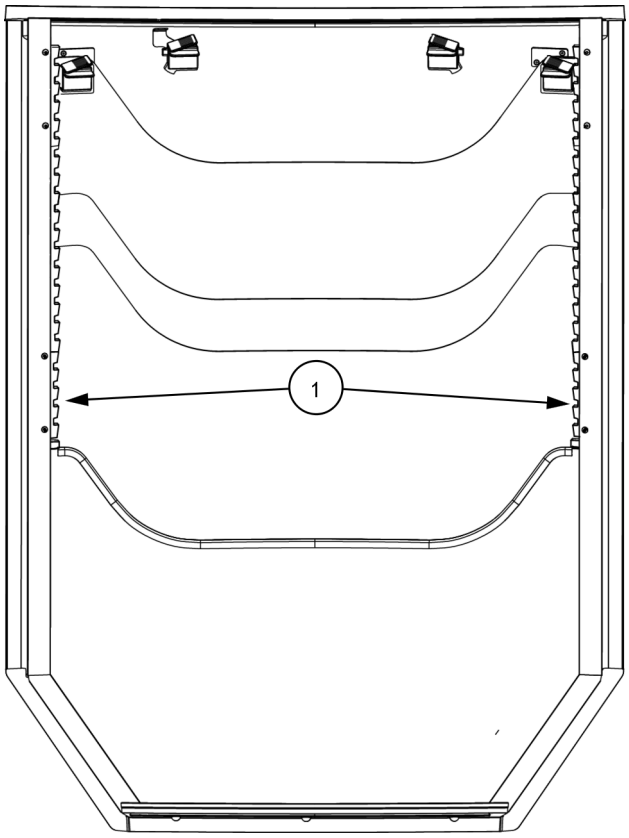
NOTICE: *Do not over torque the screws you may damage the internal locking rail section. If you damage one of the internal locking rails replace it with one of the middle sections.*

4. Slide the bottom section of the internal locking rail **(1)** into the frame and secure with screws. Tighten screws to a torque of **1.5 – 2.0 N·m** (**13.3 – 17.7 lb in**).



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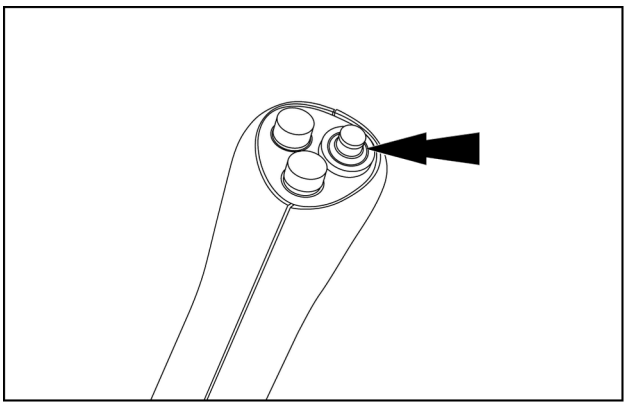
Horn

Push and hold the button to activate the horn. Release to deactivate the horn.



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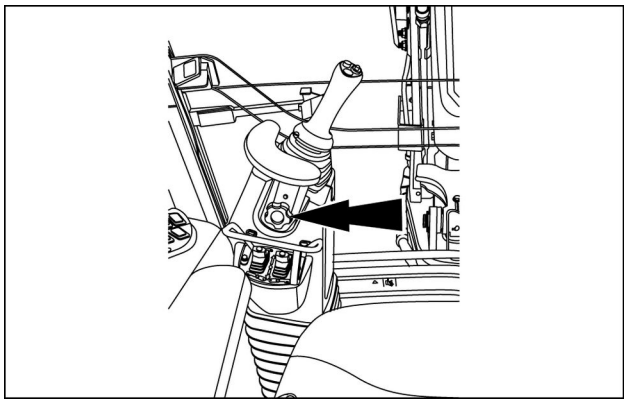
Wrist rest

Turn the knob counter-clockwise and reposition the left wrist rest. Turn clockwise to tighten in position.



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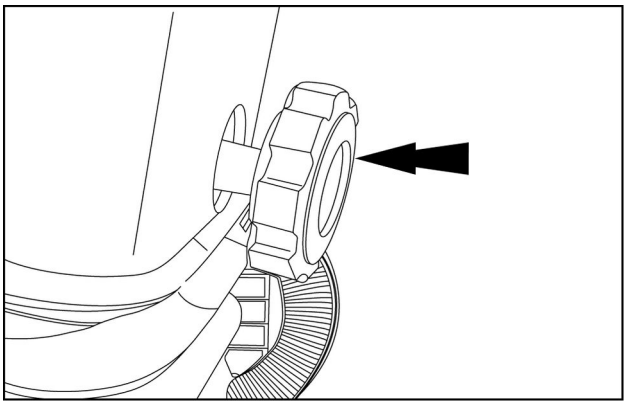
Tower tip

On the backhoe side of the tower. Turn the knob counter-clockwise and tip the upper part of the left tower. Turn clockwise to lock in position.



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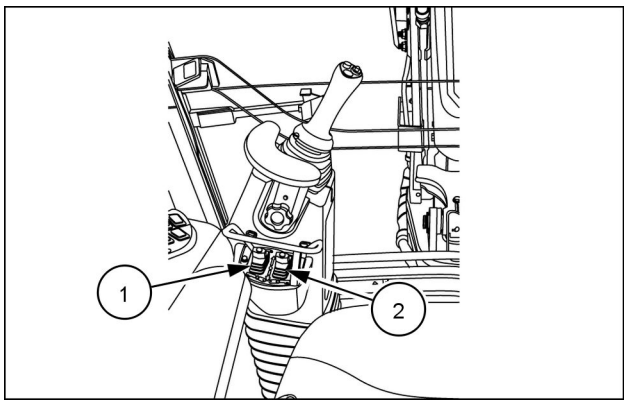
Stabilizers

Push the switch down to lower the stabilizer. Push upward to raise the stabilizer.

Stabilizer auto up function: Push the switch all the way up, momentarily past the detent position. Release the switch and the stabilizer automatically raises to the full up (transport) position. To cancel auto up, push the switch up or down.

NOTICE: *Lower both the right-side and the left-side stabilizers at the same time.*



RCPH10TLB135AAF 7

(1) Left-side stabilizer control
(2) Right-side stabilizer control

Advanced Instrument Cluster (AIC)

NOTE: *The AIC is only available for machines with Powershift transmissions. Not all AIC functionality may be applicable for your machine.*

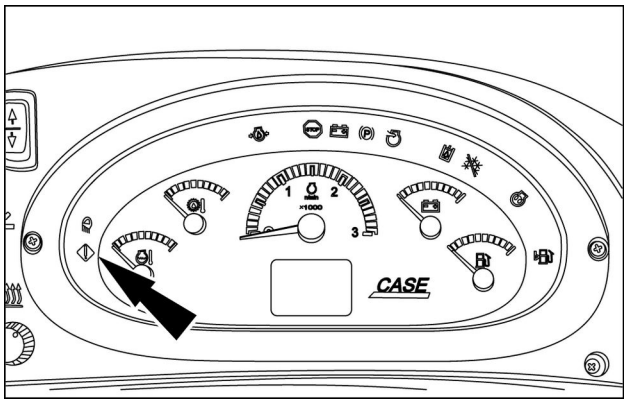
The vehicle controller, engine controller, and electronic transmission controller, if equipped, on the machine monitors machine functions and controls. The control modules also activate warning lamps and audible alarms and display information on the AIC display.

NOTICE: *Before starting the machine, turn the key switch to the ON position and wait two seconds before turning the key switch to the START position. The two second delay is required as it allows the engine controller time to power up before engine cranking is allowed.*

Indicator/warning/danger lamps

Machine fault:

Warning lamp. Illuminates when a machine fault (vehicle, engine, or electronic transmission controller) has been detected. A one second audible alarm will sound per key cycle.



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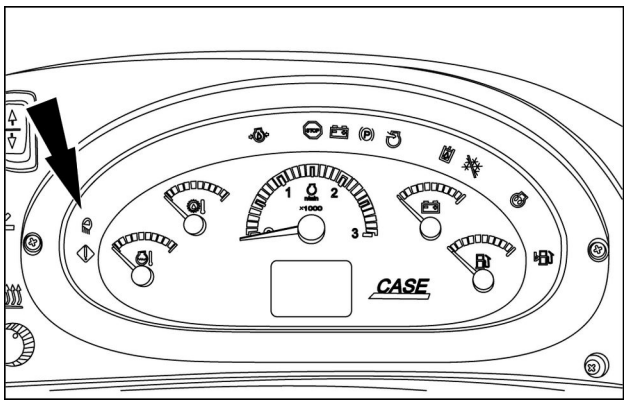
Driving lights:

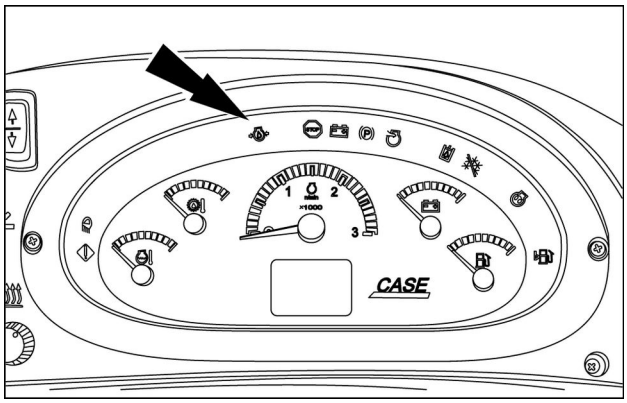
Indicator lamp.
Illuminates when the driving lamp switch is in the ON position.
Illuminates when the front and/or rear work lamp switches are in the ON position.



RCPH10TLB138AAF 2

Low engine oil pressure:

Warning lamp. Illuminates when, with the engine running, there is no or low oil pressure in the engine. Do not run the engine when this lamp illuminates. A continuous audible alarm will sound when this condition exists.



RCPH10TLB138AAF 3

4 - OPERATING INSTRUCTIONS

Commissioning the unit

Run in period of a new machine

During the first 20 hours of operation (new machine or after an engine rebuild), make sure you:

- Operate the machine with normal loads for the first 8 hours.
- Do not work the engine hard at stall speeds (wheels slowly turning or stopped and the engine running at full throttle).
- Keep the engine at normal operating temperature.
- Do not run the engine at idle speeds for long periods of time.

Engine speed

It is recommended that you run the engine at full throttle when operating conditions permit and when safe.

Do not run the engine at idle speed for long periods. This can cause a low operating temperature. Low operating temperature can cause acids and deposits in the engine oil.

Starting the unit

Before starting the engine

⚠ WARNING

Inhalation/asphyxiation hazard!
Make sure there is proper ventilation before starting the engine.
Failure to comply could result in death or serious injury.

W0091A

⚠ WARNING

Hazard to bystanders!
Before you start the engine, make sure that the area surrounding the machine is clear of all persons, and that the backhoe swing lock pin is in the LOCK position.
Failure to comply could result in death or serious injury.

W1449B

⚠ DANGER

Avoid injury!
Starting in gear can cause death. Start the engine only from the operator's seat with the transmission control(s) in neutral.
Failure to comply will result in death or serious injury.

D0114A

Starting for the first time

Before you start the engine for the first time:

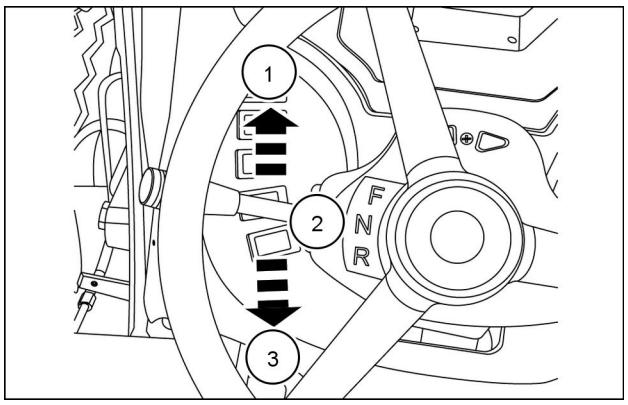
- Make sure the machine is properly lubricated and greased. Refer to the maintenance section of this manual.
- Check the engine oil level, engine coolant level, and transmission oil. Refer to the maintenance section of this manual.
- Check that the machine fuel tank is filled with clean fuel that meets the specifications provided in this manual.
- Remove any water or sediment from the water separator.
- Check the tire air pressure and the wheel bolt torque.

Machine direction

The transmission directional control lever must be in the NEUTRAL (center) position **(2)** before you can start the engine. If you attempt to start the machine with the control lever in FORWARD or REVERSE a constant audible alarm will sound.

- To travel forward, lift the direction control lever and push the lever completely forward **(1)**.
- To travel in reverse, lift the direction control lever and pull the lever completely rearward **(3)**.

NOTE: *For smooth operation, reduce the engine speed before you change directions.*



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13. Measure the distance from the ground to the highest point of the machine. You must know the clearance height of the machine.
14. After you have driven a few miles, stop the truck and trailer and check your load. Make sure the chains are still tight and that the loader backhoe has not moved on the trailer.

Unload the loader backhoe from a trailer:

1. Remove the chains and blocks from the loader backhoe.
2. Fasten the seat belt.
3. Start the engine.
4. Put the backhoe in the transport position or raise the backhoe bucket or attachment off of the trailer floor.
5. Raise the loader bucket off of the trailer floor.
6. Shift the transmission to first gear, release the parking brake, and drive slowly off the trailer.

NOTICE: *The following information is to be used as reference and not an exact weight for your machine. To find the exact weight of your machine find a suitable scale to weigh your machine.*

580N (SAE transport configuration)

Total	Front	Rear
6607 kg (**14566 lb**)	**1637 kg** (**3609 lb**)	**4970 kg** (**10957 lb**)
Standard dipper, **2.08 m** (**82.00 in**) Long Lip (LL) bucket, Two-Wheel Drive (2WD), 17.5L x 24 rear tires, 24" trenching backhoe bucket, standard cast stabilizer pads, canopy, vinyl suspension seat, dual battery, fully fueled. Center of gravity is from the rear axle center. No operator. Transport position (stowed backhoe).		

580SN (SAE transport configuration)

Total	Front	Rear
7814 kg (**17226 lb**)	**1870 kg** (**4123 lb**)	**5944 kg** (**13104 lb**)
General Purpose (GP) loader bucket, cab, Four-Wheel Drive (4WD), fully fueled, **318 kg** (**700 lb**) front counterweight, flip stabilizer pads, dual battery,19.5L x 24 rear tires, **Extendahoe®**, 24” Heavy Dirt (HD) bucket, mechanical backhoe controls, powershuttle transmission, cloth seat. Center of gravity is from the rear axle center. No operator. Transport position (stowed backhoe).		

580SN WT (SAE transport configuration)

Total	Front	Rear
9065 kg (**19985 lb**)	**2845 kg** (**6272 lb**)	**6220 kg** (**13713 lb**)
General Purpose (GP) loader bucket,, **Extendahoe®**, two-door cab, powershift transmission, Four-Wheel Drive (4WD), flip stabilizer pads, dual battery, backhoe coupler, backhoe auxiliary hydraulics, 24” Heavy Duty (HD) bucket, comfort steer, air-suspension seat, fully fueled, 21L-24 rear tires. Center of gravity is from the rear axle center. No operator. Transport position (stowed backhoe).		

590SN (SAE transport configuration)

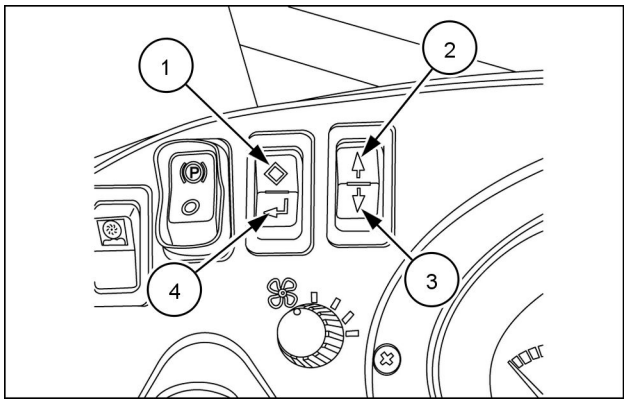
Total	Front	Rear
9068 kg (**19991 lb**)	**2514 kg** (**5542 lb**)	**6554 kg** (**14449 lb**)
General Purpose (GP) loader bucket, 2two-door cab, Four-Wheel Drive (4WD), fully fueled, **499 kg** (**1100 lb**) front counterweight, flip stabilizer pads, dual battery, **Power Lift™**, **Ride Control™**, **Extendahoe®**, backhoe coupler, backhoe auxiliary hydraulics, air-suspension seat. Center of gravity is from the rear axle center. No operator. Transport position (stowed backhoe).		

Throttle sensitivity

NOTE: *Machines with HPCR engine only.*

Change the throttle sensitivity:

1. Press Enter **(4)** to access the menu screens.
2. Press the up arrow **(2)** or the down arrow **(3)** to navigate through the menu screens.



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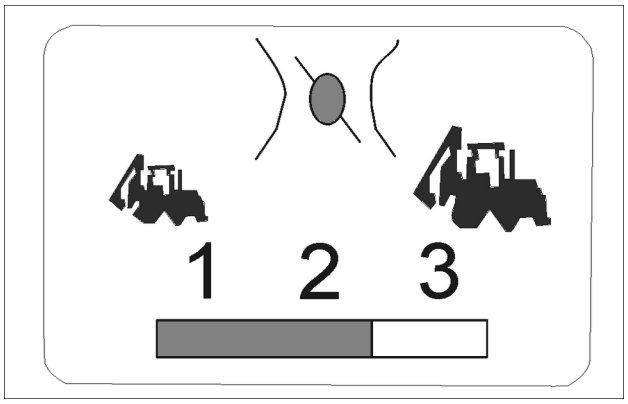
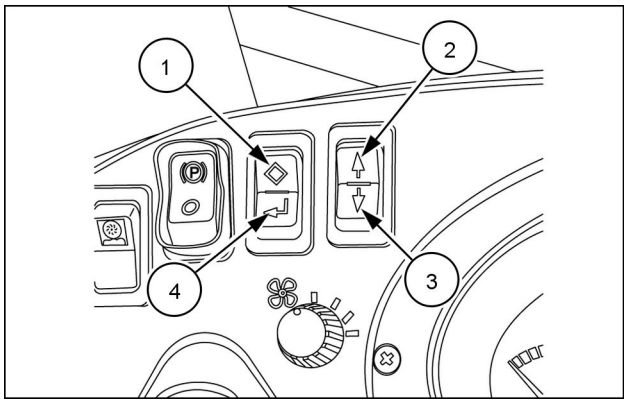
3. When the Throttle Sensitivity screen displays, press Enter. The setting bar flashes.
4. Press the up arrow or the down arrow to adjust the setting, where 1 is least aggressive and 3 is most aggressive.
5. Press Enter to save the selection.



RCPH10TLB195AAF 2

6. Use the arrows to navigate to a different menu screen or press Escape **(1)** until you return the main screen (engine hour meter).



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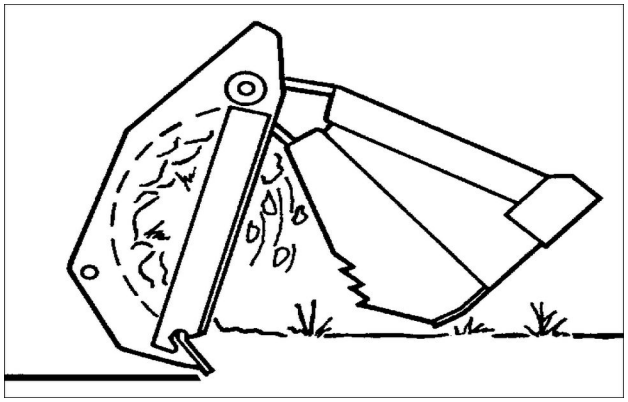
Scraper:

Tilt the bucket to the scraper position. Open the clam to the desired depth of cut. Refer to the depth indicator image **2**.



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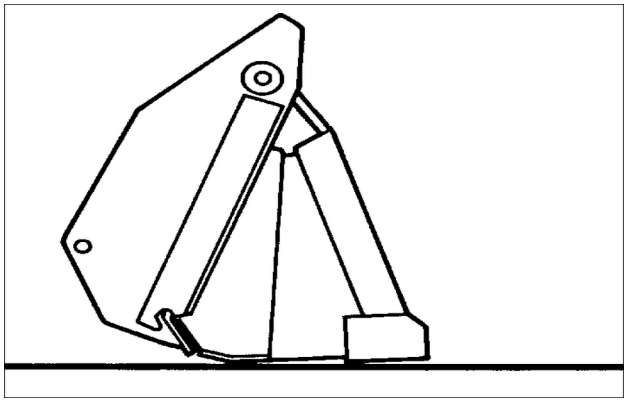
Loader:

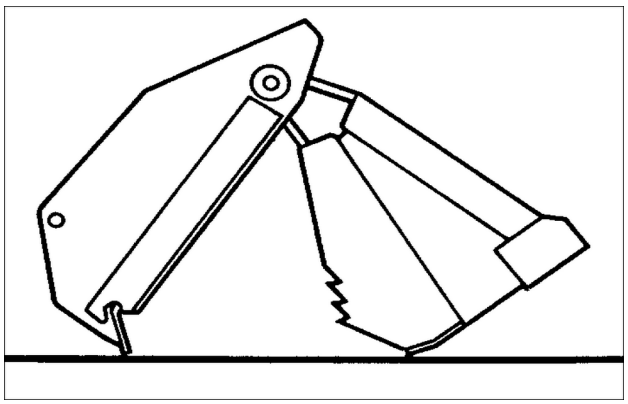
Tilt the bucket to the loader position. Close the clam completely. The bucket now operates as a standard bucket.



RCPH10TLB233AAF 7

Clam:

Tilt the bucket to the clam position. Place the open bucket over the material to be moved. Close the clam to pick up the material. Place the bucket over the new location for the material and open the bucket to dump the material.



RCPH10TLB236AAF 8

Stabilizer pads

⚠ WARNING

Tip-over hazard!
Put the stabilizers in the operating position before you lower the boom and extend the dipper. The front of the machine can raise above the ground and become unstable if the stabilizers are not down in the operating position.
Failure to comply could result in death or serious injury.

W0196A

⚠ WARNING

Tip-over hazard!
Before you raise the stabilizers from the operating position, put the backhoe in the transport position or completely retract the dipper and raise the boom. Make sure the machine tires are touching the ground. The machine can become unstable when the tires are not on the ground.
Failure to comply could result in death or serious injury.

W0195A

Always position the stabilizer pads for maximum stability. If you dig next to a building, wall etc., change the position of the stabilizer pads.

Change the position of a stabilizer pad:

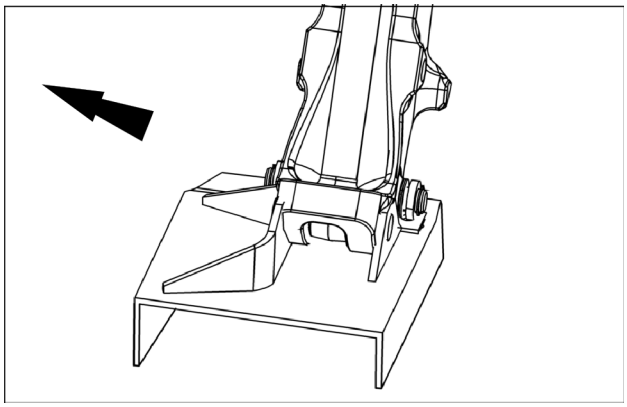
1. Remove a retaining ring from the pin on each stabilizer pad.
2. Use a hammer and drift pin and remove each pin.
3. Put the stabilizer pads into position. For correct stabilizer pad position, refer to stabilizer pad positions later in this section.
4. Install the pins and retaining rings.

Stabilizer pad position

NOTE: *Examples are shown for right stabilizers (backhoe operation position). Arrow indicates front of machine.*

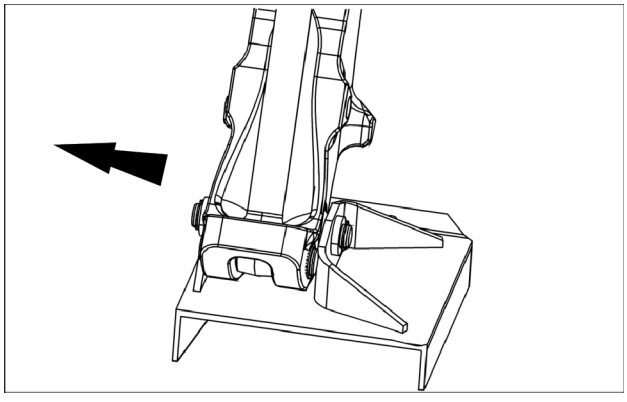
Standard two position stabilizer pads:

- Digging to the side (working next to buildings, walls etc.)



RCPH10TLB419AAF 1

- Maximum stability for digging to the rear and minimum width for traveling



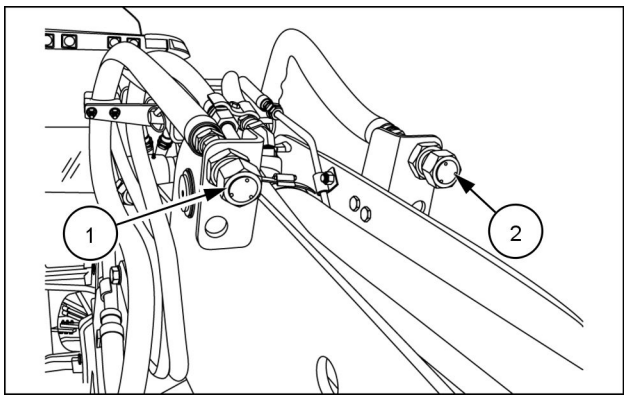
RCPH10TLB418AAF 2

6. Dump and lower the loader bucket to the ground.
7. Connect a hand line to the load before you start. Make sure the worker holding the hand line is away from the load.
8. Test the lift capacity before you start your job:
   A. Put the machine close to the load.
   B. Use a cable or sling to fasten the load to the end of the dipper at the lift eye.
   C. Lift the load with the backhoe so the load is **25 – 50 mm** (**1 – 2 in**) above the ground.
   D. Swing the load all the way to one side.
   E. Move the load away from the machine. Make sure you keep the load **25 – 50 mm** (**1 – 2 in**) above the ground.
   F. Lower the load to the ground if one of the stabilizers is raised above the ground or if there is any indication that the stability of the machine is reduced.
9. Always move the load slowly. Do not move the load over the top of workers or bystanders.
10. When the load is raised, keep all workers and bystanders away until the load is placed on blocks or is placed on the ground.

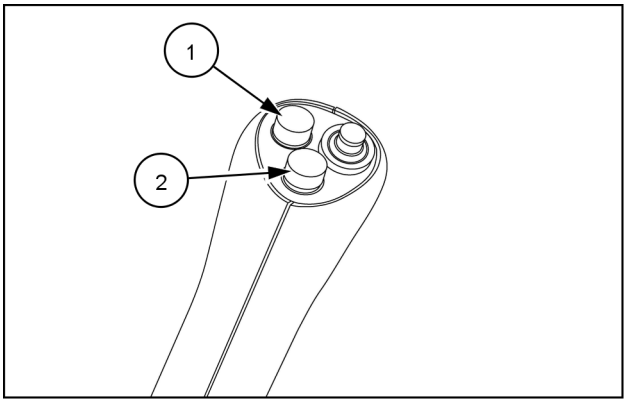
NOTICE: *Remove the clevis hook when lifting is complete. Damage to the clevis hook or the linkage can occur if the clevis hook is not removed when digging.*

Units with Pilot Controls and in Uni-Aux or Bi-Aux mode:

- Press the top left button **(1)** to energize the pressure fitting hose **(1)** .
- Press the lower left button **(2)** to energize the pressure fitting hose **(2)**.



RCPH10TLB413AAF 29

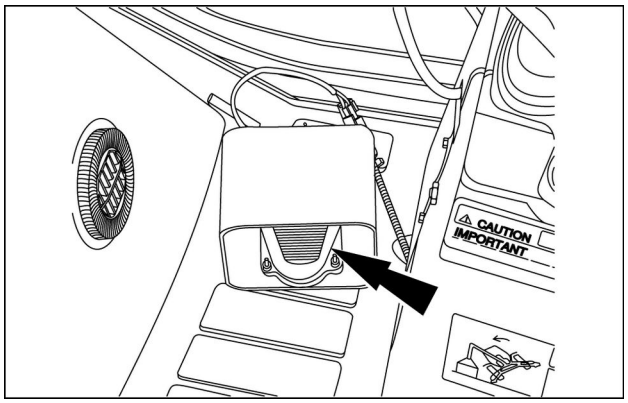


RAIL14TLB0705AA 30

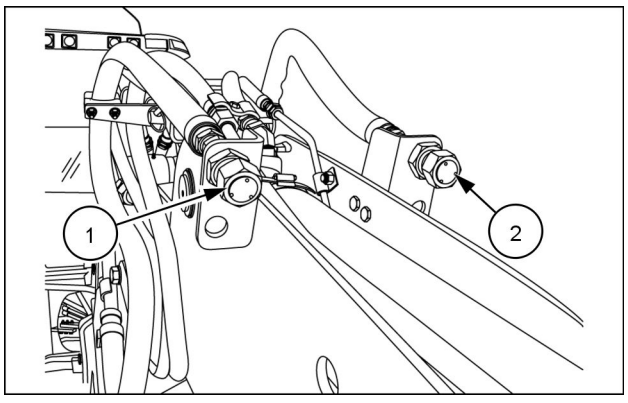
(1)	Uni-Aux or Bi-Aux pressure hose **(1)**
(2)	Bi-Aux pressure hose **(2)**

Units with Mechanical Controls and in Uni-Aux mode:

Press the pedal to pressurize the Uni-Aux pressure hose **(1)**.



RCPH10TLB115AAF 31



RCPH10TLB413AAF 32

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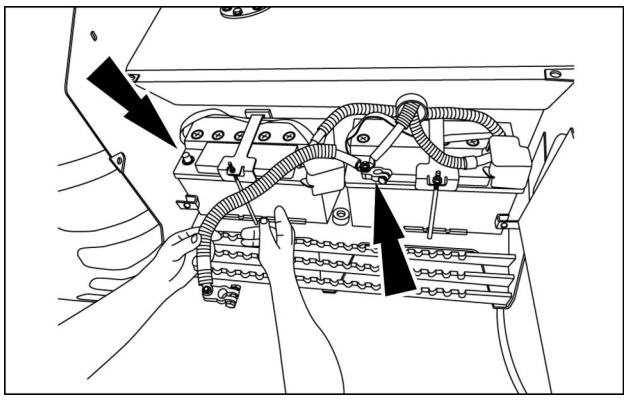
3. Disconnect the negative battery cable from the negative battery terminal.



RCPH11TLB003AAM 3

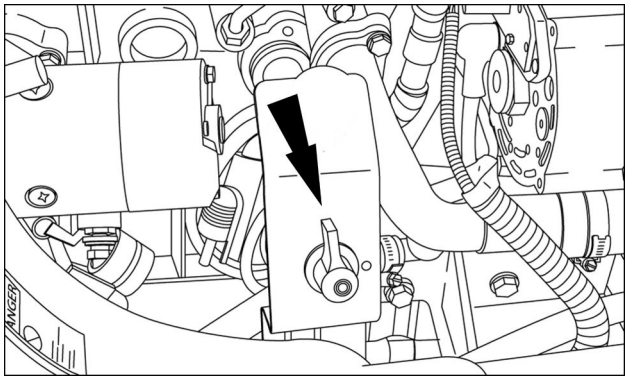
Master disconnect switch (if equipped)

Use the master disconnect switch the enable or disable electrical power from the machine batteries to the electrical components. The master disconnect switch is on the right-hand side of the engine.

- O – disconnect machine from battery power.
- I – connect machine to battery power.

NOTICE: *Wait at least* ***60 s*** *after you place the ignition key in the OFF position before turning master disconnect switch to OFF. This allows the machine controllers to shut down properly.*

NOTICE: *Some machine service procedures require an actual terminal disconnect of the batteries. Do not use the master disconnect switch for those types of procedures, such as welding on the machine.*



RAIL12TLB0142AA 4

Capacities – 590SN (factory fill)

NOTE: *Machines with the optional Severe Cold Weather Package (SCWP) use the SCWP recommended fluids. Your machine will have a decal that indicates that the machine is equipped with the SCWP option. The decal is on the left-hand side of the engine near the maintenance decal.*

Engine crank case

Standard specification (factory fill):	**CASE AKCELA UNITEK NO. 1™ SBL CJ-4 SAE 10W-40**
SCWP specification (factory fill):	**CASE AKCELA UNITEK NO. 1™ SSL CJ-4 SAE 0W-40**
Capacity:	
With filter change	**13.6 L** (**14.4 US qt**)

Fuel tank

Standard specification (factory fill):	**ASTM D975 GRADE NO. 2-D S15** (No. 2 diesel)
SCWP specification (factory fill):	Winter diesel fuel blend with a cold weather diesel fuel additive
Capacity:	**159 L** (**42 US gal**)

NOTE: *Contact your CASE CONSTRUCTION dealer for assistance and availability of winter diesel fuel blends in your area. Follow the directions on the manufactures label of the cold weather diesel fuel additive for recommended use.*

Cooling system

Standard and SCWP specification (factory fill):	**CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT** (**50%** concentrate and **50%** distilled water)
Without heater	**17.3 L** (**18.3 US qt**)
With heater	**18.0 L** (**19.0 US qt**)

Hydraulic system

Standard specification (factory fill):	**CASE AKCELA NEXPLORE™ FLUID**
SCWP specification (factory fill):	**CASE AKCELA HY-TRAN® ULTRACTION SSL**
Capacity:	
Total system	**123.0 L** (**130.0 US qt**)
Total system with Extendahoe	**128.7 L** (**136.0 US qt**)
Reservoir with filter change	**55.0 L** (**58.1 US qt**)
Reservoir without filter change	**53.0 L** (**56.0 US qt**)

Hydraulic diagnostic test ports

If equipped, the machine's hydraulic system pressure can be easily checked from the hydraulic quick disconnect diagnostic test port(s) located on the right-hand side of the machine above the hydraulic reservoir tank and near the right-hand stabilizer on the inside of the chassis.

Hydraulic test port configurations

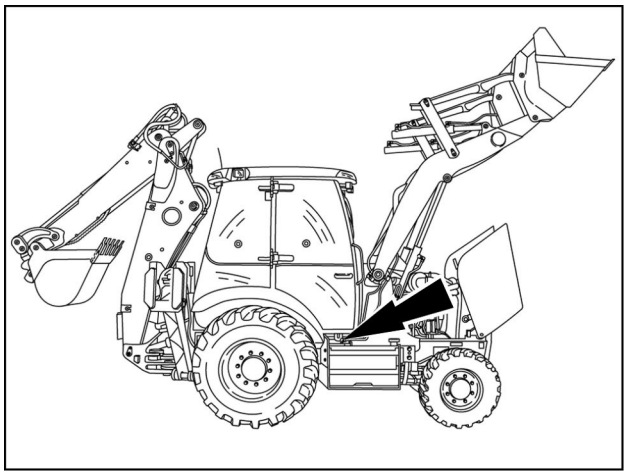
NOTE: *Hydraulic test ports on a machine with pilot backhoe controls shown in the illustration.*

NOTICE: *Always keep the covers on the quick connect test ports when not in use.*

Remote hydraulic test ports, if equipped

- Top port **(1)** - Pump output pressure
- Bottom port **(2)** - Load sense (LS) pressure

NOTE: *Load sense pressure port not available on machines with mechanical backhoe controls.*



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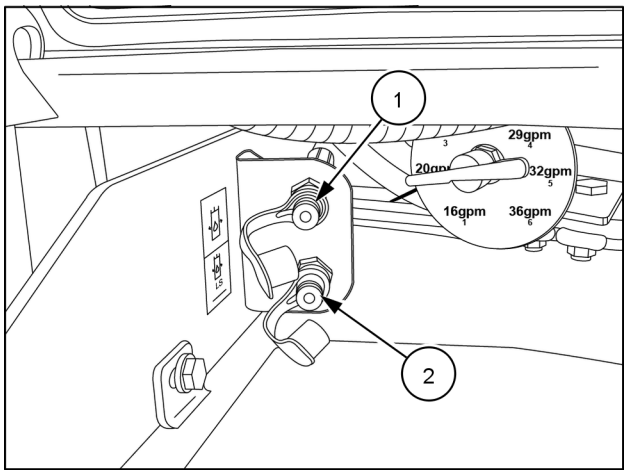
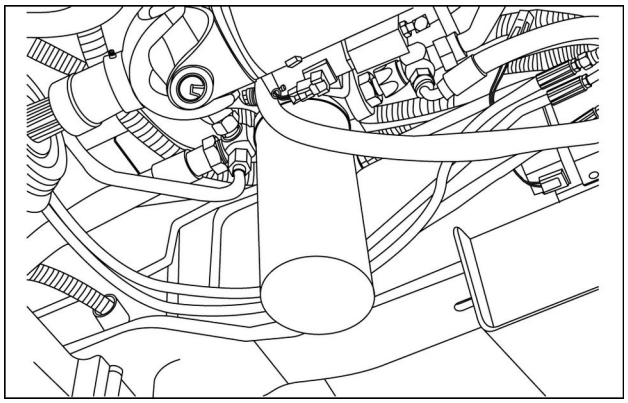


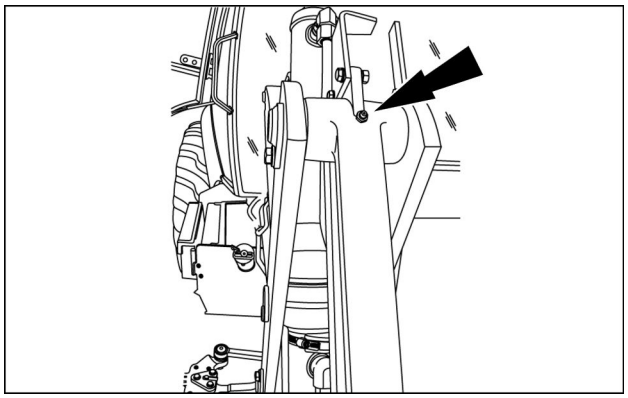
RAIL17TLB0348BA 2

3. Clean the area around the filter head area before removing the old filter. Wear eye protection to keep dirt and debris from eyes.
4. Use a filter wrench and remove the old filter. Have a suitable container ready to capture any fluid that might leak or spill.
5. Dispose of the filter in accordance with local, regional, and federal regulations.
6. Lubricate the gasket of the new filter with clean oil.
7. Install the new filter and turn it clockwise until the gasket contacts the head of the filter assembly.
8. Continue to tighten the filter for 1/3 turn.
9. Tighten the hydraulic reservoir cap.
10. Start up the engine.
11. Ensure the warning lamp does not illuminate.
12. After running for three or four minutes, shut down the engine.
13. Inspect for leaks.
14. Add fluid if necessary.



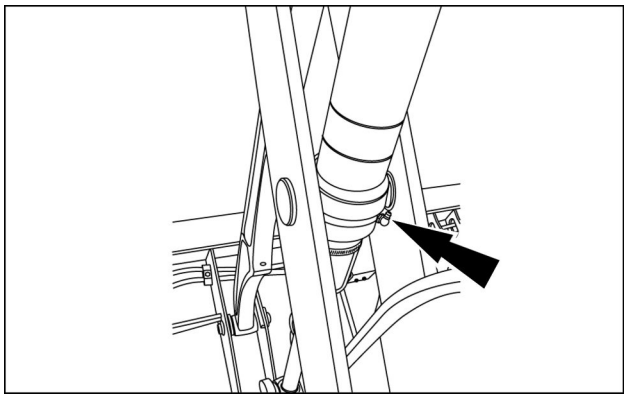
RCPH10TLB045AAF 3

(2) Bucket link - Two total, one on each side



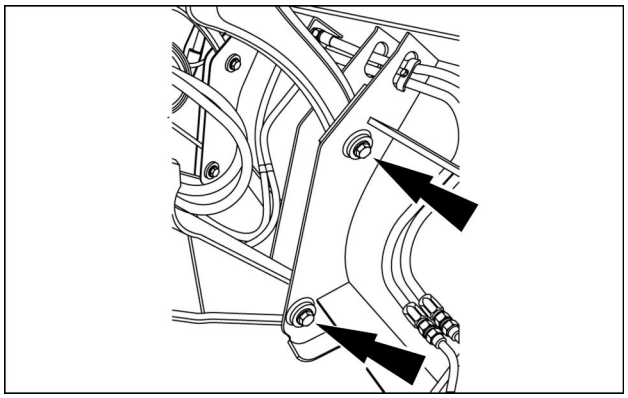
RCPH10TLB379AAF 3

(3) Bucket cylinder trunnion - Two total, one on each side



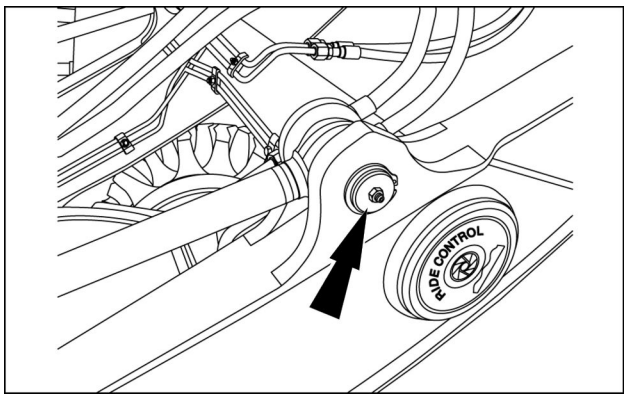
RCPH10TLB380AAF 4

(4) Bucket pivots - Four total, two on each side



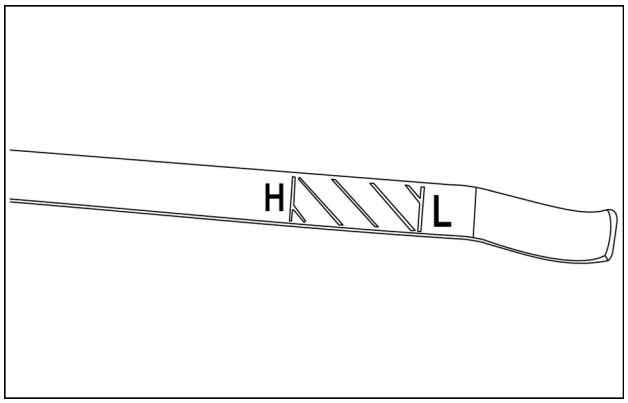
RCPH10TLB389AAF 5

(5) Bucket cylinder, rod end - Two total, one on each side



RCPH10TLB388AAF 6

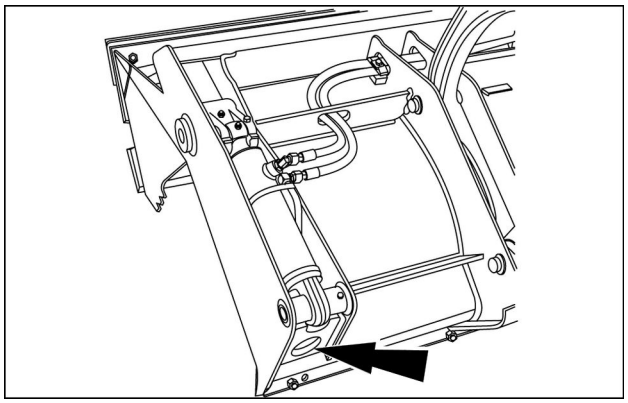
7. Check the fluid level on the dipstick. The level should be between the high (H) mark and the (L) mark.



RCPH10TLB054AAF 2

8. Add fluid as needed. Do not fill above the high mark.

- Cylinder, closed end - Two total, one on each side



RCPH10TLB258AAF 3

Parking brake

Check the operation of the parking brake after the first **100 h** of operation. Then check the parking brake every **1000 h** of operation.

1. Make sure the area is clear of other workers or bystanders.
2. Disconnect the connector for Spring-Applied, Hydraulic-Released (SAHR) brake solenoid on the transmission. For detailed instructions, see **7-129**.
3. Ensure the operator's seat is in the loader operation position and fasten the seat belt.
4. Disengage Four-Wheel Drive (4WD), if equipped.
5. Engage the parking brake.
6. Place the direction control lever in NEUTRAL and the transmission in third gear.
7. Start up the engine.
8. Ensure the loader bucket, backhoe bucket, and stabilizers are raised in preparation of forward travel.
9. Disengage the parking brake.
10. Place the direction control lever in FORWARD and increase the engine speed to **1500 RPM**. The machine must not move. Contact your dealer for service as needed.
11. Connect the connector for the Spring-Applied, Hydraulic-Released (SAHR) brake solenoid to the transmission. The connector must be attached before returning the machine to operation. For detailed instructions, see **7-129**.
12. Test the parking brake to ensure it engages and disengages correctly. For example, transmission is de-clutched when the parking brake is applied.

Transmission fluid level

Check the fluid level of the transmission every **250 h** of operation.

Standard climate transmission fluid specification – **CASE AKCELA NEXPLORE™ FLUID**

Severe Cold Weather Package (SCWP) transmission fluid specification – **CASE AKCELA HY-TRAN® ULTRACTION SSL**

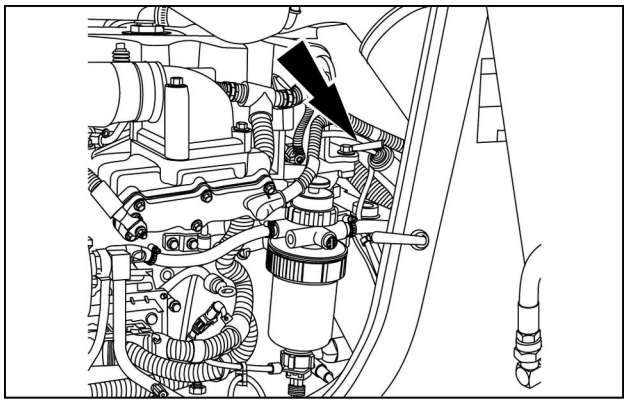
1. **⚠ WARNING**

   Rotating parts!
   The engine is running. Keep clear of rotating fans and belts.
   Failure to comply could result in death or serious injury.

   W0275A

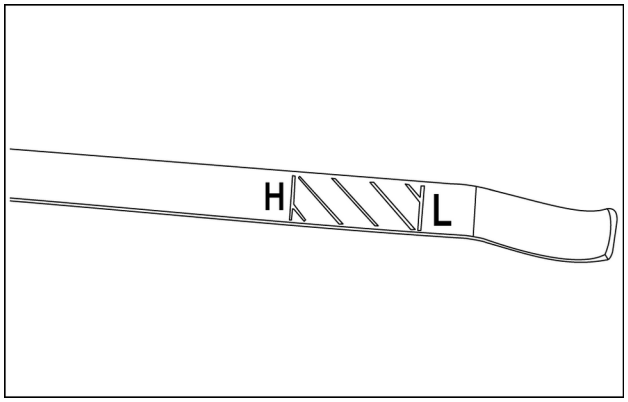
   Start up the engine. The engine must be running at idle to accurately check the transmission fluid level.

2. Turn the dipstick handle counter-clockwise and pull out the dipstick.



RCPH10TLB055AAF 1

3. Check the fluid level on the dipstick. The level should be between the high (H) mark and the (L) mark.



RCPH10TLB054AAF 2

4. Shut down the engine.
5. Add fluid as needed. Do not fill above the high mark.

Battery fluid level

⚠ WARNING

Hazardous chemicals!
Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.
Failure to comply could result in death or serious injury.

W0006A

Check the battery fluid level every **500 h** of operation or every 120 days, whichever comes first.

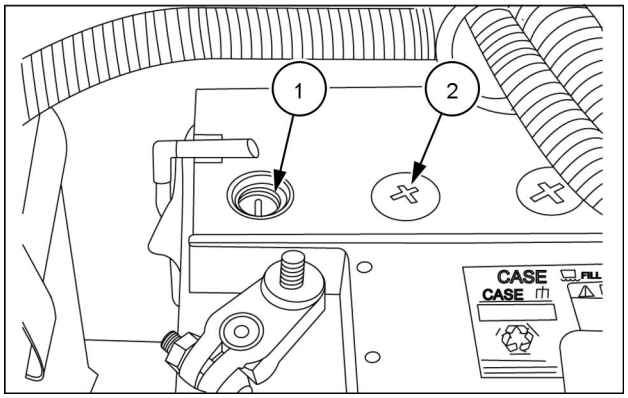
Check the battery fluid level if the machine has not been operated in a long time.

Check the fluid on a monthly basis if the machine is operated in very warm climates.

1. Shut down the engine.
2. Clean the area around the battery to prevent external material or contaminants from entering the battery vent wells.

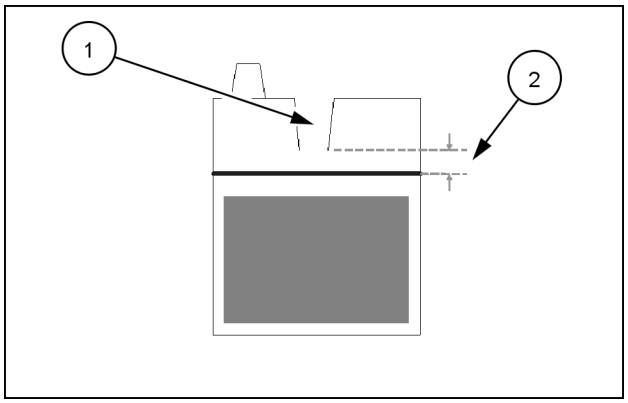
NOTICE: *Use caution when working with metallic tools or conductors. Contact can create sparks and short circuits.*

3. Use a Phillips head screwdriver and remove the cap **(2)** for the vent well **(2)**.



RCPH10TLB291AAF 1

4. Check the fluid level in each vent cell. Specification **(2)** is **3 – 10 mm** (**0.12 – 0.39 in**) from the base of the vent well **(1)** to the start of the electrolyte level.
5. Add distilled water to each cell as needed.
6. Reinstall the vent cap and tighten the screw. Do not overtighten! Screw torque must not exceed **1 N·m** (**12 lb in**).
7. In temperatures of **0 °C** (**32 °F**) and below, connect a battery charger to the batteries (or run the engine) for approximately two hours to ensure the electrolyte mixes with the added water.



RCPH10TLB396AAF 2

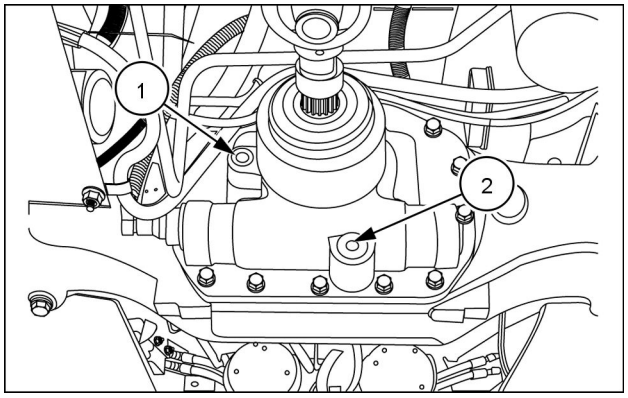
Rear axle fluid

Change the rear axle fluid every **1000 h** of operation.

Rear axle oil specifications (580N and 580SN) – Capacity **13.6 L** (**14.4 US qt**) of **TUTELA TRANSAXLE FLUID SAE 80W-140**

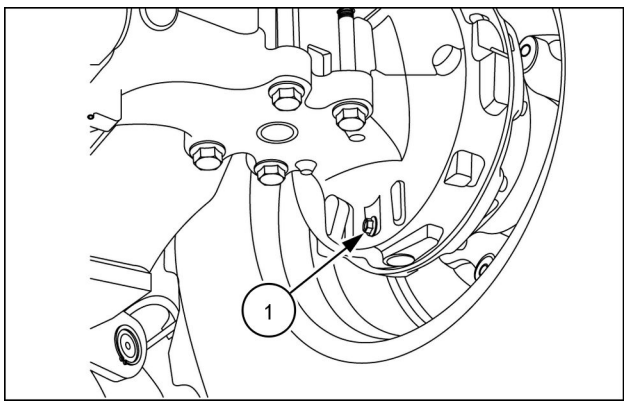
Rear axle oil specifications (580SN WT and 590SN) – Capacity **18.6 L** (**19.7 US qt**) of **TUTELA TRANSAXLE FLUID SAE 80W-140**

1. Start up the engine and run until the rear axle fluid is at operating temperature.
2. Clean the areas around the axle drain plug **(2)** and the check/fill plug **(1)**.
3. Place a suitable container under the axle drain plug and slowly remove the plug.



RCPH09TLB006AAF 1

4. Clean the area around the left rear **(1)** and the right rear planetary drain plug.
5. Place containers under the planetary drain plugs and drain.



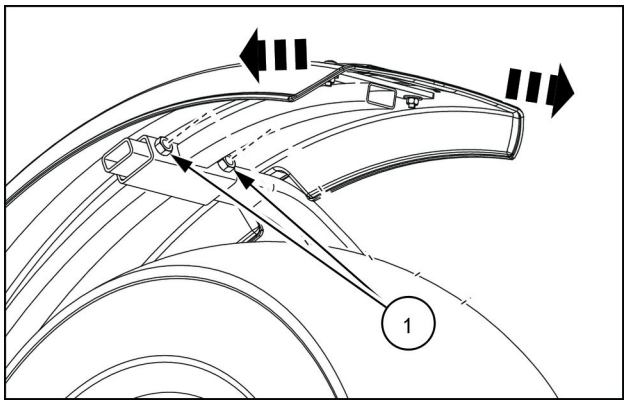
RCPH10TLB068AAF 2

6. Install the axle drain plug and both planetary drain plugs.
7. Remove the check/fill plug and fill to specification.

Front fender

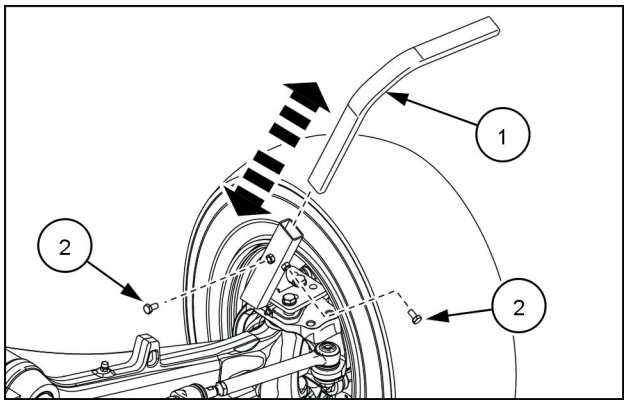
NOTE: *Occasionally you may need to adjust the front fenders to avoid contact with the tires.*

1. Park the machine on a firm level surface.
2. Place the backhoe in the stowed position or lower the bucket to the ground.
3. Lower the loader bucket to the ground.
4. Turn off the engine.
5. Loosen both bolts under the fender.
6. Slide the fender back and forth until it is directly over the tire.
7. Tighten the bolts to secure the fender position.



RAIL16TLB0967AA 1

8. Loosen both bolts **(1)** on the vertical arm **(2)** of the fender support.
9. Slide the fender up or down. Make sure that you allow enough fender clearance to accommodate the movement of the tire.



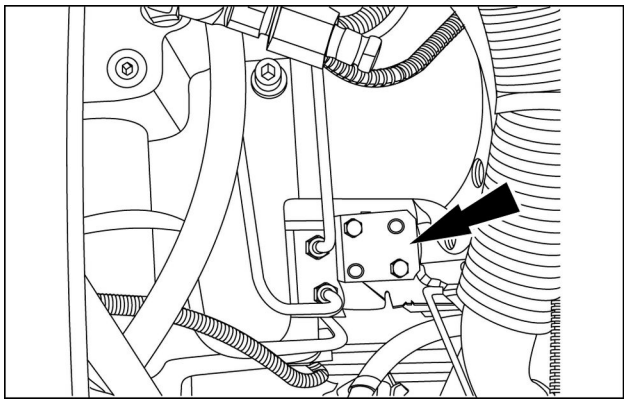
RAIL16TLB0965AA 2

10. Tighten the bolts to secure the fender position.
11. If necessary, repeat the procedure on the other fender.
12. Operate the machine making full turns in either direction while observing the tire and fender clearance. Adjust if necessary.

Disable parking brake

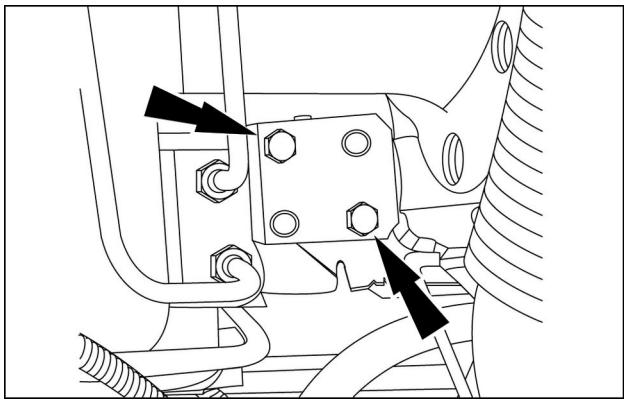
For disabled machines, disable the parking brake whenever the parking brake fails to disengage.

1. Chock the wheels to prevent movement.
2. Remove the mat and floor plate.
3. Locate the solenoid block for the parking brake on the transmission.
4. Clean the area of dirt and debris.



RCPH10TLB064AAF 1

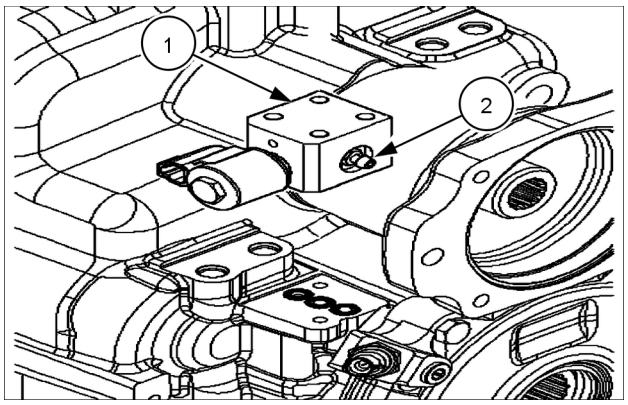
5. Remove the two bolts that secure the solenoid block.



RCPH10TLB065AAF 2

6. Carefully lift up and rotate the solenoid block **90° (1)**.
7. Reinstall the bolts and tighten the bolts to a torque of **20 N·m** (**15 lb ft**).
8. Attach a grease gun (use **CASE AKCELA MOLY GREASE**) to the fitting **(2)** on the solenoid block and pump approximately 65 pumps.

NOTICE: *Extreme pressure is NOT needed to release the parking brake. Over pressurization may damage the seals. Moderate effort is required on the grease gun.*



RCPH10TLB070AAF 3

9. Carefully remove the wheel chocks, as the machine may now be moved.

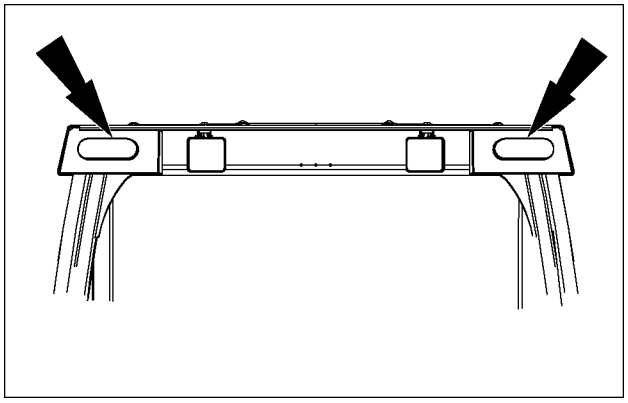
NOTICE: *The machine should be free to roll. If the machine does not roll, there may be an issue in the parking brake or drivetrain. Contact your dealer.*

NOTICE: *After grease has been used to release the parking brake it will be necessary to clean and flush the entire system before placing the machine back into operation. Contact your dealer for this procedure.*

Stop, tail, flasher, and turn signal lamps - canopy - ROPS canopy

NOTE: *The procedure is the same to replace the bulb in a turn signal/flasher lamp or in a tail/stop lamp.*

Turn signal/flasher lamps are at the front of the ROPS canopy on the left and the right side.



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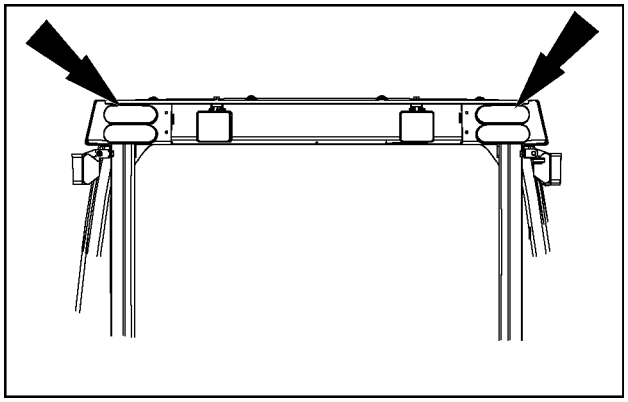
Turn signal/flasher lamps are also at the rear of the ROPS canopy on the left and the right side.



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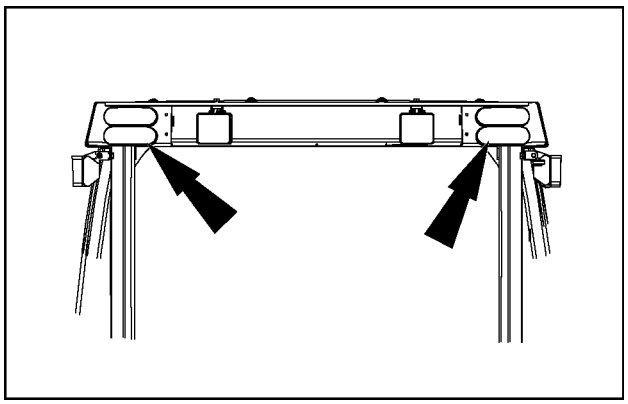
Tail/stop lamps are at the rear of the ROPS canopy on the left and the right side.



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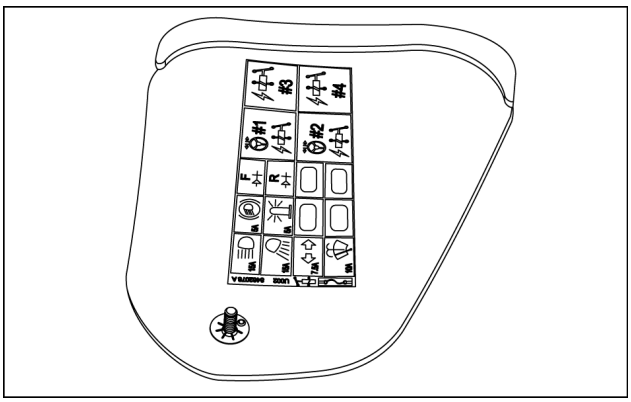
3. Refer to the decal on the interior side of the panel cover for fuse, relay, and/or diode functions.



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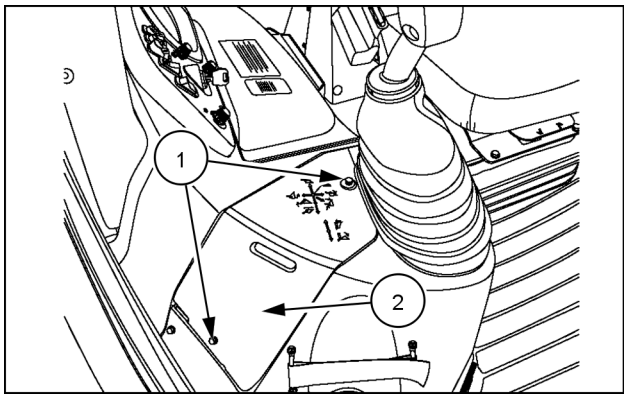
Side console box

1. Turn the thumb screws **(1)** to loosen the panel cover **(2)** for the fuse box. Remove the panel cover.



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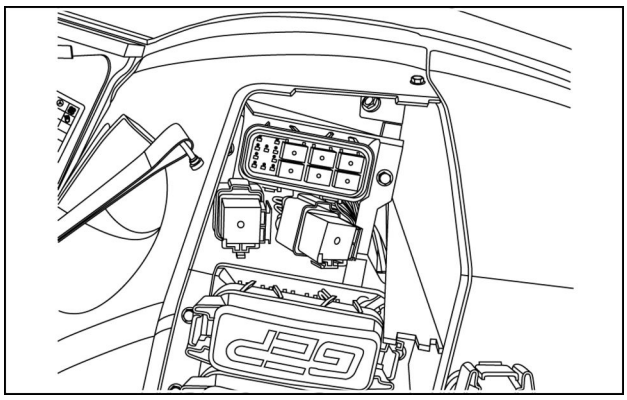

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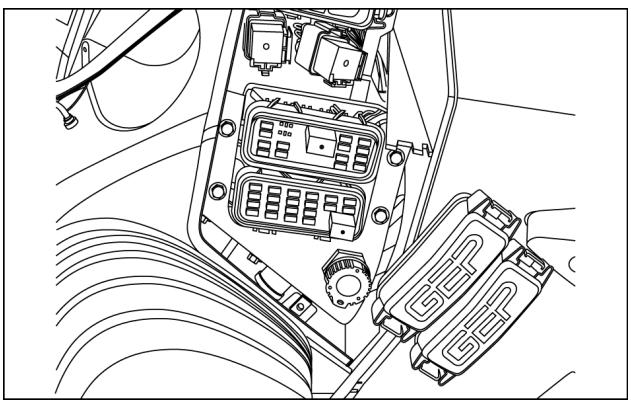
2. Remove the fuse box covers as needed.



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Storage

Machine storage

If the machine is to be in storage for more than 30 days, park the machine inside a building. If a building is not available, park the machine in a dry area on planks and cover the machine with a waterproof covering.

Geographic, environmental and actual storage conditions make it difficult to follow a set storage procedure for all areas and conditions. The following procedure is for a storage period of six months or longer. This procedure is a good starting point but may not be all inclusive. If you have questions about storing your machine, contact your dealer.

1. Inspect the machine for visible signs of wear, breakage or damage. Order any parts required and make the necessary repairs to avoid delays when starting the next operating period.
2. Wash the machine.
3. Lubricate the machine at all grease fittings.
4. Paint any area where the paint has been damaged.
5. Drain the fuel tank.
6. Put approximately **8 l** (**2 US gal**) of diesel flushing oil in the fuel tank. Run the engine until the exhaust smoke is blue white.
7. Drain the flushing oil from the fuel tank.
8. Fill the fuel tank and add diesel fuel conditioner by following the directions on the container.
9. Move all hydraulic controls to relieve any pressure in the hydraulic circuits.
10. Change the engine oil and replace the oil filter.
11. Drain the cooling system. Leave the drain valves open and do not tighten the radiator cap.
12. Put a Do Not Operate tag on the instrument panel.
13. Clean or replace the primary element for the air filter.
14. Cover the exposed cylinder rods, valve spools, and any other bare metal parts with a rust and corrosion preventive.
15. Install a battery maintainer on the battery. You may choose to leave the battery in the machine or remove the battery from the machine and store inside.

Capacities – 580SN WT (factory fill)

Engine crank case

NOTE: *Machines with the optional Severe Cold Weather Package (SCWP) use the SCWP recommended fluids. Your machine will have a decal that indicates that the machine is equipped with the SCWP option. The decal is on the left-hand side of the engine near the maintenance decal.*

Standard specification (factory fill):	**CASE AKCELA UNITEK NO. 1™ SBL CJ-4 SAE 10W-40**
SCWP specification (factory fill):	**CASE AKCELA UNITEK NO. 1™ SSL CJ-4 SAE 0W-40**
Capacity:	
With filter change	**13.6 L** (**14.4 US qt**)

Fuel tank

Standard specification (factory fill):	**ASTM D975 GRADE NO. 2-D S15** (No. 2 diesel)
SCWP specification (factory fill):	Winter diesel fuel blend with a diesel fuel additive
Capacity:	**159 L** (**42 US gal**)

NOTE: *Contact your CASE CONSTRUCTION dealer for assistance and availability of winter diesel fuel blends in your area. Follow the directions on the manufactures label of the cold weather diesel fuel additive for recommended use.*

Cooling system

Standard and SCWP specification (factory fill):	**CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT** (**50%** concentrate and **50%** distilled water)
Without heater	**17.3 L** (**18.3 US qt**)
With heater	**18.0 L** (**19.0 US qt**)

Hydraulic system

Standard specification (factory fill):	**CASE AKCELA NEXPLORE™ FLUID**
SCWP specification (factory fill):	**CASE AKCELA HY-TRAN® ULTRACTION SSL**
Capacity:	
Total system	**123.0 L** (**130.0 US qt**)
Total system with Extendahoe	**128.7 L** (**136.0 US qt**)
Reservoir with filter change	**55.0 L** (**58.1 US qt**)
Reservoir without filter change	**53.0 L** (**56.0 US qt**)

Reverse 3	**24.7 km/h** (**15.4 mph**)	**23.3 km/h** (**14.5 mph**)
Reverse 4	**46.3 km/h** (**28.8 mph**)	**43.8 km/h** (**27.2 mph**)

580SN-WT

Powershift S-type transmission

2295 RPM	21L x 24 rear tire
Forward 1	**6.3 km/h** (**3.9 mph**)
Forward 2	**10.0 km/h** (**6.2 mph**)
Forward 3	**21.4 km/h** (**13.3 mph**)
Forward 4	**38.8 km/h** (**24.1 mph**)
Reverse 1	**7.6 km/h** (**4.7 mph**)
Reverse 2	**12.0 km/h** (**7.5 mph**)
Reverse 3	**25.7 km/h** (**16.0 mph**)

Powershift H-type transmission - optional

2295 RPM	21L x 24 rear tire
Forward 1	**6.3 km/h** (**3.9 mph**)
Forward 2	**10.3 km/h** (**6.4 mph**)
Forward 3	**21.9 km/h** (**13.6 mph**)
Forward 4	**37.0 km/h** (**23.0 mph**)
Reverse 1	**7.6 km/h** (**4.7 mph**)
Reverse 2	**12.4 km/h** (**7.7 mph**)
Reverse 3	**26.3 km/h** (**16.3 mph**)

Manual (powershuttle) transmission - optional

2295 RPM	21L x 24 rear tire
Forward 1	**6.3 km/h** (**3.9 mph**)
Forward 2	**10.0 km/h** (**6.2 mph**)
Forward 3	**21.4 km/h** (**13.3 mph**)
Forward 4	**38.8 km/h** (**24.1 mph**)
Reverse 1	**7.6 km/h** (**4.7 mph**)
Reverse 2	**12.0 km/h** (**7.5 mph**)
Reverse 3	**25.7 km/h** (**16.0 mph**)
Reverse 4	**46.6 km/h** (**28.9 mph**)

590SN

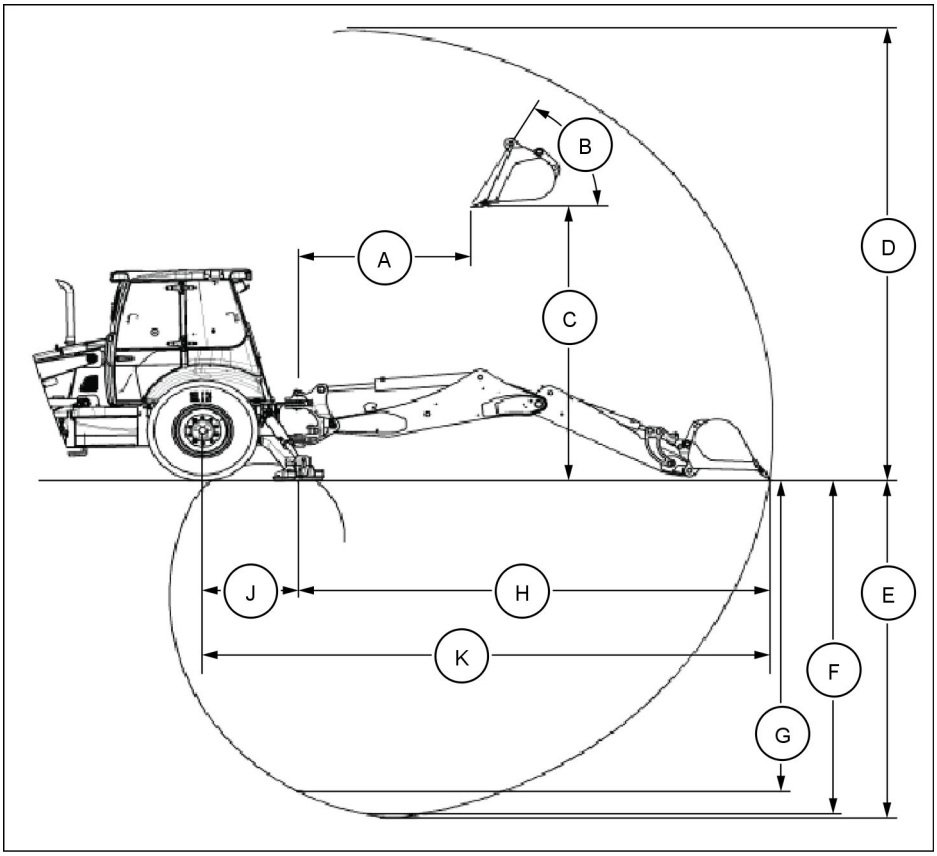
Powershift S-type transmission

2306 RPM	21L x 24 rear tire
Forward 1	**6.3 km/h** (**3.9 mph**)
Forward 2	**10.1 km/h** (**6.3 mph**)
Forward 3	**21.3 km/h** (**13.2 mph**)
Forward 4	**38.9 km/h** (**24.2 mph**)
Reverse 1	**7.6 km/h** (**4.7 mph**)
Reverse 2	**12.1 km/h** (**7.5 mph**)
Reverse 3	**25.6 km/h** (**15.9 mph**)

Powershift H-type transmission -optional

2306 RPM	21L x 24 rear tire
Forward 1	**6.4 km/h** (**4.0 mph**)
Forward 2	**10.5 km/h** (**6.5 mph**)
Forward 3	**22.0 km/h** (**13.7 mph**)
Forward 4	**37.0 km/h** (**23.0 mph**)
Reverse 1	**7.7 km/h** (**4.8 mph**)

Description	2WD	4WD
Straight links	**175.6°**	**175.6°**
Mechanical coupler	**198°**	**198°**
Hydraulic coupler (Extendahoe®) Not applicable on the 580N	**194.8°**	**194.8°**
Hydraulic coupler (standard dipper) Not applicable on the 580N	**198°**	**198°**
Universal coupler	**190°**	**190°**
Swing arc	**180°**	**180°**
Angle of departure	**15.3°**	**19°**



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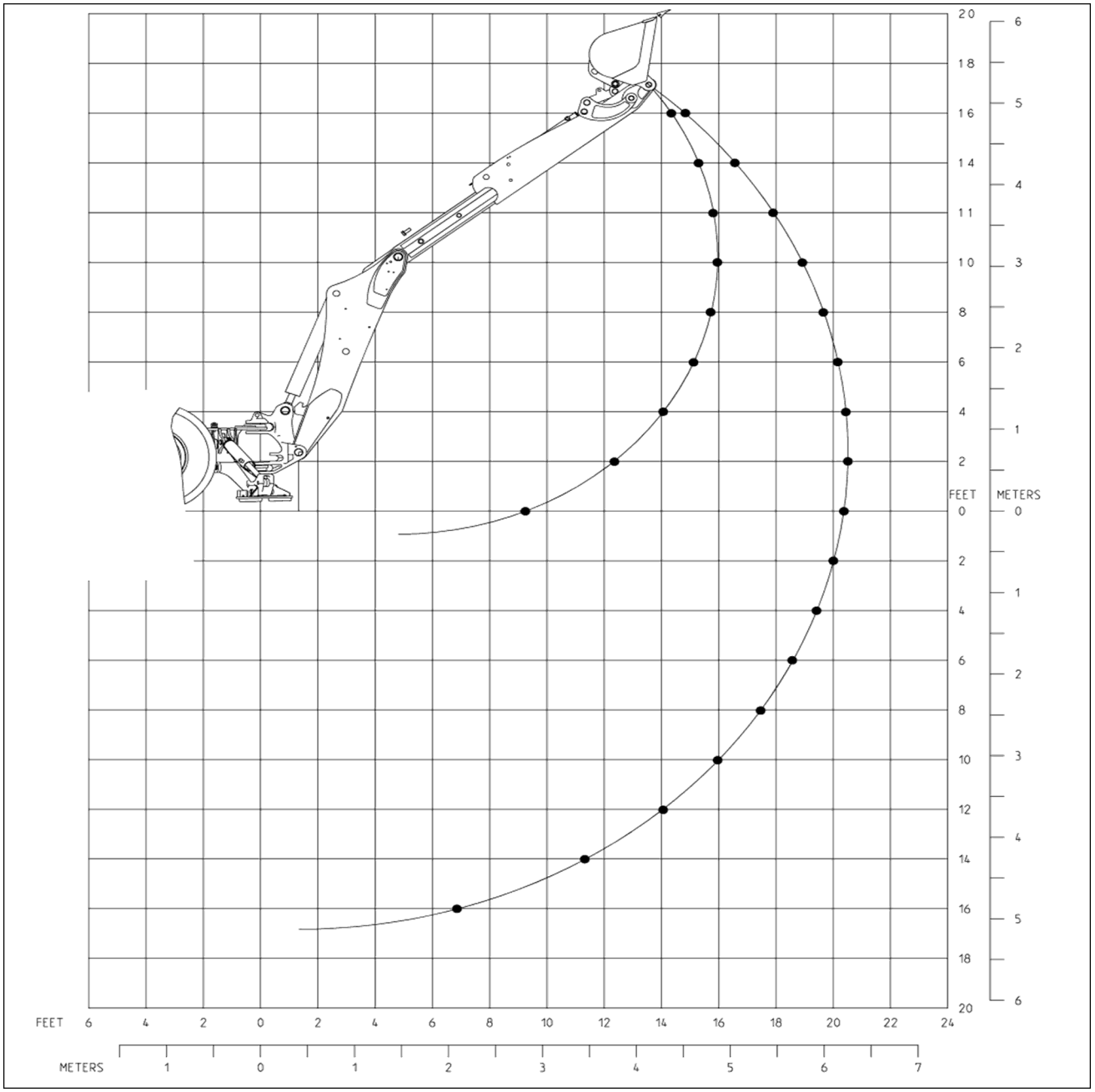
580SN WT

	Description	4WD
A	Loading reach	
	Standard dipper / retracted Extendahoe®	
	Quick coupler	
	Heavy duty bucket	**1423.8 mm (56.1 in)**
	High capacity bucket	**1278.9 mm (50.4 in)**
	Universal coupler	
	Heavy duty bucket	**1387.3 mm (54.6 in)**
	High capacity bucket	**1242.4 mm (48.9 in)**
	Extendahoe® extended	
	Quick coupler	
	Heavy duty bucket	**2218.2 mm (87.3 in)**
	High capacity bucket	**2042.5 mm (80.4 in)**
	Universal coupler	
	Heavy duty bucket	**2181.7 mm (85.9 in)**
	High capacity bucket	**2006.0 mm (79.0 in)**
	Loading reach (Dipper cylinder retracted)	

580SN WT (digging force)

Description	4WD
Digging force, bucket cylinder (SAE rated **239 bar** (**3460 psi**))	
Quick coupler	
Heavy duty bucket	**6136.4 daN** (**13795.1 lbf**)
High capacity bucket	**5328.3 daN** (**11978.5 lbf**)
Universal coupler	
Heavy duty bucket	**5830.1 daN** (**13106.5 lbf**)
High capacity bucket	**5173.1 daN** (**11629.5 lbf**)
Digging force, bucket cylinder (SAE rated **261 bar** (**3780 psi**))	
Quick coupler	
Heavy duty bucket	**6703.9 daN** (**15070.9 lbf**)
High capacity bucket	**5821.1 daN** (**13086.3 lbf**)
Universal coupler	
Heavy duty bucket	**6369.3 daN** (**14318.7 lbf**)
High capacity bucket	**5651.5 daN** (**12705.1 lbf**)
Digging force, dipper cylinder (SAE rated **239 bar** (**3460 psi**))	
Standard dipper / retracted Extendahoe®	
Quick coupler	
Heavy duty bucket	**3850.8 daN** (**8657.0 lbf**)
High capacity bucket	**3679.7 daN** (**8272.4 lbf**)
Universal coupler	
Heavy duty bucket	**3754.1 daN** (**8439.5 lbf**)
High capacity bucket	**3604.0 daN** (**8102.2 lbf**)
Extendahoe® extended	
Quick coupler	
Heavy duty bucket	**2809.1 daN** (**6315.1 lbf**)
High capacity bucket	**2716.3 daN** (**6106.4 lbf**)
Universal coupler	
Heavy duty bucket	**2757.3 daN** (**6198.6 lbf**)
High capacity bucket	**2674.9 daN** (**6013.5 lbf**)
Digging force, dipper cylinder (SAE rated **261 bar** (**3780 psi**))	
Standard dipper / retracted Extendahoe®	
Quick coupler	
Heavy duty bucket	**4206.9 daN** (**9457.6 lbf**)
High capacity bucket	**4020.1 daN** (**9037.5 lbf**)
Universal coupler	
Heavy duty bucket	**4101.3 daN** (**9220.1 lbf**)
High capacity bucket	**3937.3 daN** (**8851.5 lbf**)
Extendahoe® extended	
Quick coupler	
Heavy duty bucket	**3068.9 daN** (**6899.1 lbf**)
High capacity bucket	**2967.5 daN** (**6671.1 lbf**)
Universal coupler	
Heavy duty bucket	**3012.2 daN** (**6771.8 lbf**)
High capacity bucket	**2922.3 daN** (**6569.7 lbf**)



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Extendahoe® - Extended

Boom lift	Standard	**Power Lift™**
+ 4.9 m (16 ft)	**959 kg (2115 lb)**	**1043 kg (2298 lb)**
+ 4.3 m (14 ft)	**1086 kg (2395 lb)**	**1181 kg (2603 lb)**
+ 3.7 m (12 ft)	**1151 kg (2536 lb)**	**1250 kg (2757 lb)**
+ 3.0 m (10 ft)	**1176 kg (2593 lb)**	**1278 kg (2818 lb)**
+ 2.4 m (8 ft)	**1163 kg (2564 lb)**	**1264 kg (2786 lb)**
+ 1.8 m (6 ft)	**1156 kg (2549 lb)**	**1257 kg (2770 lb)**
+ 1.2 m (4 ft)	**1144 kg (2521 lb)**	**1243 kg (2741 lb)**
+ 0.6 m (2 ft)	**1129 kg (2489 lb)**	**1227 kg (2706 lb)**
Ground level	**1129 kg (2489 lb)**	**1227 kg (2706 lb)**
- 0.6 m (2 ft)	**1118 kg (2466 lb)**	**1215 kg (2680 lb)**
- 1.2 m (4 ft)	**1109 kg (2446 lb)**	**1206 kg (2659 lb)**
- 1.8 m (6 ft)	**1108 kg (2443 lb)**	**1205 kg (2656 lb)**
- 2.4 m (8 ft)	**1118 kg (2465 lb)**	**1215 kg (2679 lb)**
- 3.0 m (10 ft)	**1148 kg (2530 lb)**	**1248 kg (2750 lb)**

Noise level

Sound levels with engine at **2200 RPM**.

Exterior	</= 78 dB(A)
Interior	</= 77 dB(A) w/ROPS canopy </= 72 dB(A) w/cab

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