



EN

Operation & Maintenance Manual

Compact Wheel Loader



L85 S/N: B53A11001



OPERATOR SAFETY WARNINGS



- Never operate without instructions. See machine signs (decals), Operation & Maintenance Manual.
- Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

SAFETY EQUIPMENT

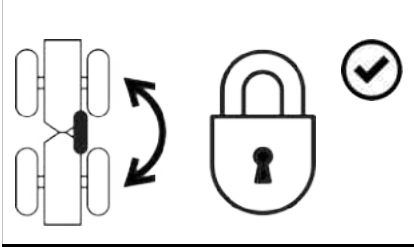
The Bobcat machine must be equipped with safety items necessary for each job. Ask your Bobcat® dealer for information on the availability and safe use of attachments and accessories.

- SEAT BELT: Check belt fasteners and check for damaged webbing or buckle.
- OPERATOR'S HANDBOOK: Must be in the cab.
- SAFETY SIGNS (DECALS): Replace if damaged.
- OPERATOR INTERLOCK CONTROL SYSTEM (OICS): Check function.
- ARTICULATION LOCK BAR: Replace if damaged.
- SAFETY TREADS: Replace if damaged.
- GRAB HANDLES: Replace if damaged.
- LIFT ARM SUPPORT: Replace if damaged.
- PARKING BRAKE
- OPERATOR ENCLOSURE (ROPS and FOPS): It must be on the machine with all fasteners tight.

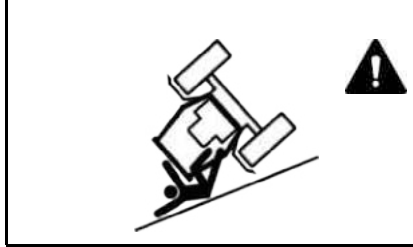
OPERATOR SAFETY WARNINGS



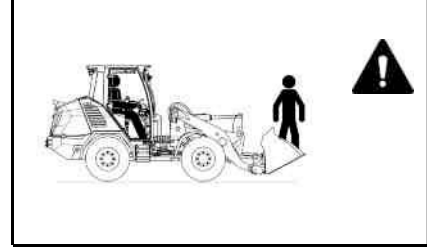
This Safety Alert Symbol means: "Attention! Be Alert! Your Safety is Involved!" Carefully read the message that follows.



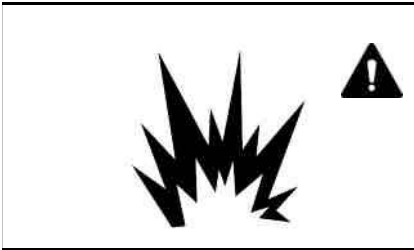
- Stay away from the articulation joint area, unless the articulation lock bar is installed or the engine is off and the parking brake is engaged.
- Always install the articulation lock bar before servicing the machine or fastening the machine for transport.



- Never use the machine without operator enclosure with ROPS and FOPS approval.
- Fasten your seat belt.



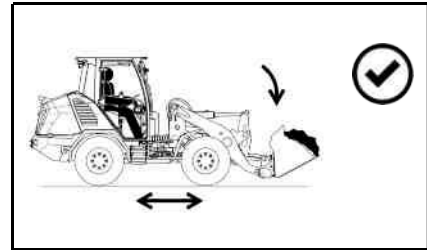
- Never carry riders.
- Keep bystanders away from the work area.
- Never use the machine as a man lift or elevating device for personnel.



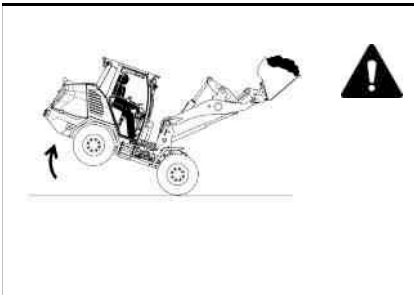
- Do not use the machine in an atmosphere with explosive dust, explosive gas, or where the exhaust can contact flammable material.
- Do not use the machine underground.



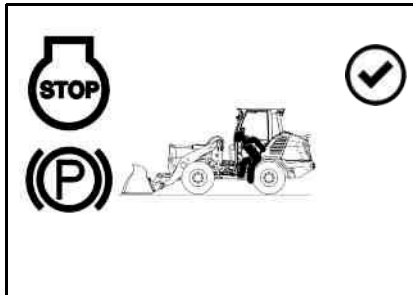
- Always fasten the seat belt securely.
- Always keep hands and feet inside the cab when operating.



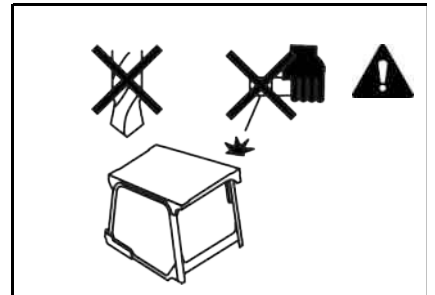
- Always carry the bucket or attachment as low as possible.
- Do not travel or turn with the lift arms up.
- Load, unload, and turn on flat level ground.



- Never exceed the Rated Operating Capacity.



- Never leave the machine with the engine running or with the lift arms up.
- To park, engage the parking brake, put the attachment flat on the ground, and stop the machine.



- Never modify equipment.
- Use only attachments approved by Bobcat Company for this machine.



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DECLARATION OF CONFORMITY (MACHINE)

Contents of EC Declaration of Conformity

This information is provided in the operators manual to comply with clause 1.7.4.2(c) of Annex I of Machinery Directive 2006/42/EC.

The official EC Declaration of Conformity is supplied in a separate document.

<p>Manufacturer</p>  <p>Bobcat Company World Headquarters 250 East Beaton Drive West Fargo, ND 58078-6000 UNITED STATES OF AMERICA</p>	<p>Directive 2000/14/EC: Noise Emission in the Environment by Equipment For Use Outdoors</p> <p>Notified Body</p> <p>Technical and Test Institute for Construction Prague Czech Republic Notified Body Number: 1020</p> <p>EC Certificate No.</p> <p>1020-090-022395</p>				
<p>Technical Documentation</p> <p>Homologation Manager Doosan Bobcat EMEA s.r.o U Kodetky 1810 26312 Dobris CZECH REPUBLIC</p>	<p>Conformity Assessment Procedure(s)</p> <p>2000/14/EC, Annex VIII, Full Quality Assurance</p> <p>Sound Power Levels [Lw(A)]</p> <table border="0"> <tr> <td>Measured Sound Power</td> <td>99,2 dBA</td> </tr> <tr> <td>Guaranteed Sound Power</td> <td>100,0 dBA</td> </tr> </table>	Measured Sound Power	99,2 dBA	Guaranteed Sound Power	100,0 dBA
Measured Sound Power	99,2 dBA				
Guaranteed Sound Power	100,0 dBA				
<p>Description of Equipment</p> <p>Type of Equipment: Wheeled Loader Model Name: L85 Model Code: B53A</p> <p>Engine Manufacturer: Bobcat Company Engine Model: DM02VB DM02-MFL05 Engine Power: 50,7 kW @ 2600 rpm</p>	<p>Equipment conforms to CE Directive(s) Listed Below</p> <p>2006/42/EC: Machinery Directive 2014/30/EU: Electromagnetic Compatibility Directive</p>				
<p>Declaration of Conformance</p> <p>This equipment conforms to the requirements specified in all the EC Directives listed in this declaration.</p>					
<p>Effective From:</p> <p>2 March 2021</p>					

DECLARATION OF CONFORMITY (HYDROFLUOROCARBON)



C201133

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 Czech Republic
 T: +420 318 532 444

www.doosanbobcat.com

Declaration of conformity with Article 14 of Regulation (EU) No 517/2014 of the European Parliament and of the Council

We Doosan Bobcat s.r.o. with VAT number CZ26489201, acting in its capacity as EU representative for the import of goods from CLARK EQUIPMENT COMPANY doing business as BOBCAT COMPANY, a corporation organised under the laws of the State of Delaware, USA with its registered address located at 250 East Beaton Drive, West Fargo, North Dakota, USA, declare under our sole responsibility that when placing on the market pre-charged equipment, which we import to or manufacture in the Union, the hydrofluorocarbons contained in that equipment are accounted for within the quota system referred to in Chapter IV of Regulation (EU) No 517/2014 as:

A. we hold authorisation(s) issued in accordance with Article 18(2) of Regulation (EU) No 517/2014 and registered in the registry referred to in Article 17 of that Regulation, at the time of release for free circulation to use the quota of a producer or importer of hydrofluorocarbons subject to Article 15 of Regulation (EU) No 517/2014 that cover (s) the quantity of hydrofluorocarbons contained in the equipment.

B. *[for importers of equipment only]* the hydrofluorocarbons contained in the equipment have been placed on the market in the Union, subsequently exported and charged into the equipment outside the Union, and the undertaking that placed the hydrofluorocarbons on the market made a declaration stating that the quantity of hydrofluorocarbons has been or will be reported as placed on the market in the Union and that it has not been and will not be reported as direct supply for export in the meaning of Article 15(2)(c) of Regulation (EU) No 517/2014 pursuant to Article 19 of Regulation (EU) No 517/2014 and Section 5C of the Annex to Commission Implementing Regulation (EU) No 1191/2014 (2).

C. *[for equipment manufactured in the Union only]* the hydrofluorocarbons charged into the equipment were placed on the market by a producer or importer of hydrofluorocarbons subject to Article 15 of Regulation (EU) No 517/2014.

Miguel Mallo Marcos

27th March, 2019

INTRODUCTION

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat machine. Read and understand this Operation & Maintenance Manual before operating your Bobcat machine. If you have any questions, see your Bobcat dealer. This manual may illustrate options and accessories not installed on your machine.

Bobcat Company Is ISO 9001 Certified



ISO 9001 is an international standard that specifies requirements for a quality management system that controls the processes and procedures that we use to design, develop, manufacture, and distribute Bobcat products.

British Standards Institute (BSI) is the Certified Registrar that Bobcat Company chose to assess the company's compliance with ISO 9001 at Bobcat's manufacturing facilities in Gwinner, North Dakota (U.S.A.), Pontchâteau (France), and the Bobcat corporate offices (Gwinner, Bismarck, and West Fargo) in North Dakota. TÜV Rheinland is the Certified Registrar that Bobcat Company chose to assess the company's compliance with ISO 9001 at Bobcat's manufacturing facility in Dobříš (Czech Republic). Only certified assessors, like BSI and TÜV Rheinland, can grant registrations.

ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.

Manufacturing Locations

Czech Republic

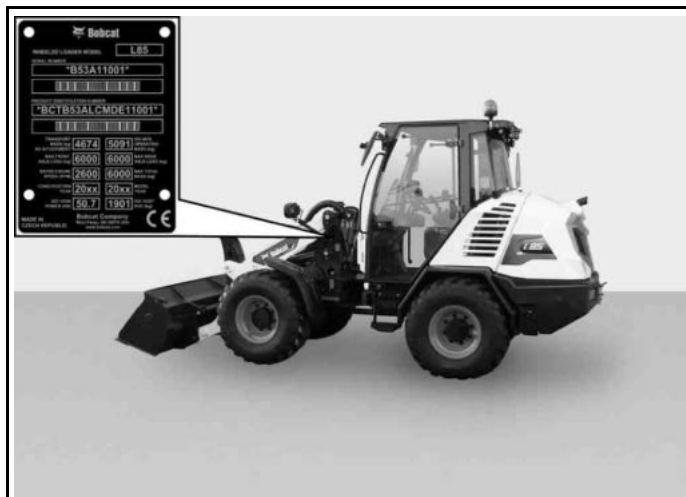
Doosan Bobcat EMEA s.r.o.
U Kodetky 1810
263 12 Dobříš
Czech Republic

SERIAL NUMBER LOCATIONS

Always use the serial number of the machine when requesting service information or when ordering parts. Earlier or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure to do a specific service operation.

Machine Serial Number

Figure 1

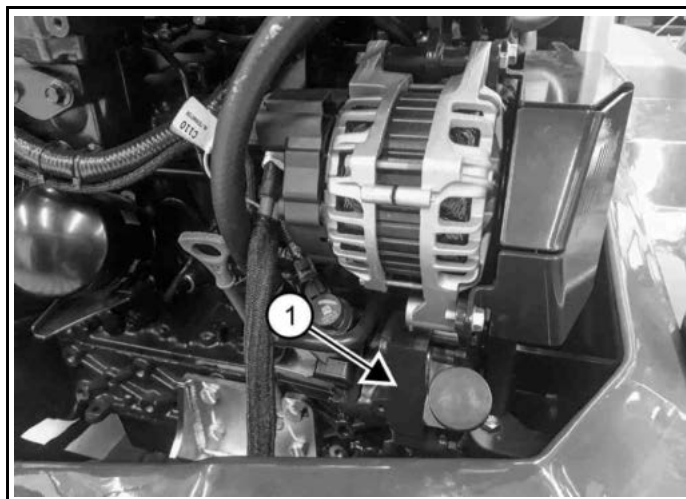


C208238b

The machine serial number plate [Figure 1] is located on the left-hand side of the front frame.

Engine Serial Number

Figure 2



C208237a

The engine serial number (Item 1) [Figure 2] is located on the left-hand side of the engine.

DELIVERY REPORT

Figure 3

Bobcat Delivery Report

Dealer Name: _____ Model Number: _____ Delivery Date: _____

Operator Name: _____

Customer Name: _____ Business Type: _____

Customer Address: _____ Street Address: _____

Customer Phone: _____ Work Phone: _____

Customer Email: _____

WARNING

The following items are to be explained to the customer by the dealer when the machine is delivered. The dealer must explain to the customer the following items:

1. Explain the safety features of the machine and the importance of reading the operator's manual.
2. Explain the importance of proper maintenance and the consequences of neglecting it.
3. Explain the importance of proper use of the machine and the consequences of misuse.
4. Explain the importance of proper use of the machine and the consequences of misuse.
5. Explain the importance of proper use of the machine and the consequences of misuse.
6. Explain the importance of proper use of the machine and the consequences of misuse.
7. Explain the importance of proper use of the machine and the consequences of misuse.
8. Explain the importance of proper use of the machine and the consequences of misuse.
9. Explain the importance of proper use of the machine and the consequences of misuse.
10. Explain the importance of proper use of the machine and the consequences of misuse.
11. Explain the importance of proper use of the machine and the consequences of misuse.
12. Explain the importance of proper use of the machine and the consequences of misuse.
13. Explain the importance of proper use of the machine and the consequences of misuse.
14. Explain the importance of proper use of the machine and the consequences of misuse.
15. Explain the importance of proper use of the machine and the consequences of misuse.
16. Explain the importance of proper use of the machine and the consequences of misuse.
17. Explain the importance of proper use of the machine and the consequences of misuse.
18. Explain the importance of proper use of the machine and the consequences of misuse.
19. Explain the importance of proper use of the machine and the consequences of misuse.
20. Explain the importance of proper use of the machine and the consequences of misuse.
21. Explain the importance of proper use of the machine and the consequences of misuse.
22. Explain the importance of proper use of the machine and the consequences of misuse.
23. Explain the importance of proper use of the machine and the consequences of misuse.

The above information has been explained to the customer and a representative of the machine. I acknowledge the contents and conditions of the operator's manual, understand the safety features, and will comply with the instructions and use all information including personal safety information contained in the operator's manual. I understand the importance of proper use of the machine and the consequences of misuse. I will read and understand the operator's manual and will comply with the instructions and use all information including personal safety information contained in the operator's manual.

Dealer Signature: _____ Date: _____

Operator Signature: _____ Date: _____

Please scan and attach this signed, completed Delivery Report to the online form to submit online.

NA15473

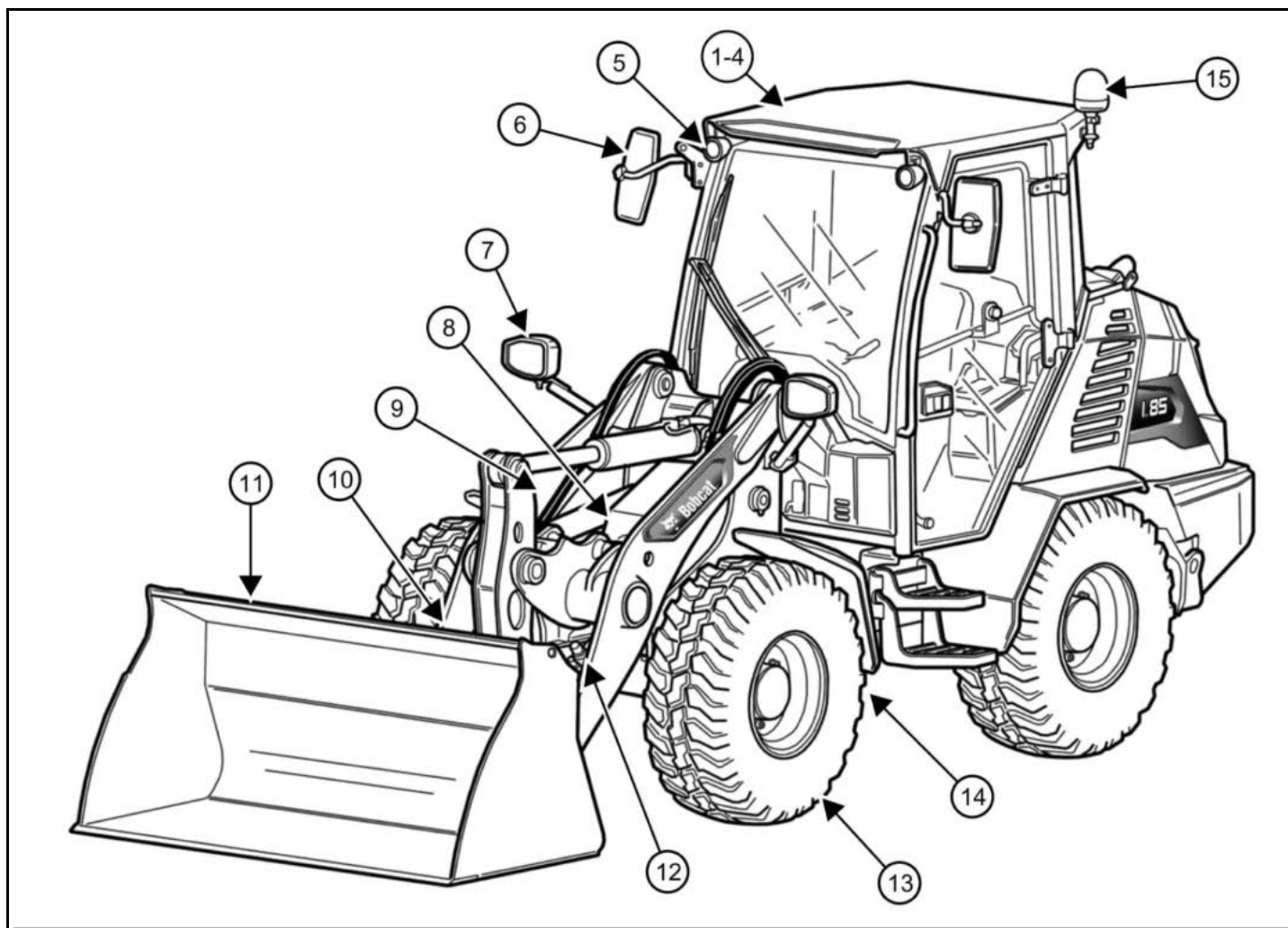
The delivery report contains a list of items that must be explained or shown to the owner or operator by the dealer when the machine is delivered.

The delivery report must be reviewed and signed by the owner or operator and the dealer.

MACHINE IDENTIFICATION

Front View

Figure 4



NA20052a

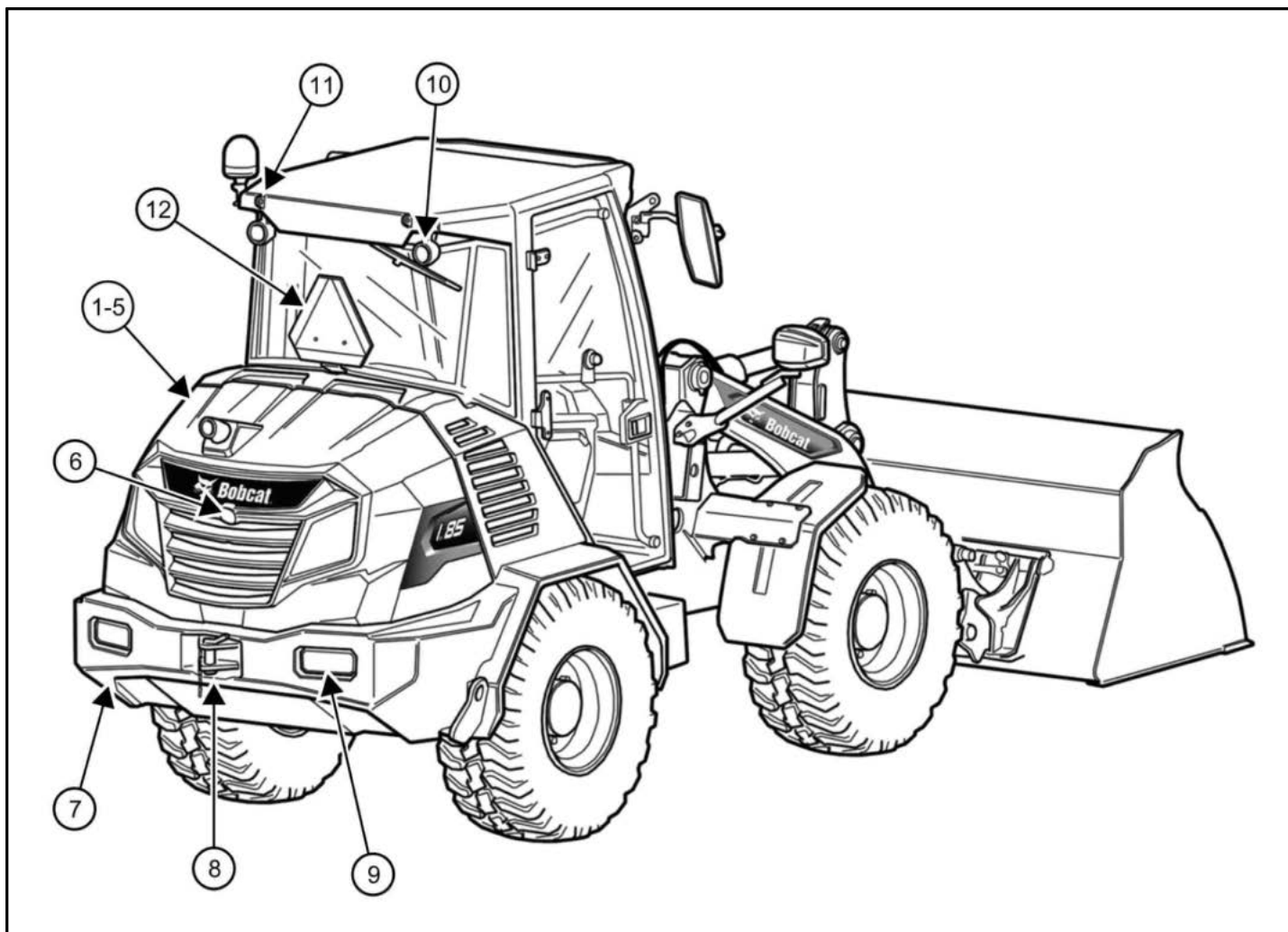
REF.	DESCRIPTION
1	Operator Cab (ROPS and FOPS)
2	Operation & Maintenance Manual and Operator's Handbook
3	Operator Seat with Seat Belt
4	Sun Visor
5	Front Work Lights
6	Mirrors
7	Front Road Lights and Turn Direction Signals
8	Wheel Wedge (If Equipped)
9	Lift Arms
10	Quick-Tach attachment mounting system
11	Bucket [A]

REF.	DESCRIPTION
12	Front Auxiliary Quick Couplers / Attachment Control Device (ACD)
13	Tyres
14	Articulation Lock Bar
15	Beacon / Strobe (If Equipped)

[A] Several different buckets and other attachments are available for your machine.

Rear View

Figure 5



NA20053a

REF.	DESCRIPTION
1	Engine Cover
2	Fuel Tank Fill
3	Hydraulic Tank Fill
4	Back-Up Alarm (If Equipped)
5	Lift Arm Support

REF.	DESCRIPTION
6	Rear View Camera
7	Counterweight
8	Retrieval Pin
9	Tail Lights and Turn Direction Signals
10	Rear Work Lights
11	License Plate Lights (If Equipped)
12	Slow Moving Vehicle (SMV) Emblem

FEATURES, ACCESSORIES, AND ATTACHMENTS

Standard Items

The model L85 Bobcat Compact Wheel Loader is equipped with the following standard items:

- 12 V Power Outlet and Dual USB Power Outlet
- Access Covers
- ACD
- Adjustable Steering Column with Steering Wheel
- Advanced Attachment Control
- Articulation Lock Bar
- Auxiliary Hydraulics (with Variable and Continuous Flow)
- Battery Disconnect Switch
- Bobcat Machine IQ
- Bobcat Standard Display
- Brake Pedal and Inching Control
- Bucket Level Indicator
- Cab Heater
- Cloth Suspension Seat
- Counterweight
- Cylinder Cushioning
- Differential Lock
- Dome Light
- Diesel Particulate Filter (DPF) system with integrated Diesel Oxidation Catalyst (DOC) (Spark Arrester Certified)
- Electronic Engine Speed Control
- Enclosed Cab Roll-Over Protective Structure (ROPS) and Falling-Object Protective Structure (FOPS) (Level 2) Approved
- Engine / Hydraulic Systems Shutdown
- Front and Rear Washers / Wipers
- Front Horn
- Glow Plugs
- Hydraulic Workgroup Lockout
- Keyed Ignition with Password Protection

- Instrumentation: Hourmeter, RPM, System Voltage; Engine Temperature and Fuel Gauges; Warning Lights
- Interior Storage Compartments
- License Plate Lights
- Lift Arm Float
- Lift Arm Support
- Mirrors
- Mudguards
- Multi-Function Joystick with Travel Direction Control
- Operator Interlock Control System (OICS)
- Parking Brake
- Quick-Tach attachment mounting system
- Radio Ready and Speakers
- Retrieval Pin
- Rear View Camera
- Rear Window Defroster
- Retractable Seat Belt
- Road Lights Halogen (Front)
- Road Lights LED (Rear)
- Tyres (405/70 R18)
- Travel Speed (20 km/h)
- Two-Speed Control
- Work Lights (Front and Rear)

Options And Accessories

Below is a list of some equipment available from your Bobcat dealer and/or factory installed accessories and factory installed options. See your Bobcat dealer for other available options and accessories.

- Auto Ride Control
- Back-Up Alarm
- Beacon
- Cab HVAC system
- Fire Extinguisher
- High-Flow Auxiliary Hydraulics
- Road Lights LED (Front)

- Road Package
- Strobe
- Suspension Seat
- Tyres:
 - ▷ 335/80 R18
 - ▷ 365/70 R18
 - ▷ 405/70 R20
- Travel Speed (30 km/h)

Attachments

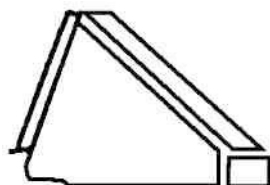
These and other attachments are approved for use on this model machine. Do not use unapproved attachments. Attachments not manufactured by Bobcat may not be approved.

The versatile Bobcat machine quickly turns into a multi-job machine with a tight-fit attachment hook-up. From bucket to grapple to pallet fork, and a variety of other attachments.

See your Bobcat dealer for information about approved attachments and attachment Operation & Maintenance Manuals.

- Buckets
- Combination Bucket
- Pallet Fork
- Quick-Tach to Bob-Tach® attachment mounting system Adapter
- Attachments requiring the Quick-Tach to Bob-Tach attachment mounting system Adapter:
 - ▷ Snowblower

Buckets Available



Increase the versatility of your Bobcat machine with a variety of bucket styles and sizes.

Many bucket styles and different capacities are available for a variety of different applications. See your Bobcat dealer for the correct bucket for your Bobcat machine and application.

SAFETY INSTRUCTIONS

Before Operation

Carefully follow the operating and maintenance instructions in this manual.

Safety decals must be in good condition. If replacing a part with a safety decal or if a safety decal is damaged or worn it must be replaced on the machine.

The Bobcat machine is highly manoeuvrable. It is rugged and useful under a wide variety of conditions. This presents an operator with hazards associated with off highroad, rough terrain applications, common with Bobcat machine usage.

The Bobcat machine has an internal combustion engine with resultant heat and exhaust. All exhaust gases can kill or cause illness so use the machine with adequate ventilation.

The dealer explains the capabilities and restrictions of the Bobcat machine and attachment for each application. The dealer demonstrates the safe operation according to Bobcat instructional materials, which are also available to operators. The dealer can also identify unsafe modifications or use of unapproved attachments. The attachments and buckets are designed for a Rated Operating Capacity. They are designed for secure fastening to the machine. The user must check with the dealer, or Bobcat literature, to determine safe loads of materials of specified densities for the machine - attachment combination.

The following publications and training materials provide information on the safe use and maintenance of the Bobcat machine and attachments:

- The Delivery Report is used to assure that complete instructions have been given to the new owner and that the machine and attachment are in safe operating condition.
- The Operation & Maintenance Manual delivered with the machine or attachment gives operating information as well as routine maintenance and service procedures. It is a part of the machine and can be stored in a container provided on the machine. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat dealer.
- Machine signs (decals) instruct on the safe operation and care of your Bobcat machine or attachment. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat dealer.
- An Operator's Handbook is fastened to the operator cab of the machine. Its brief instructions are convenient for the operator.

The dealer and owner / operator review the recommended uses of the product when delivered. If the owner / operator will be using the machine for a different application(s) he or she must ask the dealer for recommendations on the new use.

Safe Operation Is The Operator's Responsibility



Safety Alert Symbol

This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

WARNING

INSUFFICIENT INSTRUCTIONS HAZARD
Untrained operators or failure to follow instructions can cause serious injury or death. Operators must have adequate training and instruction before operating. ◀

W-2001

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine. ◀

I-2019

WARNING

The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. ◀

W-2044

DANGER

The signal word **DANGER** on machine signs and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury. ◀

D-1002

The machine and attachment must be in good operating condition before use.

Check all of the items on the Service Schedule decal in the Every 10 Hours section or as shown in the Operation & Maintenance Manual.

Safe Operation Needs A Qualified Operator

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine.

A Qualified Operator Must Do The Following

- Understand the written instructions, rules, and regulations.
 - The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, and machine signs (decals).
 - Check the rules and regulations at your location. The rules may include an employer's work safety requirements. For driving on public roads, the machine must be equipped as stipulated by the

local regulations authorising operation on public roads in your specific country. Regulations may identify a hazard such as a utility line.

be disposed of in a proper manner through your local dealer or recycling center.

- Have training with actual operation.
 - ▷ Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
 - ▷ The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.
- Know the work conditions.
 - ▷ Know the weight of the materials being handled. Avoid exceeding the Rated Operating Capacity of the machine. Material that is very dense will be heavier than the same volume of less dense material. Reduce the size of load if handling dense material.
 - ▷ The operator must know any prohibited uses or work areas, for example, he or she needs to know about excessive slopes.
 - ▷ Know the location of any underground lines.
 - ▷ Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, respiratory equipment, hearing protection, or Special Applications Kits are required for some work. See your Bobcat dealer about Bobcat safety equipment for your model.

Silica Dust Exposure



Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Use a respirator, water spray, or other means to control dust.

Dismantling And Disposal

On the completion of its useful life, the machine and its parts shall be disposed of in an environmental friendly manner. Please contact your local dealer. Parts of the machine can be remanufactured like the engine depending on its age and condition, or recycled like metals, plastics, rubbers and glasses. Respect the environment and dispose of waste properly. Worn or damaged parts shall not be left in the environment. Oils, brake fluid, cooling refrigerants, batteries and cells shall

FIRE PREVENTION



Maintenance

The machine and some attachments have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment, and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants, and some coolants mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

Do not use the machine where exhaust, arcs, sparks, or hot components can contact flammable material, explosive dust, or gases.

Electrical



P200082

Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use petrol or diesel fuel for cleaning parts. Use commercial non-flammable solvents.

Fuelling



P200084

Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher sulfur content. Avoid death or serious injury from fire or explosion. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fuelling standards for proper earthing and bonding practices.

Starting

Do not use ether or starting fluids on any engine that has glow plugs or air intake heater. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting.

Exhaust System

The exhaust system consisting of DPF (Diesel Particulate Filter) or DOC (Diesel Oxidation Catalyst) is designed to control the emission of hot particles from the engine and exhaust system and are certified as spark arrestors, but they and the exhaust gases are still hot.

Welding And Grinding

Always clean the machine and attachment, disconnect the battery, and disconnect the wiring from the Bobcat controllers before welding. Cover rubber hoses, battery, and all other flammable parts. Keep a fire extinguisher near the machine when welding.

Have good ventilation when grinding or welding painted parts. Wear a dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing non-metallic parts such as hoods, fenders, or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers



P20083

Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

The following publications are also available for your Bobcat compact wheel loader. You can order them from your Bobcat dealer.



OPERATION & MAINTENANCE MANUAL

Complete instructions on the correct operation and the routine maintenance of your Bobcat compact wheel loader.

7401895



SERVICE MANUAL

Complete maintenance instructions for your Bobcat compact wheel loader.

7401896



OPERATOR'S HANDBOOK

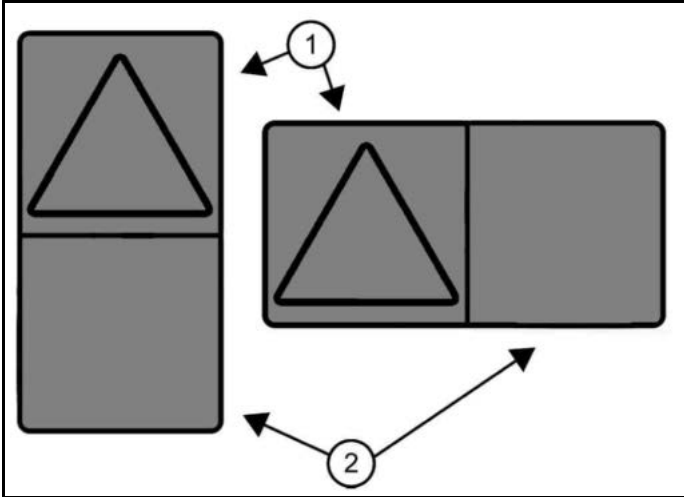
Gives basic operation instructions and safety warnings.

7401897

PICTORIAL ONLY SAFETY SIGNS

Safety signs are used to alert the equipment operator or maintenance person to hazards that may be encountered in the use and maintenance of the equipment. The location and description of the safety signs are detailed in this section. Please become familiarised with all safety signs installed on the machine / attachment.

Figure 6



The format consists of the hazard panel(s) (Item 1) [Figure 6] and the avoidance panel(s) (Item 2) [Figure 6].

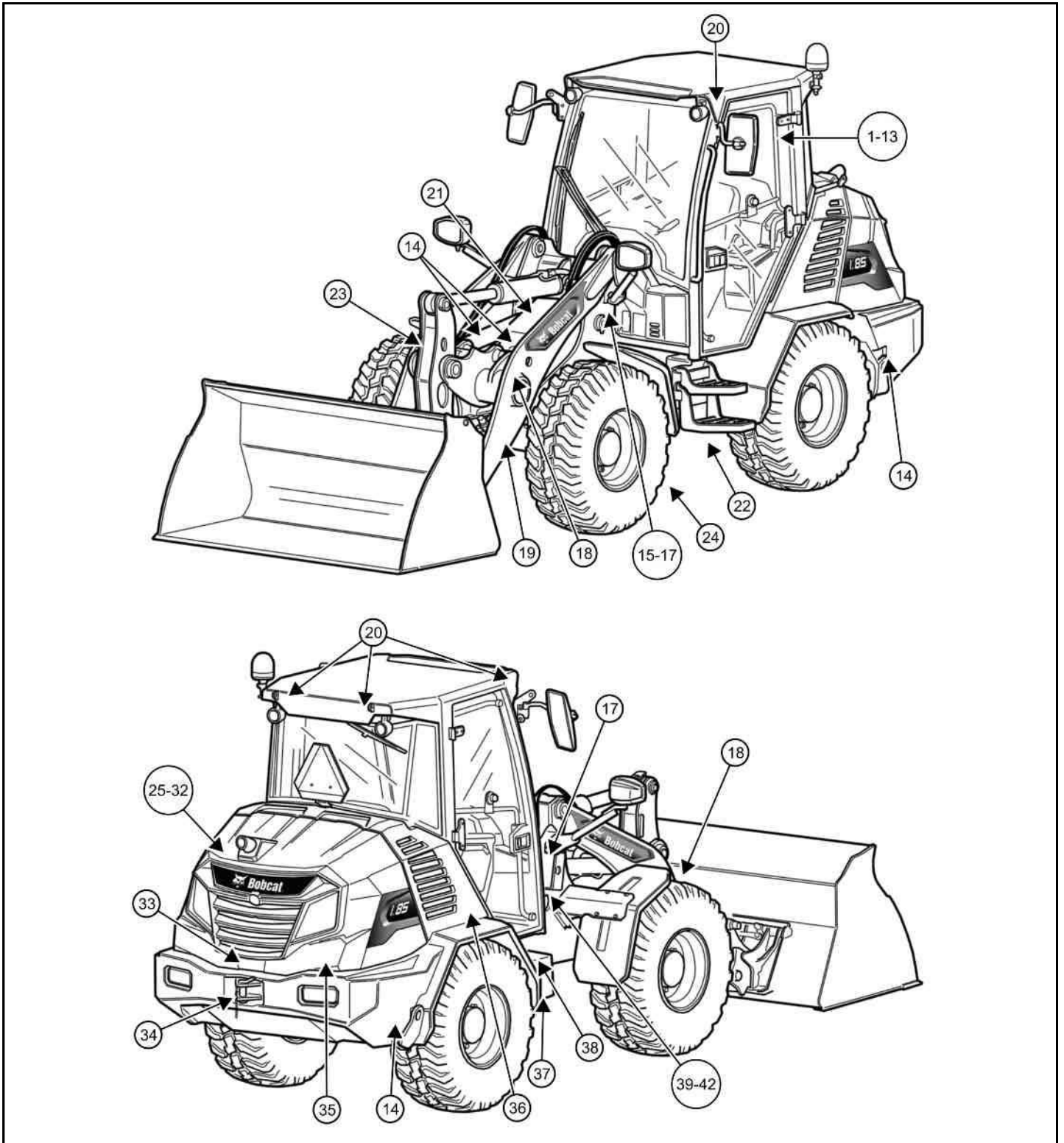
Hazard Panels: Depict a potential hazard enclosed in a safety alert triangle.

Avoidance Panels: Depict actions required to avoid the hazards.


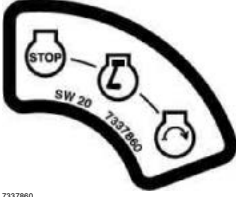
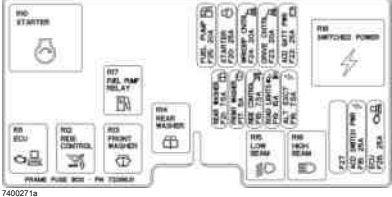
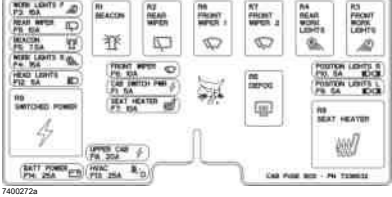
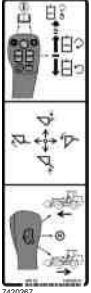
A safety sign may contain more than one hazard panel and more than one avoidance panel.





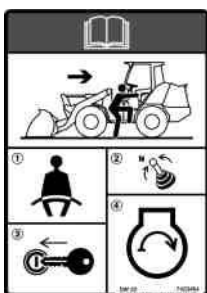


MACHINE SIGNS (DECALS)






Figure 7

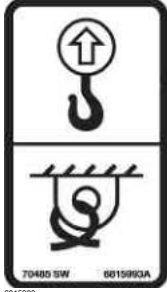
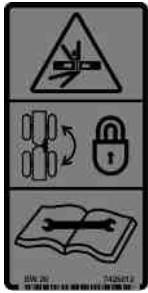

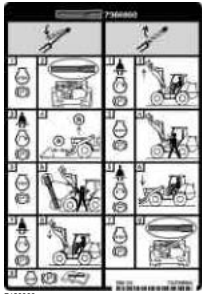






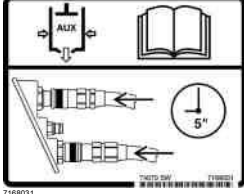

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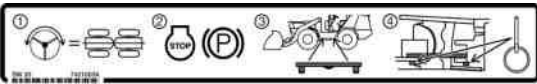

REF.	DECAL	WARNING (If applicable)
1	<p>Operation And Maintenance Manual Location (6732148)</p> <p>This decal is located inside the operator cab.</p> 	<div style="background-color: black; color: white; padding: 5px; text-align: center;"> WARNING </div> <p>INSUFFICIENT INSTRUCTIONS HAZARD Untrained operators or failure to follow instructions can cause serious injury or death. Read and understand the Operation & Maintenance Manual before operating the machine. ◀</p> <small>W-3021</small>
2	<p>Key Switch (7337860)</p> <p>This decal is located inside the operator cab.</p> 	
3	<p>Mainframe Fuse Panel (7400271)</p> <p>This decal is located inside the operator cab.</p> 	
4	<p>Operator Cab Fuse Panel (7400272)</p> <p>This decal is located inside the operator cab.</p> 	
5	<p>Controls Pattern (7420267)</p> <p>This decal is located inside the operator cab.</p> 	<div style="background-color: black; color: white; padding: 5px; text-align: center;"> WARNING </div> <p>UNINTENDED MOVEMENT HAZARD Failure to follow instructions can cause serious injury or death. Know the control pattern before operating. Read and understand the Operation & Maintenance manual before operating the machine. ◀</p> <small>W-3022</small>

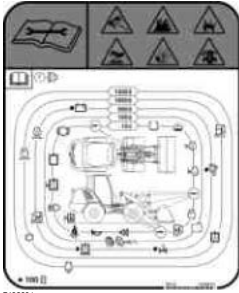


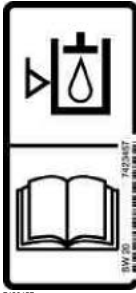
REF.	DECAL	WARNING (If applicable)
6	<p>General Hazard Warning (7421002)</p> <p>This decal is located inside the operator cab.</p> 	 <p>GENERAL HAZARD Untrained operators or failure to follow instructions can cause serious injury or death. Operators must have adequate training and instruction before operating the machine. Read Operation & Maintenance Manual and Handbook. Never modify equipment or use attachments not approved by Bobcat Company.</p> <ul style="list-style-type: none"> • On slopes, keep heavy end of machine uphill. • Do not travel or turn with lift arms up. Load, unload, and turn on flat level ground. DO NOT exceed Rated Operating Capacity (See decal in cab). ◀ <p><small>W-2837</small></p>
7	<p>Back-up Alarm (7420998) (If Equipped)</p> <p>This decal is located inside the operator cab.</p> 	 <p>CRUSHING HAZARD Contact with machine can cause serious injury or death.</p> <ul style="list-style-type: none"> • Always keep bystanders away from the work area and travel path. • The operator must maintain a clear view of the direction of travel and look before and during machine movement. • The back-up alarm must sound when operating the machine in the reverse direction. ◀ <p><small>W-2783</small></p>
8	<p>Standard Controls Operation (7423464)</p> <p>This decal is located inside the operator cab.</p> 	
9	<p>To Leave The Machine (7423467)</p> <p>This decal is located inside the operator cab.</p> 	 <p>GENERAL HAZARD Failure to follow instructions can cause serious injury or death</p> <p>To leave the loader safely:</p> <ol style="list-style-type: none"> 1. Lower the lift arms and put attachment flat on the ground. 2. Stop the engine. 3. Engage the brake. 4. Raise seat bar. 5. Exit the loader. ◀ <p><small>W-2839</small></p>

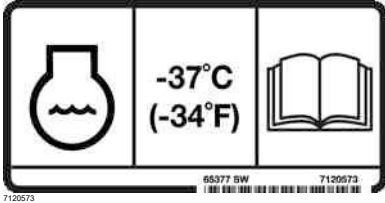


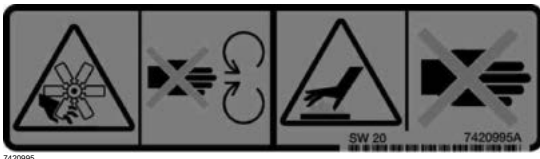

REF.	DECAL	WARNING (If applicable)
10	<p data-bbox="225 237 544 266">Rollover Hazard (7425811)</p> <p data-bbox="225 293 751 322">This decal is located inside the operator cab.</p> 	 WARNING <p data-bbox="794 338 1485 416">INSTABILITY HAZARD Machine tipping or rollover can cause serious injury or death.</p> <ul data-bbox="794 421 1485 618" style="list-style-type: none"> • Do not overload the machine. • Keep the lift arms as low as possible. • Do not travel or turn with the lift arms up. • Turn on level ground. Slow down when turning. • Go up and down slopes, not across them. • Keep the heavy end of the machine uphill. • Check for adequate traction. ◀
11	<p data-bbox="225 663 751 719">Rated Operating Capacity / Lift Capacity Chart (7420994)</p> <p data-bbox="225 745 751 775">This decal is located inside the operator cab.</p> 	
12	<p data-bbox="225 1111 512 1140">Sound Power (7417656)</p> <p data-bbox="225 1167 751 1196">This decal is located inside the operator cab.</p> 	
13	<p data-bbox="225 1447 544 1476">Emergency Exit (7423531)</p> <p data-bbox="225 1503 751 1532">This decal is located inside the operator cab.</p> 	

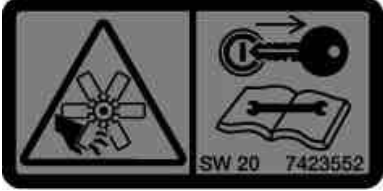





REF.	DECAL	WARNING (If applicable)
14	<p>Lift / Tie Down (6815993) (4)</p> <p>This decal is located next to the front and rear lift / tie-down points of the machine.</p> 	
15	<p>Articulation Crushing Hazard (7425812)</p> <p>This decal is located on the left-hand side of the front frame.</p> 	<div style="background-color: black; color: white; padding: 5px; text-align: center;">  WARNING </div> <p>CRUSHING HAZARD Using a damaged articulation lock bar or with missing parts can allow movement of the articulation joint causing serious injury or death. Read this Operation & Maintenance Manual. Understand all safety signs (decals), precautions and operating procedures before operating this vehicle. ◀</p> <small>W-3088</small>
16	<p>Lift Arm Support (7420999)</p> <p>This decal is located on the left-hand side of the front frame.</p> 	

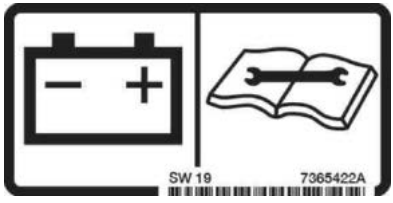

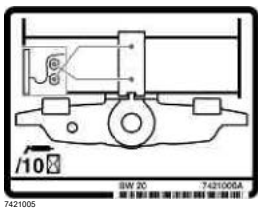
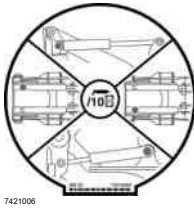
REF.	DECAL	WARNING (If applicable)
17	<p>Articulation Crushing Hazard (7423454) (2)</p> <p>This decal is located on both sides of the front frame.</p> 	 <p>WARNING</p> <p>CRUSHING HAZARD Using a damaged articulation lock bar or with missing parts can allow movement of the articulation joint causing serious injury or death. Read this Operation & Maintenance Manual. Understand all safety signs (decals), precautions and operating procedures before operating this vehicle. ◀</p> <p><small>W-3088</small></p>
18	<p>Stay Clear (7369644) (2)</p> <p>This decal is located on both sides of the lift arms.</p> 	 <p>DANGER</p> <p>CRUSHING HAZARD Lift arms lowering will cause serious injury or death. Keep out of this area when lift arms are raised unless supported by an approved lift arm support. Moving lift arm control or failure of a part can cause lift arms to drop. ▶</p> <p><small>D-1020</small></p>
19	<p>Auxiliary Hydraulic Couplers (7168031)</p> <p>This decal is located on the left-hand side of the lift arms.</p> 	
20	<p>No Lift Point (7359393)</p> <p>This decal is located on the four corners of the operator enclosure roof.</p> 	

REF.	DECAL	WARNING (If applicable)
21	<p>Lift Arm Crushing (7414224) (3)</p> <p>This decal is located on the front frame cover.</p>  <p>7414224</p>	 <p>CRUSHING HAZARD Lift arms lowering will cause serious injury or death. Keep out of this area when lift arms are raised unless supported by an approved lift arm support. Moving lift arm control or failure of a part can cause lift arms to drop. ◀</p> <p>D-1020</p>
22	<p>Pressurised Fluid (7414225)</p> <p>This decal is located underneath the operator enclosure.</p>  <p>7414225</p>	 <p>INJECTION HAZARD Release Ride Control accumulator pressure before servicing.</p> <ul style="list-style-type: none"> • After fully lowering the lift arms or installing an approved lift arm support, use lift arm bypass control for 5 seconds to release pressure from lift circuit before servicing. <p>See Operation & Maintenance Manual or Service Manual for lift arm bypass control instructions. ◀</p> <p>W-3015</p>
23	<p>Falling Hazard (7421001)</p> <p>This decal is located on the lift arms rocker.</p>  <p>7421001</p>	 <p>FALLING HAZARD Falling from the machine can cause serious injury or death.</p> <ul style="list-style-type: none"> • Never carry riders. • Never use machine as a man lift or work platform. ◀ <p>W-2835</p>
24	<p>Articulation Lock Bar Installation (7421003)</p> <p>This decal is located on the left-hand side of the front frame.</p>  <p>7421003</p>	 <p>CRUSHING HAZARD Using a damaged articulation lock bar or with missing parts can allow movement of the articulation joint causing serious injury or death. Service or replace the articulation lock bar if damaged or if parts are missing. ◀</p> <p>W-3087</p>

REF.	DECAL	WARNING (If applicable)
25	<p data-bbox="225 237 730 271">Service Checklist and Schedule (7432691)</p> <p data-bbox="225 293 730 327">This decal is located inside the engine bay.</p>  <p data-bbox="225 640 256 651">7432691</p>	<div data-bbox="794 271 1485 327" style="background-color: black; color: white; padding: 5px; text-align: center;">  WARNING </div> <p data-bbox="794 338 1054 371">GENERAL HAZARD</p> <p data-bbox="794 371 1469 427">Failure to follow instructions can cause serious injury or death.</p> <ul data-bbox="794 427 1469 1066" style="list-style-type: none"> • Keep door / cover closed except for service. • Keep engine clean of flammable material. • Keep body, loose objects, and clothing away from electrical contacts, moving parts, hot parts, and exhaust. • Do not use the machine in space with explosive dusts or gases or with flammable material near exhaust. • Never use ether or starting fluid on diesel engine with glow plugs or air intake heater. Use only starting aids as approved by engine manufacturer. • Leaking fluids under pressure can enter skin and cause serious injury. • Battery acid causes severe burns; wear goggles. If acid contacts eyes, skin, or clothing, flush with water. For contact with eyes, flush and get medical attention. • Battery makes flammable and explosive gas. Keep arcs, sparks, flames, and lighted tobacco away. • For jump start, connect negative cable to the machine engine last (never at the battery). After jump start, remove negative connection at the engine first. • Exhaust gases can kill. Always ventilate. ◀ <p data-bbox="794 1055 826 1066">W-2782</p>
26	<p data-bbox="225 1115 699 1149">Ultra Low Sulfur (7238123) (if equipped)</p> <p data-bbox="225 1171 730 1205">This decal is located inside the engine bay.</p>  <p data-bbox="225 1417 256 1429">7238123</p>	
27	<p data-bbox="225 1447 687 1480">Hydraulic Fluid Sight Gauge (7423457)</p> <p data-bbox="225 1503 730 1536">This decal is located inside the engine bay.</p>  <p data-bbox="225 1850 256 1861">7423457</p>	

REF.	DECAL	WARNING (If applicable)
28	<p>Engine Coolant (7120573)</p> <p>This decal is located inside the engine bay.</p> 	
29	<p>Hot Pressurised Fluid (7169699)</p> <p>This decal is located inside the engine bay.</p> 	<p>⚠ WARNING</p> <p>BURN HAZARD Hot fluid can cause serious burns</p> <ul style="list-style-type: none"> • Never open hot. • Open slowly to release pressure.. ◀ <p><small>W-2755</small></p>
30	<p>Hot Surface Warning (7185935) (3)</p> <p>This decal is located inside the engine bay.</p> 	<p>⚠ WARNING</p> <p>BURN HAZARD Failure to follow instructions can cause serious burns. Stop the engine and allow it to cool before removing the radiator cap or adding coolant. ◀</p> <p><small>W-2070</small></p>
31	<p>Hot Surfaces and Rotating Fan (7420995)</p> <p>This decal is located inside the engine bay.</p> 	<p>⚠ WARNING</p> <p>CUTTING AND BURN HAZARD Keep away from the operating machine.</p> <ul style="list-style-type: none"> • Keep away from fan and moving parts. Do not operate with guard removed. • Do not touch hot surfaces. Allow to cool before servicing. ◀ <p><small>W-2521</small></p>
32	<p>High pressure gas (7169291)</p> <p>This decal is located inside the engine bay.</p> 	<p>⚠ WARNING</p> <p>IMPACT HAZARD Opening cylinder can release rod and cause serious injury or death.</p> <ul style="list-style-type: none"> • Contents under high pressure. • Do not open. • See Service Manual for additional information. <p><small>W-2523</small></p>

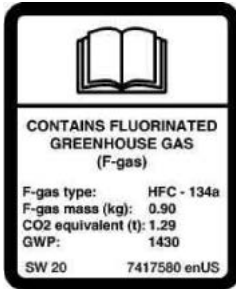
REF.	DECAL	WARNING (If applicable)
33	Engine Cover (7423552) This decal is located on the engine cover. 	
34	Retrieval Point (7350278) This decal is located on the counterweight. 	
35	Stay Clear (7421004) This decal is located on the engine cover. 	<div style="background-color: black; color: white; padding: 5px; text-align: center;">  WARNING </div> <p>CRUSHING HAZARD Contact with machine can cause property damage, serious injury or death.</p> <ul style="list-style-type: none"> • Keep out of swing area or travel path. • Always look in the direction of travel. • Make sure swing area is clear of bystanders and objects. ◀
36	Speed Limit (7423472 or 7421009) (If Equipped) This decal is located on the engine cover and on the right-hand side cover.  	

REF.	DECAL	WARNING (If applicable)
37	Battery Access (7365422)	
	This decal is located on the battery cover.	
	 <p>The decal is rectangular and divided into two sections. The left section shows a battery symbol with a minus sign on the left and a plus sign on the right. The right section shows a wrench and a screwdriver crossed. Below the battery symbol is the text 'SW 19' and below the tools is '7365422A'. At the bottom, there is a small barcode and the text '7365422A'.</p>	
38	Not A Step (7236952)	
	This decal is located on the battery cover.	
	 <p>The decal is circular with a diagonal line through it, indicating a prohibition. Inside the circle is a silhouette of a foot. Below the circle is the text '7236952'.</p>	
39	Grease Point Articulation Joint (7421005)	
	This decal is located at the articulation joint, on the right-hand side of the machine.	
	 <p>The decal is rectangular and shows a technical drawing of a mechanical joint. In the bottom left corner, there is a '10' in a square. Below the drawing is the text 'SW 20' and '7421005A'. At the bottom, there is a small barcode and the text '7421005A'.</p>	
40	Grease Points Lift Arms (7421006)	
	This decal is located on the right-hand side of the front frame.	
	 <p>The decal is circular and shows a technical drawing of lift arms. In the center, there is a '10' in a square. Below the drawing is the text '7421006'.</p>	

REF.	DECAL	WARNING (If applicable)
------	-------	-------------------------

41 Fluorinated Greenhouse Gas (7417580) (If Equipped)

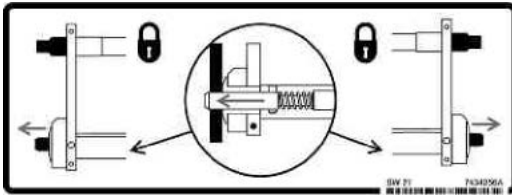
This decal is located on the HVAC unit.



7417580

42 Quick-Tach (7434256)

This decal is located on the rear side of the front frame.





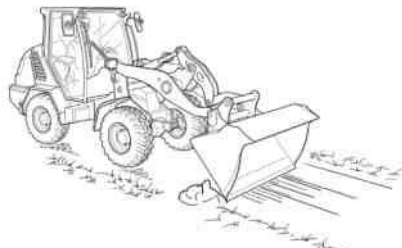
7434256




INTENDED USE

This machine is classified as a compact wheel loader as defined in ISO 6165. This machine has wheels and commonly a front mounted bucket for the principle intended functions of digging, moving, levelling, lifting, carrying, and loading loose materials such as earth, gravel, or crushed rock.

Additional Bobcat approved attachments allow this machine to perform other tasks described in the attachment Operation & Maintenance Manuals.

Examples of intended use include:

<p>Digging</p>  <p>NA20133</p>
<p>Backfilling</p>  <p>NA20215</p>
<p>Levelling</p>  <p>NA20216</p>

<p>Piling Materials</p>  <p>NA20134</p>
<p>Loading Materials</p>  <p>NA20213</p>
<p>Moving Palletised Materials</p>  <p>NA20077</p>

⚠ WARNING

INSTABILITY HAZARD
 Machine tipping or rollover can cause serious injury or death.
 Load, unload and turn on flat level ground. **DO NOT** exceed Rated Operating Capacity (ROC) shown on decal in cab. ◀

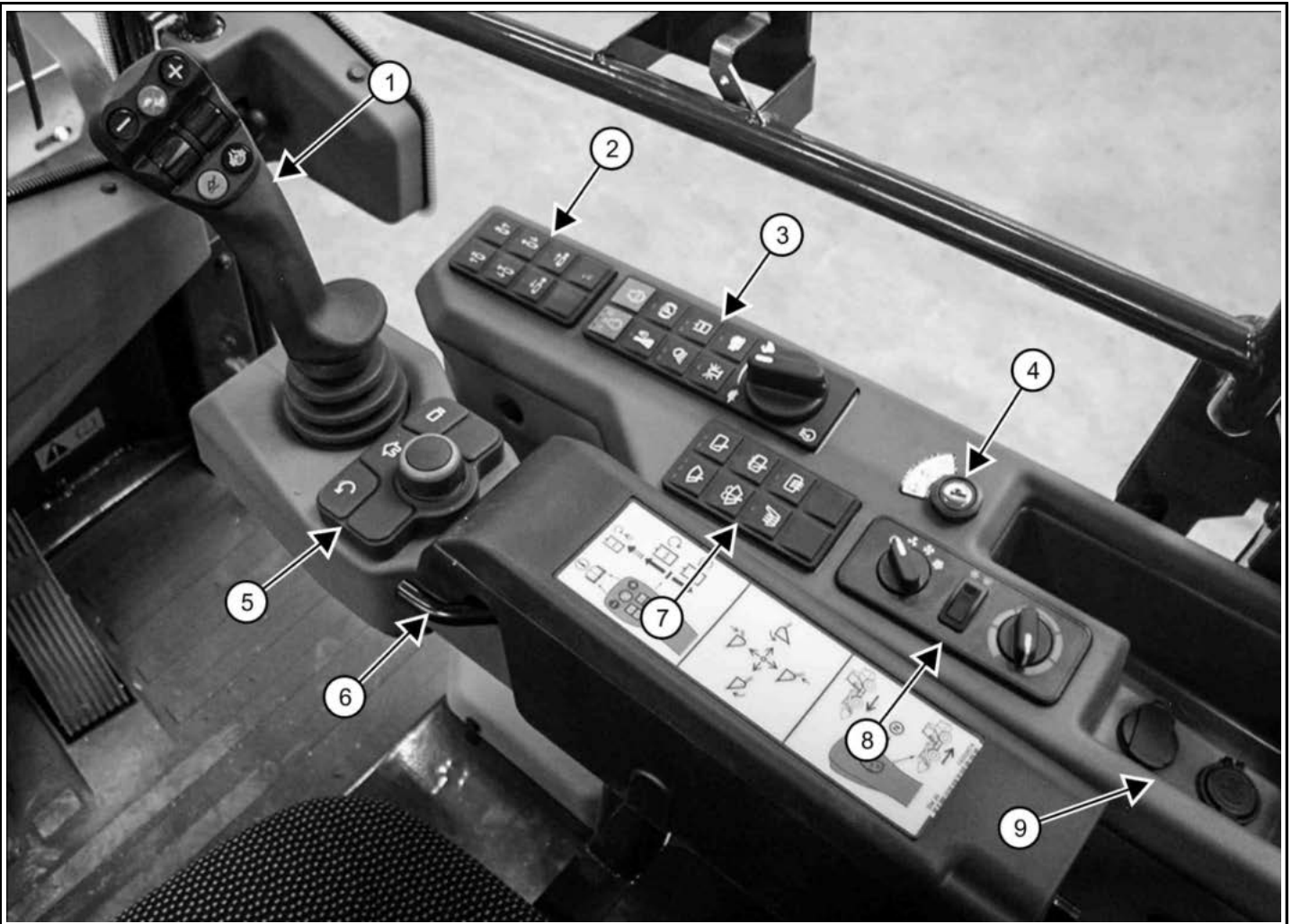
⚠ IMPORTANT

MACHINE DAMAGE HAZARD
 Damage to lift arms or hydraulics can occur.
Never drive forward when the hydraulic control for lift arms is in float position. ◀

OPERATOR CONTROLS IDENTIFICATION

Right Control Panel Overview

Figure 8

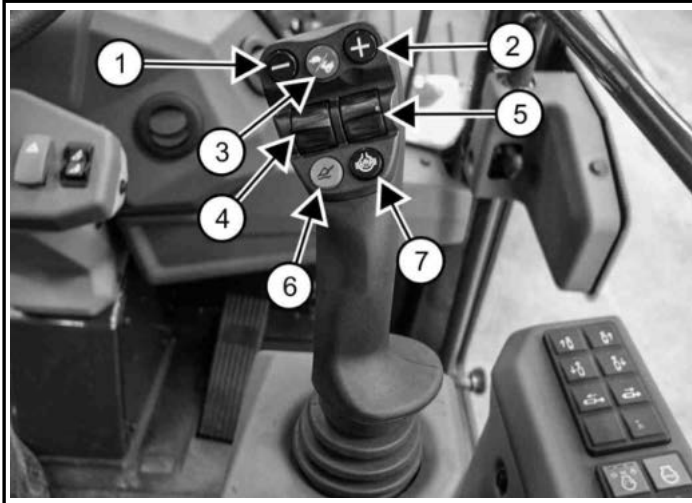


C207540b

REF.	DESCRIPTION	FUNCTION
1	Joystick	(See Joystick on Page 33)
2	ACD Control Panel	(See Attachment Control Device (ACD) on Page 61)
3	Main Control Panel	(See Main Control Panel on Page 34)
4	Key Switch	(See Key Switch on Page 35)
5	Jog Shuttle	(See Jog Shuttle on Page 35)
6	Armrest Adjustment Lever	Use the lever to adjust the position of the armrest.
7	Cab Control Panel	(See Cab Control Panel on Page 34)
8	Cab Temperature Control / HVAC Control (If Equipped)	(See Heating, Ventilation, And Air Conditioning HVAC Controls on Page 36)
9	Auxiliary Power Ports	Provides a 12 Volt Power Port and a USB charging port for accessories.

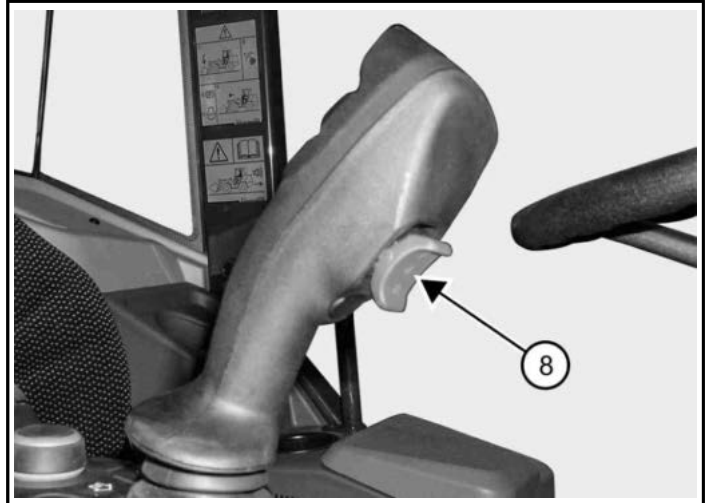
Joystick

Figure 9



C207533a

Figure 10

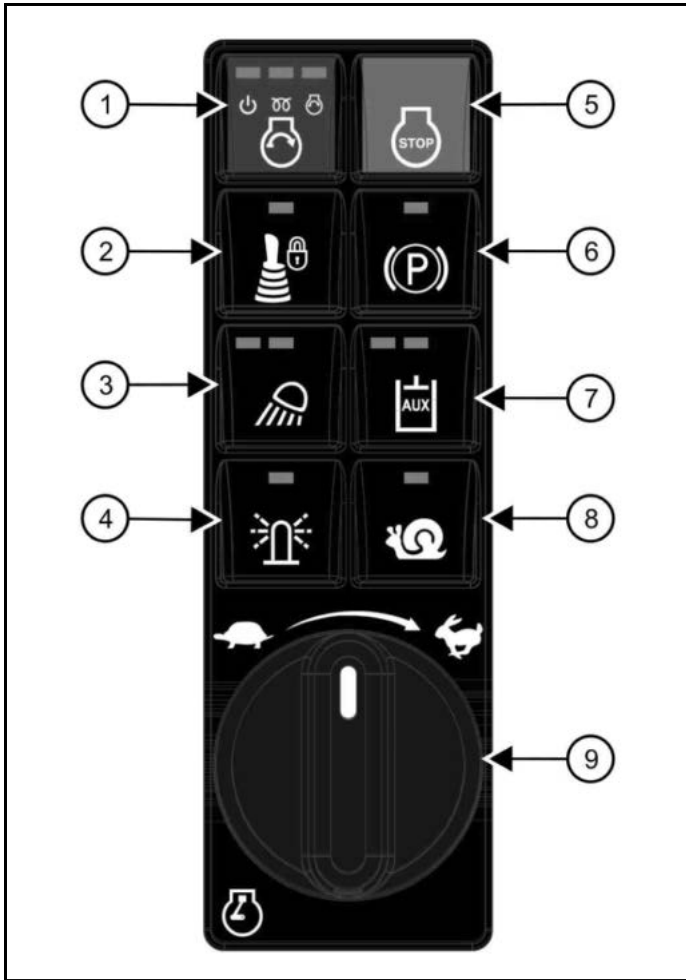


C207572a

REF.	DESCRIPTION	FUNCTION
1	Minus Button	When low range advanced attachment control mode is activated, press the button to decrease the travel speed. (See Adjusting The Advanced Attachment Control Travel Speed on Page 54)
2	Plus Button	When low range advanced attachment control mode is activated, press the button to increase the travel speed. (See Adjusting The Advanced Attachment Control Travel Speed on Page 54)
3	Two-Speed Control	Press the button to switch between work mode and travel mode. (See Two-speed Control on Page 52)
4	Not Used	---
5	Auxiliary Hydraulics / Continuous Auxiliary Flow / High-Flow Auxiliary Hydraulics (If Equipped)	Rotate the roller up to increase auxiliary hydraulic flow, rotate the roller down to decrease auxiliary hydraulic flow. When the continuous auxiliary flow function is activated, rotate the roller fully (in either direction) to engage. (See Operating Auxiliary Hydraulics on Page 58)
6	Lift Arm Float	Press the button and move the joystick forward to activate lift arm float. (See Operating Lift Arm Float on Page 55)
7	Differential lock	Press the button to activate the differential lock. (See Differential Lock on Page 69)
8	Travel Direction Switch (F-N-R)	The travel direction switch has three positions (Forward – Neutral – Reverse). The centre position is the neutral position. Press the top of the switch for forward travel, press the bottom of the switch for reverse travel.

Main Control Panel

Figure 11



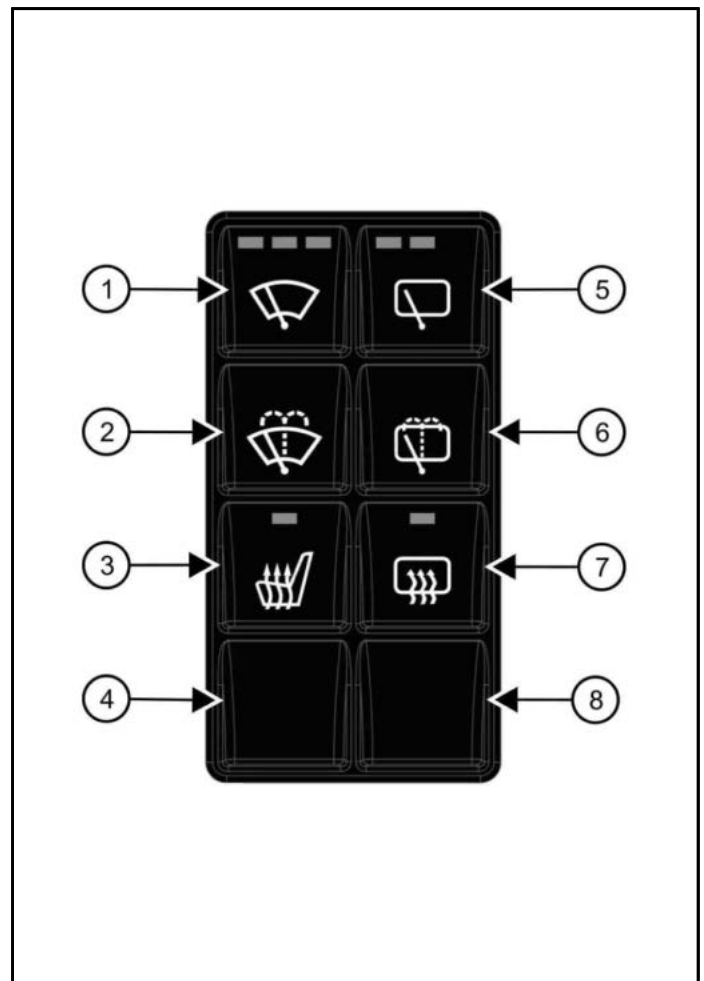
C206984a

REF.	DESC.	FUNCTION
1	Run / Start	(See Starting The Engine on Page 66)
2	Hydraulic Workgroup Lockout	(See Operating The Hydraulic Workgroup Lockout on Page 56)
3	Work Lights	Press the button once to activate the front work lights. Press the button a second time to activate both the front and rear work lights. Press the button a third time to deactivate the work lights.
4	Beacon / Strobe	(See Operating The Beacon / Strobe on Page 43)
5	STOP	(See Stopping The Engine And Leaving The Machine on Page 71)
6	Parking Brake	(See Parking Brake on Page 51)

REF.	DESC.	FUNCTION
7	Auxiliary Hydraulics	(See Operating Auxiliary Hydraulics on Page 58)
8	Advanced Attachment Control	(See Advanced Attachment Control on Page 53)
9	Engine Speed Control	Only active when advanced attachment control mode is engaged. (See Adjusting The Advanced Attachment Control Engine Speed on Page 54)

Cab Control Panel

Figure 12



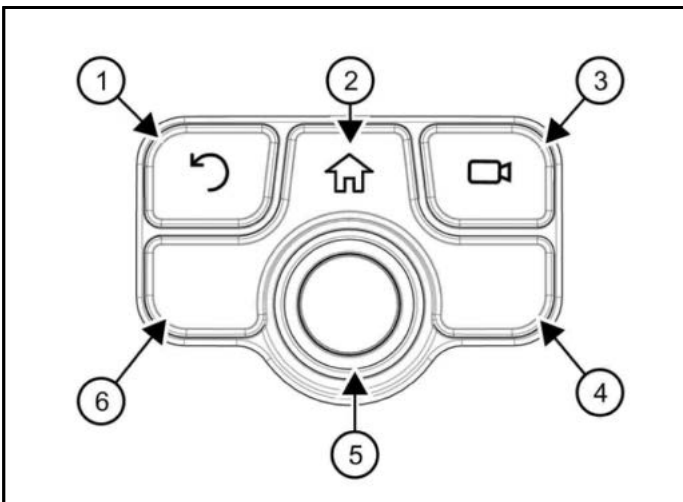
C206985a

REF.	DESC.	FUNCTION
1	Front Wiper	(See Wiper Operation on Page 42)
2	Front Washer	
3	Seat Heater (If Equipped)	(See Adjusting The Suspension Seat on Page 64)

REF.	DESC.	FUNCTION
4	Not Used	---
5	Rear Wiper	(See Wiper Operation on Page 42)
6	Rear Washer	
7	Rear Window Defroster	Press the button once to activate the rear window defroster for 5 minutes. Press the button again to deactivate the rear window defroster.
8	Not Used	---

Jog Shuttle

Figure 13

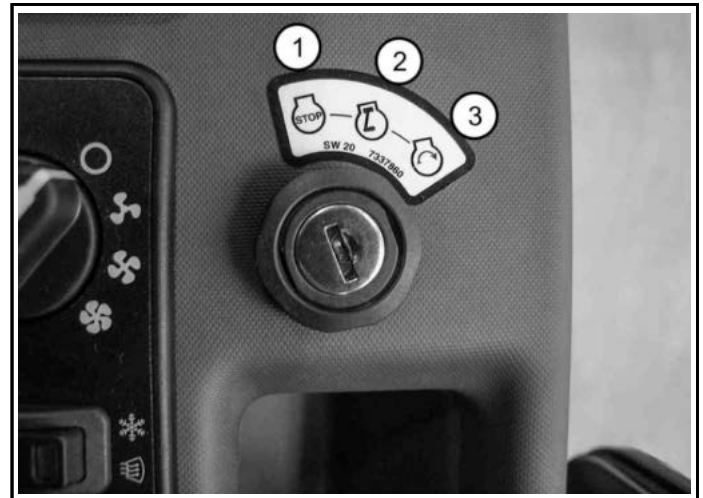


C209983a

REF.	DESC.	FUNCTION
1	Return	Press to return to previous screen.
2	Home	Press to change display view to the GAUGES screen.
3	Rear View Camera	Press to change display view to rear camera.
4	Not Used	---
5	Rotary Knob	Rotate to navigate between available icons on display. Press to select highlighted icon.
6	Not Used	---

Key Switch

Figure 14



C207535a

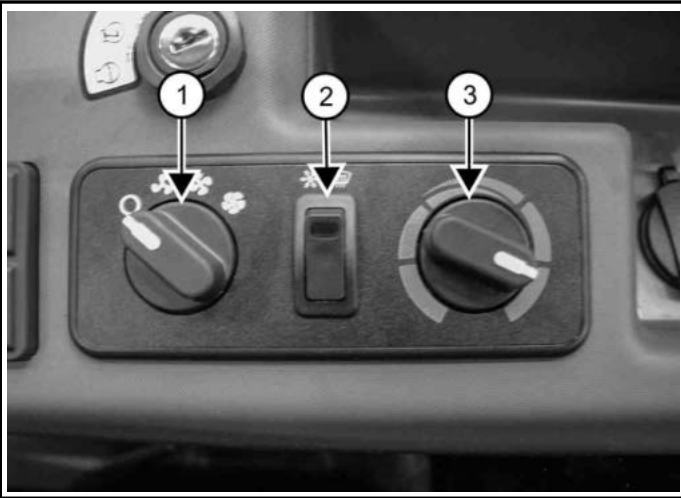
REF.	DESC.	FUNCTION
1	STOP	Stop the engine and turn the machines electrical system off.
2	Run	Turn the machines electrical system on.
3	Start	Start the engine.

The run / start and STOP buttons on the main control panel are functional after the key switch is turned to the run position.

NOTE: Pressing the STOP button on the main control panel will stop the engine and momentarily turn the electrical system off. The electrical system will reactivate after a few seconds unless the key switch is turned to the STOP position.

Heating, Ventilation, And Air Conditioning HVAC Controls

Figure 15



C207534a

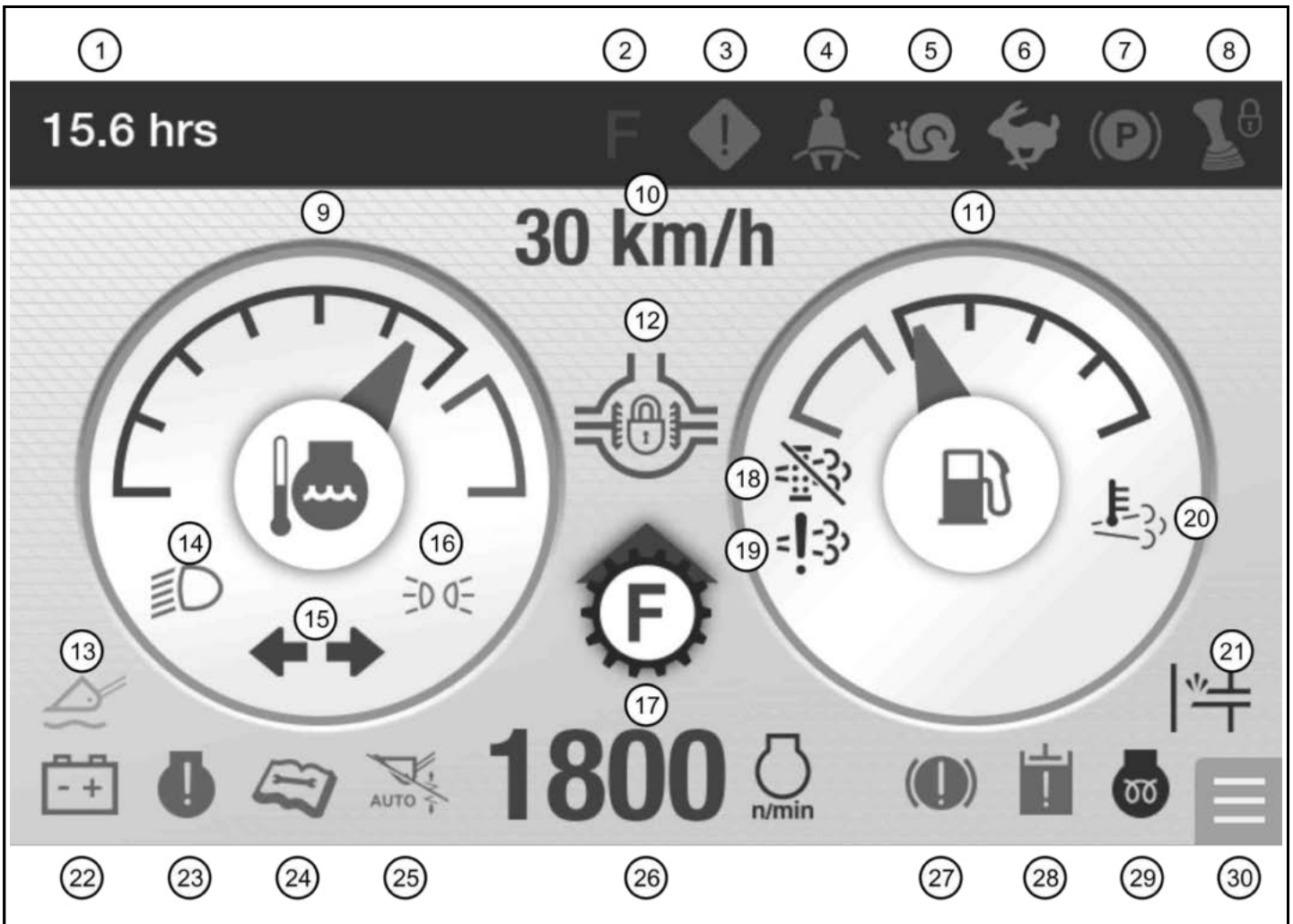
This machine may be equipped with a HVAC system.

The HVAC control panel [Figure 15] is installed if the machine is equipped with a cab heater or air conditioning.

REF.	DESC.	FUNCTION
1	Fan Motor Speed	<p>Rotate clockwise to increase fan speed and anticlockwise to decrease. There are four positions; Off - 1 - 2 - 3.</p> <p>Louvers throughout the operator cab can be opened, closed, and rotated.</p>
2	Air Conditioning / Defrost Switch (If equipped)	<p>Press top of switch to start; bottom to stop. Switch will light when started.</p> <p>Fan motor must be on for air conditioning to operate.</p>
3	Temperature Control	<p>Rotate clockwise to increase the temperature and anticlockwise to decrease.</p>

Display

Figure 16



The display is a visual interface that provides control of certain machine settings and operating information through the use of a jog shuttle control. The standard display is scratch and weather resistant.

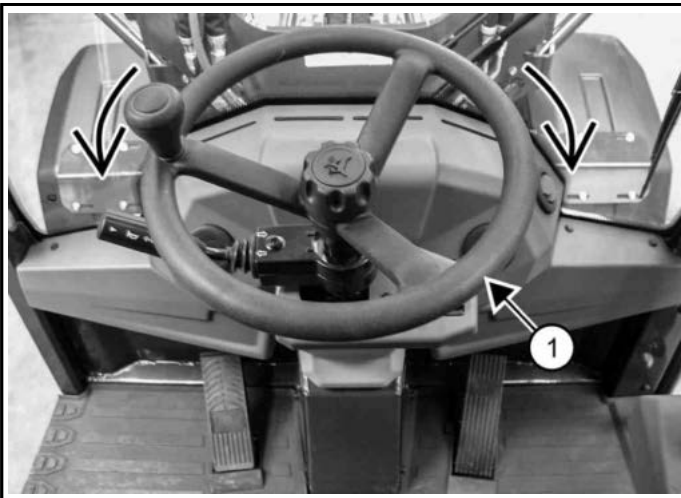
The following table shows the description and function for the icons located on the gauges (home) screen [Figure 16].

REF.	DESCRIPTION	FUNCTION
1	Hourmeter	Shows machine operating hours. This will remain visible on most screens.
2	Travel Direction Indicator (F-N-R)	Travel direction or neutral will show on screen when selected.
3	General Warning	Malfunction with one or more machine functions.
4	Seat Belt Reminder	Instructs operator to fasten seat belt.
5	Advanced Attachment Control Mode	This icon is on when advanced attachment control mode is activated.
6	Two-Speed	Low range selected.
7	Parking Brake Engaged	This icon is on when the machine cannot be driven.
8	Hydraulic Workgroup Lockout	This icon is on when hydraulic workgroup lockout is activated.

REF.	DESCRIPTION	FUNCTION
9	Engine Coolant Temperature Gauge	Shows the engine coolant temperature.
10	Travel Speed	Shows the travel speed.
11	Fuel Gauge	Shows the amount of fuel in the tank.
12	Differential Lock	This icon is on when the differential lock is activated.
13	Lift Arm Float	This icon is on when lift arm float is activated.
14	Work Lights	Low beam is activated.
15	Turn Signals	Indicates left or right turn signal is on.
16	Beacon / Strobe	This icon is on when the beacon / strobe is activated.
17	Travel Direction Indicator (F-N-R)	Travel direction or neutral will show on screen when selected.
18	Diesel Particulate Filter (DPF)	This icon is on when the DPF is regenerating. The inhibit icon will display here when inhibit mode is selected. (See Diesel Particulate Filter (DPF) System on Page 45)
19	Emissions Error	DPF malfunction or failure.
20	High Exhaust System Temperature (HEST)	This icon is on when the exhaust temperature is higher than normal operation.
21	Fuel Priming in Process	This icon is on when the fuel pump is priming the fuel system. Wait to start the machine until this icon is off.
22	Low Battery Voltage	Battery voltage is low.
23	Engine Malfunction	Engine malfunction or failure.
24	Service Due	Indicates service is due. (See Record A Service on Page 134)
25	Automatic Ride Control	This icon is on when automatic ride control is activated.
26	Engine rpm	Shows engine rpm.
27	Brakes Malfunction	Service brake or parking brake malfunction or failure.
28	Low Hydraulic Charge Pressure	Hydraulic charge pressure is low.
29	Glow Plugs Activated	This icon is on when the glow plugs are on. Wait to start the machine until this icon is off.
30	Navigation Handle	This icon is used to open the navigation bar. (See Navigation Bar on Page 132)

Steering Wheel

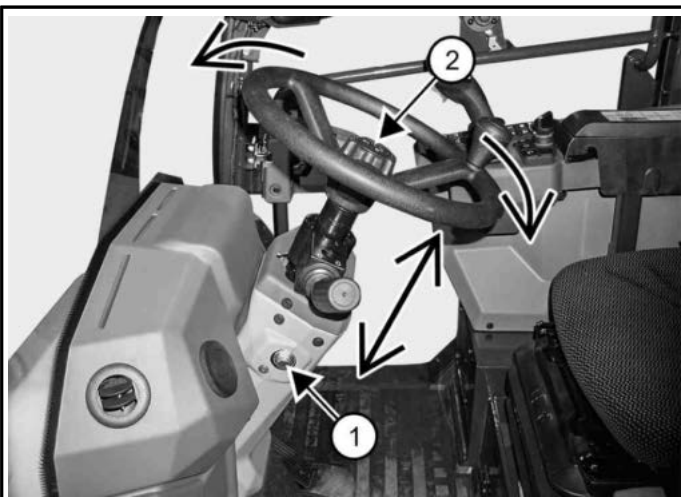
Figure 17



C207539a

- Turn the steering wheel (Item 1) [Figure 17] clockwise to turn right; anticlockwise to turn left.

Figure 18

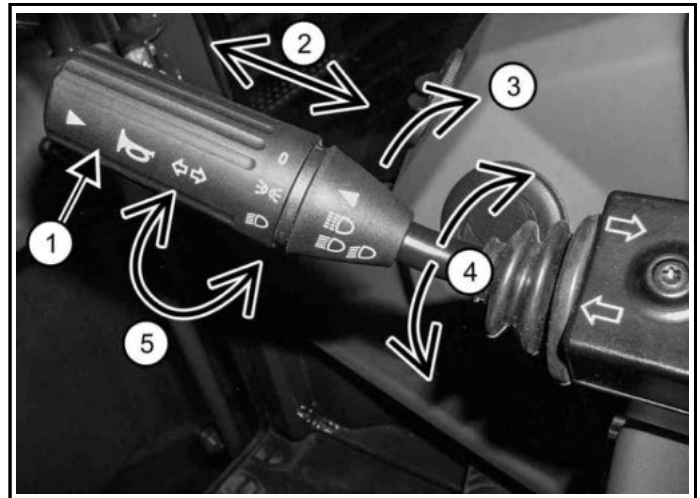


C207551a

- To adjust the tilt position of the steering column, press the button (Item 1) [Figure 18] while adjusting the steering column.
- To adjust the height of the steering wheel, rotate the knob (Item 2) [Figure 18] anticlockwise and adjust the height of the steering wheel. To lock the height, rotate the knob clockwise.

Multi-Function Lever

Figure 19



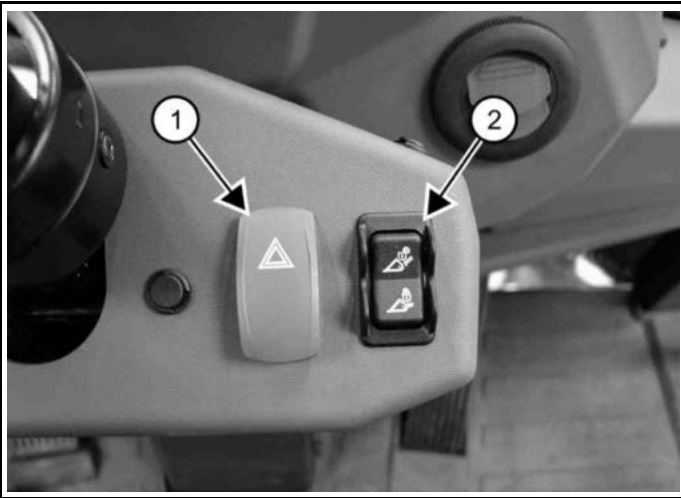
C207560a

The multi-function lever (Item 1) [Figure 19] has four functions:

- Horn (Item 2) [Figure 19]: Push the lever in to sound the horn
- High / Low Beam (Item 3) [Figure 19]: Pull the multi-function lever toward you to turn on the high / low beam.
- Turn direction signal (Item 4) [Figure 19]: Push the lever down to turn on the left turn direction signal lights, pull the lever up to turn on the right turn direction signal lights.
- Lights (Item 5) [Figure 19]: Rotate the multi-function lever to turn on the lights. The three positions are:
 - ▷ 0: OFF
 - ▷ 1: Parking lights and rear lights
 - ▷ 2: Headlights and rear lights

Front Dash

Figure 20

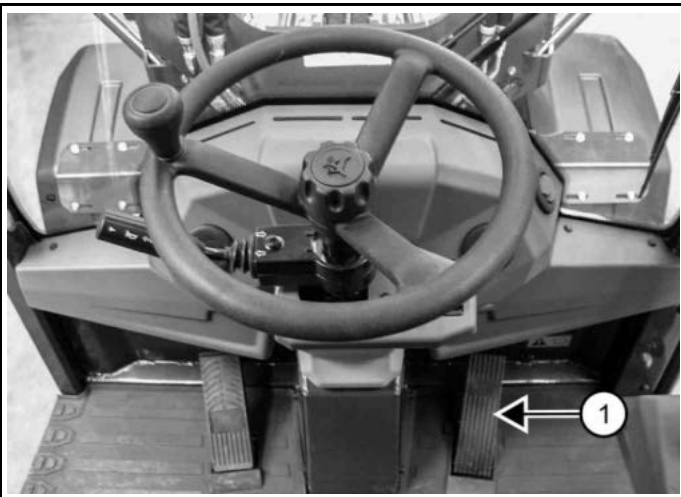


C207532a

REF.	DESCRIPTION
1	Engage / Disengage Four-Way Flashers
2	Engage / Disengage Attachment Lock (See Installing And Removing Attachments (Quick-Tach System) on Page 73)

Using The Drive Pedal

Figure 21

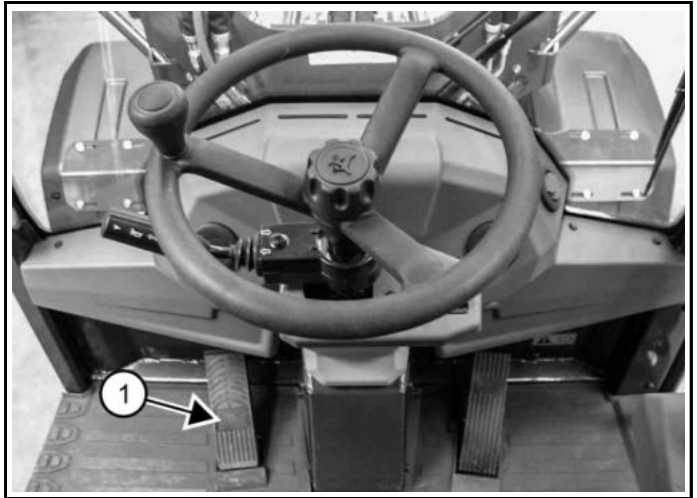


C207533b

- The drive pedal (Item 1) [Figure 21] is located on the right-hand side of the steering column.
- Press the drive pedal down to increase travel speed. Release foot pressure to decrease travel speed.

Using The Brake Pedal And Inching Control

Figure 22



C207539c

- The brake pedal (Item 1) [Figure 22] is located on the left-hand side of the steering column.
- Press the brake pedal a small amount to decrease travel speed and control inching (gradual travel of the machine). Press down to stop travel of the machine.

NOTE: Approximately the first half of the total brake pedal travel is for INCHING CONTROL.

OPERATOR ENCLOSURE

Operator Cab Description

This Bobcat machine has a ROPS and FOPS approved operator cab to protect the operator from rollover and falling objects. The seat belt must be worn for rollover protection.

- ROPS: Roll-Over Protective Structure per ISO 3471.
- FOPS: Falling-Object Protective Structure per ISO 3449, Level II (see below).
- Level II FOPS: Protection from falling trees, rocks: for machines involved in site clearing, overhead demolition, or forestry.

WARNING

MODIFICATION HAZARD

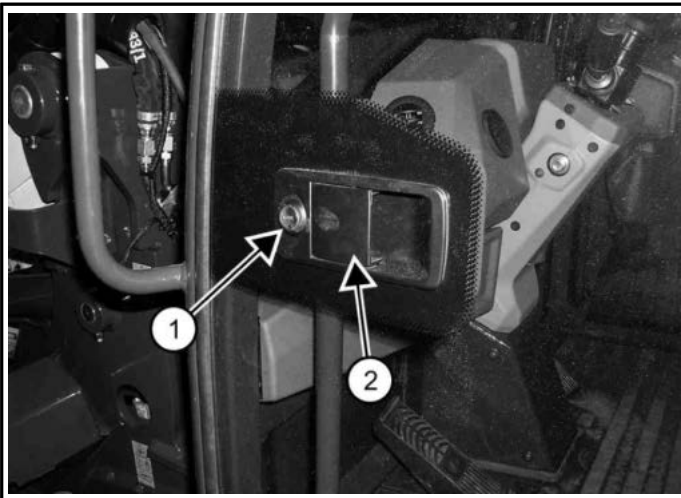
Cab changes can cause loss of operator protection from rollover and falling objects resulting in serious injury or death.

Never modify operator cab by welding, grinding, drilling holes or adding attachments unless instructed to do so by Bobcat Company. ◀

W-2069

Door Operation

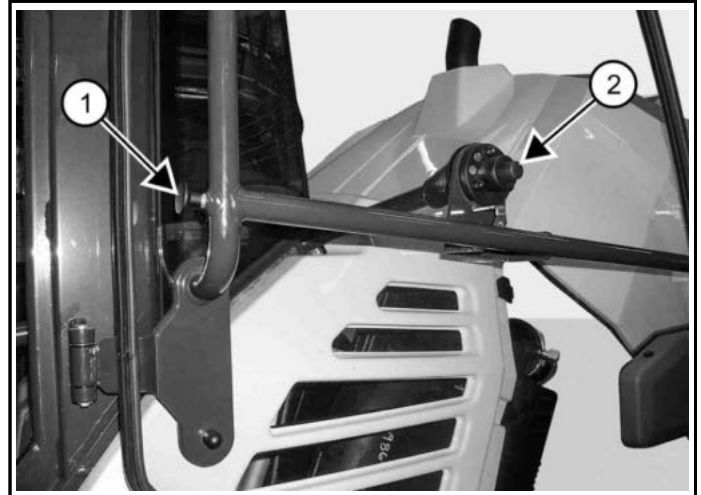
Figure 23



C207554a

- To open the door, unlock the lock (Item 1), pull the latch (Item 2) [Figure 23] and pull open the door.

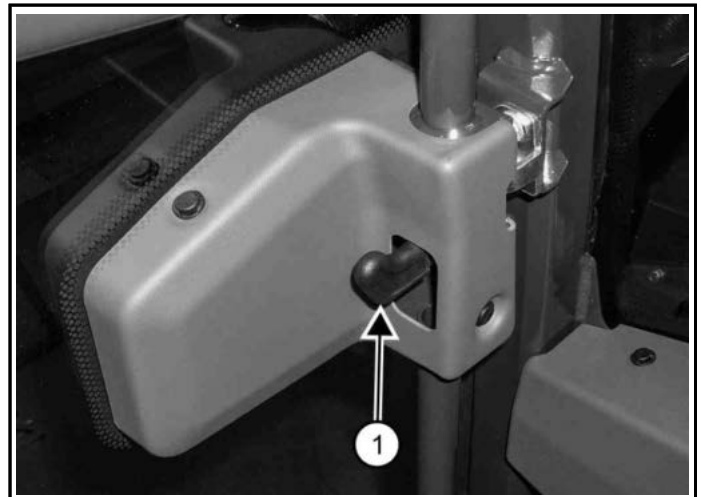
Figure 24



C207556a

- The door locks itself in the open position. To close the door, either pull the lever (Item 1) or press the button (Item 2) [Figure 24] and pull the door to close it.

Figure 25

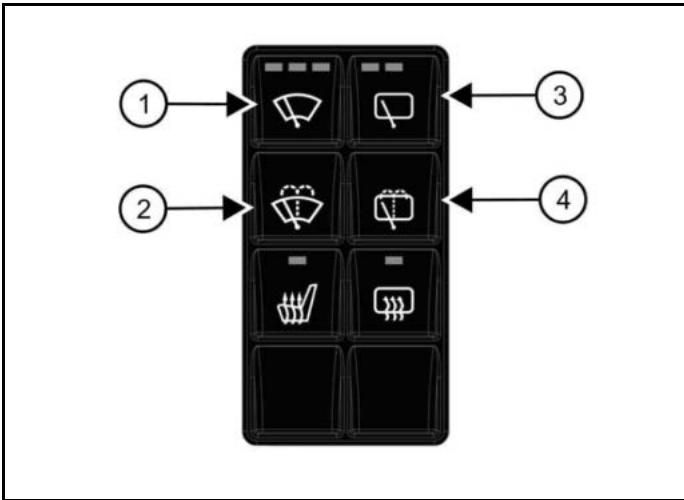


C207500a

- To open the door from the inside, push down the latch (Item 1) [Figure 25] and push open the door.

Wiper Operation

Figure 26



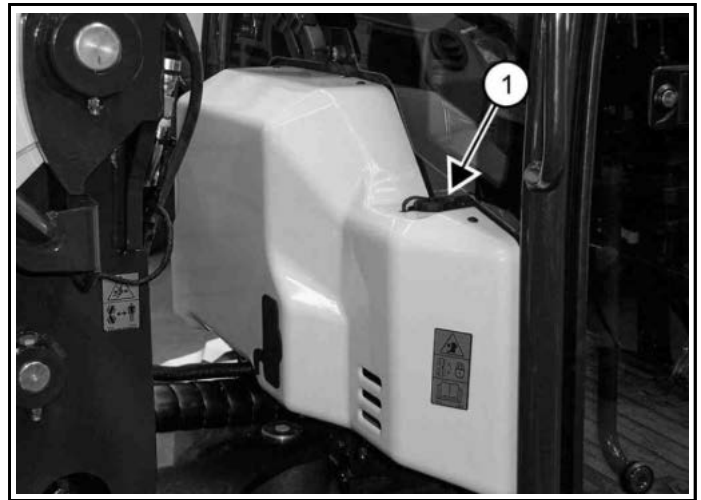
C206985b

The front and rear wiper controls are located on the cab control panel.

- To activate the front wiper, press the button (Item 1) [Figure 26] to start the front wiper. Press the button again up to two times to increase the wiper speed.
- Press the button (Item 1) [Figure 26] again to stop the front wiper.
- To activate the front washer, press and hold the button (Item 2) [Figure 26]. Release the button to deactivate the washer.
- To activate the rear wiper, press the button (Item 3) [Figure 26] to start the rear wiper. Press the button again to increase the wiper speed.
- Press the button (Item 3) [Figure 26] again to stop the rear wiper.
- To activate the rear washer, press and hold the button (Item 4) [Figure 26]. Release the button to deactivate the washer.

Filling Washer Fluid Tank

Figure 27



C207516a

The washer fluid tank is located on the front of the operator cab.

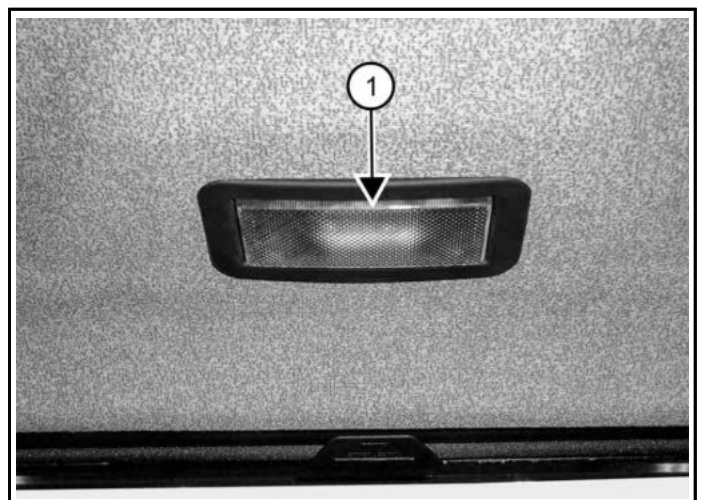
1. Remove the cap (Item 1) [Figure 27].
2. Add washer fluid until fluid is visible.

NOTE: When the temperature is 0°C (32°F) or lower, fill the washer reservoir with washer fluid specified for freezing conditions. If the washer bottle is filled with water, it will freeze and damage the washer reservoir.

3. Close the cap (Item 1) [Figure 27].

Operating The Cab Light

Figure 28



C200344a

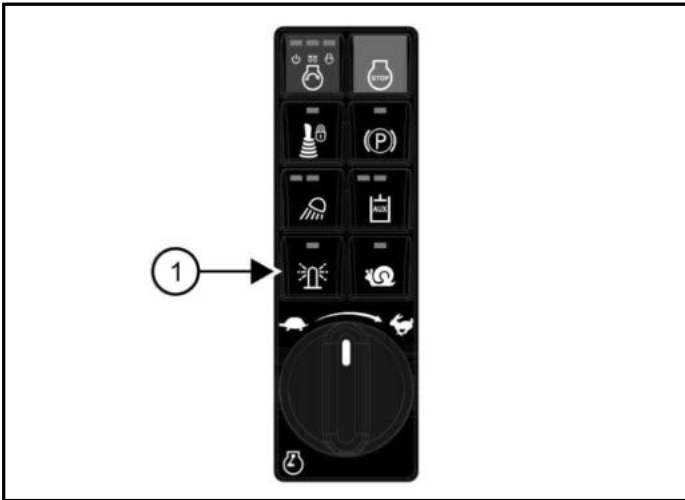
The cab light is located above the operator on the roof of the cab.

1. Push either side of the lens (Item 1) [Figure 28] to turn the light on.

- Return the lens to the middle position to turn the light off.

Operating The Beacon / Strobe

Figure 29

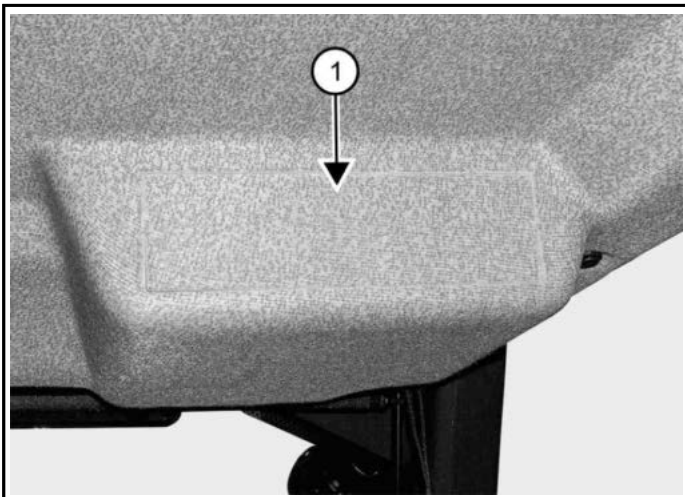


This machine may be equipped with a beacon / strobe. The beacon / strobe is located on top of the operator enclosure.

- To activate the beacon / strobe, press the button (Item 1) [Figure 29] on the main control panel.
- Press the button again to deactivate the beacon / strobe.

Radio Ready

Figure 30

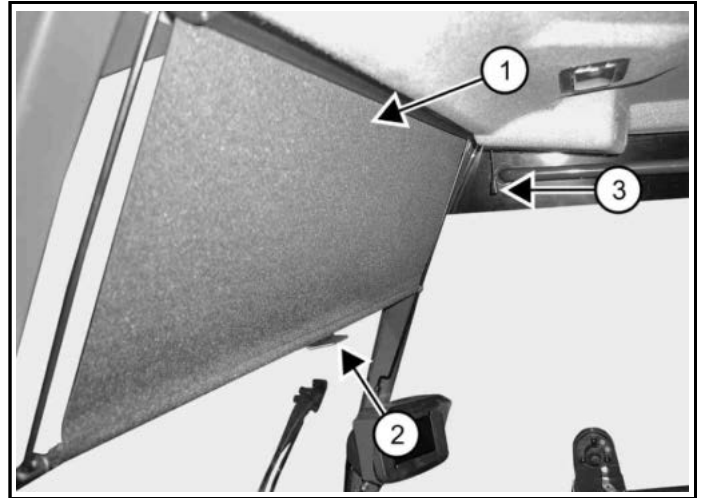


The machine can be equipped with a radio.

The radio dock is located on the right side of the cab roof, behind a cut-out (Item 1) [Figure 30].

Sun Visor

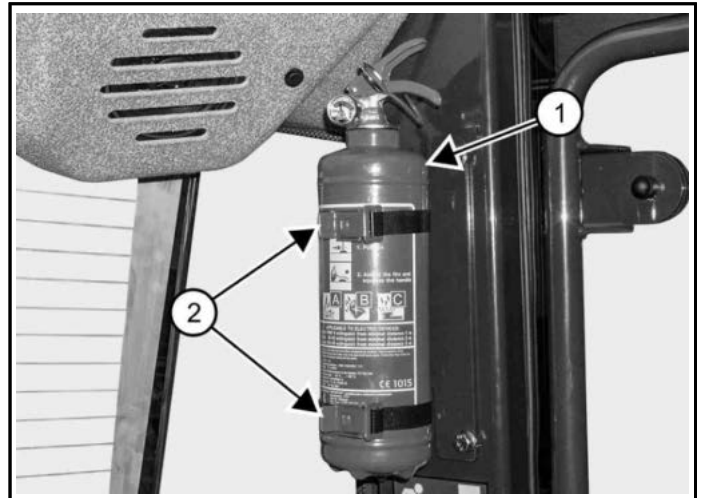
Figure 31



The sun visor (Item 1) can be pulled down using the latch (Item 2), and pulled up using the cord (Item 3) [Figure 31].

Fire Extinguisher

Figure 32



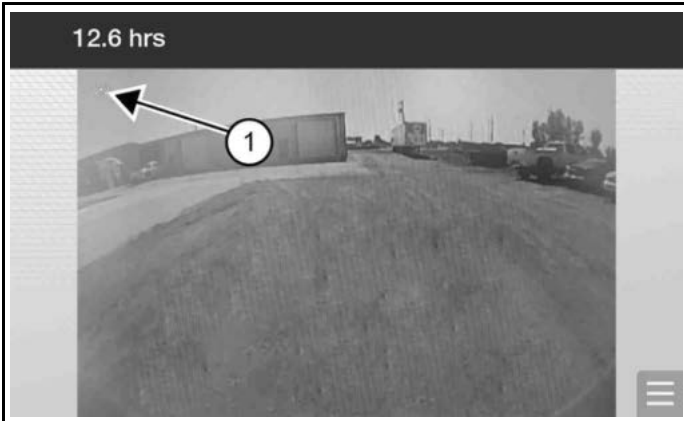
If equipped, the fire extinguisher (Item 1) [Figure 32] is located on the left side of the cab. Loosen the latches (Items 2) [Figure 32] to remove the fire extinguisher.

REAR VIEW CAMERA SYSTEM

Rear View Camera System Description

A rear view camera system is not a substitute for keeping bystanders away from the work area. Operators must remain fully aware of the surroundings using direct visibility, mirrors and the rear view camera system. The operator must service and maintain the camera system to ensure proper function.

Figure 33



The camera view is shown on the display [Figure 33] by selecting **[CAMERA]** on the display or pressing the camera button on the jog shuttle.

The rotating icon (Item 1) [Figure 33] in the upper left corner of the display indicates a live broadcast from the camera.

If the icon freezes, it indicates that the camera is not supplying a live broadcast and service may be required.

The display will change to camera view automatically when the operator moves the travel direction switch in the REVERSE position.

NOTE: Objects viewed on the camera display are closer than they appear.

WARNING

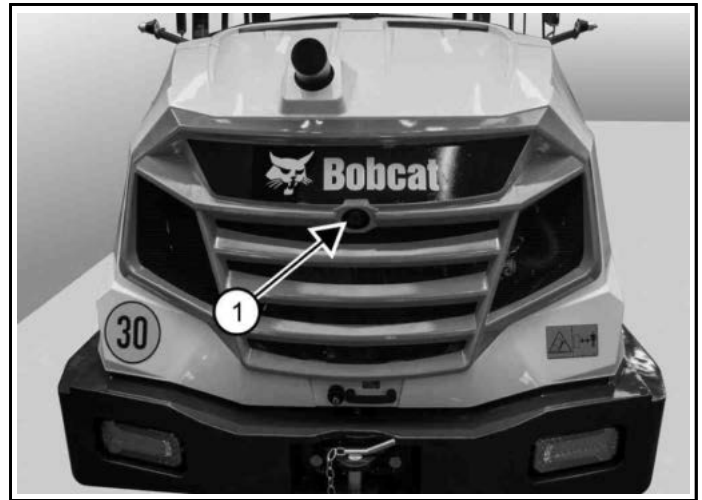
CRUSHING HAZARD

Contact with machine can cause serious injury or death.

- Always keep bystanders away from the work area and travel path.
- The operator must always look in the direction of travel. ◀

Maintaining The Rear View Camera System

Figure 34



The rear view camera (Item 1) [Figure 34] is located in the engine cover.

Perform the following daily or as necessary:

- Clean the lens of the camera using a soft cloth and clean water.
- Remove mud, snow, ice, or other debris that could affect the clear view provided by the camera system.
- Replace damaged rear view camera system components. See your Bobcat dealer for service and parts.



DIESEL PARTICULATE FILTER (DPF) SYSTEM

DPF Description

The engine exhaust system is equipped with a diesel particulate filter (DPF).



The DPF is an emissions reduction device that removes diesel particulate matter (soot) from the exhaust gases of the diesel engine. The DPF will trap and collect the soot until it is burned off.

The process of burning off the collected soot is called regeneration. There are four types of regeneration: passive, automatic, forced parked, and service. An inhibit mode is also available to the operator.






Icon	Definition
	Inhibit - Appears on the display when the operator has selected inhibit mode. Machine is indicating it would like to do regeneration when flashing.
	Emissions Error - Appears on the display to indicate a problem with the emission regulating system.

Term	Description
Passive Regeneration	The engine provides adequate exhaust temperature during operation for regeneration.
Automatic Regeneration	The engine control unit (ECU) automatically controls active regeneration. Active regeneration can occur any time the engine is operating once the soot accumulated in the DPF reaches a certain level. (See Automatic Regeneration Operation on Page 46)
Forced Parked Regeneration	The operator activates a forced parked regeneration. This selection requires confirmation after certain machine conditions are met. (See Forced Parked Regeneration Operation on Page 47)
Service Regeneration	Your Bobcat dealer uses specialised equipment to perform a service regeneration. (See DPF Service Regeneration on Page 122)
Inhibit Mode	Active regeneration will not occur. This selection requires confirmation. (See Inhibit Mode Operation on Page 49)

DPF Regeneration Status Icons

Icon	Definition
	DPF - Appears on the display during regeneration. Machine is requesting that the operator activates a forced parked regeneration when flashing.
	Hot Exhaust System Temperature (HEST) - Appears on the display during regeneration to indicate that exhaust and exhaust gases can be hot.

DPF Regeneration Tables

Soot Level	0 – 75%	75 – 100%	100 – 105%	105 – 110%	110 – 120%	120 – 150%	> 150%
Active Regeneration Status	Not Required	Not Required	Regenerating	Regenerating	Regenerating	Not Regenerating	Not Regenerating
Inhibit Allowed 	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forced Parked Allowed 	No	Yes	Yes	Yes	Yes	No	No
DPF Icon 	Off	Off	On	Flashing Slowly	Flashing Slowly	Flashing Quickly	Off
HEST Icon 	Off	Off	On	On	On	Off	Off
Check Engine Icon 	Off	Off	Off	Off	On	On	On
Regeneration Type	Passive	Passive	Automatic	Automatic	Automatic	Service	None
Soot Load Bar Colour	Grey	Blue	Blue	Red	Red	Red	Red
Service Code	None	None	None	None	P2463	P24A3	P24A3
Torque Derate	None	None	None	None	Mild	Severe	Severe
Operator Action	None	None	None	Activate Forced Parked Regeneration when possible	Activate Forced Parked Regeneration when possible	Dealer Service Regeneration Required (See DPF Service Regeneration on Page 122)	Contact your Bobcat dealer to service the DPF

NOTE: The general warning icon on the display will also turn on to alert operator of active service codes.

Automatic Regeneration Operation

Automatic regeneration mode is selected by default every time the machine is started.

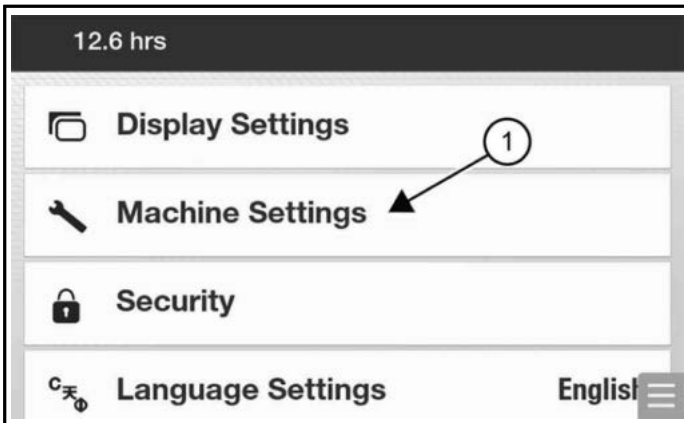
The DPF management screen is available on the display, where you can check the status of the DPF and select the required regeneration mode.

Figure 35



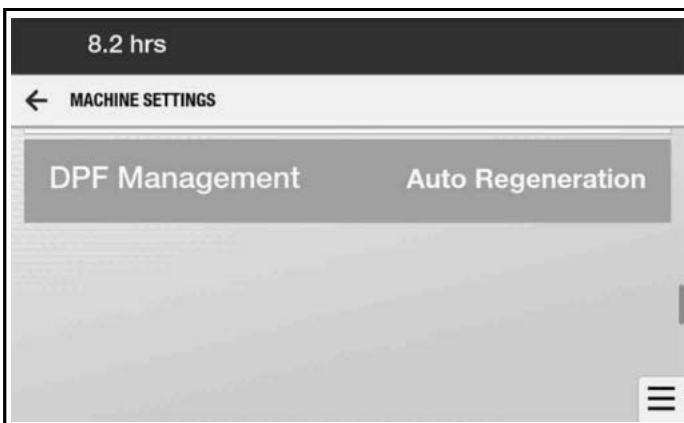
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 35].
2. Select [SETTINGS] (Item 2) [Figure 35].

Figure 36



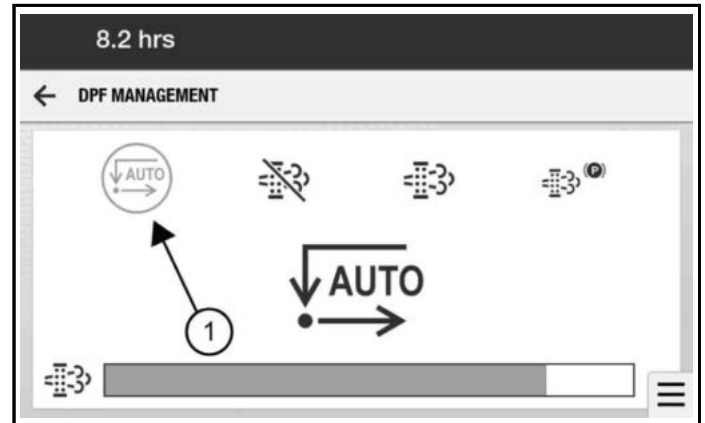
3. Select [MACHINE SETTINGS] (Item 1) [Figure 36].

Figure 37



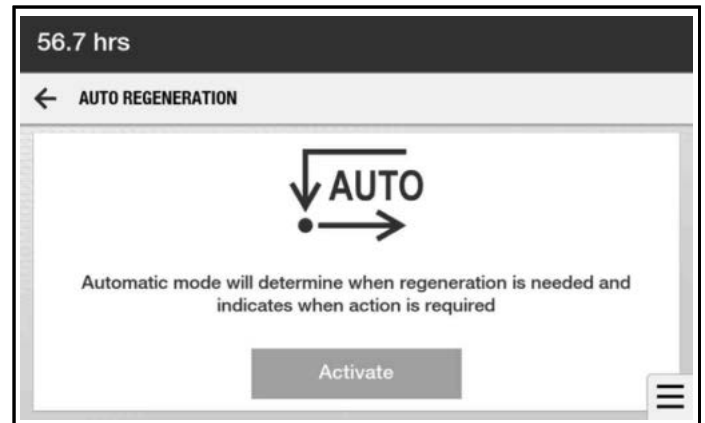
4. Scroll down and select [DPF MANAGEMENT] [Figure 37].

Figure 38



5. Select the automatic regeneration icon (Item 1) [Figure 38].

Figure 39



6. Select [ACTIVATE] [Figure 39] if not already active.

The ECU will monitor soot load and perform a regeneration automatically. The operator will be informed that an automatic regeneration has started by the HEST icon.

The machine should be operated during this regeneration.

NOTE: The regeneration process can last for 30 minutes or longer.

It is recommended to increase engine speed to high idle during an automatic regeneration and operate the machine under load if possible.

It is recommended to allow the regeneration cycle to finish before turning the machine off.

Forced Parked Regeneration Operation

A forced parked regeneration can be activated by the operator using the DPF management screen. The machine cannot be operated during this regeneration.

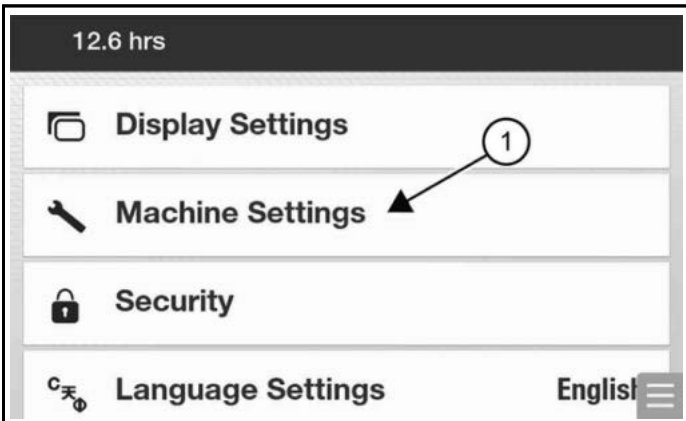
NOTE: The regeneration process can last for 40 minutes or longer.

Figure 40



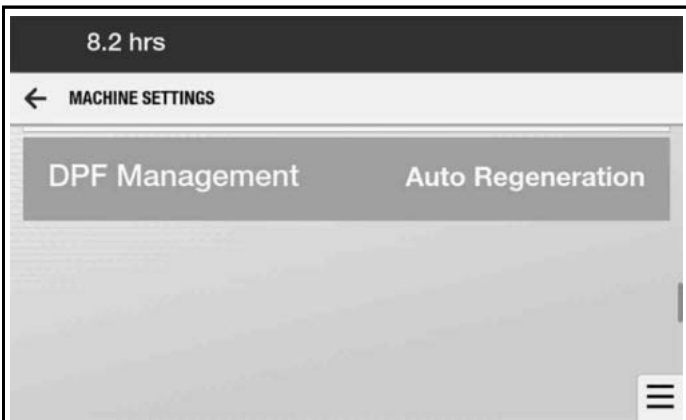
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 40].
2. Select [SETTINGS] (Item 2) [Figure 40].

Figure 41



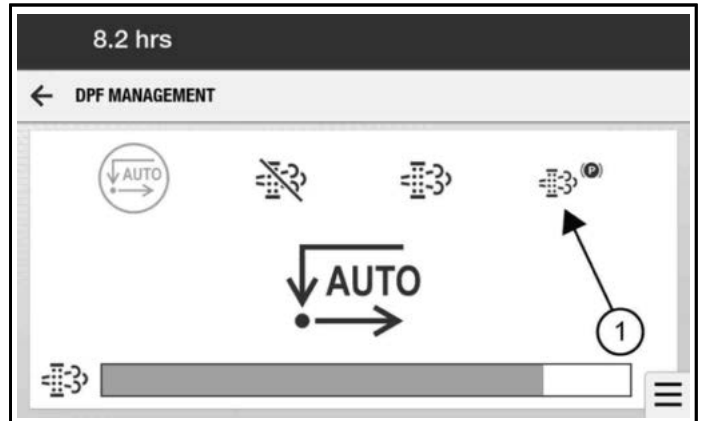
3. Select [MACHINE SETTINGS] (Item 1) [Figure 41].

Figure 42



4. Scroll down and select [DPF MANAGEMENT] [Figure 42].

Figure 43



5. Select the forced parked regeneration icon (Item 1) [Figure 43].

⚠ IMPORTANT

MACHINE DAMAGE HAZARD

Failure to follow directions may cause damage to the DPF.

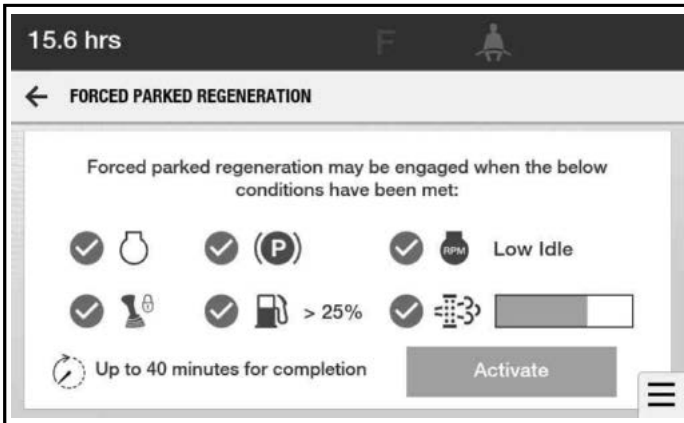
Never stop the engine during the regeneration cycle. This will by-pass the programmed cool down cycle required after a high temperature regen. ◀

The following machine conditions must be met before forced parked regeneration is allowed:

- No active DPF related service codes
- Engine coolant temperature higher than 40°C (104°F)
- Soot load between 75 percent and 120 percent
- Parking brake engaged
- Engine speed at low idle
- Hydraulic functions disabled
- More than 25 percent fuel in the tank

6. Decrease engine speed to low idle.

Figure 44



7. Select **[ACTIVATE]** [Figure 44] to start regeneration.

The ECU will control engine speed until the regeneration cycle is finished.

Inhibit Mode Operation

Regeneration can be prevented from occurring by selecting inhibit mode. The machine should be operated under load when inhibit mode is selected.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD

Operating the machine in inhibit mode for extended periods may cause severe damage to the DPF. ◀

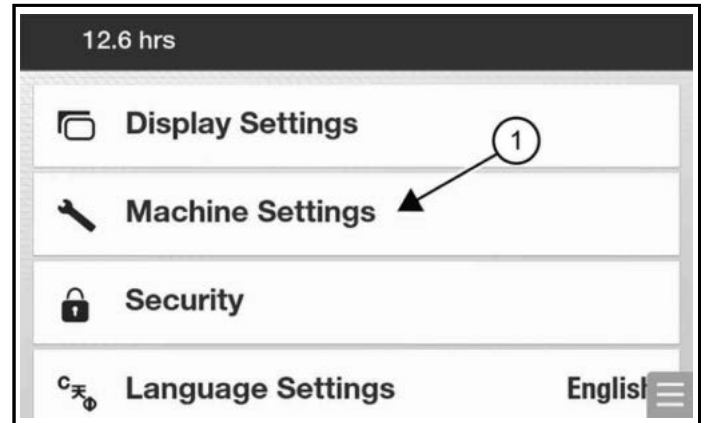
The DPF will be inhibited from actively regenerating until a regeneration mode is selected or the machine is turned OFF. The machine will revert to automatic mode the next time the machine is turned ON.

Figure 45



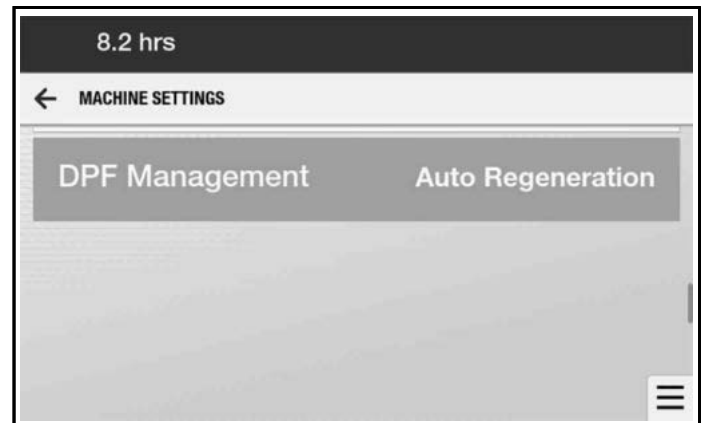
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 45].
2. Select **[SETTINGS]** (Item 2) [Figure 45].

Figure 46



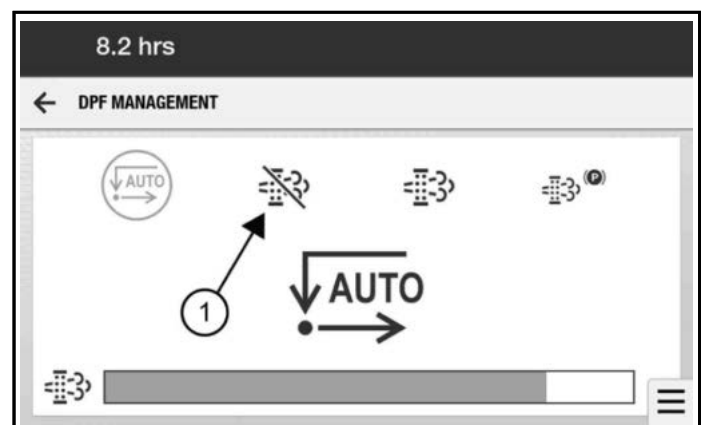
3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 46].

Figure 47



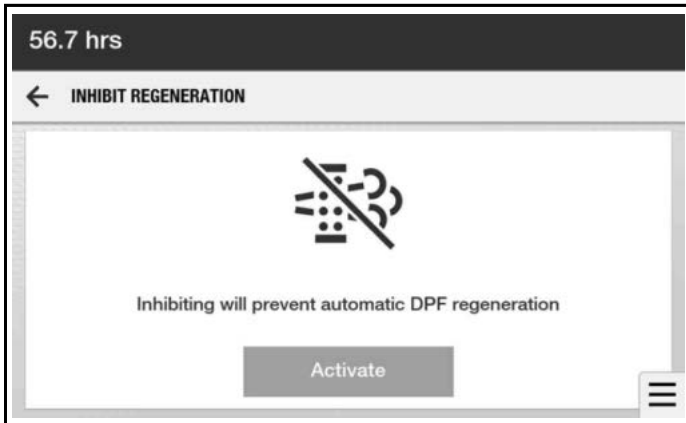
4. Scroll down and select **[DPF MANAGEMENT]** [Figure 47].

Figure 48



5. Select the inhibit mode icon (Item 1) [Figure 48].

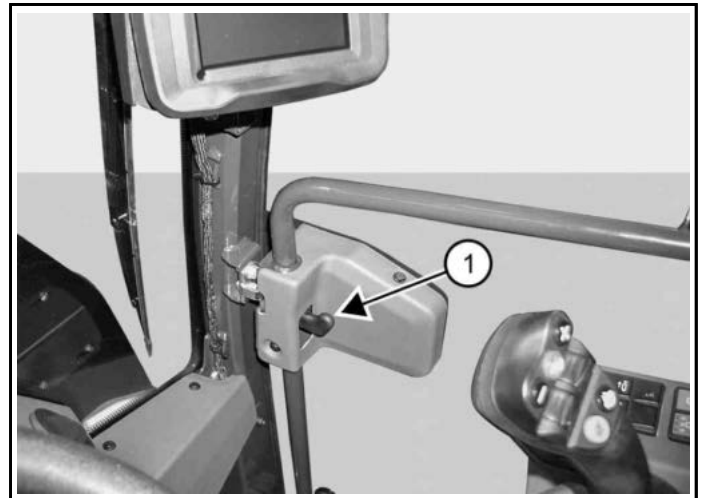
Figure 49



6. Select **[ACTIVATE]** [Figure 49] to inhibit regeneration.
7. After running the machine in inhibit mode, take one of the below actions as soon as possible:
 - Place the machine in automatic regeneration mode
 - Perform a forced regeneration if possible (The soot load bar must be blue or red.)
 - Perform a forced parked regeneration if possible (The soot load bar must be blue or red.)

PERFORMING AN EMERGENCY EXIT

Figure 50



The right door provides an emergency exit from the machine.

1. To open the right door, push the lever (Item 1) [Figure 50] down and push the door open.
2. Safely exit the machine.

PARKING BRAKE

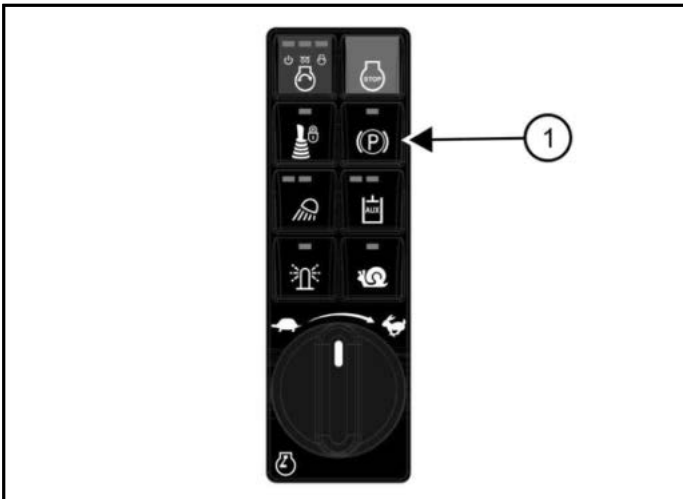
Operating The Parking Brake

This machine is equipped with an automated parking brake system.

When the machine is turned off, the parking brake automatically activates.

The parking brake can also be activated manually:

Figure 51



1. Press the button (Item 1) [Figure 51] to engage the parking brake (the LED light on the button will turn on).
2. While the travel direction switch is set to Forward or Reverse, press the drive pedal to ensure that the machine does not move.

If the machine moves while the parking brake is activated, contact your Bobcat dealer for service.

3. To disengage the parking brake, press the button (Item 1) [Figure 51] (the LED light on the button will turn off), switch the travel direction switch to Forward or Reverse, and press the drive pedal.

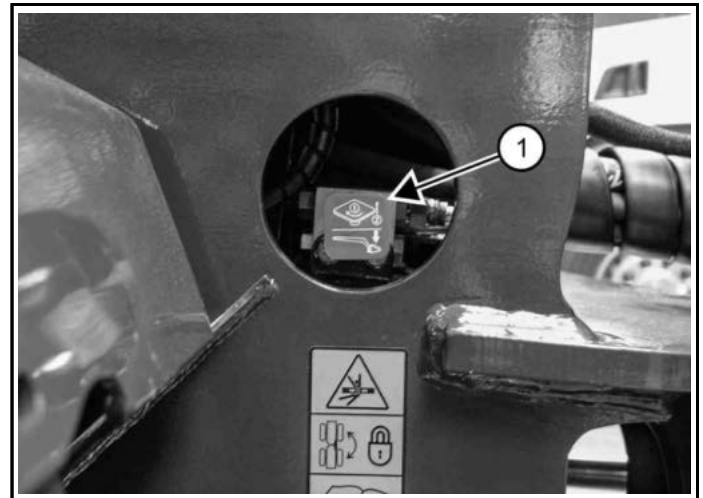
The parking brake display icon disappears once the parking brake is disengaged.

NOTE: In case of failure of the service brake, the parking brake can be used as emergency brake.

LIFT ARM BYPASS CONTROL

Operating The Lift Arm Bypass Control

Figure 52



The lift arm bypass control (Item 1) [Figure 52] is located on the left-hand side of the machine, next to the front tyre.

To operate the lift arm bypass control:

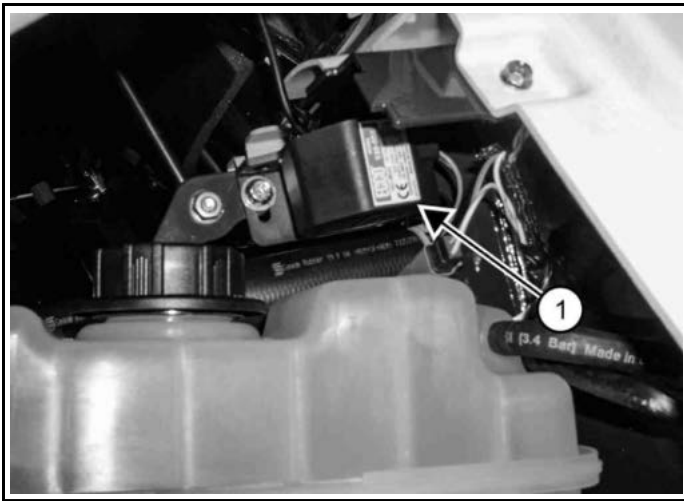
1. Make sure that all bystanders are at a safe distance from the lift arms.
2. Pull and rotate the lever (Item 1) [Figure 52] clockwise and hold until the lift arms are fully lowered.

NOTE: The lift arm bypass control only releases pressure of the lift cylinders. If the bucket is tilted inward (toward the machine), the bucket may not touch the ground when the lift arms are in the lowest position. It is recommended to lower the bucket onto the ground when the machine is not being operated.

BACK-UP ALARM SYSTEM

Back-Up Alarm System Description

Figure 53



This machine may be equipped with a back-up alarm system.

The back-up alarm (Item 1) [Figure 53] is located inside the engine bay, on the right-hand side, above the coolant tank.

A back-up alarm is not a substitute for looking to the rear when operating the machine in reverse, or for keeping bystanders away from the work area. Operators must always look in the direction of travel including reverse, and keep bystanders away from the work area, even though the machine is equipped with a back-up alarm.

Operators must be trained to always look in the direction of travel, including when operating the machine in reverse and to keep bystanders away from the work area. Other workers should be trained to always keep away from the operator's work area and travel path.

Operating The Back-Up Alarm System

⚠ WARNING

CRUSHING HAZARD

Contact with machine can cause serious injury or death.

- Always keep bystanders away from the work area and travel path.
- The operator must always look in the direction of travel. ◀

The back-up alarm will sound when the operator moves the machine in the reverse direction.

If the alarm does not sound or for adjustment instructions, see inspection and maintenance instructions for the back-up alarm system in the preventive maintenance section of this manual.

(See Inspecting The Back-Up Alarm System on Page 95)

TWO-SPEED CONTROL

Two-Speed Control Description

This machine is equipped with two speed ranges, high and low. High range allows you to reduce cycle times when there is a long travel distance between the dig site and the dump site. You can also use the high range when travelling from one jobsite to another at faster speeds.

⚠ WARNING

IMPACT HAZARD

Hitting Obstructions At High Range Speeds Can Cause Serious Injury or Death
Fasten shoulder belt for additional restraint when operating at high range speeds. ◀

W-2754

Operating Two-Speed

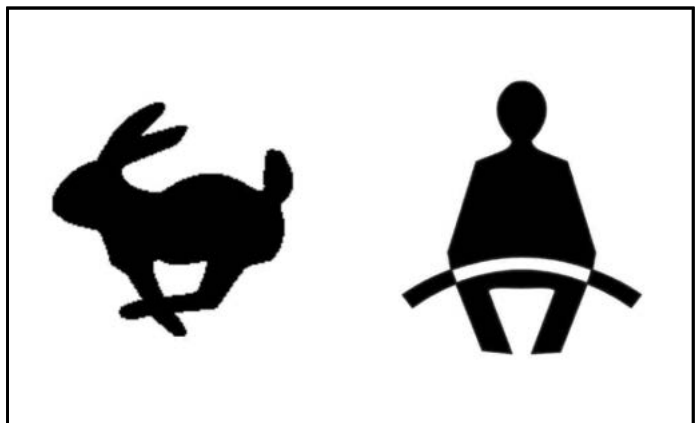
Figure 54



C207533e

- Press the button (Item 1) [Figure 54] on the joystick to switch between high speed and low speed.

Figure 55



EM11172

- In high speed, the two-speed and seat belt icons [Figure 55] located on the upper right display will turn ON.

ADVANCED ATTACHMENT CONTROL

Advanced Attachment Control Description

Advanced attachment control allows the engine speed and travel speed to be controlled independently.

This feature can be useful when operating attachments, loading or unloading, and certain applications. (EXAMPLES: Sweeping and snowblowing)

The advanced attachment control mode is best used with attachments that require continuous auxiliary flow but lower travel speeds. Using this mode, the attachment can be used at maximum hydraulic flow while travelling at low travel speeds.

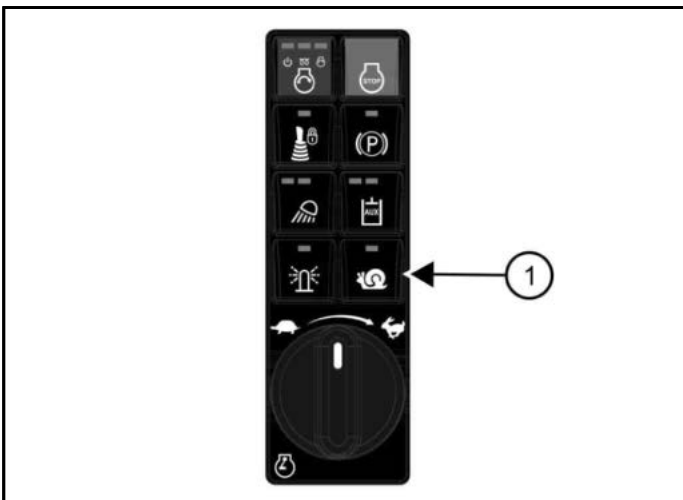
Operating The Advanced Attachment Control Mode

Engaging Advanced Attachment Control Mode

- To engage the advanced attachment control mode, stop the machine and adjust the travel direction switch to the NEUTRAL position. (See Joystick on Page 33)

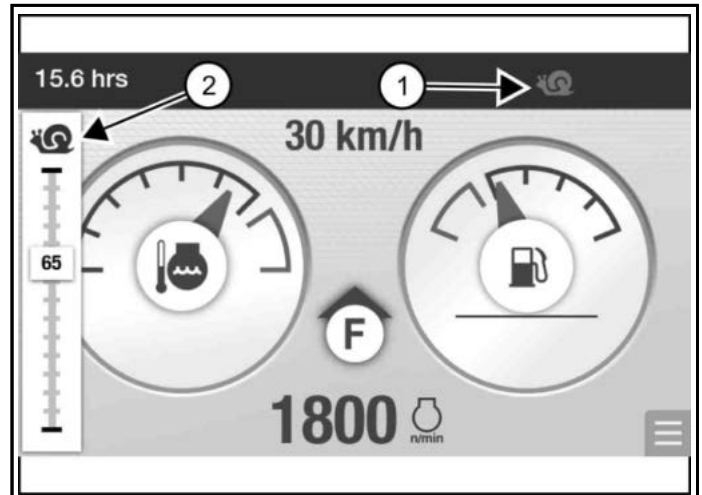
NOTE: Auxiliary hydraulics will need to be reactivated when advanced attachment control mode is engaged.

Figure 56



- Press the button (Item 1) [Figure 56] on the main control panel once to engage the advanced attachment control mode.

Figure 57



The advanced attachment control icon (Item 1) [Figure 57] will appear in the display and remain on until the advanced attachment control button is pressed again or the machine is turned OFF.

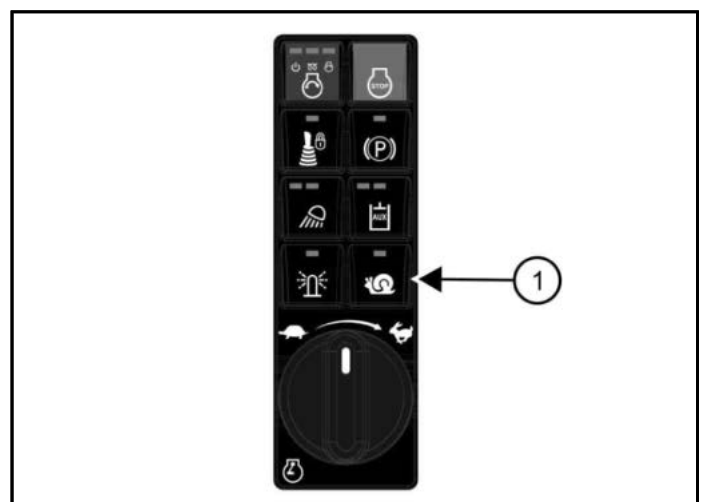
When the advanced attachment control mode is engaged, while in low range, the travel speed can be set to a percentage of the low range travel speed. That percentage will appear briefly in the display (Item 2) [Figure 57].

Disengaging Advanced Attachment Control Mode

- To disengage the advanced attachment control mode, stop the machine and adjust the travel direction switch to the NEUTRAL position. (See Joystick on Page 33)

NOTE: Auxiliary hydraulics will need to be reactivated when advanced attachment control mode is disengaged.

Figure 58

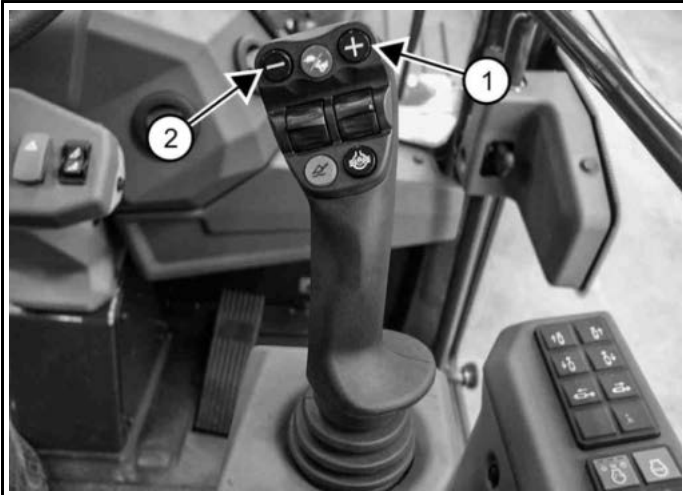


- Press the button (Item 1) [Figure 58] on the main control panel once to disengage the advanced attachment control mode.

Adjusting The Advanced Attachment Control Travel Speed

While in advanced attachment control mode, it is possible to adjust the travel speed using two-speed control. (See Two-speed Control on Page 52)

Figure 59



C207533F

- When low range is selected, the operator can adjust the maximum travel speed within the range of 1 km/h – 8,5 km/h (0.6 mph – 5.2 mph).
 - ▷ Press the drive pedal down fully and press the plus button (Item 1) [Figure 59] on the joystick to increase the maximum travel speed.
 - ▷ Press the drive pedal down fully and press the minus button (Item 2) [Figure 59] on the joystick to decrease the maximum travel speed.

The percentage graph will appear in the display (Item 1) [Figure 57] while adjusting.

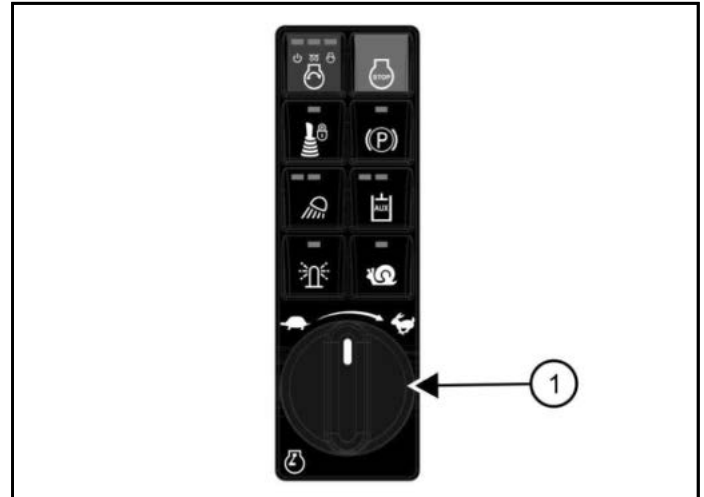
- When high range is selected, the machine will travel at the maximum travel speed of the machine.

The selected speed will be saved in the system as the low range travel speed in advanced attachment control mode.

Adjusting The Advanced Attachment Control Engine Speed

While advanced attachment control mode is activated, the engine speed can be adjusted independent from the travel speed.

Figure 60



C200329a

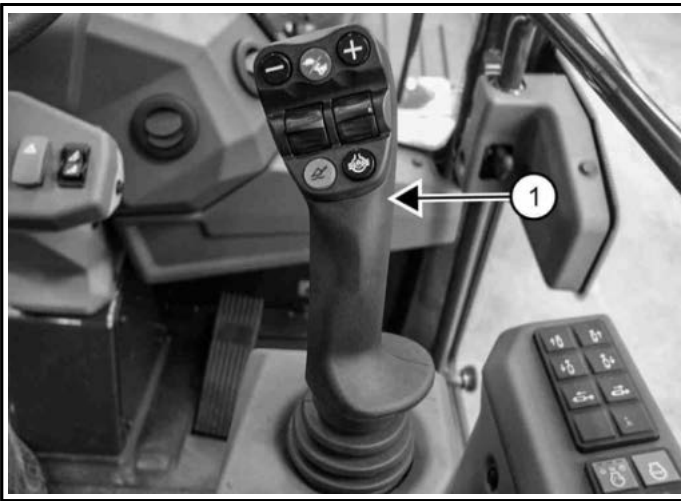
- On the main control panel, rotate the engine speed dial (Item 1) [Figure 60] clockwise to increase the engine speed.
- Rotate the engine speed dial (Item 1) [Figure 60] anticlockwise to decrease the engine speed.

NOTE: The engine speed control dial (Item 1) [Figure 60] does not change the engine speed outside of the advanced attachment control mode.

HYDRAULIC CONTROLS

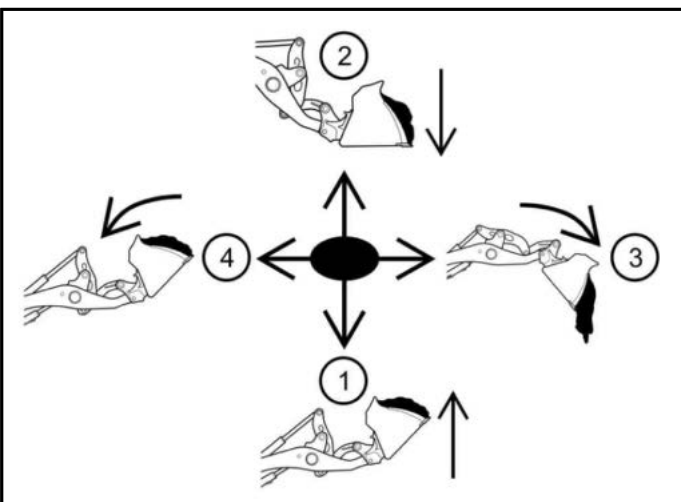
Operating Hydraulic Controls

Figure 61



Movement of the joystick (Item 1) [Figure 61] controls the hydraulic cylinders for the lift and tilt functions.

Figure 62



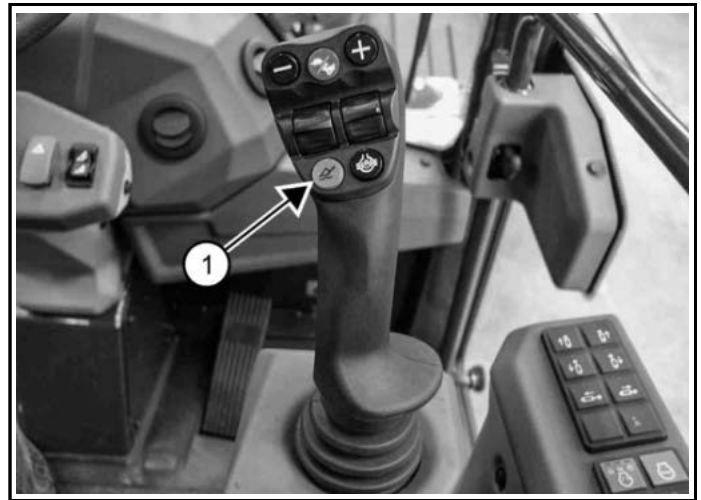
- Pull the joystick back to raise the lift arms (Item 1) [Figure 62].
- Push the joystick forward to lower the lift arms (Item 2) [Figure 62].
- Push the joystick to the right to tilt the bucket forward (Item 3) [Figure 62].
- Push the joystick to the left to tilt the bucket backward (Item 4) [Figure 62].

Operating Lift Arm Float

The lift arm float function is used to level loose material while driving backward.

1. Place the bucket flat on the ground.

Figure 63



2. Press the lift arm float button (Item 1) [Figure 63] and move the joystick fully forward to activate the lift arm float function.

The lift arm float icon will show on the display screen.

Releasing the button and the joystick does not deactivate lift arm float.

3. Press the button (Item 1) [Figure 63] again or move the joystick backward to deactivate lift arm float.

Operating Automatic Ride Control

This machine may be equipped with automatic ride control.

Automatic ride control provides a smoother ride, reduced load spillage, and improved machine control when travelling over uneven ground with heavy loads or in heavy digging applications.

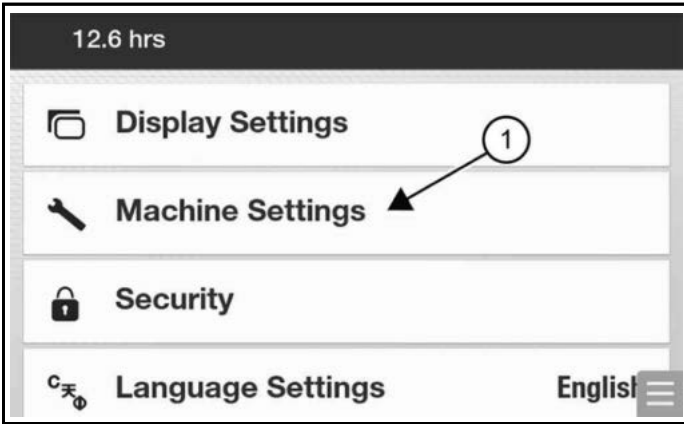
Automatic ride control is enabled by default.

Figure 64



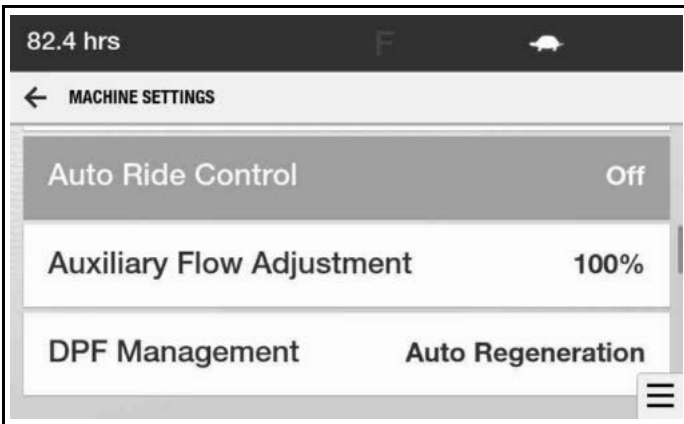
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 64].
2. Select **[SETTINGS]** (Item 2) [Figure 64].

Figure 65



3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 65].

Figure 66



4. Select **[AUTO RIDE CONTROL]** to deactivate automatic ride control [Figure 66].

The machine software will engage and disengage ride control automatically based on lift arm load and operation.

When deactivated, the automatic ride control icon located on the display will turn off.

5. Select **[AUTO RIDE CONTROL]** again to activate automatic ride control [Figure 66].

Automatic ride control may not be available if the hydraulic fluid temperature is too low.

The automatic ride control system uses an accumulator that requires occasional service. (See Checking Automatic Ride Control Accumulator Charge on Page 126)

NOTE: Certain applications will not benefit from using automatic ride control. Turn off automatic ride control when using certain attachments for better performance.

⚠ WARNING

AVOID UNEXPECTED LIFT ARM MOVEMENT
Operating with the Automatic Ride Control ON may result in the lift arms slowly raising during certain conditions when the operator moves the hydraulic controls in a specific manner:

1. A small or no load on the lift arms. **EXAMPLE:** Empty bucket or no attachment installed.
2. High hydraulic pressure in the tilt or auxiliary hydraulic system. **EXAMPLE:** Holding the tilt control forward or backward after it stops moving OR when an Attachment hydraulic motor is stalled.
3. While moving the lift control to raise or lower the lift arms.

NOTE: The slow upward movement of the lift arms will continue briefly even after the operator moves the hydraulic controls back to NEUTRAL under the conditions and operation described above. Disengage the automatic ride control functions for applications where precise lift arm control is required or whenever unexpected lift arm movement is not desired.

Operating The Hydraulic Workgroup Lockout

The hydraulic workgroup lockout function deactivates all the hydraulic controls on the machine. The hydraulic workgroup lockout button is located on the main control panel.

NOTE: By default, the hydraulic workgroup is active.

Figure 67



1. To engage the hydraulic workgroup lockout function, press the button (Item 1) [Figure 67].

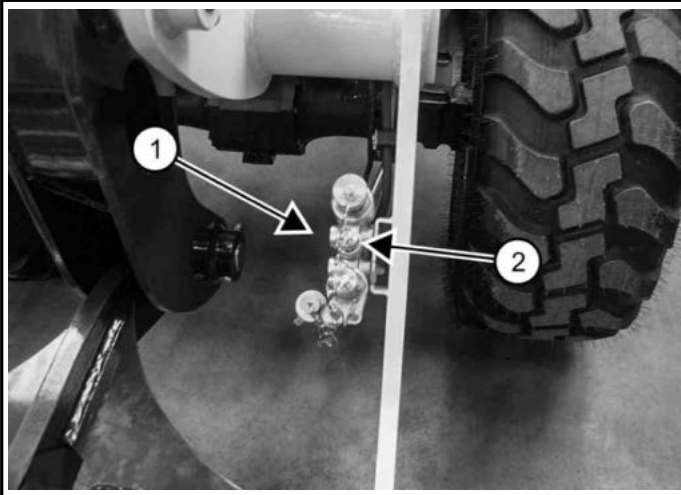
The hydraulic workgroup will deactivate.

2. Press the button again to disengage the hydraulic workgroup lockout function.

The hydraulic workgroup will activate.

Auxiliary Hydraulic Couplers Operation

Figure 68



Front auxiliary hydraulics (Item 1) [Figure 68] are standard and are located on the left-hand lift arm.

1. Remove dirt and debris from the surface of the male and female couplers and from the outside diameter of the male couplers.

2. Visually check the couplers for corroding, cracking, damage, or excessive wear.

If any of these conditions exist, the coupler(s) must be replaced.

3. Install the couplers.

Full connection is made when the ball release sleeves slide forward on the female couplers.

4. Connect the attachment case drain (if equipped) to the small quick coupler (Item 2) [Figure 68].

Disconnecting Auxiliary Hydraulic Couplers

1. Hold the male coupler.
2. Retract the sleeves on the female couplers until couplers disconnect.

Troubleshooting Auxiliary Hydraulic Couplers

Dirty couplers are often thought to be faulty and are unnecessarily replaced instead of simply being cleaned. Keep quick couplers clean to provide reliable service. Always clean coupler faces before connecting. Allowing dirt and other contaminants to remain can cause premature wear to internal seals and sealing surfaces.

Leaking Couplers

- Leaks are often caused by contaminants that prevent proper sealing of the couplers or that dislocate internal seals.
- Repeatedly connect and disconnect leaking couplers to dislodge contaminants.

Couplers Stuck In Open Position

- A gritty feel when moving the outer sleeve of female couplers or a coupler that remains open when disconnected is evidence of contamination.
- Clean couplers with a Teflon™ based aerosol lubricant.
- Retract the sleeves on the female couplers and clean thoroughly while rotating the sleeve until all contamination has been removed.
- Immediately clean a coupler stuck in the open position to prevent further contamination and leaks.

Difficult To Connect And Disconnect Couplers

- Attachment hoses that are out of alignment with the machine couplers can cause abnormal wear and make it difficult to connect and disconnect couplers.
- Ensure attachment hoses are routed exactly as shown in the attachment Operation & Maintenance Manual to prevent permanent coupler damage.

Relieving Auxiliary Hydraulic Pressure

⚠ WARNING

INJECTION HAZARD

Pressurised diesel fuel or hydraulic fluid can penetrate skin and eyes, causing serious injury or death.

Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury. ◀

W-2072

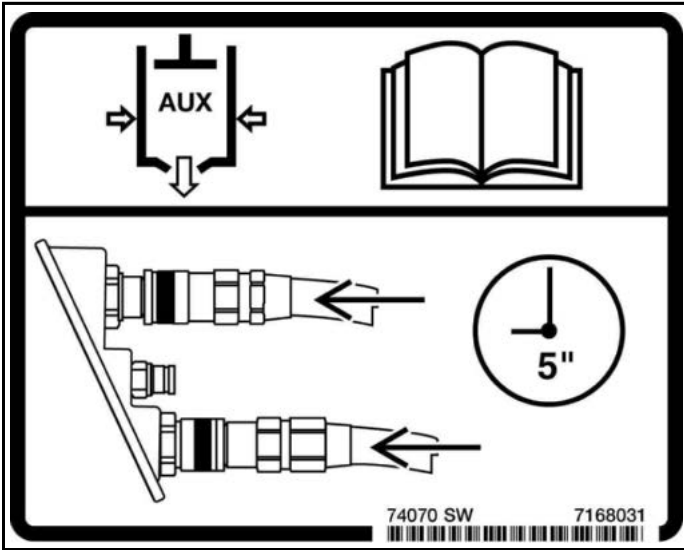
⚠ WARNING

BURN HAZARD

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers. ◀

W-2220

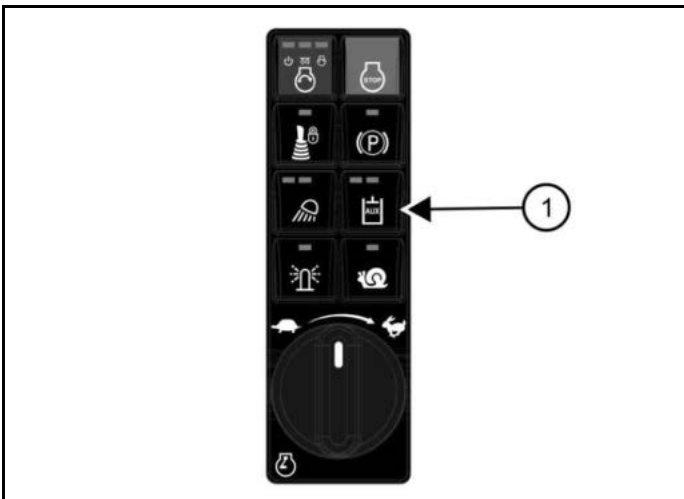
Figure 69



- When connecting: Push the quick couplers tightly together and hold for 5 seconds.
The pressure is automatically relieved as the couplers are installed.
- When disconnecting: Push the quick couplers tightly together and hold for 5 seconds.
 - ▷ Retract the sleeves until the couplers disconnect.

Operating Auxiliary Hydraulics

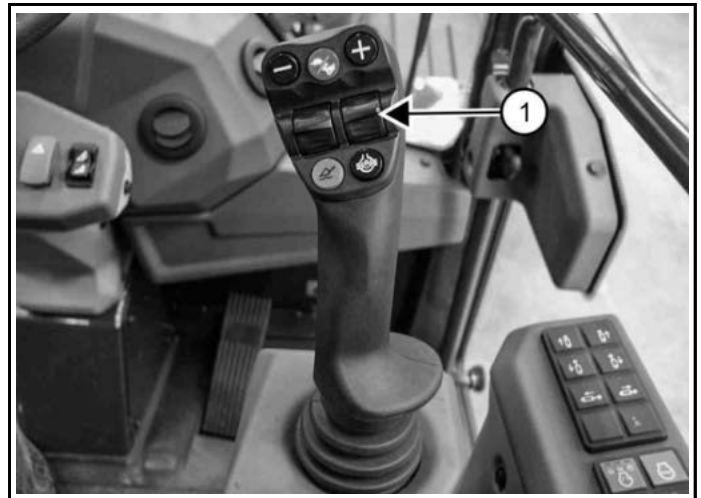
Figure 70



1. Press the auxiliary hydraulics button (Item 1) [Figure 70] on the main control panel once to activate auxiliary hydraulics.
The left LED light in the button will turn on.
2. If the machine is equipped with high flow hydraulics, press the auxiliary hydraulics button a second time to active high flow auxiliary hydraulics.

Both LED lights in the button will turn on.

Figure 71



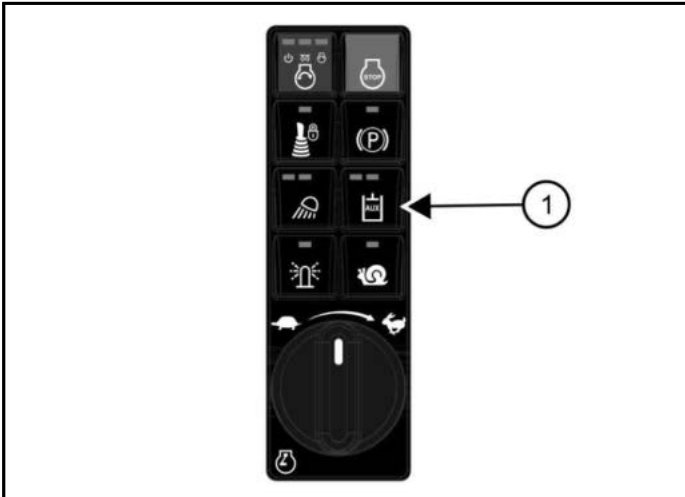
3. Rotate the front auxiliary hydraulic roller (Item 1) [Figure 71] up or down to change direction of the auxiliary hydraulic fluid flow to the front quick couplers.
If you move the switch halfway, the auxiliary functions move at approximately one-half speed.
4. Release the front auxiliary hydraulic roller to stop hydraulic flow to the front quick couplers.
5. To deactivate auxiliary hydraulics, press the auxiliary hydraulics button (Item 1) [Figure 70] once or several times until all the LED's on the button are off.

NOTE: When the operator leaves the operator's seat, the auxiliary hydraulic system will deactivate after 5 seconds.

Operating Auxiliary Hydraulics In Continuous Flow Mode

To provide constant auxiliary hydraulic fluid flow to the female coupler (female coupler is pressurised):

Figure 72

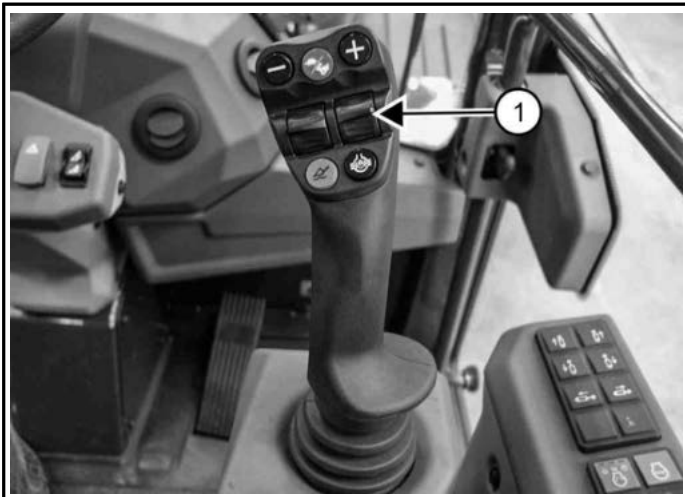


1. Press the auxiliary hydraulics button (Item 1) [Figure 72] on the main control panel to activate auxiliary hydraulics with continuous flow.

The right LED light in the button will turn on.

NOTE: If the machine is equipped with high flow hydraulics, pressing the button two times will activate high flow auxiliary hydraulics with continuous flow. Both LED lights in the button will turn on.

Figure 73



2. To activate continuous flow, on the joystick, rotate the auxiliary hydraulics roller (Item 1) [Figure 73] all the way up through the detent.
Continuous flow will remain active when the roller is released.
3. To deactivate continuous flow, rotate the auxiliary hydraulics roller (Item 1) [Figure 73] up or down from the neutral position.

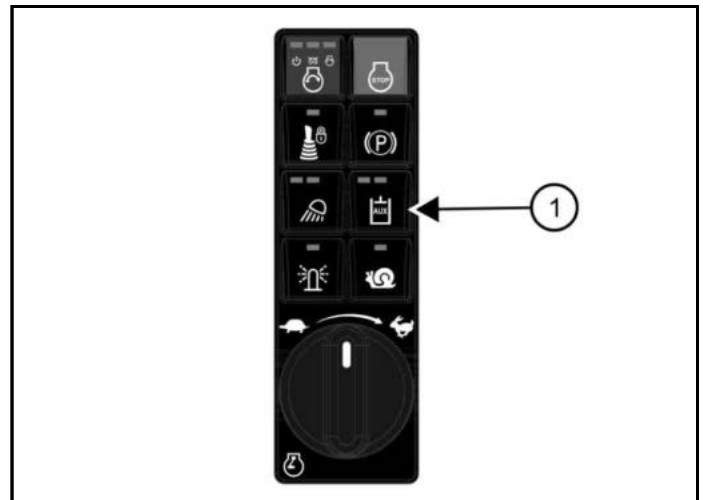
NOTE: Deactivating auxiliary hydraulics or leaving the operator's seat will also deactivate continuous flow.

Operating Auxiliary Hydraulics In Reverse Continuous Flow Mode

To provide constant auxiliary hydraulic fluid flow to the male coupler (male coupler is pressurised):

NOTE: Reverse flow can cause damage to some attachments. Use reverse flow with your attachment only if approved. See your attachment Operation & Maintenance Manual for detailed information.

Figure 74

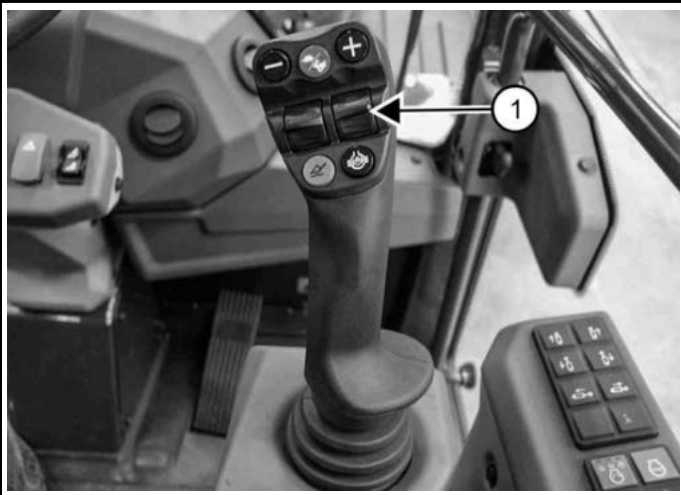


1. Press the auxiliary hydraulics button (Item 1) [Figure 74] on the main control panel to activate auxiliary hydraulics with continuous flow.

The right LED in the button will turn on.

NOTE: If the machine is equipped with high flow hydraulics, pressing the button two times will activate high flow auxiliary hydraulics with continuous flow. Both LED lights in the button will turn on.

Figure 75



C207533c

2. To activate reverse continuous flow, on the joystick, rotate the auxiliary hydraulics roller (Item 1) [Figure 75] all the way down through the detent.

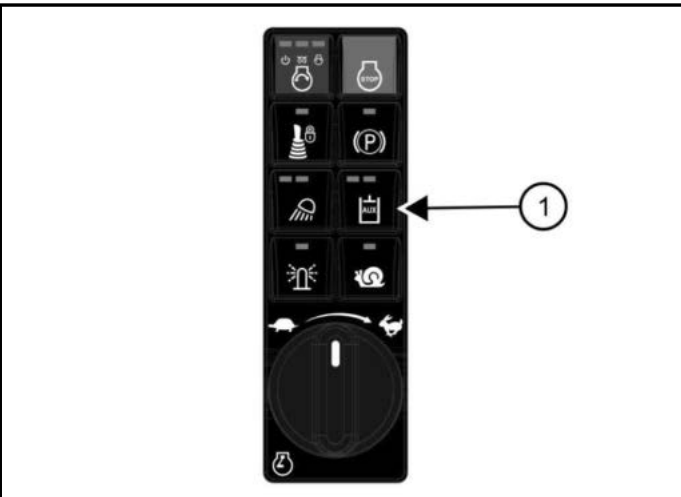
Continuous flow will remain active when the roller is released.

3. To deactivate reverse continuous flow, rotate the auxiliary hydraulics roller (Item 1) [Figure 75] up or down from the neutral position.

NOTE: Deactivating auxiliary hydraulics or leaving the operator's seat will also deactivate reverse continuous flow.

Operating High-Flow Auxiliary Hydraulics

Figure 76



C206984d

This machine may be equipped with high-flow auxiliary hydraulics.

The high-flow function provides additional hydraulic fluid flow to the system to operate an attachment that requires more hydraulic flow.

1. Press the auxiliary hydraulics button (Item 1) [Figure 76] on the main control panel to activate auxiliary hydraulics.

The left LED light in the button will turn on.

2. To activate high-flow auxiliary hydraulics, press the auxiliary hydraulics button (Item 1) [Figure 76] one more time.

Both LED lights in the button will turn on.

3. To deactivate high-flow auxiliary hydraulics, press the auxiliary hydraulics button (Item 1) [Figure 76] a third time.

Both LED lights in the button will turn off.

Attachments That Automatically Enable High-Flow Hydraulics

1. Press button once to activate auxiliary hydraulics and high-flow, the left and middle LED are on.
2. Second button press will deactivate high-flow hydraulics, middle LED is off.
3. Third button press will deactivate auxiliary hydraulics, all LED are off.

Attachments That Automatically Disable High-Flow Hydraulics

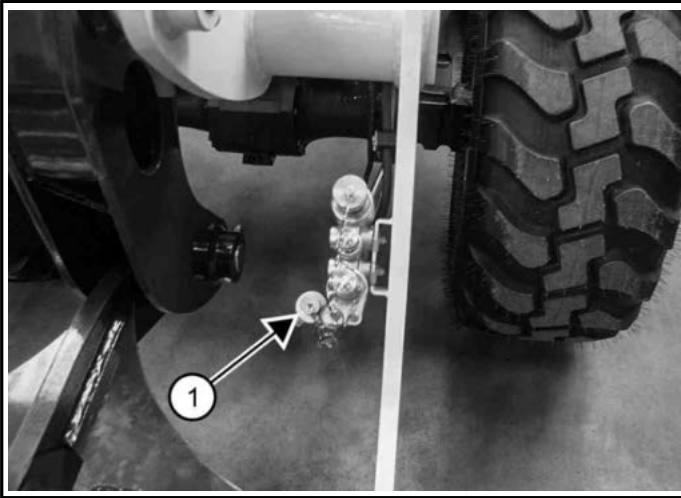
1. Press button once to activate auxiliary hydraulics, left LED is on.
2. Second button press will not activate high-flow hydraulics, middle LED is on briefly and turns off.
3. Third button press will deactivate auxiliary hydraulics, all LED are off.

NOTE: See attachment Operation & Maintenance Manual for more information.

ATTACHMENT CONTROL DEVICE (ACD)

Attachment Control Device (ACD) Description

Figure 77

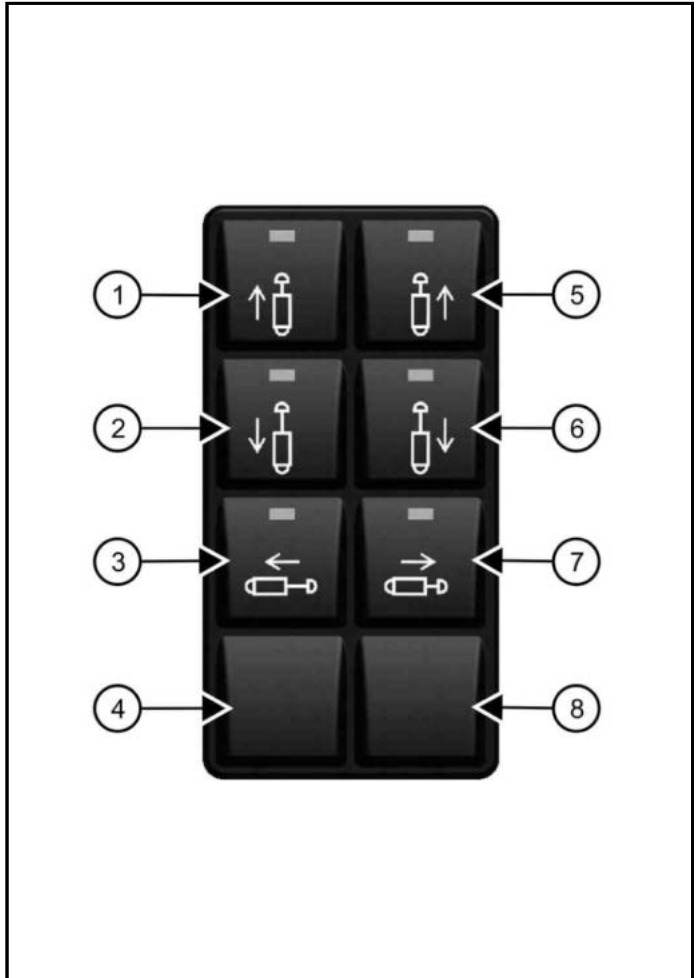


C207544b

The attachment electrical harness (if equipped) connects to the ACD (Item 1) [Figure 77].

The ACD control panel [Figure 78] in the operator enclosure controls the attachment. See the attachment Operation & Maintenance Manual for more details:

Figure 78



C206986a

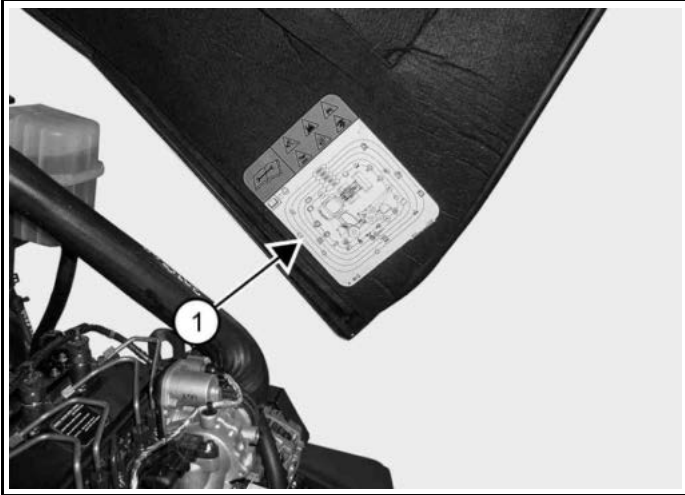
REF.	DESCRIPTION
1	Move Left-Hand Side Up
2	Move Left-Hand Side Down
3	Move Attachment Left
4	Not Used
5	Move Right-Hand Side Up
6	Move Right-Hand Side Down
7	Move Attachment Right
8	Not Used

DAILY INSPECTION

Daily Inspection And Maintenance List

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The Service Schedule is a guide for correct maintenance of your Bobcat machine.

Figure 79



The Service Schedule (Item 1) [Figure 79] is located on the inside of the engine cover.

A complete list of scheduled maintenance tasks, service symbols and regular maintenance items is also located in the Preventive Maintenance section of this manual. (See Service Schedule on Page 88)

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

- Keep door / cover closed except for service.
- Keep engine clean of flammable material.
- Keep body, loose objects, and clothing away from electrical contacts, moving parts, hot parts, and exhaust.
- Do not use the machine in space with explosive dusts or gases or with flammable material near exhaust.
- Never use ether or starting fluid on diesel engine with glow plugs or air intake heater. Use only starting aids as approved by engine manufacturer.
- Leaking fluids under pressure can enter skin and cause serious injury.
- Battery acid causes severe burns; wear goggles. If acid contacts eyes, skin, or clothing, flush with water. For contact with eyes, flush and get medical attention.
- Battery makes flammable and explosive gas. Keep arcs, sparks, flames, and lighted tobacco away.
- For jump start, connect negative cable to the machine engine last (never at the battery). After jump start, remove negative connection at the engine first.
- Exhaust gases can kill. Always ventilate. ◀

W-2782

NOTE: Fluids such as engine oil, hydraulic fluid, and coolant must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state, and federal regulations for correct disposal.

⚠ WARNING

INSUFFICIENT INSTRUCTIONS HAZARD

Untrained operators or failure to follow instructions can cause serious injury or death.

Operators must have adequate training and instruction before operating. ◀

W-2001

The following list of items must be checked daily:

- Engine Oil Level
- Hydraulic Fluid Level
- Engine Air Cleaner – Check system for damage or loose connections
- Engine Cooling System – Check system for damage or leaks, check coolant level, clean radiator cooling package, rear grilles, and engine compartment
- Operator Cab and Cab Mounting Hardware
- Seat Belt
- Front Horn, Back-up Alarm, and Rear View Camera (if equipped) – Check for proper function
- Grease Pivot Pins (Lift Arms, Lift Links, Bob-Tach, Cylinders, Bob-Tach Wedges)

- Loose or Broken Parts – Repair or replace as necessary
- Safety Treads and Safety Signs (Decals) – Replace as necessary
- Lift Arm Support and Articulation Lock Bar – Replace if damaged

IMPORTANT

ENGINE OR EXHAUST SYSTEM DAMAGE

Failure to maintain the factory equipped spark arrester exhaust system can result in improper function.

- **Muffler:** The muffler chamber must be emptied every 100 hours of operation to keep it in working condition.
- **Selective Catalyst Reduction (SCR) and / or Diesel Oxidation Catalyst (DOC):** Do not remove or modify the DOC or SCR. The SCR must be maintained according to the instructions in the Operation & Maintenance Manual for proper function.
- **Diesel Particulate Filter (DPF):** The DPF must be maintained according to the instructions in the Operation & Maintenance Manual for proper function.

If this machine is operated on flammable forest, brush, or grass covered land, a spark arrester attached to the exhaust system may be required and must be and maintained in working order. Refer to local laws and regulations for spark arrester requirements. ◀

131-30771580

IMPORTANT

MACHINE DAMAGE HAZARD

Improper pressure washing may lead to damage of the decal.

- Direct the stream at a 90 degree angle and at least 300 mm (12 in) from the decal.
- Wash from the centre of the decal toward the edges. ◀

1-2226

Cleaning The Machine

It is recommended to keep the machine clean and well maintained to ensure optimum performance. When using a pressure washer to clean the machine, the following requirements should not be exceeded:

- Maximum water temperature : 50°C (122°F)
- Maximum water pressure: 12 MPa (120 bar) (1740 psi)
- Maximum water flow: 15 L/min (4 U.S. gpm)
- Minimum spraying distance: 150 mm (6 in)
- Use a flat jet nozzle

IMPORTANT

MACHINE DAMAGE

Never Pressure Wash

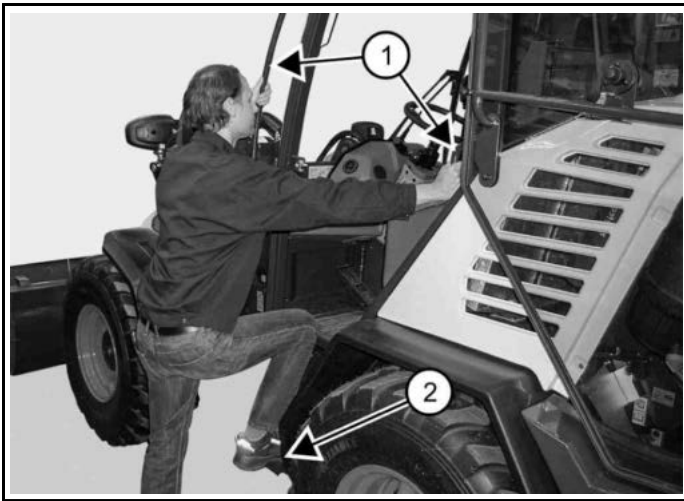
- The machine with the engine running
- The engine compartment and inside other covered areas
- Electrical components
- With the nozzle directly into the air inlet
- The radiator with water, it could damage the fins and cause dust to stick to the radiator channels. Always use compressed air to clean the radiator blowing out from the fan side. ◀

1-2410

PRE-STARTING PROCEDURE

Entering The Machine

Figure 80



C207571a

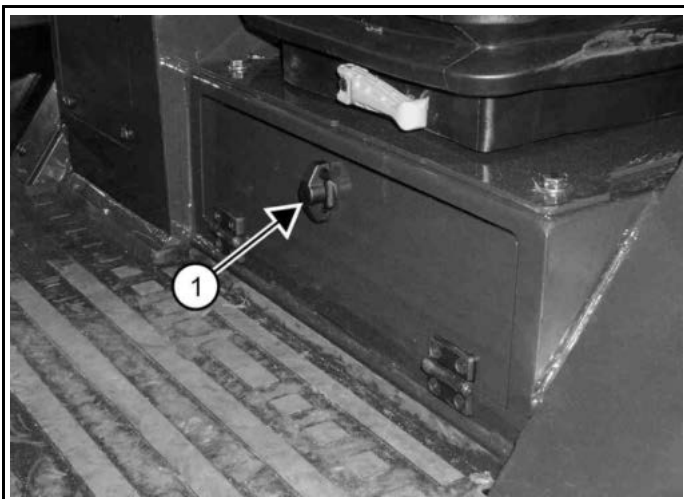
Use the grab handles (Item 1) and steps (Item 2) [Figure 80] to enter the machine, maintaining a three-point contact at all times. Do not jump.

Safety treads are installed on the machine to provide a slip resistant surface to enter and exit the machine.

Keep safety treads clean and replace when damaged. Replacement treads are available from your Bobcat dealer.

Operation & Maintenance Manual And Operator's Handbook Locations

Figure 81



C207481a

Read and understand the Operation & Maintenance Manual and the Operator's Handbook before operating the machine.

The Operation & Maintenance Manual and other manuals are located in a container (Item 1) [Figure 81] underneath the operator seat.

Figure 82



C208271a

The Operator's Handbook is located in a slot (Item 1) [Figure 82] behind the operator's seat.

⚠ WARNING

INSUFFICIENT INSTRUCTIONS HAZARD

Untrained operators or failure to follow instructions can cause serious injury or death.

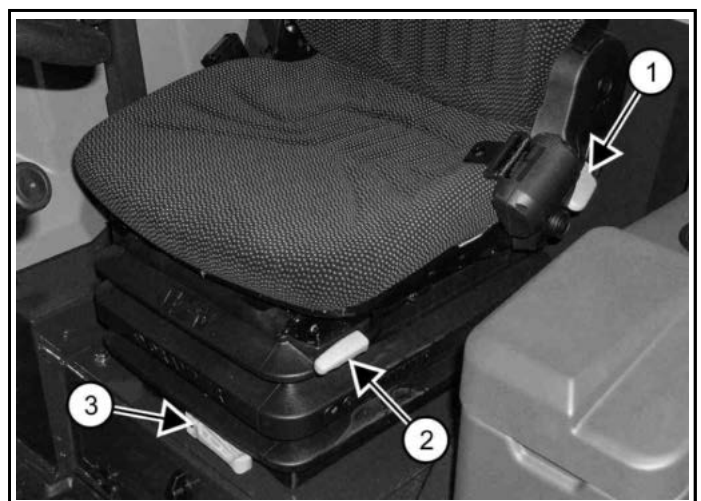
- Read and understand the Operation & Maintenance Manual, Operator's Handbook and decals on machine.
- Follow warnings and instructions in the manuals when making repairs, adjustments or servicing.
- Check for correct function after adjustments, repairs or service.

W-2003

Seat Adjustment

Adjusting The Suspension Seat

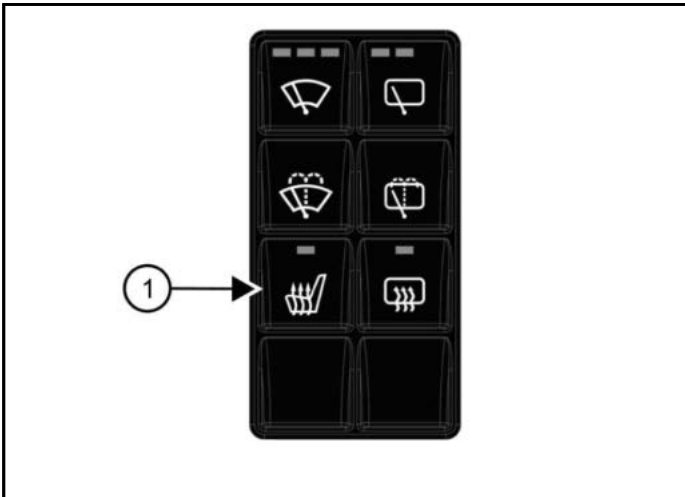
Figure 83



C207482a

- Pull the lever (Item 1) [Figure 83] up to adjust the angle of the seat back.
- Pull the lever (Item 2) [Figure 83] up to adjust the seat position for comfortable operation of the machine controls.
- Turn the lever (Item 3) [Figure 83] to adjust the seat cushion for weight of the operator.
- The height of the seat can be adjusted incrementally by manually lifting the seat. Lift the seat all the way up to reset the seat height to the lowest setting.
- Press the red button (Item 2) [Figure 85] to release the seat belt.

Figure 84



- If equipped, the button (Item 1) [Figure 84] to turn the heated seat on or off is located on the cab control panel.

Fastening The Seat Belt

Figure 85



- Pull the lap belt (Item 1) [Figure 85] across to the right side of the seat and fasten.

STARTING THE ENGINE

Quick Start Description

The display uses a sleep function to reduce boot-up time and battery draw. The sleep time for the display is fixed.

If the machine has been off longer than the sleep time setting, one of three splash screens will appear on the display.

Figure 86



Unlocked with quick start on [Figure 86]:

- A password is not required.
- The engine can be started after the glow plugs have cycled.
- Machine functions are active immediately after engine is started.
- The display will start booting up as soon as the machine is turned on and the gauges screen will be the next screen to appear.

Figure 87



Locked with quick start on [Figure 87]:

- A password is required.

- The engine can be started after the glow plugs have cycled.
- Machine functions are disabled until a password is entered.
- The display will start booting up as soon as the machine is turned on and the password entry screen will be the next screen to appear.
- The machine will shut down if a valid password is not entered within 10 minutes.

Figure 88



Locked with quick start off [Figure 88]:

- A password is required.
- The engine cannot be started until a password is entered.
- The display will start booting up as soon as the machine is turned on and the password entry screen will be the next screen to appear.

NOTE: Machine lockout can be turned on or off. (See Security Settings on Page 136)

NOTE: Quick start can be turned on or off. (See Security Settings on Page 136)

Starting The Engine

⚠ WARNING

FIRE AND EXPLOSION HAZARDS
Engines can have hot parts and hot exhaust gas that can cause serious injury or death.

- Keep flammable material away.
- DO NOT use machines in an atmosphere containing explosive dust or gases. ◀

W-2051

1. Perform the pre-starting procedure. (See Pre-Starting Procedure on Page 64)

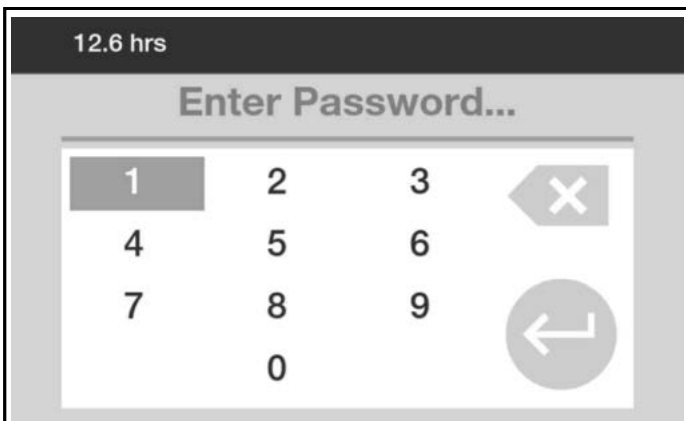
Figure 89



2. Press the run button (Item 1) [Figure 89] or turn the key switch to run. (See Key Switch on Page 35) The left LED in the run button will light.

If the machine has been off longer than the sleep time setting, one of three splash screens will appear on the display.
(See Quick Start Description on Page 66)

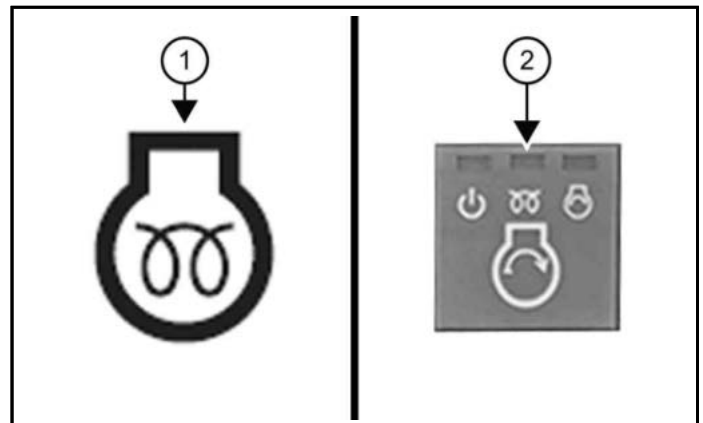
Figure 90



3. Use the numeric keypad [Figure 90] to enter the password if the machine lockout feature is activated. (See Security Settings on Page 136)

NOTE: Your machine has a permanent, randomly generated master password set at the factory. Your machine will also be assigned an owner password. Your dealer will provide you with this password. Change the owner password to one that you will easily remember to prevent unauthorised use of your machine.
(See Security Settings (Manage Operators) on Page 137) Keep your password in a safe location for future needs.

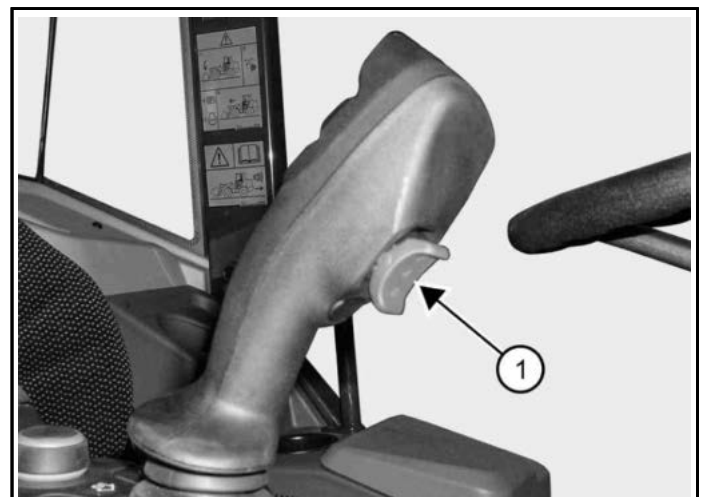
Figure 91



The machine will cycle the glow plugs automatically based on temperature. The engine preheat icon (Item 1) will show on the display and the middle LED in the run button (Item 2) [Figure 91] will light while the glow plugs are on.

NOTE: It is recommended in cold weather to cycle the glow plugs twice before attempting to start the engine. This will allow for additional heating time for cold weather starting.

Figure 92



4. Ensure that the travel direction switch (Item 1) [Figure 92] on the back of the joystick is set to the NEUTRAL (centre) position.

5. When the engine preheat icon turns off, press the run button (Item 2) [Figure 91] or turn the key switch to run. The right LED in the run button will light while the starter is operating. Release the button when the engine starts.

NOTE: To start the machine, the operator must be seated in the operator's seat, and the travel direction switch must be in the neutral position.

The engine controller will run the engine at a slightly lower idle speed while checking engine systems and temperatures at startup.

The engine controller may override the operator engine speed control setting and restrict the idle speed.

The alarm will beep two times when the engine controller is no longer overriding engine speed.

Engine speed will return to normal low idle or slowly increase to the operator engine speed control setting.

The engine speed control may remain overridden during cold temperatures.

(See Cold Temperature Engine Speed Control Description on Page 68)

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

- Fasten seat belt, start, and operate only from the operator's seat.
- Never wear loose clothing when working near machine. ◀

W2135

⚠ WARNING

INHALATION HAZARD

Exhaust fumes contain odorless, invisible gases that can kill without warning.

Fresh air must be added to avoid concentration of exhaust fumes when an engine is running in an enclosed area. If the engine is stationary, vent the exhaust outside. ◀

W2050

Warming The Hydraulic / Hydrostatic System

- Let the engine operate for a minimum of 5 minutes to warm the engine and hydrostatic transmission fluid before operating the machine.

NOTE: The full range of the engine speed control and the full range of travel speeds will not be available until the engine controller determines the machine is adequately warmed.

(See Cold Temperature Engine Speed Control Description on Page 68) and (See Cold Temperature Hydraulic / Hydrostatic Drive Description on Page 69) .

⚠ IMPORTANT

MACHINE DAMAGE HAZARD

Starting the engine when the temperature of the hydraulic fluid is less than -30°C (-20°F) will result in significant damage to the hydraulic system and components.

Park the machine in a heated location or provide some means of warming the hydraulic fluid prior to starting the engine if the ambient temperature at startup is expected to be -30°C (-20°F) or below ◀

I-2403

Cold Temperature Starting Tips

⚠ WARNING

EXPLOSION HAZARD

Failure to follow instructions can cause serious injury, death or severe engine damage.

DO NOT use ether or starting fluid with glow plug or air intake heater systems. ◀

W-2071

If the temperature is below freezing, perform the following to make starting the engine easier:

- Replace the engine oil with the correct type and viscosity for the anticipated starting temperature. (See Engine Oil Chart on Page 104)
- Make sure the battery is fully charged.
- Install an engine heater, available from your Bobcat dealer.

NOTE: The standard display may not be at full intensity when the temperature is below -20°C (-4°F). The display may take 30 seconds to several minutes to warm up. All systems remain monitored even when the display is off.

⚠ WARNING

INHALATION HAZARD

Exhaust fumes contain odorless, invisible gases that can kill without warning.

Fresh air must be added to avoid concentration of exhaust fumes when an engine is running in an enclosed area. If the engine is stationary, vent the exhaust outside. ◀

W-2050

Cold Temperature Engine Speed Control Description

The engine controller will not allow full engine speed and torque when the hydraulic temperature is too low and may slightly raise engine speed to assist in warming the engine coolant and hydraulic fluid during cold temperatures.

The following actions are performed automatically by the engine controller to aid machine warm up:

1. The engine controller will increase engine speed.
2. Operator selected engine speed will be limited until hydraulic fluid is adequately warmed.

3. Once engine coolant and hydraulic fluid approaches normal operating temperatures, engine speed will return to normal low idle or slowly increase or decrease to the operator engine speed control setting.
4. Full engine speed control is returned to the operator.

NOTE: Full engine speed and torque may not be available until the engine controller determines the machine is adequately warmed.

Cold Temperature Hydraulic / Hydrostatic Drive Description

Drive will be disabled when the hydraulic fluid temperature is too low.

Drive will be allowed, but limited until the hydraulic fluid has warmed sufficiently. The machine will gradually allow faster travel as the hydraulic fluid continues to warm.

Until the hydraulic fluid is adequately warmed, the following functions might be limited / disabled:

- Auxiliary Hydraulics
- Differential Lock
- Hydraulic Workgroup
- Hydrostatic Drive
- Maximum Engine Speed
- Two-Speed Travel

The machine performance display will show which functions are limited / disabled.

NOTE: In extreme temperatures, between -30°C and -17,7°C (-22°F and 0°F), all functions will be disabled.

DIFFERENTIAL LOCK

Differential Lock Description

The differential lock allows for greater traction in muddy or slippery conditions, at a reduced travel speed.

NOTE: It is advised to use the differential lock only when necessary, to avoid unnecessary wear of the differential.

Operating The Differential Lock

The differential lock button is located on the joystick.

NOTE: Always make sure that the machine is not moving and not articulated before engaging / disengaging the differential lock, to avoid damaging the differential.

⚠ WARNING

GENERAL HAZARD

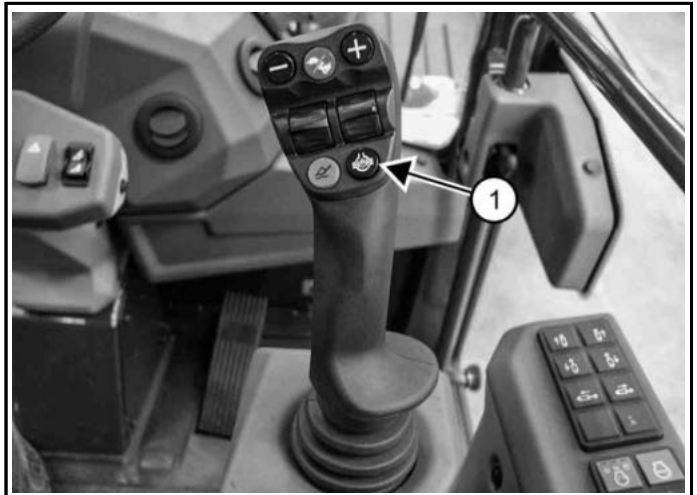
Failure to follow instructions can cause serious injury or death.

Never use the differential lock during travel on public roads. Do not articulate the machine while the differential lock is engaged. Read and understand the Operation & Maintenance Manual before using the differential lock function.

888C3244

NOTE: While the differential lock is engaged, travel speed will be limited to 5 km/h.

Figure 93



C207533g

- While the machine is stationary and the wheels are aligned, press and hold the differential lock button (Item 1) [Figure 93] to engage the differential lock.
- Stop the machine and release the differential lock button (Item 1) [Figure 93] to disengage the differential lock.

MONITORING THE DISPLAY

Monitoring The Display During Operation

Figure 94

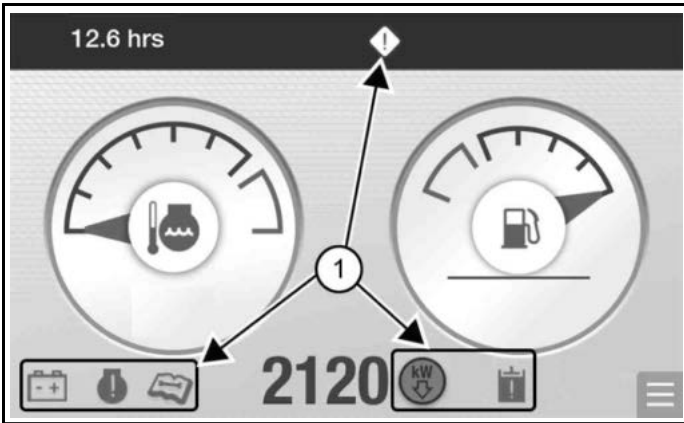
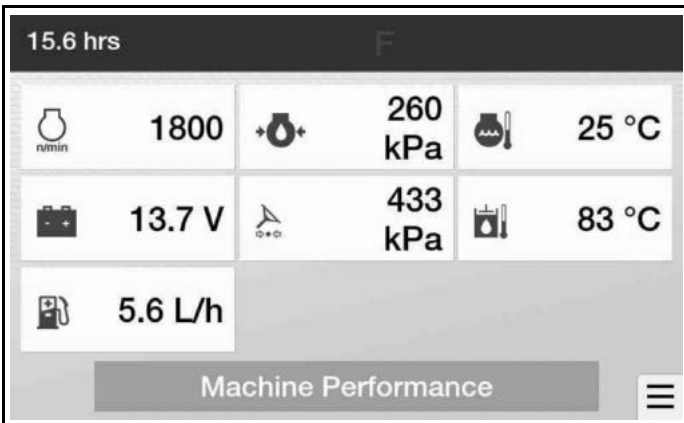
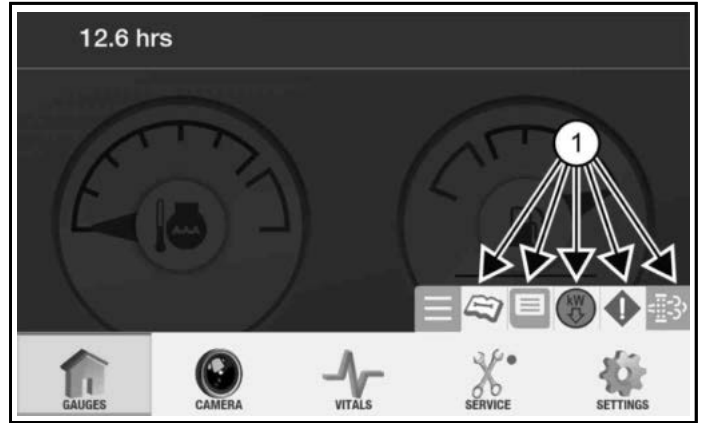


Figure 95



- Frequently monitor the **GAUGES** screen [Figure 94] and the **VITALS** screen [Figure 95].
- These icons (Items 1) [Figure 94] indicate machine conditions that may require service. (See Display on Page 37)
- Selecting **[MACHINE PERFORMANCE]** on the vitals screen can also provide details on machine condition. (See Vital Detail And Machine Performance on Page 133)

Figure 96



- Active shortcuts (Items 1) [Figure 96] can appear in place of, or next to, the navigation handle that also indicate a need for service. (See Viewing Active Shortcuts on Page 132)
- A red dot next to **[SERVICE]** [Figure 96] indicates an active service code. (See View Service Codes on Page 134)

Derate And Shutdown Conditions

Certain machine conditions can result in a derate condition until the fault is corrected. These derates are designed to protect the machine systems from damage while a fault condition exists.

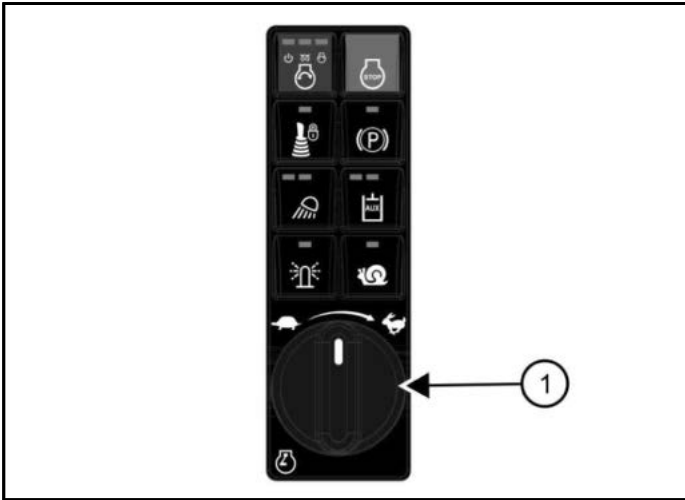
An engine shutdown can occur during certain system malfunctions. The engine can be restarted to move the machine.

STOPPING THE ENGINE AND LEAVING THE MACHINE

Stopping The Engine And Leaving The Machine Procedure

1. Park the machine on a level surface.
2. Fully lower the lift arms and put the attachment flat on the ground.

Figure 97



C206984c

3. If advanced attachment control mode is activated, set the engine speed control dial (Item 1) [Figure 97] to the low idle position.
4. Switch the travel direction switch to the neutral position. Ensure the parking brake is engaged.

Figure 98



C207535b

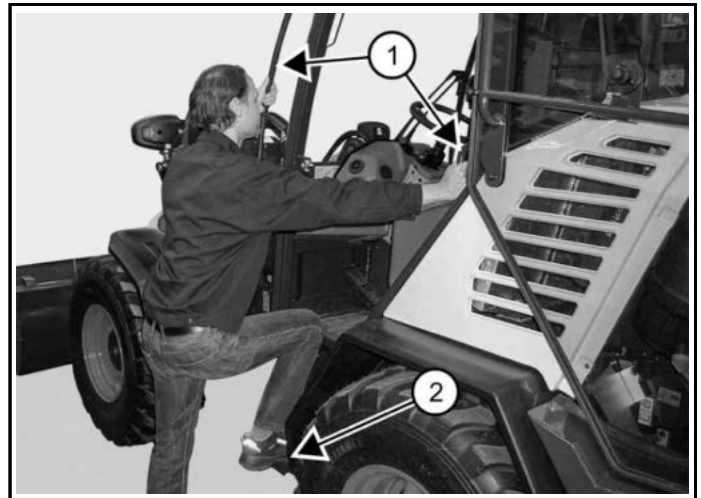
5. Turn the key switch to the STOP position (Item 1) [Figure 98] to stop the engine and turn the machine's electrical system off.

NOTE: The key switch must be turned to the STOP position to deactivate the machine. If the STOP button is used to deactivate the machine, the electrical system will remain active.

6. Unbuckle the seat belt.
7. Remove the key from the switch to prevent operation of the machine by unauthorised personnel.

NOTE: Activate the machine lockout feature to require a password before the machine can be operated. (See Security Settings on Page 136) .

Figure 99



C207571a

8. Exit the machine using the grab handles (Items 1) and steps (Item 2) (maintaining a three-point contact) [Figure 99].

NOTE: If the work lights are on, they will remain on for approximately 90 seconds after turning the machine off. If the road lights are on, they will remain on even if the machine is turned off.

⚠ WARNING

GENERAL HAZARD

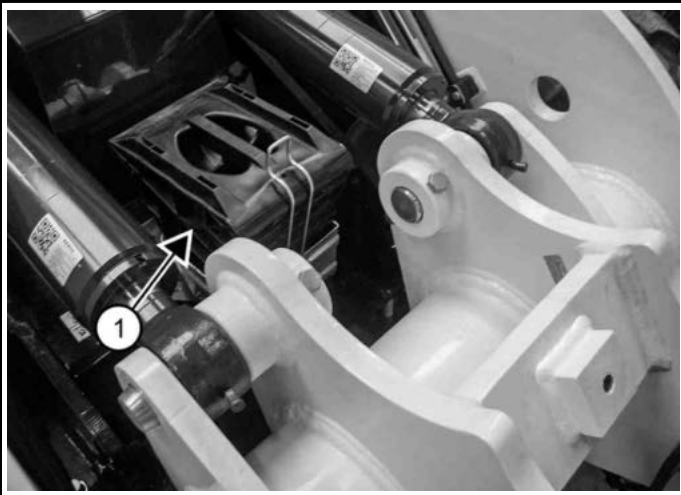
Failure to follow instructions can cause serious injury of death.

Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, and drive functions are deactivated. ◀

12256-78F00051

Figure 100



If the machine is parked on a slope, remove the wheel wedge (if equipped) (Item 1) [Figure 100] and install it against a wheel on the lower side of the slope.

C207522a

ATTACHMENTS

Choosing The Correct Bucket

⚠ WARNING

MODIFICATION HAZARD

Unapproved attachments can cause serious injury or death.

Buckets and attachments for safe loads of specified densities are approved for each model. Never use attachments or buckets that are not approved by Bobcat Company. ◀

W-2052

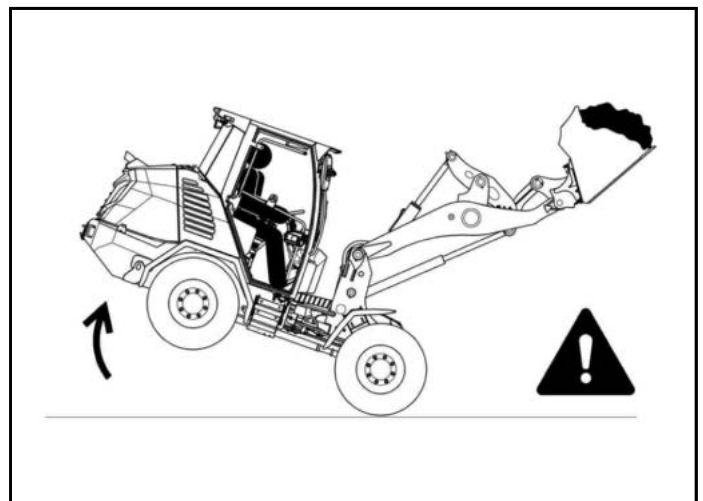
NOTE: Warranty is void if non-approved attachments are used on the Bobcat machine.

The dealer can identify, for each model machine, the attachments and buckets approved by Bobcat. The buckets and attachments are approved for Rated Operating Capacity (ROC) and for secure fastening to the Quick-Tach.

The ROC for this machine is shown on a decal in the operator cab. (See Machine Specifications on Page 144)

The ROC is determined by using a bucket and material of normal density, such as dirt or dry gravel. If longer buckets are used, the load centre moves forward and reduces the ROC. If extremely dense material is loaded, the volume must be reduced to prevent overloading.

Figure 101



NA20227a

Exceeding the ROC [Figure 101] can cause the following problems:

- Steering the machine may be difficult.
- Tyres will wear faster.
- There will be a loss of stability.
- The life of the Bobcat machine will be reduced.

Use the correct bucket size for the type and density of material being handled. For safe handling of materials

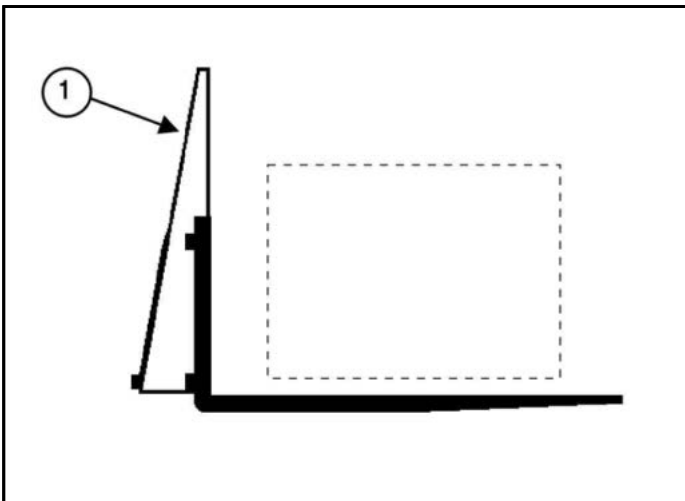
and avoiding machine damage, the attachment (or bucket) should handle a full load without going over the ROC for the machine. Partial loads may make steering more difficult.

⚠ WARNING

INSTABILITY HAZARD
Excessive load can cause loss of control or tipping leading to serious injury or death.
DO NOT exceed Rated Operating Capacity (ROC). ◀

Pallet Fork Information

Figure 102



The maximum load to be carried when using a pallet fork is shown on a decal located on the pallet fork frame (Item 1) [Figure 102].

See your Bobcat dealer for more information about pallet fork inspection, maintenance, and replacement. See your Bobcat dealer for ROC when using a pallet fork and for other available attachments.

⚠ WARNING

INSTABILITY HAZARD
Excessive load can cause loss of control or tipping leading to serious injury or death.
DO NOT exceed Rated Operating Capacity (ROC). ◀

Inspecting Pallet Fork

Forks shall be inspected at intervals of not more than 12 months or whenever any defect or permanent deformation is detected. Severe applications require more frequent inspection.

Fork inspection shall be carried out carefully by trained personnel with the aim of detecting any damage, failure, or deformation which might impair safe use. Any fork that shows such a defect shall be withdrawn from service and repaired by the fork manufacturer or replaced.

- **Surface Cracks** - The fork shall be thoroughly examined visually for cracks and if considered

necessary, subjected to a nondestructive crack detection process. This inspection for cracks must also include any special mounting mechanisms of the fork blank to the fork carrier. The fork shall not be returned to service if cracks are detected.

- **Straightness of Blade and Shank** - The straightness of the upper face of the blade and the front face of the shank shall be checked. If the deviation from straightness exceeds 0.5 percent of the length of the blade or the height of the shank, the fork shall not be returned to service until it has been repaired.
- **Fork Angle (Upper Face of Blade to Load Face of Shank)** - Any fork that has a deviation of greater than 3 degrees from the original specification shall not be returned to service.
- **Difference in Height of Fork Tips** - The difference in height of one set of forks when mounted on the fork carrier shall be checked. If the difference in tip heights exceeds 3 percent of the length of the blade, the set of forks shall not be returned to service until repaired.
- **Positioning Lock (When Originally Provided)** - It shall be confirmed that the positioning lock is in good repair and correct working order. If any fault is found, the fork shall be withdrawn from service until satisfactory repairs have been made.
- **Wear of Fork Blade and Shank** - The fork blade and shank shall be thoroughly checked for wear, special attention being paid to the vicinity of the heel. If the thickness is reduced to 90 percent of the original thickness, the fork shall not be returned to service.

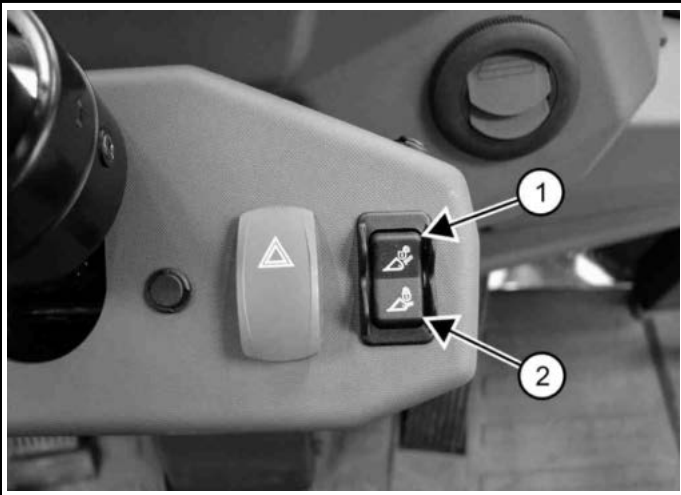
Installing And Removing Attachments (Quick-Tach System)

This machine is equipped with a Quick-Tach system. The Quick-Tach system is used for fast changing of buckets and attachments. See the appropriate attachment Operation & Maintenance Manual to install other attachments.

Installing Quick-Tach Attachments

1. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 64)
2. Start the engine.
3. Lower the lift arms and tilt the Quick-Tach frame forward.

Figure 103



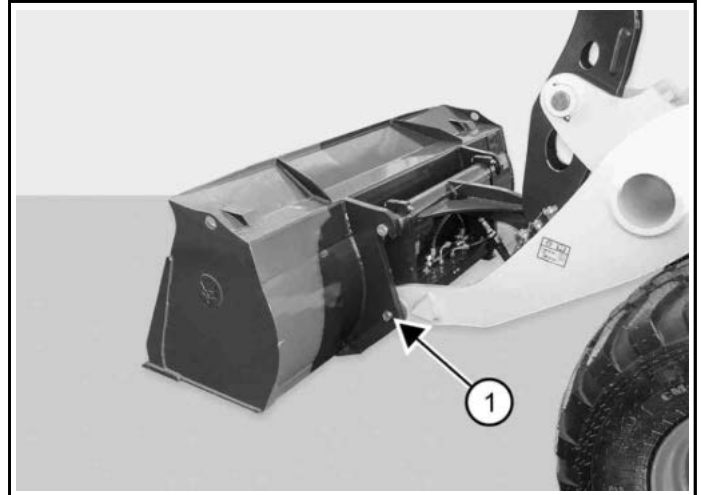
4. Press and hold the top of the switch (Item 1) [Figure 103] to unlock the Quick-Tach.

Figure 104



5. Drive the machine slowly forward until the top edge of the Quick-Tach frame is directly under the hooks of the bucket mounting frame [Figure 104] (or other attachment).

Figure 105



6. Tilt the Quick-Tach frame backward until the cutting edge of the bucket (or other attachment) is slightly off the ground [Figure 105].

This procedure positions the bucket mounting frame against the locking pins of the Quick-Tach frame.

7. Press the bottom of the switch (Item 2) [Figure 103] to lock the attachment to the Quick-Tach frame [Figure 105].

NOTE: The Quick-Tach system uses continuously pressurised hydraulic fluid to keep the locking pins in the engaged position and prevent attachment disengagement. Because the pins can slowly extend, the operator may need to press and hold the top of the switch (Item 1) [Figure 103] to make sure both locking pins are fully retracted before installing the attachment.

8. The locking pins (Item 1) [Figure 105] of the Quick-Tach frame must extend through the holes in the mounting frame of the bucket (or other attachment).

Removing Quick-Tach Attachments

1. Lower the lift arms and put the attachment flat on the ground.
2. Lower or close any hydraulic equipment, if applicable.
3. Perform the following steps if the attachment has electrical, or hydraulic connections to the machine:

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

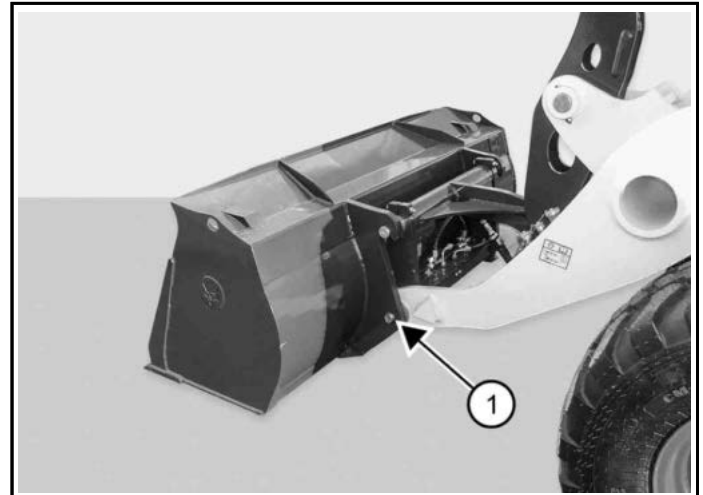
Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, and drive functions are deactivated. ◀

- a. Stop the engine and exit the machine. (See Stopping The Engine And Leaving The Machine on Page 71)
- b. Disconnect attachment electrical harness and hydraulic lines, if applicable, from the machine. (See Relieving Auxiliary Hydraulic Pressure on Page 57)
- c. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 64)
- d. Start the engine.

NOTE: The Quick-Tach system uses continuously pressurised hydraulic fluid to keep the locking pins in the engaged position and prevent attachment disengagement. Because the pins can slowly extend, the operator may need to press and hold the top of the switch (Item 1) [Figure 106] to make sure both locking pins are fully retracted before removing the attachment.

Figure 107



4. Press the top of the switch (Item 1) [Figure 106] to unlock the Quick-Tach frame. The pins (Item 1) [Figure 107] should retract.

Figure 108



5. Tilt the Quick-Tach frame forward and drive the machine backward, away from the bucket or attachment [Figure 108].

Installing And Removing Attachments (Quick-Tach To Bob-Tach Adapter)

The Quick-Tach to Bob-Tach attachment mounting system adapter is an attachment that allows for installing Bob-Tach attachment mounting system attachments onto the Quick-Tach attachment mounting system.

The Bob-Tach attachment mounting system system is used for fast changing of buckets and attachments. See the appropriate attachment Operation & Maintenance Manual to install other attachments.

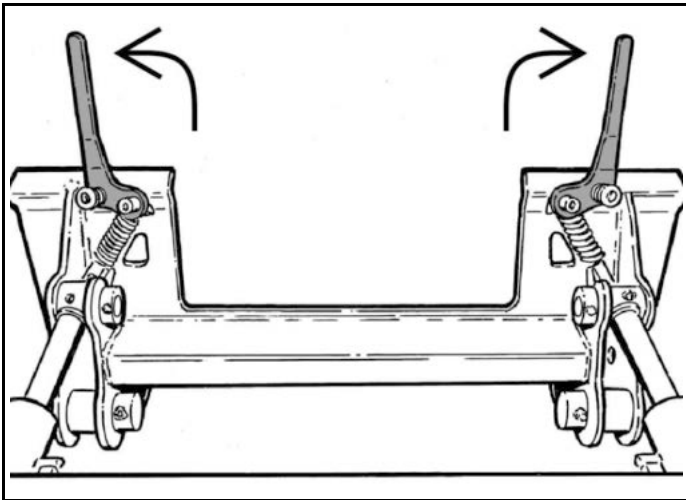
To install the Quick-Tach to Bob-Tach attachment mounting system adapter. (See Installing And Removing Attachments (Quick-Tach System) on Page 73)

Figure 106



Installing Bob-Tach Attachments

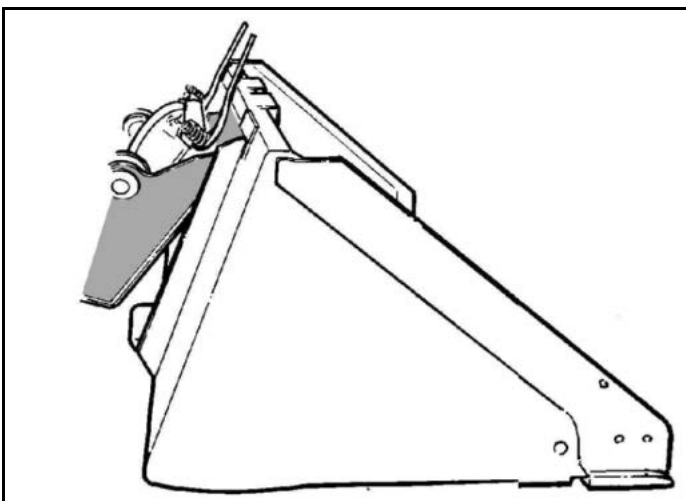
Figure 109



NA3445A

1. Pull the Bob-Tach attachment mounting system levers up until they are fully raised (wedges fully raised) [Figure 109].
2. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 64)
3. Start the engine.
4. Press the operate button
5. Release the parking brake.
6. Lower the lift arms and tilt the Bob-Tach attachment mounting system frame forward.

Figure 110

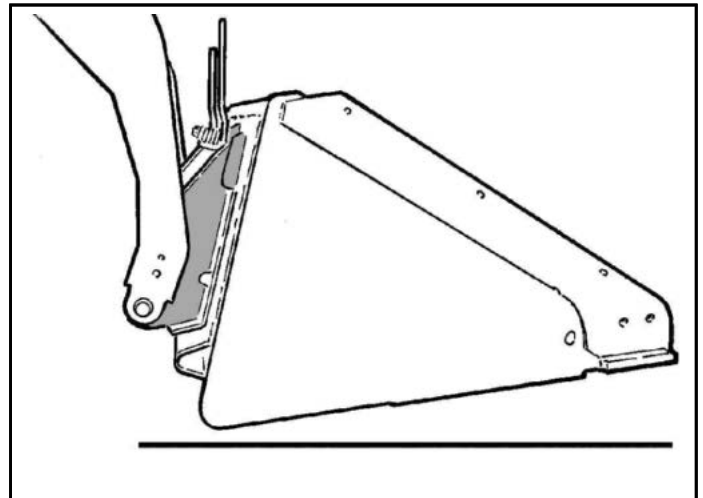


NA3451

7. Drive the machine slowly forward until the top edge of the Bob-Tach attachment mounting system frame is completely under the top flange of the bucket mounting frame [Figure 110] (or other attachment).

NOTE: Be sure the Bob-Tach attachment mounting system levers do not hit the attachment.

Figure 111



NA3447

8. Tilt the Bob-Tach attachment mounting system frame backward until the cutting edge of the bucket (or other attachment) is slightly off the ground [Figure 111].

This procedure will cause the bucket mounting frame to fit up against the front of the Bob-Tach attachment mounting system frame.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

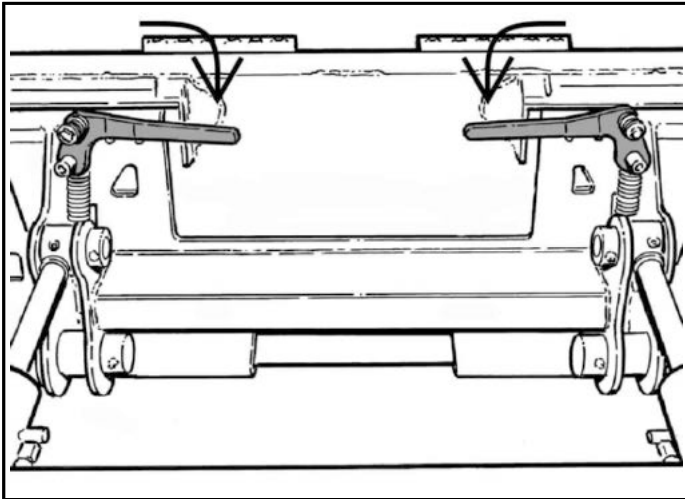
Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, and drive functions are deactivated. ◀

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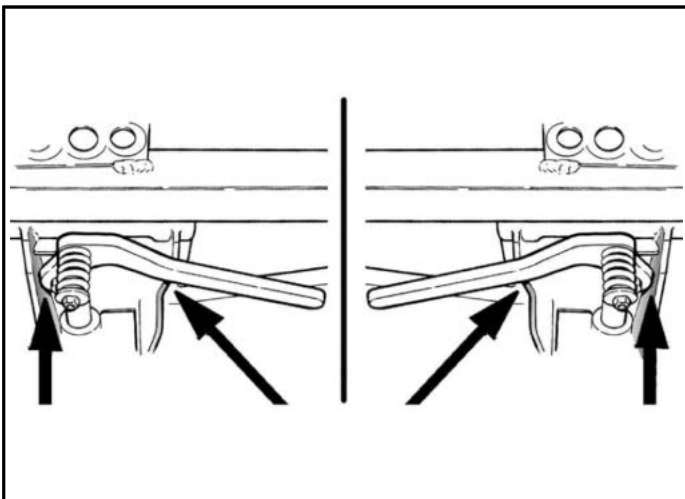
9. Stop the engine and exit the machine. (See Stopping The Engine And Leaving The Machine on Page 71)

Figure 112



10. Push down on the Bob-Tach attachment mounting system levers until they are fully engaged in the locked position [Figure 112] (wedges fully extended through the attachment mounting frame holes).

Figure 113



11. Both levers must contact the frame as shown when locked [Figure 113].

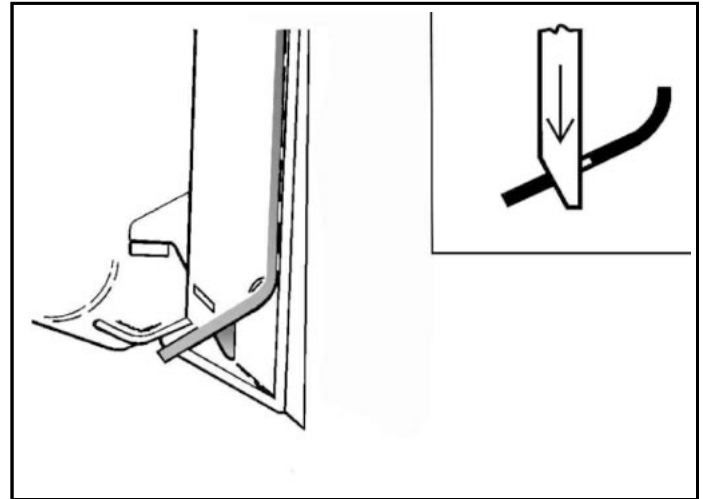
If both levers do not engage in the locked position, see your Bobcat dealer for maintenance.

⚠ WARNING

CRUSHING HAZARD
 Failure to secure Bob-Tach wedges can allow attachment to come off and cause serious injury or death.
 Both wedges must extend through the holes in the attachment mounting frame. Lever(s) must be fully down and locked. ◀

W2102

Figure 114



12. The wedges must extend through the holes in the mounting frame of the bucket (or other attachment), securely fastening the bucket to the Bob-Tach attachment mounting system frame [Figure 114].

Removing Bob-Tach Attachments

1. Lower the lift arms and put the attachment flat on the ground.
2. Lower or close any hydraulic equipment, if applicable.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

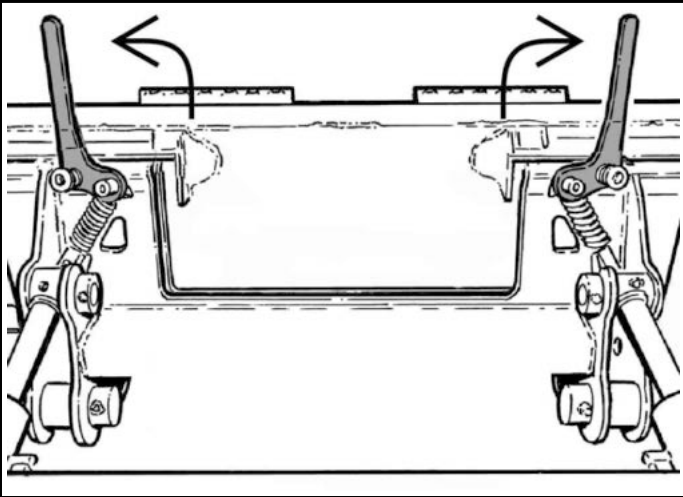
Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, and drive functions are deactivated. ◀

12259-7BF88B51

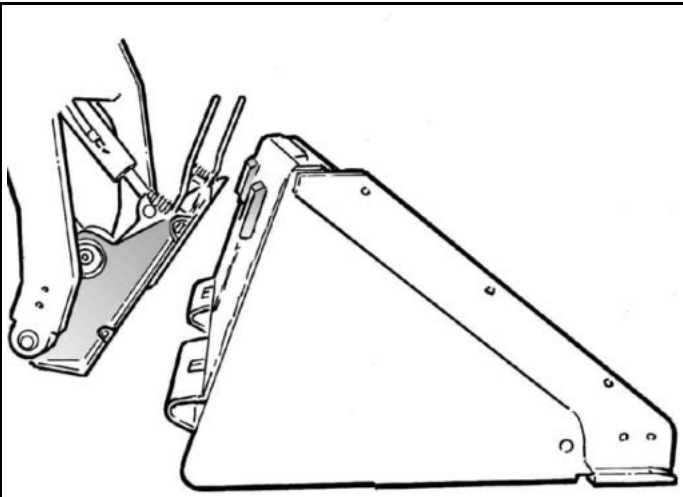
3. Stop the engine and exit the machine. (See Stopping The Engine And Leaving The Machine on Page 71)
4. Disconnect attachment electrical harness and water or hydraulic lines, if applicable, from the machine. (See Relieving Auxiliary Hydraulic Pressure on Page 57)

Figure 115



5. Pull the Bob-Tach attachment mounting system levers up until they are fully raised (wedges fully raised) [Figure 115].
6. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 64)
7. Start the engine.
8. Press the operate button.
9. Release the parking brake.

Figure 116



10. Tilt the Bob-Tach attachment mounting system frame forward and drive the machine backward, away from the bucket or attachment [Figure 116].

OPERATING PROCEDURE

Inspect The Work Area

Before beginning operation, inspect the work area and check ground conditions for unsafe conditions:

- Look for sharp drop-offs or rough terrain.
- Have underground utility lines (gas, electrical, water, sewer, irrigation, etc.) located and marked.
- Work slowly in areas of underground utilities.
- Remove objects or other construction material that could damage the machine or cause personal injury.
- Inspect for signs of instability such as cracks or settlement.
- Be aware of weather conditions that can affect ground stability.
- Check for adequate traction if working on a slope.

Basic Operating Instructions

When operating on a public road or motorway, always follow local regulations. For example, a slow moving vehicle (SMV) emblem or direction signals may be required.

Run the engine at low idle speed to warm the engine and hydraulic system before operating the machine.

NOTE: Machines warmed up with moderate engine speed and light load have longer life.

New operators must operate the machine in an open area without bystanders. Operate the controls until the machine can be handled at an efficient and safe rate for all conditions of the work area.

Operating Near An Edge Or Water

Keep the machine as far back from the edge as possible and the machine base perpendicular to the edge so that if part of the edge collapses, the machine can be moved back.

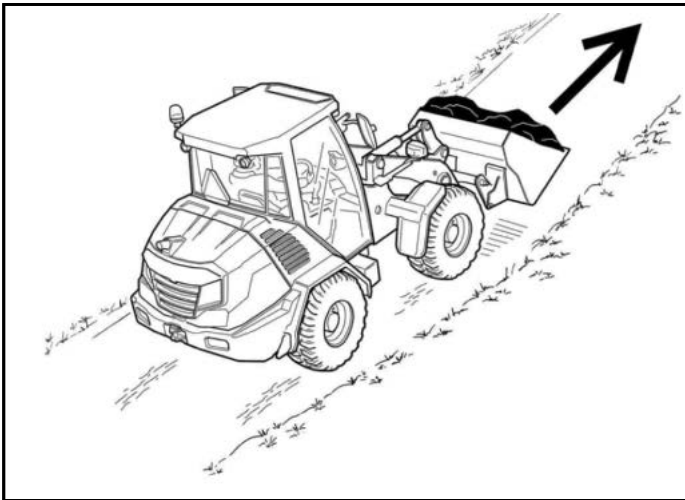
Always move the machine back at any indication the edge may be unstable.

Driving On Public Roads

When operating on a public road or motorway, always follow local regulations. For example; Slow Moving Vehicle emblem or direction signals may be required.

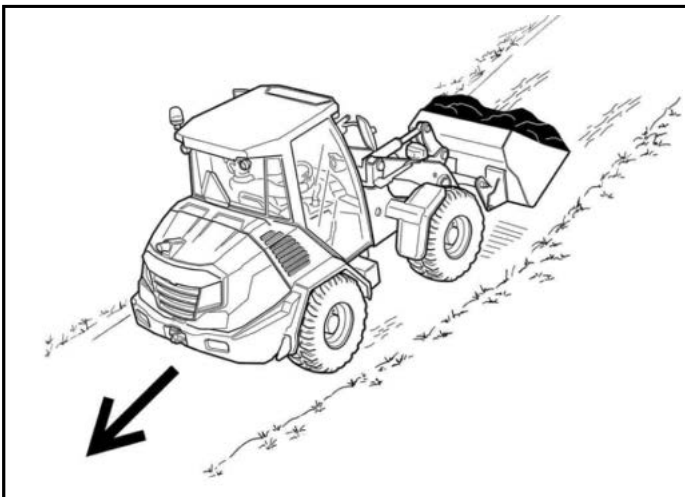
Operating With A Full Bucket

Figure 117



NA21028a

Figure 118



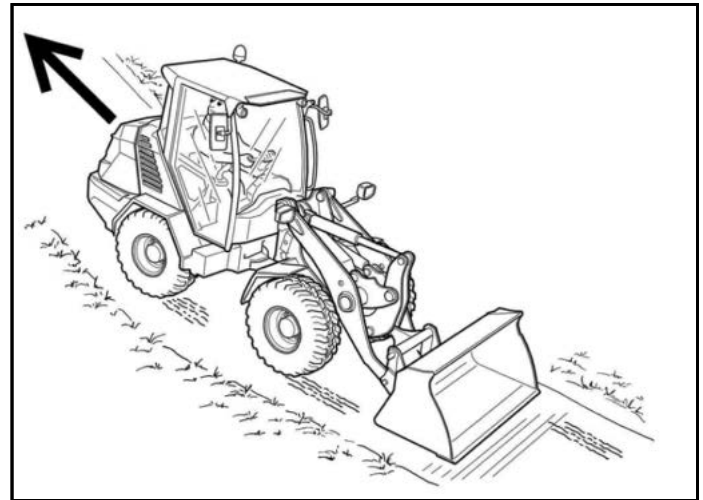
NA21029a

With a full bucket, go up or down the slope with the heavy end toward the top of the slope [Figure 117] and [Figure 118].

Raise the bucket only high enough to avoid obstructions on rough ground.

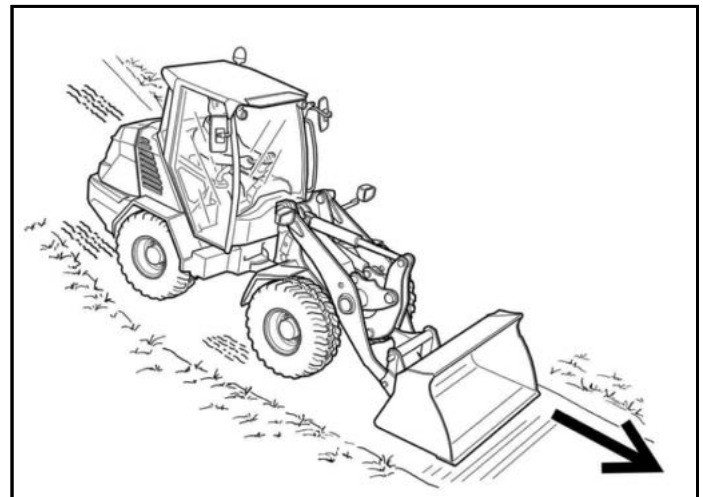
Operating With An Empty Bucket

Figure 119



NA21010a

Figure 120



NA21011a

With an empty bucket, go up or down the slope with the heavy end toward the top of the slope [Figure 119] and [Figure 120].

Raise the bucket only high enough to avoid obstructions on rough ground.

TOWING THE MACHINE

Towing Procedure

The machine can be towed a short distance such as removing it from mud or loading onto a transport vehicle.

Tow the machine at a slow speed, not exceeding 5 km/h (3 mph). Do not tow the machine for more than 3 minutes.

The towing chain (or cable) must be rated at 1.5 times the weight of the machine. (See Machine Specifications on Page 144)

⚠ WARNING

UNINTENDED MACHINE MOVEMENT HAZARD
Failure to follow instructions can cause serious injury or death.

- Block wheels to prevent roll away before adjusting screws to bypass the parking brake system.
- Return adjustment screws to the operating position before operating the machine. ◀

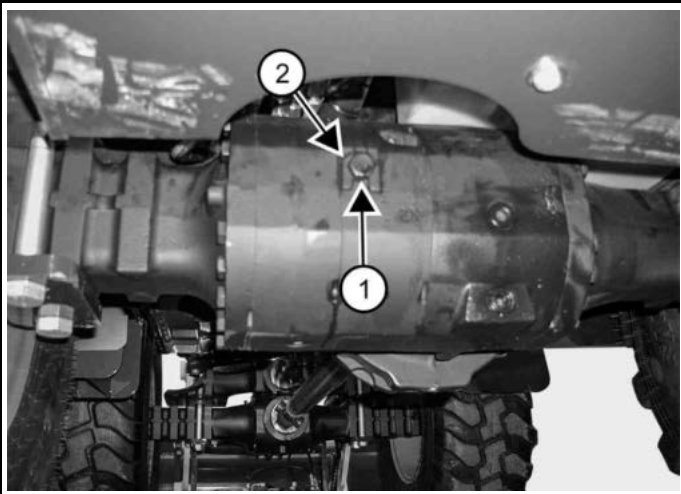
W-2808

Block the wheels to prevent the machine from rolling.

Disengaging The Parking Brake

The brakes are engaged by spring pressure and released by hydraulic pressure. The parking brake must be released manually before towing. Only the rear axle has parking brakes.

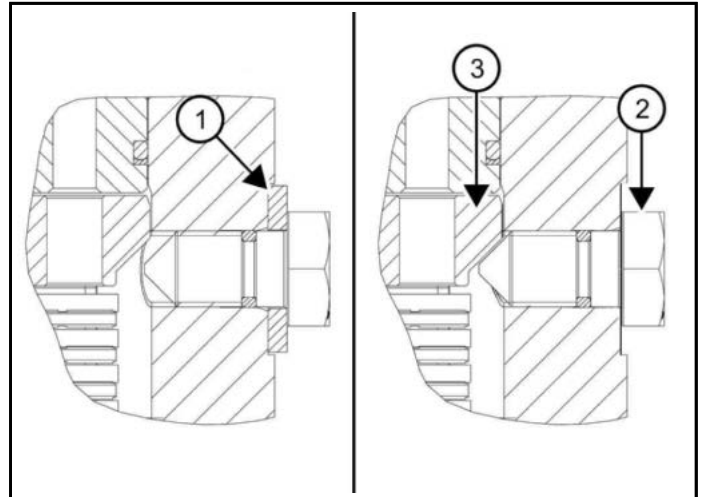
Figure 121



C207566c

1. Loosen the two bolts (Item 1) (the bolts and spacers are located on both the front and rear side of the rear axle) until the slotted spacers (Item 2) [Figure 121] can be removed from under the bolt heads.
2. Remove the spacers (Item 2) [Figure 121] and save for reuse.

Figure 122



P68846a

3. After removing the spacers (Item 1), evenly tighten the front and rear bolts (Item 2) to hold the parking brake piston (Item 3) [Figure 122] in the released position.

The parking brakes are now released for towing the machine.

NOTE: The parking brake will not work until the adjustment screw is returned to the original position.

Disengaging The Hydrostatic Pump

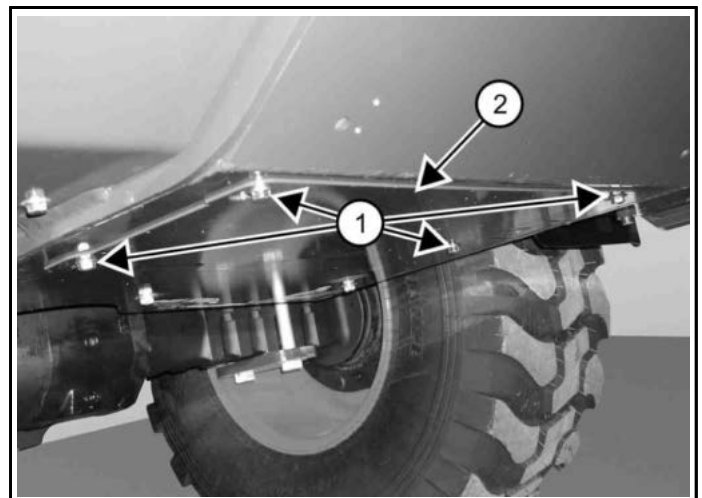
⚠ WARNING

UNINTENDED MACHINE MOVEMENT HAZARD
Failure to follow instructions can cause serious injury or death.

- Block wheels to prevent roll away before adjusting screws to bypass the parking brake system.
- Return adjustment screws to the operating position before operating the machine. ◀

W-2808

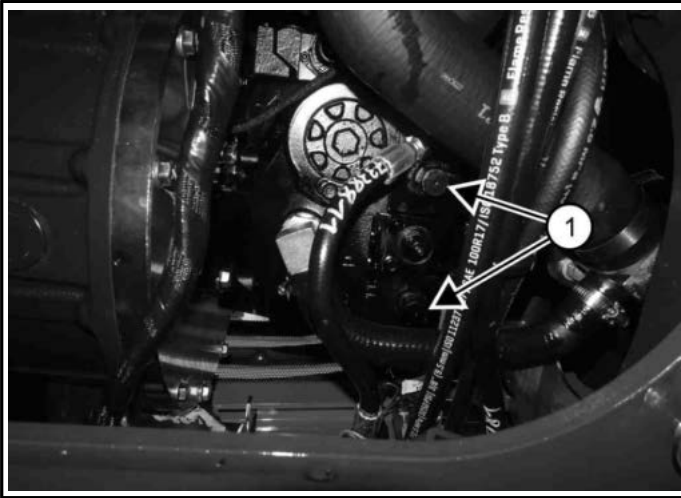
Figure 123



C208065a

1. Underneath the machine, loosen the access cover mounting bolts (Items 1) and remove the access cover (Item 2) [Figure 123].

Figure 124



2. On the hydrostatic pump, loosen the high pressure relief valves (Items 1) [Figure 124] by turning them maximum three times anticlockwise.

NOTE: Do not turn more than three times. This can result in leakage.

3. Reinstall the access cover (Item 2) [Figure 123].

This action will bypass the oil flow of the hydrostatic transmission.

Tow the machine at a slow speed, not exceeding 5 km/h (3 mph). Do not tow the machine for more than 3 minutes.

Engaging The Hydrostatic Pump

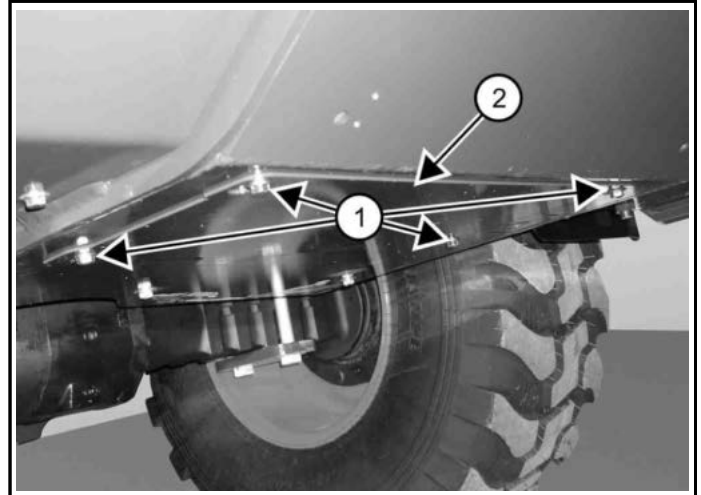
⚠ WARNING

UNINTENDED MACHINE MOVEMENT HAZARD
Failure to follow instructions can cause serious injury or death.

- Block wheels to prevent roll away before adjusting screws to bypass the parking brake system.
- Return adjustment screws to the operating position before operating the machine. ◀

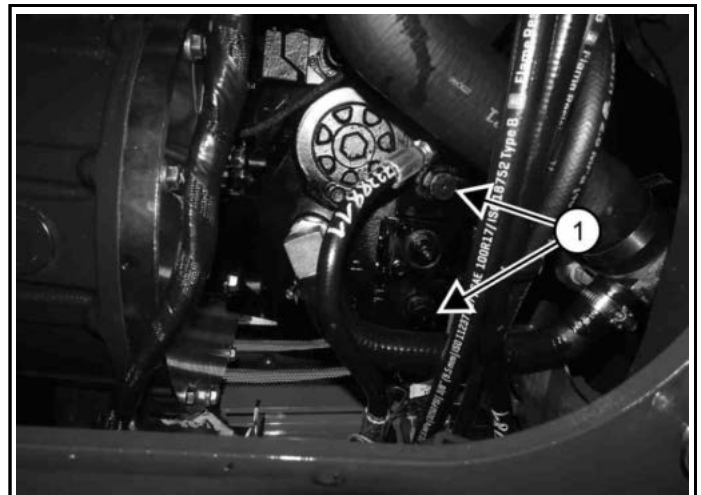
1. After towing is completed, block the wheels to prevent the machine from rolling.

Figure 125



2. Underneath the machine, loosen the access cover mounting bolts (Items 1) and remove the access cover (Item 2) [Figure 125].

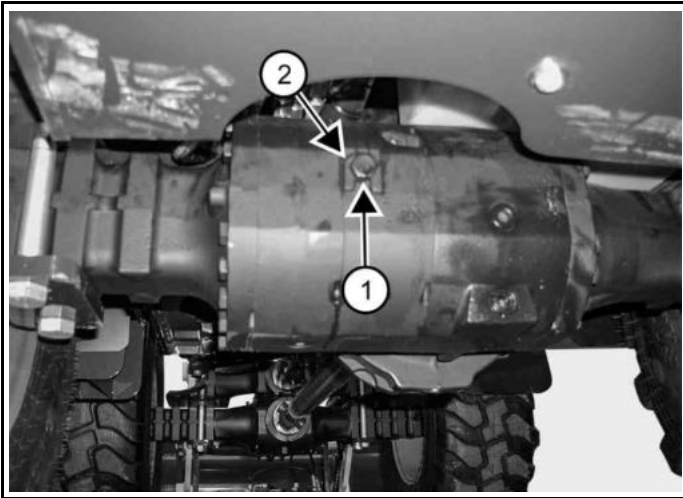
Figure 126



3. On the hydrostatic pump, tighten the high pressure relief valves (Items 1) [Figure 126] to a torque of 70 N•m (52 ft-lb) to re-engage the hydrostatic transmission.
4. Reinstall the access cover (Item 2) [Figure 125].

Engaging The Parking Brake

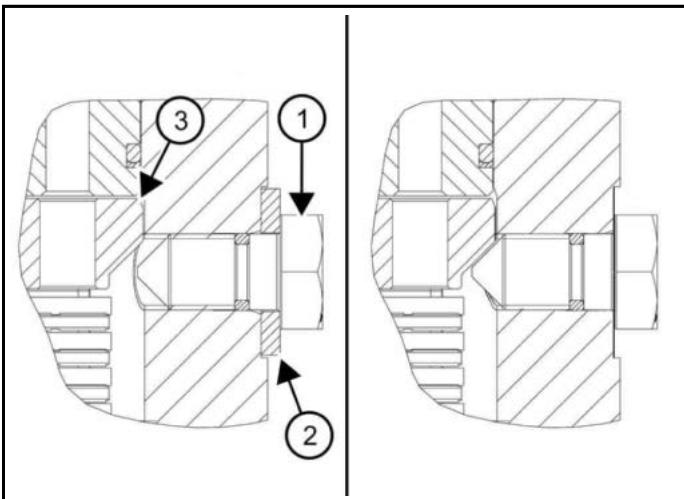
Figure 127



C21756rc

1. Loosen the two bolts (Item 1) until the slotted spacers (Item 2) [Figure 127] can be installed under the bolt heads (the bolts and spacers are located on both the front and rear side of the rear axle).

Figure 128



P68040b

2. Evenly tighten the front and rear bolts (Item 1) to hold the spacers (Item 2) [Figure 127] and [Figure 128].
3. Tighten the bolts to a torque between 95 - 115 N•m (70 - 85 ft-lb).

This will allow the parking brake piston (Item 3) [Figure 128] to be active again.

Make sure the parking brake functions correctly before using the machine.
(See Operating The Parking Brake on Page 51)

LIFTING THE MACHINE

Lifting Procedure



CRUSHING HAZARD

- Falling machine can cause serious injury or death.
- Before lifting, check fasteners on four point lift.
 - Never allow riders in the cab or bystanders within 5 m (15 ft) while lifting the machine. ◀

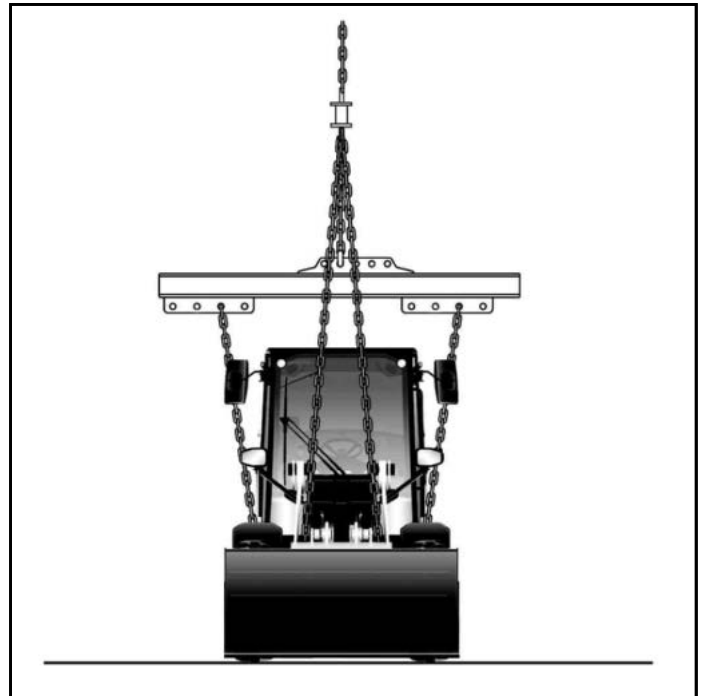
W-2160

The machine can be lifted with cables or chains.

1. Remove any attachments from the machine.

NOTE: It is required to use a spreader bar with a width wider than the operator enclosure, to prevent damage to the operator enclosure.

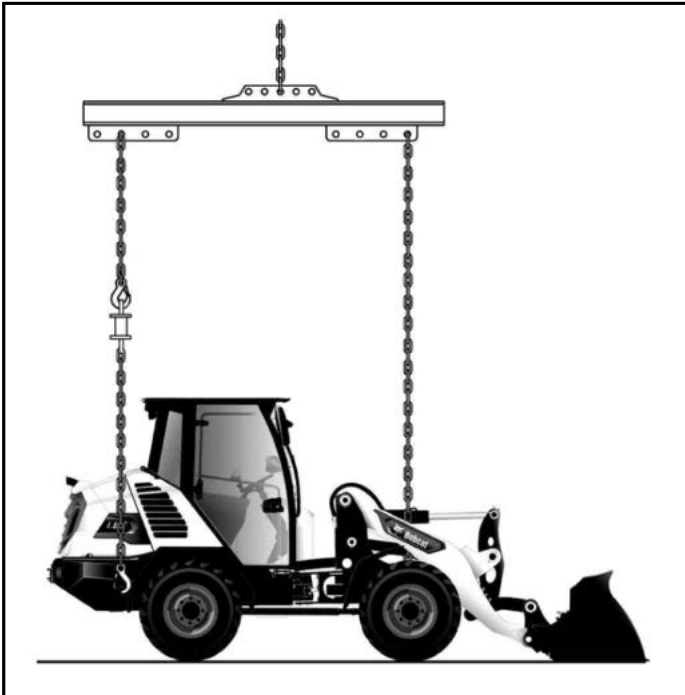
Figure 129



NA20151

2. Four-point lift method: use a spreader bar as shown in [Figure 129].

Figure 130



3. Four-point lift method: Align the chains with the lifting points on the machine as shown in [Figure 130].

Figure 131

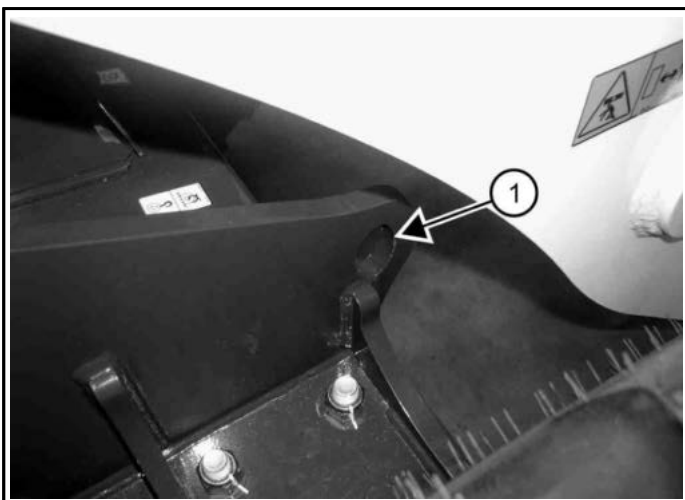
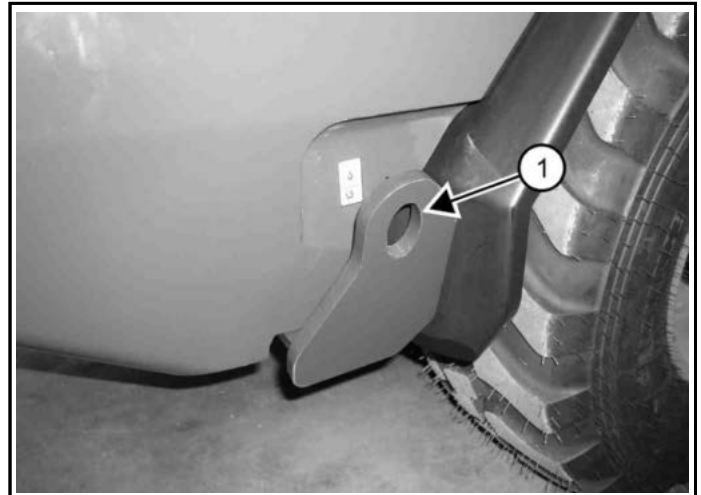
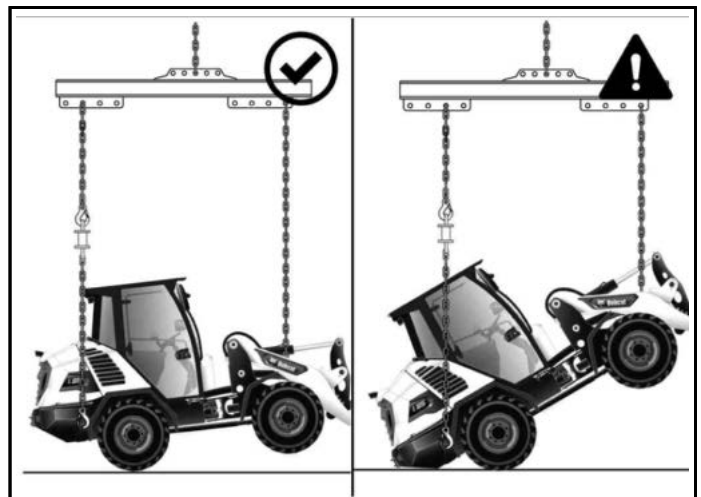


Figure 132



4. On both sides of the machine, attach cables or chains to the lifting points (Item 1) [Figure 131] and [Figure 132].

Figure 133



NOTE:

- Sling legs should not contact any part of the operator enclosure or lift arms to prevent damage.
- The required length of front and rear sling legs may or may not be equal depending on machine configuration. Make sure that the machine remains level when lifting the machine [Figure 133].
- Ensure the lifting equipment is of adequate size and capacity for the weight of the machine. (See Machine Specifications on Page 144)

TRANSPORTING THE MACHINE

Loading And Unloading

⚠ WARNING

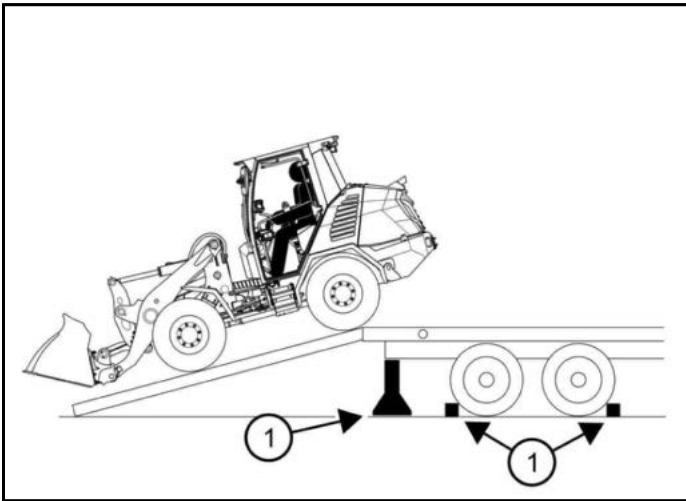
INSTABILITY HAZARD

Wood ramps can break and cause personal injury. Use adequately designed ramps of sufficient strength to support the weight of the machine loading onto a transport vehicle. ◀

W2058

Ensure the transport and towing vehicles are of adequate size and capacity for weight of the machine. (See Machine Specifications on Page 144)

Figure 134



NA20219a

A machine with an empty bucket or no attachment must be loaded backward onto the transport vehicle.

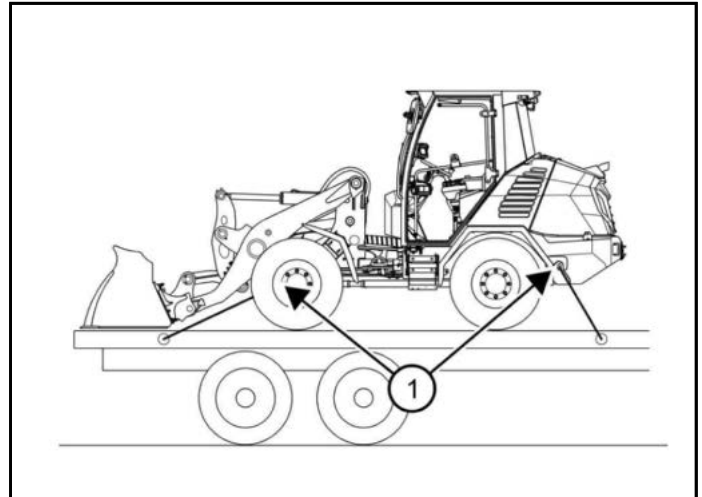
The rear of the trailer must be blocked or supported (Items 1) [Figure 134] when loading or unloading the machine to prevent the front end of the trailer from raising up.

Fastening

Use the following procedure to fasten the machine to the transport vehicle to prevent the machine from moving during sudden stops or when going up or down slopes.

1. Lower the bucket or attachment onto the transport vehicle.
2. Stop the engine.
3. Engage the parking brake.
4. Install the articulation lock bar. (See Articulation Lock Bar on Page 93)

Figure 135



NA20219a

5. Install chains at the front and rear machine tie-down positions (Items 1) [Figure 135].
6. Fasten each end of the chain to the transport vehicle.
7. Use chain binders to tighten the chains.

NOTE: It is recommended to use wheel wedges to provide additional support to the machine while transporting.



MAINTENANCE SAFETY WARNINGS



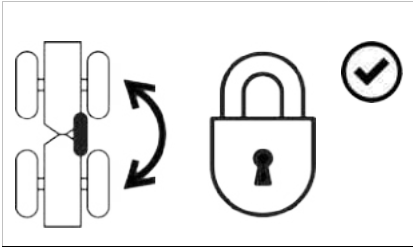
- Never service the Bobcat® machine without instructions. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine.
- Follow warnings and instructions in manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are not in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL**. Always use genuine Bobcat replacement parts. The Service Safety Training Course is available from your Bobcat dealer.

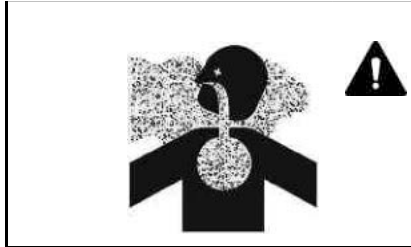
MAINTENANCE SAFETY WARNINGS



This Safety Alert Symbol means: "Attention! Be Alert! Your Safety is Involved!" Carefully read the message that follows.



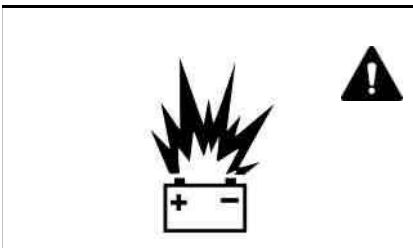
- Install the articulation lock bar when conducting service or maintenance in the articulation joint area.
- Never go under the lift arms when raised unless the lift arms are held by an approved lift arm support. Replace if damaged.
- Disconnecting or loosening any hydraulic tubeline, hose, fitting, component, or a part failure can cause the lift arms to drop.



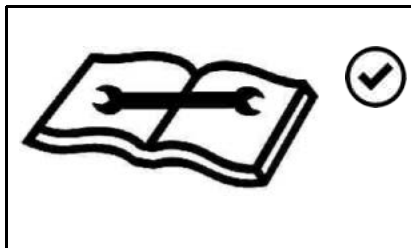
- Have good ventilation when welding or grinding painted parts.
- Wear a dust mask when grinding painted parts. Toxic dust and gas can be produced.
- Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.



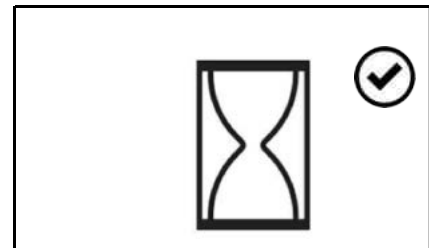
- Stop, cool, and clean the engine of flammable materials before checking fluids.
- Never service or adjust the machine with the engine running unless instructed to do so in the manual.
- Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes.
- Never fill the fuel tank while the engine is running, while smoking, or near an open flame.



- Lead-acid batteries produce flammable and explosive gases.
- Keep arcs, sparks, flames, and lighted tobacco away from batteries.
- Batteries contain acid which burns eyes or skin on contact.
- Wear protective clothing. If acid contacts the body, wash well with water. In case of eye contact, wash well with water and seek immediate medical attention.



- Keep body, jewelry, and clothing away from moving parts, electrical contact, hot parts, and exhaust.
- Wear eye protection to guard from battery acid, compressed springs, fluids under pressure, and flying debris when the engine is running or tools are used. Use eye protection approved for the type of welding.
- Keep the engine cover and panels installed except for service. Fasten panels and latch the engine cover before operating.



- Cleaning and maintenance are required daily.
- Never modify equipment or add attachments not approved by Bobcat Company.

SERVICE SCHEDULE

Maintenance Intervals

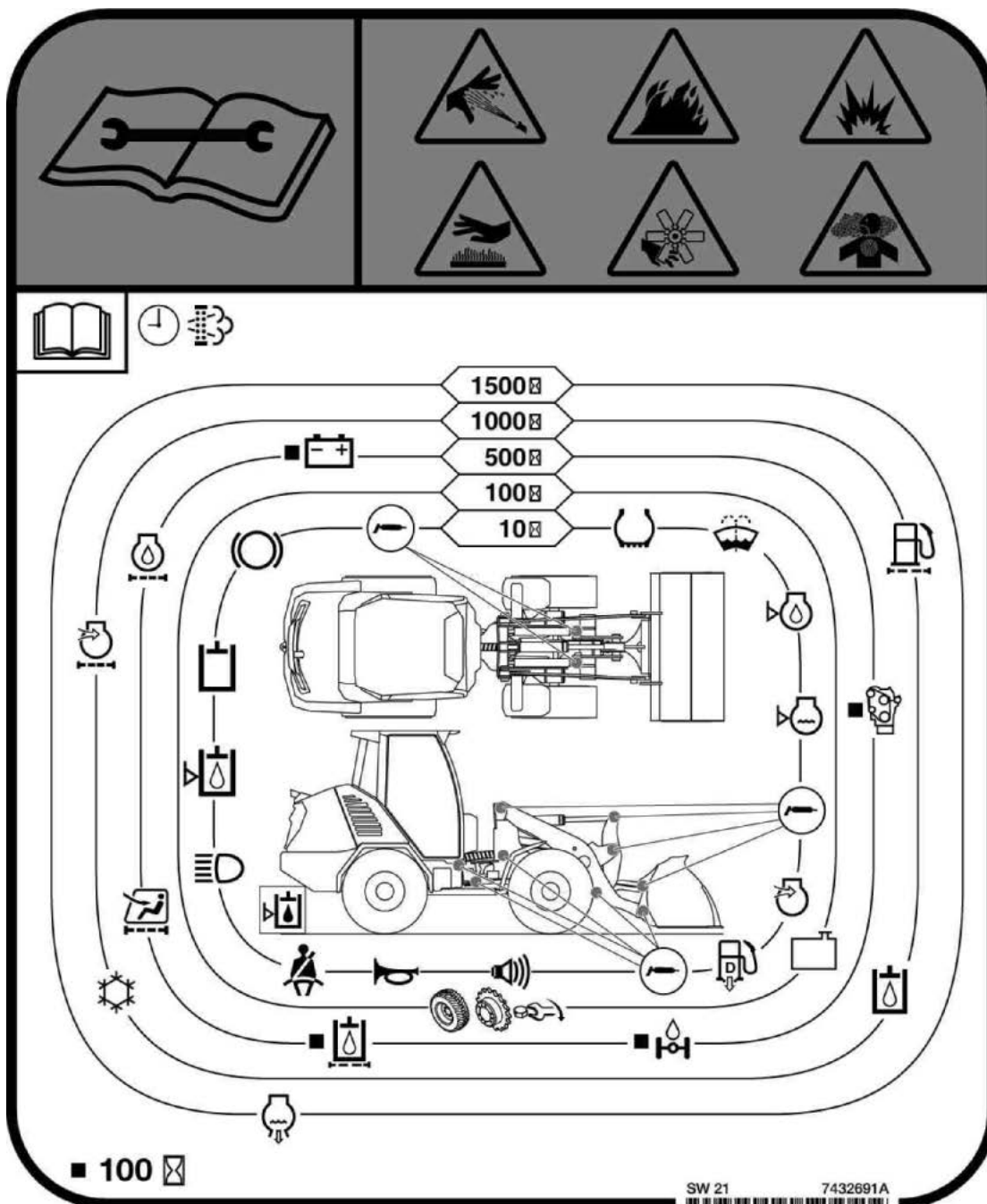
Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures.

The maintenance items listed under the maintenance intervals on the following pages are the required tasks to be performed. Those items provide additional details and include maintenance that is not shown on the decal.

All maintenance intervals are for machines operating in general environmental conditions. Keep in mind that filter and oil life can be reduced:

- When machines are operating in high dust environments or extreme temperature applications,
- When fuel is taken from uncontrolled storage tanks,
- When other non-standard conditions exist.

For more details, contact your Bobcat dealer.



⚠ WARNING

INSUFFICIENT INSTRUCTIONS HAZARD




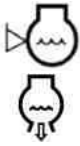

Untrained operators or failure to follow instructions can cause serious injury or death.

- Read and understand the Operation & Maintenance Manual, Operator's Handbook and decals on machine.
- Follow warnings and instructions in the manuals when making repairs, adjustments or servicing.
- Check for correct function after adjustments, repairs or service. ◀












W-2003









Explanation of the service intervals:

- **10:** Every 10 hours or daily (before starting the machine).
- **100:** Every 100 hours.
- **500:** Every 500 hours or every 12 months, whichever comes first.
- **1000:** Every 1000 hours or every 12 months, whichever comes first.
- **1500:** Every 1500 hours or every 24 months, whichever comes first.

Service Schedule						
O	Check condition / proper operation. Adjust or replace as needed.	V	Refill as needed			
D	Check the display. Service only when required.	C	Clean			
W	Drain water	R	Replace			
F	First time only.	G	Grease			
Item	Service Required	Service Interval (hours)				
		10	100	500	1000	1500
Tyres 	Check tyre condition and pressure. (See Page 123)	O				
Window Washer Fluid 	(See Page 42)	V				
Engine Oil and Filter 	(See Page 103) <ul style="list-style-type: none"> • Engine Oil Filter (7343102) • Engine Oil: <ul style="list-style-type: none"> ▷ Bobcat Ultra Engine Power SAE 10W/30 CK-4 (7341377) ▷ Bobcat Ultra Engine Power SAE 15W/40 CK-4 (7395725) 	V		R		
Engine Coolant 	(See Page 106) <ul style="list-style-type: none"> • Engine Coolant (6987793) 	V				R
Grease Fittings 	(See Page 127)	G				

Service Schedule

O	Check condition / proper operation. Adjust or replace as needed.	V	Refill as needed			
D	Check the display. Service only when required.	C	Clean			
W	Drain water	R	Replace			
F	First time only.	G	Grease			
Item	Service Required	Service Interval (hours)				
		10	100	500	1000	1500
Engine Air System and Air Filters 	(See Page 97) • Outer Air Filter (7412641) • Inner Air Filter (7412642)	DO			R	
Fuel Filter 	(See Page 99) • Main Fuel Filter (7336334)	DW			R	
	(See Page 99) • Fuel Pre-Filter (7348032) • Fuel Tank Vent Filter (7340277)				R	
Back-Up Alarm (If Equipped) / Front Horn  	Check for proper function. (See Page 39) and (See Page 95)	O				
Seat Belt 	Check condition. (See Page 92)	OC				
Indicators and Lights 	Check for proper function. (See Page 39)	O				
Hydraulic / Hydrostatic Fluid and Filter 	(See Page 116) • Hydraulic Filter (7425242)		FR	R		
	(See Page 116) • Hydraulic Fluid (6987791)	V			R	
	(See Page 116) • Hydraulic Tank Breather (7340277)				R	
Hydraulic Hoses and Tubelines 	Check hydraulic hoses and tubelines for leaks. Contact your Bobcat dealer to replace any damaged hoses or tubelines.	O				

Service Schedule						
O	Check condition / proper operation. Adjust or replace as needed.	V	Refill as needed			
D	Check the display. Service only when required.	C	Clean			
W	Drain water	R	Replace			
F	First time only.	G	Grease			
Item	Service Required	Service Interval (hours)				
		10	100	500	1000	1500
Parking Brake / Service Brake 	Check For Proper Function. (See Page 51) and (See Page 40)	O				
Safety Signs, Treads And Mirrors	(See Page 19)	O				
Engine Cooling System 	(See Page 106)		C			
Wheel Nut Torque 	(See Page 123)		O			
Front and Rear Wipers	Check for proper function. (See Page 42)		O			
Pedals / Steering Wheel / Joystick	Check for proper function. (See Page 32)		O			
Alternator and Air-Conditioning Belt (if equipped) 	Check condition and tension. (See Page 125) and (See Page 124) <ul style="list-style-type: none"> • Alternator Belt (7339263) • Air-Conditioning Belt (7178328) 		FO	O		
Axle and Differential / Planetary Carriers / Reduction Box 	(See Page 119) <ul style="list-style-type: none"> • Axle Oil (6987794) 		FR	R		
Axle Hardware	Tighten axle bolts to 500 N•m (368.8 ft-lb).		FO			
Cab Air Filters 	(See Page 96) <ul style="list-style-type: none"> • Cab Fresh Air Filter (7428022) • Recirculation Filter (7428021) 			OC		
Battery and Cable Connectors 	Check voltage. Check terminals for good contact and presence of protective grease. (See Page 112) <ul style="list-style-type: none"> • Battery (7288629) 		FO	O		
Heater Coil and Air Conditioning Evaporator 	Contact your Bobcat dealer.				C	

SEAT BELT

Inspecting And Maintaining The Seat Belt

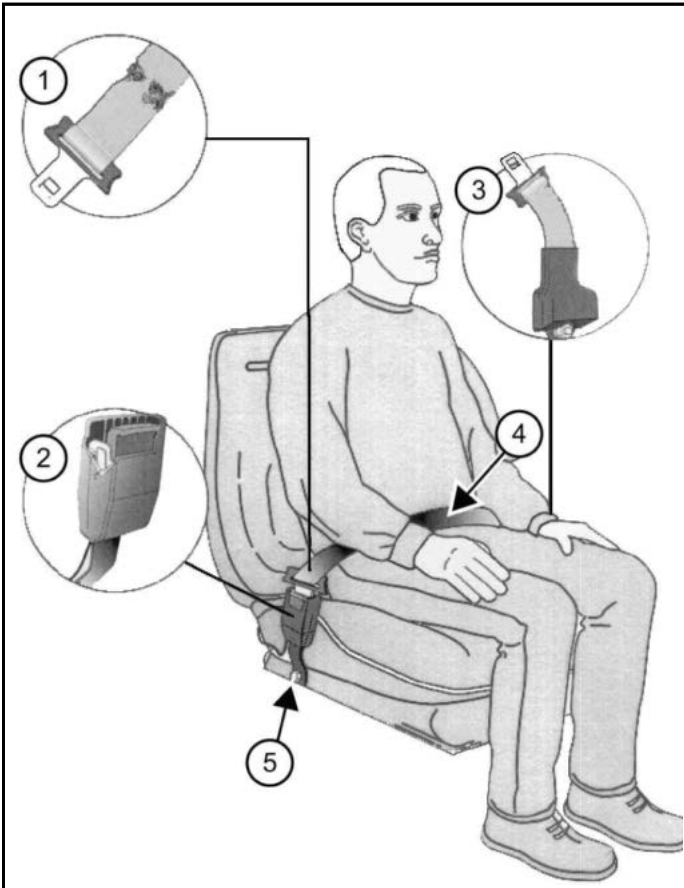
⚠ WARNING

GENERAL HAZARD

Failure to properly inspect and maintain the seat belt can cause lack of operator restraint resulting in serious injury or death. *

W2466

Figure 136



Check the seat belt daily for correct function. Inspect the seat belt system thoroughly at least once each year or more often if the machine is exposed to severe environmental conditions or applications.

The items below are referenced in [Figure 136].

1. Check the webbing. If the system is equipped with a retractor, pull the webbing completely out and inspect the full length of the webbing. Look for cuts, wear, fraying, dirt, and stiffness.
2. Check the buckle and latch for correct operation. Make sure latch plate is not excessively worn or deformed, buckle is not damaged, and casing is not broken.
3. Check the retractor web storage device (if equipped) by extending webbing to determine if it looks correct and that it spools out and retracts webbing correctly.

4. Check webbing in areas exposed to ultraviolet (UV) rays from the sun or extreme dust or dirt. If the original colour of the webbing in these areas is extremely faded and / or the webbing is packed with dirt, the webbing strength may have deteriorated.
5. Check the hardware on both sides of the seat. Hardware should be tight. Hardware must not be missing, rusted, corroded, or damaged.

Any seat belt system that shows cuts, fraying, extreme or unusual wear, significant discolourations due to ultraviolet UV exposure, dusty / dirty conditions, abrasion to the seat belt webbing, or damage to the buckle, latch plate, retractor (if equipped), hardware or any other obvious problem should be replaced immediately.

See your Bobcat dealer for seat belt system replacement parts for your machine.

OPERATOR INTERLOCK CONTROL SYSTEM

Inspecting The Seat Switch

If the operator leaves the operator's seat while the machine is running, the seat switch will automatically shut down auxiliary hydraulic flow after 5 seconds.

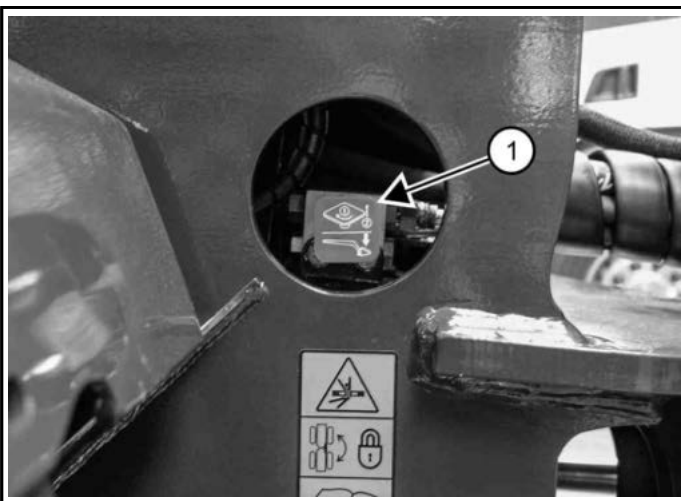
1. Park the machine on a flat, level surface and place the attachment flat on the ground.
2. While seated in the operator's seat, press the run button or turn the key switch to start the machine. Ensure that the parking brake is engaged.
3. Press the auxiliary hydraulics button on the main control panel to activate auxiliary hydraulics.
4. While the machine is running, raise up from the operator's seat.

Auxiliary hydraulics should deactivate after 5 seconds. If auxiliary hydraulics do not deactivate, contact your Bobcat dealer for service.

Inspecting The Lift Arm Bypass Control

1. Raise the lift arms 2 m (6 ft) off the ground.
2. Stop the engine.
3. Leave the operator cab.

Figure 137



4. Rotate and pull the lift arm bypass control switch (Item 1) [Figure 137].

The lift arms should lower onto the ground.

If the lift arm bypass control does not function as intended, see your Bobcat dealer for service.

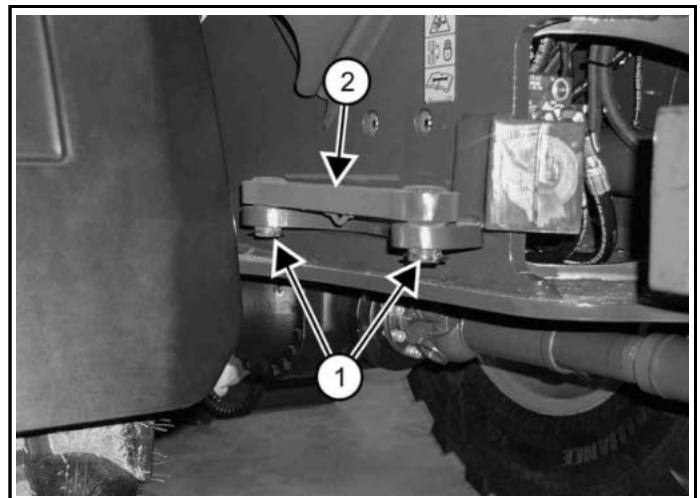
ARTICULATION LOCK BAR

Installing The Articulation Lock Bar

The articulation lock bar is stored on the left-hand side of the machine, behind the front wheel. The articulation lock bar must be used any time the machine is raised, for maintenance of the articulation area, and when fastening for transport.

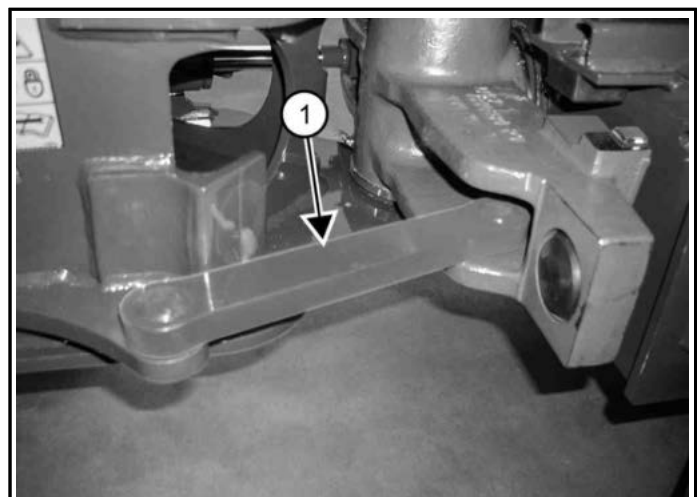
1. Centre the machine.
2. Exit the machine.
(See Stopping The Engine And Leaving The Machine on Page 71)

Figure 138



3. Remove the lock pins (Items 1) and remove the articulation lock bar (Item 2) [Figure 138].

Figure 139



4. Install the articulation lock bar (Item 1) [Figure 139].

NOTE: It may be required to adjust the machine by turning the steering wheel to install the articulation lock bar.

⚠ WARNING

CRUSHING HAZARD

Using a damaged articulation lock bar or with missing parts can allow movement of the articulation joint causing serious injury or death. Service or replace the articulation lock bar if damaged or if parts are missing. ◀

W-3087

5. Install the locking pins to secure the articulation lock bar in place.

LIFT ARM SUPPORT

Lift Arm Support Description

⚠ DANGER

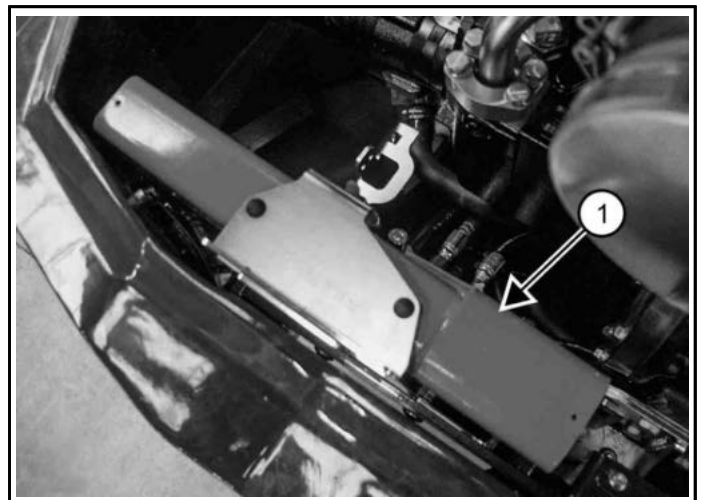
CRUSHING HAZARD

Failure to use an approved lift arm support or using a damaged lift arm support can allow the lift arms or attachment to fall and cause serious injury or death.

- Never work on machine with the lift arms up unless the lift arms are secured by an approved lift arm support.
- Service or replace lift arm support if damaged or if parts are missing. ◀

D-1043

Figure 140



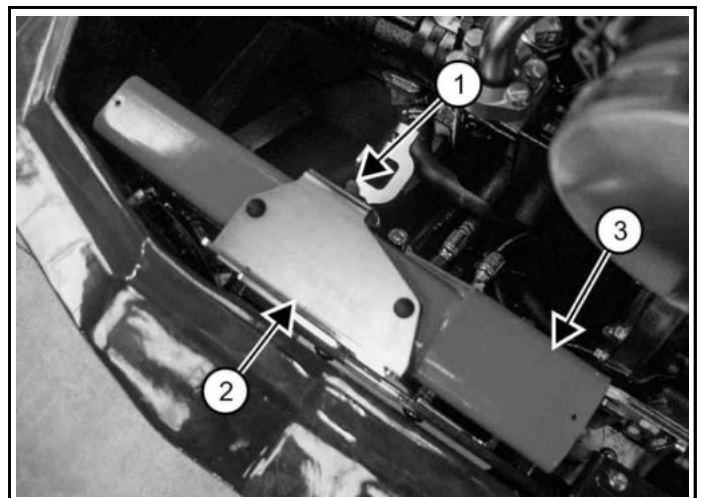
C207549a

The lift arm support (Item 1) [Figure 140] is used to support the lift arms while working on the machine with the lift arms up.

The lift arm support is stored inside the engine bay.

Installing The Lift Arm Support

Figure 141



1. To remove the lift arm support (Item 3), pull down the lever (Item 1) and remove the bracket (Item 2) [Figure 141].
2. Enter the machine, start the engine and raise the lift arms all the way up. (See Pre-Starting Procedure on Page 64)
3. Stop the engine and exit the machine.

Figure 142



4. Install the lift arm support over the rod end of the lift cylinder [Figure 142].
The lift arm support must be tight against the cylinder rod.
5. Enter the machine, start the engine. (See Pre-Starting Procedure on Page 64)
6. Lower the lift arms slowly until the lift arm rests against the lift arm support.
7. Stop the engine and exit the machine.

Removing The Lift Arm Support

NOTE: The lift arm support should remain resting on the cylinder barrel when the lift arms are raised. Service or replace the lift arm support if the lift arm support raises with the cylinder rod.

1. Enter the machine, start the engine and raise the lift arms all the way up. (See Pre-Starting Procedure on Page 64)
2. Shut down the engine, exit the machine.
3. Remove the lift arm support.
4. Enter the machine, start the engine. (See Pre-Starting Procedure on Page 64)
5. Fully lower the lift arms and stop the engine.
6. Return the lift arm support to the storage position and secure with the bracket.

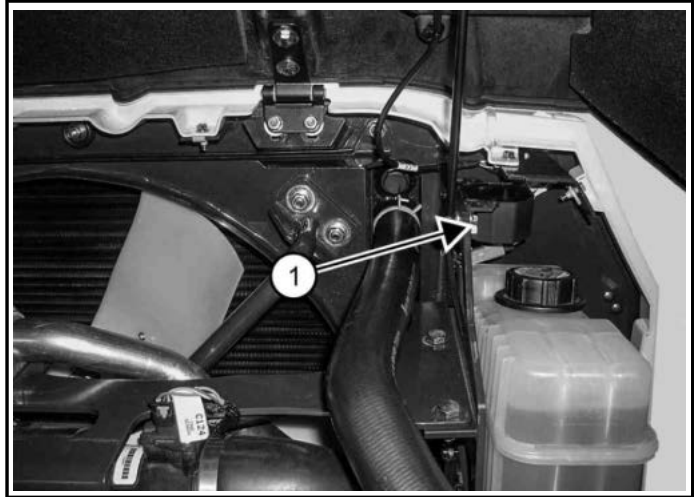
BACK-UP ALARM SYSTEM

Back-Up Alarm System Description

This machine may be equipped with a back-up alarm system. The back-up alarm will sound when the machine is on and the travel direction switch is set in reverse.

Inspecting The Back-Up Alarm System

Figure 143



The back-up alarm (Item 1) [Figure 143] is located inside the engine bay, above the coolant tank.

1. Enter the machine and perform the Pre-Starting Procedure. (See Pre-Starting Procedure on Page 64)
2. Start the machine.
3. Put the travel direction switch in the reverse position.

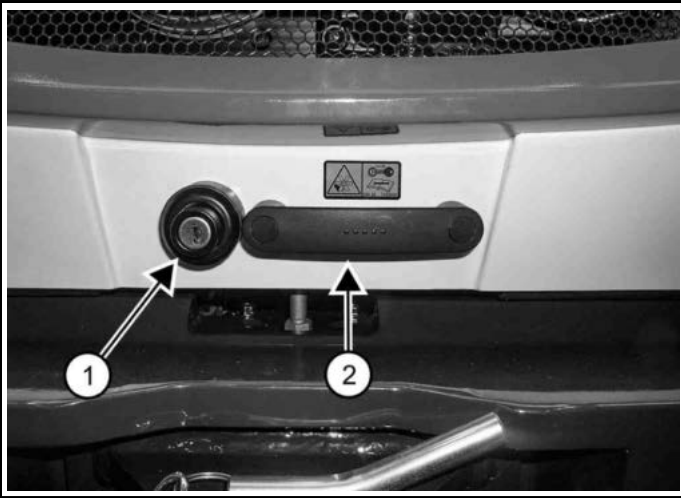
The back-up alarm must sound.

Inspect the back-up alarm electrical connections and the wire harness for tightness and damage. Repair or replace any damaged components. If back-up alarm does not sound, see your Bobcat dealer for service.

ENGINE COVER

Opening And Closing The Engine Cover

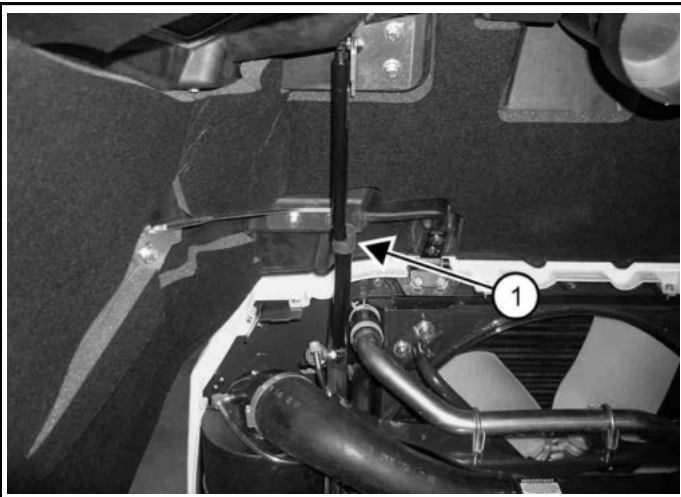
Figure 144



C207536a

- To unlock the engine cover, turn the key switch (Item 1) [Figure 144] clockwise.
- Push the key switch (Item 1) [Figure 144] in to open the engine cover.
- Pull the handle (Item 2) [Figure 144] to open the engine cover.

Figure 145



C207538a

- To close the engine cover, support the engine cover by hand and push the lower end of the gas cylinder (Item 1) [Figure 145] against the upper end.

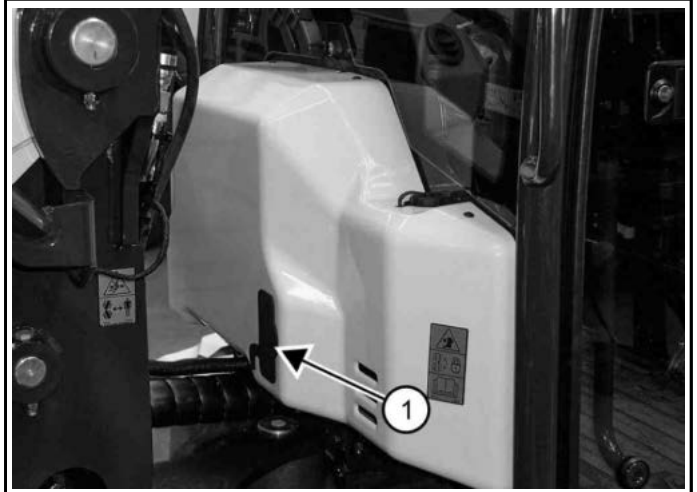
HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

This machine may be equipped with a HVAC system.

Maintaining Fresh Air / Recirculation Filter

The recirculation filter is located on the front side of the operator cab.

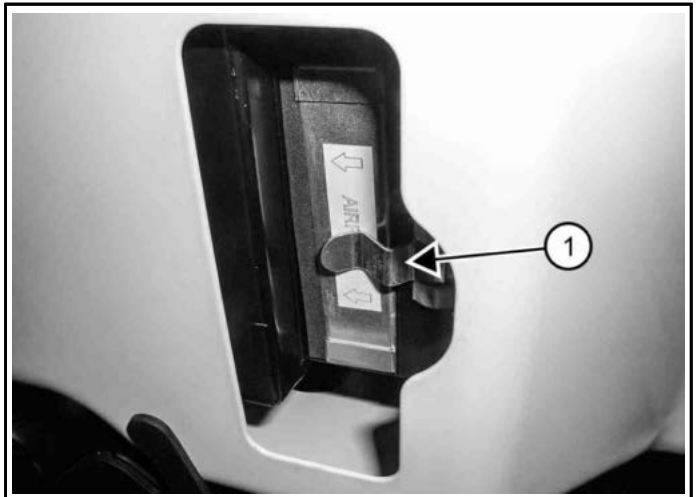
Figure 146



C208842a

1. Remove the cover (Item 1) [Figure 146].

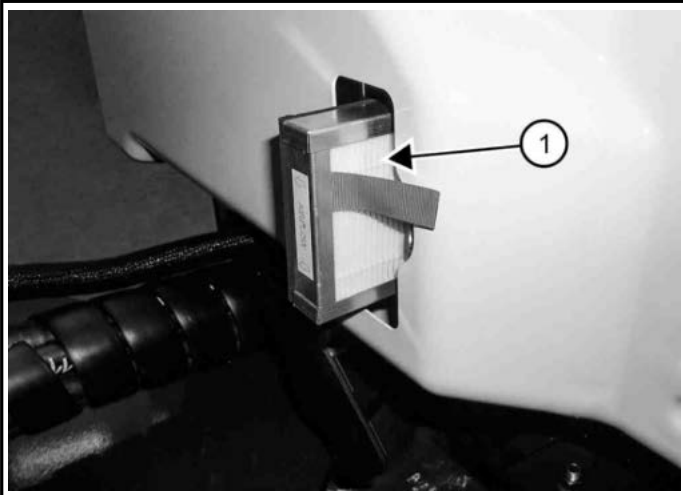
Figure 147



C207530a

2. Open the clip (Item 1) [Figure 147].

Figure 148



3. Remove the filter (Item 1) [Figure 148].
4. Rinse the filter with water and allow the filter to dry, or use a vacuum cleaner to clean the filter.
Do not use solvents.
5. Reinstall the filter.
6. Close the clip and reinstall the cover.

Cleaning The Air Conditioning Condenser

The condenser should be cleaned with the radiator cooling package.
(See Cleaning The Engine Cooling System on Page 106)

Lubricating Air Conditioning System

The air conditioning should be operated for approximately 5 minutes every week to lubricate the internal components.

Troubleshooting The HVAC System

If the fan does not operate or the air conditioning does not turn on, check the fuse.
(See Operator Cab Fuse Panel on Page 108)

If your air conditioning system circulates warm air, see your Bobcat dealer for service.

ENGINE AIR CLEANER

Replacing Engine Air Filter Element (Outer)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

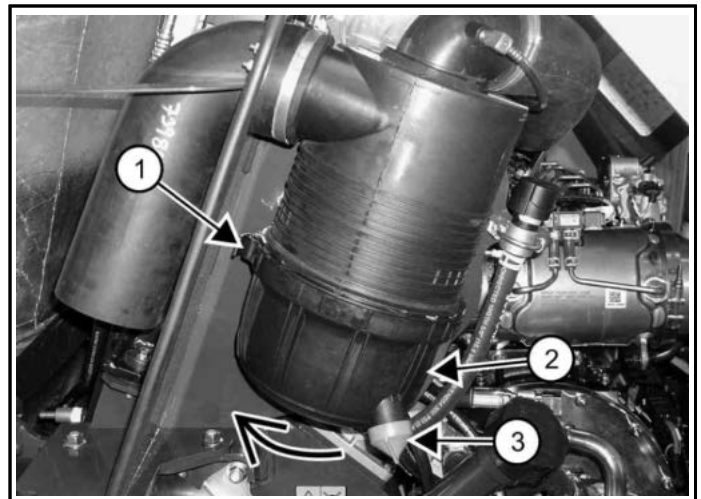
Replace the inner filter every second time the outer filter is replaced.

NOTE: Prolonged operation with an active air filter plugged code can cause severe engine component damage.

NOTE: Prolonged operation with an active air filter plugged code will cause the engine to derate (torque and rpm reduction).

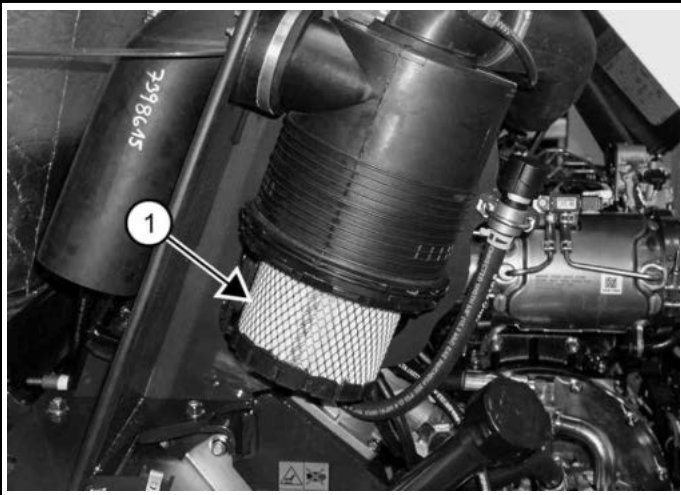
1. Stop the engine.
2. Open the engine cover.

Figure 149



3. Open the clip (Item 1) [Figure 149] to unlock the cover.
4. Rotate the cover (Item 2) [Figure 149] anticlockwise a small amount to remove.

Figure 150



5. Remove the outer filter (Item 1) [Figure 150] and discard.

NOTE: Make sure the filter housing is free of dirt and debris. Verify that sealing surfaces are clean. DO NOT use compressed air.

6. Install a new outer filter. Push in until the filter contacts the base of the housing.
7. Install the cover (Item 2) so that the rubber evacuator (Item 3) [Figure 149] is pointed down.
8. Rotate the cover clockwise a small amount.
9. Close the clip (Item 1) [Figure 149] in to lock the cover in place.
10. Close engine cover.

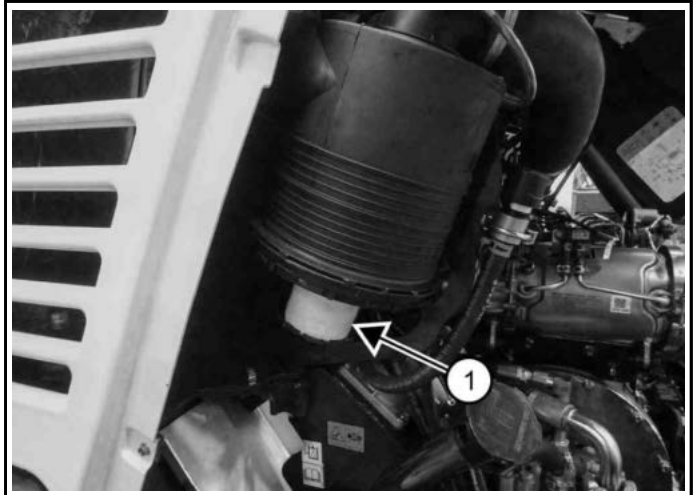
Replacing Engine Air Filter Element (Inner)

The inner filter should be replaced only under the following conditions:

- Replace the inner filter every second time the outer filter is replaced.
- After the outer filter has been replaced, start the engine and operate at full rpm. If service code Air Filter Plugged is still displayed, replace the inner filter.

1. Stop the engine.
2. Open the engine cover.
3. Remove the outer filter. (See Replacing Engine Air Filter Element (Outer) on Page 97)

Figure 151



4. Remove the inner filter (Item 1) [Figure 151] and discard.

NOTE: Make sure the filter housing is free of dirt and debris. Verify that sealing surfaces are clean. DO NOT use compressed air.

5. Install the new inner filter. Push in until the filter contacts the base of the housing.
6. Install the new outer filter. (See Replacing Engine Air Filter Element (Outer) on Page 97)
7. Close the engine cover.

FUEL SYSTEM

Fuel Specifications

NOTE: Contact your local fuel supplier to receive recommendations for your region.

U.S. Standard (ASTM D975)

Use only clean, high quality diesel fuel, grade number 2-D or grade number 1-D.

Ultra-low sulfur diesel fuel must be used in this machine. Ultra-low sulfur is defined as 15 mg/kg (15 ppm) sulfur maximum.

The following is one suggested blending guideline that should prevent fuel gelling during cold temperatures:

TEMPERATURE	GRADE 1-D	GRADE 2-D
Above -9°C (+15°F)	0%	100%
Down to -21°C (-5°F)	50%	50%
Below -21°C (-5°F)	100%	0%

NOTE: Biodiesel blend fuel may also be used in this machine. Biodiesel blend fuel must contain no more than five percent biodiesel mixed with ultra-low sulfur petroleum based diesel. This biodiesel blend fuel is commonly marketed as B5 blended diesel fuel. B5 blended diesel fuel must meet ASTM specifications.

E.U. Standard (EN590)

Use only clean, high quality diesel fuel that meets the EN590 specifications listed below:

- Sulfur-free diesel fuel defined as 10 mg/kg (10 ppm) sulfur maximum.
- Diesel fuel with cetane number of 51.0 and above.

NOTE: Biodiesel blend fuel may also be used in this machine. Biodiesel blend fuel must contain no more than seven percent biodiesel mixed with sulfur-free petroleum based diesel. This biodiesel blend fuel is commonly marketed as B7 blended diesel fuel. B7 blended diesel fuel must meet EN590 specifications.

Biodiesel Blend Fuel

Biodiesel blend fuel has unique qualities that should be considered before using in this machine:

- Cold weather conditions can lead to plugged fuel system components and hard starting.
- Biodiesel blend fuel is an excellent medium for microbial growth and contamination, which can cause corrosion and plugging of fuel system components.
- Use of biodiesel blend fuel may result in premature failure of fuel system components, such as plugged fuel filters and deteriorated fuel lines.

- Shorter maintenance intervals may be required, such as cleaning the fuel system and replacing fuel filters and fuel lines.
- Using biodiesel blended fuels containing more than the recommended amount of biodiesel can affect engine life and cause deterioration of hoses, tubelines, injectors, injector pump, and seals. (See Fuel Specifications on Page 99)

Apply the following guidelines if biodiesel blend fuel is used:

- Ensure the fuel tank is as full as possible at all times to prevent moisture from collecting in the fuel tank.
- Ensure that the fuel tank cap is securely tightened.
- Biodiesel blend fuel can damage painted surfaces. Remove all spilled fuel from painted surfaces immediately.
- Drain all water from the fuel filter daily before operating the machine.
- Do not exceed engine oil change interval. Extending oil change intervals can cause engine damage.
- Before vehicle storage, drain the fuel tank, refill with 100% petroleum diesel fuel, add fuel stabiliser, and run the engine for at least 30 minutes.

NOTE: Biodiesel blend fuel does not have long-term stability and should not be stored for more than three months.

Filling The Fuel Tank

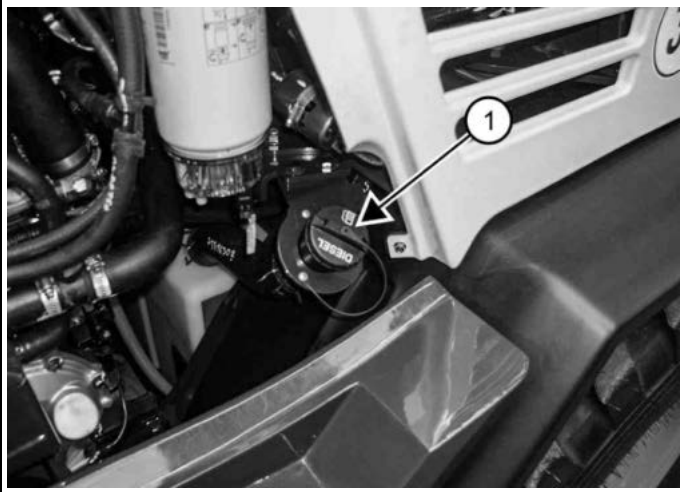


WARNING

FIRE AND EXPLOSION HAZARDS
 Failure to follow instructions can cause serious injury or death.
Stop and cool the engine before adding fuel. NO SMOKING!

1. Stop the engine.
2. Open the engine cover.

Figure 152



3. Remove the fuel fill cap (Item 1) [Figure 152].
4. Use a clean, approved safety container to add fuel of the correct specification. Add fuel only in an area that has free movement of air and no open flames or sparks. **NO SMOKING!**
5. Install and tighten the fuel fill cap (Item 1) [Figure 152] until the fuel cap clicks.
6. Close the engine cover.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

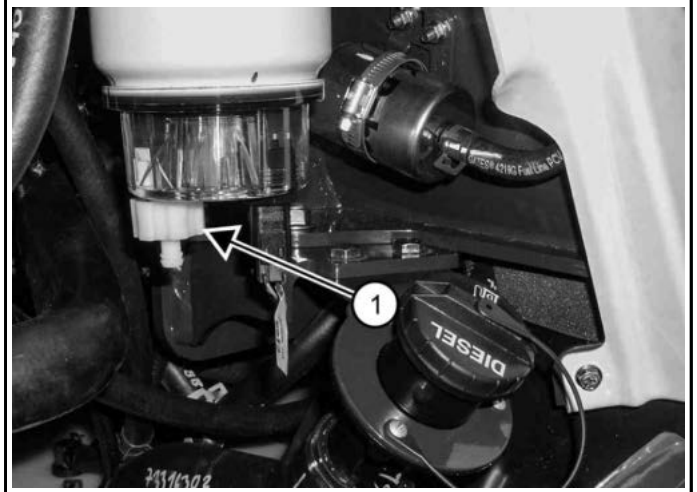
Removing Water From The Main Fuel Filter

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

NOTE: This procedure requires the use of a spare 9 mm (3/8 in) hose approximately 500 mm (19.7 in) long.

1. Stop the engine.
2. Open the engine cover.

Figure 153



3. Attach a 9 mm (3/8 in) hose to the drain (Item 1) [Figure 153] at the bottom of the main fuel filter.
4. Route the other end of the hose to a container.
5. Loosen the drain (Item 1) [Figure 153] to remove trapped water from the fuel water separator.
6. Tighten the drain.
7. Remove the hose.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

8. Close the engine cover.

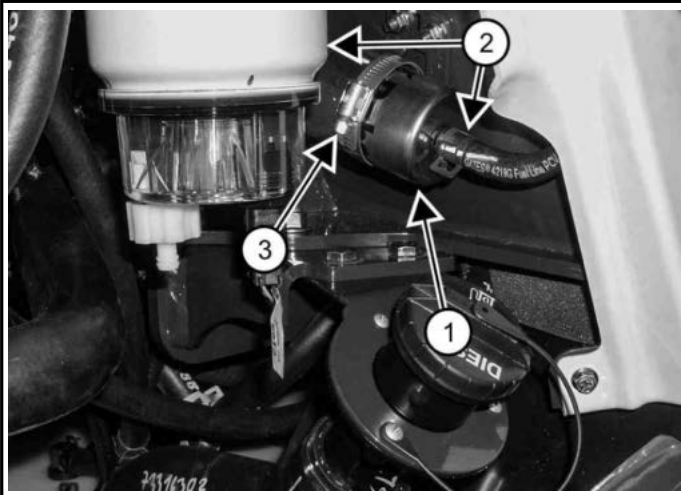
Replacing The Fuel Pre-Filter

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

The fuel pre-filter is located behind the main fuel filter.

1. Stop the engine.
2. Open the engine cover.

Figure 154



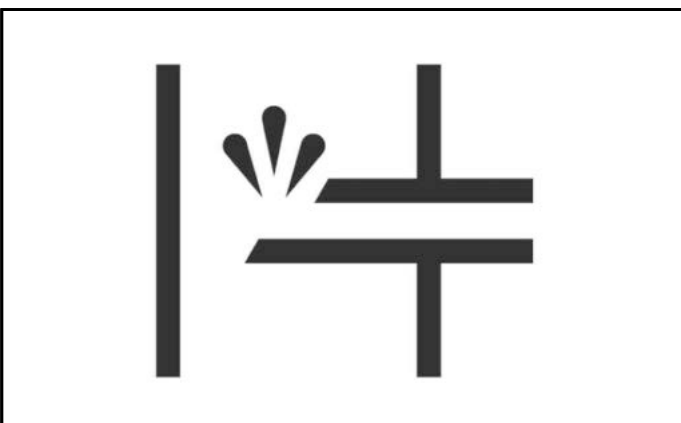
3. On both sides of the fuel pre-filter (Item 1), disconnect the hoses (Items 2) [Figure 154]. Plug or clamp the hoses to prevent fuel spillage.
4. Loosen the clamp (Item 3) [Figure 154].
5. Remove the pre-filter (Item 1) [Figure 154] and discard.
6. Install new pre-filter into the clamp (Item 3) [Figure 154] and tighten clamp.
7. Reinstall the hoses (Items 2) [Figure 154].

⚠ WARNING

FIRE AND EXPLOSION HAZARD
 Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

8. Close the engine cover.
9. Press the run button on the main control panel or turn the key switch.

Figure 155



10. Wait for the fuel priming in process icon [Figure 155] on the display to turn off.
11. Start the engine and allow to operate for one minute.
12. Stop the engine.

⚠ WARNING

INJECTION HAZARD
 Pressurised diesel fuel or hydraulic fluid can penetrate skin and eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury. ◀

13. Check for leaks at the fuel pre-filter.

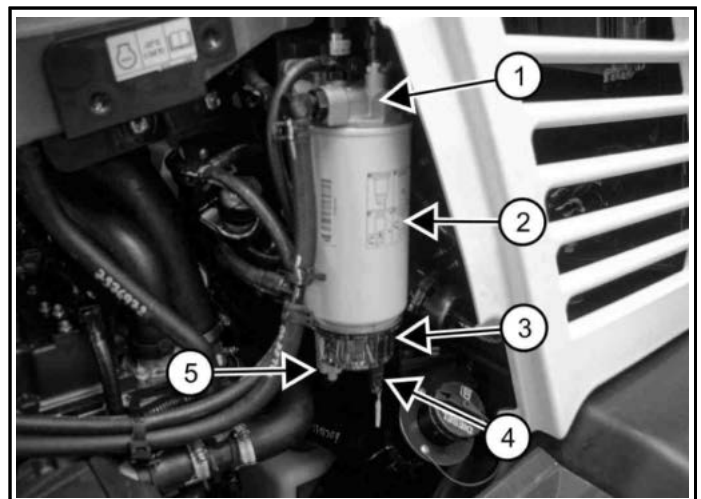
Replacing The Main Fuel Filter

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

NOTE: This procedure requires the use of a spare 9 mm (3/8 in) hose approximately 500 mm (19.7 in) long.

1. Stop the engine.
2. Open the engine cover.

Figure 156



3. Attach a 9 mm (3/8 in) hose to the drain (Item 5) [Figure 156] at the bottom of the main fuel filter.
4. Route the other end of the hose to a container.
5. Loosen the drain (Item 5) [Figure 156] to empty the filter.
6. Tighten the drain.
7. Remove the hose.

8. Recycle or dispose of used fuel in an environmentally safe manner.
9. Disconnect the electrical connector (Item 4) [Figure 156].
10. Remove the fuel water separator (Item 3) from the fuel filter element (Item 2) [Figure 156].
11. Remove the fuel filter element (Item 2) from the fuel filter head (Item 1) [Figure 156].

NOTE: DO NOT fill the new fuel filter element with fuel at this time.

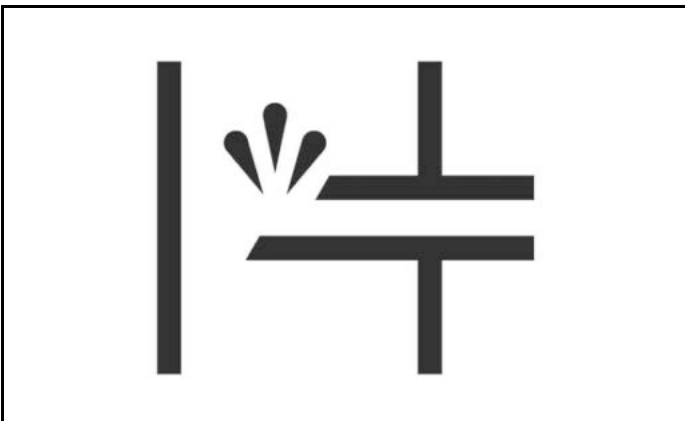
12. Put clean oil on two new fuel filter element O-rings.
13. Install the fuel water separator onto new fuel filter element.
Tighten 0,75 of a turn after the O-ring makes contact.
14. Install assembly onto fuel filter head.
Tighten three-fourths of a turn after the O-ring makes contact.
15. Connect the electrical connector.
16. Verify the drain is fully closed.

⚠ WARNING

FIRE AND EXPLOSION HAZARD
Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

17. Close the engine cover.
18. Press the run button on the main control panel or turn the key switch.

Figure 157



19. Wait for the fuel priming in process icon [Figure 157] on the display to turn off.
20. Start the engine and allow to operate for one minute.

21. Stop the engine.

⚠ WARNING

FIRE AND EXPLOSION HAZARD
Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

22. Check for leaks at the main fuel filter.

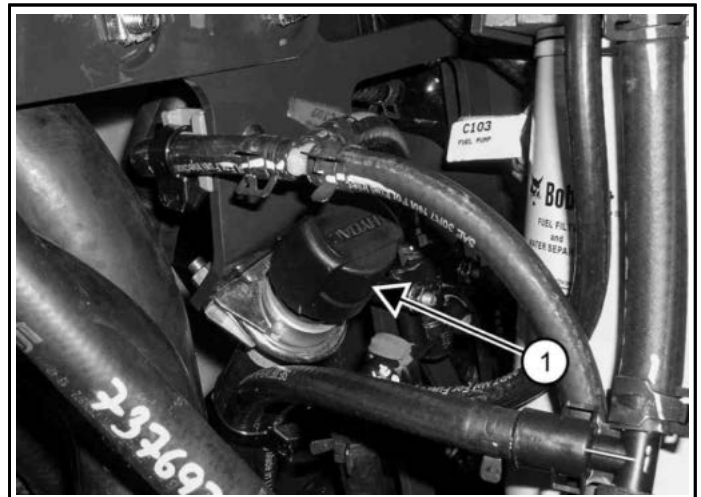
Replacing Fuel Tank Vent Filter

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

The fuel tank vent filter is located next to the main fuel filter.

1. Stop the engine.
2. Open the engine cover.

Figure 158



3. Remove the fuel tank vent filter (Item 1) [Figure 158] and discard.
4. Install new fuel tank vent filter and tighten.
5. Close the engine cover.

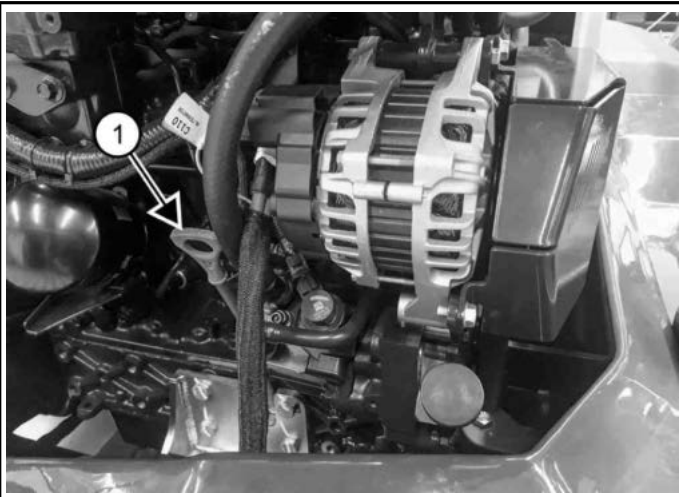
ENGINE LUBRICATION SYSTEM

Checking And Adding Engine Oil

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

1. Park the machine on a level surface.
2. Stop the engine.
3. Open the engine cover.

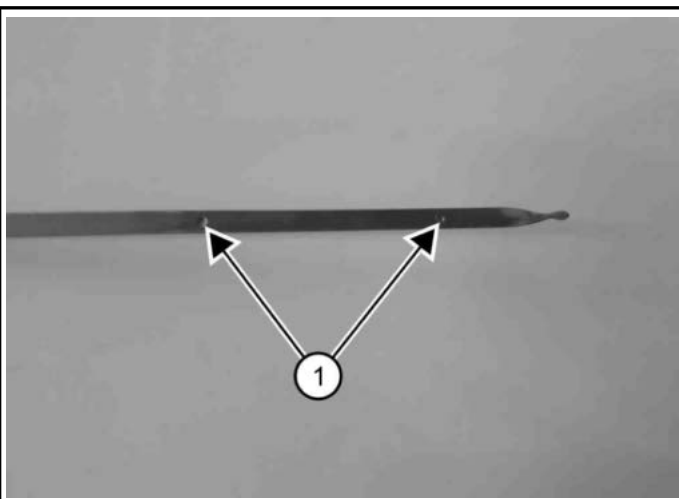
Figure 159



C208237b

4. Remove the dipstick (Item 1) [Figure 159].

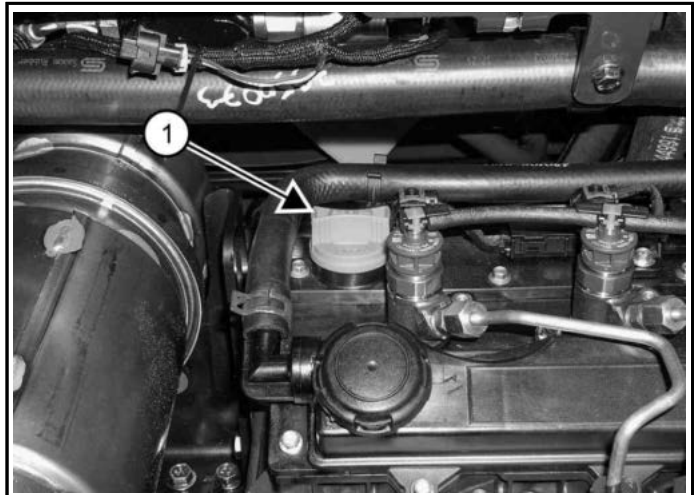
Figure 160



EM11197a

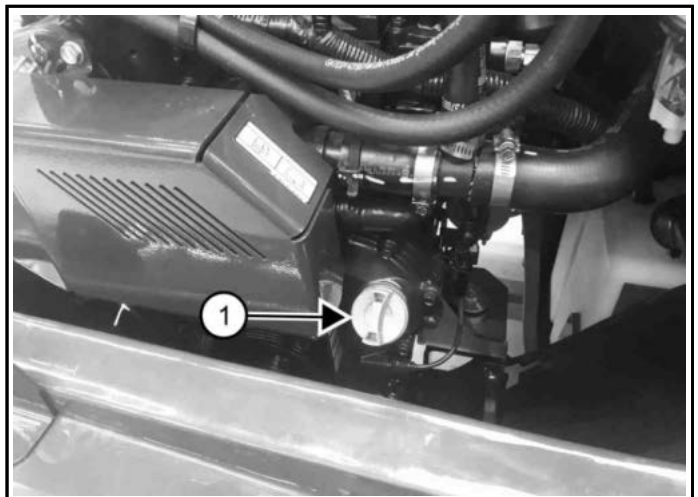
5. Keep the oil level between the marks on the dipstick (Items 1) [Figure 160]. Do not overfill.

Figure 161



C207528a

Figure 162



EM11198a

6. Remove the oil fill cap (Item 1) [Figure 161] or [Figure 162] to add engine oil.

⚠ WARNING

BURN HAZARD

Hot surfaces can cause serious injury.

- Do not touch.
- Allow to cool before servicing. ◀

W-2533

⚠ WARNING

FIRE AND EXPLOSION HAZARD

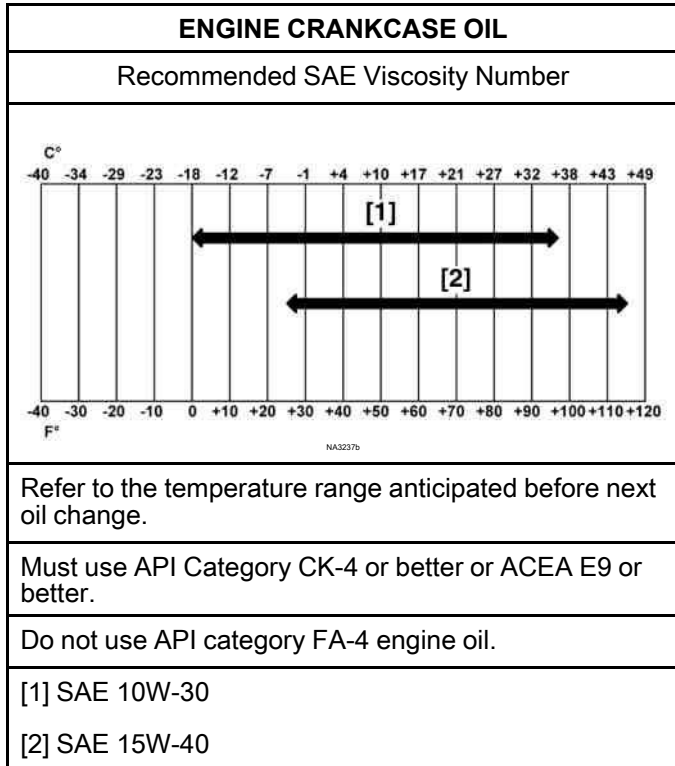
Failure to use care around combustibles can cause serious injury or death.

Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

W-2103

7. Reinstall the oil fill cap and the dipstick.
8. Close the engine cover.

Engine Oil Chart



Bobcat engine oils are recommended for use in this machine. If Bobcat engine oil is not available, use a good quality engine oil that meets API Service Category of CK-4 or better, or ACEA E9 or better.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD
 Failure to follow directions may result in severe engine damage.
 Use of API Service Category FA-4 engine oil is not approved and may cause irreversible damage to the engine. ◀

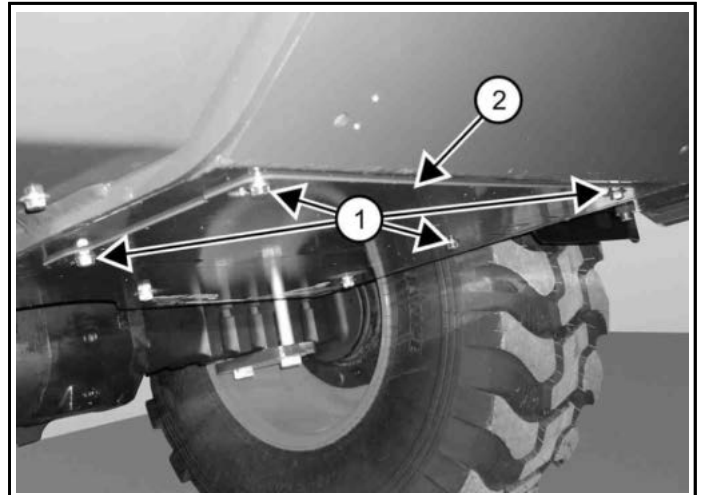
Replacing Engine Oil And Filter

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

The use of work gloves is recommended when performing this task.

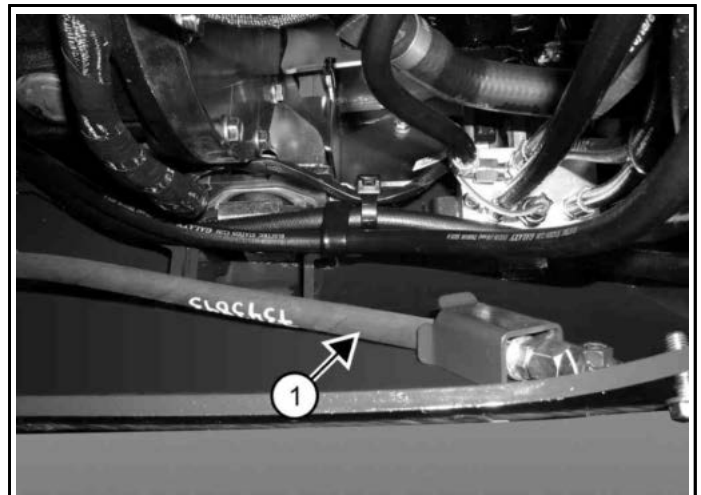
1. Operate the engine until coolant reaches normal operating temperature.
2. Stop the engine.

Figure 163



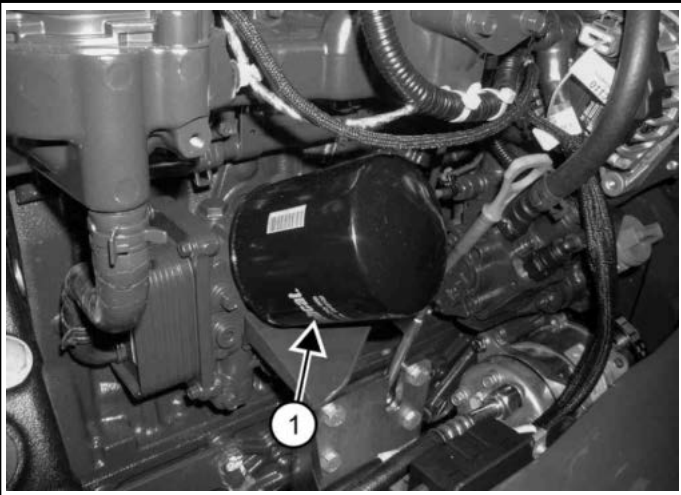
3. Underneath the machine, loosen the access cover mounting bolts (Items 1) and remove the access cover (Item 2) [Figure 163].

Figure 164



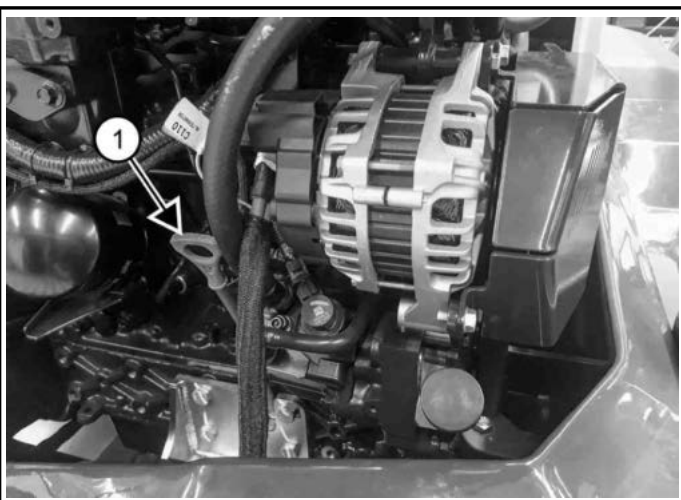
4. Remove the drain hose (Item 1) [Figure 164] from the storage position.
5. Unplug the drain hose and drain the engine oil into a suitable container.
6. Reinstall the plug onto the drain hose when the fluid stops draining. Tighten the plug to a torque of 50 N•m (36.9 ft-lb).
7. Put the drain hose back in the storage position and reinstall the access cover.
8. Recycle or dispose of used oil in an environmentally safe manner.
9. Open the engine cover.

Figure 165



10. Remove the oil filter (Item 1) [Figure 165].
 11. Clean the filter base.
 12. Put clean oil on the new filter gasket.
 13. Install the new filter and hand tighten until the gasket contacts the surface, then tighten an additional 0,75 turn.
- NOTE:** Use genuine Bobcat filter only.
14. Add engine oil.
(See Checking And Adding Engine Oil on Page 103)
 15. Start the engine and allow to operate for several minutes.
 16. Stop the engine.
 17. Check for leaks at the filter.

Figure 166



18. Remove the dipstick (Item 1) [Figure 166] and check the oil level.

19. Add oil as needed if the oil level is not at the top mark on the dipstick.
20. Reinstall the dipstick (Item 1) [Figure 166].
21. Close the engine cover.

⚠ WARNING

FIRE AND EXPLOSION HAZARD
 Failure to use care around combustibles can cause serious injury or death.
 Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

W-2103

ENGINE COOLING SYSTEM

Cleaning The Engine Cooling System

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

1. Stop the engine.

⚠ WARNING

IMPACT AND INJECTION HAZARDS

Flying debris or pressurised fluids can cause serious injury or death.

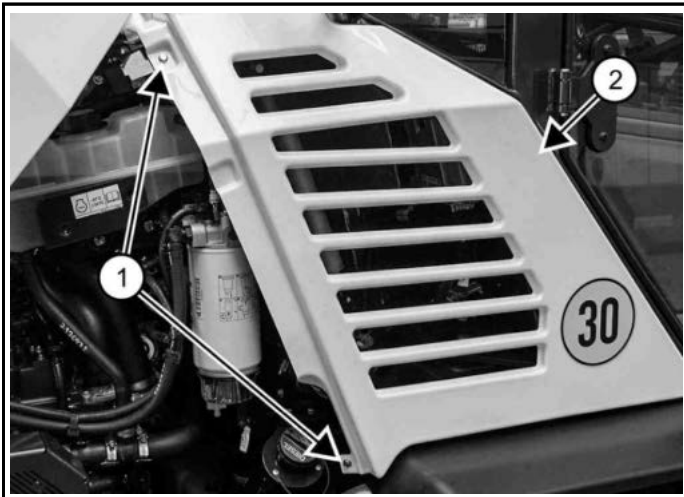
Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material.
- Engine is running.
- Tools are being used. ◀

W-2019

2. Open the engine cover.

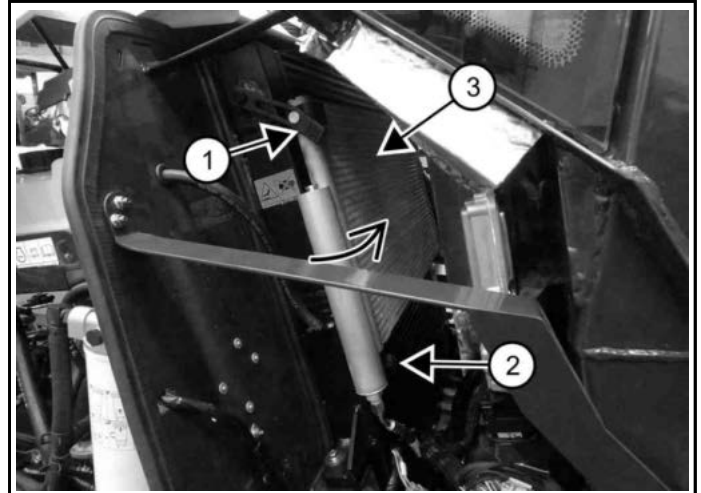
Figure 167



C207509a

3. Remove the bolts (Items 1) to remove the right side cover (Item 2) [Figure 167].

Figure 168



C208126a

4. If the machine is equipped with a HVAC system, remove the bolt (Item 2). Loosen the rubber strap (Item 1) and pull the HVAC system radiator (Item 3) [Figure 168] away from the cooling system radiator.
5. Use low air pressure to clean the radiator.
6. If equipped, reinstall the HVAC radiator on the cooling system radiator.
7. Reinstall the right side cover.
8. Close the engine cover.

Checking And Adding Coolant

You will need a refractometer to check propylene glycol condition.

Check the engine coolant level every day before starting the engine for the work shift.

⚠ WARNING

BURN HAZARD

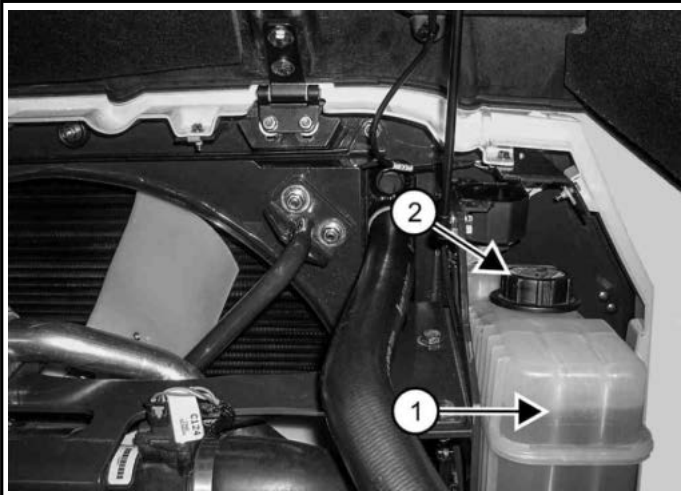
Failure to follow instructions can cause serious burns.

Stop the engine and allow it to cool before removing the radiator cap or adding coolant. ◀

W-2070

1. Stop the engine and allow the engine to cool.
2. Open the engine cover.

Figure 169



3. Coolant must be between the MINCOLD and MAXCOLD (Item 1) [Figure 169] markers when the engine is cold.

NOTE: The machine is factory filled with propylene glycol coolant (purple colour). DO NOT mix propylene glycol with ethylene glycol.

4. Remove the coolant cap (Item 2) [Figure 169] to add coolant.
5. Use a refractometer to check the condition of propylene glycol in your cooling system.

The correct mixture of coolant to provide a -37°C (-34°F) freeze protection is:

5 L propylene glycol mixed with 4,4 L of water

1 U.S. gal propylene glycol mixed with 3,5 qt of water.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD
The incorrect ratio of water to coolant will reduce cooling system efficiency and may lead to premature engine failure.

- Always use the correct ratio of water to coolant.
- Always add a premixed solution. ◀

6. Add premixed coolant, 47% water and 53% propylene glycol to the coolant tank until the coolant level reaches the upper level marker on the tank.
7. Install the coolant cap and tighten.
8. Close the engine cover.

Replacing Coolant

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

⚠ WARNING

BURN HAZARD

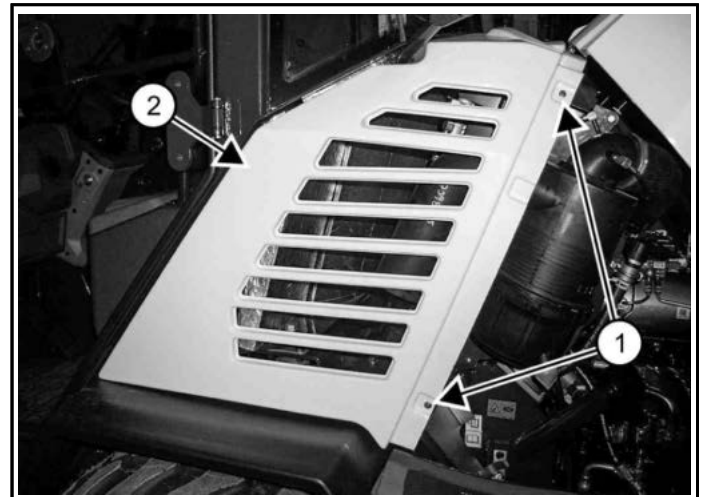
Failure to follow instructions can cause serious burns.

Stop the engine and allow it to cool before removing the radiator cap or adding coolant. ◀

W-2070

1. Stop the engine.
2. Open the engine cover.

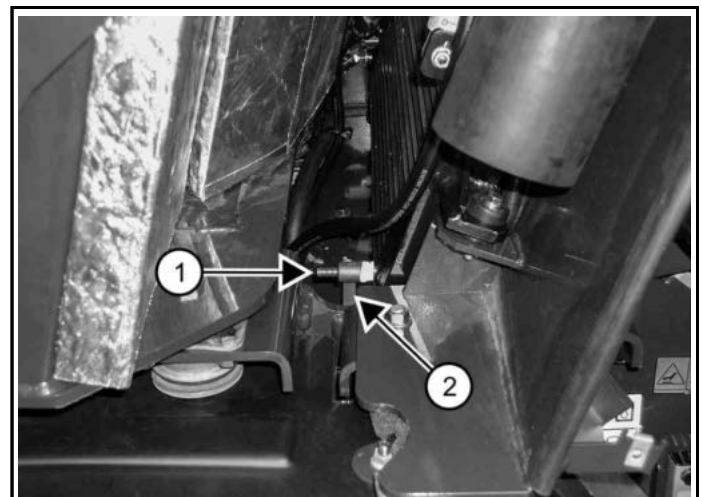
Figure 170



C207552a

3. Remove the bolts (Items 1) and remove the left side cover (Item 2) [Figure 170].

Figure 171



C207495a

4. Attach a hose to the drain valve (Item 1) [Figure 171] to drain the coolant in a suitable container.
5. Turn the valve (Item 2) [Figure 171] anticlockwise to drain coolant into a container.
6. Remove the coolant cap to drain the coolant faster.

7. Turn the valve (Item 2) [Figure 171] clockwise to close the drain.
8. Reinstall the left side cover.
9. Add coolant.
(See Checking And Adding Coolant on Page 106)
10. Reinstall the coolant cap and tighten.
11. Operate the engine until coolant reaches normal operating temperature.
12. Stop the engine and allow the engine to cool down.
13. Recheck the coolant level, add coolant as needed.
14. Close the engine cover.

ELECTRICAL SYSTEM

Electrical System Description

The machine has a 12 volt, negative earth, alternator charging system.

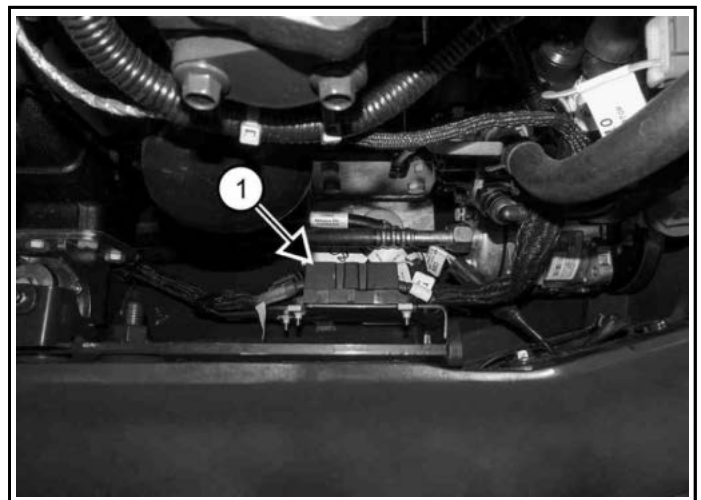
The electrical system is protected by fuses located in an operator cab fuse panel, and a mainframe fuse panel. Both fuse panels are located in the operator enclosure.

The fuses will protect the electrical system when there is an electrical overload. The reason for the overload must be found before starting the engine again.

Fuse And Relay Identification

Master Fuse

Figure 172



C20829a

The master fuse (Item 1) [Figure 172] is located inside the engine bay, next to the right road light.

Operator Cab Fuse Panel

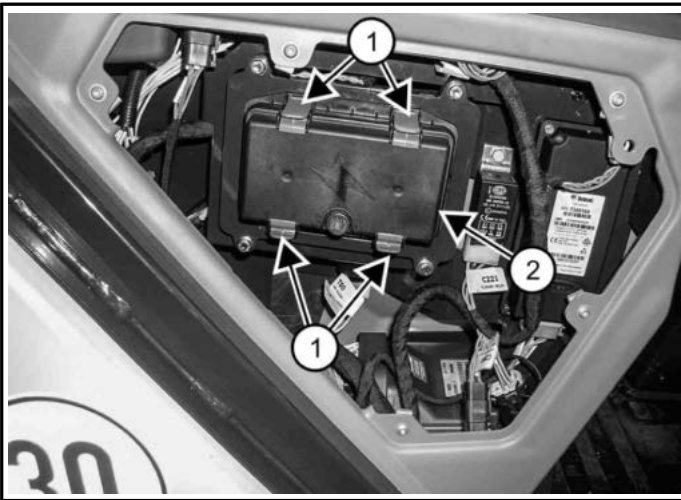
Figure 173



C207485a

The operator cab fuse panel is located behind the panel (Item 2) inside the cab, accessible by opening the right side cab door. Loosen the screw (Item 1) to remove the cover (Item 2) [Figure 173].

Figure 174

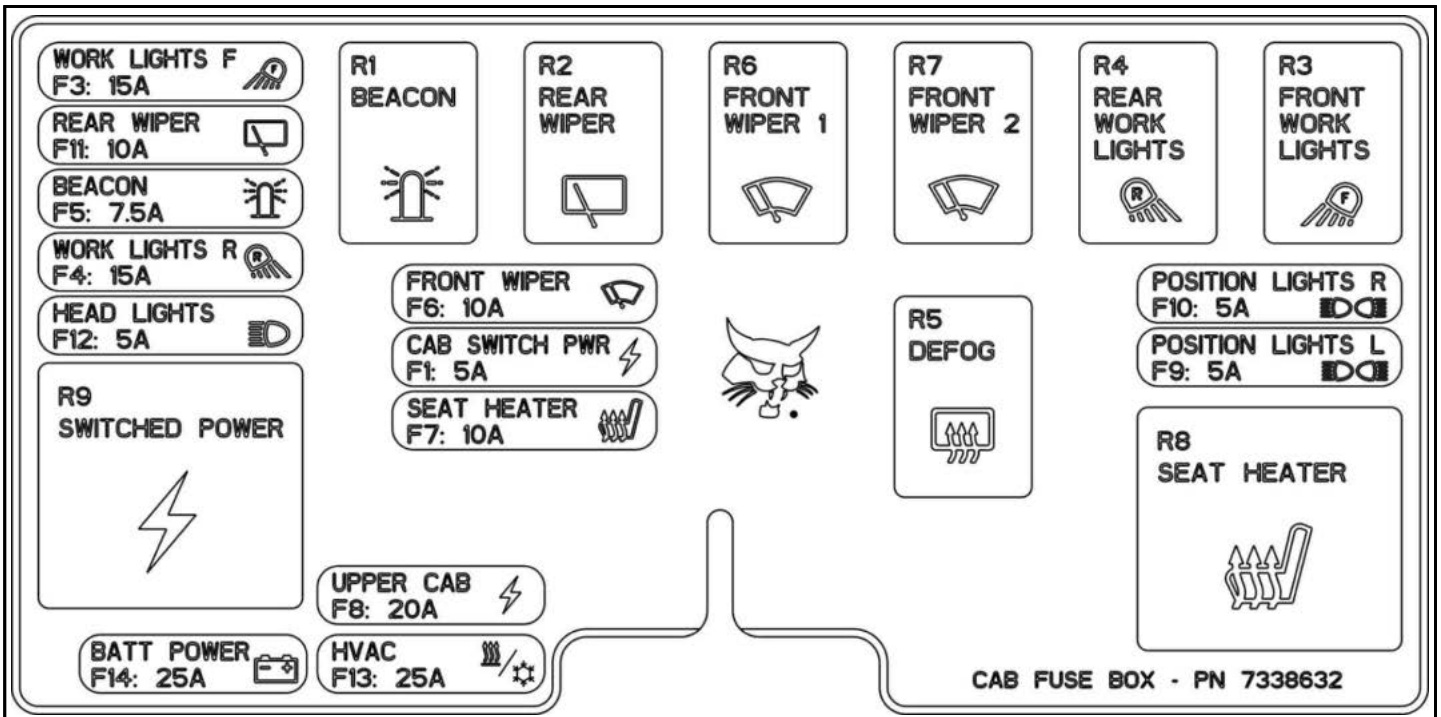


C207486a

The cover (Item 2) [Figure 174] can be removed by opening four latches (Items 1).
















A decal located inside the fuse panel cover indicates fuse and relay location and fuse amperage ratings.








Figure 175



7400272b

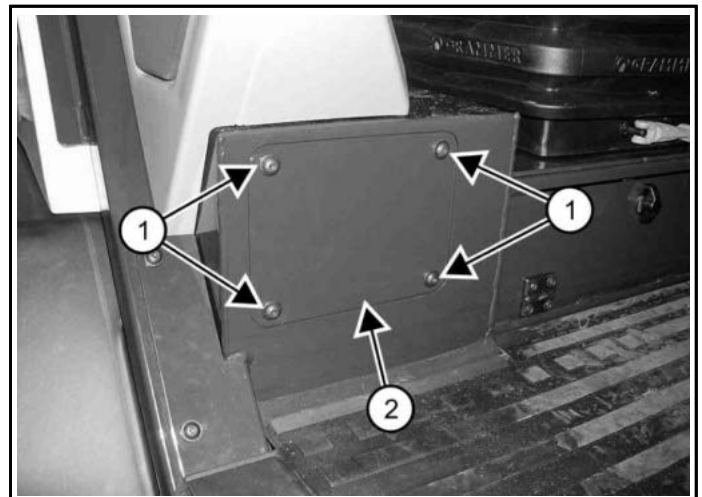
Fuse location and amperage ratings are shown in the table below and on the decal [Figure 175]. Relays are identified by the letter “R” in the AMP column.

REF.	ICON	DESCRIPTION	AMP
F1		Cab Switch Power	5
F2		Not Used	--
F3		Work Light Front	15
F4		Work Lights Rear	15
F5		Beacon	7.5
F6		Front Wiper	10
F7		Seat Heater	10
F8		Upper Cab	20
F9		Position Lights Left	5
F10		Position Lights Right	5
F11		Rear Wiper	10
F12		Head Lights	5
F13		HVAC	25
F14		Battery Power	25
R1		Beacon	R
R2		Rear Wiper	R

REF.	ICON	DESCRIPTION	AMP
R3		Front Work Lights	R
R4		Rear Work Lightts	R
R5		Defog	R
R6		Front Wiper 1	R
R7		Front Wiper 2	R
R8		Seat Heater	R
R9		Switched Power	R

Mainframe Fuse Panel

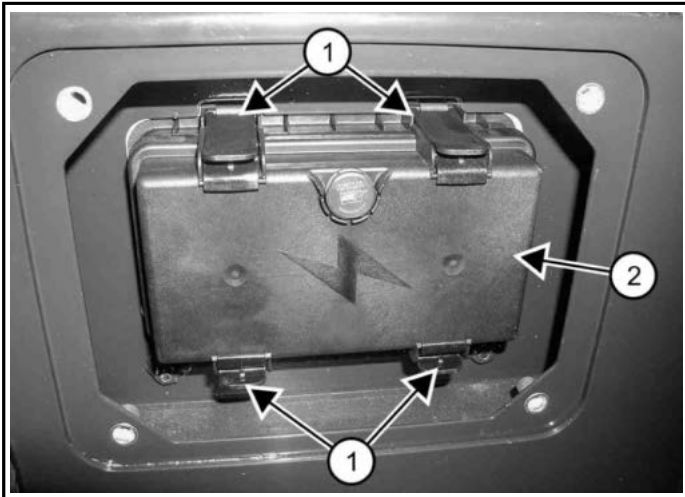
Figure 176



C207483a

The mainframe fuse panel is located inside the cab. Remove the bolts (Items 1) and the cover (Item 2) [Figure 176].

Figure 177

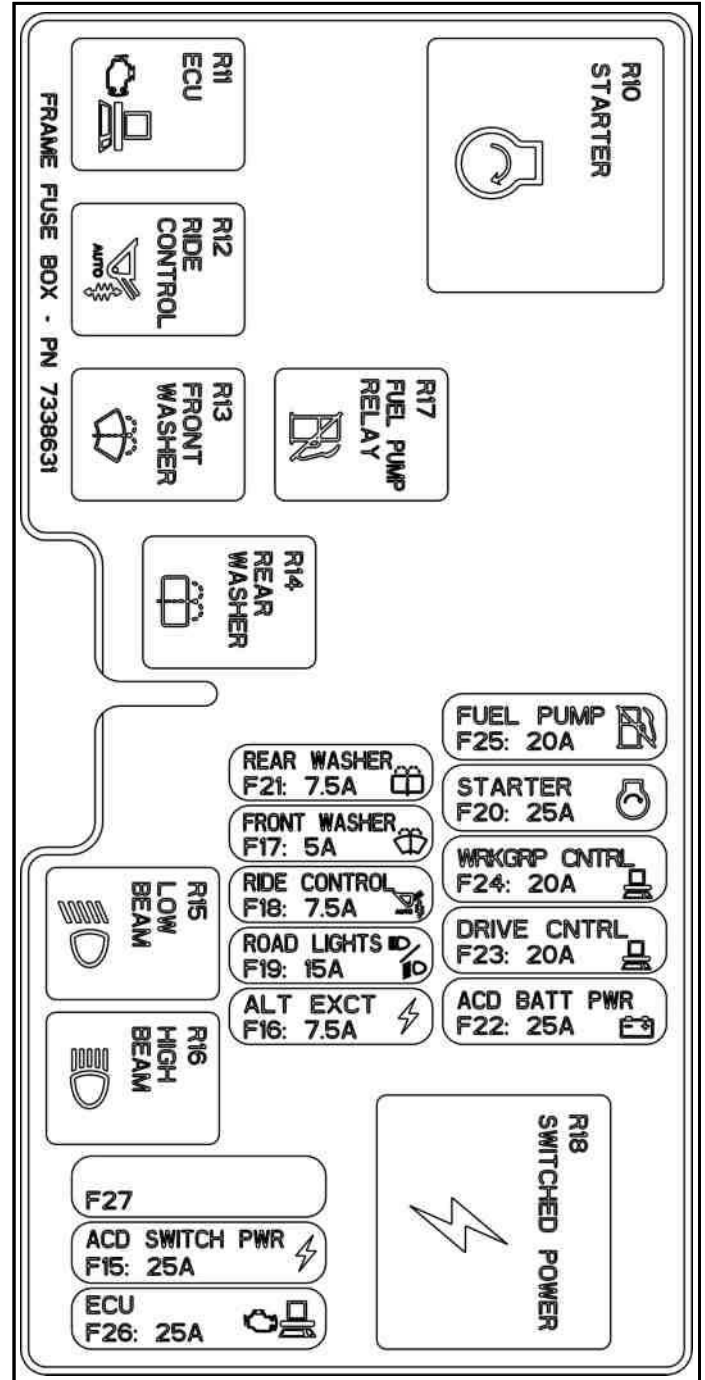


C207484a

The cover (Item 2) can be removed by opening four latches (Items 1) [Figure 177].
















A decal located inside the fuse panel cover indicates fuse and relay location and fuse amperage ratings.







Figure 178



740021

Fuse location and amperage ratings are shown in the table below and on the decal [Figure 178]. Relays are identified by the letter "R" in the AMP column.

REF.	ICON	DESCRIPTION	AMP
F15		ACD Switch Power	25
F16		Alt EXCT	7.5
F17		Front Washer	5
F18		Ride Control	7.5
F19		Road Lights	15
F20		Starter	25
F21		Rear Washer	7.5
F22		ACD Battery Power	25
F23		Drive Controller	20
F24		Workgroup Controller	20
F25		Fuel Pump	20
F26		ECU	25
R10		Starter	R
R11		ECU	R
R12		Ride Control	R

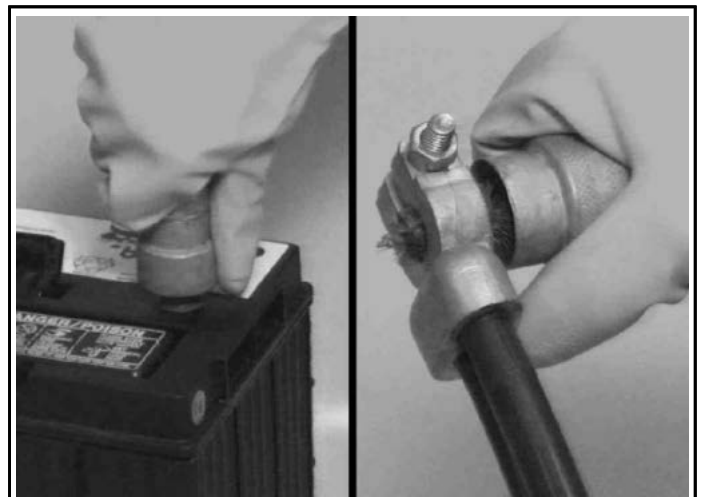
REF.	ICON	DESCRIPTION	AMP
R13		Front Washer	R
R14		Rear Washer	R
R15		Low Beam	R
R16		High Beam	R
R17		Fuel Pump	R
R18		Switched Power	R

Battery Maintenance

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

The Bobcat brand battery supplied with your machine is sealed and does not require watering. Proper charging and storage are important to maximise the life of all batteries.

Figure 179



P200188

Simple steps for reliability and long battery life:

- Keep battery posts and terminals clean [Figure 179].
- Keep terminals tight.

- Remove corrosion from battery and terminals with sodium bicarbonate (baking soda) and water solution.
- Put Bobcat Battery Saver or grease on the battery terminals and cable ends to prevent corrosion.
- Operate the machine for at least 15 minutes to recover from the battery drain caused by engine start up whenever practical.
- Maintain the battery charge level. This is a key factor for long battery life.
- Charge a severely discharged battery with a battery charger instead of relying on the machine charging system. (See Battery Charging on Page 113)
- Check the battery state of charge every 30 days on machines that are not frequently used. (See Testing The Battery on Page 113)

⚠ WARNING

CHEMICAL HAZARD

Contact with or ingestion of battery acid can cause serious injury or death.

- Batteries contain acid that burns eyes and skin on contact. Wear safety goggles, protective clothing, and rubber gloves to keep acid off body.
- In case of acid contact, wash immediately with water. In case of eye contact, get prompt medical attention and wash eye with clean, cool water for at least 5 minutes.
- If electrolyte is ingested, drink large quantities of water or milk! DO NOT induce vomiting. Get prompt medical attention. ◀

Maintaining Battery Charge Level

All batteries will self-discharge over time. This machine has features that require battery power even when the machine is not being used. Use of a quality battery maintainer is highly recommended to ensure that your machine is ready to start when you need it and avoid costly battery replacement.

Battery Maintainers

Use a good quality battery maintainer to keep the battery above 12.4 volts for machines that are not frequently used. Batteries below 12.4 volts must first be charged using a battery charger. Solar maintainers should have a minimum capacity of 10 watts to be effective.

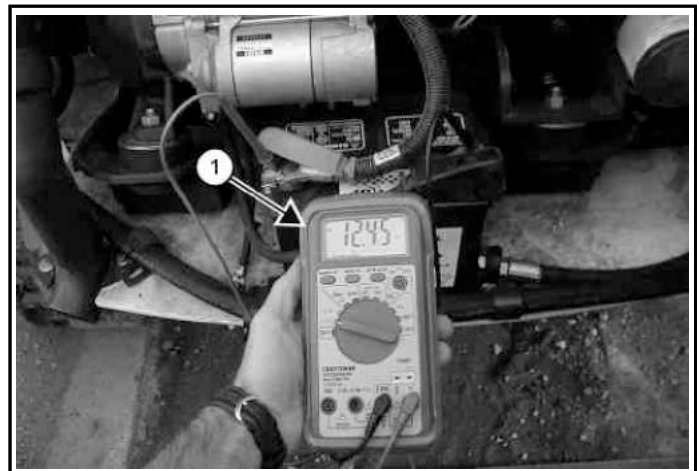
Battery Service During Machine Storage

- Remove the battery if storing the machine for an extended period of time.
- Fully charge the battery.
- Store the battery in a cool dry place above freezing and boost charge periodically.
- If battery removal is not desired, a good quality battery maintainer must be used to compensate for battery self-discharge and parasitic loads from

machine controllers, accessories, and features such as connected machine intelligence.

Testing The Battery

Figure 180



The simplest and most common check to determine battery state of charge is to use a digital multimeter or voltmeter (Item 1) [Figure 180].

A battery found below 12.4 volts must be charged to 100% charge per the battery charger's recommendation. Allow at least 60 minutes after operating the machine or charging the battery to get an accurate reading.

If the reading is less than 12.4 volts after the battery has been charged for several hours, see your Bobcat dealer to have a more thorough battery test performed.

The freezing point of battery electrolyte is dependent on the battery state of charge. Keeping the battery voltage above 12.4 volts will help prevent batteries from freezing, even at extremely low temperatures.

If the battery freezes, the internal grid may be damaged and the case will be distorted or cracked. If this happens, dispose of the battery according to local regulations.

Battery Charging

A battery charger designed for 12 volt charging systems is recommended. Follow the battery charger manufacturer's instructions to charge the battery to 12.6 volts (100% charge). Batteries should be charged at room temperature to avoid an undercharge or overcharge condition. Never attempt to charge a frozen battery.

The following table can be used to identify the approximate amount of time required to charge a discharged battery. Allow at least 60 minutes after operating the machine or charging the battery to get an accurate reading.

Battery Voltage	State of Charge	Charger Maximum Rate		
		30 Amps	20 Amps	10 Amps
12.6 V	100%	Ready to Use		
12.4 V	75%	0.9 hr	1.3 hr	2.5 hr
12.2 V	50%	1.9 hr	2.7 hr	5.1 hr
12.0 V	25%	2.9 hr	4.3 hr	7.8 hr
11.8 V	0%	4.0 hr	5.7 hr	10.7 hr

NOTE: Use a good quality charger to avoid battery damage from overcharging.

⚠ WARNING

EXPLOSION HAZARD

Battery gas can explode and cause serious injury or death.

- Keep arcs, sparks, flames and lighted tobacco away from batteries. When jumping from booster battery make final connection (negative) at machine frame.
- Do not jump start or charge a frozen or damaged battery. Warm battery to 16°C (60°F) before connecting to a charger. Unplug charger before connecting or disconnecting cables to a battery. Never lean over battery while boosting, testing or charging. ◀

W-2066

Using A Booster Battery (Jump Starting)

If the engine will not start without using a booster battery, BE CAREFUL! There must be one person in the operator's seat and one person to connect and disconnect the battery cables.

The key switch must be in the STOP position. The booster battery must be 12 volt.

NOTE: The booster battery must be used on the engine starter. DO NOT jump start the machine using the machine battery to prevent shorting. The engine starter is located at the front of the engine, and is accessible from the right hand side of the engine.

⚠ WARNING

EXPLOSION HAZARD

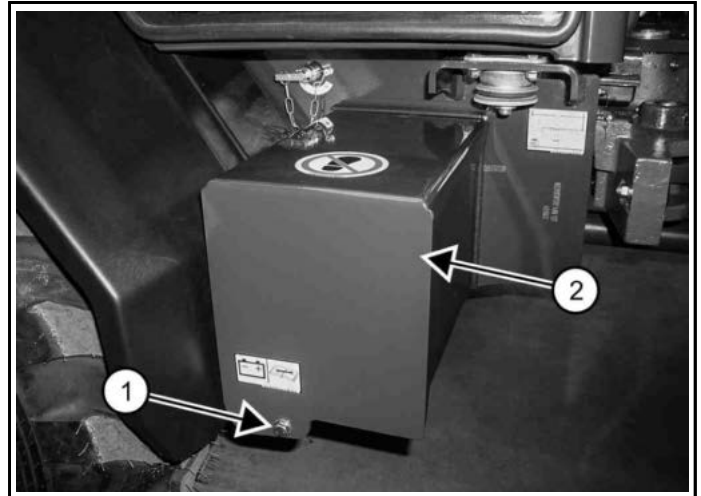
Battery gas can explode and cause serious injury or death.

- Keep arcs, sparks, flames and lighted tobacco away from batteries. When jumping from booster battery make final connection (negative) at machine frame.
- Do not jump start or charge a frozen or damaged battery. Warm battery to 16°C (60°F) before connecting to a charger. Unplug charger before connecting or disconnecting cables to a battery. Never lean over battery while boosting, testing or charging. ◀

W-2066

1. Stop the engine.

Figure 181

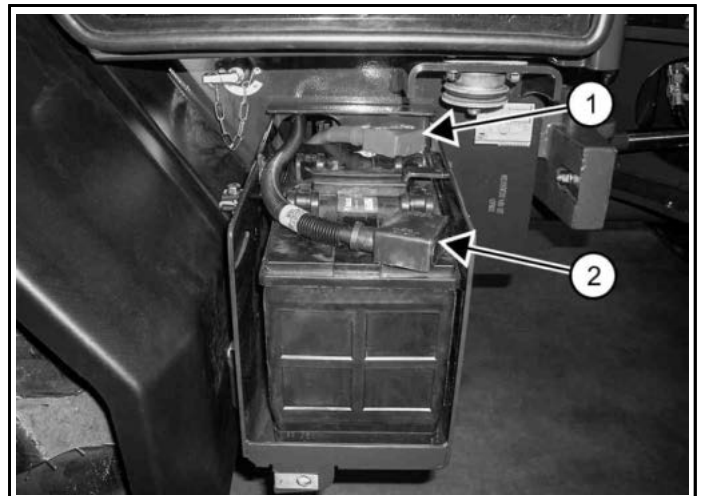


C207489b

2. On the right-hand side of the operator enclosure, remove the bolt (Item 1) to remove the cover (Item 2) [Figure 181].
3. Connect the end of the first cable to the positive (+) terminal of the booster battery.

NOTE: Always connect the positive terminals first.

Figure 182



C207483b

4. Connect the other end of the same cable to the positive (+) terminal (Item 1) [Figure 182] on the battery.
5. Connect the end of the second cable to the negative (-) terminal of the booster battery.
6. Connect the other end of the same cable to the negative (-) terminal (Item 2) [Figure 182] of the battery.

NOTE: Take care not to short the battery when connecting the battery terminals, at all times avoid contact between terminals, cable ends and any metal parts on the machine.

7. Keep cables away from moving parts. Start the engine. (See Starting The Engine on Page 66)
8. After the engine has started, remove the negative (-) cable (Item 2) [Figure 182] first.

NOTE: Always disconnect the negative terminals first.

9. Remove the cable from the positive (+) terminal (Item 1) [Figure 182].
10. Remove the cables from the booster battery.
11. Close the engine cover.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD
Damage to the alternator can occur
Do not operate machine if:

- Engine is operated with battery cables disconnected.
- Battery cables are connected when using a fast charger or when welding on the machine. Remove both cables from the battery.
- Extra battery cables (booster cables) are connected wrong. ◀

I-2023

Replacing The Battery

⚠ WARNING

CHEMICAL HAZARD
Contact with or ingestion of battery acid can cause serious injury or death.

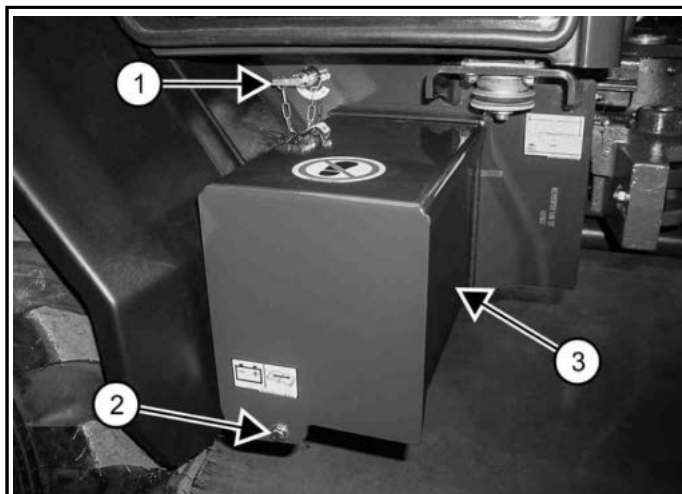
- Batteries contain acid that burns eyes and skin on contact. Wear safety goggles, protective clothing, and rubber gloves to keep acid off body.
- In case of acid contact, wash immediately with water. In case of eye contact, get prompt medical attention and wash eye with clean, cool water for at least 5 minutes.
- If electrolyte is ingested, drink large quantities of water or milk! DO NOT induce vomiting. Get prompt medical attention. ◀

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The battery is located on the right-hand side of the machine, underneath the operator enclosure.

1. Stop the engine.

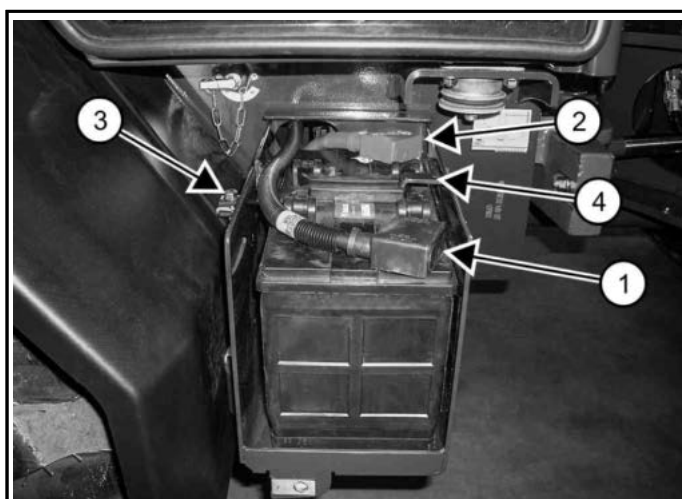
Figure 183



C207489a

2. Rotate the battery disconnect switch (Item 1) [Figure 183] anticlockwise to the 0 position to disconnect the battery from the engine starter.
3. Remove the bolt (Item 2) and the cover (Item 3) [Figure 183].

Figure 184



C207493a

4. Remove the bolt (Item 3) and the bracket (Item 4) [Figure 184].
5. Disconnect the negative (-) cable (Item 1) [Figure 184] from the battery.

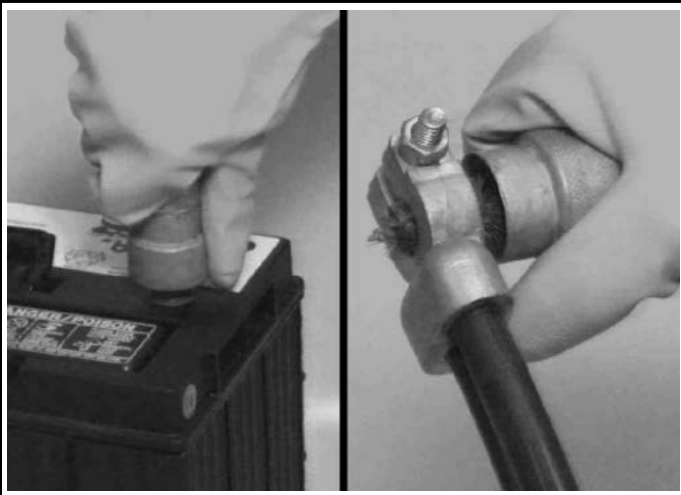
NOTE: Do not touch any metal parts with the battery terminals.

6. Disconnect the positive (+) cable (Item 2) [Figure 184] from the battery.

NOTE: For better access to the terminal, move the battery slightly out of the battery box.

7. Remove the battery from the machine.

Figure 185



P200188

8. Always clean the battery terminals and cable ends when installing a new or used battery [Figure 185].
Do not touch any metal parts with the battery terminals.
9. Install the new battery.
10. Connect and tighten the positive (+) battery cable (Item 2) [Figure 184].
NOTE: Always connect the negative (-) cable last to prevent sparks.
11. Connect and tighten the negative (-) battery cable (Item 1) [Figure 184].
12. Reinstall the bracket (Item 4) and the bolt (Item 3) [Figure 184].
13. Put Bobcat Battery Saver or grease on the battery terminals and cable ends to prevent corrosion.
14. Reinstall the cover (Item 2) and the bolt (Item 1) [Figure 183].
15. Rotate the battery disconnect switch clockwise to the 1 position to connect the battery to the engine starter.

⚠ WARNING

EXPLOSION HAZARD

Battery gas can explode and cause serious injury or death.

- Keep arcs, sparks, flames and lighted tobacco away from batteries. When jumping from booster battery make final connection (negative) at machine frame.
- Do not jump start or charge a frozen or damaged battery. Warm battery to 16°C (60°F) before connecting to a charger. Unplug charger before connecting or disconnecting cables to a battery. Never lean over battery while boosting, testing or charging. ◀

W-2086

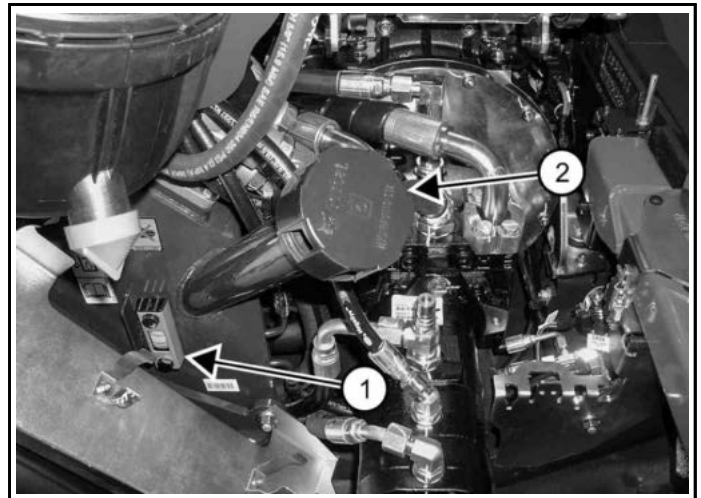
HYDRAULIC / HYDROSTATIC SYSTEM

Checking And Adding Hydraulic Fluid

Check the hydraulic / hydrostatic fluid level every day before starting the work shift.

1. Park the machine on a level surface, lower the lift arms, and lower the attachment flat on the ground or tilt the attachment mounting system to the vertical position if no attachment is installed.
2. Stop the engine.
3. Open the engine cover.

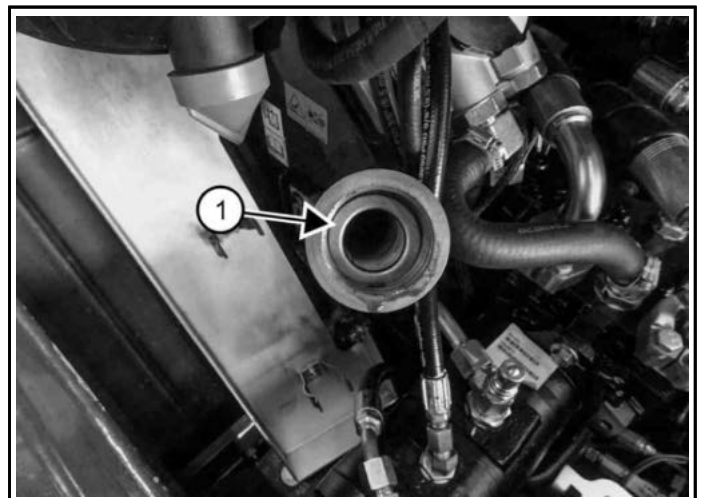
Figure 186



C200468a

4. Check the fluid level in the sight gauge (Item 1) [Figure 186].
Ensure that the hydraulic fluid level is visible in the sight gauge.
5. Remove the cap (Item 2) [Figure 186].

Figure 187



C208141a

6. Check the fill screen (Item 1) [Figure 187] for damage or wear. Clean or replace if necessary.
7. Add hydraulic fluid until the fluid level is visible in the sight gauge (Item 1) [Figure 186].
8. Reinstall the fill cap (Item 2) [Figure 186].
9. Close the engine cover.

Hydraulic Fluid Chart

HYDRAULIC FLUID	
Recommended ISO Viscosity Grade (VG) and Viscosity Index (VI)	
Refer to the temperature range anticipated before next oil change.	
[1]	VG 100; Minimum VI 130
[2]	VG 46; Minimum VI 150
[3]	Bobcat All-Season Fluid
[4]	Bobcat Synthetic Fluid
[5]	Bobcat Biodegradable Hydraulic / Hydrostatic Fluid (Unlike biodegradable fluids that are vegetable based, Bobcat biodegradable fluid is formulated to prevent oxidation and thermal breakdown at operating temperatures.)

Use only recommended fluid in the hydraulic system.

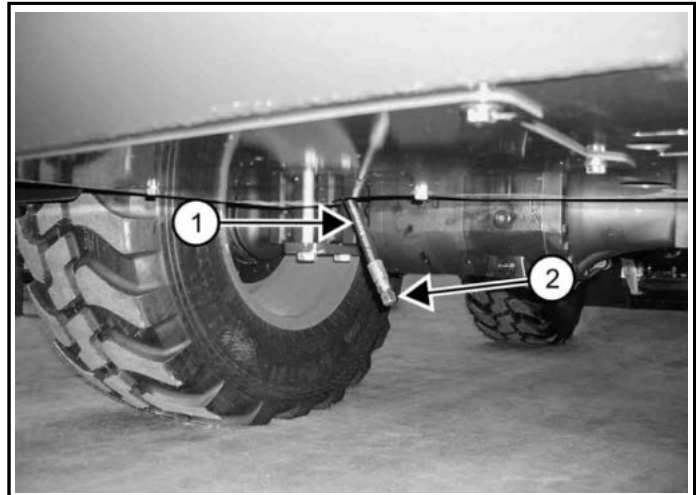
Replacing Hydraulic Fluid

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

Hydraulic fluid should also be replaced if the fluid is contaminated or after major repair. Always replace the hydraulic / hydrostatic filter whenever the hydraulic fluid is replaced. (See Replacing The Hydraulic / Hydrostatic Filter on Page 118)

1. Stop the engine.

Figure 188



2. Underneath the machine, at the left-hand rear wheel, use the drain hose (Item 1) [Figure 188] to drain the hydraulic fluid tank.
3. Remove the plug (Item 2) [Figure 188] to drain the hydraulic fluid into a suitable container.

NOTE: Recycle or dispose of used fluid in an environmentally safe manner.

4. Reinstall the plug onto the drain hose when the fluid stops draining. Tighten the plug to a torque of 55 N•m (30.6 ft-lb).
5. Coil the hydraulic fluid drain hose and fasten in the storage location to prevent damage.
6. Open the engine cover.
7. Add hydraulic fluid. (See Checking And Adding Hydraulic Fluid on Page 116)
8. Start the engine and operate the hydraulic controls.
9. Stop the engine and check for leaks.

⚠ WARNING

INJECTION HAZARD

Pressurised diesel fuel or hydraulic fluid can penetrate skin and eyes, causing serious injury or death.

Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury.

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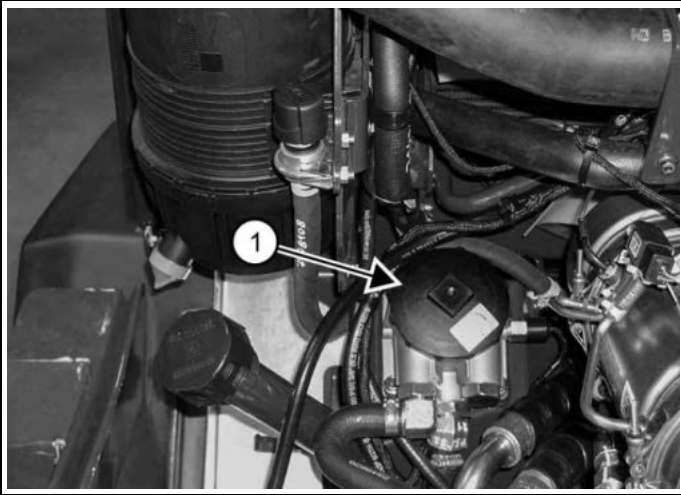
10. Check the fluid level in the reservoir and add as needed.
11. Close the engine cover.

Replacing The Hydraulic / Hydrostatic Filter

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

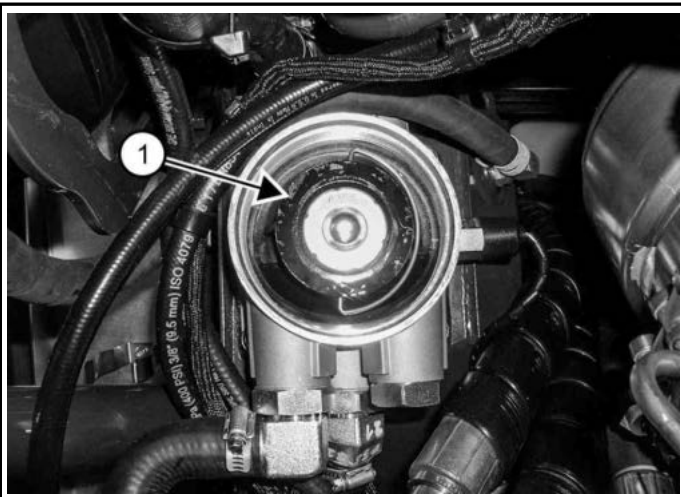
1. Stop the engine.
2. Open the engine cover.

Figure 189



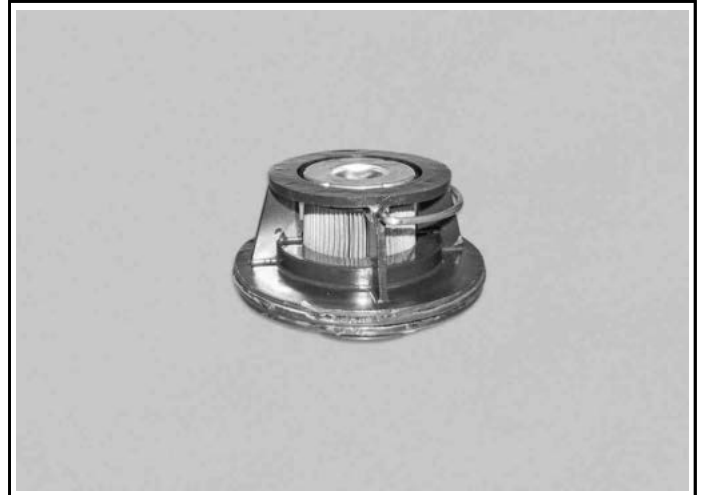
3. Rotate the hydraulic filter cap (Item 1) [Figure 189] anticlockwise to remove the cap.

Figure 190



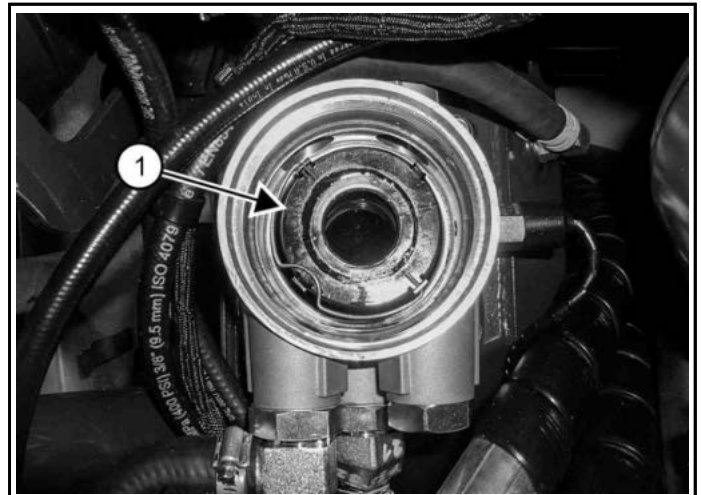
4. Rotate the filter element (Item 1) [Figure 190] anticlockwise and pull the filter element from the housing.

Figure 191



5. Check the filter element [Figure 191]. Clean or replace as necessary.

Figure 192



6. Rotate the main filter element (Item 1) [Figure 192] anticlockwise and pull the main filter element from the housing.
7. Install the new main filter element. Rotate the main filter element clockwise to secure.

Use only a genuine Bobcat replacement filter.
8. Reinstall the filter element (Item 1) [Figure 190]. Rotate the filter element clockwise to secure.
9. Reinstall the hydraulic filter cap (Item 1) [Figure 189].
10. Close the engine cover.

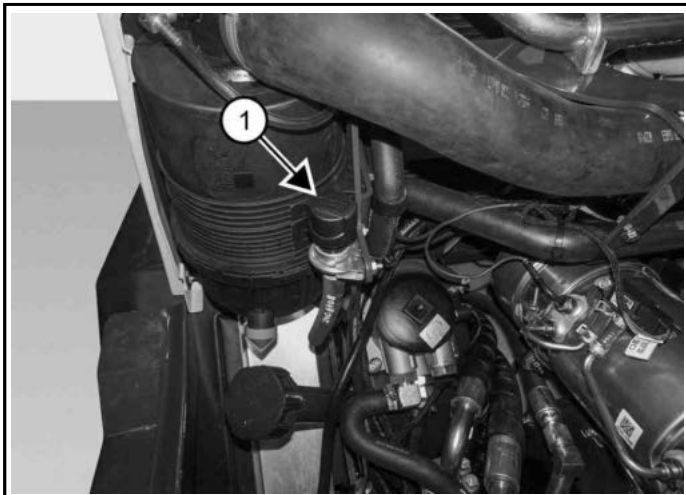
Replacing Hydraulic Tank Breather

See the SERVICE SCHEDULE for the correct service interval. (See Service Schedule on Page 88)

The hydraulic tank breather is located next to the hydraulic filter.

1. Stop the engine.
2. Open the engine cover.

Figure 193



C208270a

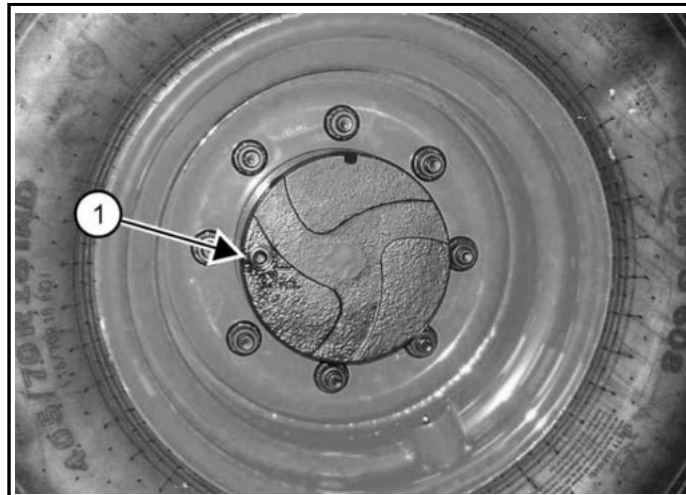
3. Remove the hydraulic tank breather (Item 1) [Figure 193] and discard.
4. Install the new hydraulic tank breather and tighten.
5. Close the engine cover.

AXLES (FRONT AND REAR)

Checking And Adding Oil (Planetary Carrier)

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

Figure 194



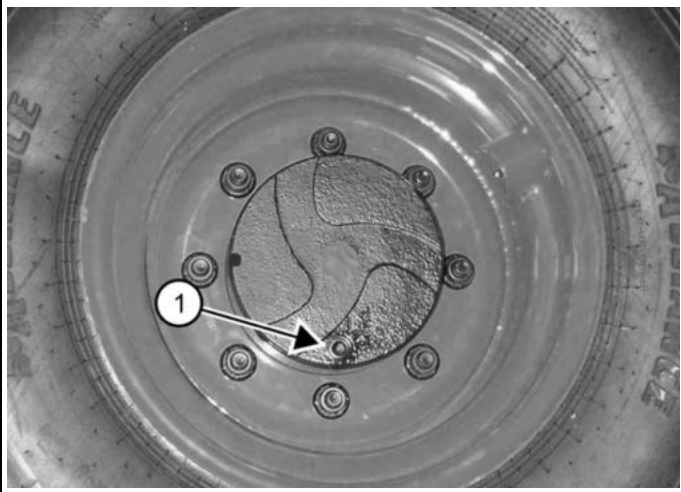
C207816a

1. Park the machine on a level surface with the plug (Item 1) [Figure 194] positioned as shown.
2. Clean the plug (Item 1) [Figure 194] and the surrounding surface.
3. Remove the plug (Item 1) [Figure 194]. The oil level should be at the bottom edge of the plug hole.
4. Clean any metallic residue from the plug.
5. Add oil through the plug hole if the oil level is below the plug hole.
6. For oil capacity or oil type. (See Machine Specifications on Page 144)
7. Install and tighten the plug to 35 - 50 N•m (26 - 37 ft-lb) torque.
8. Repeat the procedure for the other three planetary carriers.

Removing And Replacing Oil (Planetary Carrier)

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

Figure 195



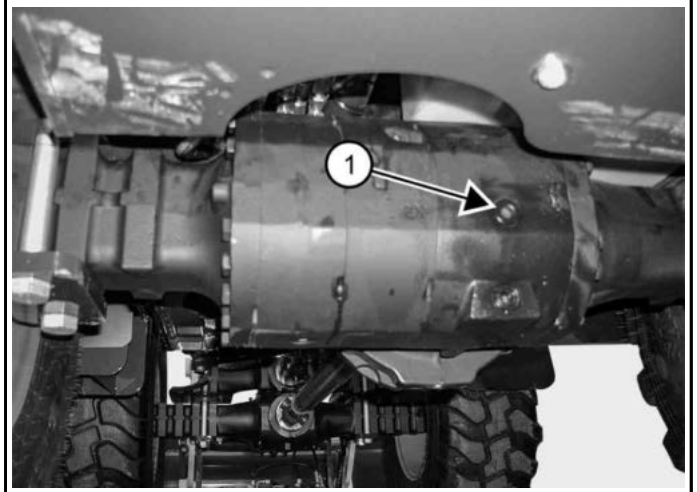
C207617a

1. Park the machine on a level surface with the plug (Item 1) [Figure 195] positioned as shown.
2. Clean the plug (Item 1) [Figure 195] and the surrounding surface.
3. Remove the plug (Item 1) [Figure 195] and drain oil into a container. Recycle or dispose of the used oil in an environmentally safe manner.
4. Clean any metallic residue from the plug.
5. Add oil.
(See Checking And Adding Oil (Planetary Carrier) on Page 119)
6. Install and tighten the plug to 35 - 50 N•m (26 - 37 ft-lb) torque.
7. Repeat the procedure for the other planetary carriers.

Checking And Adding Oil (Rear Differential)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 196



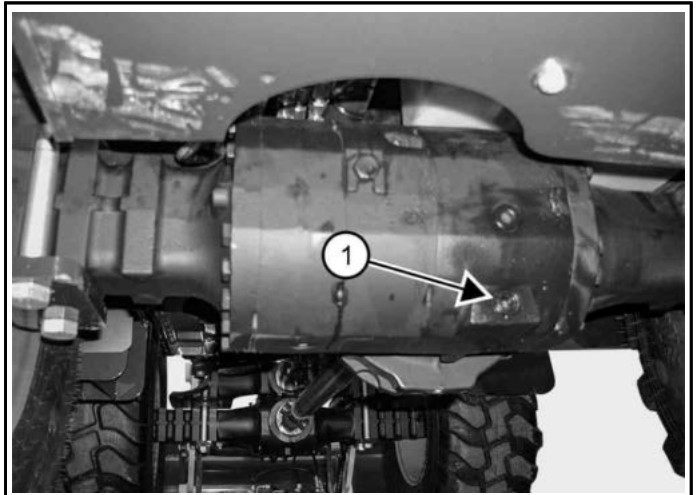
C207566a

1. Park the machine on a level surface.
2. Clean the fill plug (Item 1) [Figure 196] and the surrounding surface.
3. Remove the fill plug (Item 1) [Figure 196]. The oil level should be at the bottom edge of the plug hole.
4. Add oil through the plug hole if the oil level is below the plug hole.
5. For oil capacity or oil type.
(See Machine Specifications on Page 144)
6. Install and tighten the fill plug to 35 - 50 N•m (26 - 37 ft-lb) torque.

Removing And Replacing Oil (Rear Differential)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 197



C207566b

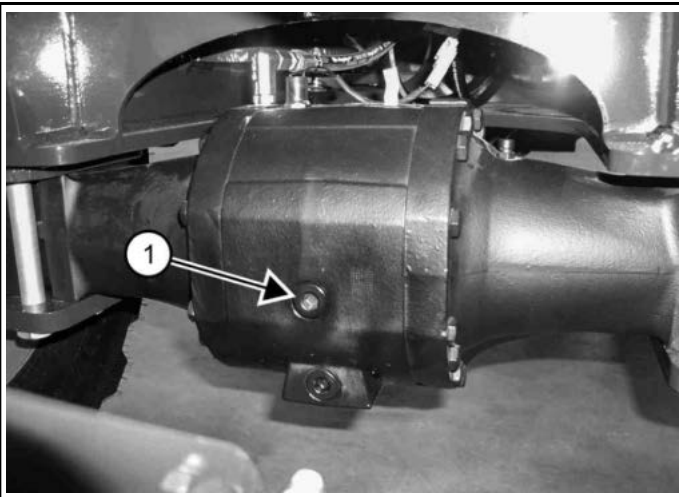
1. Park the machine on a level surface.

2. Clean the drain plug (Item 1) [Figure 197] and the surrounding surface.
3. Remove the drain plug (Item 1) [Figure 197] and drain oil into a container. Recycle or dispose of the used oil in an environmentally safe manner.
4. Clean any metallic residue from the drain plug.
5. Install and tighten the drain plug (Item 1) [Figure 197] to 35 - 50 N•m (26 - 37 ft-lb) torque.
6. Add oil.
(See Checking And Adding Oil (Rear Differential) on Page 120)

Checking And Adding Oil (Front Differential)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 198

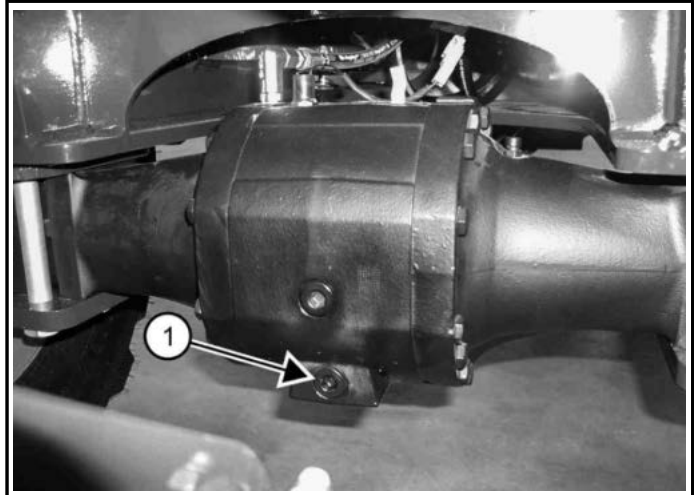


1. Park the machine on a level surface.
2. Clean the fill plug (Item 1) [Figure 198] and the surrounding surface.
3. Remove the fill plug (Item 1) [Figure 198]. The oil level should be at the bottom edge of the plug hole.
4. Add oil through the plug hole if the oil level is below the plug hole.
5. For oil capacity or oil type.
(See Machine Specifications on Page 144)
6. Install and tighten the fill plug to 35 - 50 N•m (26 - 37 ft-lb) torque.

Removing And Replacing Oil (Front Differential)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 199

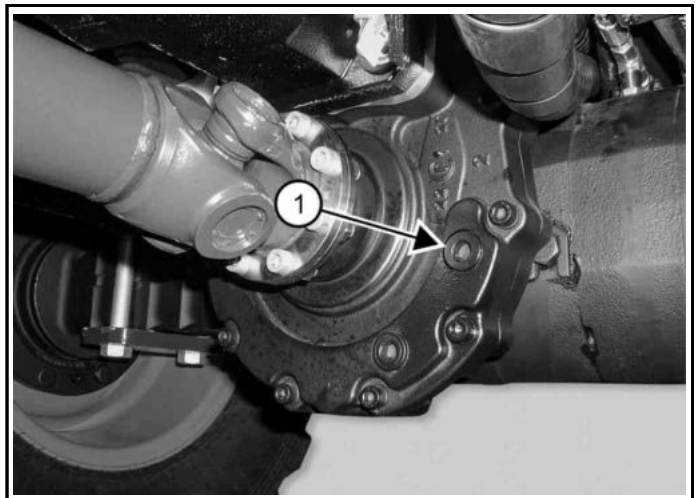


1. Park the machine on a level surface.
2. Clean the drain plug (Item 1) [Figure 199] and the surrounding surface.
3. Remove the drain plug (Item 1) [Figure 199] and drain oil into a container. Recycle or dispose of the used oil in an environmentally safe manner.
4. Clean any metallic residue from the drain plug.
5. Install and tighten the drain plug (Item 1) [Figure 199] to 35 - 50 N•m (26 - 37 ft-lb) torque.
6. Add oil.
(See Checking And Adding Oil (Front Differential) on Page 121)

Checking And Adding Oil (Reduction Box)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 200



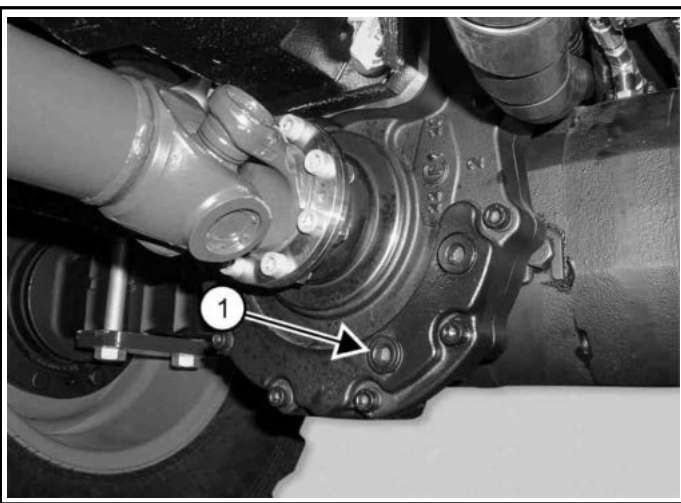
1. Park the machine on a level surface.

2. Clean the fill plug (Item 1) [Figure 200] and the surrounding surface.
3. Remove the fill plug (Item 1) [Figure 200]. The oil level should be at the bottom edge of the plug hole.
4. Add oil through the plug hole if the oil level is below the plug hole.
5. For oil capacity or oil type.
(See Machine Specifications on Page 144)
6. Install and tighten the fill plug to 35 - 50 N•m (26 - 37 ft-lb) torque.

Removing And Replacing Oil (Reduction Box)

See the Service Schedule for the correct service interval.
(See Service Schedule on Page 88)

Figure 201



1. Park the machine on a level surface.
2. Clean the drain plug (Item 1) [Figure 201] and the surrounding surface.
3. Remove the drain plug (Item 1) [Figure 201] and drain oil into a container. Recycle or dispose of the used oil in an environmentally safe manner.
4. Clean any metallic residue from the drain plug.
5. Install and tighten the drain plug (Item 1) [Figure 201] to 35 - 50 N•m (26 - 37 ft-lb) torque.
6. Add oil.
(See Checking And Adding Oil (Reduction Box) on Page 121)

DIESEL PARTICULATE FILTER (DPF) SYSTEM

DPF Service Description

The engine exhaust system is equipped with a diesel particulate filter (DPF). The DPF is an emissions reduction device that removes diesel particulate matter (soot) from the exhaust gases of the diesel engine. The DPF will trap and collect the soot until it is burned off. The process of burning off the collected soot is called regeneration.

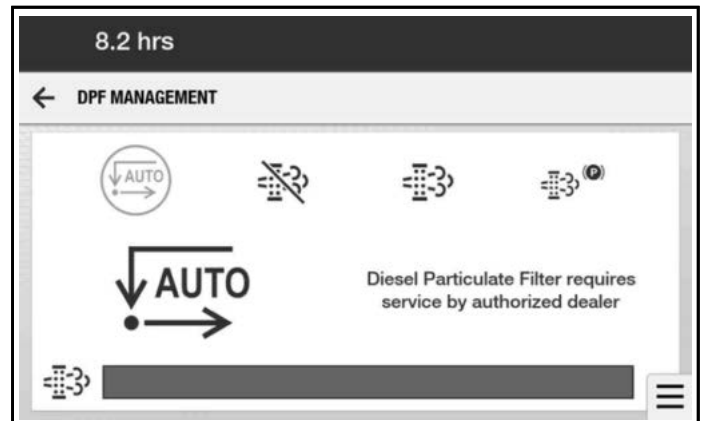
A service regeneration cycle may be required if too much soot is allowed to accumulate in the DPF. This can occur in the following situations:

- The machine is often operated for brief periods (less than 30 minutes) that do not allow sufficient time for the DPF to complete an automatic or operator activated forced regeneration cycle.
- The inhibit mode is used for an extended period of time. This will inhibit the DPF from actively regenerating and burning off the collected soot.

Ash residue will remain after the regeneration process is complete. The ash must be periodically removed from the DPF.

DPF Service Regeneration

Figure 202



The machine will alert the operator when DPF service is required [Figure 202].

Service code "P24A3" "Very High DPF Soot Mass - Service Regen Required" will be accompanied by a severe torque reduction.

Service regeneration requires the use of specialised equipment. See your Bobcat dealer for service regeneration.

DPF Cleaning

Contact your Bobcat dealer to arrange the cleaning of the DPF when indicated.

Service code "P242F" "High DPF Ash Content - Ash Cleaning Needed" will show in the display screen when DPF cleaning is necessary.

The DPF is a critical component of the engine exhaust system and must be properly maintained. Specialised equipment is required to clean the ash from the DPF. See your Bobcat dealer for DPF cleaning.

TYRE MAINTENANCE

Checking Wheel Nut Torque

See the Service Schedule for the correct service interval. (See Service Schedule on Page 88)

Figure 203



The correct wheel nut tightening torque is 360 N•m (266 ft-lb) [Figure 203].

Rotating Tyres

Check the tyres regularly for wear, damage, and pressure.

The same size tyres must be used on each side of the machine. If different sizes are used, each tyre will turn at a different rate and cause excessive wear.

Recommended tyre pressure must be maintained to avoid excessive tyre wear, loss of stability, and loss of handling.

- Check for correct pressure before operating the machine. See the specification page for tyre operating pressures. (See Machine Specifications on Page 144)

NOTE: Inflate the tyres to the recommended operating pressure shown on the side wall of the tyre, or as specified by the tyre manufacturer for your load case.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD

Mixing tyre brands and sizes and improper tyre inflation pressure can cause transmission or tyre damage.

Inflate tyres to the MAXIMUM pressure shown on the sidewall of the tyre.

Use only tyres of the same size and similar wear condition on the same machine

DO NOT mix brands of tyres used on the same machine. ◀

Mounting Tyres

- Tyres are to be repaired only by an authorised person using the proper procedures and safe equipment.
- Tyres and rims must always be checked for correct size before mounting. Check rim and tyre bead for damage.
- The rim flange must be cleaned and free of rust.
- The tyre bead and rim flange must be lubricated with a rubber lubricant before mounting the tyre.

⚠ WARNING

EXPLOSION HAZARD

Failure to use correct tyre mounting procedure can cause serious injury or death.

Do not inflate tyres above specified pressure. ◀

W-2078

- Avoid excessive pressure that can rupture the tyre and cause serious injury or death.
- During inflation of the tyre, check the tyre pressure frequently to avoid over inflation.
- Inflate the tyres to the recommended operating pressure shown on the side wall of the tyre, or as specified by the tyre manufacturer for your load case.

AIR CONDITIONING BELT

This machine may be equipped with an air conditioning belt.

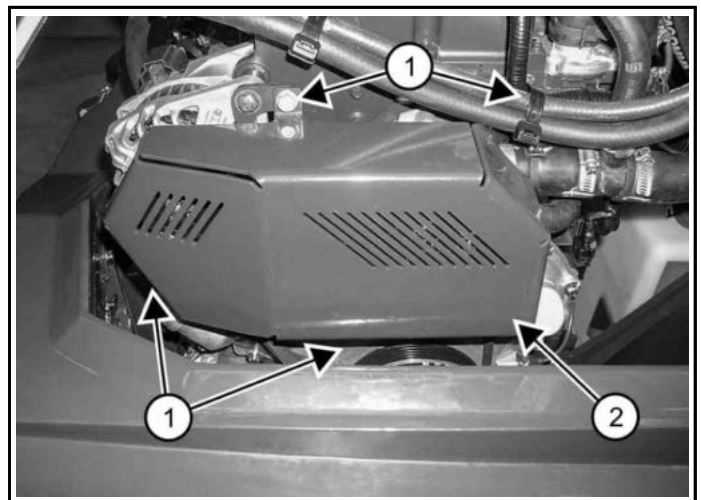
Adjusting The Air Conditioning Belt

This belt is a special maintenance free type that is pretensioned over the pulleys. This belt eliminates the need for a tensioning device and does not require periodic adjustment. Contact your Bobcat dealer for replacement parts.

Replacing The Air Conditioning Belt

1. Stop the engine.
2. Open the engine cover.

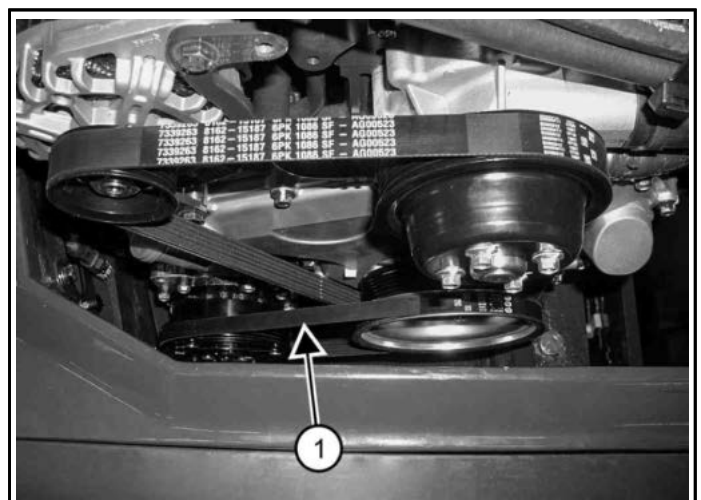
Figure 204



C207510a

3. Remove the four bolts (Items 1) and remove belt shield (Item 2) [Figure 204].

Figure 205



C207519a

4. Cut the old belt (Item 1) [Figure 205] and remove the belt from the pulleys.

5. Inspect the pulleys for wear.
6. Install the new belt around the pulleys.
7. Ensure the belt is fully installed on both pulleys.
8. Reinstall the belt shield (Item 2) [Figure 205].
9. Close the engine cover.

ALTERNATOR BELT

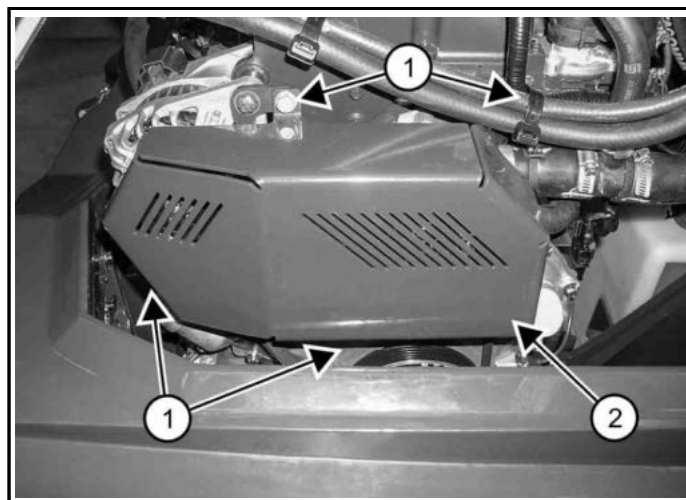
Adjusting The Alternator Belt

This belt is a special maintenance free type that is pretensioned over the pulleys. This belt eliminates the need for a tensioning device and does not require periodic adjustment. Contact your Bobcat dealer for replacement parts.

Replacing The Alternator Belt

1. Stop the engine.
2. Open the engine cover.

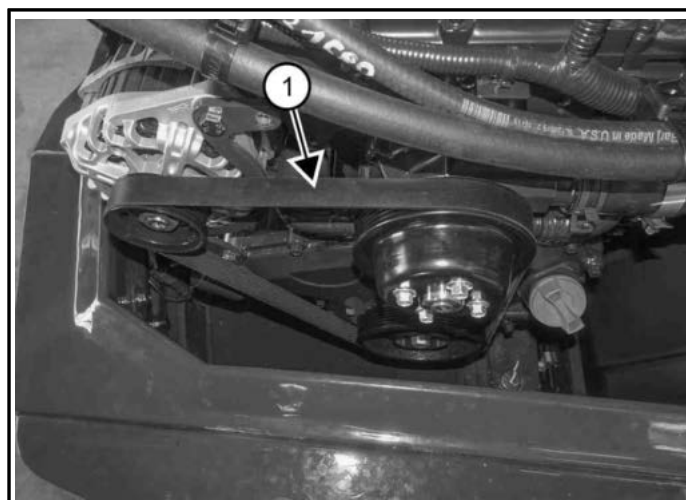
Figure 206



C207510a

3. Remove the four bolts (Items 1) and remove belt shield (Item 2) [Figure 206].
4. If equipped, remove the air conditioning belt. (See Air Conditioning Belt on Page 124)

Figure 207



C208140a

5. Cut the old belt (Item 1) [Figure 207] and remove the belt from the pulleys.

6. Inspect the pulleys for wear.
7. Install the new belt around the pulleys.
8. Ensure the belt is fully installed on all three pulleys.
9. If equipped, install a new air conditioning belt. (See Air Conditioning Belt on Page 124)
10. Reinstall the belt shield (Item 2) [Figure 206].
11. Close the engine cover.

AUTOMATIC RIDE CONTROL ACCUMULATOR

Checking Automatic Ride Control Accumulator Charge

The nitrogen charge in your accumulator will decrease over time. This will result in decreased effectiveness of the automatic ride control benefits.

NOTE: The signs of a low accumulator charge include: excessive lift arm movement, reduced ride control performance, or loss of ride control function.

Special tools and equipment are required to check and service the nitrogen charge in the accumulator.

WARNING

INJECTION HAZARD

Release Ride Control accumulator pressure before servicing.

- After fully lowering the lift arms or installing an approved lift arm support, use lift arm bypass control for 5 seconds to release pressure from lift circuit before servicing.

See Operation & Maintenance Manual or Service Manual for lift arm bypass control instructions. ◀

W-3015

See your Bobcat dealer for service if you believe that your automatic ride control accumulator charge is low.

MACHINE LUBRICATION

Lubricating Grease Fittings

Lubricate the machine as specified for the best performance. (See Service Schedule on Page 88)

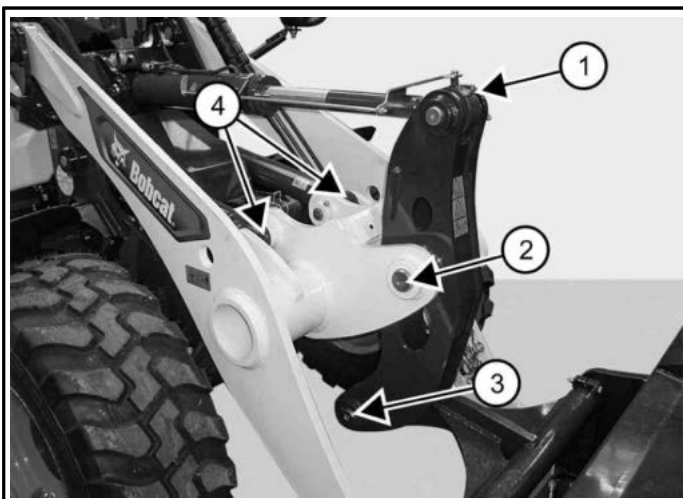
Record the operating hours each time you lubricate the machine.

1. Remove the attachment from the machine. (See Installing And Removing Attachments (Quick-Tach System) on Page 73)
2. Park the machine on a level surface, lower the lift arms, and tilt the attachment mounting system to the vertical position.
3. Stop the engine.
4. Always use a good quality lithium based multipurpose grease when you lubricate the machine. Apply the lubricant until extra grease shows.

Lubrication Locations

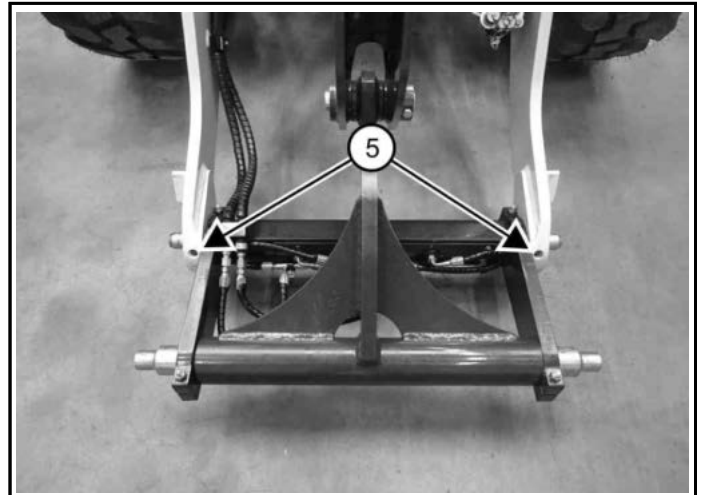
Lift Arms

Figure 208



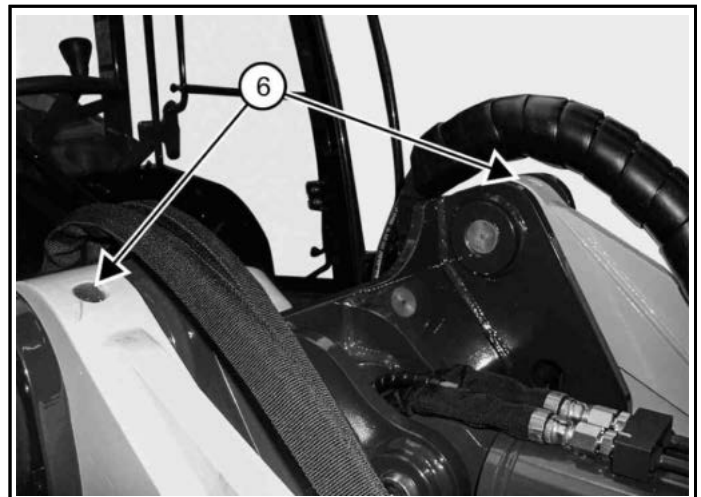
C207568a

Figure 209



C208272a

Figure 210

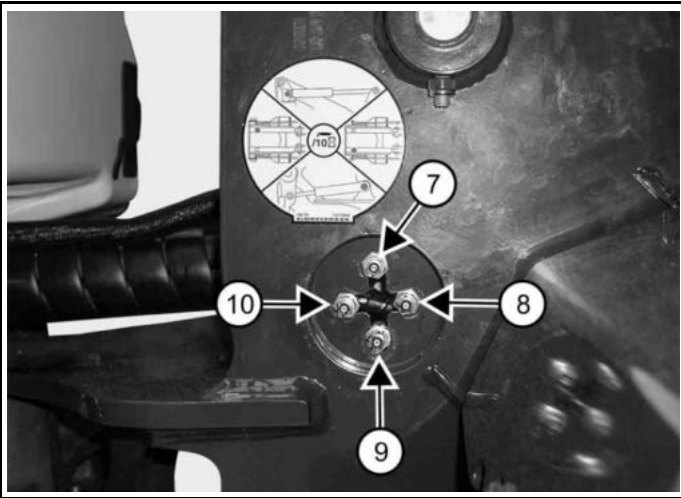


C207525a

REF.	Location	No. of Fittings
1	Rod End Tilt Cylinder	1
2	Pivot Point Lift Arm / Rocker Arm	1
3	Pivot Point Rocker Arm / Attachment	1
4	Rod End Lift Cylinders (Both Sides)	2
5	Pivot Point Lift Arm / Attachment (Both Sides)	2
6	Pivot Point Front Frame / Lift Arm (Both Sides)	2

Front Frame

Figure 211

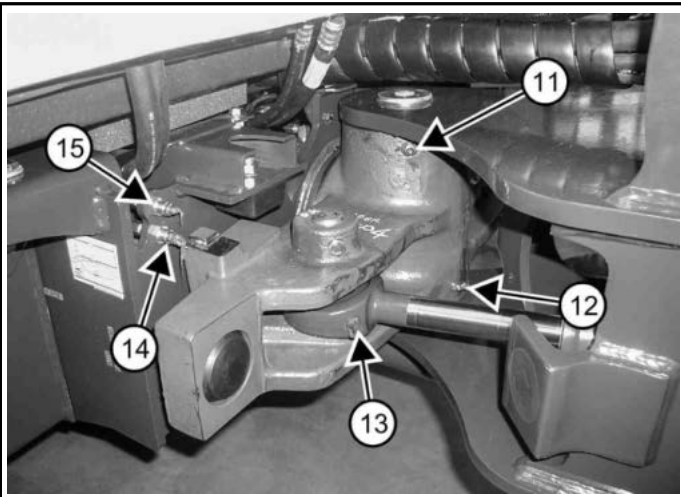


C207555a

REF.	Location	No. of Fittings
7	Base End Tilt Cylinder	1
8	Base End Right Side Lift Cylinder	1
9	Base End Steering Cylinder	1
10	Base End Left Side Lift Cylinder	1

Articulation Joint

Figure 212



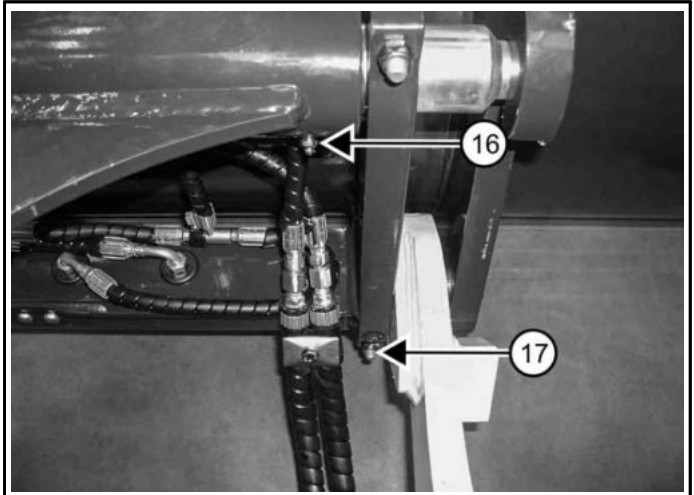
C207527a

REF.	Location	No. of Fittings
11	Upper Section Pivot Point Articulation Joint / Front Frame	1
12	Lower Section Pivot Point Articulation Joint / Front Frame	1

REF.	Location	No. of Fittings
13	Steering Cylinder Rod End	1
14	Rear Section Pivot Point Articulation Joint / Rear Frame	1
15	Front Section Pivot Point Articulation Joint / Rear Frame	1

Quick-Tach

Figure 213



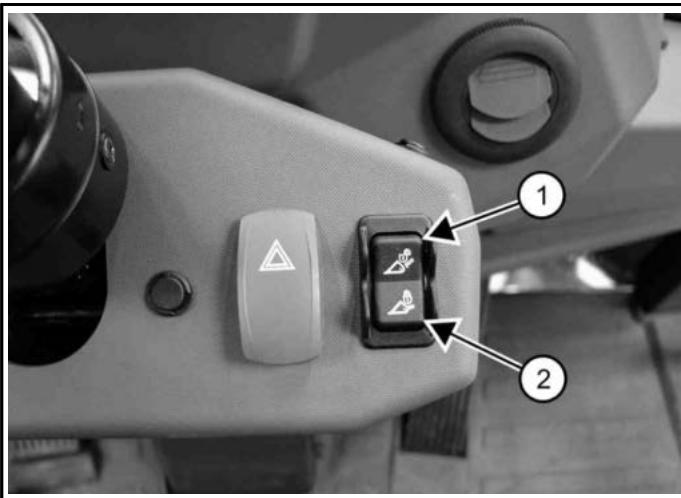
C207521d

REF.	Location	No. of Fittings
16	Pivot Point Quick-Tach / Rocker Arm (Both Sides)	2
17	Pivot Point Quick-Tach / Lift Arm (Both Sides)	2

QUICK-TACH

Inspecting And Maintaining The Quick-Tach

Figure 214



1. Press the top of the switch (Item 1) [Figure 214] to unlock the Quick-Tach.
2. Press the bottom of the switch (Item 2) [Figure 214] to lock the Quick-Tach.

⚠ WARNING

CRUSHING HAZARD

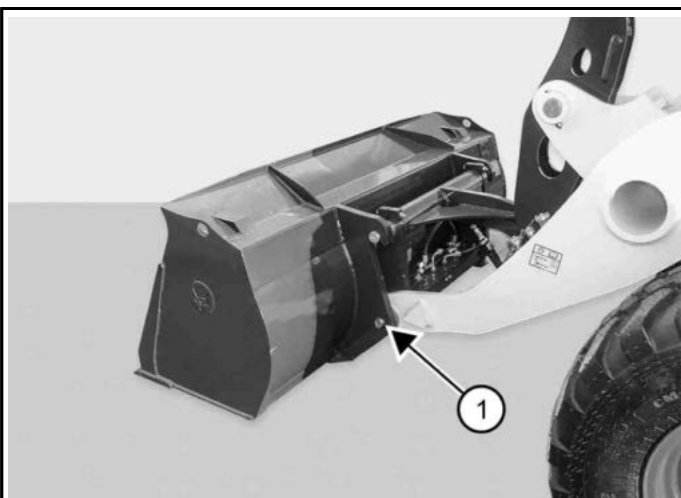
Failure to secure Bob-Tach wedges can allow attachment to come off and cause serious injury or death.

Both wedges must extend through the holes in the attachment mounting frame. Lever(s) must be fully down and locked. ◀

W2102

NOTE: The Quick-Tach will lock automatically after ten seconds. If the Quick-Tach does not lock automatically, contact your Bobcat dealer.

Figure 215



C207618a

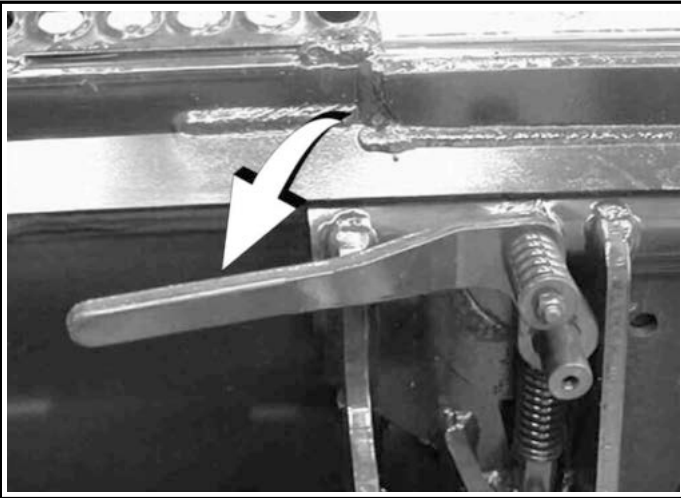
3. When the Quick-Tach is unlocked, the pins (Item 1) [Figure 214] should be retracted. When the Quick-Tach is locked, the pins should be extended.
4. Inspect the mounting frame on the attachment and Quick-Tach linkages for excessive wear or damage. Replace any parts that are damaged, bent, or missing. Keep all fasteners tight.
5. Look for cracked welds.

Contact your Bobcat dealer for repair or replacement parts.
6. Lubricate the pins.
(See Service Schedule on Page 88) and
(See Machine Lubrication on Page 127)

QUICK-TACH TO BOB-TACH ADAPTER

Inspecting And Maintaining The Quick-Tach To Bob-Tach Adapter

Figure 216



P8513C

1. Move the Bob-Tach attachment mounting system levers down to engage the wedges [Figure 216].

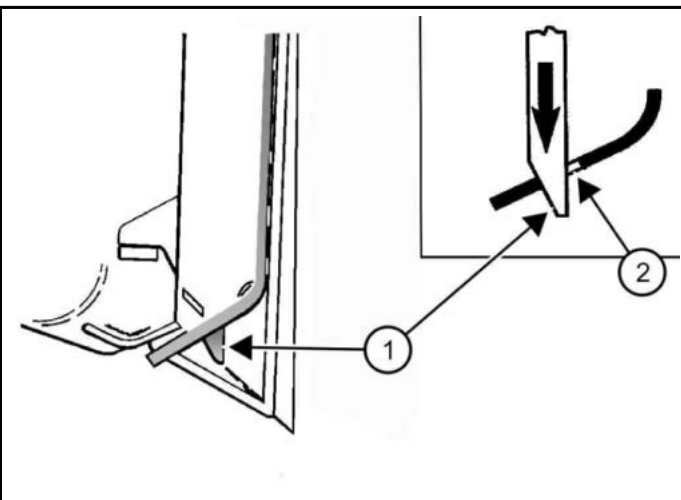
The levers and wedges must move freely.

⚠ WARNING

CRUSHING HAZARD
 Failure to secure Bob-Tach wedges can allow attachment to come off and cause serious injury or death.
 Both wedges must extend through the holes in the attachment mounting frame. Lever(s) must be fully down and locked. ◀

W-2102

Figure 217

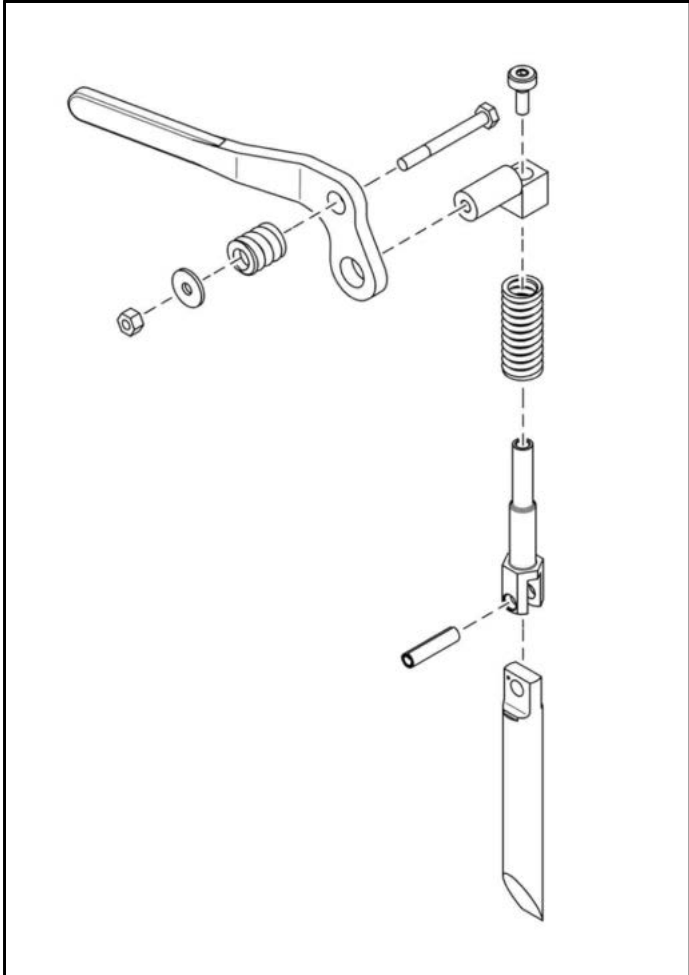


NA345b

- The wedges (Item 1) [Figure 217] must extend through the holes in the attachment mounting frame.

- The spring loaded wedges (Item 1) must contact the lower edge of the holes in the attachment mounting frame (Item 2) [Figure 217].
- If the wedges do not contact the lower edge of the holes [Figure 217], the attachment will be loose and can come off the Bob-Tach attachment mounting system.

Figure 218



2. Inspect the mounting frame on the attachment and Bob-Tach attachment mounting system, linkages, and wedges for excessive wear or damage [Figure 218].
3. Replace any parts that are damaged, bent, or missing.
4. Keep all fasteners tight.
5. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.
6. Lubricate the wedges.

MACHINE STORAGE AND RETURN TO SERVICE

Extended Storage Procedure

Sometimes it may be necessary to store your machine for an extended period of time. Below is a list of items to perform before storage.

- Thoroughly clean the machine including the engine compartment.
- Lubricate the machine.
- Replace worn or damaged parts.
- Park the machine in a dry protected shelter.
- Lower the lift arms all the way and put the bucket flat on the ground.
- Put blocks under the frame to remove weight from the tyres.
- Put grease on any exposed cylinder rods.
- Put fuel stabiliser in the fuel tank and run the engine a few minutes to circulate the stabiliser to the pump and fuel injectors.
- Remove grease from exposed cylinder rods.
- Check all belt tensions.
- Be sure all shields and guards are in place.
- Lubricate the machine.
- Check tyre inflation and remove blocks from under frame.
- Remove cover from exhaust pipe opening.
- Start the engine and let run for a few minutes while observing the instrument panels and systems for correct operation.
- Operate machine, check for correct function.
- Stop the engine and check for leaks. Repair as needed.

NOTE: If biodiesel blend fuel has been used, perform the following:

- Drain the fuel tank, refill with 100% petroleum diesel fuel, add fuel stabiliser and run the engine for at least 30 minutes.
- Drain and flush the cooling system. Refill with premixed coolant.
- Replace all fluids and filters (engine, hydraulic / hydrostatic).
- Replace air cleaner, heater, and air conditioning filters.
- Put all controls in NEUTRAL position.
- Remove the battery. Be sure the electrolyte level is correct then charge the battery. Store it in a cool dry place above freezing temperatures and charge it periodically during storage.
- Cover the exhaust pipe opening.
- Tag the machine to indicate that it is in storage condition.

Returning The Machine To Service

After the Bobcat® machine has been in storage it is necessary to follow a list of items to return the machine to service:

- Check the engine and hydraulic oil levels; check coolant level.
- Install a fully charged battery.

NAVIGATION (STANDARD DISPLAY)

Navigation Bar

Figure 219



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 219] to open the navigation bar.
2. The navigation bar contains icons that are used to take you to the following screens:
 - **GAUGES** - Home screen
 - **CAMERA** - Rear view camera screen
 - **VITALS** - (See Vitals (Standard Display) on Page 133)
 - **SERVICE** - (See Service (Standard Display) on Page 134)
 - **SETTINGS** - (See Settings (Standard Display) on Page 135)

Viewing Active Shortcuts

Figure 220



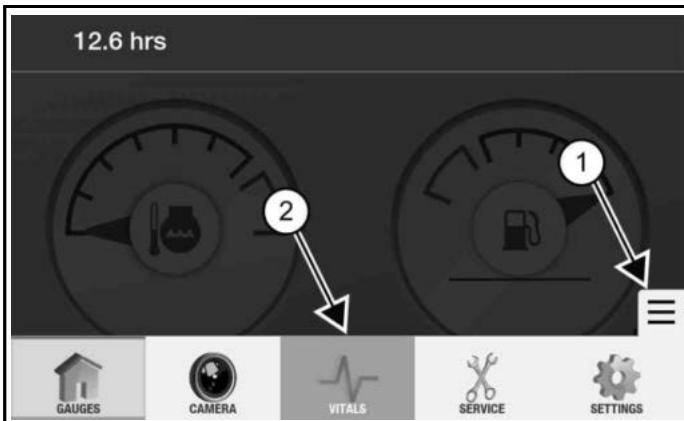
- The following icons can appear in the navigation handle position [Figure 220]. Selecting the icon will take you directly to the indicated screen.

ICON	DESC.	FUNCTION
	Navigation Handle	Opens and closes the navigation bar (See Navigation Bar on Page 132)
	Service Due	Opens the service screen (See Record A Service on Page 134)
	Software Update	Opens the software screen (See Software on Page 139)
	Machine Derate	Opens the machine performance screen (See Vital Detail And Machine Performance on Page 133)
	Warning	Opens the service codes screen (See View Service Codes on Page 134)
	Diesel Particulate Filter	Opens the DPF management screen (See DPF Description on Page 45)

VITALS (STANDARD DISPLAY)

Vital Detail And Machine Performance

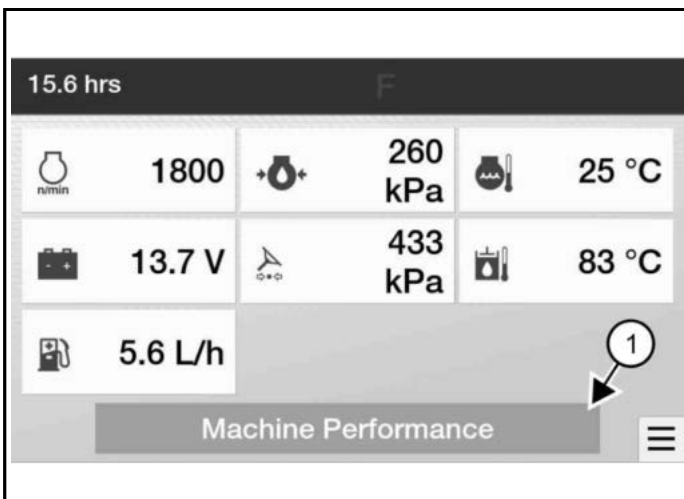
Figure 221



NA3704A

1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 221].
2. Select [VITALS] (Item 2) [Figure 221].

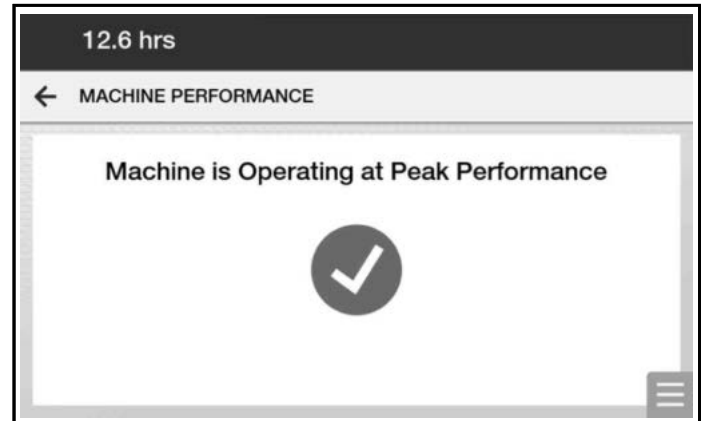
Figure 222



EM11196a

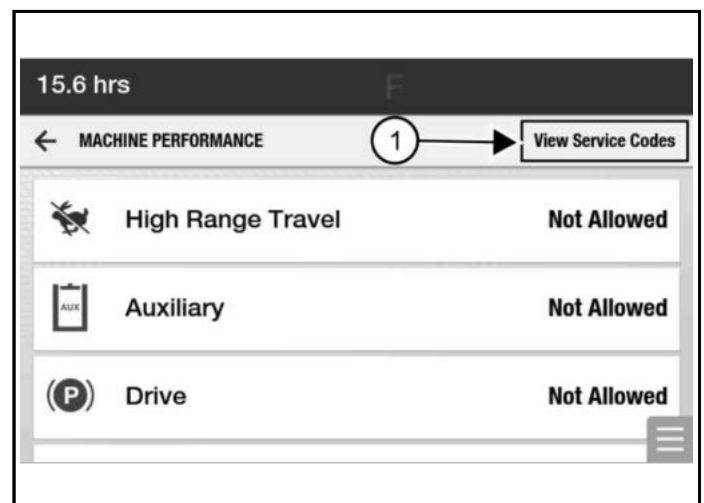
3. The following vitals can be viewed in a digital format [Figure 222]:
 - Engine Speed (RPM)
 - Engine Oil Pressure
 - Engine Coolant Temperature
 - System Voltage
 - Hydraulic Steering Pressure
 - Hydraulic Fluid Temperature
 - Fuel Usage Per Hour

Figure 223



NA3702

Figure 224



EM11194a

4. Select [MACHINE PERFORMANCE] (Item 1) [Figure 222] to view limitations or restrictions that prevent machine damage.

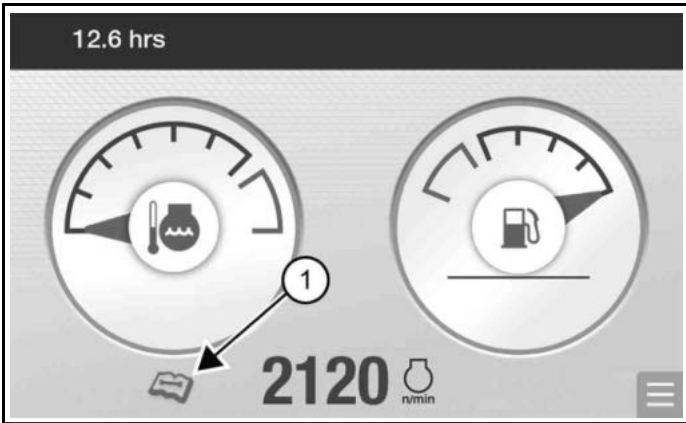
Examples of **MACHINE PERFORMANCE** screens are shown in [Figure 223] and [Figure 224]. Associated service codes may also be listed.

5. Select [VIEW SERVICE CODES] (Item 1) [Figure 224] to take you directly to the **SERVICE CODES** screen.

SERVICE (STANDARD DISPLAY)

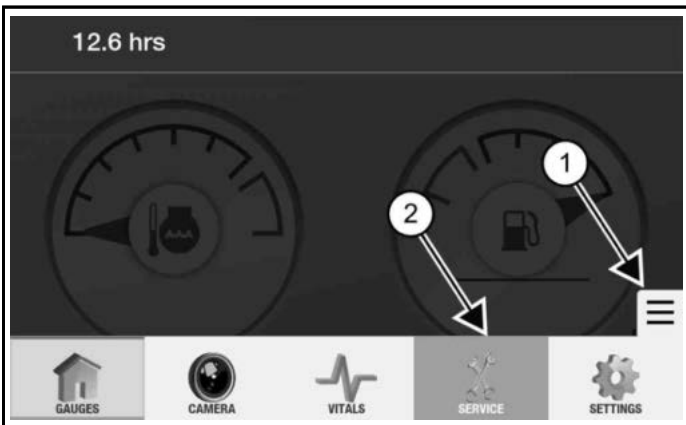
Record A Service

Figure 225



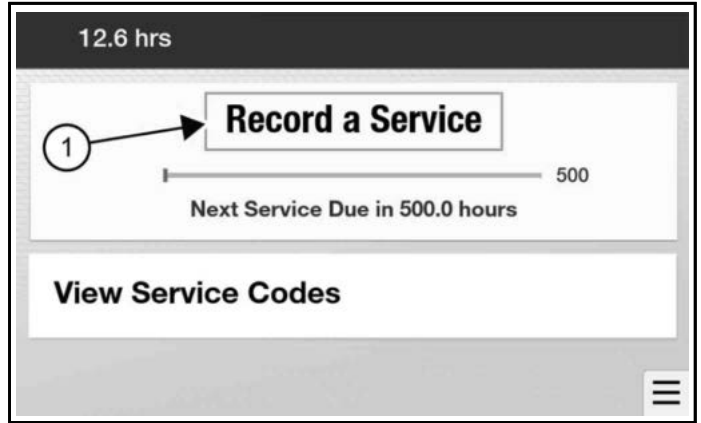
The service schedule information is based off the machine service schedule. The display will notify the operator 10 hours prior to the next service due and continue until the service is completed (Item 1) [Figure 225].

Figure 226



1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 226].
2. Select [SERVICE] (Item 2) [Figure 226].

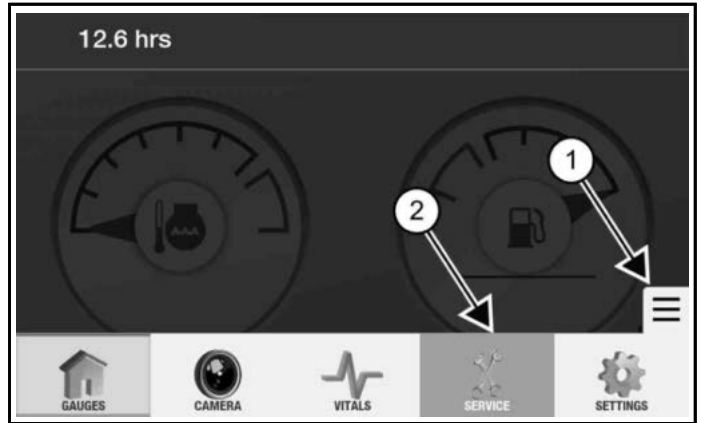
Figure 227



3. Select [RECORD A SERVICE] (Item 1) [Figure 227] to record the service as completed.

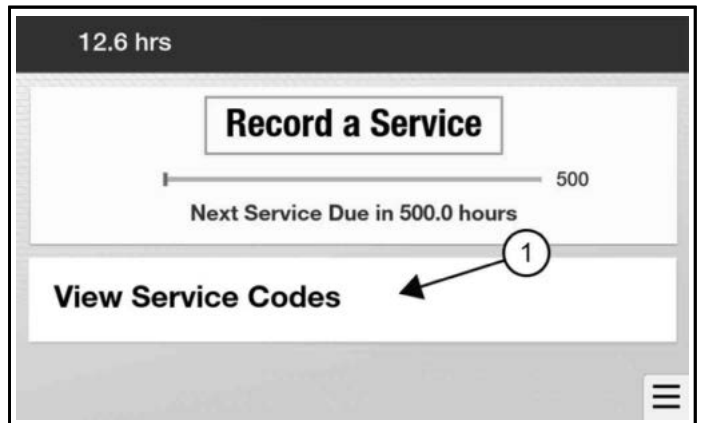
View Service Codes

Figure 228



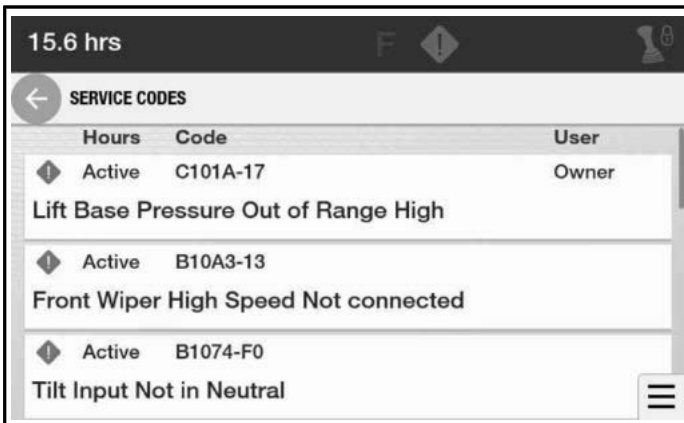
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 228].
2. Select [SERVICE] (Item 2) [Figure 228].

Figure 229



3. Select **[VIEW SERVICE CODES]** (Item 1) [Figure 229].

Figure 230



4. Scroll down if necessary to see all service codes [Figure 230].

SETTINGS (STANDARD DISPLAY)

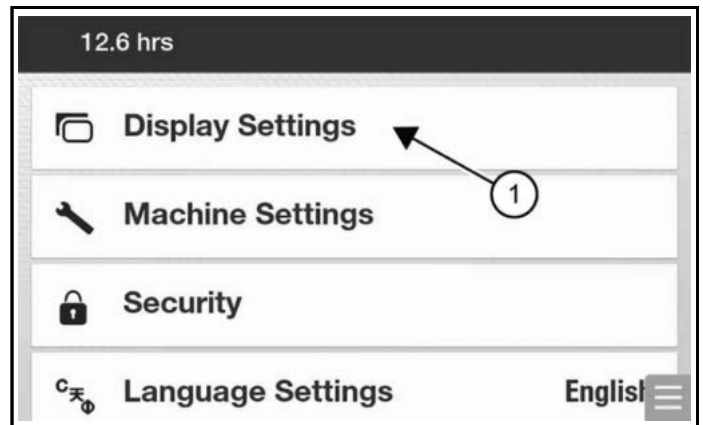
Display Settings

Figure 231



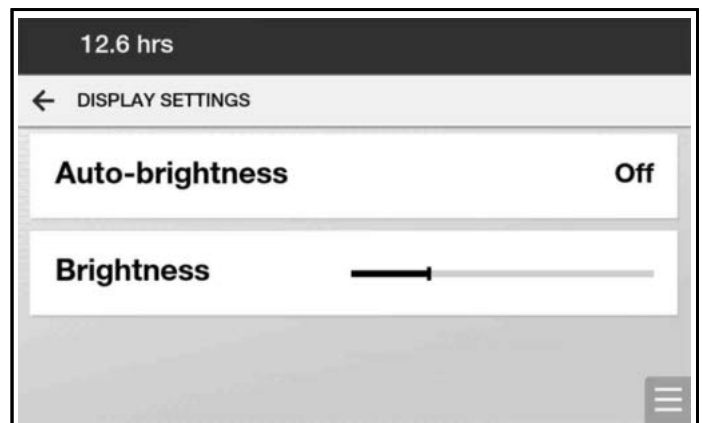
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 231].
2. Select **[SETTINGS]** (Item 2) [Figure 231].

Figure 232



3. Select **[DISPLAY SETTINGS]** (Item 1) [Figure 232].

Figure 233



4. The following display settings are available [Figure 233]:

- Auto brightness on or off
- Screen brightness adjustment

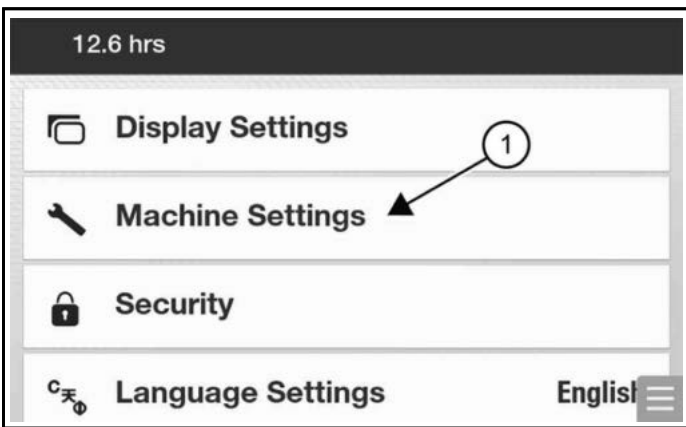
Machine Settings

Figure 234



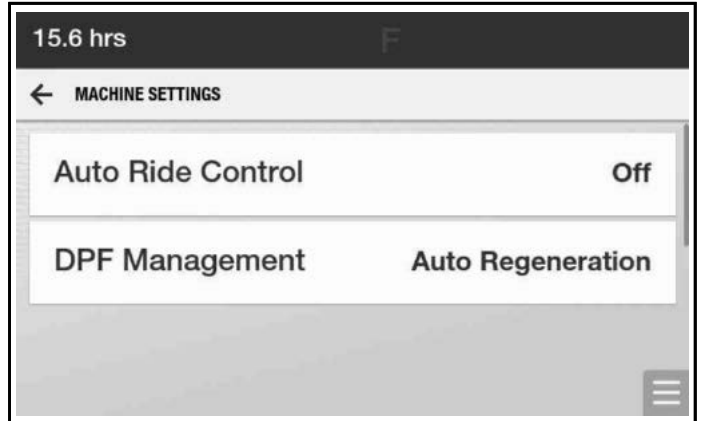
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 234].
2. Select [SETTINGS] (Item 2) [Figure 234].

Figure 235



3. Select [MACHINE SETTINGS] (Item 1) [Figure 235].

Figure 236

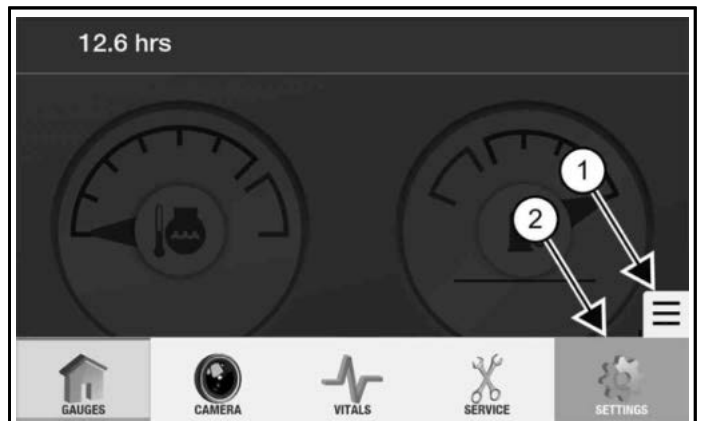


4. The following machine settings may be available depending on machine configuration [Figure 236]:

- Auto Ride Control
- DPF Management

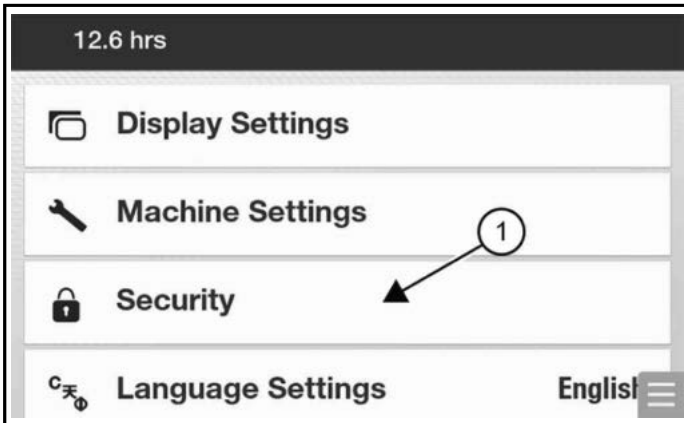
Security Settings

Figure 237



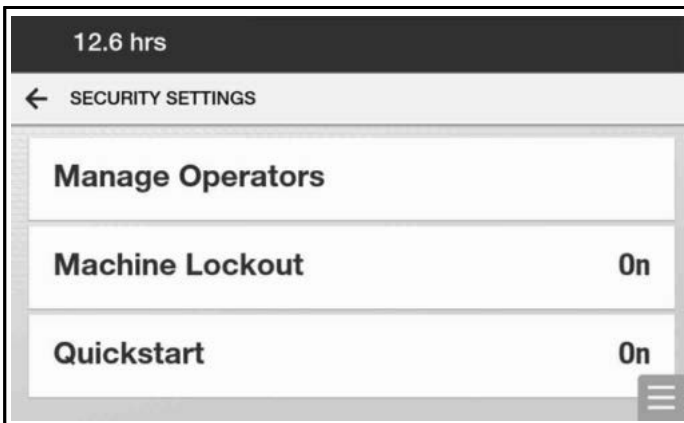
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 237].
2. Select [SETTINGS] (Item 2) [Figure 237].

Figure 238



3. Select [SECURITY] (Item 1) [Figure 238].

Figure 239



4. The following security settings are available [Figure 239]:
- Manage Operators (See Security Settings (Manage Operators) on Page 137)
 - Machine Lockout - When on, requires password to use machine
 - Quick Start - When on, allows the machine to be started before the display finishes booting up

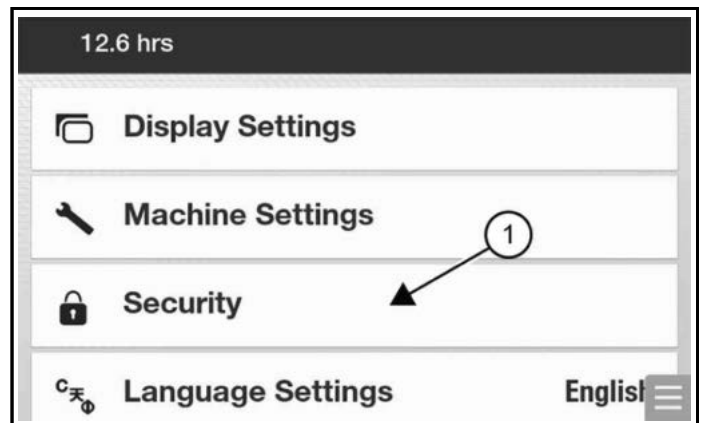
Security Settings (Manage Operators)

Figure 240



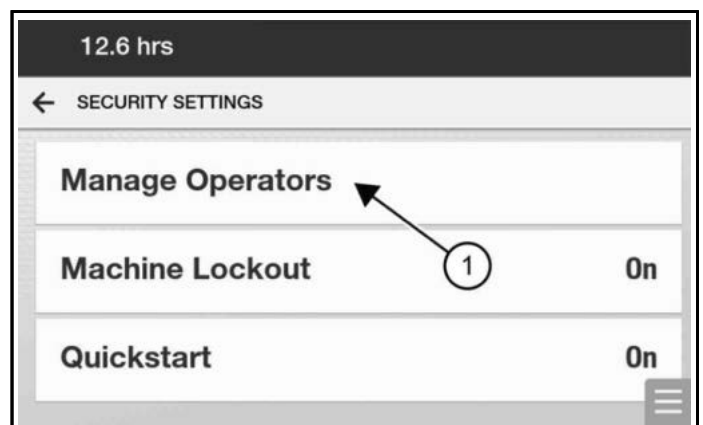
1. Select the [NAVIGATION HANDLE] icon (Item 1) [Figure 240].
2. Select [SETTINGS] (Item 2) [Figure 240].

Figure 241



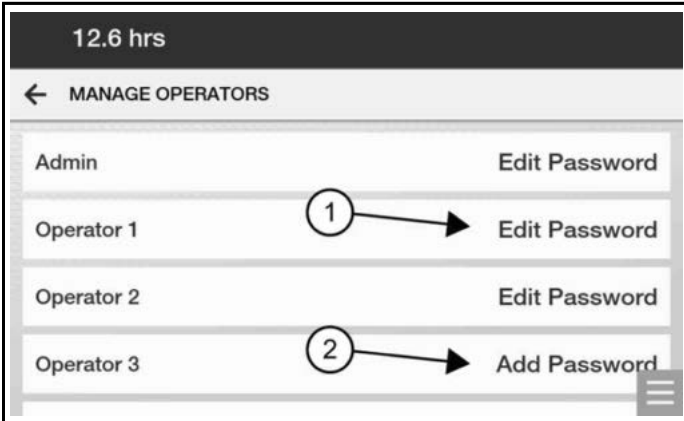
3. Select [SECURITY] (Item 1) [Figure 241].

Figure 242



4. Select [MANAGE OPERATORS] (Item 1) [Figure 242].

Figure 243



5. Select **[ADD PASSWORD]** (Item 2) [Figure 243] to enter a new operator.
A maximum of four operators can be assigned.
6. Select **[EDIT PASSWORD]** (Item 1) [Figure 243] to change a password.

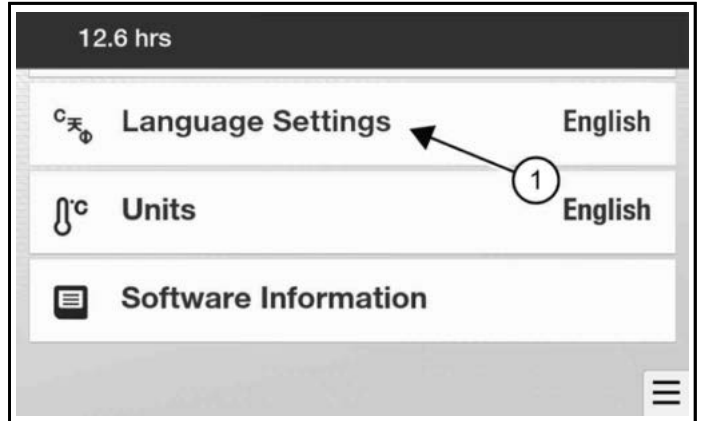
Language Settings

Figure 244



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 244].
2. Select **[SETTINGS]** (Item 2) [Figure 244].

Figure 245



3. Select **[LANGUAGE SETTINGS]** (Item 1) [Figure 245].

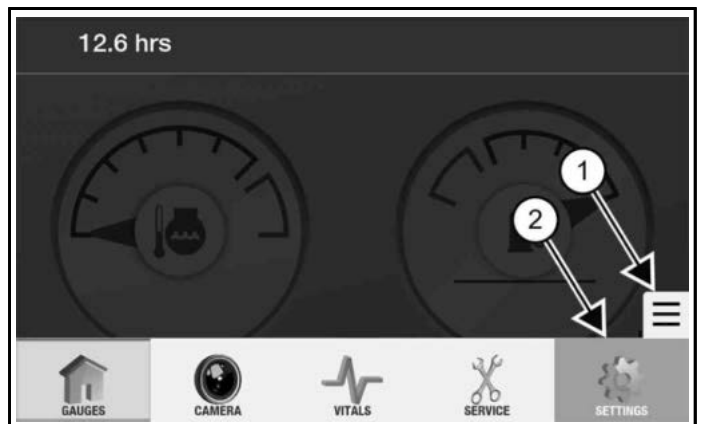
Figure 246



4. Scroll up or down and select the desired language [Figure 246]. The selected language will take effect immediately.

Units

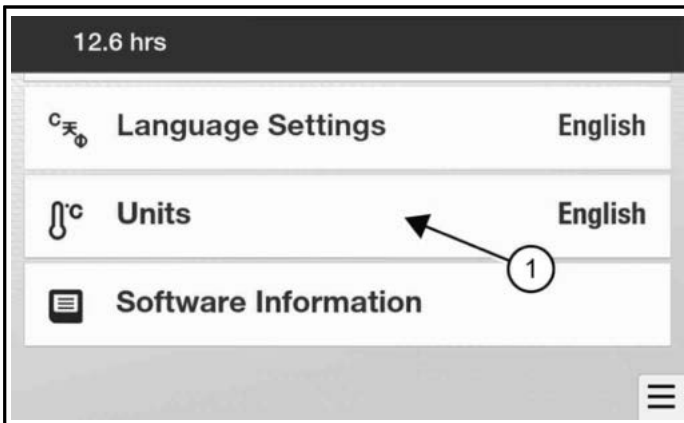
Figure 247



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 247].

2. Select **[SETTINGS]** (Item 2) [Figure 247] [Figure 247].

Figure 248



3. Scroll down and select **[UNITS]** (Item 1) [Figure 248] to toggle between English and Metric.

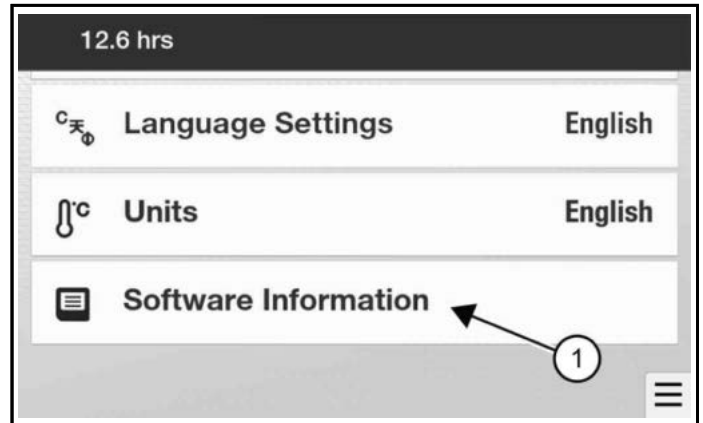
Software

Figure 249



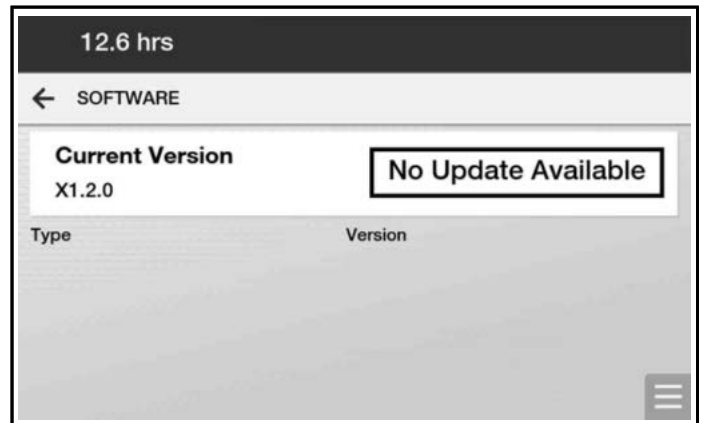
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 249].
2. Select **[SETTINGS]** (Item 2) [Figure 249].

Figure 250



3. Scroll down and select **[SOFTWARE INFORMATION]** (Item 1) [Figure 250].

Figure 251



4. Your machine's current software version is shown [Figure 251]. Software updates can only be performed by your dealer.

DIAGNOSTIC SERVICE CODES

Service Codes List

CODE	DESCRIPTION
"B1001-96"	Key Switch Failure
"B1005-00"	Key Switch Multiple
"B1034-11"	Rear Work Light Short to Ground
"B1034-12"	Rear Work Light Short to Battery
"B1034-13"	Rear Work Light Not Connected
"B1037-11"	Stop Light Short to Ground
"B1037-15"	Stop Light Error On
"B103D-11"	Beacon Short to Ground
"B103D-12"	Beacon Short to Battery
"B103D-13"	Beacon Not Connected
"B1040-12"	Buzzer Error On
"B1040-14"	Buzzer Error Off
"B1041-12"	Backup Alarm Error Off
"B1041-14"	Backup Alarm Error On
"B104A-11"	Seat Heater Short to Ground
"B104A-12"	Seat Heater Short to Battery
"B104A-13"	Seat Heater Open Circuit
"B1080-09"	Operator Presence Component Failure
"B1080-16"	Operator Presence Circuit Voltage Below Threshold
"B1080-17"	Operator Presence Circuit Voltage Above Threshold
"B10A2-11"	Front Wiper Short to Ground
"B10A2-12"	Front Wiper Short to Battery
"B10A2-13"	Front Wiper Not connected
"B10A3-11"	Front Wiper High Speed Short to Ground
"B10A3-12"	Front Wiper High Speed Short to Battery
"B10A3-13"	Front Wiper High Speed Not connected
"B10A5-11"	Rear Wiper Short to Ground
"B10A5-12"	Rear Wiper Short to Battery
"B10A5-13"	Rear Wiper Not Connected
"B10A7-11"	Front Washer Short to Ground

CODE	DESCRIPTION
"B10A7-12"	Front Washer Short to Battery
"B10A7-13"	Front Washer Not Connected
"B10A8-11"	Rear Washer Short to Ground
"B10A8-12"	Rear Washer Short to Battery
"B10A8-13"	Rear Washer Not Connected
"B10C0-00"	Camera Not Connected
"B10C1-00"	Camera Software Error
"B10F0-11"	Rear Defog Short to Ground
"B10F0-12"	Rear Defog Short to Battery
"B10F0-13"	Rear Defog Circuit Open
"B1102-9E"	Power Exchange Lock Switch Stuck On
"B1103-9E"	Power Exchange Unlock Switch Stuck On
"B1120-F0"	Joystick Right Roller Not in Neutral
"B1150-F0"	Travel Direction Switch Not in Neutral
"B1151-00"	Travel Direction Switch Multiple
"B1190-11"	Front Work Light Short to Ground
"B1190-12"	Front Work Light Short to Battery
"B1190-13"	Front Work Light Not Connected
"C1001-16"	Sensor Supply Out of Range Low
"C1001-17"	Sensor Supply Out of Range High
"C1003-16"	Sensor Supply Out of Range Low
"C1003-17"	Sensor Supply Out of Range High
"C1004-16"	Drive Controller Sensor Supply Out of Range Low
"C1004-17"	Drive Controller Sensor Supply Out of Range High
"C101A-16"	Lift Base Pressure Out of Range Low
"C101A-17"	Lift Base Pressure Out of Range High
"C1020-11"	Front Base Solenoid Short to Ground
"C1020-12"	Front Base Solenoid Short to Battery
"C1020-13"	Front Base Solenoid Open Circuit
"C1020-19"	Front Base Solenoid Overcurrent
"C1021-11"	Front Rod Solenoid Short to Ground
"C1021-12"	Front Rod Solenoid Short to Battery
"C1021-13"	Front Rod Solenoid Open Circuit

CODE	DESCRIPTION
"C1021-19"	Front Rod Solenoid Overcurrent
"C102A-11"	Hydraulic Fan Short to Ground
"C102A-12"	Hydraulic Fan Short to Battery
"C102A-13"	Hydraulic Fan Open Circuit
"C102A-19"	Hydraulic Fan Overcurrent
"C1039-11"	High Flow Solenoid Short to Ground
"C1039-12"	High Flow Solenoid Short to Battery
"C1039-13"	High Flow Solenoid Open Circuit
"C1043-11"	Lift Cylinder Base Short to Ground
"C1043-12"	Lift Cylinder Base Short to Battery
"C1043-13"	Lift Cylinder Base Open Circuit
"C1043-19"	Lift Cylinder Base Overcurrent
"C1044-11"	Lift Cylinder Rod Short to Ground
"C1044-12"	Lift Cylinder Rod Short to Battery
"C1044-13"	Lift Cylinder Rod Open Circuit
"C1044-19"	Lift Cylinder Rod Overcurrent
"C1048-11"	Tilt Cylinder Rod Short to Ground
"C1048-12"	Tilt Cylinder Rod Short to Battery
"C1048-13"	Tilt Cylinder Rod Open Circuit
"C1048-19"	Tilt Cylinder Rod Overcurrent
"C1049-11"	Tilt Cylinder Base Short to Ground
"C1049-12"	Tilt Cylinder Base Short to Battery
"C1049-13"	Tilt Cylinder Base Open Circuit
"C1049-19"	Tilt Cylinder Base Overcurrent
"C1050-11"	Switched Power Relay Short to Ground
"C1050-12"	Switched Power Relay Short to Battery
"C1050-13"	Switched Power Relay Open Circuit
"C1060-11"	Brake Short to Ground
"C1060-12"	Brake Short to Battery
"C1060-13"	Brake Open Circuit
"C1060-19"	Brake Solenoid Overcurrent
"C1090-00"	Hydraulic Filter Plugged
"C1091-12"	Hydraulic Main Filter Switch Error ON

CODE	DESCRIPTION
"C1099-FA"	Hydraulic Oil Temperature Too High
"C1099-FB"	Hydraulic Oil Temperature Extremely High
"C1099-FC"	Hydraulic Oil Temperature Performance Reduction
"C109A-16"	Hydraulic Oil Temperature Out of Range Low
"C109A-17"	Hydraulic Oil Temperature Out of Range High
"C10CA-77"	Swash Plate Commanded Position not Reachable
"C10CA-F0"	Swash Plate Not in Neutral
"C10CB-93"	Swash Plate Sensor Error
"C10CD-16"	Swash Plate Sensor Signal 1 Out of Range Low
"C10CD-17"	Swash Plate Sensor Signal 1 Out of Range High
"C10CE-16"	Swash Plate Sensor Signal 2 Out of Range Low
"C10CE-17"	Swash Plate Sensor Signal 2 Out of Range High
"C10D1-11"	Drive Pump Forward Short to Ground
"C10D1-12"	Drive Pump Forward Short to Battery
"C10D1-13"	Drive Pump Forward Open Circuit
"C10D1-19"	Drive Pump Forward Overcurrent
"C10D2-11"	Drive Pump reverse Short to Ground
"C10D2-12"	Drive Pump reverse Short to Battery
"C10D2-13"	Drive Pump reverse Open Circuit
"C10D2-19"	Drive Pump reverse Overcurrent
"C1110-11"	Ride Control Circuit Short to Ground
"C1110-15"	Ride Control Circuit Error On
"C1111-16"	Ride Control Feedback Circuit Out of Range Low
"C1111-17"	Ride Control Feedback Circuit Out of Range High
"C1130-11"	Hydraulic Motor Short to Ground
"C1130-12"	Hydraulic Motor Short to Battery
"C1130-13"	Hydraulic Motor Open Circuit
"C1130-19"	Hydraulic Motor Overcurrent
"C1131-FB"	Hydraulic Motor Speed Extremely High

CODE	DESCRIPTION
"C1132-13"	Hydraulic Motor Speed Sensor Not Connected
"C1132-16"	Hydraulic Motor Speed Sensor Circuit Out of Range Low
"C1132-17"	Hydraulic Motor Speed Sensor Circuit Out of Range High
"C1182-A2"	Alternator Voltage Low
"C1183-A3"	Alternator Voltage High
"C1192-00"	System Voltage Extremely Low
"C1193-00"	System Voltage Too Low
"C1195-00"	System Voltage High
"C1196-00"	System Voltage Extremely High
"C1200-11"	Power Exchange Unlock Short to Ground
"C1200-12"	Power Exchange Unlock Short to Battery
"C1200-13"	Power Exchange Unlock Open Circuit
"C1205-11"	Power Exchange Lock Short to Ground
"C1205-12"	Power Exchange Lock Short to Battery
"C1205-13"	Power Exchange Lock Open Circuit
"C1220-11"	Diff-Lock Short to Ground
"C1220-12"	Diff-Lock Short to Battery
"C1220-13"	Diff-Lock Open Circuit
"C1220-19"	Diff-Lock Overcurrent
"C1221-77"	Diff-Lock Sensor Commanded Position Not Reachable
"C1221-9E"	Diff-Lock Sensor Stuck On
"C1222-00"	Diff-Lock Unlock Requested
"C1223-00"	Diff-Lock Not Allowed
"C1250-F9"	Park Brake Pressure Low
"C1250-FA"	Park Brake Pressure High
"C1251-16"	Park Brake Pressure Sensor Circuit Out of Range Low
"C1251-17"	Park Brake Pressure Sensor Circuit Out of Range High
"C1260-F9"	Service Brake Pressure Low
"C1260-FA"	Service Brake Pressure High

CODE	DESCRIPTION
"C1260-FB"	Service Brake Pressure Extremely High
"C1261-16"	Service Brake Pressure Sensor Circuit Out of Range Low
"C1261-17"	Service Brake Pressure Sensor Circuit Out of Range High
"C1270-F9"	Steering Pressure Low
"C1271-16"	Steering Pressure Sensor Circuit Out of Range Low
"C1271-17"	Steering Pressure Sensor Circuit Out of Range High
"C1280-F8"	Reserve Brake Pressure Extremely Low
"C1280-F9"	Reserve Brake Pressure Low
"C1280-FA"	Reserve Brake Pressure High
"C1281-16"	Reserve Brake Pressure Sensor Circuit Out of Range Low
"C1281-17"	Reserve Brake Pressure Sensor Circuit Out of Range High
"C1300-16"	Inching Sensor Circuit Out of Range Low
"C1300-17"	Inching Sensor Circuit Out of Range High
"C1300-54"	Inching Pedal Sensor Missing Calibration
"P0225-16"	Throttle Pedal Sensor Out of Range Low
"P0225-17"	Throttle Pedal Sensor Out of Range High
"P0226-16"	Throttle Pedal Sensor Secondary Out of Range Low
"P0226-17"	Throttle Pedal Sensor Secondary Out of Range High
"P0227-93"	Throttle Pedal Failure
"P0460-16"	Fuel Level Sensor Out of Range Low
"P0460-17"	Fuel Level Sensor Problem
"P100C-11"	Crank Request Circuit Short to Ground
"P100C-12"	Crank Request Circuit Short to Battery
"P100C-13"	Crank Request Circuit Open
"P1061-97"	Air Filter Plugged
"P1062-00"	Air Filter Pressure Derate Level 1

CODE	DESCRIPTION
"P1063-00"	Air Filter Pressure Derate Level 2
"P1065-31"	Air Filter Switch Not Connected
"P1100-FA"	Engine Coolant Temperature High
"P1100-FB"	Engine Coolant Temperature Extremely High
"P1100-FC"	Engine Coolant Temperature Limited Performance
"P1110-FA"	Fuel Temperature High
"P1110-FB"	Fuel Temperature Extremely High
"P1110-FC"	Fuel Temperature Limited Performance
"P1115-FA"	Air Intake Temperature Too High
"P1115-FB"	Air Intake Temperature Extremely High
"P1115-FC"	Air Intake Temperature Limited Performance
"P1120-00"	Fuel Filter Plugged
"P1121-00"	Fuel Filter Derate Level 1
"P1122-00"	Fuel Filter Derate Level 2
"P1125-00"	Fuel Filter Extremely Plugged
"P1130-F8"	Fuel Filter Inlet Pressure Extremely Low
"P1130-F9"	Fuel Filter Inlet Pressure Low
"P1131-16"	Fuel Pressure Out of Range Low
"P1131-17"	Fuel Pressure Out of Range High
"P1134-11"	Fuel Lift Pump Short to Ground
"P1134-15"	Fuel Lift Pump Error On
"P1134-63"	Fuel Lift Pump Protection Time-Out
"P113B-7B"	Fuel Level Low
"U1010-08"	Main Keypad No Communication
"U1012-08"	Cab Keypad No Communication
"U1013-08"	Accessory (ACD) Keypad No Communication
"U1015-62"	Throttle Encoder Signal Compare Failure
"U1040-00"	Hour Meter Changed
"U1050-00"	Hub Controller Interrupted Power Failure
"U1053-00"	Drive Controller Interrupted Power Failure

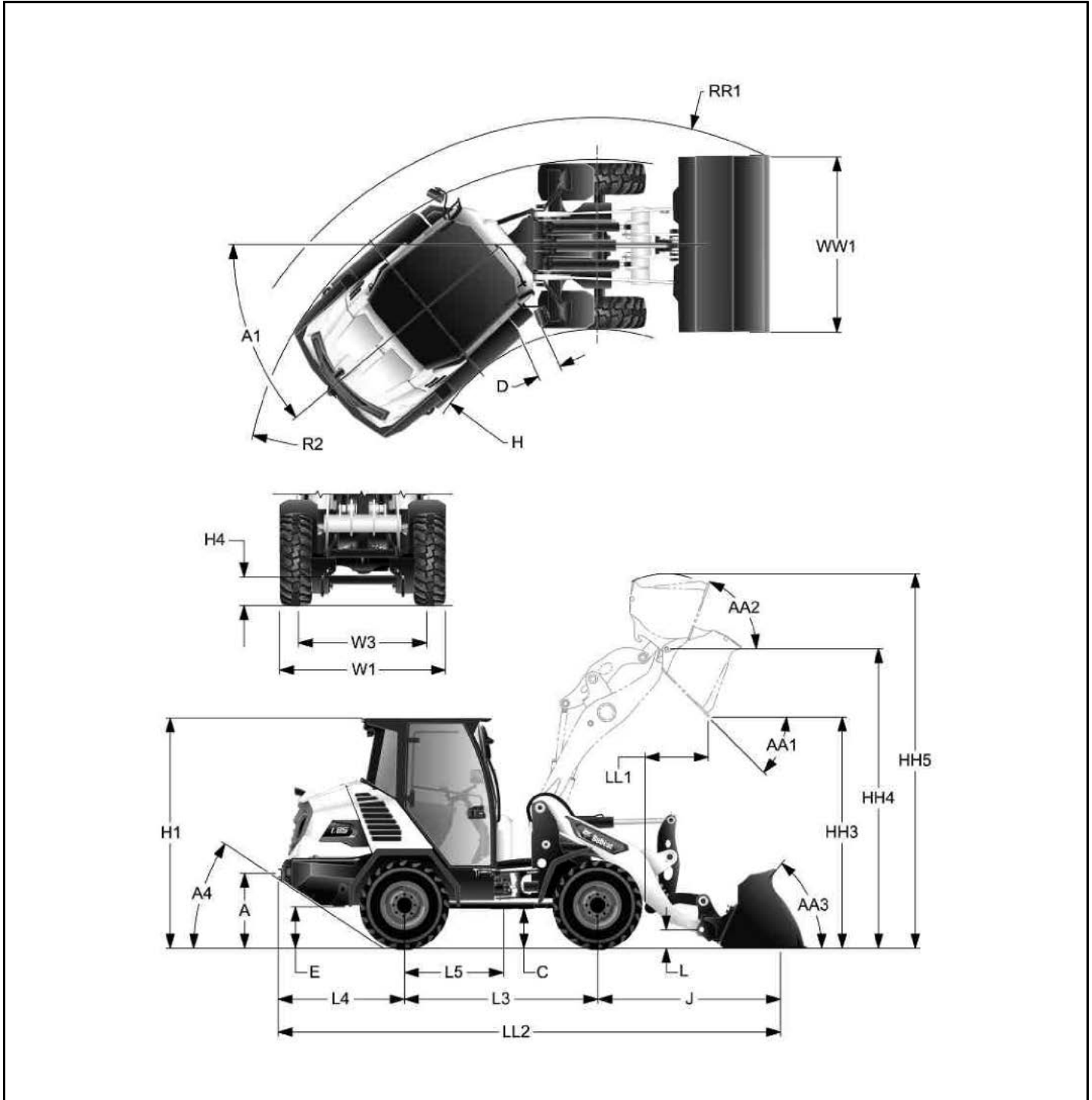
CODE	DESCRIPTION
"U1054-00"	Workgroup Controller Interrupted Power Failure
"U1070-00"	Hub Controller Programmed
"U1073-00"	Drive Controller Programmed
"U1074-00"	Workgroup Controller Programmed
"U1090-51"	Hub Controller Not Programmed
"U1090-57"	Hub Controller Software Version Error
"U1091-08"	Display No Communication
"U1091-51"	Display Not Programmed
"U1091-FD"	Display Shutdown
"U1094-08"	Drive Controller No Communication
"U1094-51"	Drive Controller Not Programmed
"U1094-57"	Drive Controller Software Version Error
"U1094-A2"	Drive Controller Voltage Low
"U1094-A3"	Drive Controller Voltage Out of Range High
"U1095-08"	Workgroup Controller No Communication
"U1095-51"	Workgroup Controller Not Programmed
"U1095-57"	Workgroup Controller Software Version Error
"U1095-A2"	Workgroup Controller System Voltage Low
"U1095-A3"	Workgroup Controller System Voltage High
"U1096-08"	ECU No Communication
"U1096-56"	ECU Failure
"U10C0-08"	Right Joystick Message Failure
"U1180-00"	Display Controller Communication Error
"U1181-00"	Display Controller Communication Error
"U1182-00"	Display Controller Communication Error
"U1183-00"	Main Controller No Communication
"U1184-00"	Jog Shuttle No Communication

MACHINE SPECIFICATIONS

Machine Dimensions

Machine Dimensions – Bucket

Figure 252



NA20152

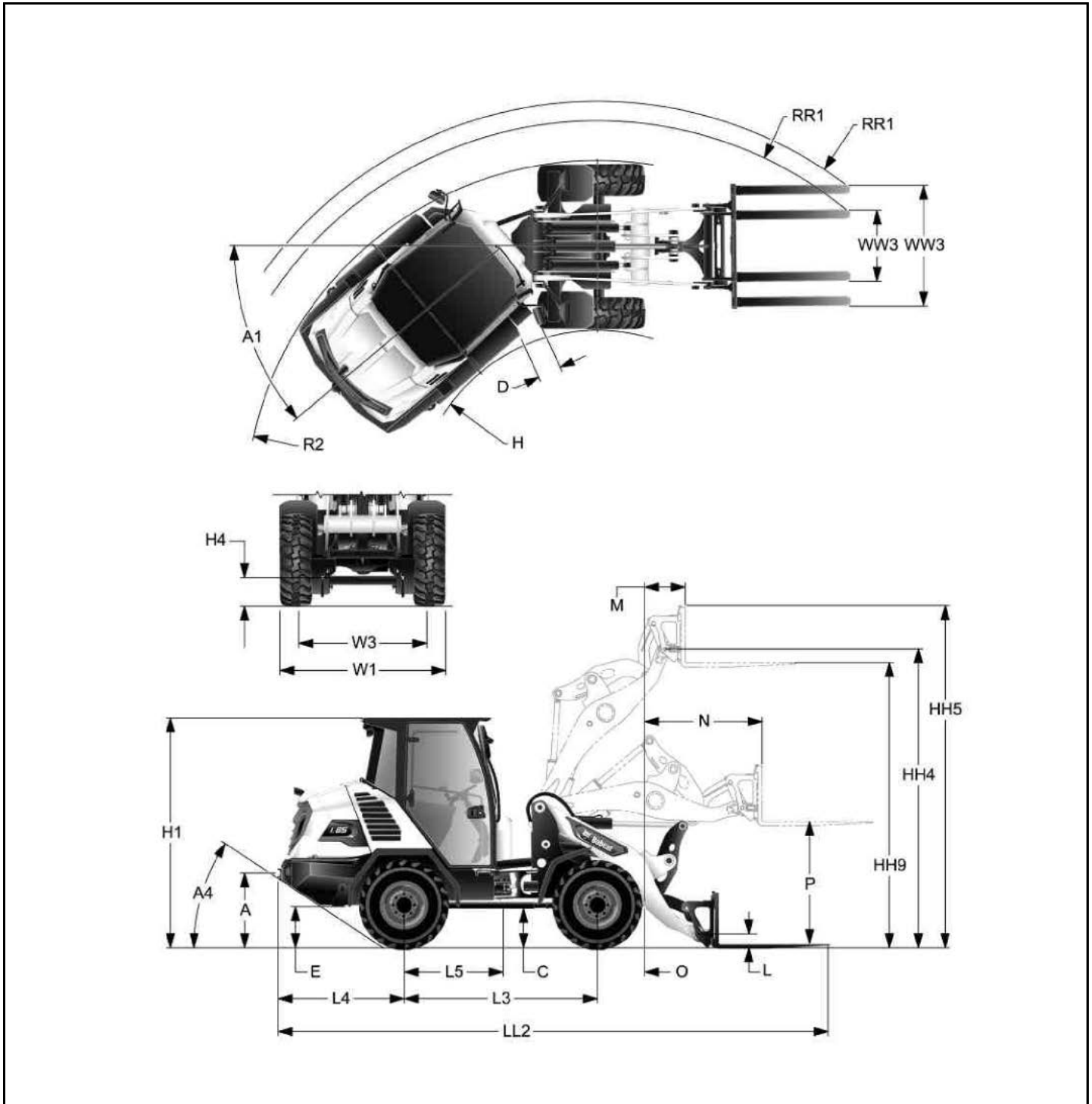
Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operation conditions, and other factors.

Where applicable, specifications conform to SAE or ISO standards and are subject to change without notice.

REF	DESCRIPTION	VALUE – WITH STANDARD TYRE
HH5	Overall Operating Height - Fully Raised	4065,1 mm (160.04 in)
HH4	Height To Hinge Pin - Fully Raised	3250,0 mm (127.95 in)
H1	Overall Height	2497,7 mm (98.33 in)
LL2	Overall Length	5452,7 mm (214.67 in)
AA1	Dump Angle	45°
HH3	Dump Height	2507,5 mm (98.72 in)
LL1	Reach - Fully Raised	686,0 mm (27.01 in)
AA3	Maximum Rollback @ Ground	50°
AA2	Maximum Rollback - Fully Raised	70°
L3	Wheelbase	2100,0 mm (82.68 in)
W1	Overall Width	1800,0 mm (70.87 in)
WW1	Bucket Width	1900,0 mm (74.80 in)
H4	Ground Clearance	312,4 mm (12.30 in)
W3	Tread	1393,0 mm (54.84 in)
A4	Angle Of Departure	33.4°
L4	Rear Overhang	1371,0 mm (53.98 in)
L5	Rear Axle To Pivot Of Articulated Steering	1075,0 mm (42.32 in)
RR1	Turning Radius - Carry Position - Bucket	4280,4 mm (168.52 in)
R2	Clearance Radius	3829,8 mm (150.78 in)
A1	Articulation Angle	40°
A	Hitch Receiver Height	812,0 mm (31.97 in)
C	Ground Clearance @ Cardan Shaft	427,0 mm (16.81 in)
D	Mudguard @ Max Articulation	257,3 mm (10.13 in)
E	Curbability	447,0 mm (17.60 in)
H	Inner Turning Radius	1985,6 mm (78.17 in)
J	Front Axle To Bucket Edge (Bucket At Ground)	1981,7 mm (78.02 in)
L	Height To Hinge Pin - Bucket At Ground	200,0 mm (7.87 in)

Machine Dimensions – Pallet Fork

Figure 253



NA20153a

Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operation conditions, and other factors.

Where applicable, specifications conform to SAE or ISO standards and are subject to change without notice.

REF	DESCRIPTION	VALUE – WITH STANDARD TYRE
HH5	Overall Operating Height - Fully Raised	4065,1 mm (160.04 in)
HH4	Height To Hinge Pin - Fully Raised	3250,0 mm (127.95 in)
H1	Overall Height	2497,7 mm (98.33 in)
LL2	Overall Length	5979,4 mm (235.41 in)
L3	Wheelbase	2100,0 mm (82.68 in)
W1	Overall Width	1800,0 mm (70.87 in)
H4	Ground Clearance	312,4 mm (12.30 in)
W3	Tread	1393,0 mm (54.84 in)
A4	Angle Of Departure	33.4°
L4	Rear Overhang	1371,0 mm (53.98 in)
L5	Rear Axle To Pivot Of Articulated Steering	1075,0 mm (42.32 in)
RR1	Turning Radius - Carry Position - Forks - Wide	4472,6 mm (176.09 in)
	Turning Radius - Carry Position - Forks - Narrow	4262,0 mm (167.79 in)
R2	Clearance Radius	3829,8 mm (150.78 in)
A1	Articulation Angle	40°
HH9	Maximum Lift Height	3100,0 mm (122.05 in)
WW3	Tines Width - Wide	1313,6 mm (51.72 in)
	Tines Width - Narrow	773,6 mm (30.46 in)
A	Hitch Receiver Height	812,0 mm (31.97 in)
C	Ground Clearance @ Cardan Shaft	427,0 mm (16.81 in)
D	Mudguard @ Max Articulation	257,3 mm (10.13 in)
E	Curbability	447,0 mm (17.60 in)
H	Inner Turning Radius	1985,6 mm (78.17 in)
L	Height To Hinge Pin - Pallet Fork At Ground	150,0 mm (5.91 in)
M	Pallet Fork - Reach At Max. Height	441,9 mm (17.40 in)
N	Pallet Fork - Max. Reach	1277,7 mm (50.30 in)
O	Pallet Fork - Reach At Ground Level	795,9 mm (31.33 in)
P	Pallet Fork - Height Of Forks At Max. Reach	1374,0 mm (54.09 in)

Performance Specifications

	Bucket		Pallet Fork	
	Straight	Articulated	Straight	Articulated
Tipping Capacity - ISO 14397-2	3801 kg (8380 lbs)	3151 kg (6948 lbs)	2910 kg (6416 lbs)	2451 kg (5404 lbs)
Rated Operating Capacity (ROC) - ISO 14397-1	1901 kg (4190 lbs)	1576 kg (3474 lbs)	2328 kg (5132 lbs)	1961 kg (4324 lbs)

Bucket Capacity - ISO 7546	0,83 m ³ (29.3 ft ³)
Operating Mass - ISO 6016	5091 kg (11224 lbs)
Lift Capacity To Maximum Height - Bucket - ISO 14397-2	2312 kg (5097 lbs)
Breakout Force - Boom - ISO 14397-2	3770 kg (8311 lbs)
Breakout Force - Bucket - ISO 14397-2	4978 kg (10974 lbs)
Travel Speed	
Low Range	8 km/h (5.0 mph) [A]
High Range	18 km/h (11.2 mph) or 28 km/h (17.4 mph) [B]

[A] Adjustable up to 8 km/h (5.0 mph) in advanced attachment control mode

[B] Depends on speed configuration of the machine

Weight Specifications

Total Weight Unladen [A]	4809 kg (10602 lb)	
Front Axle Weight Unladen [A]	1241 kg (2736 lb)	
Rear Axle Weight Unladen [A]	3568 kg (7866 lb)	
	Bucket	Pallet Fork
Total Weight	5091 kg (11224 lb)	5022 kg (11072 lb)
Front Axle Weight	1795 kg (3957 lb)	1678 kg (3699 lb)
Rear Axle Weight	3297 kg (7269 lb)	3344 kg (7372 lb)

[A] Unladen is defined as a machine without attachment, at full fluid capacity and with an operator weighing 75 kg (165 lbs).

Engine Specifications

Make / Model	2.4L Bobcat Engine V2 Stage V
Fuel	Ultra Low Sulfur Diesel
Cooling	53% Propylene Glycol / 47% Water Mixture
Horsepower	
Gross Per ISO 14396	50.7 kW (68.0 hp) / 2600 rpm
Gross Per SAE J1995	51.0 kW (68.3 hp) / 2600 rpm
Torque	
Gross Per ISO 14396	252.0 N•m (185.9 ft-lb) / 1800 rpm
Gross Per SAE J1995	253.3 N•m (186.8 ft-lb) / 1800 rpm
Low Idle Rpm	1000 +/- 25
High Idle Rpm	2600 +/- 25
Number Of Cylinders	4

Type Of Cycle	4 Cycle
Displacement	2393 L (146 in ³)
Bore X Stroke	90 x 94 mm (3.24 x 3.7 in)
Lubrication	Gear Pump Pressure / System With Filter
Crankcase Ventilation	Closed Breathing
Air Filter	Replaceable dry paper cartridge with separate safety element
Ignition	Diesel – Compression
Air Induction	Turbo-Charged & Charged Air Cooled
Starting Aid	Glow plugs automatically activated as needed in RUN position

Drive System Specifications

Main Drive	Proportionally Regulated Hydrostatic Motor
Transmission	Hydrostatic with Electronic Regulation
Transmission Oil	Bobcat Transmission Oil GL4

Controls Specifications

Starting	Key switch / Run button on main control panel
Vehicle Steering	Machine articulation via hydraulic steering with steering wheel
Speed Range Selection	<ul style="list-style-type: none"> • Two-Speed control via button on joystick • Advanced attachment control mode via button on main control panel
Travel Direction	Travel Direction Switch (F-N-R) on joystick
Travel Speed Adjustment	<ul style="list-style-type: none"> • Drive pedal in work and travel mode • Engine speed dial on main control panel in advanced attachment control mode
Machine Hydraulics	<ul style="list-style-type: none"> • Dual axis joystick for lift and tilt • Auxiliary hydraulic pressure control via roller on joystick • Auxiliary pressure activated via button on main control panel (standard and continuous with high-flow option)
Auxiliary Pressure Release	Press and hold quick couplers to relieve
Service Brake	Integrated wet brake disk in rear axle
Parking Brake	Spring applied pressure release (SAPR) brake (Automatic Activation / Deactivation)

Hydraulic System Specifications

Hydraulic Pump	Section Gear Pump 2 (Optionally 3)
Implement Pump Capacity [A]	75,4 L/min (19.9 U.S. gpm) @ 2600 rpm
System Relief Valve Setting	20,5 MPa (205 bar) (2973 PSI)
Charge Pump Capacity [A]	44,2 L/min (11.7 U.S. gpm) @ 2600 rpm
Charge Pump Relief Valve Setting	3,2 MPa (32 bar) (461.1 PSI)
Fan Pump Capacity [A]	28,1 L/min (7.4 U.S. gpm) @ 2600 rpm
Fan Pump Relief Valve Setting	23,0 MPa (230 bar) (3336 PSI)
High-Flow Pump Capacity (Option) [A]	28,1 L/min (7.4 U.S. gpm) @ 2600 rpm
High-Flow Pump Relief Setting (Option)	20,5 MPa (205 bar) (2973 PSI)
Auxiliary Flow Capacity [A] Standard High-Flow	75,4 L/min (19.9 U.S. gpm) @ 2600 rpm 103,5 L/min (27.3 U.S. gpm) @ 2600 rpm
Auxiliary Relief Setting	28,0 MPa (280 bar) (4061 PSI)
Hydraulic Main Filter	In Tank With Suction Boost
Hydraulic Tank Breather Filter	Paper Element
Directional Control Valve	3 Spool (Optionally 4) / Parallel Series Type / Open Centre
Hydraulic Fluid	Bobcat Hydraulic Oil

[A] Theoretical maximum value

Electrical System Specifications

Alternator	13.5V, 90A Nominal Output
Battery	12.0V, 110Ah, 900CCA
Starter	12V, 2.5kW
Instrumentation	<ul style="list-style-type: none"> • Bobcat Standard Display • Horn / Backup Alarm (Option) • Operator Controls: <ul style="list-style-type: none"> ▷ Joystick ▷ Main Control Panel ▷ Cab Control Panel ▷ ACD Control Panel ▷ Key Switch ▷ Heater / HVAC Control Panel ▷ Front Dash (Four-Way Flashers, Attachment Lock) ▷ Multi-Function Lever

Fluid Capacities Specifications

Cooling System	11,0 L (2.9 U.S. gal)
Cooling System W/ Heater	11,8 L (3.1 U.S. gal)
Coolant Recovery Bottle (Max Line)	1,72 L (1.82 qt)
Fuel Tank	78,8 L (20.8 U.S. gal)
Engine Lubricating Oil W/ Filter Change	8,4 L (8.9 qt)
Hydraulic And Hydrostatic Reservoir (At Sight Glass)	27,2 L (7.2 U.S. gal)
Hydraulic And Hydrostatic System	55 L (14.5 U.S. gal)

Tyre Specifications

Tyre	Bucket		Pallet Fork	
	Front	Rear	Front	Rear
Standard: 405/70 R18				
Optional: 335/80 R18 365/70 R18 405/70 R20	300 kPa (3,00 Bar) (44 PSI)	200 kPa (2,00 Bar) (29 PSI)	375 kPa (3,75 Bar) (54 PSI)	200 kPa (2,00 Bar) (29 PSI)

Temperature Range

Operation and storage	-23°C – +43°C (-9.4°F – +109.4°F)
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Altitude

Maximum Altitude	2000 m (6500 ft)
------------------	------------------

Environmental

DECLARED SINGLE-NUMBER NOISE EMISSION VALUES	
In accordance with ISO 4871	
Noise level per Directive 2000/14/EC – LwA	100 dB(A)

DECLARED VIBRATION EMISSION VALUES		
In accordance with EN 12096		
	Value	Uncertainty
Whole-body vibration per ISO 2631-1	0,63 m/s ²	0,25 m/s ²
Hand-arm vibration per ISO 5349-1	1,31 m/s ²	N/A

Machine equipped with optional HVAC unit contains fluorinated greenhouse gas (F-gas)	
F-gas type	HFC-134a
F-gas mass	0,90 kg
CO2 equivalent	1,29 t
GWP	1430

ENGINE CO₂ EMISSION VALUES	
CO ₂ emission (NRSC)	750,6 g/kWh
This CO ₂ measurement results from testing over a forced test cycle under laboratory conditions a(n) (parent) engine representative of the engine type (engine family) and shall not imply or express any guarantee of the performance of a particular engine.	

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Reference Information

Compact Wheel Loader Serial Number:

Engine Serial Number:

NOTES:

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.....

.....

YOUR BOBCAT DEALER NAME:

Dealer Address:

Affix Business Card Here or enter dealer information

Sales Contact (Name): _____
(Phone): _____
(Email): _____

Rental Contact (Name): _____
(Phone): _____
(Email): _____

Affix Business Card Here or enter dealer information

Service Contact (Name): _____
(Phone): _____
(Email): _____

Parts Contact (Name): _____
(Phone): _____
(Email): _____