



EN

Operation & Maintenance Manual

Skid-Steer Loader



S66 S/N: B4SA11001 & Above



7353043enUS (D)
August 2021

Printed in USA
Original Instructions



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T4-B

OPERATOR SAFETY WARNINGS



- Never operate without instructions. Read machine signs (decals), Operation & Maintenance Manual, and Operator's Handbook.
- 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.
- **SEAR BAR:** When up, it must lock loader controls.
- **OPERATOR CAB (ROPS AND FOPS):** It must be on the loader with all fasteners tight.
- **OPERATOR'S HANDBOOK:** Must be in the cab.
- **SAFETY SIGNS (DECALS):** Replace if damaged.
- **SAFETY TREADS:** Replace if damaged.
- **GRAB HANDLES:** Replace if damaged.
- **LIFT ARM SUPPORT:** Replace if damaged.
- **PARKING BRAKE**
- **BOBCAT INTERLOCK CONTROL SYSTEM (BICS)**



This check mark means: "Follow instructions for proper operations." Carefully read the message that follows.



- Always fasten seat belt snugly and use the seat bar.
- Always keep feet on foot pedals or footrests when operating.

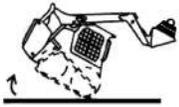


- Never use machine without operator cab with ROPS and FOPS approval.
- Fasten your seat belt!

OPERATOR SAFETY WARNINGS



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



- Never exceed Rated Operating Capacity (ROC).
- Always carry 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 leave loader with engine running or with lift arms up.
- To park: engage parking brake, put attachment flat on the ground, and stop the engine.



- Never carry riders.
- Keep bystanders away from work area.



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



- Do Not use machine in atmosphere with explosive dust, explosive gas, or where exhaust can contact flammable material.



- Never use loader as a personnel lift or work platform.



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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

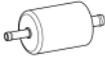
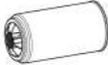
North America

Bobcat Company
250 E. Beaton Drive
West Fargo, ND 58078
USA

Czech Republic

Doosan Infracore Europe s.r.o.
Pobřežní 620/3
186 00 Prague
Czech Republic

REGULAR MAINTENANCE ITEMS

	ENGINE OIL FILTER 7343102
	FUEL FILTER, PRE-FILTER 7348032
	FUEL FILTER, MAIN 7336334
	FUEL TANK VENT FILTER 7340277
	ENGINE AIR FILTER, OUTER 7386225
	ENGINE AIR FILTER, INNER 7386224
	HYDRAULIC MAIN FILTER, Kit with O-rings 7414582
	HYDRAULIC CHARGE FILTER 7319444
	HYDRAULIC RESERVOIR VENT FILTER 7390732
	BATTERY 7269857
	HYDRAULIC FLUID 6903117 (2.5 U.S. gal) 6903118 (5 U.S. gal) 6903119 (55 U.S. gal)
	PROPYLENE GLYCOL COOLANT 6983128 - Premixed (U.S. gal) 6983129 - Concentrate (U.S. gal)

ENGINE OIL	1 qt
SAE 15W40	7354881
SAE 10W30	7354875
Synthetic SAE 5W-40	7403513

ENGINE OIL	1 U.S. gal
SAE 15W40	7354882
SAE 10W30	7354876
Synthetic SAE 5W-40	7403514

ENGINE OIL	2.5 U.S. gal
SAE 15W40	7354883
SAE 10W30	7354877

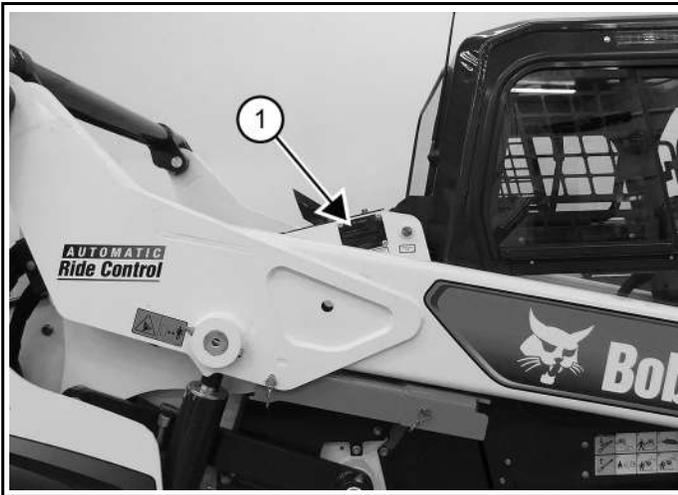
NOTE: Always verify Part Numbers with your Bobcat dealer.

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 Location

Figure 1

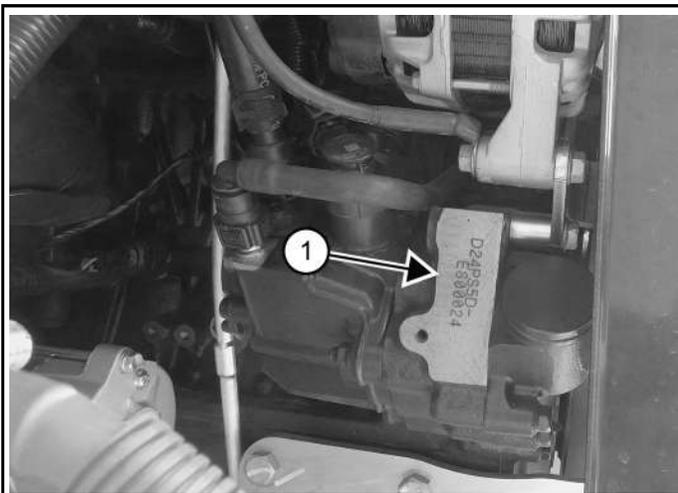


C200190A

The machine serial number plate (Item 1) [Figure 1] is located on the right rear of the machine frame.

Engine Serial Number Location

Figure 2



C200191A

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

DELIVERY REPORT

Figure 3



NA15473

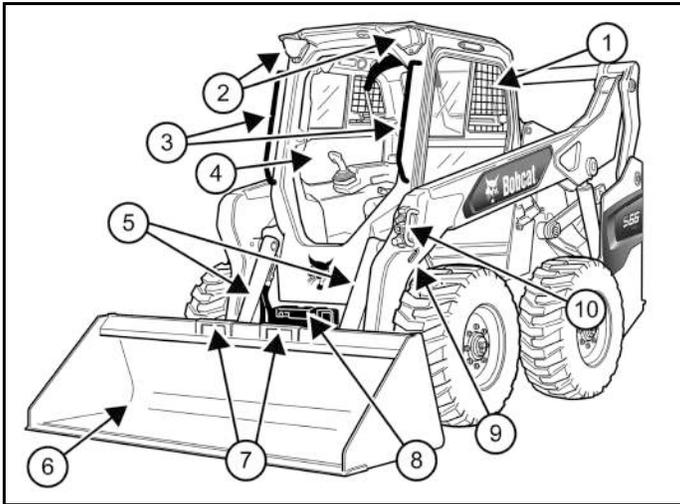
The delivery report contains a list of items that must be explained or shown to the owner or operator by the dealer when the machine is delivered.

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

LOADER IDENTIFICATION

Front View

Figure 4



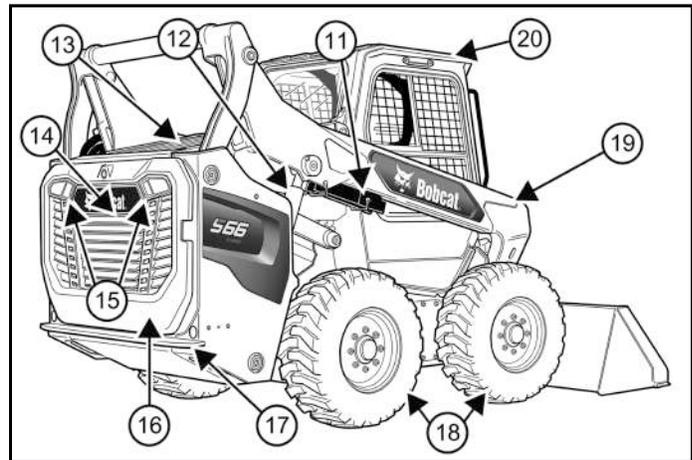
NA18599A

REF	DESCRIPTION
1	Operation & Maintenance Manual and Operator's Handbook
2	Front Lights
3	Grab Handles
4	Operator Seat with Seat Belt and Seat Bar
5	Tilt Cylinders
6	Bucket [A]
7	Bucket Steps
8	Step
9	Alternate Front Tie-down (Both Sides)
10	Front Auxiliary Quick Couplers

[A] Bucket — Several different buckets and other attachments are available for the Bobcat loader.

Rear View

Figure 5



NA18599A

REF	DESCRIPTION
11	Lift Arm Support
12	Lift Cylinder (Both Sides)
13	Rear Grille
14	Back-up Alarm
15	Rear Work Lights and Taillights
16	Rear Door
17	Rear Tie-down (Both Sides) Front Tie-down located behind Bucket
18	Tires [A]
19	Lift Arm
20	Operator Cab (ROPS and FOPS) [B]

[A] Tires — Standard tires are shown. Several different tire styles and sizes are available for the Bobcat loader.

[B] ROPS — Roll-Over Protective Structure per ISO 3471 and FOPS — Falling-Object Protective Structure per ISO 3449, Level I. Level II is available.

FEATURES, ACCESSORIES, AND ATTACHMENTS

Standard Items

This model S66 Bobcat loader is equipped with the following standard items:

- 74 hp Bobcat Engine Turbo Tier 4 Diesel Engine
- Adjustable Seat
- Auxiliary Hydraulics: Variable Flow
- Bobcat Interlock Control System (BICS™)
- Bobcat Standard Display
- Bob-Tach® Attachment Mounting System
- Controls: Bobcat Standard
- Enclosed Cab (includes: rear window and polycarbonate top window) ROPS and FOPS (Level I) Approved
- Engine / Hydraulic Systems Protection
- Front Horn / Back-up Alarm
- Glow Plugs (Automatically activated)
- LED Lights: Front and Rear
- Lift Arm Support
- Parking Brake
- Seat Bar
- Seat Belt with 3–Point Restraint
- Spark Arrester Device
- Tires (Bobcat Super Float, 31 x 12 – 16.5, 10 PR)
- Two-Speed Travel

Options And Accessories

Below is a list of some equipment available from your Bobcat dealer as Dealer and / or Factory Installed Accessories and Factory Installed Options. See your Bobcat dealer for other available options and accessories.

- Adjustable Heated Air Ride Suspension Seat
- Adjustable Suspension Seat
- Air Conditioning
- Air Filter Precleaner
- Attachment Control Device (ACD) (7-Pin, 14-Pin)
- Auto HVAC
- Auto Idle (Available only on SJC equipped loaders)
- Automatic Ride Control
- Auxiliary Hydraulics Coupler Guard
- Battery Disconnect Switch Kit
- Bobcat Touch Display
- Cab Door with Emergency Exit
- Cab Heater

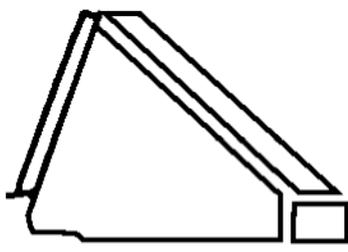
- Cab Reseal Plug Kit
- Clear Side Enclosed Cab
- Controls: Selectable Joystick Controls (SJC) (Selectable 'ISO' or 'H' Pattern Control)
- Counterweight Kit
- Dual Direction Bucket Positioning (With On / Off Selection)
- Engine Block Heater
- Extended Pedals
- Fire Extinguisher
- FOPS Kit (Level II)
- Forestry Door and Window Kit
- Forestry Door Wiper
- Four-Way Flashers
- Front and Rear Light Guards
- High-Flow Auxiliary Hydraulics
- Hose Guide
- Hydraulic Muffler
- Keyed Ignition Kit
- LED Side Lighting
- Lift Kit (Four-Point, Single-Point)
- Power Bob-Tach Attachment Mounting System
- Premium LED Front Lights
- Radio
- Radio Remote Control
- Rear Auxiliary Hydraulics
- Rear Bumper Kit
- Rear Camera Kit
- Rear Window Wiper
- Reversing Fan
- Rotating Beacon
- Seat Belt – 3 in. Wide
- Sound Reduction Kit (Reduces noise at operator ear)
- Special Applications Kit
- Strobe Light
- Tailgate Guard Kit
- Tailgate Lock
- Tires:
 - ▷ Bobcat Standard Duty, 10 – 16.5, 8 PR
 - ▷ Bobcat Heavy Duty, 10 – 16.5, 10 PR
 - ▷ Bobcat Heavy Duty Offset, 10 – 16.5, 10 PR
 - ▷ Bobcat Heavy Duty Poly Fill, 10 – 16.5, 10 PR
 - ▷ Bobcat Heavy Duty Offset Poly Fill, 10 – 16.5, 10 PR

- ▷ Bobcat Severe Duty, 10 – 16.5, 10 PR
- ▷ Bobcat Solidflex, 31 x 6 x 10
- Windows:
 - ▷ Externally Removable Rear Window
 - ▷ Polycarbonate Rear Window
 - ▷ Polycarbonate Side Windows
 - ▷ Side Windows

Specifications subject to change without notice and standard items may vary.

Buckets Available

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



Many bucket styles, widths, and different capacities are available for a variety of different applications. They include Construction and Industrial, Low Profile, Fertilizer, and Snow, to name a few. See your Bobcat dealer for the correct bucket for your Bobcat loader and application.

Attachments

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

The versatile Bobcat loader quickly turns into a multijob 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.

- Angle Broom
- Asphalt Spreader
- Auger
- Bale Handler
- Blades — Box, Dozer, Snow, Snow V-Blade
- Breaker, Hydraulic
- Brush Saw
- Brushcat™ Rotary Cutter
- Buckets

- Chipper
- Combination Bucket
- Concrete Mixer
- Concrete Pump
- Digger
- Drop Hammer
- Dumping Hopper
- Flail Cutter
- Grader
- Grapples — Farm / Utility, Industrial, Root
- Landplane
- Landscape Rake
- Laser Equipment
- Mower
- Packer Wheel
- Pallet Fork
- Planer
- Rock Bucket
- Scarifier
- Scraper
- Seeder
- Snow Pusher
- Snowblower
- Sod Layer
- Soil Conditioner
- Spreader
- Stabilizer, Rear
- Stump Grinder
- Sweeper
- Tiller
- Tilt-Tatch™
- Tree Spade
- Trench Compactor
- Trencher
- Utility Fork
- Utility Frame
- Vibratory Roller
- Water Kit
- X-Change™ Frame

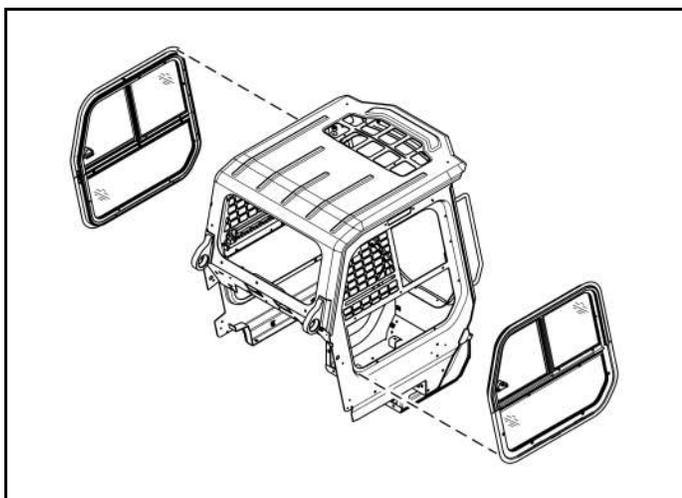
High-Flow Attachments

The following attachments are approved for use on High-Flow machines. See your Bobcat dealer for an updated list of approved attachments.

- Angle Broom
- Auger
- Brushcat™ Rotary Cutter
- Chipper
- Concrete Pump
- Flail Cutter
- Planer
- Snowblower
- Soil Conditioner
- Stump Grinder
- Tiller
- Trencher

Clear Side Enclosed Cab Option

Figure 6



Depending on machine specifications, windows are provided to function as guards. Damaged windows must be replaced with those of equivalent specification before the machine is used again. The machine must not be used with the window removed. The clear side enclosed cab windows are polycarbonate [Figure 6].

⚠ DANGER

MODIFICATION HAZARD

Crushing can cause serious injury or death.

- **DO NOT** operate if cab side windows are damaged or missing.
- **Replace damaged or missing windows with Bobcat approved parts only.** ◀

131-F07853F8

Inspecting And Maintaining Clear Side Enclosed Cab Option

- Inspect for cracks or damage. Replace if required.

- Prerinse with water to remove gritty materials.
- Wash with a mild household detergent and warm water.
- Use a sponge or soft cloth. Rinse well with water and dry with a clean soft cloth or rubber squeegee.

⚠ IMPORTANT

MACHINE DAMAGE HAZARD

Avoid polycarbonate window damage:

Do not use abrasive or highly alkaline cleaners.

Do not use cleaners containing ammonia.

Do not clean with metal blades or scrapers. ◀

I-2402

Special Applications Kit

⚠ WARNING

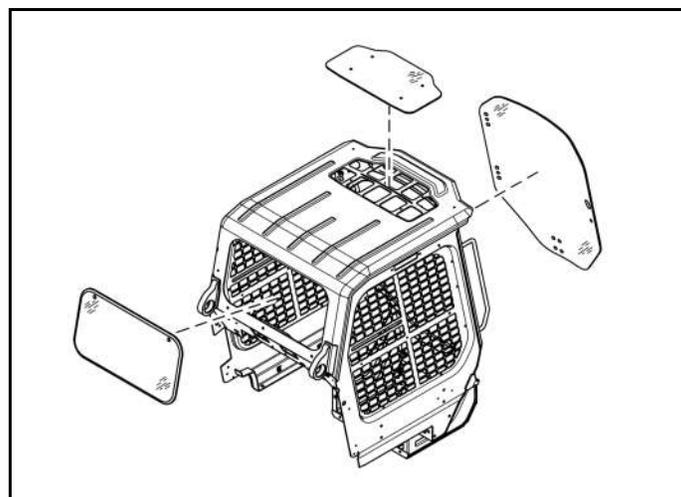
IMPACT AND PUNCTURE HAZARD

Flying debris or objects entering the operator cab can cause serious injury or death.

Some attachment applications can cause flying debris or objects to enter the front, top or rear cab openings. Install the Special Applications Kit and Top Guard (if applicable) to provide added operator protection in these applications. ◀

W-2737

Figure 7



NA15971

Available for special applications to restrict material from entering cab openings. Kit includes 12,7 mm (0.5 in) thick polycarbonate front door and polycarbonate rear window [Figure 7].

Polycarbonate top window (standard item) must be installed for special applications to restrict material from entering cab openings.

See your Bobcat dealer for availability.

Inspecting And Maintaining Special Applications Kit

- Inspect for cracks or damage. Replace if required.
- Prerinse with water to remove gritty materials.
- Wash with a mild household detergent and warm water.
- Use a sponge or soft cloth. Rinse well with water and dry with a clean soft cloth or rubber squeegee.

⚠ IMPORTANT

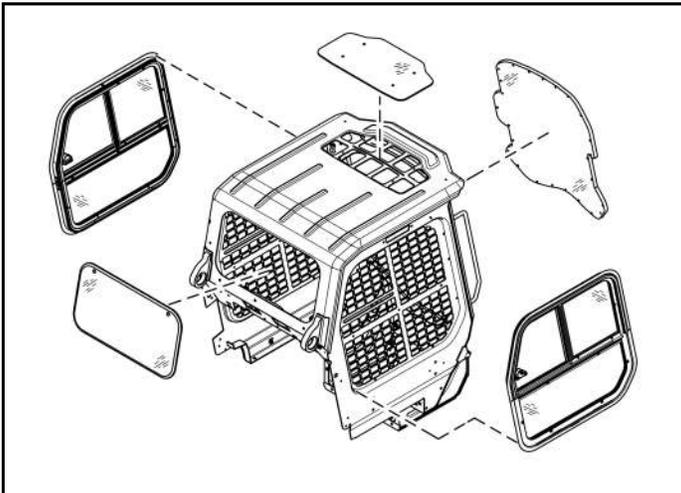
MACHINE DAMAGE HAZARD

Avoid polycarbonate window damage:
Do not use abrasive or highly alkaline cleaners.
Do not use cleaners containing ammonia.
Do not clean with metal blades or scrapers. ◀

I-2402

Forestry Door And Window Kit

Figure 8



NA15972

Available for special applications to prevent flying debris and objects from entering the cab. Kit includes 19,1 mm (0.75 in) thick laminated polycarbonate front door, polycarbonate side windows, and polycarbonate rear window [Figure 8].

Polycarbonate top window (standard item) must be installed as part of the Forestry Door And Window Kit to restrict material from entering cab openings.

The side windows of the clear side enclosed cab are polycarbonate and meet the side window requirements of the Forestry Door and Window kit to restrict material from entering cab openings.

Inspecting And Maintaining Forestry Door And Window Kit

- Inspect for cracks or damage. Replace if required.

- Order part number 7349287 if door frame is damaged and needs to be replaced.
- Order kit part number 7401369 if door polycarbonate is damaged and needs to be replaced.
- Prerinse with water to remove gritty materials.
- Wash with a mild household detergent and warm water.
- Use a sponge or soft cloth. Rinse well with water and dry with a clean soft cloth or rubber squeegee.

⚠ IMPORTANT

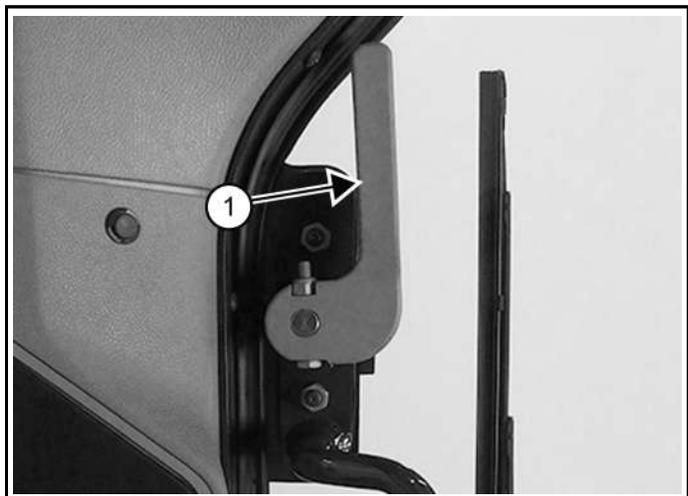
MACHINE DAMAGE HAZARD

Avoid polycarbonate window damage:
Do not use abrasive or highly alkaline cleaners.
Do not use cleaners containing ammonia.
Do not clean with metal blades or scrapers. ◀

I-2402

Forestry Door Emergency Exit

Figure 9



C200179b

- Inspect both emergency exit levers (Item 1) [Figure 9], linkages, and hardware for loose or damaged parts.
- Repair or replace if necessary.

SAFETY INSTRUCTIONS

Before Operation

Carefully follow the operating and maintenance instructions in this manual.

The Bobcat machine is highly maneuverable and compact. It is rugged and useful under a wide variety of conditions. This presents an operator with hazards associated with off highway, 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 handbook is available from your dealer in an English edition or one of many other languages. See your Bobcat dealer for more information on translated versions.
- The AEM Safety Manual delivered with the machine gives general safety information.

- Operator and Service Safety Training courses are available through your Bobcat dealer. These courses provide information on safe and efficient operation and correct service procedures.
- See the Publications and Training Resources page in this manual or your Bobcat dealer for Service and Parts Manuals, printed materials, videos, or training courses available. Also check the Bobcat website www.bobcat.com or www.bobcat.com/training.
- Online operator training courses are also available. Go to www.bobcatonlinetraining.com for a listing of available courses and more information.

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.

Call Before You Dig



Dial 811 (USA Only)

Dial 1-888-258-0808 (USA & Canada)

When you call, you will be directed to a location in your state / province / city for information about buried lines (telephone, cable TV, water, sewer, gas, etc.).

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, Safety Manual, and machine signs (decals).
 - ▷ Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.
- 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.

- ▷ Operator Training Courses are available from your Bobcat dealer in English and Spanish. They provide information for safe and efficient equipment operation. Safety videos are also available.
 - ▷ Service Safety Training Courses are available from your Bobcat dealer. They provide information for safe and correct service procedures.
- 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. Call local utilities or the toll free phone number found in the Before Operation section of this manual.
 - ▷ 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

Silica dust can cause lung disease and is known to the state of California to cause cancer.

Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust.

Do not exceed Permissible Exposure Limits (PEL) to silica dust as determined by OSHA or other job site Rules and Regulations. Use a respirator, water spray or other means to control dust.

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 gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

Fueling



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 fueling standards for proper grounding 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.

Spark Arrester Exhaust System

The spark arrester exhaust system is designed to control the emission of hot particles from the engine and exhaust system, but the muffler and the exhaust gases are still hot.

Check the spark arrester exhaust system regularly to make sure it is maintained and working properly. Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrester muffler (if equipped).

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 nonmetallic 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



P200083

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 loader. You can order them from your Bobcat dealer. For the latest information on Bobcat products and the Bobcat Company, visit our website at Bobcat.com/training.



OPERATION & MAINTENANCE MANUAL

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

7353043enUS



SKID-STEER LOADER ONLINE OPERATOR TRAINING

Provides information on safe and efficient operation and introduces the key components and safety features of skid-steer loaders.

See your Bobcat dealer to purchase an enrollment card or visit bobcatonlinetraining.com for more information.

7341494



SKID-STEER LOADER OPERATOR TRAINING COURSE

Introduces operator to step-by-step basics of skid-steer loader operation.

7249275 (English)

7249278 (Spanish)



SAFETY MANUAL

Gives basic safety procedures and warnings for your Bobcat loader.

6556500 (English and Spanish)



OPERATOR SAFETY DVD

Gives basic safety instructions for many Bobcat products including loaders.

6904762 (English and Spanish)

LOADER SAFETY VIDEO



Scan the code to watch the loader safety video or view at Bobcat.com/training.

(Mobile device with quick response code application required)

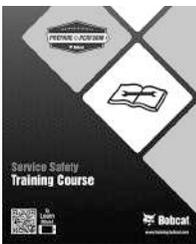


SERVICE MANUAL



Complete maintenance instructions for your Bobcat loader.

7353044enUS



SERVICE SAFETY TRAINING COURSE

Introduces service technicians to step-by-step basics of proper and safe maintenance and servicing procedures.

7297250



OPERATOR'S HANDBOOK

Gives basic operation instructions and safety warnings.

7323981enUS



TOUCH DISPLAY USER GUIDE

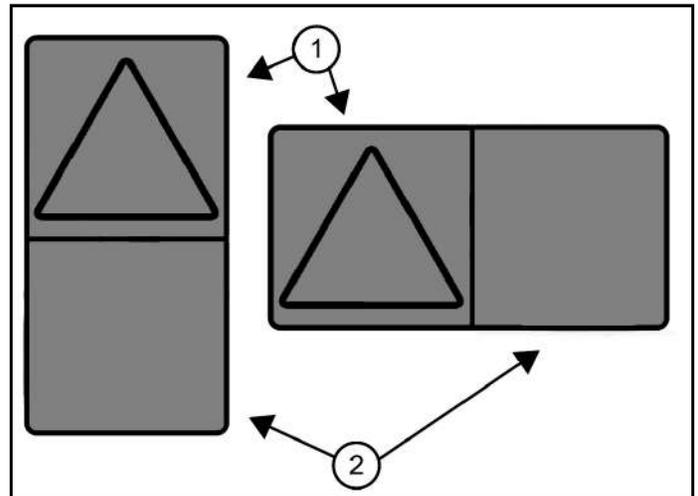
Gives instructions for pairing a cellular phone with the touch display and for operating the sound system on the touch display.

7326266enUS

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 familiarized with all safety signs installed on the machine / attachment.

Figure 10



C200466a

The format consists of the hazard panel(s) (Item 1) [Figure 10] and the avoidance panel(s) (Item 2) [Figure 10].

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

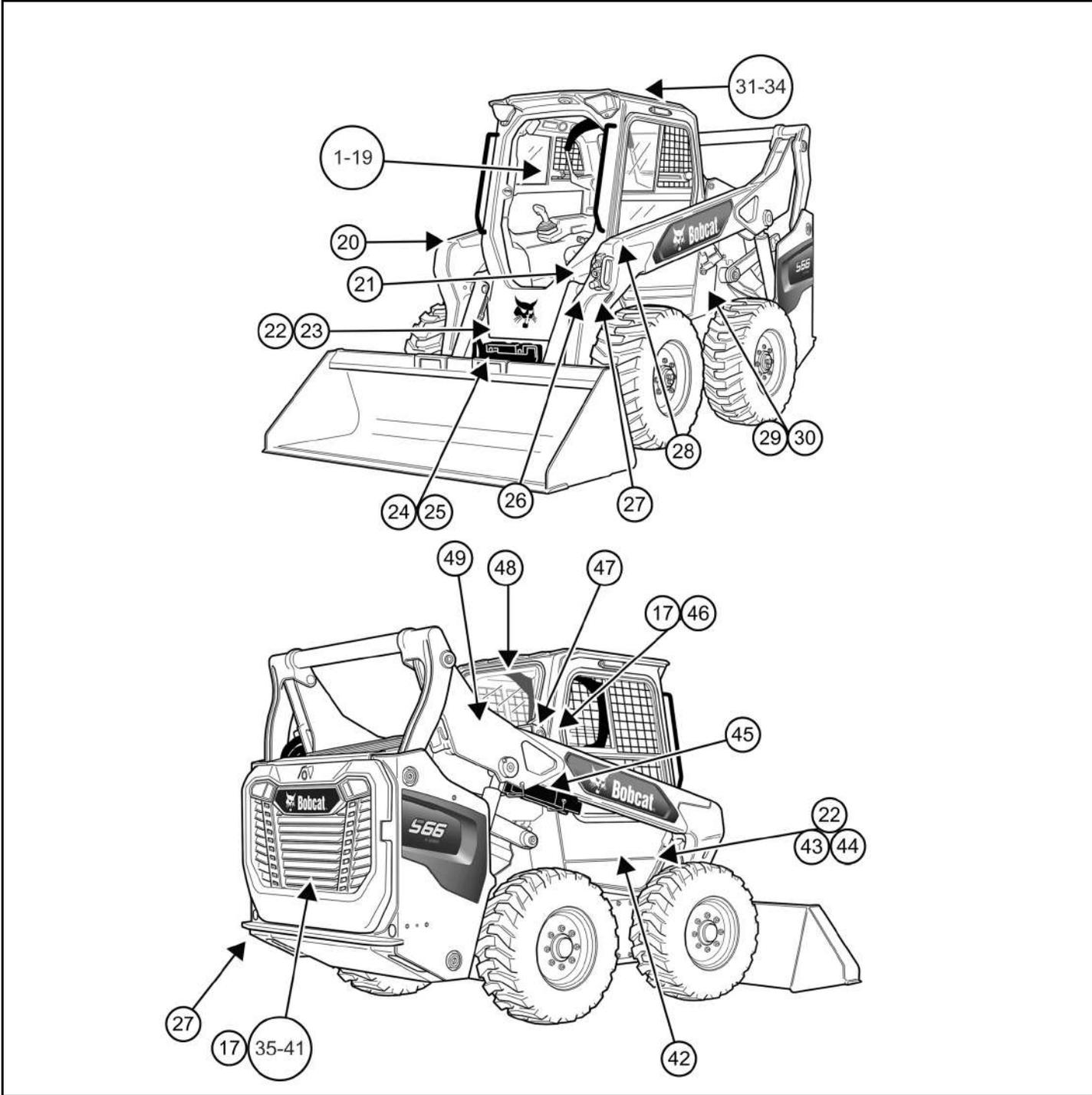
Avoidance Panels: Depict actions required to avoid the hazards.

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

MACHINE SIGNS (DECALS)

Follow the instructions on all Machine Signs (Decals) that are on the machine. Replace any damaged machine signs and be sure they are in the correct locations. Machine signs are available from your Bobcat dealer.

Figure 11



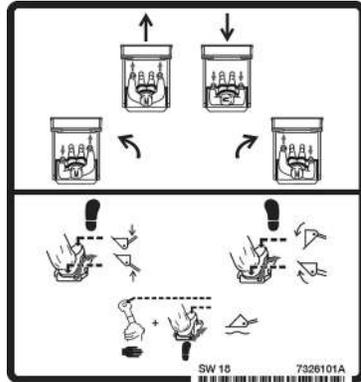
NA3839A

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Standard Controls (7326101)

This safety sign is located inside the operator cab on the lower left side of loaders equipped with standard controls.

1



To Leave The Loader (7341319)

This safety sign is located inside the operator cab on the lower left side of loaders equipped with standard controls.

2


 **WARNING**
GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

To leave the loader safely:

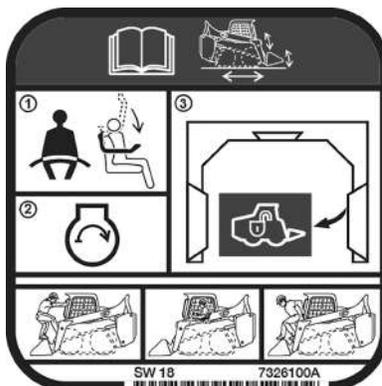
1. Lower the lift arms and put attachment flat on the ground.
2. Stop the engine.
3. Engage the brake.
4. Raise seat bar.
5. Move pedals and hand controls until both lock.
6. Exit the loader. ◀

W2558

Standard Controls Operation (7326100)

This safety sign is located inside the operator cab on the lower left side of loaders equipped with standard controls.

3

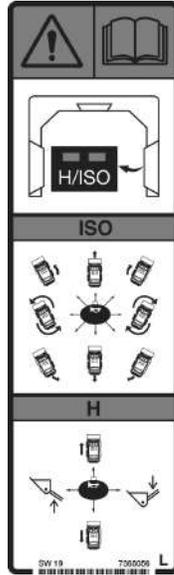


REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

SJC Controls (7368056)

This safety sign is located inside the operator cab on the left armrest of loaders equipped with SJC controls.

4



! WARNING

UNINTENDED MACHINE MOVEMENT HAZARD
 Accidental loader movement can cause serious injury or death.

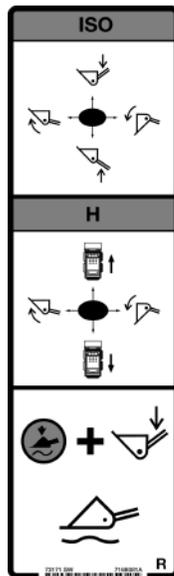
- Drive, lift arm and tilt functions operate on different joysticks in each control mode.
- Know and understand the selected control mode before operating.

READ AND UNDERSTAND THE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION. ◀

SJC Controls (7168081)

This safety sign is located inside the operator cab on the right armrest of loaders equipped with SJC controls.

5



REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

To Leave The Loader (7330860)

This safety sign is located inside the operator cab on the lower left side of loaders equipped with SJC controls.

6


 **WARNING**
GENERAL HAZARD

Failure to follow instructions can cause serious injury or death
To leave the loader safely:

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. ◀

W-2839

General Hazard Warning (7323814)

This safety sign is located inside the operator cab on the lower right side.

7


 **WARNING**
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.

- 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). ◀

W-2837

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

SJC Controls Operation (7326103)

This safety sign is located inside the operator cab on the lower left side of loaders equipped with SJC controls.

8



Back-Up Alarm (7342336)

This safety sign is located inside the operator cab on the lower right side.

9



! 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 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. ◀

W-2783

Operator Safety Warning (7368166)

This safety sign is located inside the operator cab on the right side back wall.

10



! 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

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Emergency Door Exit (7344613)

This safety sign is located inside the operator cab on the left side of the door of loaders equipped with a front door.

11



High Range Speeds (7326102)

This safety sign is located inside the operator cab on the right side of loaders equipped with 3–point restraint.

12

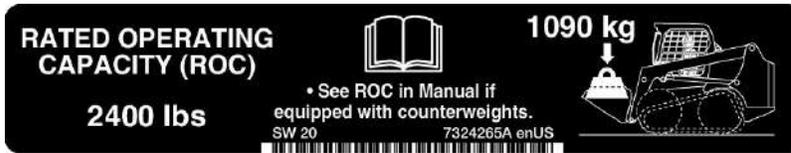


IMPACT HAZARD
Hitting Obstructions At High Range
Speeds Can Cause Serious Injury or
Death
Fasten shoulder belt for additional
restraint when operating at high range
speeds. ◀
W2754

Rated Operating Capacity (7324265)

This safety sign is located inside the operator cab on the left side.

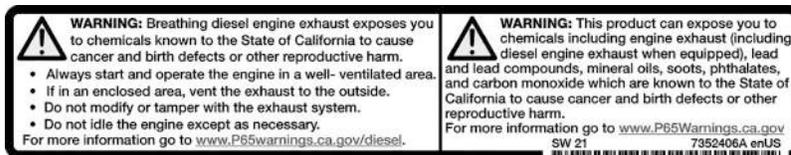
13



Proposition 65 (7352406)

This safety sign is located inside the operator cab on the lower right side.

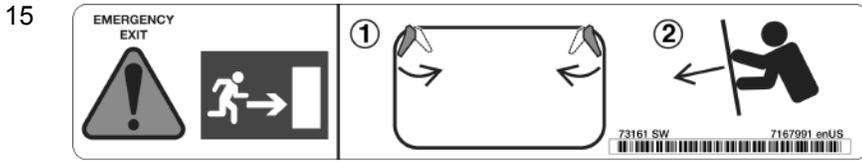
14



REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

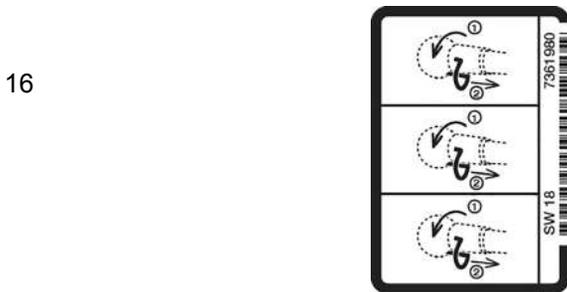
Rear Window Exit (7167991)

This safety sign is located inside the operator cab on the rear window of loaders equipped with rear window with latches.



Spring Removal (7361980)

This safety sign is located inside the operator cab on the gas spring component of loaders equipped with a front door.



High Pressure Gas (7347041) (2 or 3)

This safety sign is located on the gas spring component(s) supporting the operator cab, the radiator, and on loaders equipped with a front door.



WARNING

IMPACT HAZARD
Opening cylinder can release rod and cause serious injury or death.

- Contents under high pressure.
- Do not open.
- See Service Manual for additional information.

W-2523

No Ammonia (7397975) (2)

This safety sign is located inside the operator cab on the left and right side of loaders equipped with clear side enclosed cab.



REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Modification Hazard (7401182) (2)

This safety sign is located inside the operator cab on the left and right side of loaders equipped with clear side enclosed cab.

19



! DANGER

MODIFICATION HAZARD

Crushing can cause serious injury or death.

- DO NOT operate if cab side windows are damaged or missing.
- Replace damaged or missing windows with Bobcat approved parts only. ◀

131-F07853F8

Falling Hazard (7341272)

This safety sign is located on top of the right side lift arm.

20



! WARNING

FALLING HAZARD

Falling from the machine can cause serious injury or death.

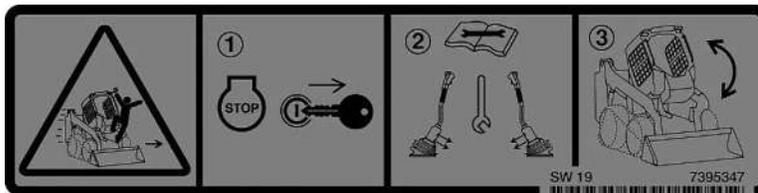
- Never carry riders.
- Never use machine as a man lift or work platform. ◀

W-2835

Unexpected Loader, Lift Arm, or Attachment Movement (7395347)

This safety sign is located outside the operator cab on the left front corner of loaders equipped with standard controls.

21



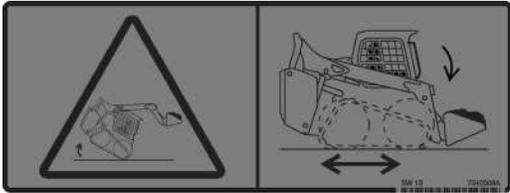
! WARNING

UNINTENDED MOVEMENT HAZARD

Cab contacting controls can cause unexpected loader, lift arm or attachment movement leading to serious injury or death.

STOP ENGINE before raising or lowering cab. ◀

W-2758

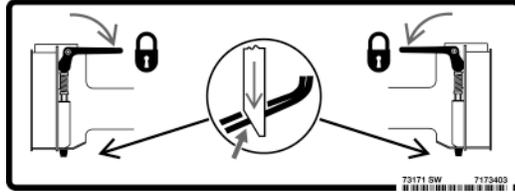
REF	DECAL	WARNING (IF APPLICABLE)
22	<p>Lift Arm Crushing (7341273) (1)</p> <p>This safety sign is located on the right side front frame.</p> 	<p>! DANGER</p> <p>CRUSHING HAZARD Lift arms lowering will cause serious injury or death. Keep out of this area when lift arms are raised unless supported by 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>
23	<p>Frame Raising (7341274)</p> <p>This safety sign is located on the left side front frame.</p> 	<p>! DANGER</p> <p>CRUSHING HAZARD Frame raising into the lift arms will cause serious injury or death. Attachment can be forced against the ground and cause front frame to raise. Never go under or reach under lift arms or lift cylinder without an approved lift arm support installed. ◀</p> <p><small>D-1021</small></p>
24	<p>Tipping, Rollover, or Loss of Visibility (7342809)</p> <p>This safety sign is located on the back side of the lift arms facing the operator.</p> 	<p>! WARNING</p> <p>INSTABILITY HAZARD Tipping, rollover or loss of visibility can cause serious injury or death. Carry load low. ◀</p> <p><small>W-2836</small></p>

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Bob-Tach (7173403)

This safety sign is located on the Bob-Tach crossmember.

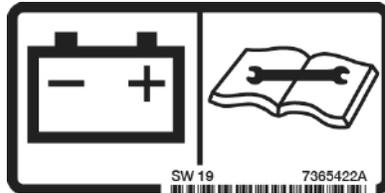
25



Battery Access (7365422)

This safety sign is located on the lower left side outside the operator cab.

26



Tie-Down (6727595) (5)

This safety sign is located next to the front and rear loader tie-down locations.

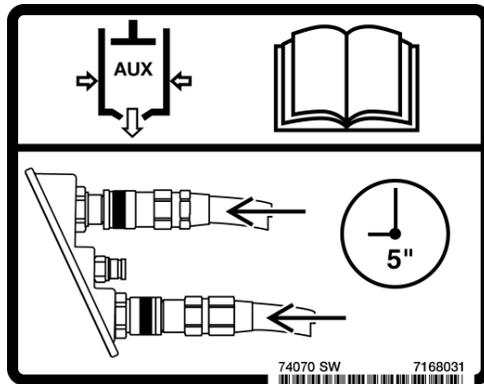
27



Auxiliary Couplers (7168031)

This safety sign is located on top of the left side lift arm.

28

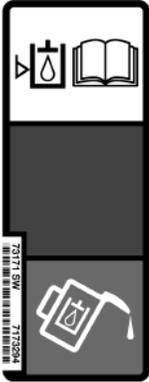


REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Hydraulic Fluid Sight Gauge (7173294)

This safety sign is located on the left side of the loader next to the hydraulic fluid sight gauge.

29



Hydraulic Fluid (7120570)

This safety sign is located on the left side of the loader on the hydraulic fill cover.

30



Hook (6533898) (2)

This safety sign is located on both sides of the top crossmember of the single-point lift.

31

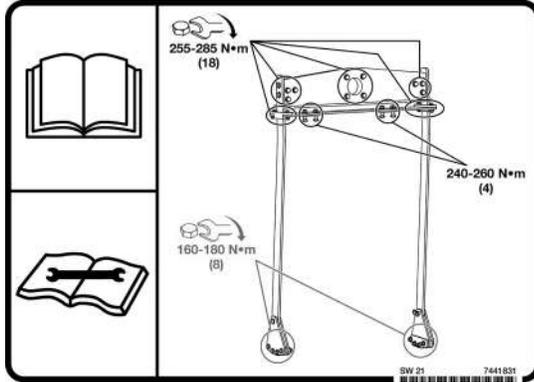


REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Service (7441831) (2)

This safety sign is located on both sides of the top crossmember of the single-point lift.

32



Single-Point Lift (7142142) (2)

This safety sign is located on both side arms of the single-point lift.

33


⚠ WARNING
CRUSHING HAZARD

Failure of the lift assembly can cause serious injury or death.

BEFORE LIFTING LOADER:

1. Check the hardware and fasteners of the Single Point Lift and Operator Cab (ROPS) for proper torque.
2. Inspect Single Point Lift for damage or cracked welds. Repair or replace components as necessary.
 - Never allow riders in the cab or bystanders within 5 m (15 ft) while lifting the machine.
 - See Operation & Maintenance Manual for more information. ◀

W-2841

REF

DECAL

WARNING
(IF APPLICABLE)

Four-Point Lift (7168020)

This safety sign is located on the front of loaders equipped with four-point lift.

34


 **WARNING**
CRUSHING HAZARD

Failure of the lift assembly can cause serious injury or death.

BEFORE LIFTING LOADER:

1. Check the hardware and fasteners at all lift points for proper torque.
2. Inspect lift points for damage or cracked welds. Repair or replace components as necessary.
 - Never allow riders in the cab or bystanders within 5 m (15 ft) while lifting the machine.
 - See Operation & Maintenance Manual for more information. ◀

W-2840

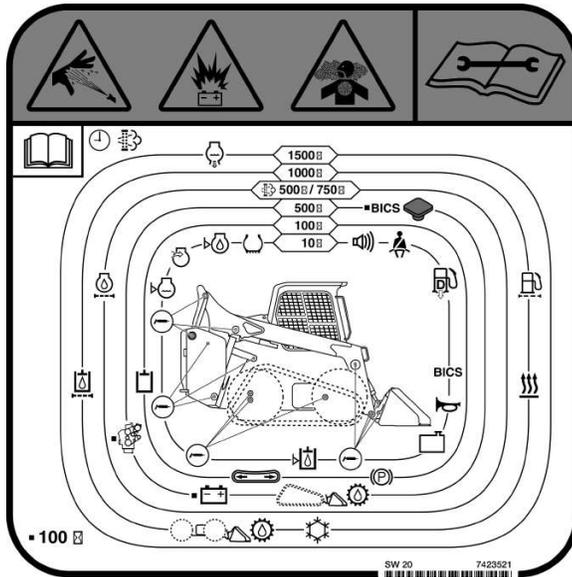
REF

DECAL

WARNING
(IF APPLICABLE)

Service Checklist and Schedule (7423521)

This safety sign is located inside the rear door on the belt shield.



35

 **WARNING**
GENERAL HAZARD

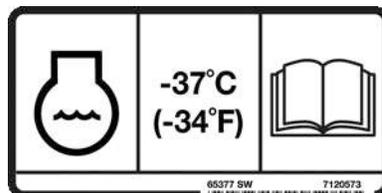
Failure to follow instructions can cause serious injury or death.

- 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. ¹

W-2782

Engine Coolant (7120573)

This safety sign is located inside the rear door on the engine coolant tank.



36

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Hot Pressurized Fluid (7325124)

This safety sign is located inside the rear door on the radiator cap.

37



! WARNING

BURN HAZARD
Hot fluid can cause serious burns

- Never open hot.
- Open slowly to release pressure. ◀

W-2755

Ultra Low Sulfur Diesel Fuel (7367887)

This safety sign is located inside the rear door next to the fuel fill.

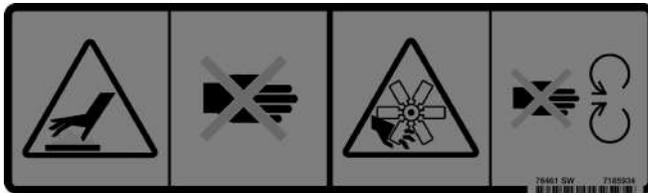
38



Hot Surfaces and Rotating Fan (7185934)

This safety sign is located inside the rear door under the handle of the radiator cooling package.

39



! WARNING

CUTTING AND BURN HAZARD
Keep away from the operating machine.

- Keep away from fan and moving parts. Do not operate with guard removed.
- Do not touch hot surfaces. Allow to cool before servicing. ◀

W-2521

Exchanger (7324952)

This safety sign is located inside the rear door on the radiator cooling package.

40

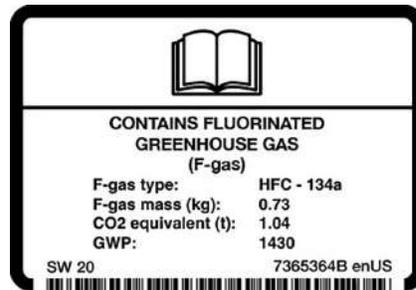


REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Fluorinated Greenhouse Gas (7365364)

This safety sign is located on the condenser inside the rear door of loaders equipped with air conditioning.

41

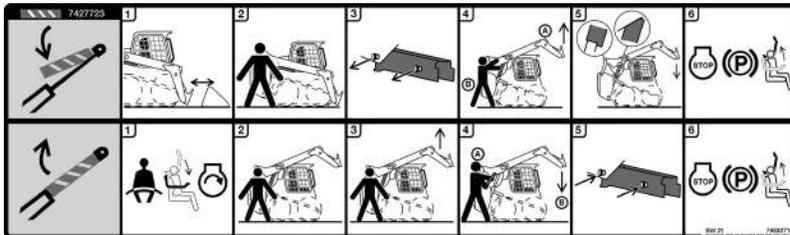


Lift Arm Support (7453271 for lift arm support part number 7427723)

Lift Arm Support (7347436 for lift arm support part number 7322343)

This safety sign is located on the lower right side outside the operator cab.

42



To Install Approved Lift Arm Support:

1. Remove attachment from loader.
2. Stay in seat while second person removes lift arm support from storage position.
3. Remove pins and lift arm support.
4. Raise lift arms while second person positions lift arm support against cylinder rod.
5. Lower lift arms slowly until lift arm support is held securely between lift arm and cylinder.
6. Stop the engine, engage the parking brake, and raise the seat bar.

To Remove Lift Arm Support:

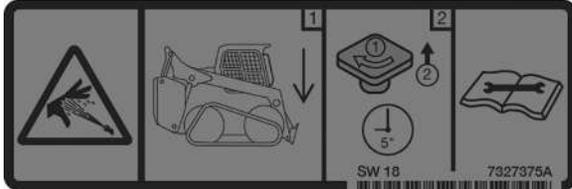
1. Fasten seat belt and lower seat bar before starting the engine.
2. Stay in seat while second person removes lift arm support from cylinder rod.
3. Raise lift arms.
4. Second person removes lift arm support from cylinder rod. Stay in seat until the lift arms are lowered all the way.
5. Return lift arm support to storage position and secure with pins.
6. Stop the engine, engage the parking brake, and raise the seat bar.

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Pressurized Fluid (7327375)

This safety sign is located inside the loader frame underneath the operator cab on the accumulator of loaders equipped with automatic ride control.

43



! 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

Lift Arm Crushing (7349416) (3)

This safety sign is located on certain hoses or tubelines inside the loader frame underneath the operator cab.

44



! DANGER

CRUSHING HAZARD

Avoid death due to lift arm or attachment movement.

- Disconnecting hydraulic lines can cause the lift arms or attachment to drop.
- Always use an approved lift arm support when lift arms are in a raised position. ◀

D-1008

Pinch Hazard (7418028)

This safety sign is located on the lift arm support.

45



! WARNING

PINCH POINT HAZARD

Keep hands clear during lift arm movement. ◀

W-3072

REF	DECAL	WARNING (IF APPLICABLE)
-----	-------	----------------------------

Latching Mechanism Release (7169877)

This safety sign is located on the latching mechanism release attached to the gas spring supporting the operator cab.

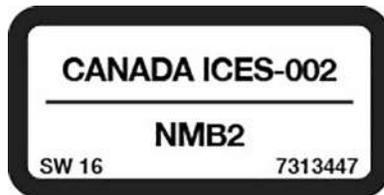
46



Canada EMC (7313447)

This safety sign is located on the right side of the loader frame next to the serial number plate.

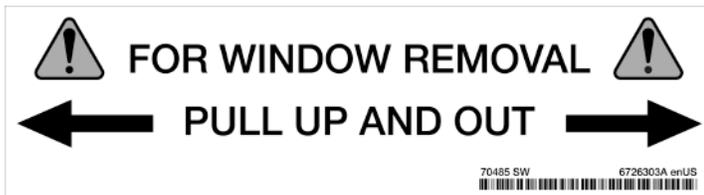
47



Rear Window (6726303)

This safety sign is located outside the operator cab on the rear window of loaders equipped with externally removable window.

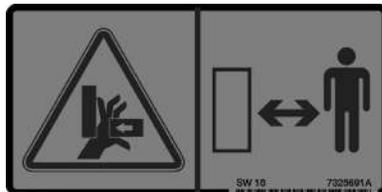
48



Pinch Hazard (7325691) (2)

This safety sign is located on the side of each lift arm.

49



PINCH POINT HAZARD
Keep hands clear during lift arm movement. ◀

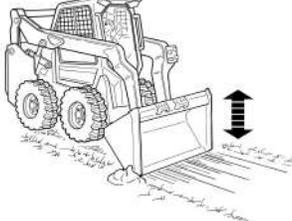
W3072

INTENDED USE

This machine is classified as a Skid-Steer Loader as defined in ISO 6165. This machine has wheels and commonly a front mounted bucket for the principle intended functions of digging, moving, leveling, 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:

Digging	
Backfilling	
Leveling	
Piling Material	

Loading Material	
Moving Palletized Loads	

⚠ 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. ◀

W-2056

⚠ WARNING

PUNCTURE AND CRUSHING HAZARDS
 Tipping forward into an object can cause serious injury or death.
 Never dump over an obstruction, such as a post, that can enter the operator cab. ◀

W-2057

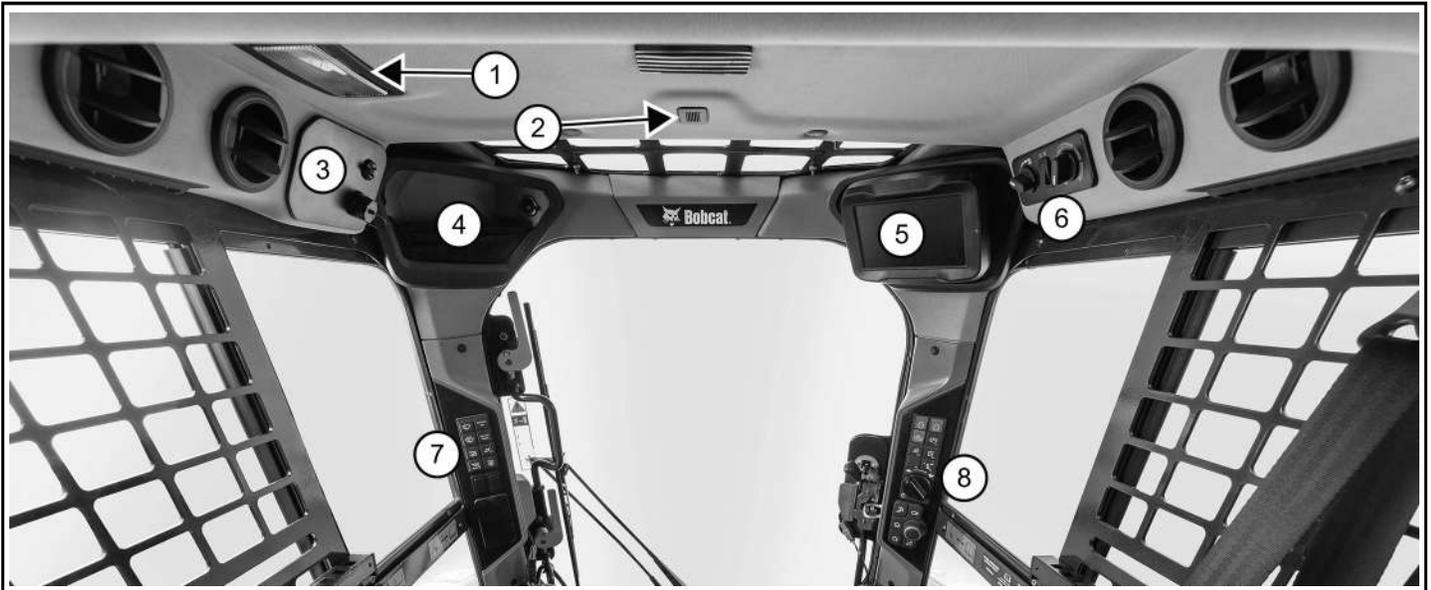
⚠ IMPORTANT

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. ◀

I-2005

INSTRUMENT PANEL OVERVIEW

Figure 12



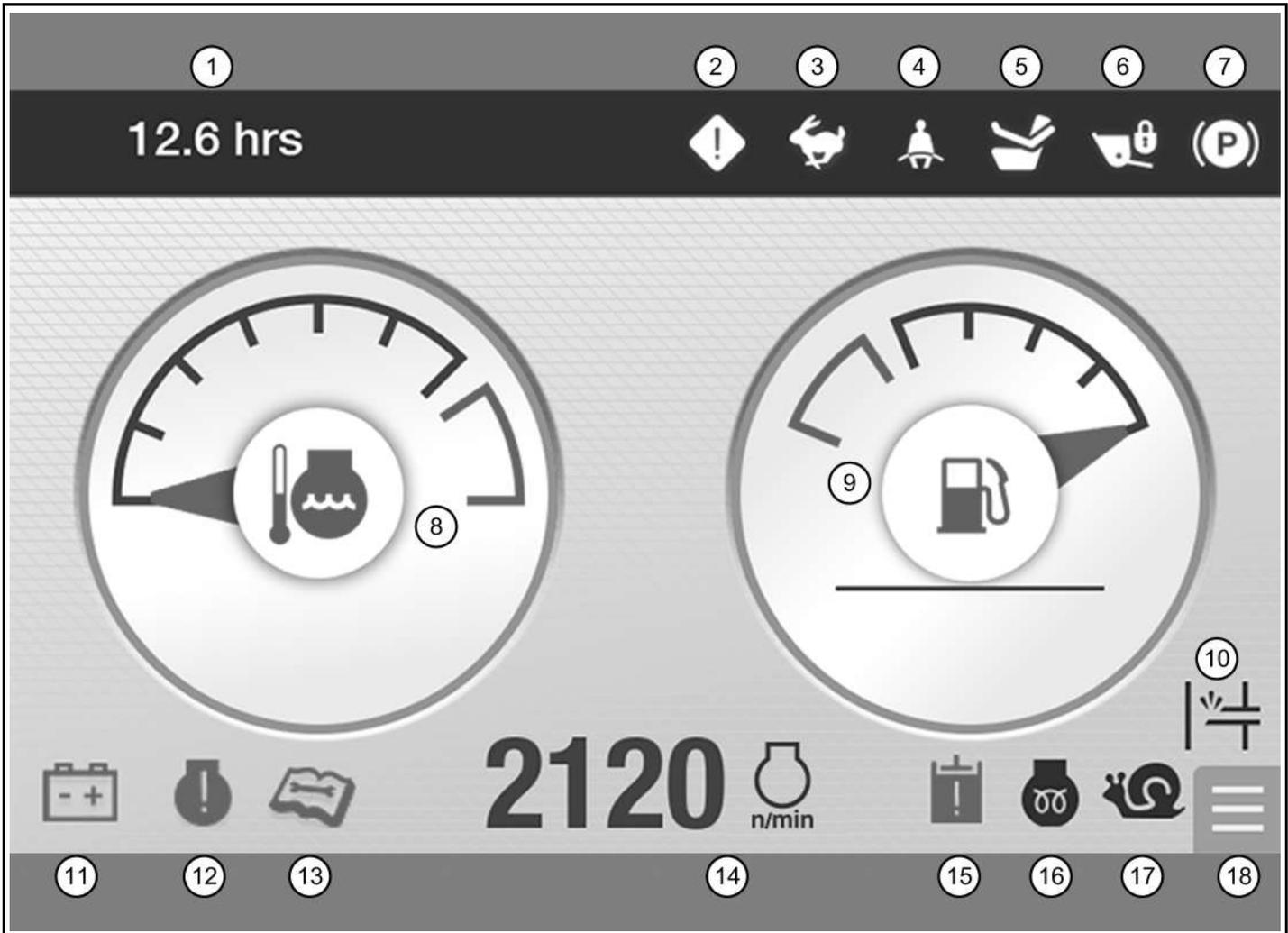
C200192a

REF	DESCRIPTION	FUNCTION
1	Cab Light	Press either side of the lens to turn the light on. Return the lens to the middle position to turn the light off.
2	Hands-Free Microphone	Used for hands-free talking with the touch display phone feature. Not installed with standard display.
3	Touch Display Radio Input Ports	(See Touch Display Radio Input Ports on Page 49)
	Standard Display Optional Radio	(See Radio Identification on Page 50)
4	Storage Compartment	Storage compartment includes a storage net and 12 volt power port for accessories.
5	Standard Display	(See Standard Display on Page 42)
	Touch Display	(See Touch Display on Page 44)
6	HVAC Controls (If equipped)	(See Heating, Ventilation, And Air Conditioning Controls on Page 48)
7	Left Control Panel	Option controls. (See Left Control Panel on Page 46)
8	Right Control Panel	Includes keyless start. (See Right Control Panel on Page 47)

STANDARD DISPLAY

The standard 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 resistant and weather resistant.

Figure 13



NA3637A

The following table shows the description and function for the icons located on the gauges (home) screen [Figure 13].

REF	DESCRIPTION	FUNCTION
1	Hourmeter	Shows machine operating hours. This will remain visible on most screens.
2	General Warning	Malfunction with one or more machine functions.
3	Two-Speed	High range selected.
4	Seat Belt Reminder	Instructs operator to fasten seat belt.
5	Seat Bar Raised	This icon is ON when the seat bar is UP.
6	Lift and Tilt Lockout	This icon is ON when the lift and tilt functions cannot be operated.

REF	DESCRIPTION	FUNCTION
7	Parking Brake Engaged	This icon is ON when the machine cannot be driven.
8	Engine Coolant Temperature Gauge	Shows the engine coolant temperature.
9	Fuel Gauge	Shows the amount of fuel in the tank.
10	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.
11	Low Battery Voltage	Battery voltage is low.
12	Engine Malfunction	Engine malfunction or failure.
13	Service Due	Indicates service is due. (See Record A Service on Page 189)
14	Engine RPM	Shows engine RPM.
15	Low Hydraulic Charge Pressure	Hydraulic charge pressure is low.
16	Glow Plugs Activated	This icon is ON when the glow plugs are ON. Wait to start the machine until this icon is OFF.
17	Speed Management	Indicates speed management is engaged.
18	Navigation Handle	This icon is used to open the navigation bar. (See Navigation Bar on Page 187)

TOUCH DISPLAY

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

See the Touch Display User Guide included in the machine literature package for phone and sound system instructions.

Figure 14



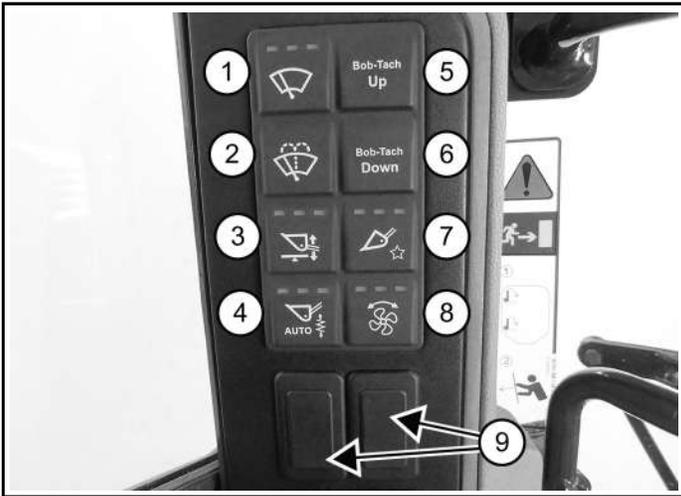
The following table shows the description and function for the icons located on the gauges (home) screen [Figure 14].

REF	DESCRIPTION	FUNCTION
1	Operator / Connected Device Information	These icons show: Operator Name, Connected Device Signal Strength, Connected Device Battery Strength, Bluetooth Device Connected, Job Clock Active, and Notifications Available.
2	Current Time / Notification Drawer	Displays current time. The notification drawer is opened by pressing the time. The notification drawer will show: Job Clock, Screen Brightness, and Notifications.

REF	DESCRIPTION	FUNCTION
3	Status Indicators	These icons show: General Warning, Two-Speed, Seat Belt Reminder, Seat Bar Raised, Lift and Tilt Lockout, and Parking Brake Engaged.
4	Volume Control	Activates volume slider bar and mute control. This will remain visible on most screens.
5	Vitals Screen	Changes display to machine vitals shown in a digital format.
6	Settings	Changes display to machine settings from the gauges screen. Used to enter camera, phone, and audio settings when those screens are displayed. (See Settings (Touch Display) on Page 204)
7	Hourmeter	Shows machine operating hours. This will remain visible on most screens.
8	Engine Oil Pressure Gauge	Shows the engine oil pressure.
9	System Voltage Gauge	Shows the system voltage.
10	Fuel Gauge	Shows the amount of fuel in the tank.
11	Hydraulic Fluid Temperature Gauge	Shows the hydraulic fluid temperature.
12	Engine Coolant Temperature Gauge	Shows the engine coolant temperature.
13	Fuel Level Bar Graph	Shows the amount of fuel in the tank. This will remain visible on most screens.
14	Status Indicators	These icons show: Fuel Priming in Process, Low Hydraulic Charge Pressure, Low Battery Voltage, and Speed Management Engaged.
15	Left Turn Signal	Indicates left turn signal is on.
16	Engine RPM	Shows engine RPM.
17	Right Turn Signal	Indicates right turn signal is on.
18	Status Indicators	These icons show: Service Due, Glow Plugs Activated, and Engine Malfunction.
19	Gauges	Changes display to this screen. (See Gauges (Touch Display) on Page 195)
20	Camera	Changes display to the camera screen. (See Camera (Touch Display) on Page 197)
21	Phone	Changes display to the phone screen. (See your Touch Display User Guide.)
22	Audio	Changes display to the audio screen. (See your Touch Display User Guide.)
23	Service	Changes display to the service screen. (See Service (Touch Display) on Page 199)
24	Active Service Code Indicator	Indicates active service code. (See View Service Codes on Page 202)
25	Attachments	Changes display to the attachments screen. (See Attachments (Touch Display) on Page 203)
26	Settings	Changes display to the settings screen. (See Settings (Touch Display) on Page 204)

LEFT CONTROL PANEL

Figure 15

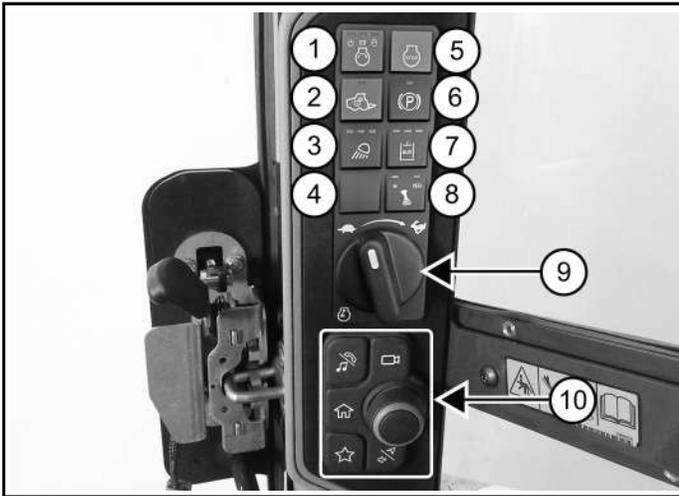


REF	DESCRIPTION	FUNCTION
8	Reversing Fan (If equipped)	(See Operating Reversing Fan on Page 86)
9	Accessory Switches (If equipped)	Certain kits available from your Bobcat dealer use switches that can be installed here. Some examples include: strobe light, rotating beacon, rear window wiper, and four-way flashers.

REF	DESCRIPTION	FUNCTION
1	Windshield Wiper (If equipped)	(See Operating Front Wiper And Washer on Page 57)
2	Windshield Washer (If equipped)	(See Operating Front Wiper And Washer on Page 57)
3	Dual Direction Bucket Positioning (If equipped)	(See Operating Dual Direction Bucket Positioning on Page 85)
4	Auto Ride Control (If equipped)	(See Operating Automatic Ride Control on Page 85)
5	Power Bob-Tach Wedges Up (If equipped)	(See Installing And Removing Attachments (Power Bob-Tach System) on Page 111)
6	Power Bob-Tach Wedges Down (If equipped)	(See Installing And Removing Attachments (Power Bob-Tach System) on Page 111)
7	Not Used	---

RIGHT CONTROL PANEL

Figure 16



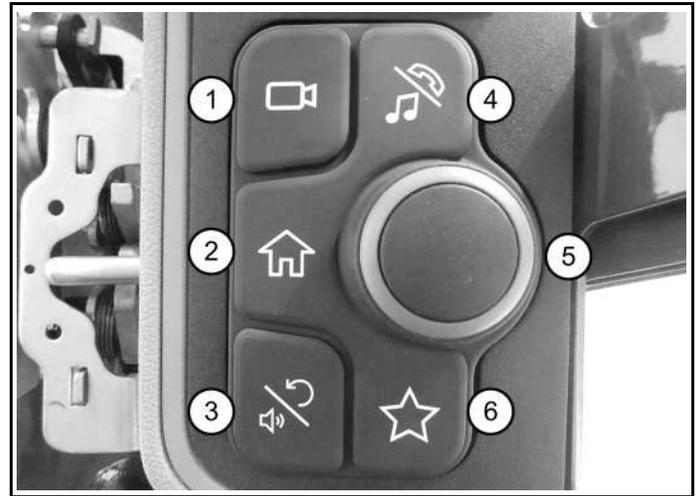
C200320A

REF	DESCRIPTION	FUNCTION
1	Run / Start	(See Starting Engine on Page 100)
2	Operate	(See Starting Engine on Page 100)
3	Lights	(See Operating Loader Lights on Page 56)
4	Not Used	---
5	Stop	(See Stopping The Engine And Leaving The Machine Procedure on Page 104)
6	Parking Brake	(See Parking Brake on Page 60)
7	Auxiliary Hydraulics	(See Operating Front Auxiliary Hydraulics on Page 87)
8	Selectable Joystick Controls (SJC) (If equipped)	(See Driving and Steering the Loader on Page 71)
9	Engine Speed Control	(See Engine Speed Control on Page 61)
10	Jog Shuttle	(See Jog Shuttle (Standard Display) on Page 47) or (See Jog Shuttle (Touch Display) on Page 48)

JOG SHUTTLE

Jog Shuttle (Standard Display)

Figure 17

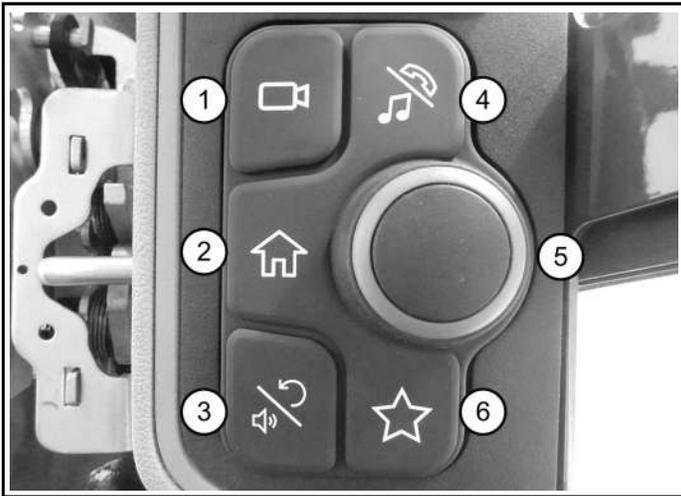


C200199a

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

Jog Shuttle (Touch Display)

Figure 18

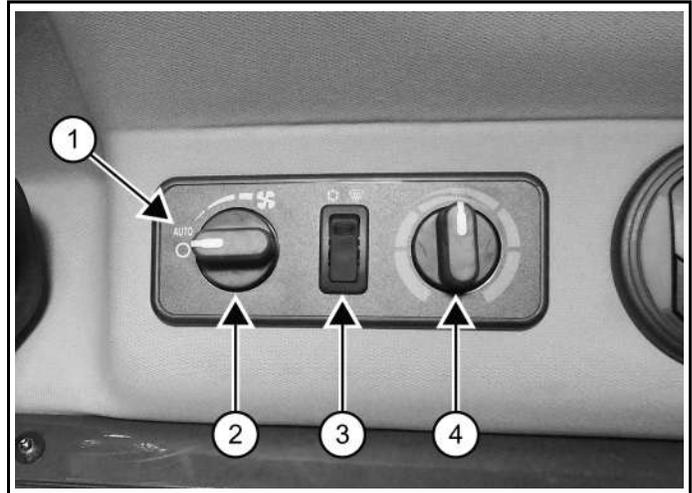


C200198a

REF	DESCRIPTION	FUNCTION
1	Rear View Camera	Press to change display view to rear camera. Press again to toggle full screen view.
2	Gauges	Press to toggle between GAUGES and VITALS screens.
3	Volume / Navigation	Press to toggle rotary knob control of radio and phone volume or navigation around the current display view.
4	Audio / Phone	Press to toggle between AUDIO and PHONE screens. See Touch Display User Guide for more information.
5	Rotary Knob	Rotate to navigate between available icons on display. Press to select highlighted icon.
		Rotate clockwise to increase volume of radio or phone and counterclockwise to decrease volume. Press to mute and unmute.
6	Favorite	Press repeatedly to cycle through favorite screens. Press and hold to add and remove favorite screens. (See Favorites on Page 204)

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) CONTROLS

Figure 19



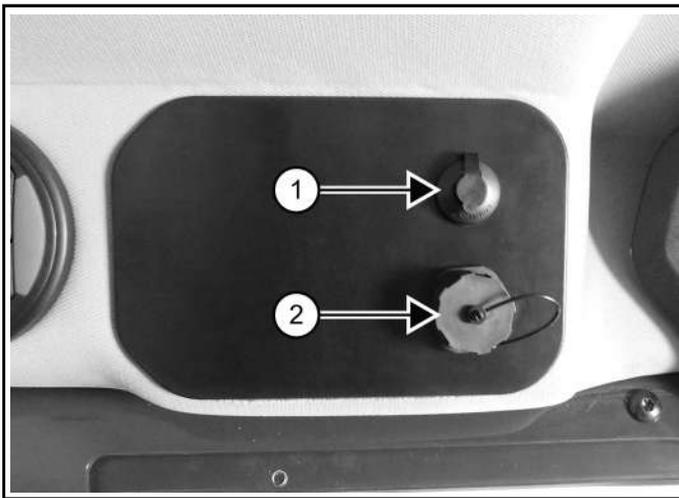
C200198a

The HVAC control panel [Figure 19] is installed if the machine is equipped with a cab heater or air conditioning.

REF	DESCRIPTION	FUNCTION
1	Auto Fan Position (If equipped)	Fan speed will automatically increase and decrease to maintain the selected temperature. Fan motor will not run at full speed when heat is required until engine coolant reaches normal operating temperature.
2	Fan Motor Speed	Rotate clockwise to increase fan speed and counterclockwise to decrease. There are four positions; Off-1-2-3. Louvers throughout the operator cab can be opened, closed, and rotated.
3	Air Conditioning / Defrost Switch (If equipped)	Press top of switch to start; bottom to stop. Switch will light when started. Fan motor must be on for air conditioning to operate.
4	Temperature Control	Rotate clockwise to increase the temperature and counterclockwise to decrease.

TOUCH DISPLAY RADIO INPUT PORTS

Figure 20

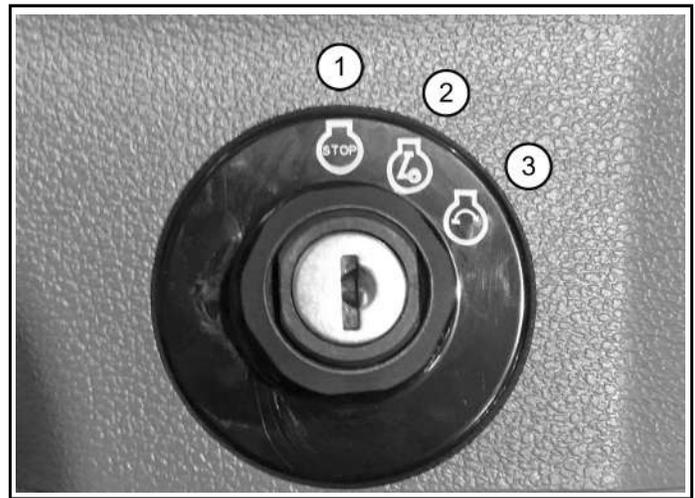


The touch display radio input ports [Figure 20] are installed if the machine is equipped with touch display.

REF	DESCRIPTION	FUNCTION
1	3,5 mm (1/8 in) Auxiliary Input (If equipped)	See the Touch Display User Guide included in the machine literature packet for more information about the sound system.
2	USB Input (If equipped)	

KEYED IGNITION KIT

Figure 21



A keyed ignition kit [Figure 21] is available for this machine.

REF	DESCRIPTION	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.

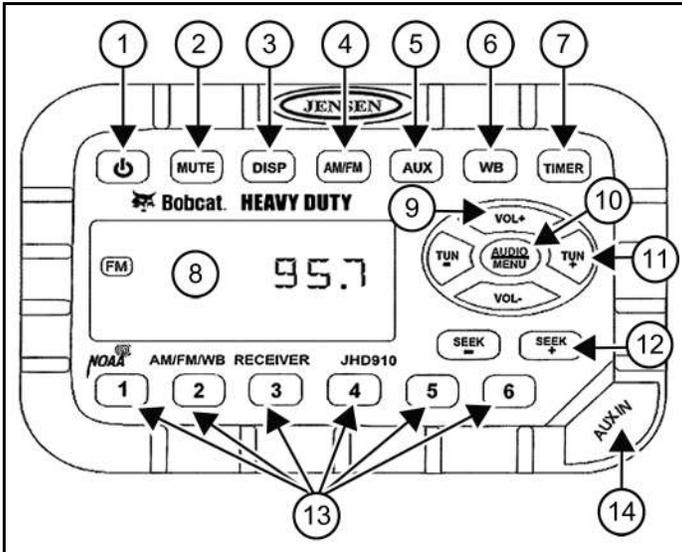
The Run / Start and Stop buttons on the right control panel are functional after the key switch is turned to the Run position.

NOTE: Pressing the Stop button on the right control panel will stop the engine and momentarily turn the electrical system OFF before turning back ON. You must turn the key switch to the Stop position after use if equipped with keyed ignition kit.

RADIO

Radio Identification

Figure 22

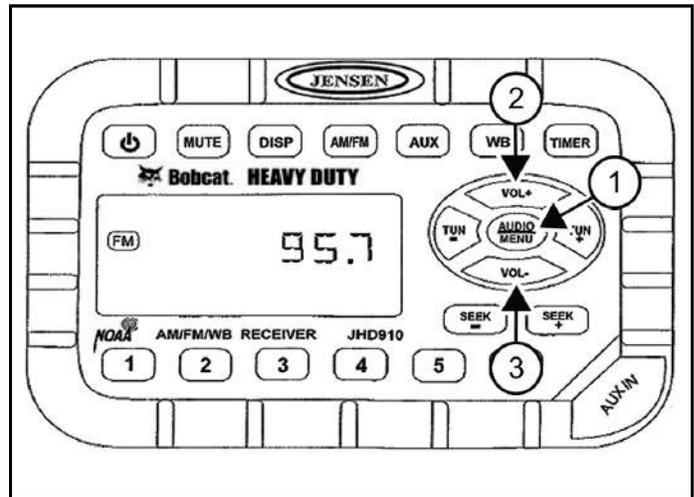


REF	DESC.	FUNCTION
9	VOL+ / VOL-	Adjusts volume up and down. Current volume (0 – 40) will appear briefly in display screen.
10	AUDIO / MENU	Adjusts radio settings. (See Adjusting Radio Settings on Page 50)
11	TUN- / TUN+	Manually tunes the radio frequency up and down.
12	SEEK- / SEEK+	Automatically tunes frequency up or down to next strong station.
13	PRESET STATIONS	Stores and recalls stations for each AM and FM band. Press button and hold to store current station. Press button to recall station.
14	AUX IN	Connect line output of portable audio device (MP3 player, etc.) to 3,5 mm (1/8 in) jack and press AUX button.

REF	DESC.	FUNCTION
1	POWER	Turns the radio unit ON / OFF.
2	MUTE	Mutes audio output.
3	DISP	Switches between display operation functions of the radio. (See Operating The Radio Clock on Page 51)
4	AM/FM	Switches between AM (MW) bands and three FM bands.
5	AUX	Switches to Auxiliary Input mode. Portable audio device (MP3 player, etc.) must be attached to auxiliary input jack.
6	WB	Selects weather band. The weather alert feature, if activated, will automatically switch from the current function to the weather band if a weather warning is received. (See Adjusting Radio Settings on Page 50)
7	TIMER	Accesses timer mode. (See Operating Radio Timer on Page 51)
8	DISPLAY SCREEN	Displays the time, frequency, and activated functions.

Adjusting Radio Settings

Figure 23



- Press the AUDIO / MENU button (Item 1) [Figure 23] to cycle through bass, treble, and balance settings.
 - ▷ Use the VOL+ (Item 2) and VOL- (Item 3) buttons [Figure 23] to adjust the desired option displayed. Normal operation will resume automatically.
- Press and hold the AUDIO / MENU button (Item 1) [Figure 23] for three seconds to enter menu adjustment settings.

- ▶ Press the AUDIO / MENU button (Item 1) [Figure 23] to cycle through the following settings:

Beep Confirm: Determines if beep will sound with each button press.

Operation Region: Selects the appropriate region (USA or Europe).

Clock Display: Selects a 12 hour or 24 hour clock display.

Display Brightness: Set display screen brightness level (low, medium, or high).

Backlight Color: Set display screen backlight color (amber or green).

Power On Volume: Sets default volume setting when radio is turned on.

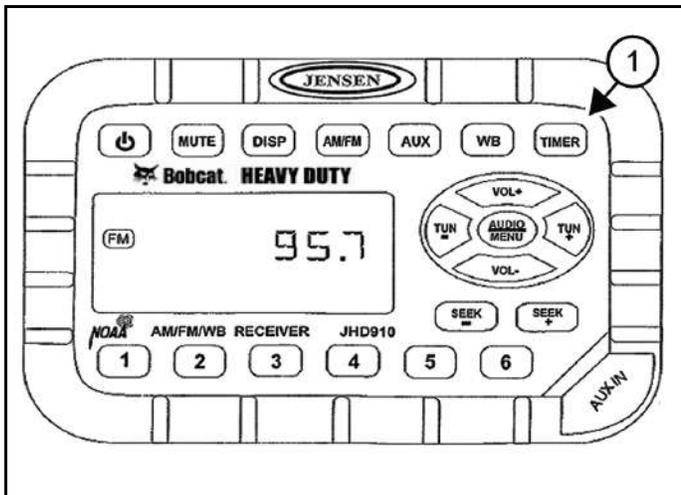
WB Alert: Determines if weather band alert features is activated.

- ▶ Use the VOL+ (Item 2) and VOL- (Item 3) buttons [Figure 23] to adjust the active setting.

Normal operation will resume automatically.

Operating Radio Timer

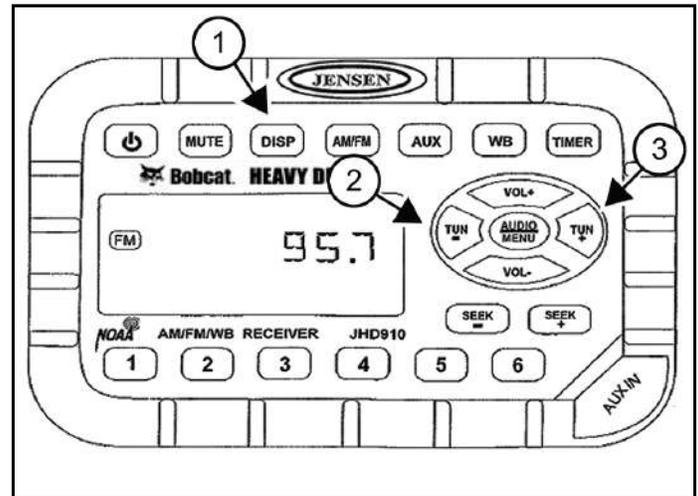
Figure 24



- Press the TIMER (Item 1) [Figure 24] button to start the timer function.
- Press TIMER (Item 1) [Figure 24] again to stop timer.
- Press and hold TIMER (Item 1) [Figure 24] to reset timer and exit from timer mode.

Operating The Radio Clock

Figure 25



- Press and hold the DISP (Item 1) button [Figure 25] to enter clock setting mode.
- Use TUN – button (Item 2) [Figure 25] to adjust hours.
- Use TUN + button (Item 3) [Figure 25] to adjust minutes.

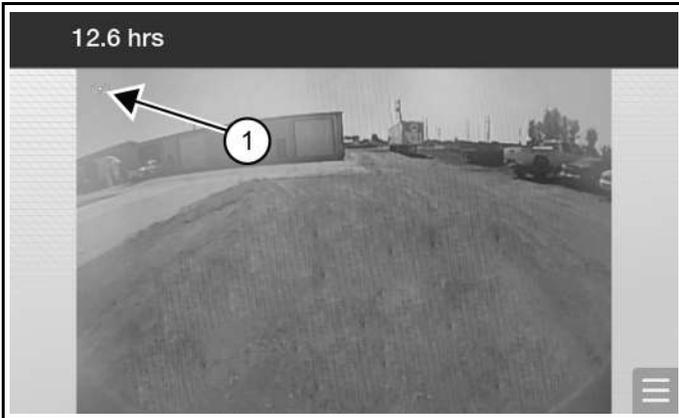
Normal operation will resume automatically.

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 and the rear view camera system. The operator must service and maintain the camera system to ensure proper function.

Figure 26



The camera view is shown on the display [Figure 26] by selecting **[CAMERA]** on the display or pressing the camera button on the jog shuttle.

The rotating icon (Item 1) [Figure 26] 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 both steering levers or the joystick(s) into 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 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. ◀

W-2783

Touch Display Only

Figure 27



The view can be toggled between partial screen and full screen by:

- Pressing the camera button on the jog shuttle.
- Touching anywhere on the camera view.
- Selecting the **[FULL SCREEN]** icon (Item 2) [Figure 27].

Camera settings are accessed by selecting the **[SETTINGS]** icon (Item 1) [Figure 27]. (See Camera Settings on Page 197)

Maintaining Rear View Camera System

Figure 28



The rear view camera (Item 1) [Figure 28] is located in the rear door.

1. 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.
- Verify proper camera adjustment. (See Adjusting Rear View Camera System on Page 53) Adjust camera if necessary.
- Replace damaged rear view camera system components. See your Bobcat dealer for service and parts.

Adjusting Rear View Camera System

Perform the following steps to adjust the rear camera:

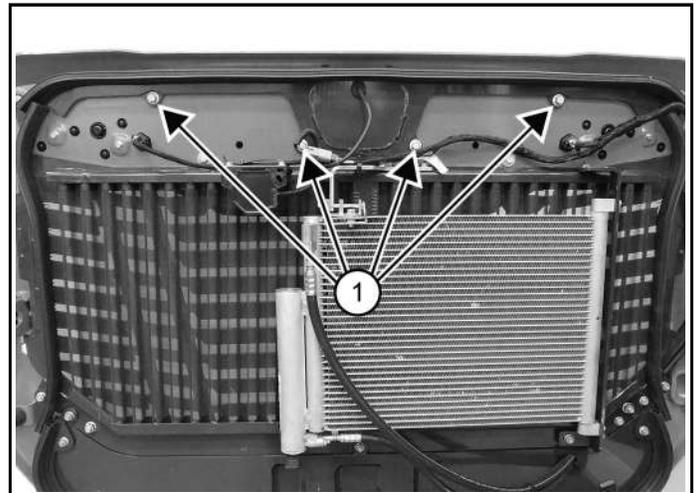
1. Make a mark on the ground 1,25 m (4 ft) behind the machine.
2. Turn the machine ON without starting the engine. Set the display for camera.

Figure 29



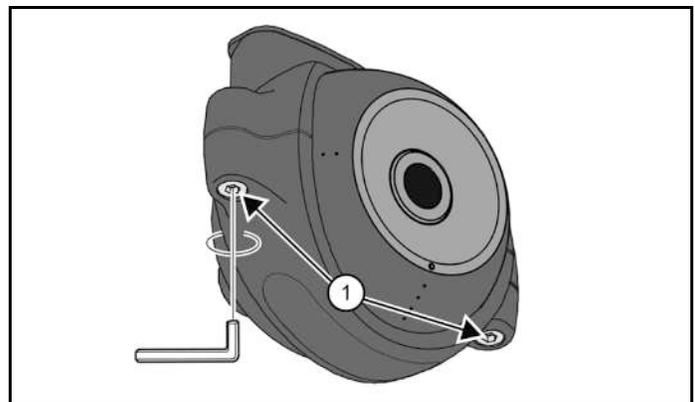
3. Ensure the camera is centered left and right. The mark on the ground (Item 2) [Figure 29] from step 1 should be visible on the display. Continue with procedure if necessary.

Figure 30



4. Remove the bolts (Item 1) [Figure 30] while supporting the bracket.

Figure 31

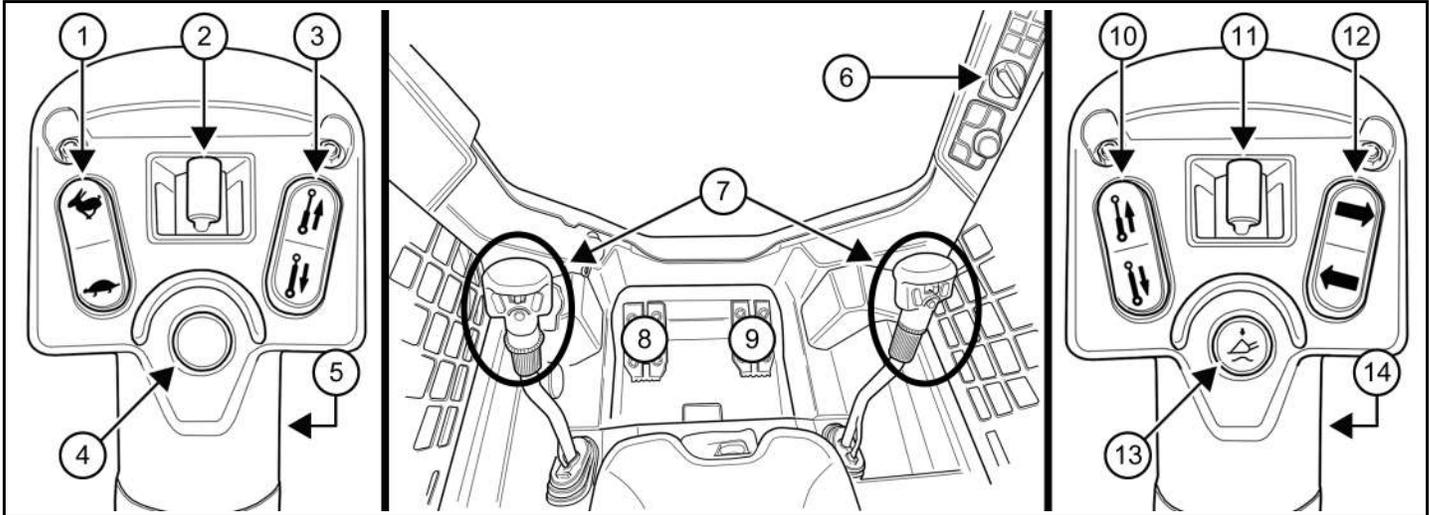


5. Loosen the screws (Item 1) [Figure 31] of the clamp holding the camera.
6. Adjust the camera until the rear door (Item 1) is just visible on the display. Ensure the camera is centered left and right. The mark on the ground (Item 2) [Figure 29] from step 1 should be visible on the display.
7. Tighten the screws to 0,8 – 1,0 N•m (7 – 8.8 in-lb) torque.
8. Install the bracket and bolts [Figure 30].
9. Verify proper camera adjustment [Figure 29].
10. Repeat steps 4 through 9 if necessary.
11. Turn the machine OFF.

CONTROL IDENTIFICATION

Standard Controls Identification

Figure 32



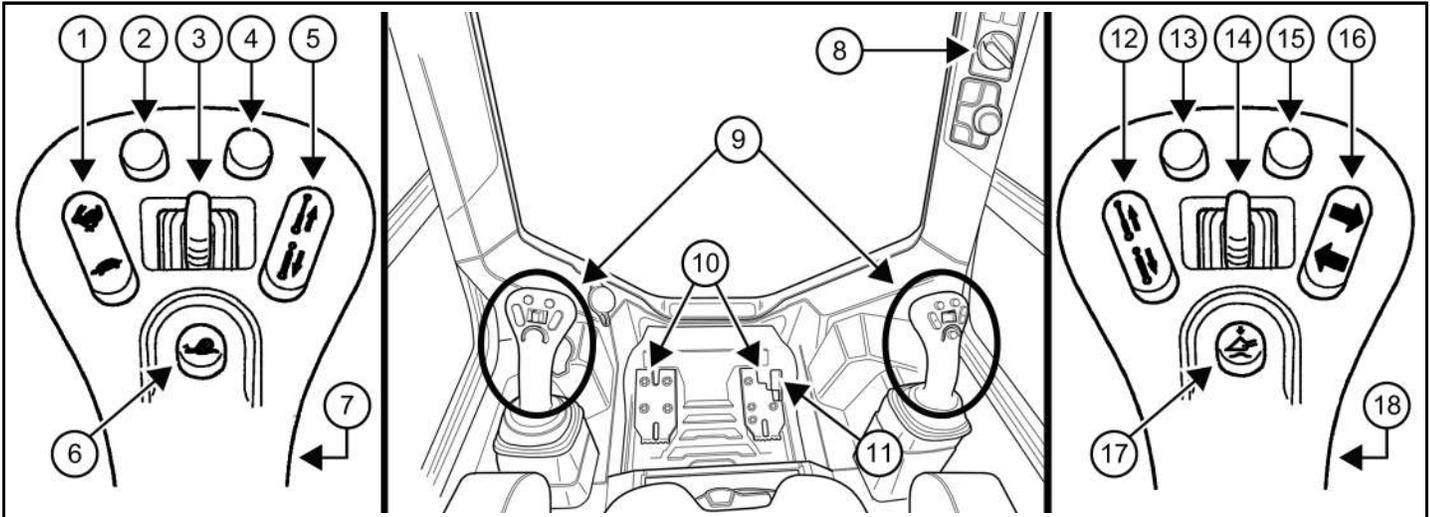
NA3800A

REF	DESCRIPTION	FUNCTION
1	TWO-SPEED CONTROL	(See Two-speed Control on Page 74)
2	REAR AUXILIARY HYDRAULICS (If equipped)	(See Operating Rear Auxiliary Hydraulics on Page 89)
	Also: ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
3	ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
4	NOT USED	---
5	FRONT HORN	Press the front switch to sound the front horn.
6	ENGINE SPEED CONTROL	(See Operating Engine Speed Control (Hand) on Page 61)
7	STEERING LEVERS	(See Operating Standard Controls on Page 71)
8	LIFT ARM PEDAL	(See Operating Standard Hydraulic Controls on Page 83)
9	TILT PEDAL	(See Operating Standard Hydraulic Controls on Page 83)
10	ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
11	FRONT AUXILIARY HYDRAULICS	(See Operating Front Auxiliary Hydraulics on Page 87)
12	TURN SIGNALS (If equipped)	Press the top to activate right signal; bottom to activate left signal; center position to turn off.

REF	DESCRIPTION	FUNCTION
13	FLOAT CONTROL	(See Operating Standard Hydraulic Controls on Page 83)
14	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	(See Operating Front Auxiliary Hydraulics In Continuous Flow Mode on Page 88) and (See Operating Front Auxiliary Hydraulics In Reverse Continuous Flow Mode on Page 88)

Selectable Joystick Controls (SJC) Identification

Figure 33



REF	DESCRIPTION	FUNCTION
1	TWO-SPEED CONTROL	(See Two-speed Control on Page 74)
	Also: SPEED MANAGEMENT	(See Speed Management on Page 75)
2 *	STEERING DRIFT COMPENSATION	(See Steering Drift Compensation on Page 78)
3	REAR AUXILIARY HYDRAULICS (If equipped)	(See Operating Rear Auxiliary Hydraulics on Page 89)
	Also: ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
4 *	STEERING DRIFT COMPENSATION	(See Steering Drift Compensation on Page 78)
5	ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
6	SPEED MANAGEMENT	(See Speed Management on Page 75)
7	FRONT HORN	Press the front switch to sound the front horn.
8	ENGINE SPEED CONTROL (HAND)	(See Operating Engine Speed Control (Hand) on Page 61)
9	JOYSTICKS	(See Driving and Steering the Loader on Page 71) and (See Hydraulic Controls on Page 83)
10	FOOTRESTS	Keep your feet on the footrests at all times.

REF	DESCRIPTION	FUNCTION
11	ENGINE SPEED CONTROL (FOOT)	(See Operating Engine Speed Control (Foot) on Page 61)
12	ATTACHMENT FUNCTION CONTROL	(See Attachment Control Device (ACD) Description on Page 92)
13 *	NOT USED	---
14	FRONT AUXILIARY HYDRAULICS	(See Operating Front Auxiliary Hydraulics on Page 87)
15 *	NOT USED	---
16	TURN SIGNALS (If equipped)	Press the top to activate right signal; press again to turn off. Press the bottom to activate left signal; press again to turn off.
17	FLOAT CONTROL	(See Hydraulic Controls on Page 83)
18	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	(See Operating Front Auxiliary Hydraulics In Continuous Flow Mode on Page 88) and (See Operating Front Auxiliary Hydraulics In Reverse Continuous Flow Mode on Page 88)

* Also used as Attachment Function Control: See your attachment Operation & Maintenance Manual.

OPERATOR CAB

Operator Cab Description

The Bobcat loader has an operator cab (ROPS and FOPS) as standard equipment to protect the operator from rollover and falling objects. The seat belt must be worn for rollover protection.

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. ◀

Operating Loader Lights

Figure 34



C200320b

The lights button (Item 1) [Figure 34] is located on the right control panel.

1. Press once for front lights and rear taillights. The left LED in the button will light.
2. Press a second time to add rear work lights. The middle LED in the button will light.
3. Press a third time to add optional side lights. The right LED in the button will light.
4. Press a fourth time to turn all lights off.

Operating Front Wiper And Washer

Figure 35



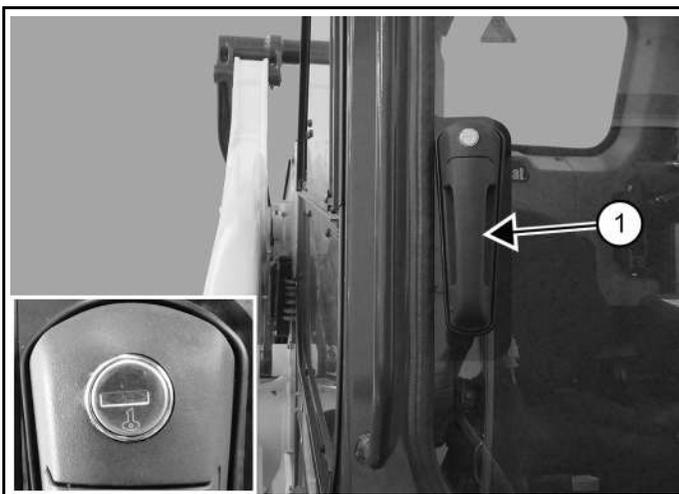
C200193h

If equipped with front wiper and washer, the controls (Items 1 and 2) [Figure 35] are located on the left control panel.

1. Press the wiper button (Item 1) [Figure 35] once to start front wiper. The left and right LED in the button will light.
2. Press a second time for intermittent operation. The left LED in the button will light.
3. Press a third time to turn the wiper off.
4. Press and hold the washer button (Item 2) [Figure 35] for washer fluid. The wiper will start automatically.

Operating Front Door

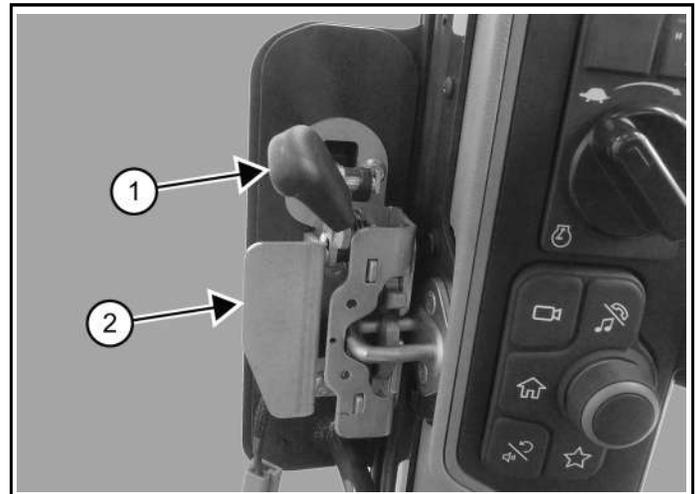
Figure 36



C200224a

- If equipped with a front door, pull the handle (Item 1) to open the front door. A lock (Inset) [Figure 36] is provided to lock the front door when the machine is not in use.

Figure 37

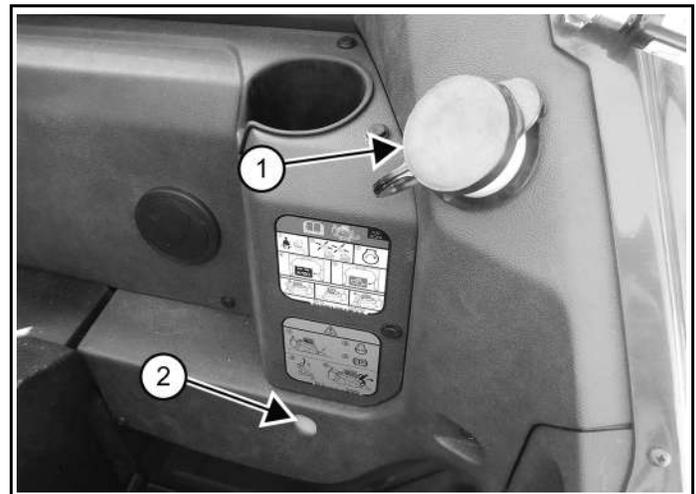


C200225a

- Pull the front door closed using the handle (Item 2) [Figure 37].
- Push the lever (Item 1) to unlatch the front door. Push on the handle (Item 2) [Figure 37] to open the front door.

Filling Front Washer Tank

Figure 38



C200201a

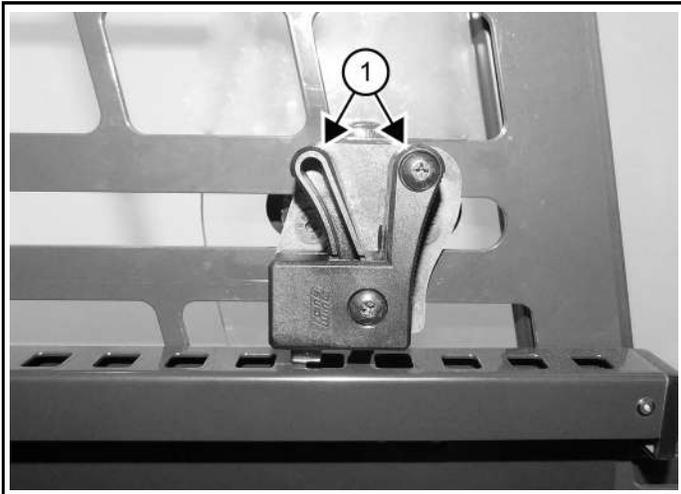
The washer fluid tank is located to the left of the operator seat.

- Check the fluid level in the sight gauge (Item 2) [Figure 38].

- Remove the cap (Item 1) [Figure 38] to add washer fluid.

Operating Side Windows

Figure 39



C200194s

1. If equipped with side windows, pinch the lever (Item 1) [Figure 39] of the side window handle and slide forward to open window. (Left side shown.)
2. Release lever at cutout to lock in desired position.
3. Pinch the lever and slide backward to close window.

BOBCAT INTERLOCK CONTROL SYSTEM (BICS)

Bobcat Interlock Control System (BICS) Description

⚠ WARNING

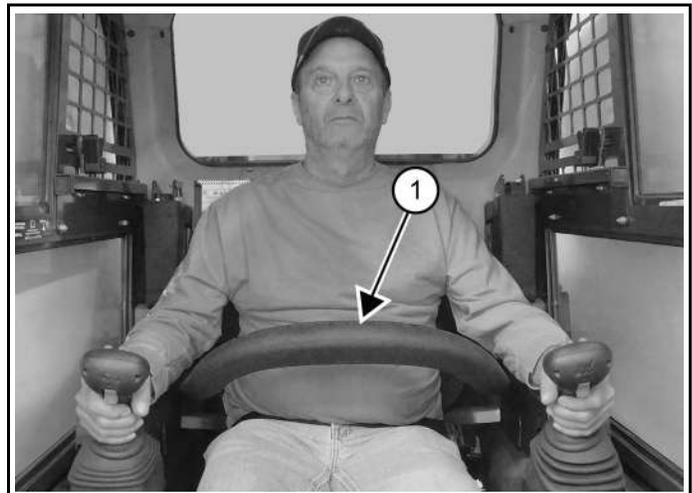
MODIFICATION HAZARD

Modifying the machine can cause serious injury or death.

The Bobcat Interlock Control System (BICS™) must deactivate the lift, tilt and traction drive functions. If it does not, contact your dealer for service. **DO NOT** modify the system. ◀

W2151

Figure 40



C200588B

The Bobcat Interlock Control System (BICS) has a pivoting seat bar with armrests (Item 1) [Figure 40]. The operator controls the use of the seat bar.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls. ◀

W2281

The BICS requires the operator to be seated in the operating position with the seat bar fully lowered before the lift, tilt, auxiliary hydraulics, and traction drive functions can be operated. The seat belt must be fastened anytime you operate the machine.

Operating Bobcat Interlock Control System (BICS)

Figure 41



NA3635

- Three icons [Figure 41] located in the upper right of the display must be OFF to fully operate the machine.
- When the seat bar is lowered, the engine is running, the operate button is pressed, and the parking brake is released; the lift, tilt, auxiliary hydraulics, and traction drive functions can be operated.
- When the seat bar is raised; the lift, tilt, auxiliary hydraulics, and traction drive functions are deactivated.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

Before you leave the operator's seat:

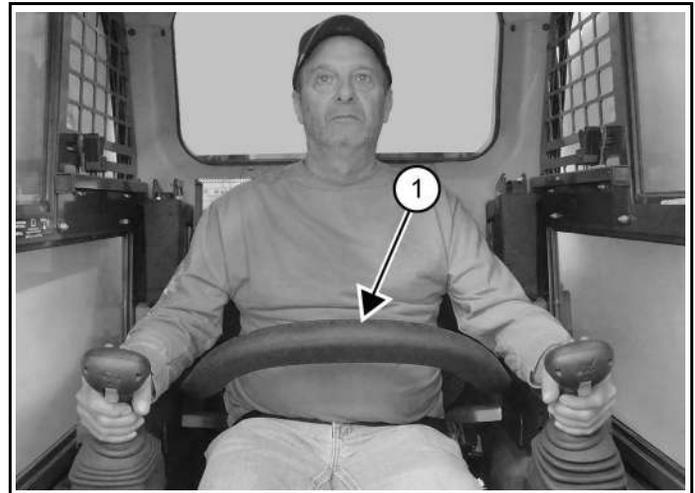
- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2483

SEAT BAR RESTRAINT SYSTEM

Seat Bar Restraint System Description

Figure 42



C2005888

The seat bar restraint system has a pivoting seat bar with armrests (Item 1) [Figure 42].

The operator controls the use of the seat bar. The seat bar in the down position helps to keep the operator in the seat.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls. ◀

W-2261

Operating Seat Bar Restraint System

- When the seat bar is down, the engine is running, the operate button is pressed, and the parking brake is released; the lift, tilt, and traction drive functions can be operated.
- When the seat bar is raised; the lift, tilt, and traction drive functions are deactivated.

⚠ 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.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2463

PARKING BRAKE**Operating Parking Brake****Figure 43**

1. Press the parking brake button (Item 1) [Figure 43] on the right control panel to engage the parking brake.

The LED in the button will light. The traction drive system is locked.

2. Move steering levers or joystick(s) slowly forward and backward.

The traction lock must be engaged. See your Bobcat dealer for service if machine fails to stop.

3. Press the button again to disengage the parking brake.

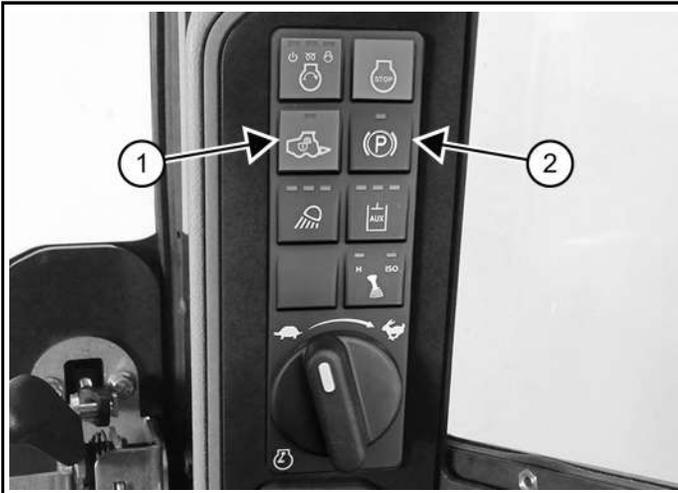
The LED in the button will turn off. The traction drive system is unlocked.

NOTE: The parking brake icon will remain visible on the display until the engine is started, the operate button is pressed, and the parking brake is disengaged.

Operating Hydraulic Controls With Parking Brake Engaged

The following steps allow you to activate the BICS and use loader lift and tilt functions without releasing the parking brake.

Figure 44

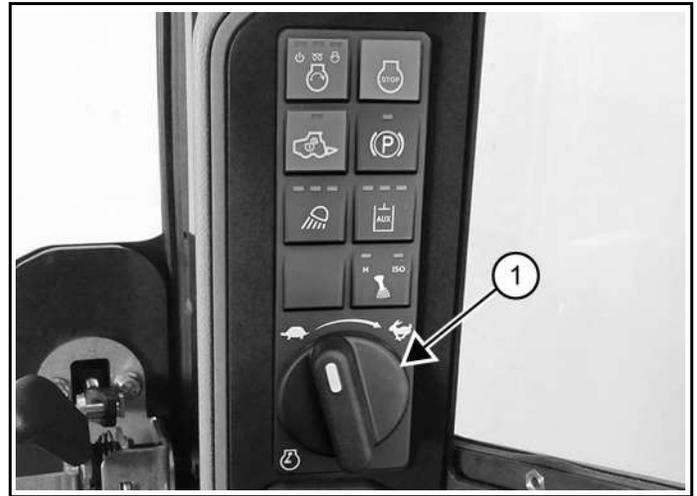


1. Press and hold the parking brake button (Item 2) [Figure 44] on the right control panel.
2. Press and hold the operate button (Item 1) [Figure 44] on the right control panel.
3. Release both buttons.

ENGINE SPEED CONTROL

Operating Engine Speed Control (Hand)

Figure 45



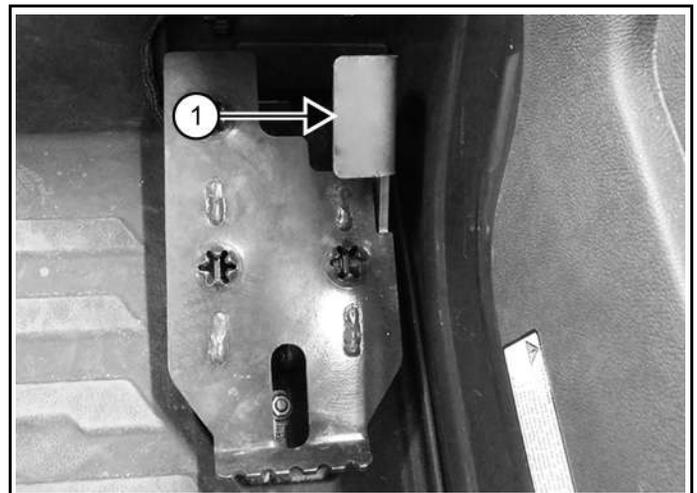
The engine speed control (Item 1) [Figure 45] is located on the right control panel.

1. Turn the knob clockwise to increase engine speed.
2. Turn the knob counterclockwise to decrease engine speed.

NOTE: The full range of the engine speed control will not be available until the engine controller determines the machine is adequately warmed. (See Cold Temperature Engine Speed Control Description on Page 102)

Operating Engine Speed Control (Foot)

Figure 46



SJC equipped machines have a foot operated engine speed control pedal (Item 1) [Figure 46] in addition to the engine speed control knob. The pedal is located on the right side floor above the footrest.

Decel Pedal

SJC machines equipped with touch display have a decel function.

When the decel function is ON and the hand engine speed control is set to high idle, pressing the foot engine speed control will lower the engine speed. (See Machine Settings on Page 207)

AUTO IDLE

Auto Idle Description

SJC equipped machines have an auto idle feature. The auto idle feature (when engaged) reduces the engine speed to low idle when the joysticks are in neutral and not used for approximately five seconds.

All of the following conditions / actions must be met to allow the engine speed to reduce to low idle when auto idle is ON:

- Joysticks are not moved out of neutral.
- Auxiliary hydraulics is not engaged.
- Foot operated engine speed control pedal is not depressed.
- Engine speed controls are not moved.

Any of the following conditions / actions return the engine speed to the set position from low idle:

- Moving a joystick out of neutral.
- Engaging auxiliary hydraulics.
- Moving either engine speed control.

NOTE: The five second time delay before the engine speed reduces to low idle can be changed on machines equipped with a touch display. (See Machine Settings on Page 207)

Operating Auto Idle

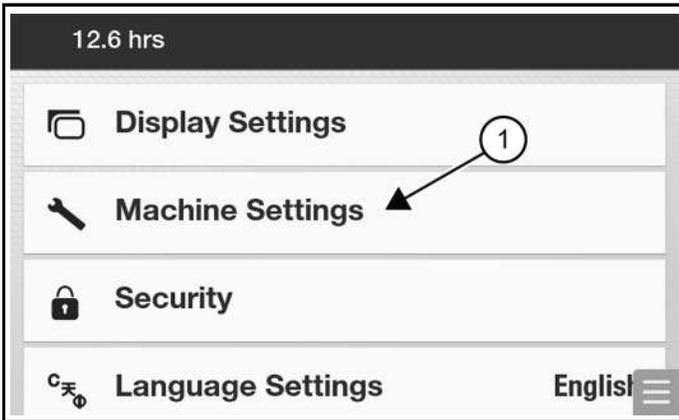
NOTE: Always disengage the auto idle feature when loading or unloading the machine on a trailer.

Figure 47



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 47].
2. Select **[SETTINGS]** (Item 2) [Figure 47].

Figure 48



3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 48].

Figure 49

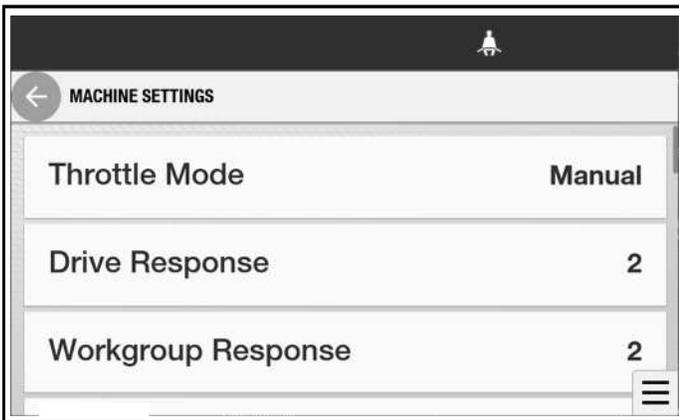
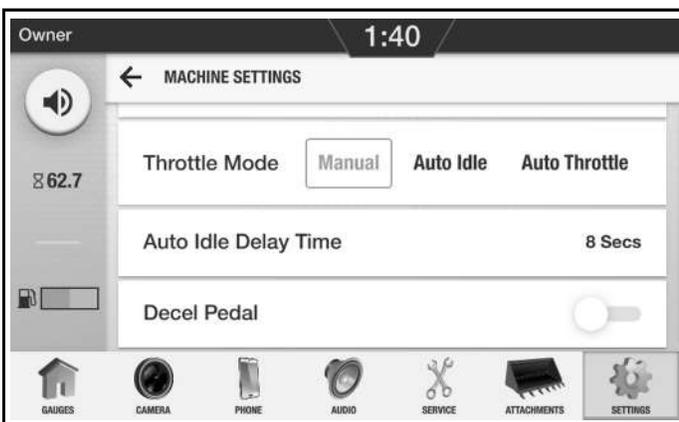


Figure 50

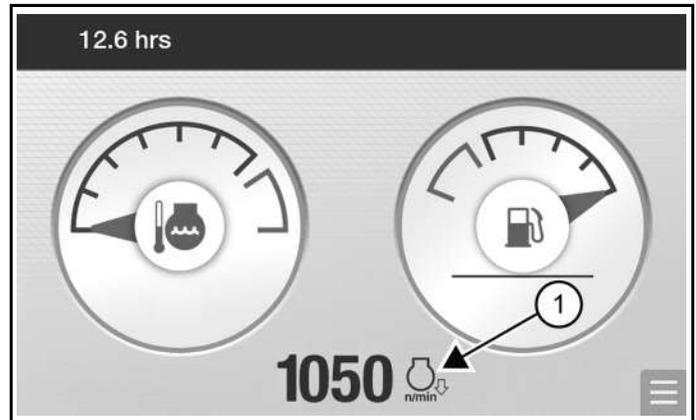


4. On the standard display, select **[THROTTLE MODE]** [Figure 49], and on the next screen select **[AUTO IDLE]**.

OR

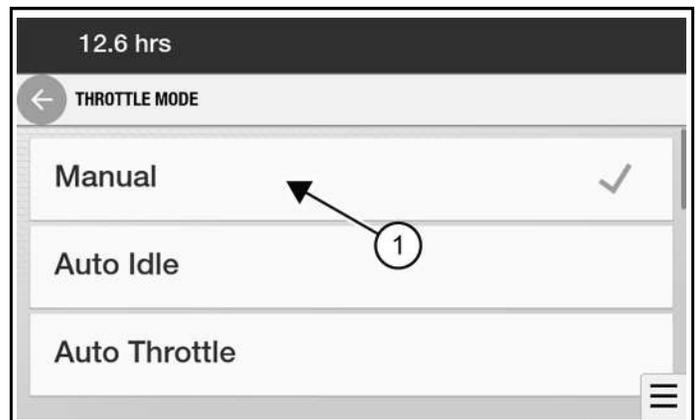
On the touch display, select **[AUTO IDLE]** as the Throttle Mode [Figure 50].

Figure 51



5. The auto idle icon (Item 1) [Figure 51] replaces the RPM icon on the display when auto idle is engaged.

Figure 52



6. Select **[MANUAL] [THROTTLE MODE]** (Item 1) [Figure 52] to turn auto idle off.

AUTO THROTTLE

Auto Throttle Description

Auto Throttle is a feature that is available on R-Series machines as a part of Bobcat Features On Demand.

When you activate the Auto Throttle feature, the throttle will adjust automatically so you don't have to manually adjust it while operating the machine.

With the addition of this feature, there are now three different throttle settings to choose from: Manual, Auto Idle, or Auto Throttle. For both Auto Idle and Auto Throttle, maximum engine speed is set with the engine speed control dial.

The primary differences between Auto Idle and Auto Throttle are described below.

Auto Idle vs. Auto Throttle	
Auto Idle	Auto Throttle
Engine speed decreases to idle after a period of time when controls are moved to neutral.	Engine speed decreases dynamically as joysticks are moved toward neutral.
Engine speed increases to the throttle setting when controls are reactivated.	Engine speed increases dynamically as joysticks are moved away from neutral.

NOTE: The Auto Throttle feature requires Selectable Joystick Controls (SJC).

Activating Auto Throttle

Figure 53



1. Set desired maximum engine speed with the engine speed control dial (Item 1) [Figure 53], which is located on the right control panel.

2. On the standard display, select **[NAVIGATION HANDLE]**→**[SETTINGS]**→**[MACHINE SETTINGS]**.

OR

On the touch display, select **[SETTINGS]**→**[MACHINE SETTINGS]**.

Manual is the default throttle setting.

Figure 54

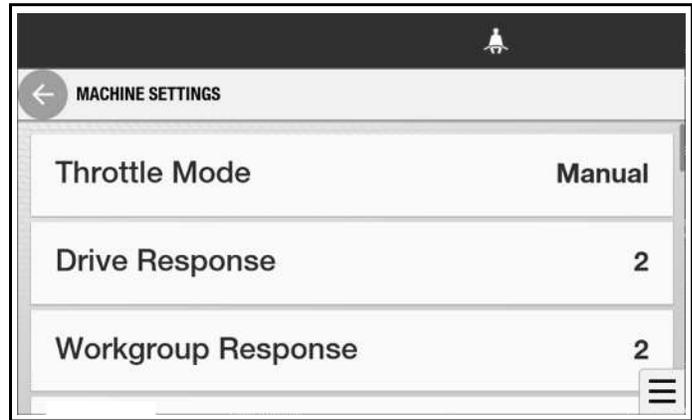
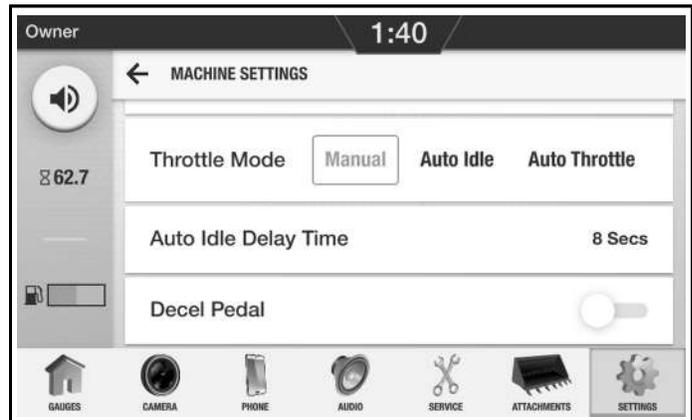


Figure 55



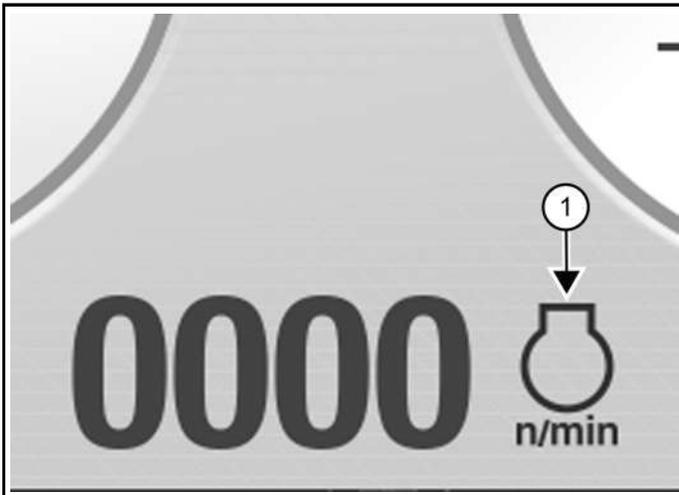
3. On the standard display, select **[THROTTLE MODE]** [Figure 54], and on the next screen select **[MANUAL]**, **[AUTO IDLE]**, or **[AUTO THROTTLE]**.

OR

On the touch display, select **[MANUAL]**, **[AUTO IDLE]**, or **[AUTO THROTTLE]** as the Throttle Mode [Figure 55].

Auto Throttle will be visible, but not selectable, until the feature has been activated by your Bobcat dealer.

Figure 56



NA388a.tif

The engine icon (Item 1) at the bottom of the **GAUGES** screen will indicate which setting is currently enabled: Manual, Auto Idle, or Auto Throttle. See table below for a description of the icons.

Icon	Description
	Manual throttle enabled
	Auto Idle enabled
	Auto Throttle enabled

NOTE: You can use the foot throttle to temporarily override the Auto Throttle feature. This will not turn Auto Throttle off.

Operating Auxiliaries With Auto Throttle

The Auto Throttle feature only responds to the joystick position.

When using auxiliaries, choose one of the following:

- Use the foot throttle to speed up when necessary.
- Go to machine settings on the screen and toggle the Auto Throttle feature OFF.

LIFT ARM BYPASS CONTROL

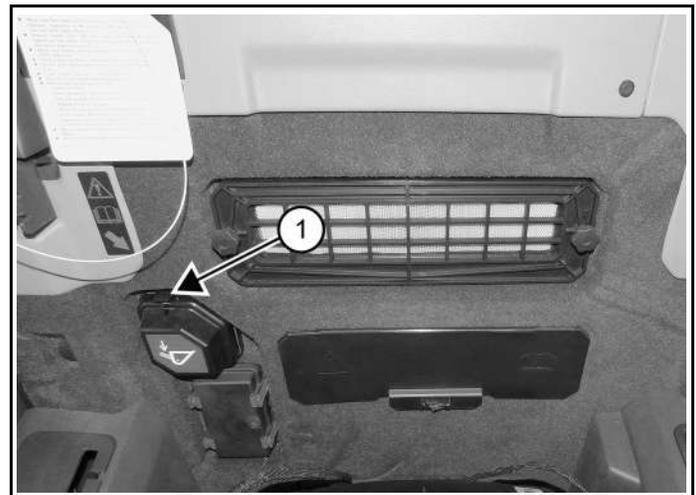
Operating Lift Arm Bypass Control

The lift arm bypass control, located behind the operator on the right side, is used to lower the lift arms if the lift arms cannot be lowered during normal operation.

Perform the following procedure to operate the lift arm bypass control:

1. Sit in the operator's seat.
2. Fasten the seat belt and lower the seat bar.

Figure 57



C200577a

3. Press down on the latch (Item 1) [Figure 57] to allow the cover to hinge open at the bottom of the cover.

Figure 58



C200204

4. Turn the knob [Figure 58] 90° clockwise.

5. Pull out and hold the knob until the lift arms lower.
6. Close the cover.

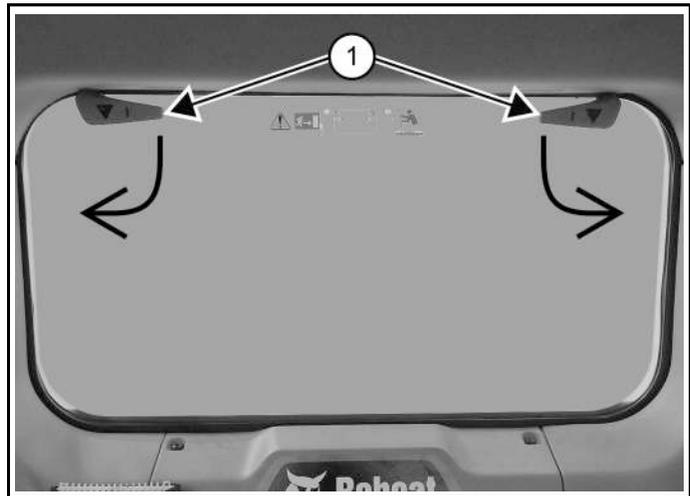
EMERGENCY EXITS

Emergency Exit Locations

The front opening on the operator cab and the rear window provide exits in case of an emergency.

Making An Emergency Exit Through Rear Window With Latches

Figure 59



1. Turn both latches (Item 1) [Figure 59] down until they disengage from the window frame.
2. Push the rear window out of the rear of the operator cab.
3. Exit through the rear of the operator cab.

NOTE: Use this procedure to remove the rear window only under emergency conditions. Damage to machine may occur.

Making An Emergency Exit Through Rear Window With Rubber Cord

Figure 60



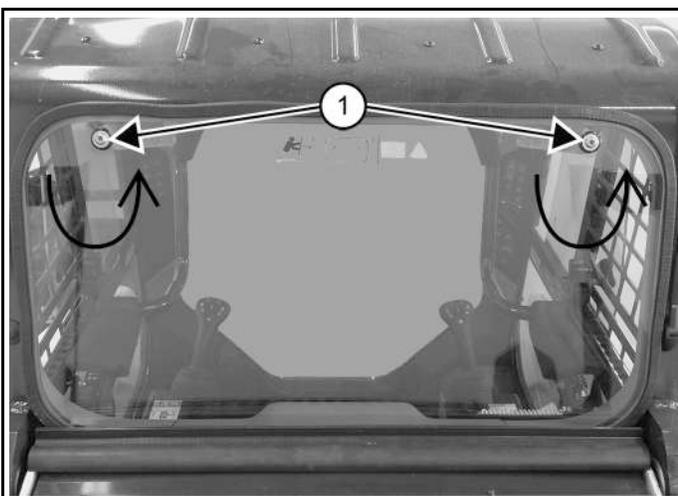
P64994f

1. Pull on the tag on the top of the rear window to remove the rubber cord [Figure 60].
2. Push the rear window out of the rear of the operator cab.
3. Exit through the rear of the operator cab.

NOTE: Use this procedure to remove the rear window only under emergency conditions. Damage to machine may occur.

Removing Rear Window With Latches From Outside Loader

Figure 61



P200567a

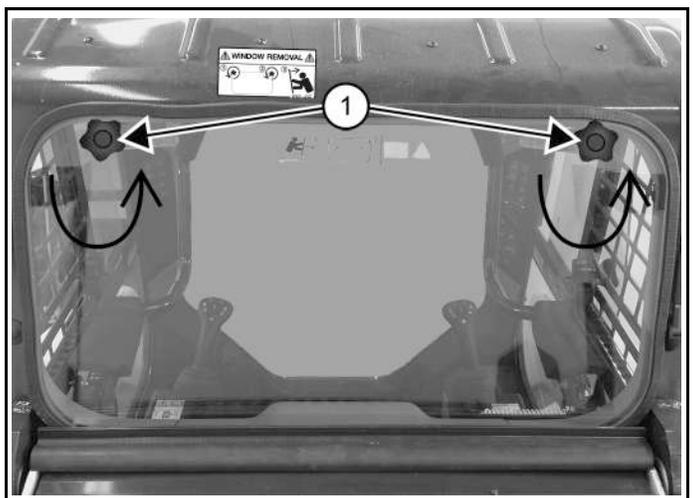
The rear window can be removed from outside the machine using a T40 TORX® drive tool.

1. Turn both screws (Item 1) [Figure 61] counterclockwise until the latches disengage from the window frame.
2. Pull the top of the window away from the cab and lift up to remove.

Removing Rear Window With Latches From Outside Loader With Knob Kit

A kit is available to allow removal of the latch equipped rear window from outside the machine without tools. See your Bobcat dealer for availability.

Figure 62



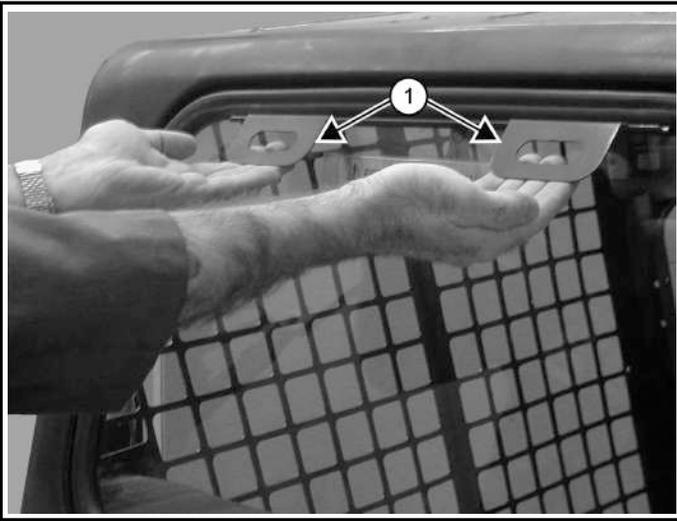
P200568a

1. Turn both knobs (Item 1) [Figure 62] counterclockwise until the latches disengage from the window frame.
2. Pull the top of the window away from the cab and lift up to remove.

Removing Rear Window With Rubber Cord From Outside Loader

A kit is available to allow removal of the rubber cord equipped rear window from outside the machine. See your Bobcat dealer for availability.

Figure 63

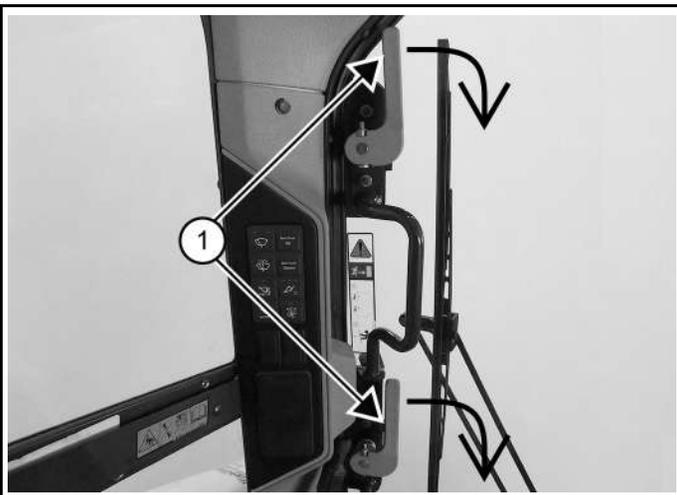


P13982a

1. Pull both handles (Item 1) [Figure 63] up and out to remove the rear window seal.
2. Remove the rear window.

Making An Emergency Exit Through Front Door

Figure 64



C200197a

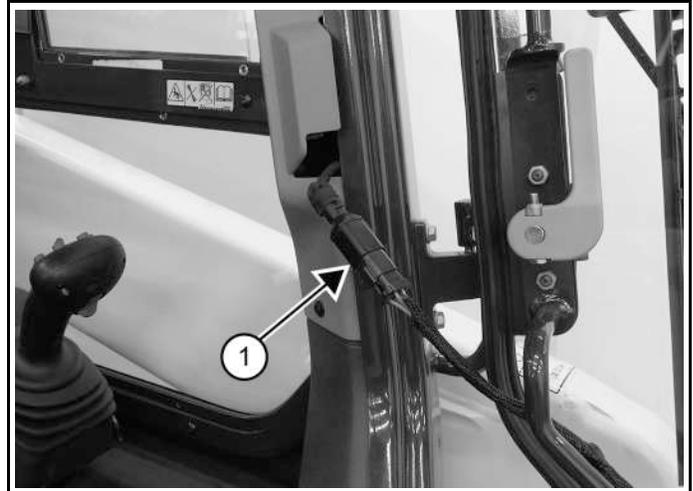
1. Turn both latches (Item 1) [Figure 64] down until they disengage from the door frame.
2. Push the door out of the operator cab door frame and exit through the opening.

NOTE: Use this procedure to remove the front door only under emergency conditions. Damage to machine may occur.

Front Door Reassembly

Reassemble the front door using the following instructions if the door was opened using the emergency exit procedure.

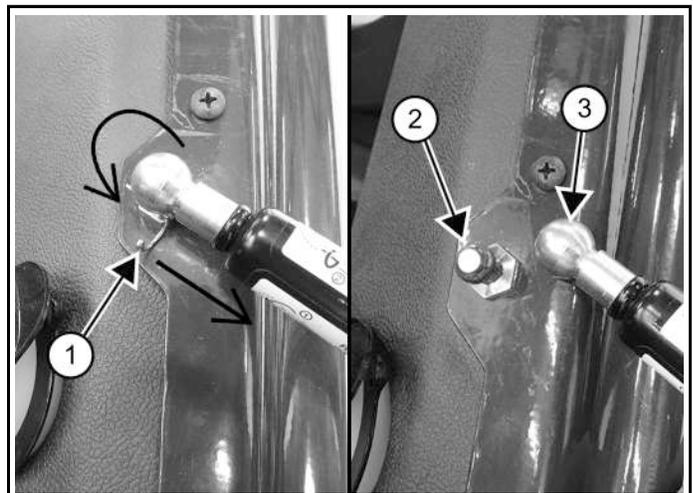
Figure 65



P200568a

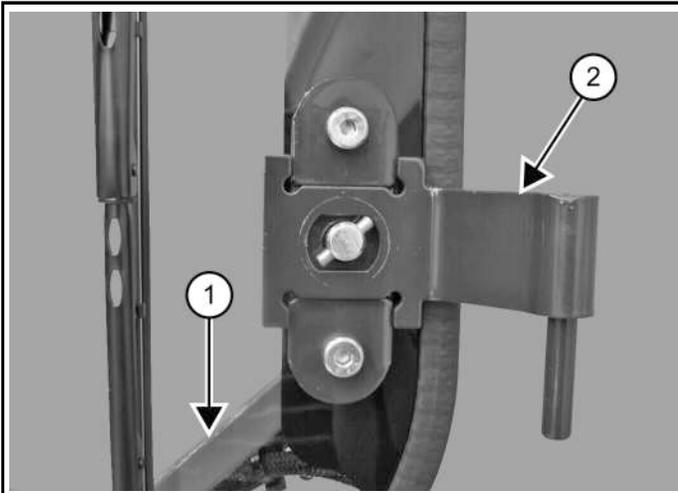
1. Disconnect electrical connector (Item 1) [Figure 65].

Figure 66



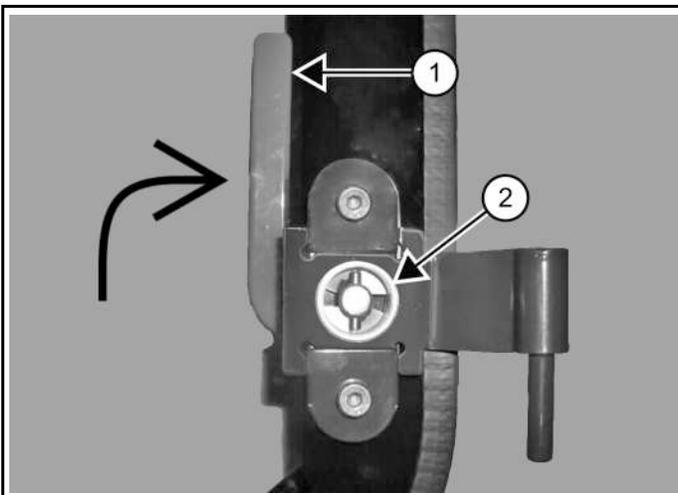
P200209a

2. Rotate and pull the clip (Item 1) [Figure 66] out of the gas spring socket.
3. Pull the gas spring socket (Item 3) straight off the ball stud fitting (Item 2) [Figure 66].
4. Remove the door hinges from the machine.

Figure 67

P90685a

5. Orient the latches as shown (Item 1) and install the door hinges (Item 2) [Figure 67] on the door. (Bottom hinge shown.)

Figure 68

P90686c

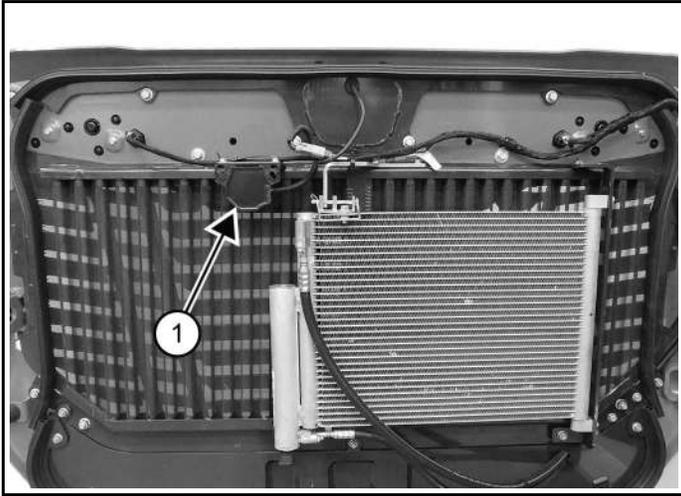
6. Install cast washers (Item 2) on door hinges taking care to match rectangular surfaces. Hold cast washer firmly against door and rotate latch (Item 1) [Figure 68] up to lock cast washer into position. (Bottom hinge shown.) (Plastic cap shown removed for visual clarity.)
7. Install door on machine.
8. Install the gas spring socket on the ball stud fitting [Figure 66].
9. Install the clip into the hole in the gas spring socket [Figure 66].

10. Rotate the clip to lock into position [Figure 66].
11. Connect electrical connector [Figure 65].

BACK-UP ALARM SYSTEM

Back-Up Alarm Description

Figure 69



The back-up alarm (Item 1) [Figure 69] is located on the inside of the rear door.

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 must also 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 Back-Up Alarm

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 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. ◀**

W-2783

- The back-up alarm will sound when the operator moves both steering levers or joystick(s) into the reverse position. Slight movement of the steering levers into the reverse position is required with

hydrostatic transmissions, before the back-up alarm will sound.

- If 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 Back-Up Alarm System on Page 135)

DRIVING AND STEERING THE LOADER

Available Control Configurations

This machine has one of two possible control configurations:

- Standard Controls – Two steering levers control drive and steering functions.
- Selectable Joystick Controls (SJC) (If equipped):
 - ▷ ('ISO' Pattern) – Left joystick controls the drive and steering functions.
 - ▷ ('H' Pattern) – Left and right joysticks control left and right side drive and steering functions.

Operating Standard Controls

⚠ WARNING

GENERAL HAZARD

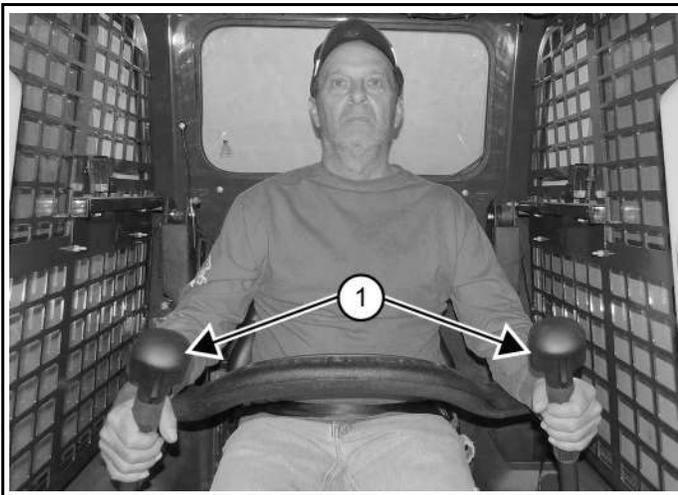
Failure to follow instructions can cause serious injury or death.

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls. ◀

W-2281

Figure 70

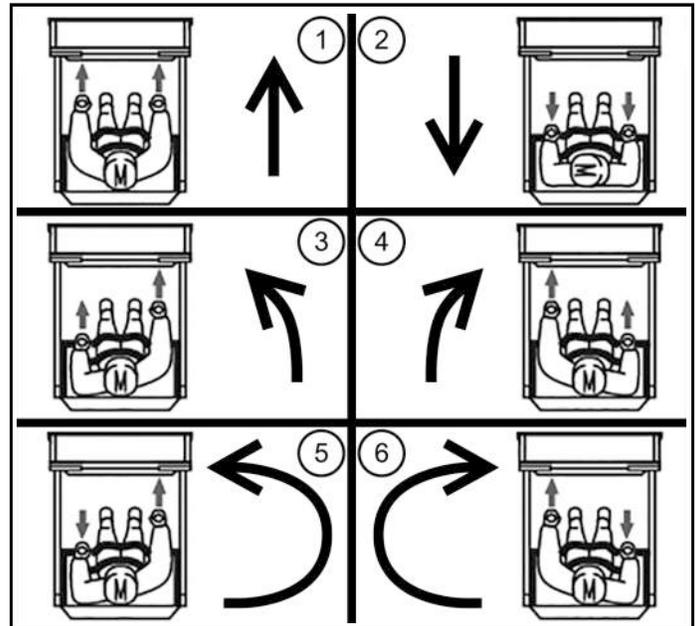


C200587a

The steering levers (Item 1) [Figure 70] are on the left and right side in front of the seat.

Move the levers smoothly. Avoid sudden starting and stopping.

Figure 71



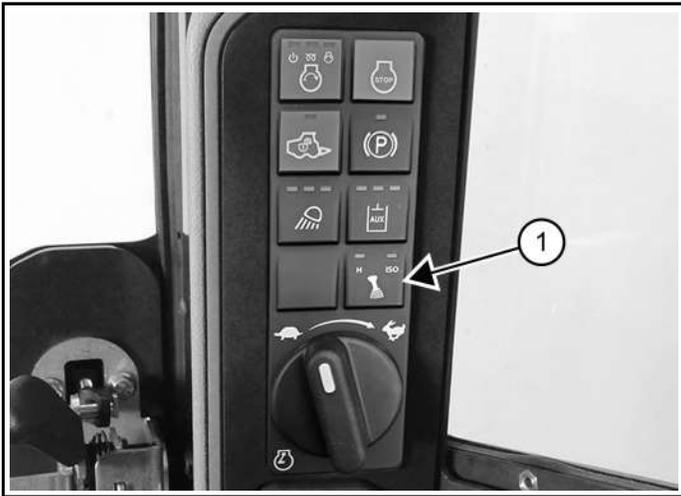
NA3471A

Steering Lever Functions (Drive And Steering)
[Figure 71]:

1. Forward Travel – Push both levers forward.
2. Backward Travel – Pull both levers backward.
3. Left Turn – Move the right lever farther forward than the left lever.
4. Right Turn – Move the left lever farther forward than the right lever.
5. Left Fast Turn – Move the left lever backward and the right lever forward.
6. Right Fast Turn – Move the right lever backward and the left lever forward.

Operating SJC In 'ISO' Control Pattern

Figure 72



Select the 'ISO' control pattern by pressing the SJC control mode button (Item 1) [Figure 72] on the right control panel until the 'ISO' LED flashes. BICS can then be activated by pressing the operate button.

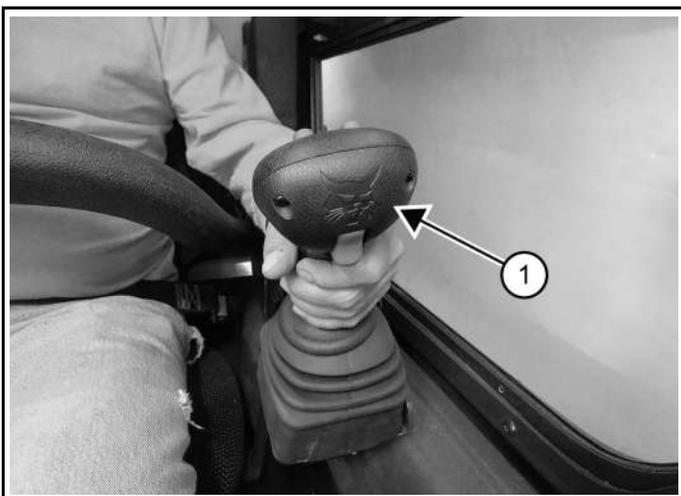
⚠ WARNING

GENERAL HAZARD
Failure to follow instructions can cause serious injury or death.

When operating the machine:

- **Keep the seat belt fastened snugly.**
- **The seat bar must be lowered.**
- **Keep your feet on the pedal controls or footrests and hands on the controls.** ◀

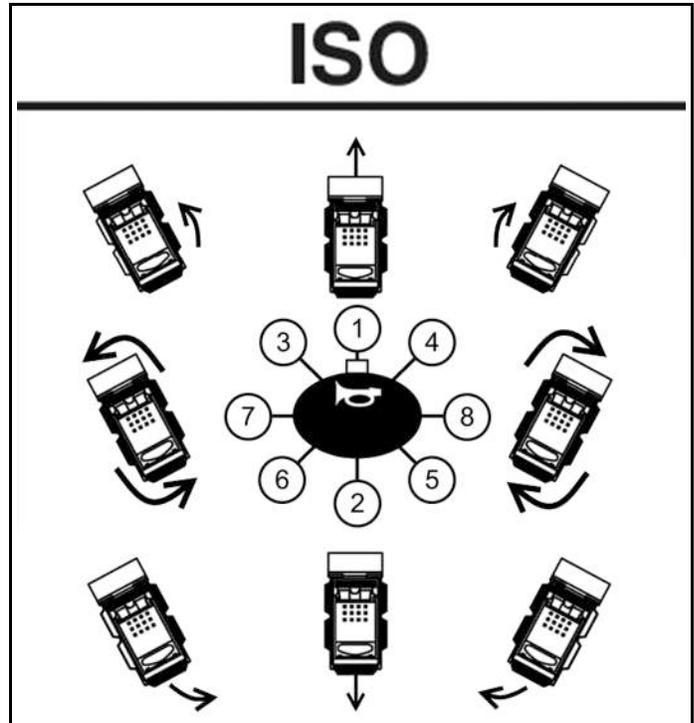
Figure 73



The joystick that controls drive and steering is on the left side in front of the seat (Item 1) [Figure 73].

Move the joystick smoothly. Avoid sudden starting and stopping.

Figure 74

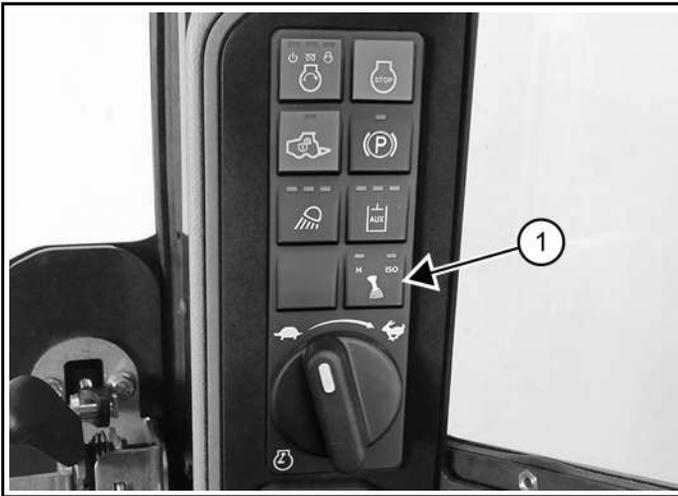


Left Joystick Functions (Drive And Steering) [Figure 74]:

1. Forward Travel – Move joystick forward.
2. Backward Travel – Move joystick backward.
3. Forward Left Turn – Move joystick forward and to the left.
4. Forward Right Turn – Move joystick forward and to the right.
5. Backward Left Turn – Move joystick backward and to the right.
6. Backward Right Turn – Move joystick backward and to the left.
7. Left Fast Turn – Move joystick to the left.
8. Right Fast Turn – Move joystick to the right.

Operating SJC In 'H' Control Pattern

Figure 75



Select the 'H' control pattern by pressing the SJC control mode button (Item 1) [Figure 75] on the right control panel until the 'H' LED flashes. BICS can then be activated by pressing the operate button.

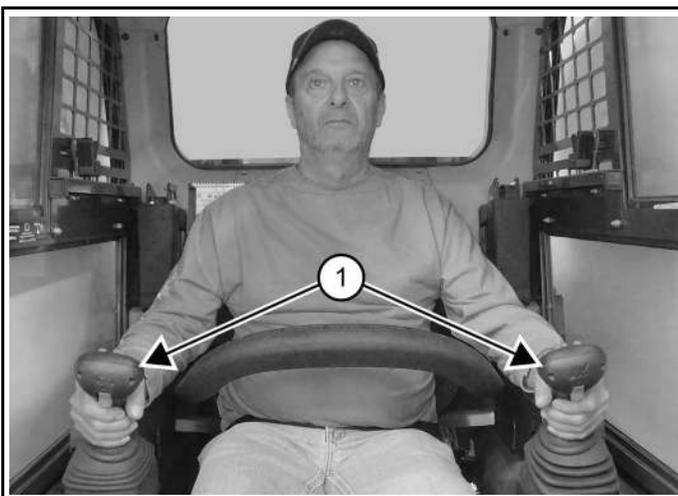
⚠ WARNING

GENERAL HAZARD
Failure to follow instructions can cause serious injury or death.

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls. ◀

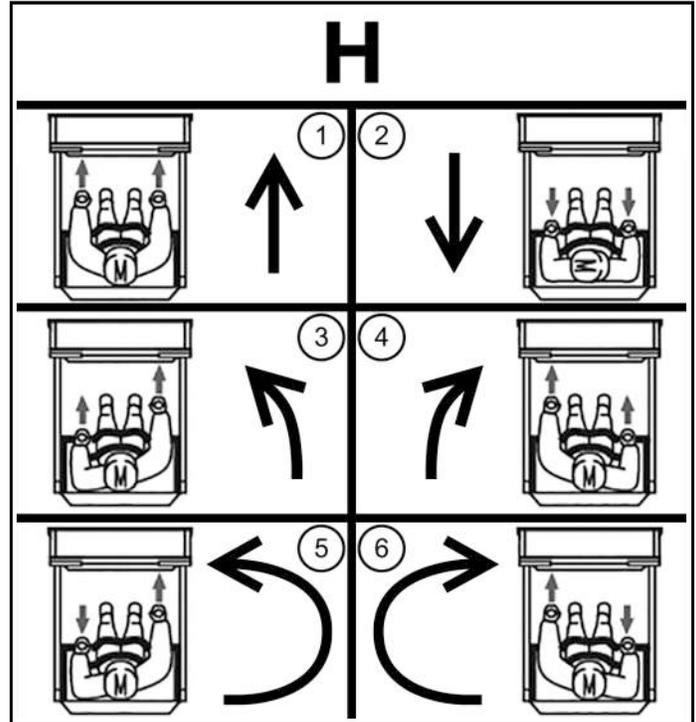
Figure 76



Both joysticks control drive and steering and are located on the left and right side in front of the seat (Item 1) [Figure 76].

Move the joysticks smoothly. Avoid sudden starting and stopping.

Figure 77



Joystick Functions (Drive And Steering) [Figure 77]:

1. Forward Travel – Move both joysticks forward.
2. Backward Travel – Move both joysticks backward.
3. Forward Left Turn – Move the right joystick farther forward than the left joystick.
4. Forward Right Turn – Move the left joystick farther forward than the right joystick.
5. Left Fast Turn – Move the left joystick backward and the right joystick forward.
6. Right Fast Turn – Move the left joystick forward and the right joystick backward.

STOPPING THE LOADER

Stopping Loader Using Control Levers Or Joysticks

When the steering levers or joysticks are moved to the NEUTRAL position, the hydrostatic transmission will act as a service brake to stop the machine.

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 traveling from one jobsite to another at faster speeds.

⚠ WARNING

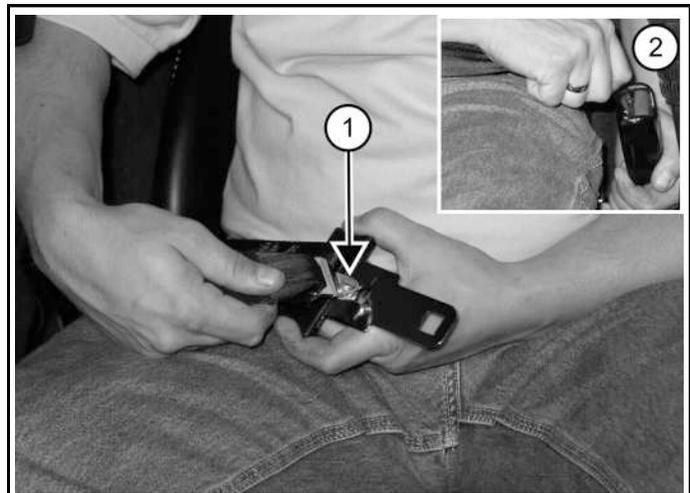
IMPACT HAZARD

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

Figure 78



P200415a

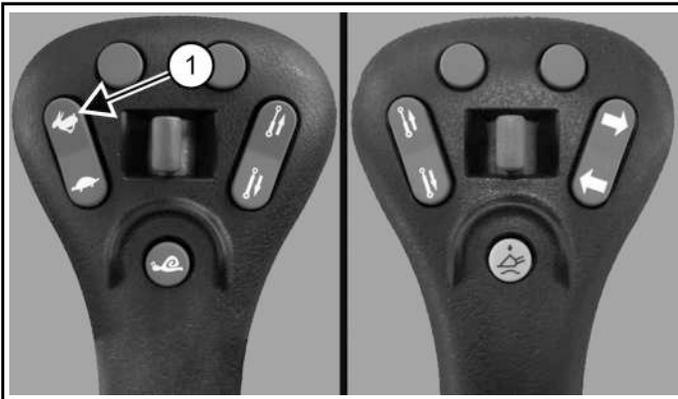
NOTE: The 3-point restraint must be used when selecting high range operation [Figure 78].

Connect the shoulder belt to the lap belt (Item 1). Pull the lap belt across to the left side of the seat and fasten (Item 2) [Figure 78].

The shoulder belt must be positioned over your right shoulder and lap belt over your lower hips.

Operating Two-Speed

Figure 79

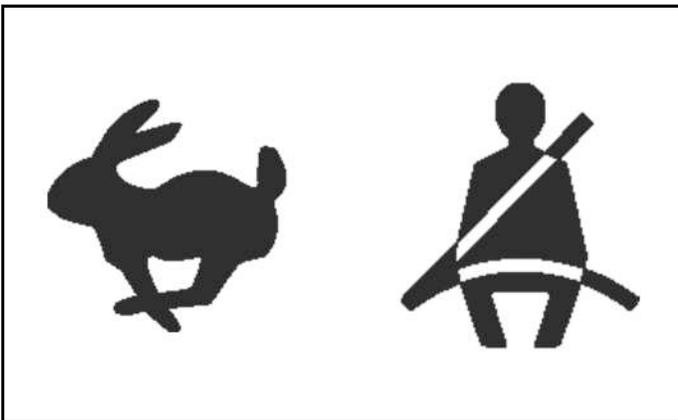


P200213A

NOTE: You must disengage Speed Management before you can select high range if equipped with SJC.

1. Press the top of the switch (Item 1) [Figure 79] on the left joystick for high range.

Figure 80



NA3638

The two-speed and seat belt icons [Figure 80] located on the upper right display will turn on.

2. Press the bottom of the switch for low range.

NOTE: The full range of travel speeds will not be available until the engine controller determines the machine is adequately warmed. (See Cold Temperature Hydrostatic Drive Description on Page 102)

SPEED MANAGEMENT

Speed Management Description

SJC equipped machines have a speed management feature. Speed Management allows the machine to be maneuvered at a slower travel speed, even during maximum movement of the joystick(s).

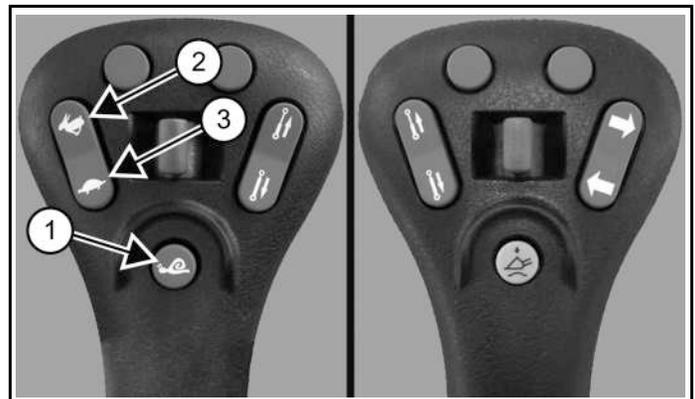
This feature can be useful when installing attachments, loading or unloading, and certain applications. (EXAMPLES: Landscaping, tilling, trenching)

Operating Speed Management

NOTE: The machine must be in low range speed to engage Speed Management.

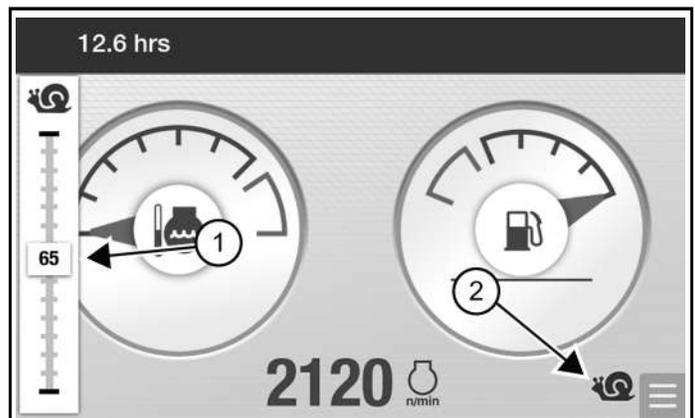
Engaging:

Figure 81



- Press the button (Item 1) [Figure 81] on the left joystick once to engage speed management.

Figure 82



The speed management icon (Item 2) [Figure 82] will appear in the display and remain on until the speed management button is pressed again or the machine is turned off.

When speed management is engaged, the machine will travel at a percentage of standard travel speed. That percentage will appear briefly in the display (Item 1) [Figure 82].

NOTE: The default percentage setting can be changed by the operator.
(See Changing Speed Management Default Setting on Page 76)

Adjusting:

1. Press the top of the speed control switch (Item 2) [Figure 81] to increase the speed up to 99%.

The percentage graph will appear in the display (Item 1) [Figure 82] while adjusting.
2. Press the bottom of the switch (Item 3) [Figure 81] to decrease the speed down to 1%.

The percentage graph will appear in the display (Item 1) [Figure 82] while adjusting.
3. Press button (Item 1) [Figure 81] again to disengage speed management and return to standard travel speed. The speed management icon will turn off.

The system will retain the selected speed percentage as long as the machine remains ON.

EXAMPLE: You can be using the machine at 40%, then disengage speed management to reposition the machine, and then reengage Speed Management. The speed percentage will still be at 40%.

EXAMPLE: Turning the machine OFF will return the Speed Management setting to the default percentage. The next time you start the engine and engage speed management, the speed is set at the last default setting saved by the operator.
(See Changing Speed Management Default Setting on Page 76)

NOTE: You must disengage speed management before you can select high range.

Changing Speed Management Default Setting

The Speed Management factory default setting can be changed by the operator to save adjustment time.

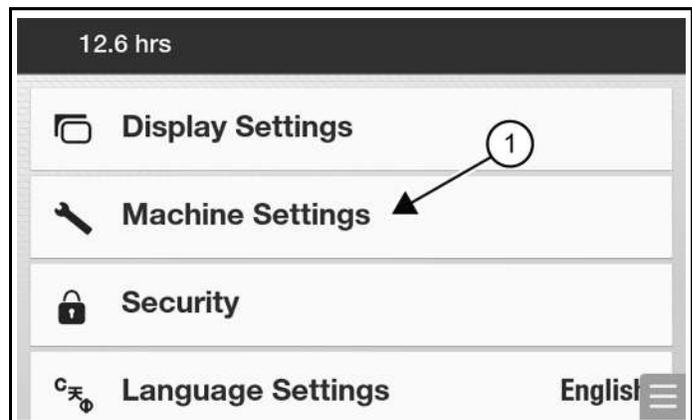
EXAMPLE: Your machine is often used for trenching and you prefer a speed management setting of 28% of standard travel speed for that application. The speed management default setting can be saved as 28% of standard travel speed. Each time you start the machine and engage speed management, the machine will default to 28% of standard travel speed.

Figure 83



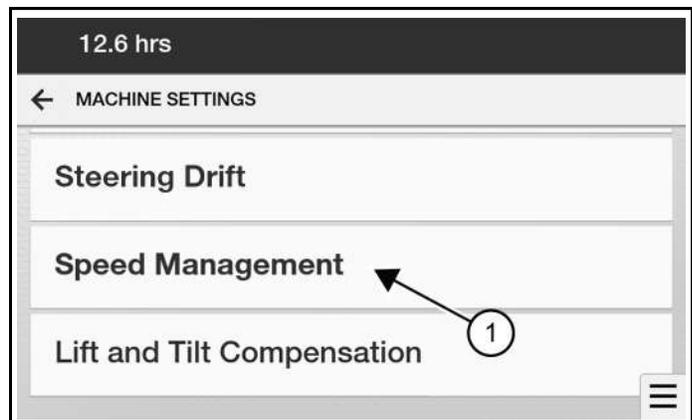
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 83].
2. Select **[SETTINGS]** (Item 2) [Figure 83].

Figure 84



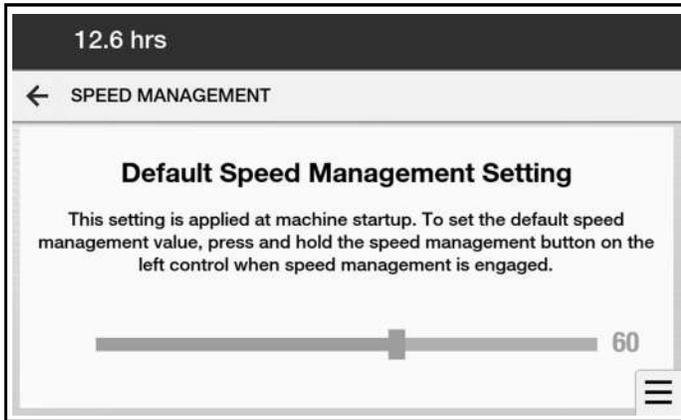
3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 84].

Figure 85



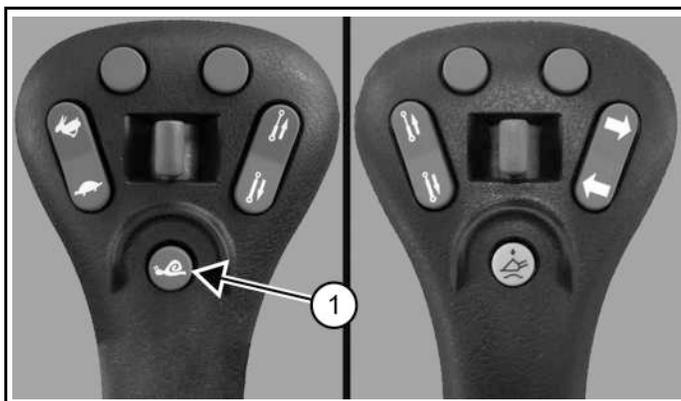
4. Select **[SPEED MANAGEMENT]** (Item 1) [Figure 85].
5. Scroll down to Default Speed Management Setting.

Figure 86



6. Use the slider bar [Figure 86] to adjust to desired default setting.

Figure 87



7. Press and hold the button (Item 1) [Figure 87] on the left joystick for several seconds to save the default setting.

When speed management is first engaged the next time the machine is started, the percentage you saved is the new default setting. Speed management can still be adjusted from 1% to 99% of standard travel speed.

The default setting can be changed any time the operator chooses and is saved for each operator.

8. Pressing the button (Item 1) [Figure 87] on the left joystick or turning the machine off will disengage speed management and return the machine to standard travel speed.

DRIVE RESPONSE

Drive Response Description

SJC equipped machines have a drive response feature. Drive response changes how responsive (more or less) the loaders drive and steering systems are when the operator moves the joystick(s).

Drive response can be changed by the operator for different drive response preferences, various job conditions, and attachment use.

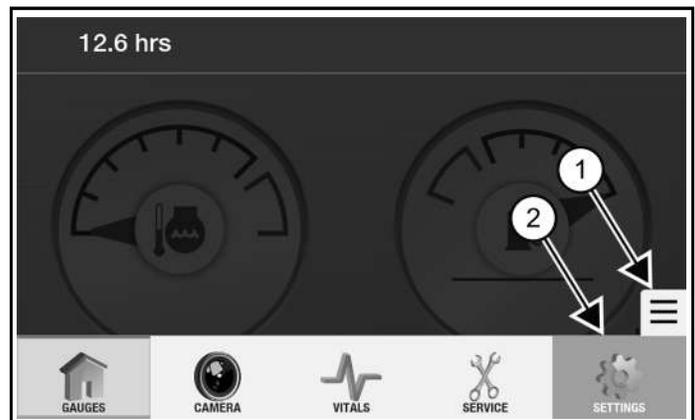
NOTE: Changes to drive response do not affect braking or stopping the machine.

There are three drive response settings:

- **[Drive Response 1]** provides a smooth responsive reaction to joystick movement. (Drive only)
- **[Drive Response 2]** is the default setting and provides a normal responsive reaction to joystick movement. (Drive only)
- **[Drive Response 3]** provides a quick responsive reaction to joystick movement. (Drive only)

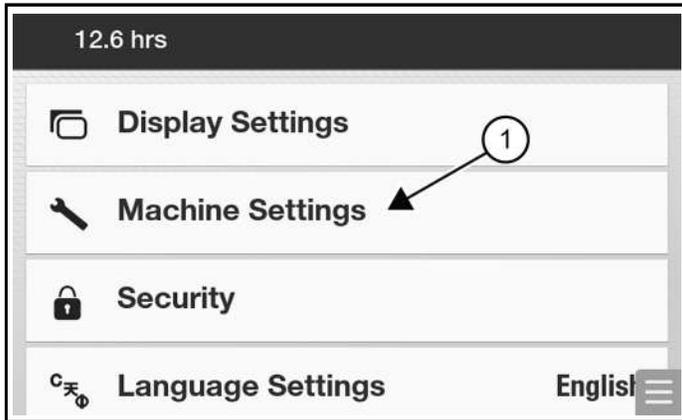
Adjusting Drive Response

Figure 88



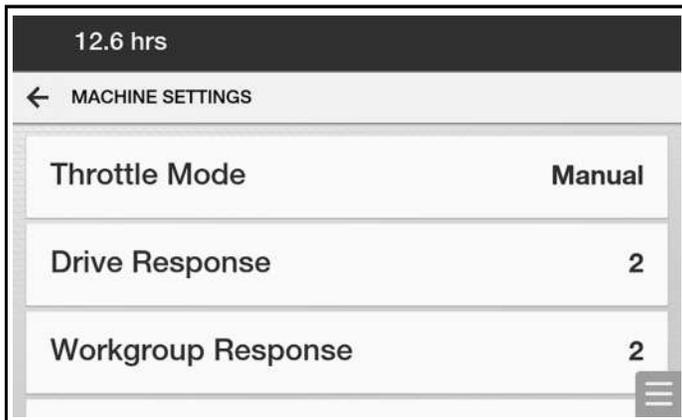
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 88].
2. Select **[SETTINGS]** (Item 2) [Figure 88].

Figure 89



3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 89].

Figure 90



4. Select the desired drive response setting [Figure 90].

The current drive response setting is automatically saved.

Drive response settings are saved individually for each operator.

STEERING DRIFT COMPENSATION

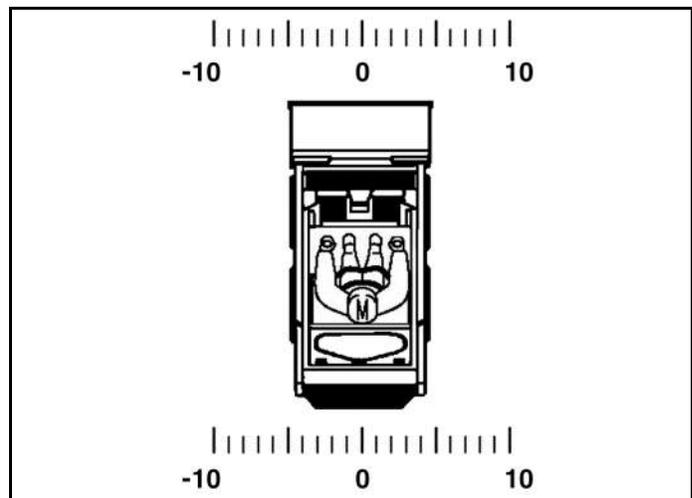
Steering Drift Compensation Description

SJC equipped machines have a steering drift compensation feature. Steering Drift Compensation can be used to reduce steering drift to maintain a desired travel path in forward and reverse directions.

Examples of applications where this feature can be used:

- To compensate for normal variations such as tire inflation pressure and tire wear.
- Using side shift attachments such as trenchers, planers, and silt fence installers.
- Driving on uneven terrain such as crowned road surfaces.

Figure 91



Steering drift compensation contains a total of 21 settings. Steering drift compensation can be set to any point from zero to -10 left, and from zero to 10 right [Figure 91].

Adjusting Steering Drift Compensation

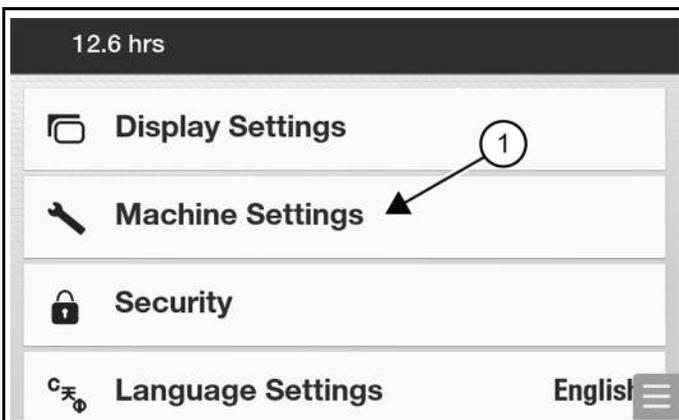
Steering drift compensation is adjusted during machine operation.

Figure 92



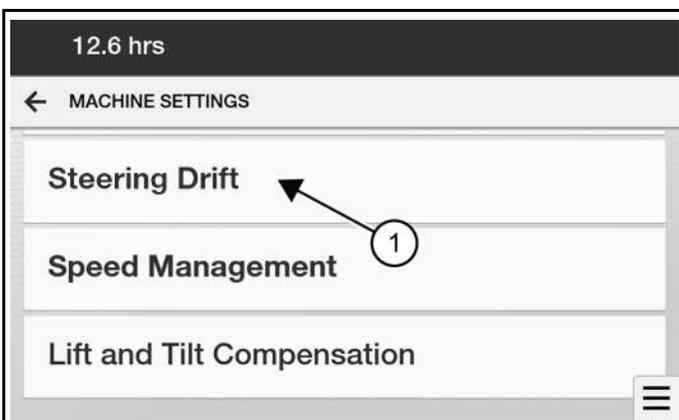
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 92].
2. Select **[SETTINGS]** (Item 2) [Figure 92].

Figure 93



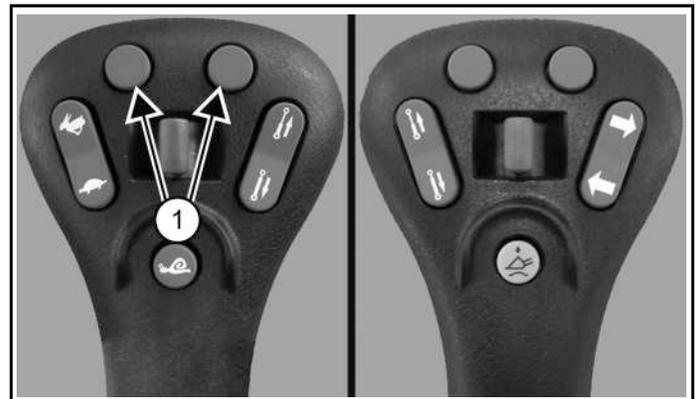
3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 93].

Figure 94



4. Select **[STEERING DRIFT]** (Item 1) [Figure 94].

Figure 95



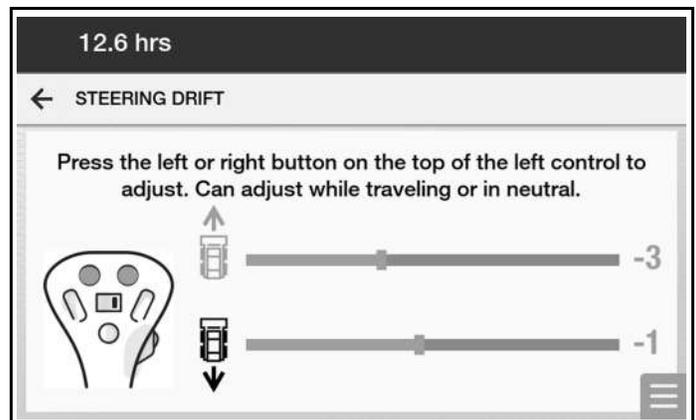
5. Press the left or right button (Item 1) [Figure 95] on the left joystick to adjust the setting.

The forward steering drift setting can be adjusted in neutral or forward travel.

The reverse steering drift setting can only be adjusted in reverse travel.

Adjustments to steering drift compensation are effective immediately.

Figure 96



6. The bar graphs on the display will show the current steering drift settings for forward and reverse [Figure 96].

The current steering drift settings are automatically saved.

NOTE: Rear view camera will display when operating in reverse. Return controls to neutral to view settings.

LIFT AND TILT COMPENSATION

Lift And Tilt Compensation Description

Lift and tilt compensation is used to account for variances in the valve. The procedure maps the full range of the joystick to lift and tilt functions allowing compensation for machine and attachment variables.

Operators can adjust the compensation to account for:

- Attachment weight
- Engine rpm
- Application
- Other machine function settings
- Personal preference

NOTE: Adjusting values for personal preference can negatively impact Dual Direction Bucket Positioning performance.

Adjusting Lift And Tilt Compensation

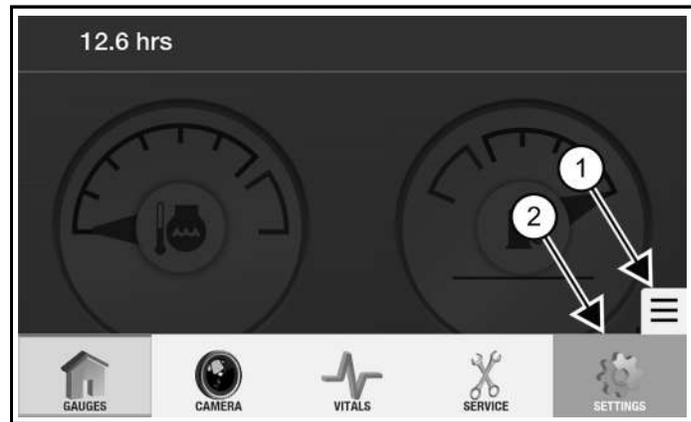
NOTE: Ensure the following conditions have been met before adjusting Lift and Tilt Compensation:

- Warm the machine to normal operating temperature.
- Remove attachment.
- Keep the engine speed control in high idle position throughout the adjustment procedure.
- Turn automatic ride control OFF.
- Turn dual direction bucket positioning OFF.

Perform pre-starting procedure and starting the engine procedures:

1. Fasten seat belt.
2. Lower seat bar.
3. Put handles or joysticks in neutral position.
4. Press the run button or turn the key switch ON.
5. Start the engine.
6. Set the engine speed control to the high idle position.
7. Press the operate button.
8. Raise the lift arms approximately 1 m (3 ft) off the ground and tilt the Bob-Tach frame forward approximately 300 mm (1 ft).
9. Press the operate button to deactivate BICS.

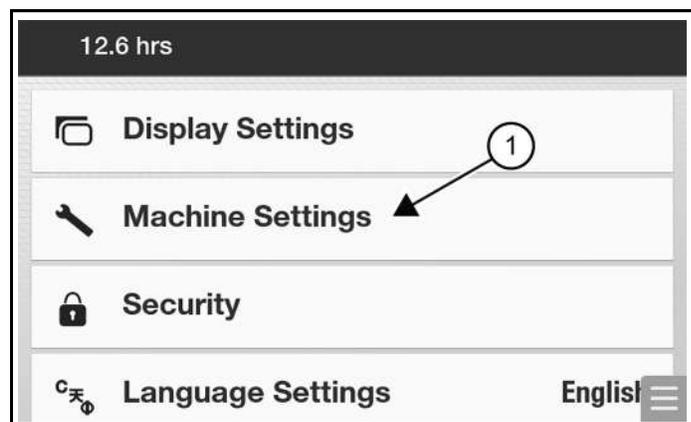
Figure 97



10. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 97].

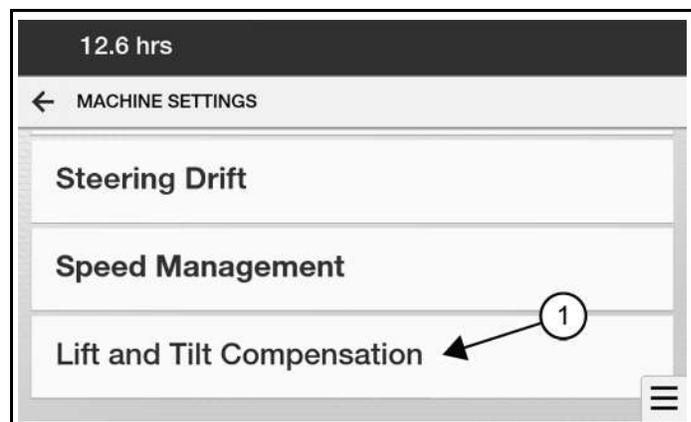
11. Select **[SETTINGS]** (Item 2) [Figure 97].

Figure 98



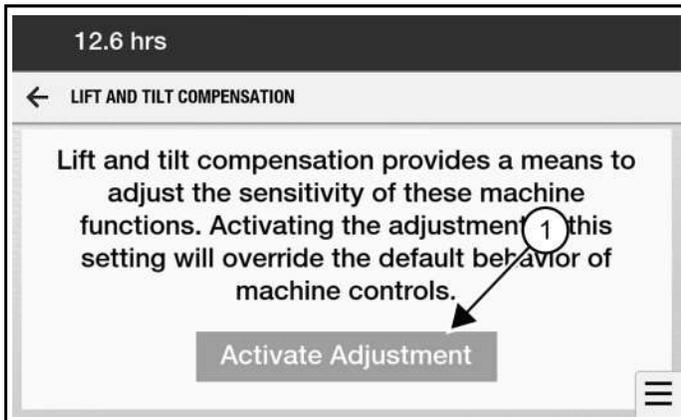
12. Select **[MACHINE SETTINGS]** (Item 1) [Figure 98].

Figure 99



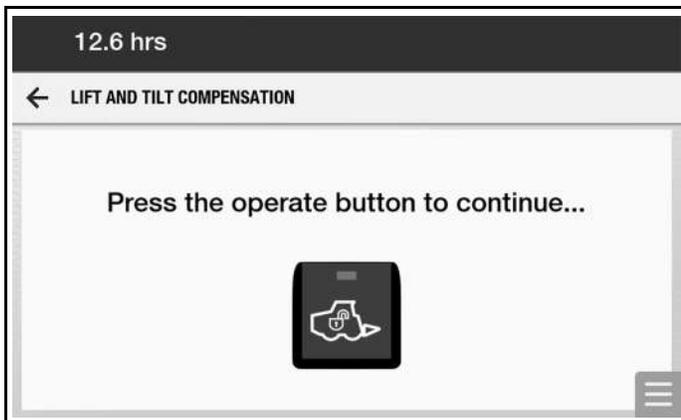
13. Scroll down and select **[LIFT AND TILT COMPENSATION]** (Item 1) [Figure 99].

Figure 100



14. Select **[ACTIVATE ADJUSTMENT]** (Item 1) [Figure 100].

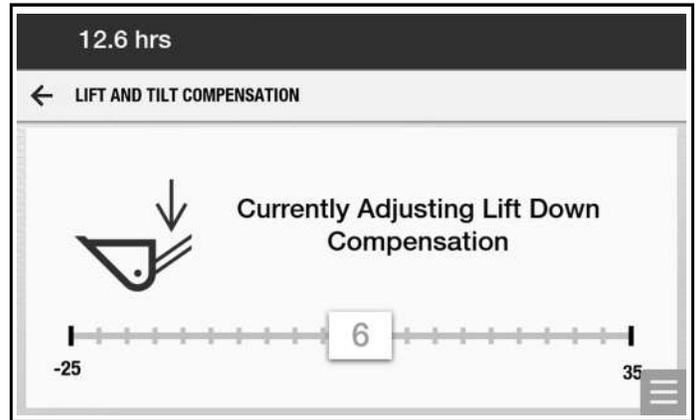
Figure 101



15. Press the operate button [Figure 101].

NOTE: When the procedure has begun, raising the seat bar will cause the machine to disengage from lift and tilt compensation adjustment. Changes made to the lift and tilt compensation settings will NOT be saved.

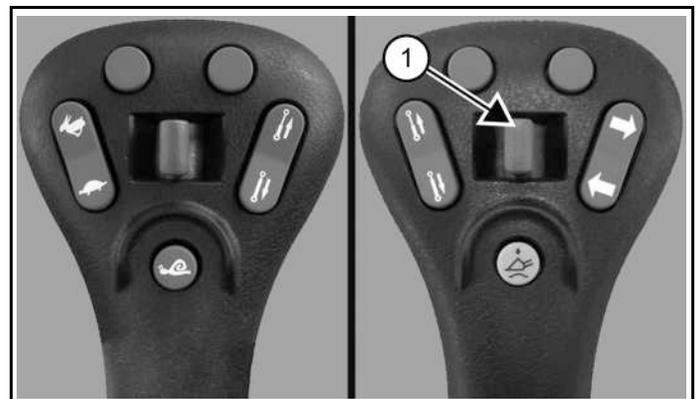
Figure 102



16. Activate lift down control and hold.

The display will indicate that lift down compensation is being adjusted and the current setting will be highlighted [Figure 102].

Figure 103



17. Move the switch (Item 1) [Figure 103] to the right repeatedly until a slight downward movement of the lift arms is noticed.

The setting will increase by one each time the switch is moved. The available range of adjustment is -25 to 35.

If the lift arms begin to move immediately, move the switch (Item 1) [Figure 103] to the left repeatedly until lift arm movement stops, then move the switch to the right repeatedly until a slight downward movement of the lift arms is noticed. (This procedure also applies to lift up, tilt backward, and tilt forward.)

18. Activate lift up control and hold. The display will indicate that lift up compensation is being adjusted and the current setting will be highlighted.

19. Move the switch (Item 1) [Figure 103] to the right repeatedly until a slight upward movement of the lift arms is noticed.
20. Activate tilt backward control and hold. The display will indicate that tilt up compensation is being adjusted and the current setting will be highlighted.
21. Move the switch (Item 1) [Figure 103] to the right repeatedly until a slight backward tilt movement of the Bob-Tach frame is noticed.
22. Activate tilt forward control and hold. The display will indicate that tilt down compensation is being adjusted and the current setting will be highlighted.
23. Move the switch (Item 1) [Figure 103] to the right repeatedly until a slight forward tilt movement of the Bob-Tach frame is noticed.
24. Save the current lift and tilt compensation settings by pressing the operate button. The machine will exit from the lift and tilt compensation menu.
OR
Raise and lower the seat bar to exit from lift and tilt compensation without saving. This will cancel all changes made.
25. Press the operate button to continue machine operation.
26. Repeat procedure if desired.
27. Check the dual direction bucket positioning (if equipped) to ensure it functions as intended.

WORKGROUP RESPONSE

Workgroup Response Description

Workgroup response changes how responsive (more or less) the lift and tilt functions are when the operator moves the foot pedals or joystick(s).

Workgroup response can be changed by the operator for different workgroup response preferences, various job conditions, and attachment use.

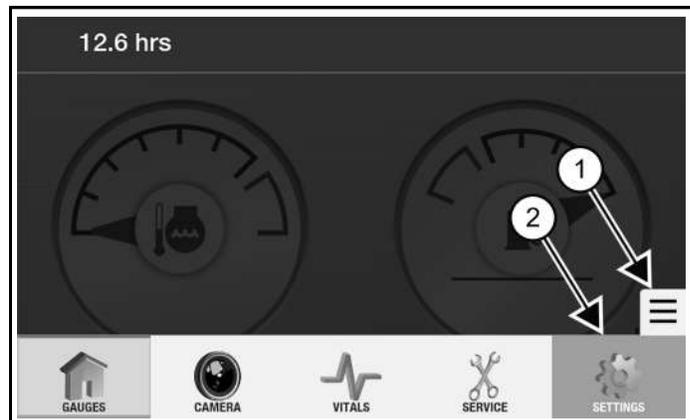
There are three workgroup response settings:

- **[Workgroup Response 1]** provides a smooth response for more precise work. For example: high speed grading, working in tight areas, and material handling.
- **[Workgroup Response 2]** is the default setting and provides a normal response for most applications.
- **[Workgroup Response 3]** provides a quick response for experienced operators. For example: increased bucket shake when truck loading and excavating.

Adjusting Workgroup Response

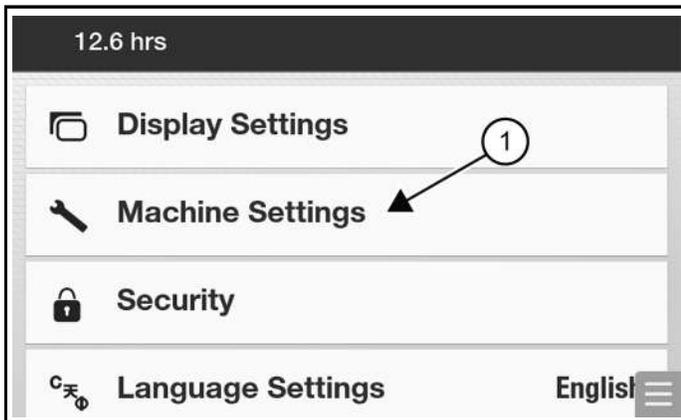
NOTE: It is recommended that you adjust lift and tilt compensation before choosing a workgroup response setting.
(See Lift and Tilt Compensation on Page 80)

Figure 104



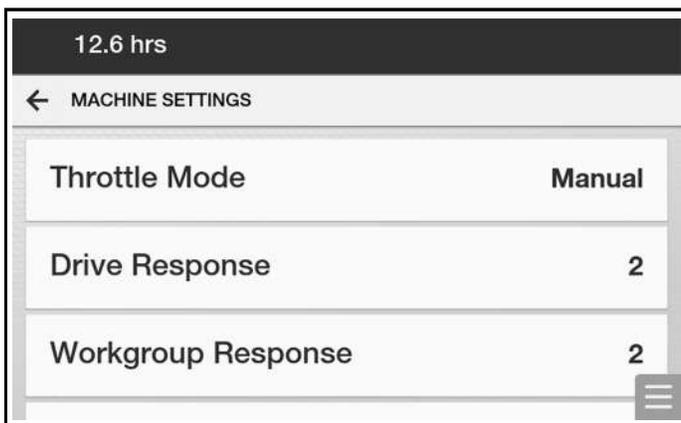
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 104].
2. Select **[SETTINGS]** (Item 2) [Figure 104].

Figure 105



3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 105].

Figure 106



4. Select the desired workgroup response setting [Figure 106].

The current workgroup response setting is automatically saved.

Workgroup response settings are saved individually for each operator.

HYDRAULIC CONTROLS

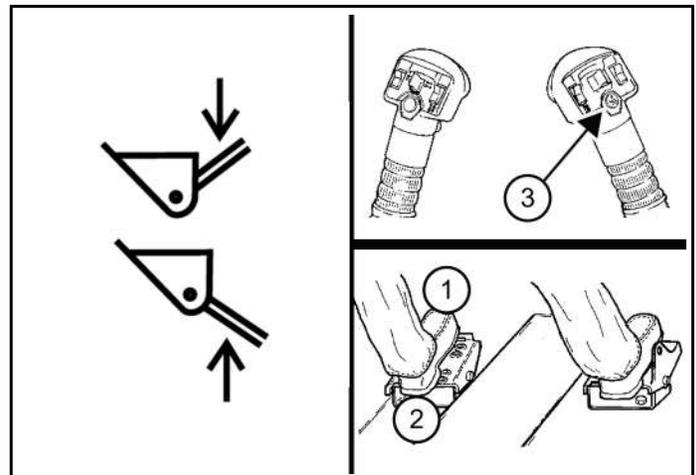
Hydraulic Controls Description

Two foot pedals or optional joysticks control the hydraulic cylinders for the lift and tilt functions.

Put your feet on the pedals (or footrests) and hands on the controls and **KEEP THEM THERE** any time you operate the machine.

Operating Standard Hydraulic Controls

Figure 107



Lift Arm Operation — (Left Pedal)

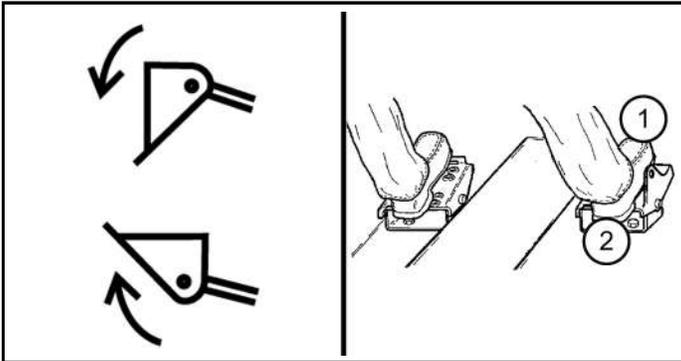
1. Push the toe (Item 1) [Figure 107] of the left pedal to lower the lift arms.
2. Push the heel (Item 2) [Figure 107] of the left pedal to raise the lift arms.

Lift Arm Float Position — (Left Pedal And Right Handle)

1. Push the toe of the left pedal forward to lift arm down position (Item 1), then press the Float button (Item 3) [Figure 107].
2. Release the Float button and allow the left pedal to return to neutral.
3. Press Float button (Item 3) again or raise the lift arms (Item 2) [Figure 107] to disengage.

Use the float position of the lift arms to level loose material while driving backward.

Figure 108

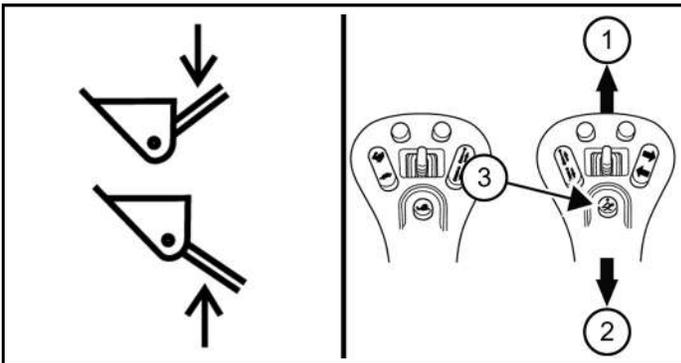


Tilt Operation (Right Pedal)

1. Push the toe of the right pedal (Item 1) [Figure 108] to tilt the bucket forward.
2. Push the heel of the right pedal (Item 2) [Figure 108] to tilt the bucket backward.

Operating SJC Hydraulic Controls In 'ISO' Control Pattern

Figure 109



Lift Arm Operation — (Right Joystick)

1. Move the right joystick forward (Item 1) [Figure 109] to lower the lift arms.
2. Move the right joystick backward (Item 2) [Figure 109] to raise the lift arms.

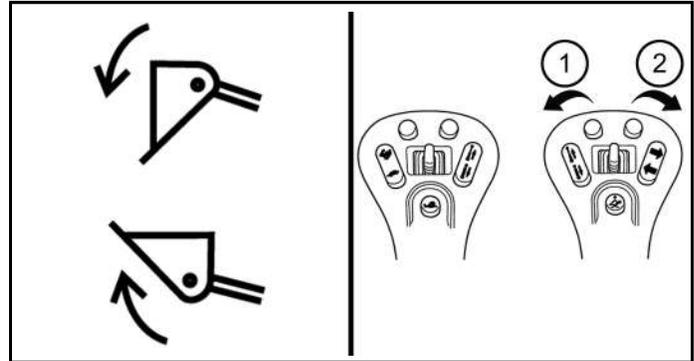
Lift Arm Float Position — (Right Joystick)

1. Move the right joystick forward to lift arm down position (Item 1), then press the Float button (Item 3) [Figure 109].
2. Release the Float button and allow the right joystick to return to neutral.

3. Press Float button (Item 3) again or raise the lift arms (Item 2) [Figure 109] to disengage.

Use the float position of the lift arms to level loose material while driving backward.

Figure 110

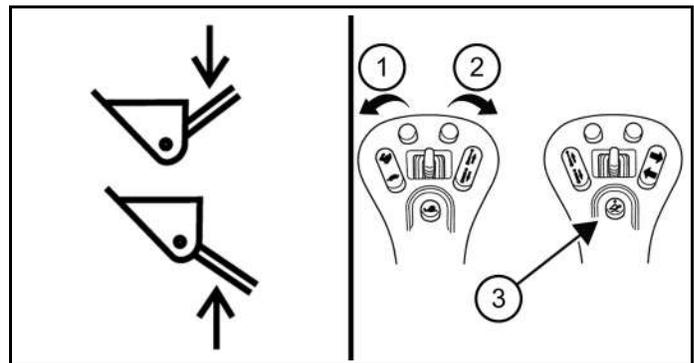


Tilt Operation (Right Joystick)

1. Move the right joystick inward (Item 1) [Figure 110] to tilt the bucket backward.
2. Move the right joystick outward (Item 2) [Figure 110] to tilt the bucket forward.

Operating SJC Hydraulic Controls In 'H' Control Pattern

Figure 111



Lift Arm Operation — (Left Joystick)

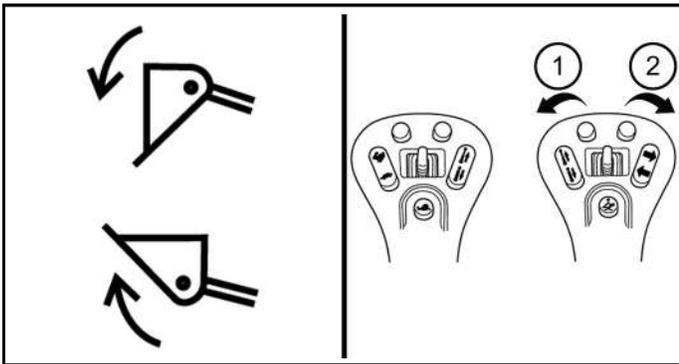
1. Move the left joystick outward (Item 1) [Figure 111] to raise the lift arms.
2. Move the left joystick inward (Item 2) [Figure 111] to lower the lift arms.

Lift Arm Float Position — (Left And Right Joysticks)

1. Move the left joystick inward to lift arm down position (Item 2), then press the Float button (Item 3) [Figure 111].
2. Release the Float button and allow the left joystick to return to neutral.
3. Press Float button (Item 3) again or raise the lift arms (Item 1) [Figure 111] to disengage.

Use the float position of the lift arms to level loose material while driving backward.

Figure 112



Tilt Operation (Right Joystick)

1. Move the right joystick inward (Item 1) [Figure 112] to tilt the bucket backward.
2. Move the right joystick outward (Item 2) [Figure 112] to tilt the bucket forward.

Operating Dual Direction Bucket Positioning

This machine may be equipped with dual direction bucket positioning. The function is to keep the bucket or other attachment at the same approximate angle as the lift arms are raised and lowered.

Figure 113



1. Press the dual direction bucket positioning button (Item 1) [Figure 113] on the left control panel to engage the bucket positioning function.

Self leveling will be activated in up direction only.

The left LED on the button will light.

2. Press the dual direction bucket positioning button (Item 1) [Figure 113] a second time.

Self leveling will be activated in both up and down directions.

The left and middle LED on the button will light.

3. Press the button again to disengage.

The LED will turn off.

NOTE: The machine will stay in the selected mode after key OFF.

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 traveling over uneven ground with heavy loads or in heavy digging applications.

Figure 114



1. Press the automatic ride control button (Item 1) [Figure 114] on the left control panel to engage the automatic ride control function. The middle LED in the button will light.

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

2. Press the button to disengage. The LED will turn off.

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 181)

NOTE: Certain applications will not benefit from using automatic ride control. Turn off 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.

WITH
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.

AND

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. ◀

W3073

Operating Reversing Fan

This machine may be equipped with a reversing fan. The function is to clear dust and debris from the rear grille. This is accomplished by reversing the direction of the cooling fan for several seconds.

The operator can select automatic or manual operation of the reversing fan.

Figure 115



C200155d

Automatic

1. Press the reversing fan button (Item 1) [Figure 115] on the left control panel to engage the automatic

reversing fan function. The middle LED in the button will light.

The machine will reverse the fan automatically based on fluid temperature as long as automatic operation is selected.

2. Press the button again to disengage. The LED will turn off.

Manual

1. Press and hold the reversing fan button (Item 1) [Figure 115] on the left control panel for several seconds to engage the manual reversing fan function. The middle LED in the button will light and the alarm will beep one time.

The machine will reverse the fan for one cycle.

2. The machine will return to the previous state after the manual cycle has completed.

NOTE: To protect vital systems, the fan will not reverse when fluid temperatures approach overheating conditions. Cleaning or servicing the cooling system may be required to continue operation. (See Cleaning Engine Cooling System on Page 155)

Reversing fan is disabled when the engine coolant or hydraulic fluid temperature is too high or too low.

Selecting automatic operation of the reversing fan when disabled will cause the following indications:

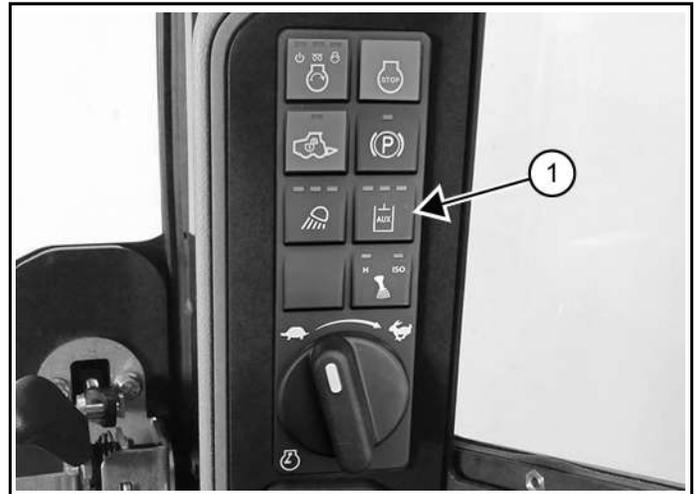
- The middle LED will light to indicate desired functionality.
- The fan will not reverse.

Selecting manual operation of the reversing fan when disabled will cause the following indications:

- The alarm will not beep.
- The middle LED will light as long as the button is held.
- The fan will not reverse.

Operating Front Auxiliary Hydraulics

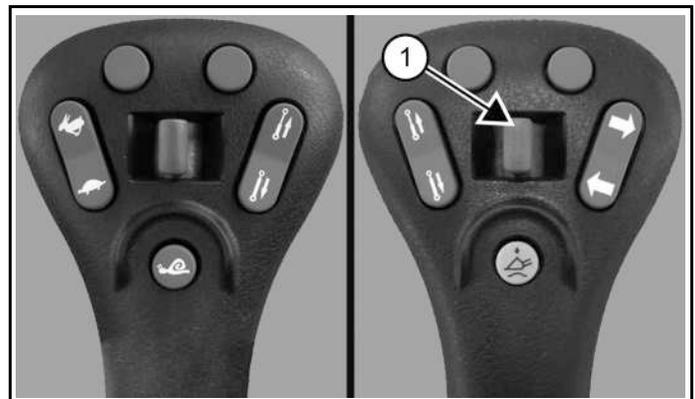
Figure 116



1. Press the auxiliary hydraulics button (Item 1) [Figure 116] on the right control panel once to activate auxiliary hydraulics.

The left LED in the button will light.

Figure 117



2. Move the front auxiliary hydraulic switch (Item 1) [Figure 117] to the right or left 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.

3. Release the front auxiliary hydraulic switch to stop hydraulic fluid flow to the front quick couplers.

Loaders Without High-Flow Hydraulics

- To deactivate the auxiliary hydraulics, press the auxiliary hydraulics button again. All LED are off.

Loaders With High-Flow Hydraulics

- To deactivate the auxiliary hydraulics, press the auxiliary hydraulics button two times. All LED are off.

NOTE: When the operator is seated and raises the seat bar, the auxiliary hydraulic system (Front and Rear) will deactivate.

Operating Front Auxiliary Hydraulics In Continuous Flow Mode

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

Figure 118

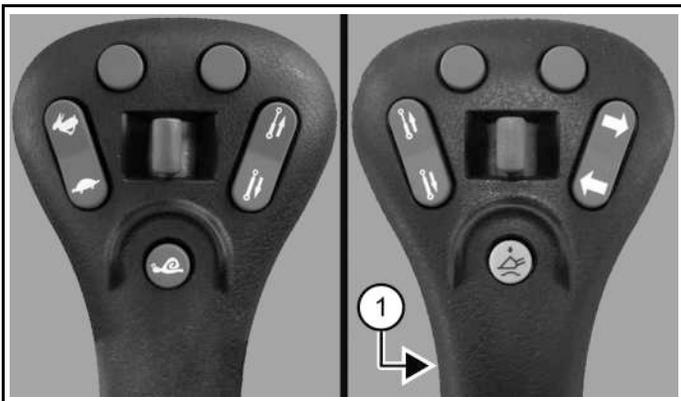


C200321d

1. Press the auxiliary hydraulics button (Item 1) [Figure 118] on the right control panel once to activate auxiliary hydraulics.

The left LED in the button will light.

Figure 119



P200213h

2. Press the Continuous Flow Control switch (Item 1) [Figure 119].

3. Press the Continuous Flow Control switch (Item 1) [Figure 119] a second time to stop continuous auxiliary hydraulic fluid flow.

NOTE: When the operator is seated and raises the seat bar, the auxiliary hydraulic system (Front and Rear) will deactivate.

Operating Front Auxiliary Hydraulics In Reverse Continuous Flow Mode

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

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 120

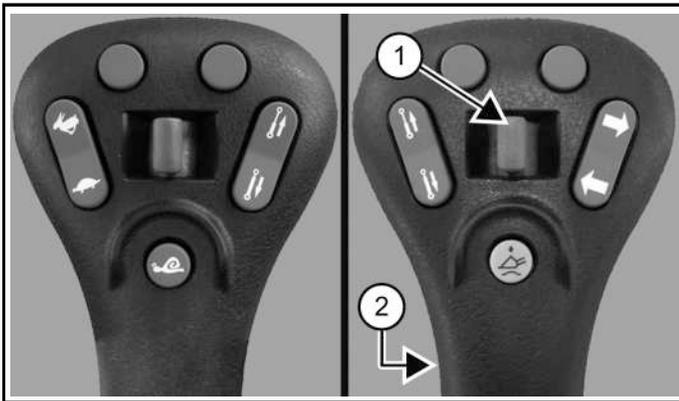


C200321d

1. Press the auxiliary hydraulics button (Item 1) [Figure 120] on the right control panel once to activate auxiliary hydraulics.

The left LED in the button will light.

Figure 121



2. Move the front auxiliary hydraulic switch (Item 1) [Figure 121] to the left and hold.
3. Press the continuous flow control switch (Item 2) [Figure 121].
4. Release the front auxiliary hydraulic switch.
5. Press the continuous flow control switch (Item 2) [Figure 121] a second time to stop continuous auxiliary hydraulic fluid flow.

NOTE: When the operator is seated and raises the seat bar, the auxiliary hydraulic system (Front and Rear) will deactivate.

Operating Rear Auxiliary Hydraulics

Figure 122



1. If equipped with rear auxiliary hydraulics, press the auxiliary hydraulics button (Item 1) [Figure 122] on the right control panel once to activate auxiliary hydraulics.

The left LED in the button will light.

Figure 123

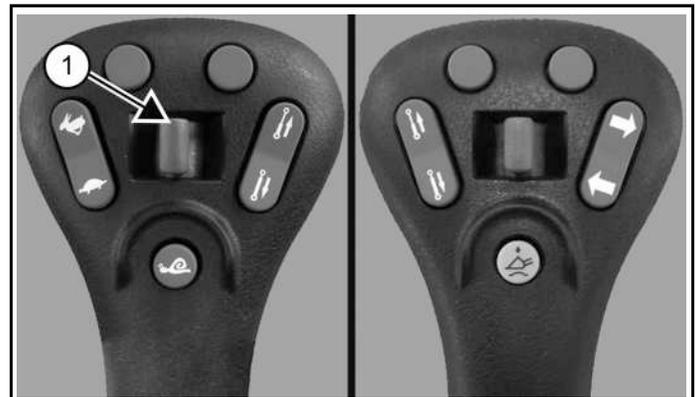
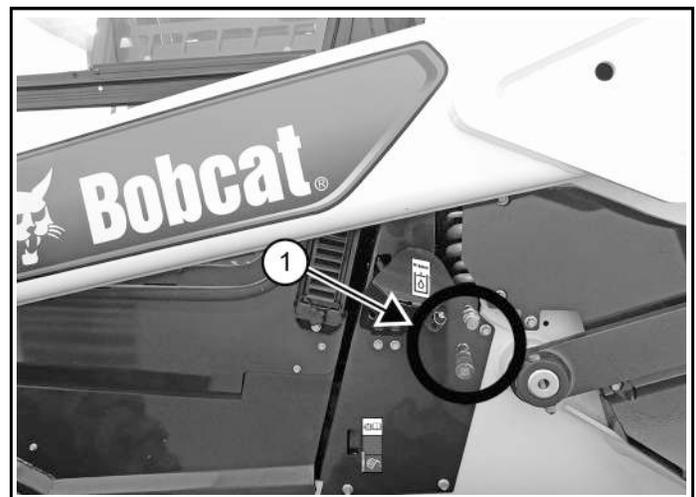


Figure 124



2. Move the rear auxiliary hydraulic switch (Item 1) [Figure 123] to the right or left to change direction of the auxiliary hydraulic fluid flow to the rear quick couplers (Item 1) [Figure 124]. (Left side shown.)
3. Release the switch to stop fluid flow.

Loaders Without High-Flow Hydraulics

- To deactivate the auxiliary hydraulics, press the auxiliary hydraulics button again. All LED are off.

Loaders With High-Flow Hydraulics

- To deactivate the auxiliary hydraulics, press the auxiliary hydraulics button two times. All LED are off.

NOTE: When the operator is seated and raises the seat bar, the auxiliary hydraulic system (Front and Rear) will deactivate.

Operating High-Flow Auxiliary Hydraulics

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.

Figure 125



1. Press the auxiliary hydraulics button (Item 1) [Figure 125] on the right control panel once to activate auxiliary hydraulics.
The left LED in the button will light.
2. Press the auxiliary hydraulics button (Item 1) [Figure 125] a second time to activate high-flow auxiliary hydraulics.
The left and middle LED in the button will light.
3. Press the auxiliary hydraulics button (Item 1) [Figure 125] a third time to deactivate auxiliary hydraulics. All LED in the button are 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.

Connecting And Disconnecting Standard Auxiliary Hydraulic Couplers

⚠ WARNING

INJECTION HAZARD

Pressurized 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

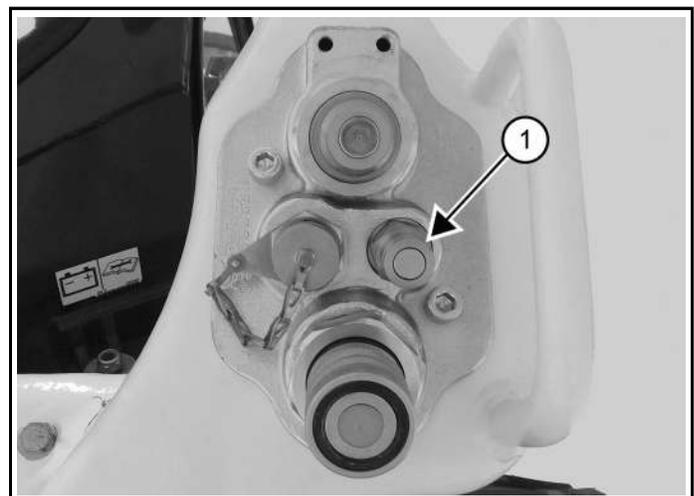
Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments.

Be careful when connecting and disconnecting quick couplers. ◀

W-2220

NOTE: Follow attachment hose routing instructions in the attachment Operation & Maintenance Manual.

Figure 126



C200206b

To Connect

1. Remove dirt or 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) [Figure 126] must be replaced.

3. Install the male couplers into the female 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 1) [Figure 126].

To Disconnect

1. Hold the male couplers.
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 (Front Auxiliary Couplers)

⚠ 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. ◀

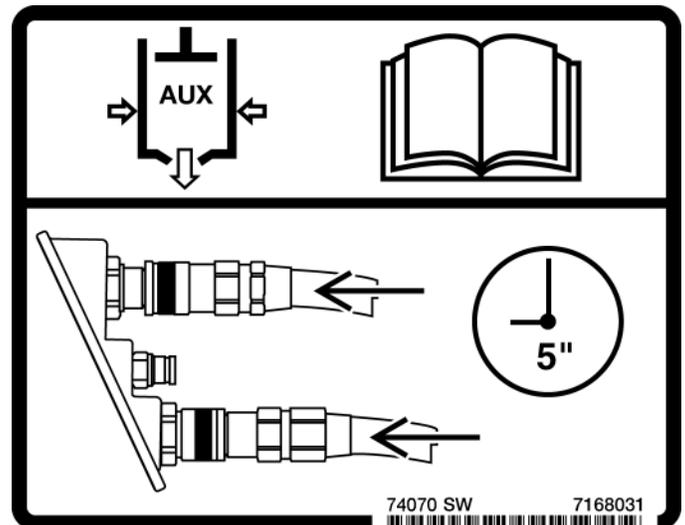
W-2220

⚠ WARNING

INJECTION HAZARD

Pressurized 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



1. Push the quick couplers tightly together and hold for 5 seconds when connecting.

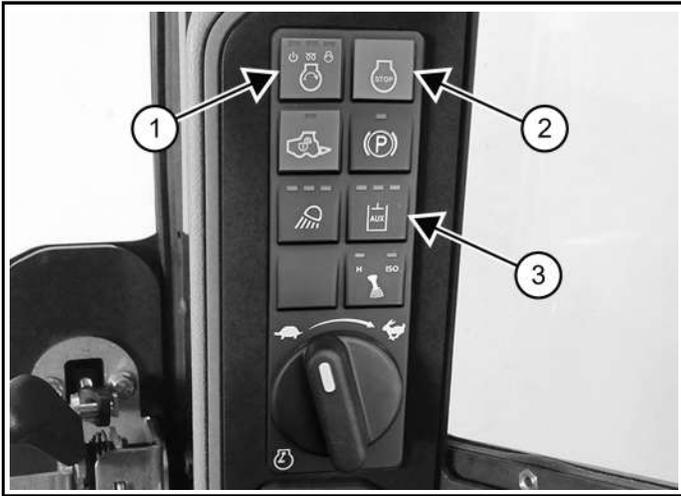
The pressure is automatically relieved as the couplers are installed.

2. Push the quick couplers tightly together and hold for 5 seconds when disconnecting; then retract the sleeves until the couplers disconnect.

Relieving Auxiliary Hydraulic Pressure (Rear Auxiliary Couplers)

1. Put the attachment flat on the ground.
2. Stop the engine.

Figure 127



3. Press the run button (Item 1) [Figure 127] on the right control panel or turn the key switch to run, but do not start the engine.
4. Press the auxiliary hydraulics button (Item 3) [Figure 127] on the right control panel once to activate auxiliary hydraulics.

Figure 128



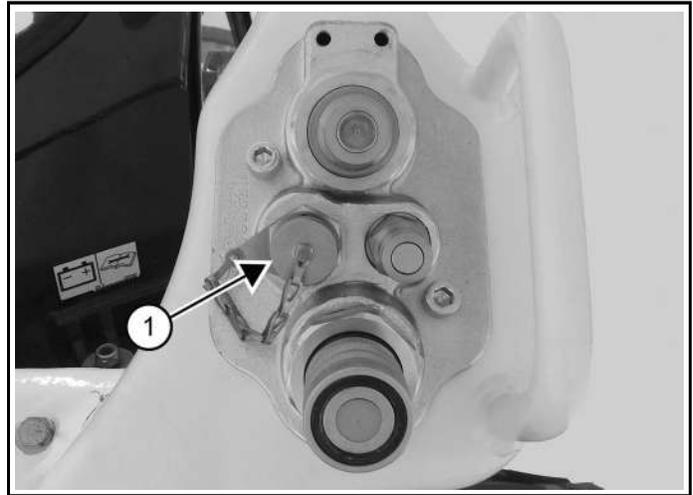
5. Move the rear auxiliary hydraulic switch (Item 1) [Figure 128] to the left and right several times.
6. Press the stop button (Item 2) [Figure 127] on the right control panel or turn the key switch to stop.

ATTACHMENT CONTROL DEVICE (ACD)

Attachment Control Device (ACD) Description

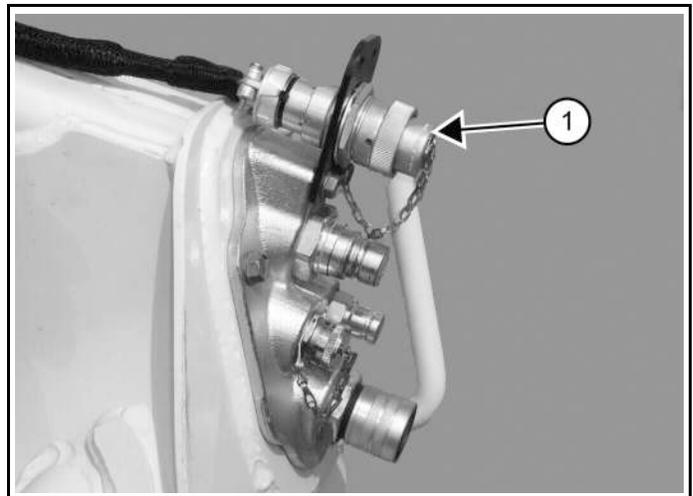
This machine may be equipped with an attachment control device.

Figure 129



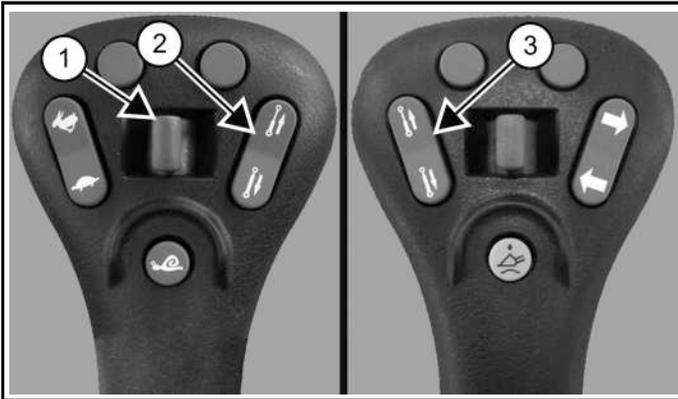
The attachment electrical harness (if equipped) connects to the attachment control device (Item 1) [Figure 129].

Figure 130



You will need the 14-Pin ACD kit (Item 1) [Figure 130] to operate early model attachments. See your Bobcat dealer.

Figure 131



Additional switches (Items 1, 2, and 3) [Figure 131] are used to control some attachment functions through the attachment control device.

NOTE: ACD takes over the function of the rear auxiliary hydraulic switch (Item 1) [Figure 131] from rear auxiliary hydraulics when an attachment electrical harness is attached to the ACD.

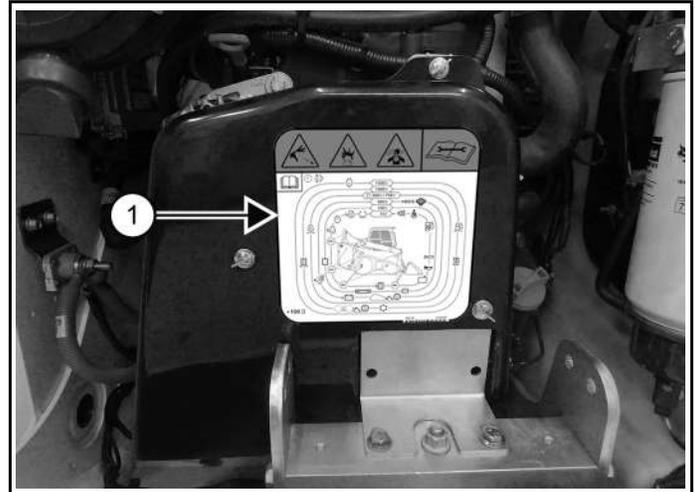
See the appropriate attachment Operation & Maintenance Manual for control details.

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 Checklist And Schedule is a guide for correct maintenance of the Bobcat loader.

Figure 132



The Service Checklist And Schedule (Item 1) [Figure 132] is located on the belt guard inside the rear door of the machine.

A description of the symbols is located inside the back cover of this manual.

A complete list of scheduled maintenance tasks is also located in the Preventive Maintenance section of this manual. (See Service Schedule on Page 124)

⚠ 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
- Seat Bar and Control Interlocks
- Bobcat Interlock Control System (BICS)

- 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)
- Tires — Check for wear, damage, and correct air pressure
- Loose or Broken Parts – Repair or replace as necessary
- Safety Treads and Safety Signs (Decals) – Replace as necessary
- Lift Arm Support – Replace if damaged

⚠ IMPORTANT**ENGINE OR EXHAUST SYSTEM DAMAGE**

Failure to maintain the factory equipped U.S.D.A. Forestry Service Approved spark arrester exhaust system can result in improper function.

- **Muffler:** The muffler spark 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, the engine must be equipped with a spark arrester and maintained in working order. Failure to do so will be in a violation of California state law section 4442 PRC. Refer to local laws and regulations for spark arrester requirements. ◀

I-2350

⚠ 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 center of the decal toward the edges. ◀

I-2228

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. ◀

I-2410

PRE-STARTING PROCEDURE

Entering The Machine

Figure 133



C200589

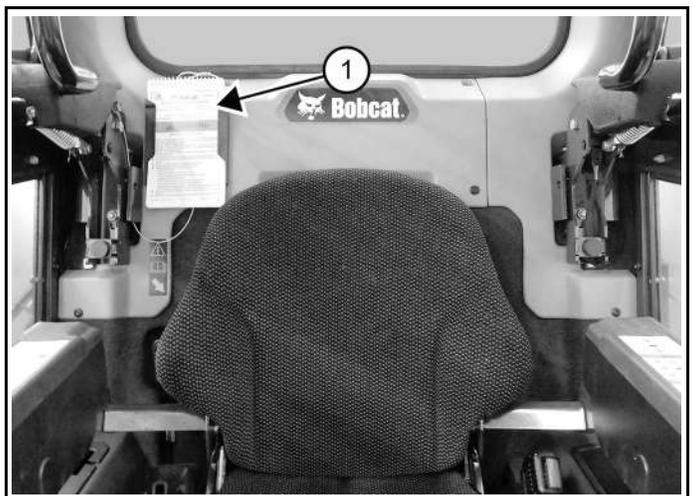
- Use the bucket or attachment steps, grab handles, and safety treads (on the machine lift arms and frame) to get on and off the machine, maintaining a three-point contact at all times [Figure 133]. Do not jump.

Safety treads are installed on the Bobcat machine to provide a slip resistant surface for getting on and off 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

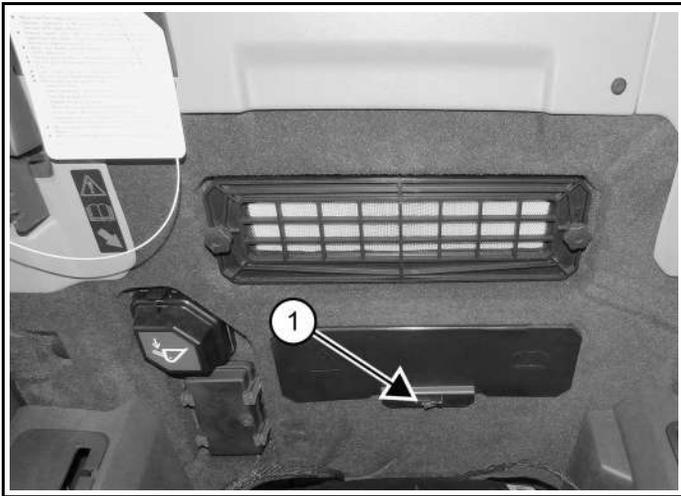
Figure 134



C200216a

Read and understand the Operation & Maintenance Manual and the Operator's Handbook (Item 1) [Figure 134] before operating the machine.

Figure 135



C200577b

The Operation & Maintenance Manual and other manuals can be kept in a container provided behind the operator seat. Press the latch (Item 1) [Figure 135] to allow the cover to flip up.

⚠ WARNING

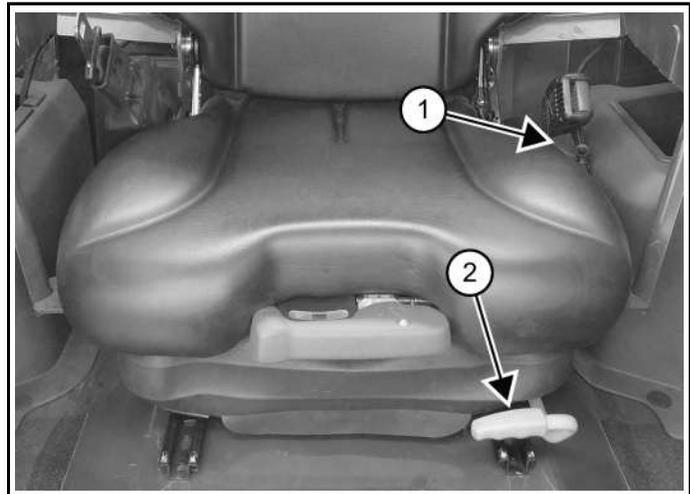
INSUFFICIENT INSTRUCTIONS HAZARD
Untrained operators or failure to follow instructions can cause serious injury or death.

- 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. ◀

W2003

Adjusting Seat

Figure 136

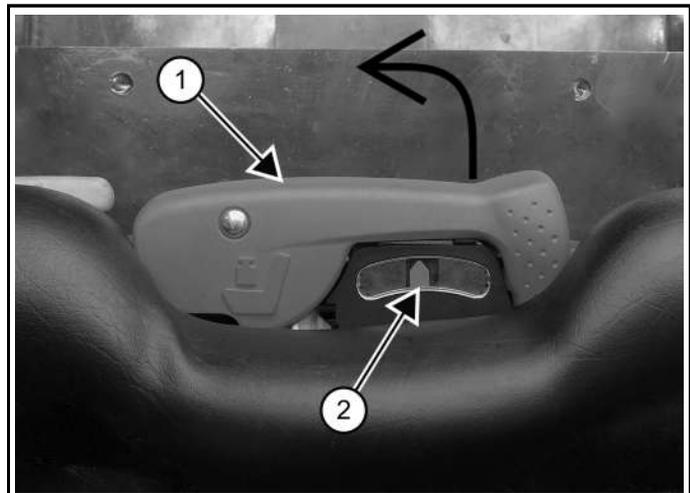


C200219a

- Pull the lever (Item 1) [Figure 136] up to adjust the angle of the seat back.
- Pull the lever (Item 2) [Figure 136] up to adjust the seat position for comfortable operation of the machine controls.

Adjusting Suspension Seat

Figure 137



C200220a

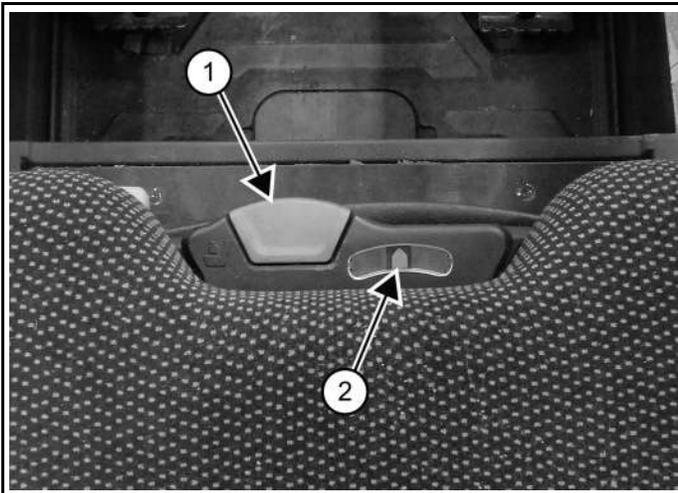
The lever (Item 1) is used to adjust the suspension response of the seat depending on the operator's weight. The optimum setting is achieved with the needle (Item 2) [Figure 137] centered in the gauge with the operator normally seated.

- Pivot the lever out fully to adjust the setting.

- Pump lever between middle and upper positions to move the needle to the right.
- Pump lever between middle and lower positions to move the needle to the left.
- Return lever to the middle position and pivot lever back fully to lock in setting.

Adjusting Heated Cloth Air Ride Suspension Seat

Figure 138



The lever (Item 1) is used to adjust the suspension response of the seat depending on the operator's weight. The optimum setting is achieved with the needle (Item 2) [Figure 138] centered in the gauge with the operator normally seated.

- Pull the lever (Item 1) [Figure 138] up and hold to increase the amount of air in the seat suspension.
- Push the lever down and hold to decrease the amount of air in the seat suspension.

NOTE: The machine electrical system must be turned ON to increase the amount of air in the seat suspension and to operate the heated seat.

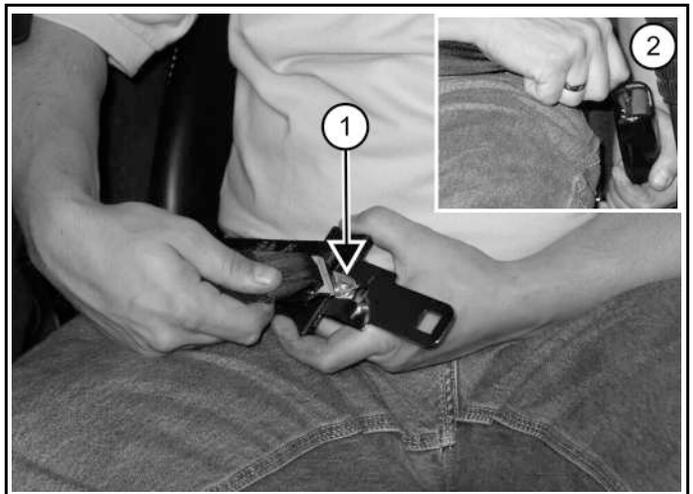
Figure 139



The switch [Figure 139] to turn the heated seat on or off is located behind the seat back on the left side.

Adjusting 3-Point Restraint Seat Belt

Figure 140



1. Connect the shoulder belt to the lap belt (Item 1) [Figure 140].
2. Pull the lap belt across to the left side of the seat and fasten (Item 2) [Figure 140].

The shoulder belt must be positioned over your right shoulder and lap belt over your lower hips.

Check the seat belt and shoulder belt retractors for correct operation. Keep retractors clean and replace as necessary.

Lowering Seat Bar

Figure 141



C200586

1. Lower the seat bar [Figure 141].
2. Put the foot pedals or hand controls in NEUTRAL position.

NOTE: Keep your hands on the steering levers and your feet on the foot pedals (or footrests) while operating the machine.

WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

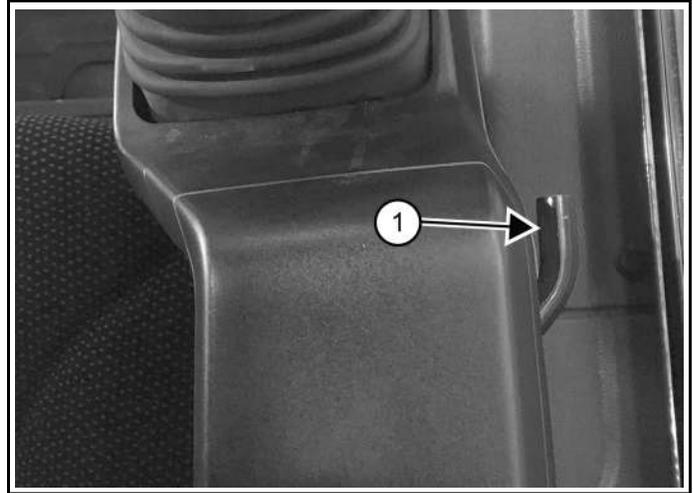
When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls. ◀

W-2261

Adjusting Joystick Position

Figure 142



C200603A

- SJC equipped machines have a joystick position adjustment. Pull the joystick adjustment lever (Item 1) [Figure 142] up to slide the joystick forward or backward to adjust for comfortable operation. (Right side shown.)

STARTING THE ENGINE

Quick Start Description

The display uses a sleep function to reduce boot-up time and battery draw. The sleep time for standard display is fixed. The sleep time for touch display can be adjusted using the owner or master password. (See Security Settings on Page 208)

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

Figure 143



Unlocked with quick start on [Figure 143]:

- 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 144



Locked with quick start on [Figure 144]:

- 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 145



Locked with quick start off [Figure 145]:

- 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 192) or
(See Security Settings on Page 208)

NOTE: Quick start can be turned on or off.
(See Security Settings on Page 192) or
(See Security Settings on Page 208)

Starting Engine

⚠ WARNING

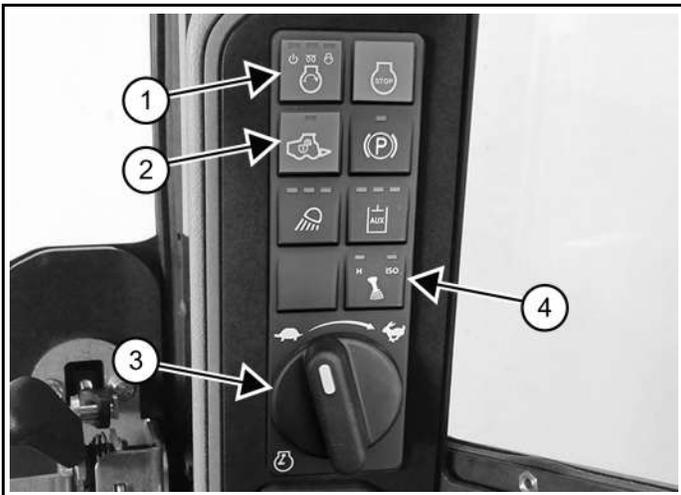
FIRE AND EXPLOSION HAZARDS
Engines can have hot parts and hot exhaust gas that can cause serious injury or death.

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

W2051

- Perform the pre-starting procedure.
(See Pre-Starting Procedure on Page 95)

Figure 146

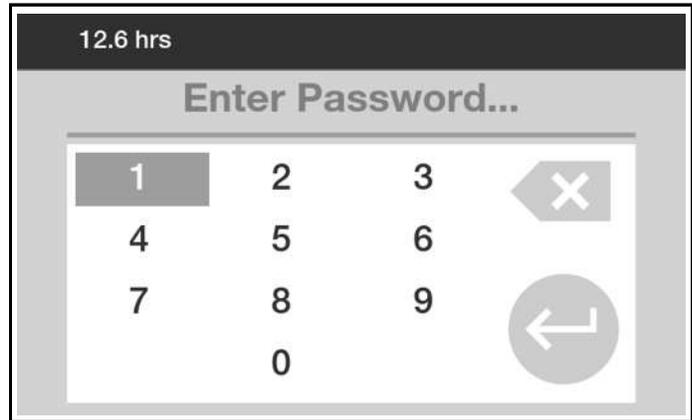


C200321J

- Set the engine speed control (Item 3) [Figure 146] to the low idle position.
- Press the run button (Item 1) [Figure 146] or turn the key switch to run.
(See Keyed Ignition Kit on Page 49) 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 99)

Figure 147

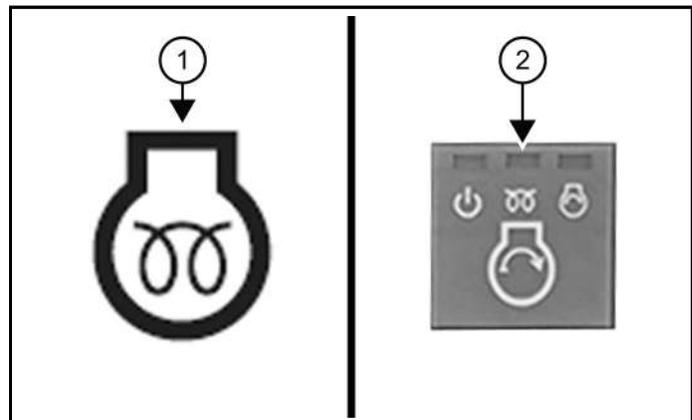


NA3719

- Use the numeric keypad [Figure 147] to enter the password if the machine lockout feature is activated.
(See Security Settings on Page 192) or
(See Security Settings on Page 208)

NOTE: Loaders have 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 unauthorized use of your machine.
(See Security Settings (Manage Operators) on Page 192) or
(See Edit Operator on Page 210) Keep your password in a safe location for future needs.

Figure 148



C200993A

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 148] 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.

- When the engine preheat icon turns off, press the start button (Item 1) [Figure 146] or turn the key to the start position. The right LED in the run button will light while the starter is operating. Release the button or key when the engine starts.

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 102)

NOTE: Make sure both joysticks are in the neutral position before starting the engine. Do not move the joysticks from the neutral position when pressing the start button with the BICS activated.

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. ◀

W-2135

- Select 'ISO' or 'H' Control Pattern (Item 4) [Figure 146] if equipped with SJC.

The LED of the current selection will flash until the operate button is pressed.

- Press the operate button (Item 2) [Figure 146] to activate the BICS and to perform hydraulic and loader functions.

The LED in the operate button will light and the parking brake will disengage when BICS is activated.

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-2255

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 102) and
(See Cold Temperature Hydrostatic Drive Description on Page 102)

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-2903

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 153)
- 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. ◀

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 Hydrostatic Drive Description

Drive will be disabled when the hydraulic fluid temperature is too low on machines equipped with SJC.

Drive will be allowed, but limited when the hydraulic fluid has warmed sufficiently. The machine will gradually allow faster travel as the hydraulic fluid continues to warm. The joystick(s) must be returned to neutral momentarily to allow full travel speed.

Two-speed travel will also be disabled until the hydraulic fluid is adequately warmed.

MONITORING THE DISPLAY

Monitoring Standard Display During Operation

Figure 149

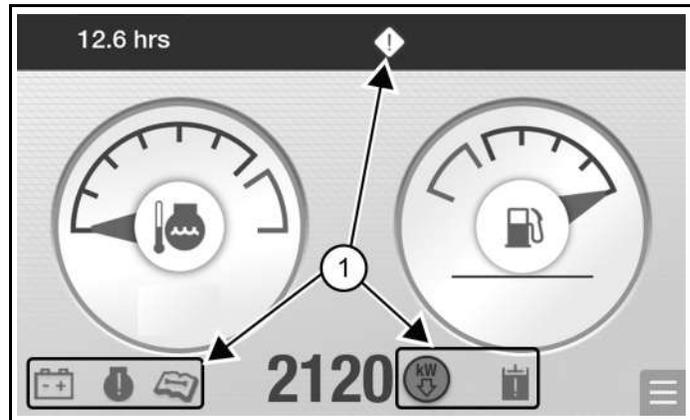


Figure 150



- Frequently monitor the **GAUGES** or **VITALS** screens [Figure 149] and [Figure 150].
- These icons (Item 1) [Figure 149] indicate machine conditions that may require service. (See Standard Display on Page 42)
- Selecting [**MACHINE PERFORMANCE**] on the vitals screen can also provide details on machine condition. (See Vital Detail And Machine Performance on Page 188)

Figure 151



- Active shortcuts (Item 1) [Figure 151] can appear in place of, or next to, the navigation handle that also indicate a need for service.
(See Viewing Active Shortcuts on Page 187)
- A red dot next to **[SERVICE]** [Figure 151] indicates an active service code.
(See View Service Codes on Page 189)

Monitoring Touch Display During Operation

Figure 152



Figure 153



- Frequently monitor the **GAUGES** [Figure 152] or **VITALS** [Figure 153] screens.
- These icons (Item 1) [Figure 152] indicate machine conditions that may require service.
(See Touch Display on Page 44)
- The red dot next to SERVICE [Figure 152] indicates an active service code.
(See View Service Codes on Page 202)
- The center icon in the gauges will change from black to red to indicate a problem [Figure 152].
- Selecting **[MACHINE PERFORMANCE]** on the vitals screen [Figure 153] can also provide details on machine condition.
(See Vital Detail And Machine Performance on Page 195)

Figure 154



- A notification [Figure 154] can alert you to a machine condition requiring service.

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.

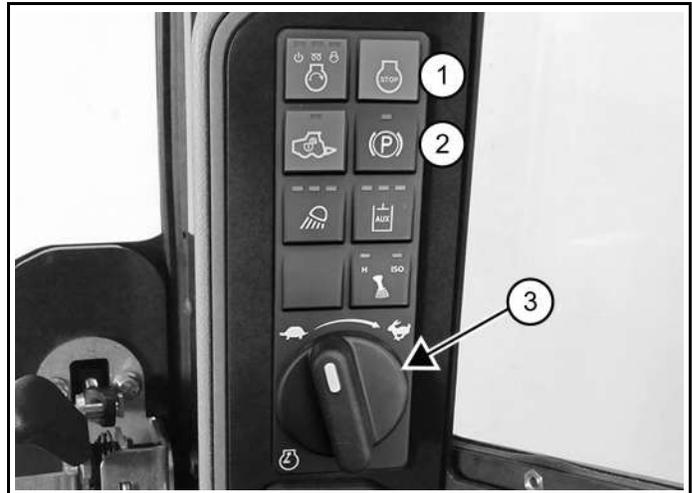
An engine shutdown can occur during certain system malfunctions. The engine can be restarted to move the machine.

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 155



C200321g

3. Set the engine speed control (Item 3) [Figure 155] to the low idle position.
4. Engage the parking brake (Item 2) [Figure 155].

Figure 156



C200594b

5. Press the stop button (Item 1) [Figure 155] or turn the key switch (if equipped) to the Stop position (Item

1) [Figure 156] to stop the engine and turn the machine's electrical system OFF.

NOTE: If the loader lights are on, they will remain on for approximately 90 seconds after turning the machine off.

6. Raise the seat bar and make sure the lift and tilt functions are deactivated.
7. Unbuckle the seat belt.
8. Remove the key from the switch (if equipped) to prevent operation of the machine by unauthorized personnel.

NOTE: Activate the machine lockout feature to require a password before the machine can be operated.
(See Security Settings on Page 192) or
(See Security Settings on Page 208) .

Figure 157



C200319

9. Exit the machine using grab handles, safety tread, and steps (maintaining a three-point contact) [Figure 157].

⚠ 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.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2483

COUNTERWEIGHTS

Counterweight Description

Counterweights can be installed on the machine.

See your Bobcat dealer for information about approved loader counterweights and configurations for your job application and attachment.

Effect Of Counterweight Use On The Loader And Loader Operation

Proper operation of the machine and attachment does not change if counterweight are installed on this machine. Always follow the instructions provided in this manual when operating your machine with counterweights installed.

Counterweights installed on your machine can affect the machine and its operation in some applications. Some examples are:

- Increased machine weight.
- Increased Rated Operating Capacity (ROC).
- Harder steering.
- Accelerated or uneven tire wear.
- Increased power consumption.

When To Consider Using Counterweights

Install counterweights to increase the loaders Rated Operating Capacity (ROC) which could improve attachment performance in some applications. Some examples are:

- Using pallet fork with palletized loads.
- Using grapples or bale fork.
- Using buckets to handle loose material without digging.

When To Consider Removing Counterweights

Remove counterweights to increase the downward force of the attachment for better attachment performance in some applications. Some examples are:

- Digging with buckets.
- Using Hydraulic Breakers, Scrapers, or Landplanes.

Accessories That Affect Machine Weight

If your machine is already equipped with accessories like water tanks or rear stabilizers; installing counterweights may not be necessary.

See your Bobcat dealer for more information about the proper use of counterweights with approved attachments and accessories for your machine.

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

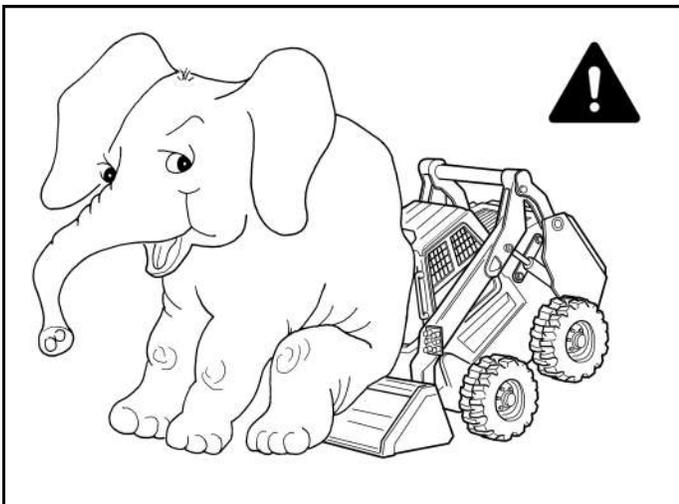
NOTE: Warranty is void if non-approved attachments are used on the Bobcat loader.

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

The ROC for this machine is shown on a decal in the operator cab. (See Loader Specifications on Page 219)

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 center moves forward and reduces the ROC. If extremely dense material is loaded, the volume must be reduced to prevent overloading.

Figure 158



NA15854A

Exceeding the ROC [Figure 158] can cause the following problems:

- Steering the machine may be difficult.
- Tires will wear faster.
- There will be a loss of stability.

- The life of the Bobcat loader 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 make steering more difficult.

⚠ WARNING

INSTABILITY HAZARD

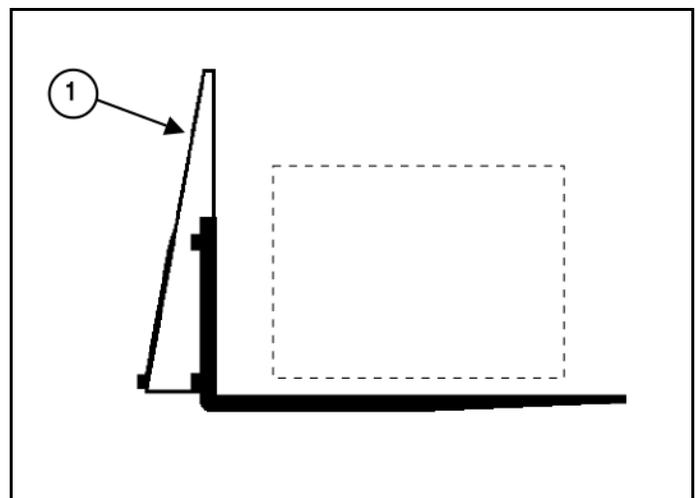
Excessive load can cause loss of control or tipping leading to serious injury or death.

DO NOT exceed Rated Operating Capacity (ROC). ◀

W-2053

Pallet Fork Information

Figure 159



NA3156A

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 159].

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). ◀

W-2053

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.

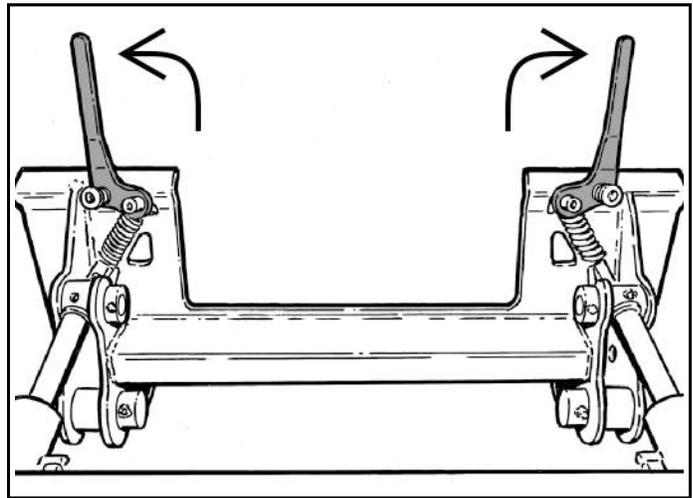
- **Surface Cracks** - The fork shall be thoroughly examined visually for cracks and if considered necessary, subjected to a nondestructive crack detection process. This inspection for cracks must also include any special mounting mechanisms of the fork blank to the fork carrier. The fork shall not be 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 (HAND LEVER BOB-TACH SYSTEM)

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

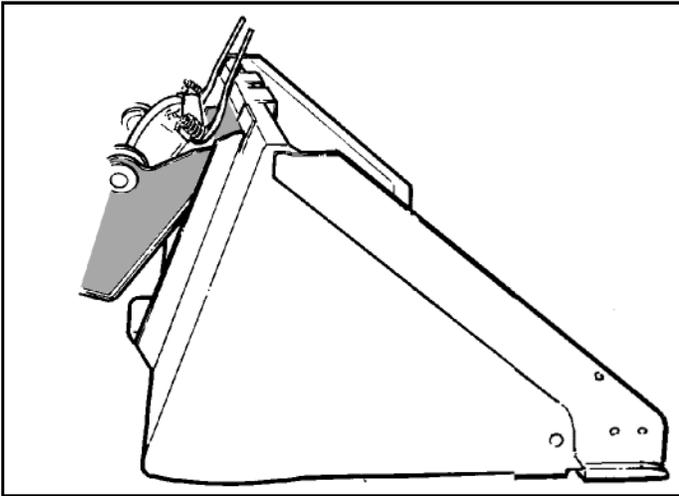
Installing Attachments

Figure 160



1. Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 160].
2. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 95)
3. Start the engine.
4. Press the operate button
5. Release the parking brake.
6. Lower the lift arms and tilt the Bob-Tach frame forward.

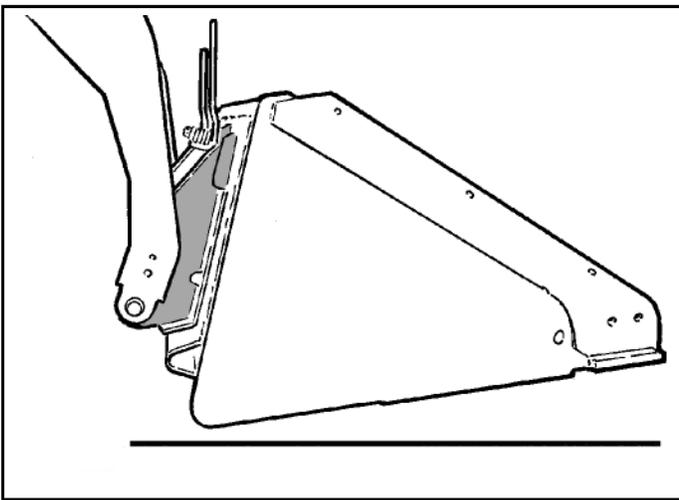
Figure 161



7. Drive the machine slowly forward until the top edge of the Bob-Tach frame is completely under the top flange of the bucket mounting frame [Figure 161] (or other attachment).

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

Figure 162



8. Tilt the Bob-Tach frame backward until the cutting edge of the bucket (or other attachment) is slightly off the ground [Figure 162].

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

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

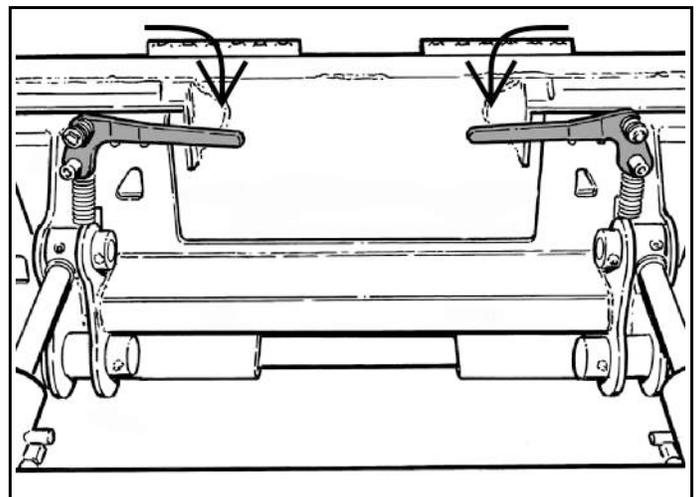
Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2483

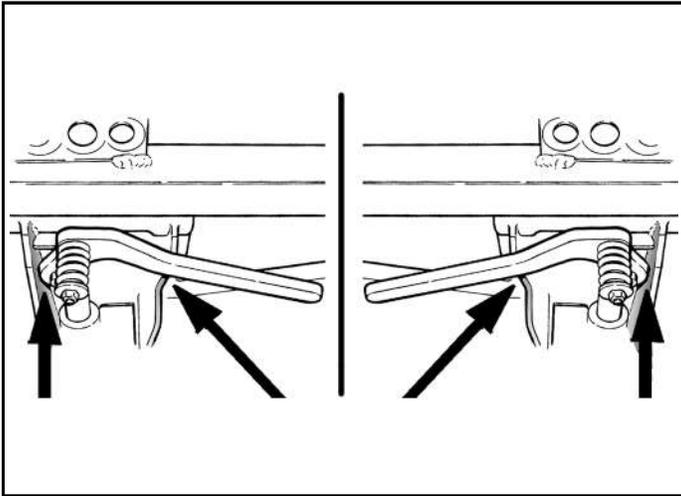
9. Stop the engine and exit the machine.
(See Stopping The Engine And Leaving The Machine Procedure on Page 104)

Figure 163



10. Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 163] (wedges fully extended through the attachment mounting frame holes).

Figure 164



11. Both levers must contact the frame as shown when locked [Figure 164].

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

⚠ WARNING

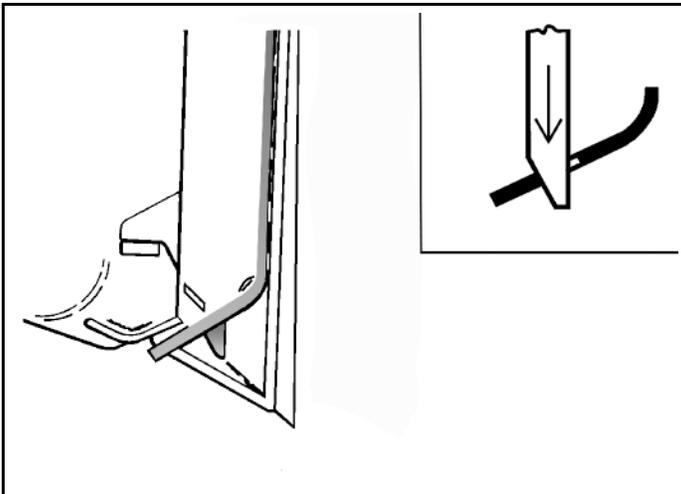
CRUSHING HAZARD

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. ◀

W-2102

Figure 165



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 frame [Figure 165].

Removing 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.

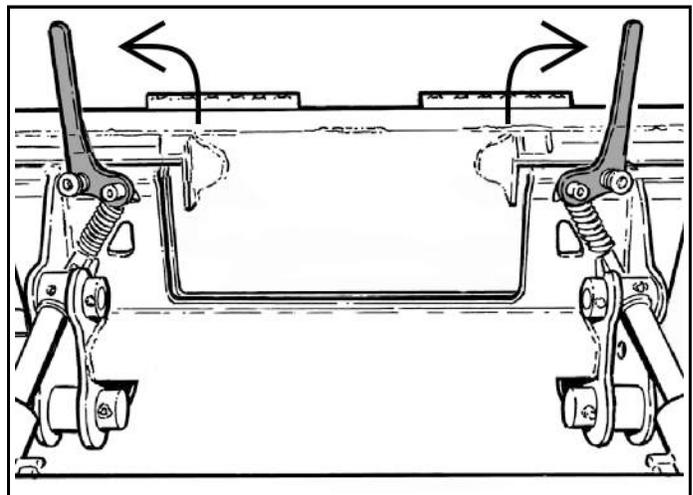
Before you leave the operator's seat:

- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2463

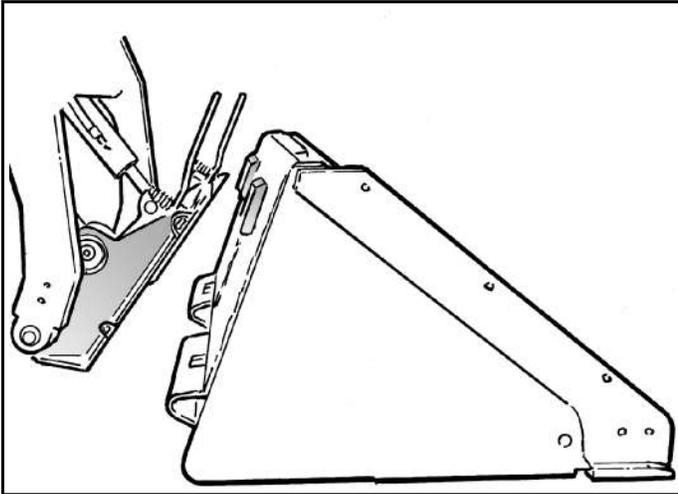
3. Stop the engine and exit the machine. (See Stopping The Engine And Leaving The Machine Procedure on Page 104)
4. Disconnect attachment electrical harness and water or hydraulic lines, if applicable, from the machine. (See Relieving Auxiliary Hydraulic Pressure (Front Auxiliary Couplers) on Page 91)

Figure 166



5. Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 166].

6. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 95)
7. Start the engine.
8. Press the operate button.
9. Release the parking brake.

Figure 167

NA3446

10. Tilt the Bob-Tach frame forward and drive the machine backward, away from the bucket or attachment [Figure 167].

INSTALLING AND REMOVING ATTACHMENTS (POWER BOB-TACH SYSTEM)

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

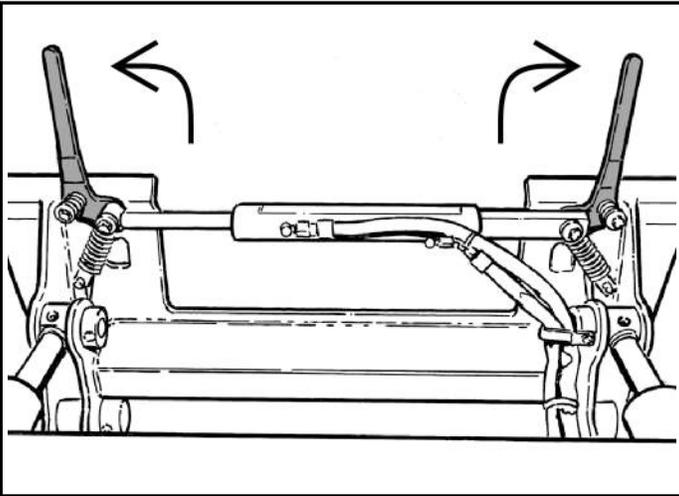
Installing Attachments

1. Enter the machine and perform the pre-starting procedure. (See Pre-Starting Procedure on Page 95)
2. Start the engine.
3. Press the operate button
4. Release the parking brake.
5. Lower the lift arms and tilt the Bob-Tach frame forward.

Figure 168

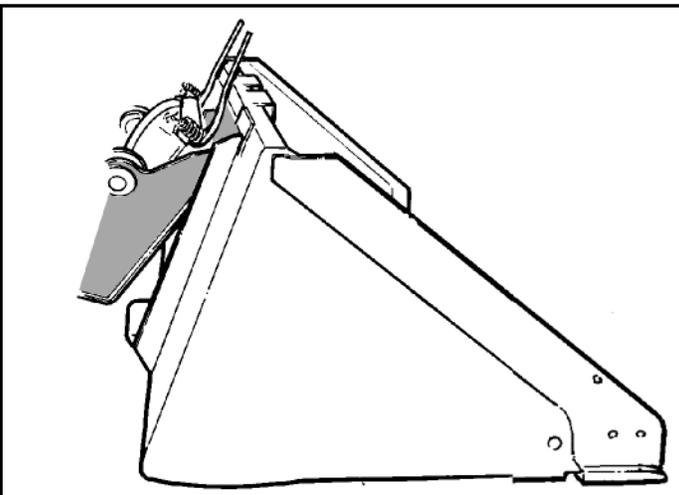
C200193e

Figure 169



6. Push and hold Bob-Tach Wedges Up button (Item 1) [Figure 168] on the left control panel until levers are fully raised (wedges fully raised) [Figure 169].

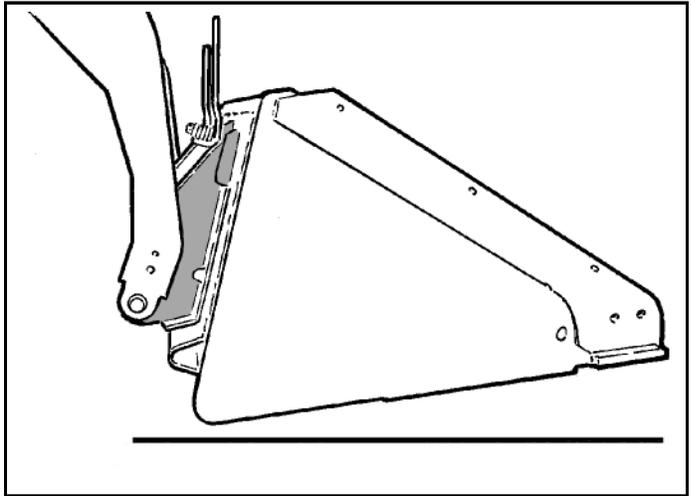
Figure 170



7. Drive the machine slowly forward until the top edge of the Bob-Tach frame is completely under the top flange of the bucket mounting frame [Figure 170] (or other attachment).

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

Figure 171



8. Tilt the Bob-Tach frame backward until the cutting edge of the bucket (or other attachment) is slightly off the ground [Figure 171].

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

Figure 172



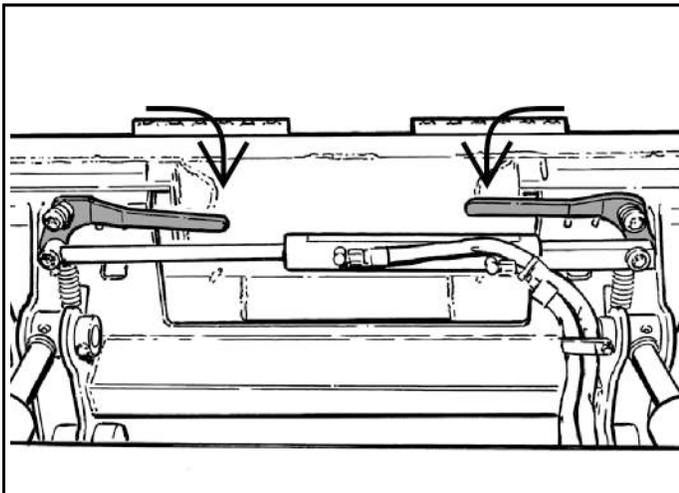
9. Push and hold Bob-Tach Wedges Up button (Item 1) [Figure 172] on the left control panel until levers are fully raised (wedges fully raised).

NOTE: The Power Bob-Tach system uses continuously pressurized hydraulic fluid to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the button (Bob-Tach Wedges Up) to be sure both wedges are fully raised before installing the attachment.

Figure 173

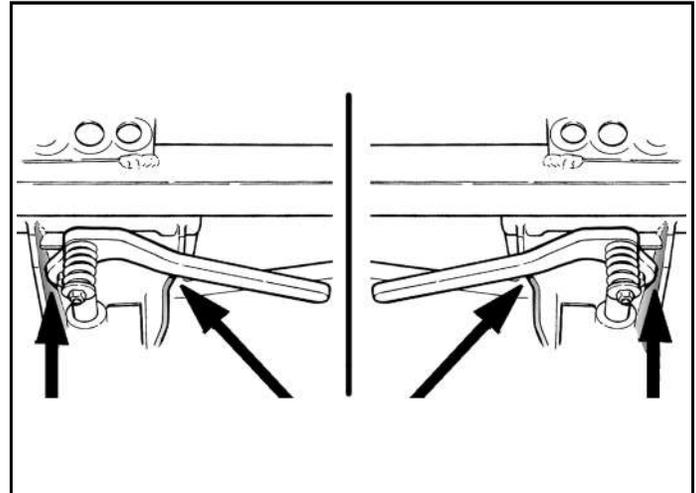


Figure 174



10. Push and hold Bob-Tach Wedges Down button (Item 1) [Figure 173] on the left control panel until levers are fully engaged in the locked position [Figure 174] (wedges fully extended through the attachment mounting frame holes).

Figure 175



11. Both levers must contact the frame as shown when locked [Figure 175].

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

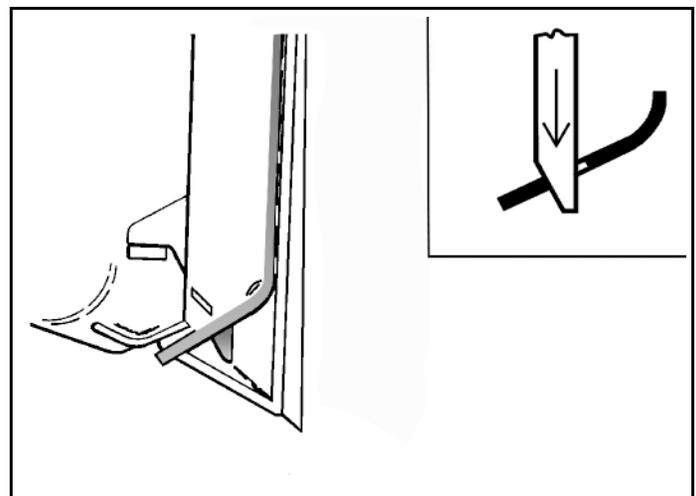
⚠ WARNING

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. ◀

Figure 176



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 frame [Figure 176].

Removing 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, water, 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.
- Raise the seat bar.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.
- The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate. ◀

W-2483

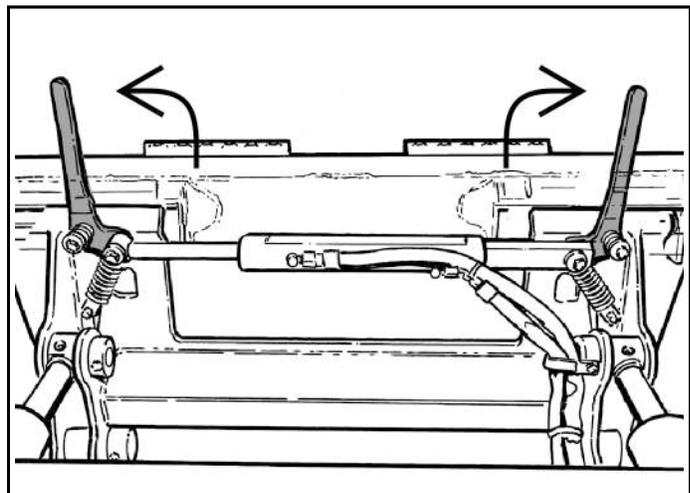
- a. Stop the engine and exit the machine.
(See Stopping The Engine And Leaving The Machine Procedure on Page 104)
- b. Disconnect attachment electrical harness and water or hydraulic lines, if applicable, from the machine.
(See Relieving Auxiliary Hydraulic Pressure (Front Auxiliary Couplers) on Page 91)
- c. Enter the machine and perform the pre-starting procedure.
(See Pre-Starting Procedure on Page 95)
- d. Start the engine.
- e. Press the operate button.
- f. Release the parking brake.

Figure 177



C200193e

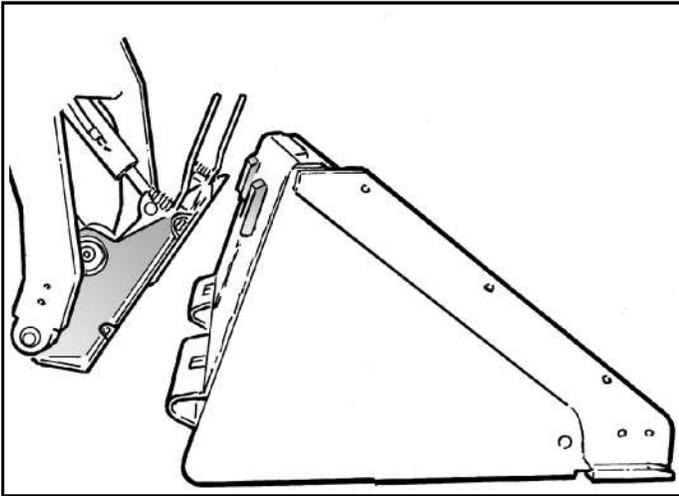
Figure 178



NA3455A

4. Push and hold Bob-Tach Wedges Up button (Item 1) [Figure 177] on the left control panel until levers are fully raised (wedges fully raised) [Figure 178].

Figure 179



NA3446

5. Tilt the Bob-Tach frame forward and drive the machine backward, away from the bucket or attachment [Figure 179].

NOTE: The Power Bob-Tach system uses continuously pressurized hydraulic fluid to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the button (Bob-Tach Wedges Up) to be sure both wedges are fully raised before installing the attachment.

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

- Always warm the engine and hydrostatic system before operating the machine.

NOTE: Machines warmed up with moderate engine speed and light load have longer life.
- Operate the machine with engine at full speed for maximum horsepower. Move the steering controls only a small amount to operate the machine slowly.
- 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.

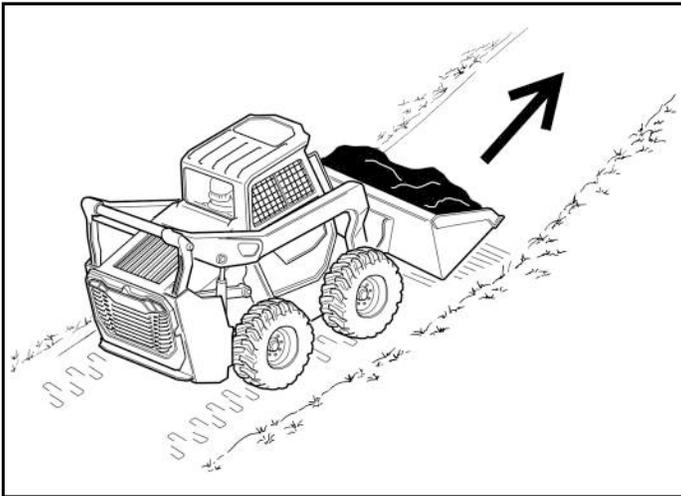
Always move the machine back at any indication the edge may be unstable.

Driving On Public Roads

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

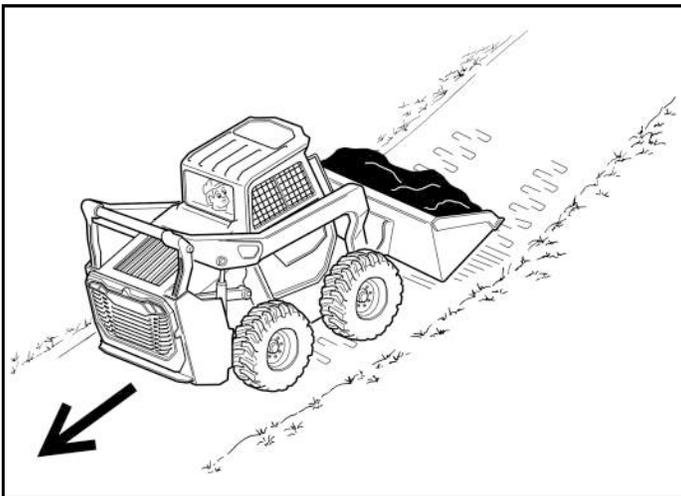
Operating On Slopes With A Full Bucket

Figure 180



NA15850A

Figure 181

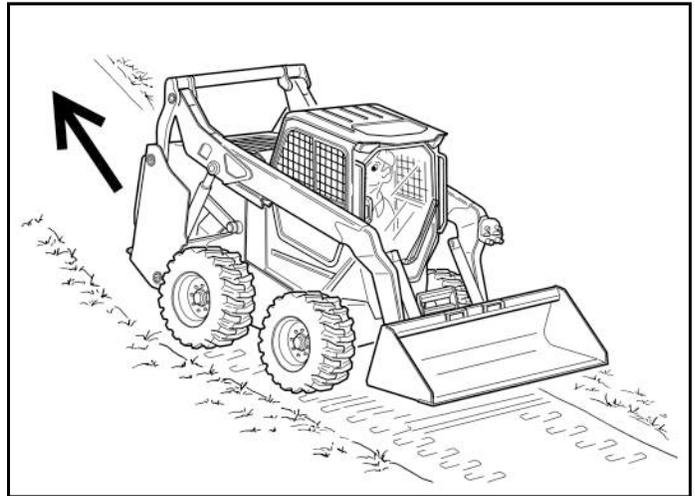


NA15851A

- With a full bucket, go up or down the slope with the heavy end toward the top of the slope [Figure 180] and [Figure 181].
- Raise the bucket only high enough to avoid obstructions on rough ground.

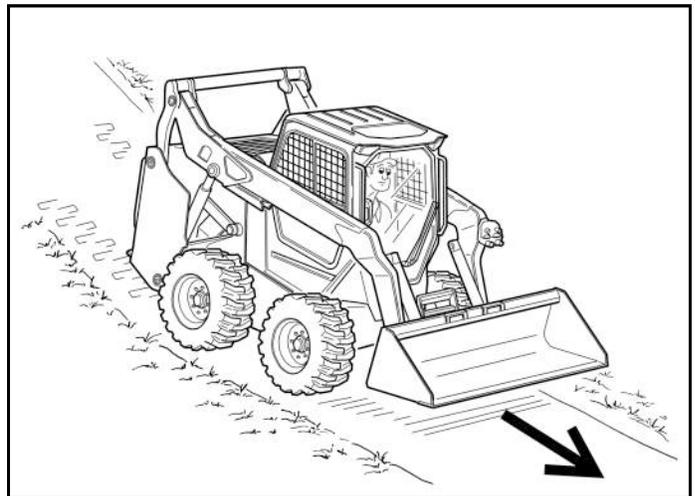
Operating On Slopes With An Empty Bucket

Figure 182



NA15852A

Figure 183



NA15853A

- With an empty bucket, go up or down the slope with the heavy end toward the top of the slope [Figure 182] and [Figure 183].
- Raise the bucket only high enough to avoid obstructions on rough ground.

TOWING THE MACHINE

Towing Procedure

Because of the design of the machine, there is not a recommended towing procedure.

- The machine can be lifted onto a transport vehicle.
- The machine can be skidded a short distance to move for service (EXAMPLE: Move onto a transport vehicle.) without damage to the hydrostatic system. (The tires will not turn.) There may be slight wear to the tires when the machine is skidded.

The towing chain (or cable) must be rated at 1.5 times the weight of the machine.
(See Loader Specifications on Page 219)

LIFTING THE MACHINE

Single-Point Lift Description

⚠ WARNING

CRUSHING HAZARD

Falling machine can cause serious injury or death.

- Before lifting, check fasteners on single point lift the operator cab.
- Assemble front cab fasteners as shown in this manual.
- Never allow riders in the cab or bystanders within 5 m (15 ft) while lifting the machine. ◀

W-2007

The machine can be lifted with the Single-Point Lift that is available as a kit from your Bobcat dealer.

The Single-Point Lift, supplied by Bobcat, is designed to lift and support the Bobcat loader without affecting rollover and falling object protection features of the operator cab.

Figure 184



NA18140

- Attach lift to lift eye [Figure 184].

NOTE: Be sure the lifting equipment is of adequate size and capacity for the weight of the machine.
(See Loader Specifications on Page 219)

Four-Point Lift Description

⚠ WARNING

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 the Four-Point Lift that is available as a kit from your Bobcat dealer.

Figure 185

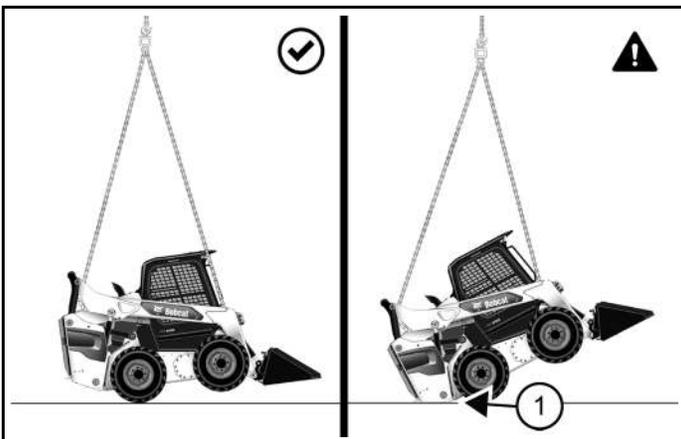


NOTE: The machine should be lifted as close to horizontal as possible, but at no time should the angle of the suspended machine exceed the departure angle (Item 1) [Figure 185] provided in the specifications section.
(See Specifications on Page 217)

NOTE: The required length of front and rear sling legs may or may not be equal depending on machine configuration. Departure angle (Item 1) [Figure 186] in this view has been exceeded, sling leg length must be adjusted to prevent this situation.

NOTE: Be sure the lifting equipment is of adequate size and capacity for the weight of the machine.
(See Loader Specifications on Page 219)

Figure 186



- Attach cables or chains to lift eyes [Figure 186].

NOTE: Sling legs should not contact any part of the operator cab or lift arms to prevent damage.

TRANSPORTING THE MACHINE

Loading And Unloading Machine

⚠ WARNING

INSTABILITY HAZARD

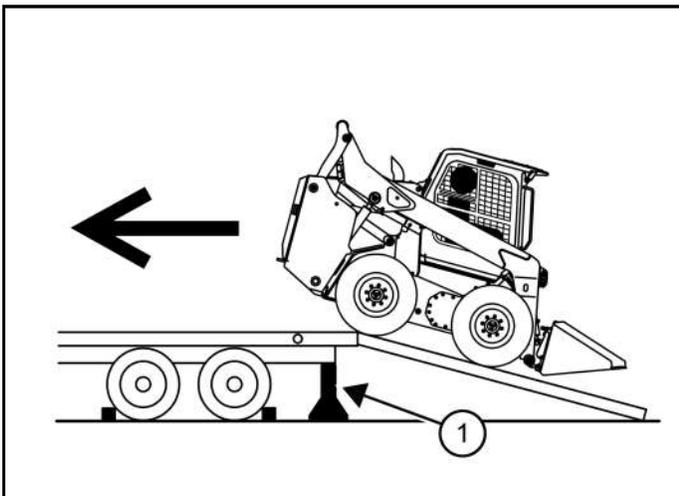
Wood ramps can break and cause personal injury. Use adequately designed ramps of sufficient strength to support the weight of the machine loading onto a transport vehicle. ◀

W-2058

Be sure the transport and towing vehicles are of adequate size and capacity for weight of machine. (See Loader Specifications on Page 219)

NOTE: Always disengage the auto idle feature when loading or unloading the machine on a trailer. (See Operating Auto Idle on Page 62)

Figure 187



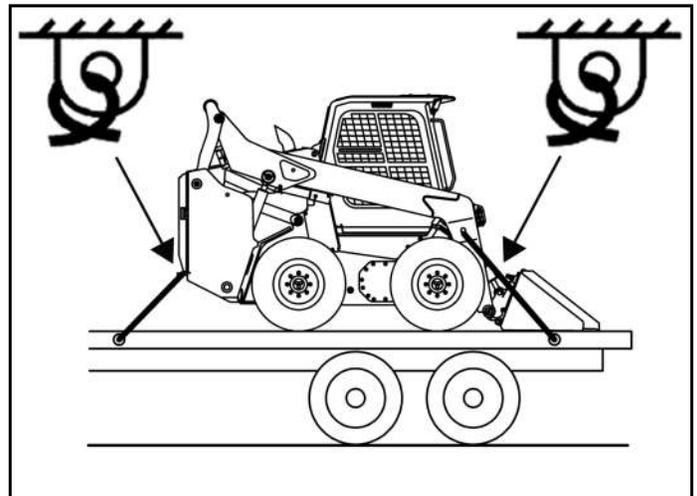
NA18111B

A loader with an empty bucket or no attachment must be loaded backward onto the transport vehicle [Figure 187].

The rear of the trailer must be blocked or supported (Item 1) [Figure 187] when loading or unloading the machine to prevent the front end of the trailer from raising up.

Fastening Machine To Transport Vehicle

Figure 188



NA18113A

Use the following procedure to fasten the Bobcat loader to the transport vehicle to prevent the machine from moving during sudden stops, or when going up or down slopes [Figure 188].

1. Lower the bucket or attachment to the floor.
2. Stop the engine.
3. Engage the parking brake.

Figure 189



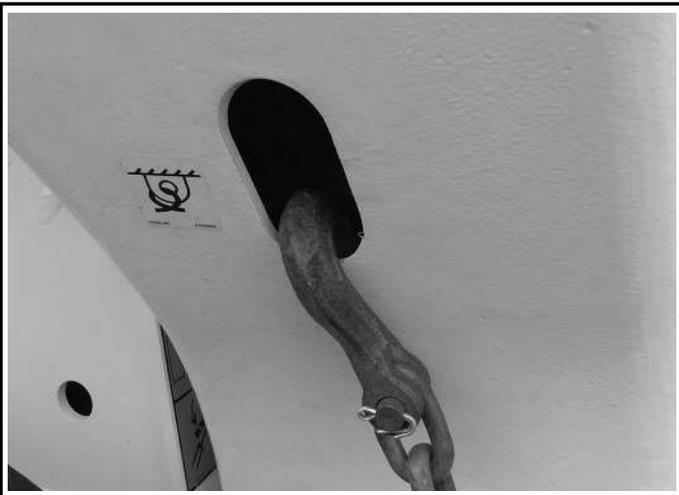
C200675

4. Install chains at both rear tie-down positions [Figure 189]. (Right side shown.)

Figure 190

C200584

5. Install chains at the front tie-down position [Figure 190]. (Lift arms shown raised for visual clarity.)

Figure 191

C200574

6. Alternate front tie-down - Install chains at both front tie-down positions on the lift arms [Figure 191]. (Right side shown.)
7. Fasten each end of the chain to the transport vehicle.
8. Use chain binders to tighten the chains.



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 the 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.



This check mark means: "Follow instructions for proper operations." Carefully read the message that follows.



- Use the correct procedure to lift or lower operator cab.



- Cleaning and maintenance are required daily.



- Grease per schedule.

MAINTENANCE SAFETY WARNINGS



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



- Have good ventilation when welding or grinding painted parts.
- Wear 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.



- Disconnecting or loosening any hydraulic tubeline, hose, fitting, component, or a part failure can cause lift arms to drop. Do not go under lift arms when raised unless supported by an approved lift arm support. Replace if damaged.



- Never work on loader with lift arms up unless lift arms are held by an approved lift arm support. Replace if damaged.
- Never modify equipment or add attachments not approved by Bobcat Company.



- Stop, cool, and clean engine of flammable materials before checking fluids.
- Never service or adjust loader 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 fuel tank with engine running, while smoking, or when near open flame.



- 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 engines are running or tools are used. Use eye protection approved for type of welding.
- Keep rear door closed except for service. Close and latch door before operating the loader.



- 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 body, flush well with water. For eye contact, flush well and get immediate medical attention.

SERVICE SCHEDULE

Maintenance Intervals

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

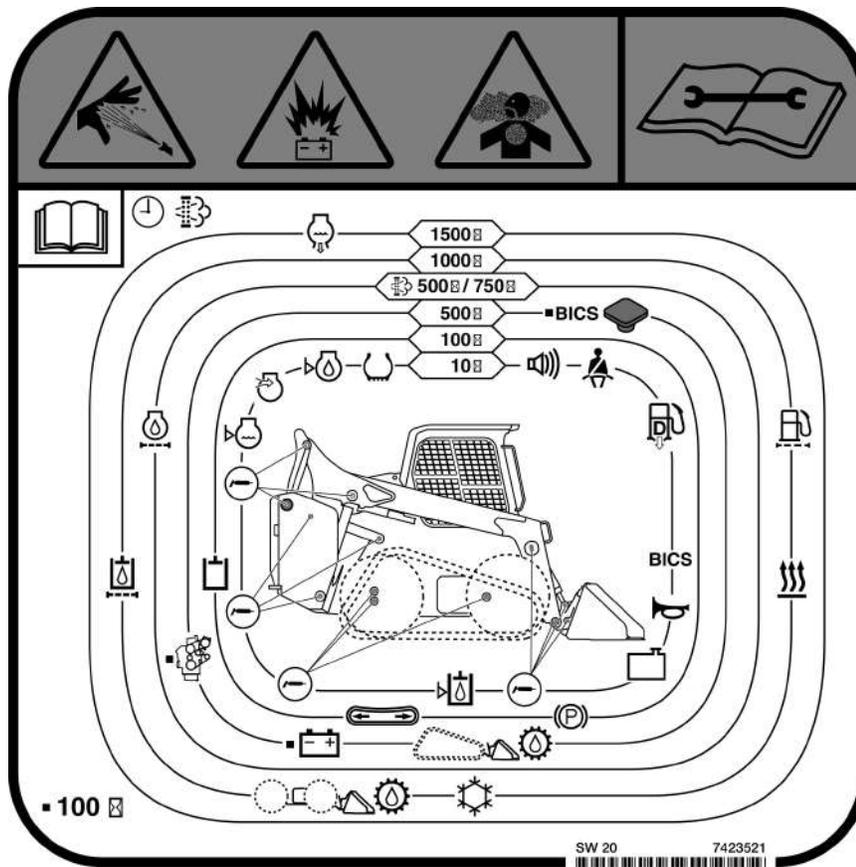
The service schedule decal is a guide for correct maintenance of the Bobcat loader. See the inside page of the back cover for symbols and identification.

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

As Indicated (Per Display)

Engine Air Filters and Air System	Check display. Service only as indicated. Check for leaks and damaged components. (See Page 145)
Fuel Filter	Check the display. Remove the trapped water or replace the main fuel filter element as indicated. (See Page 149)

First 10 Hours

Wheel Nuts	Perform every 10 hours or daily for the first 30 hours, then as scheduled. Check for loose wheel nuts and tighten to correct torque. (See Page 176)
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Every 10 Hours (Before Starting The Loader)

Engine Oil	Check level and add as needed. (See Page 152)
Engine Air Intake Ducting	Check for loose connections and damaged components. (See Page 145)
Engine Cooling System	Clean debris from radiator cooling package, air conditioning condenser (if equipped), rear grilles, and engine compartment. Check coolant level COLD and add premixed coolant as needed. (See Page 155) (See Page 156)
Lift Arms, Lift Links, Cylinders, Bob-Tach, Pivot Pins, Wedges	Lubricate with multipurpose lithium based grease. (See Page 182)
Seat Belt, Seat Belt Retractors, Seat Bar, Control Interlocks	Check the condition of seat belt. Clean or replace seat belt retractors as needed. Check the seat bar and control interlocks for correct operation. Clean dirt and debris from moving parts. (See Page 129) (See Page 131)
Bobcat Interlock Control System (BICS)	Check for correct function. Lift and Tilt functions MUST NOT operate with seat bar raised. (See Page 127)
Front Horn, Back-up Alarm, Rear View Camera (if equipped)	Check for proper function. (See Page 54) (See Page 135) (See Page 52)
Tires	Check for damaged tires and correct air pressure. Inflate to MAXIMUM pressure shown on the sidewall of the tire. (See Page 176)
Operator Cab	Check the fastening bolts, washers, and nuts. Check the condition of the cab. (See Page 137)
Indicators and Lights	Check for correct operation of all indicators and lights. (See Page 42) (See Page 44)
Safety Signs and Safety Treads	Check for damaged signs (decals) and safety treads. Replace any signs or safety treads that are damaged or worn. (See Page 17) (See Page 95)
Hydraulic Fluid	Check fluid level and add as needed. (See Page 168) (See Page 169)
Heater and Air Conditioning Filters (if equipped)	Clean or replace filters as needed. (See Page 143)

First 100 Hours

Accessory Drive Belt (Alternator, air conditioning, water pump)	Check condition. Replace as needed. (See Page 179)
Bobcat Interlock Control System (BICS)	Check the function of the lift arm bypass control. (See Page 128)
Battery	Check cables and connections. (See Page 163)

Every 100 Hours

Hydraulic Hoses and Tubelines	Check for damage and leaks. Repair or replace as needed.
Final Drive Transmissions (Chaincases)	Check fluid levels and add as needed. (See Page 178)
Parking Brake, Foot Pedals, Hand Controls and Steering Levers, or Joysticks	Check for correct operation. Repair or adjust as needed.
Wheel Nuts	Check for loose wheel nuts and tighten to correct torque. (See Page 176)

Every 500 Hours Or Every 12 Months

Accessory Drive Belt (Alternator, air conditioning, water pump)	Check condition. Replace as needed. (See Page 179)
Bobcat Interlock Control System (BICS)	Check the function of the lift arm bypass control. (See Page 128)
Battery	Check cables and connections. (See Page 163)

Every 750 Hours Or Every 12 Months

Engine Oil and Filter	Replace oil and filter element. (See Page 153)
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Every 1000 Hours Or Every 12 Months

Hydraulic Filters	Replace the hydraulic main and charge filters. (See Page 173) (See Page 174)
Hydraulic Reservoir	Replace the fluid and reservoir vent filter. (See Page 170) (See Page 175)
Final Drive Transmissions (Chaincases)	Replace the fluid. (See Page 178)
Heater Coil and Air Conditioning Evaporator (if equipped)	Clean the heater coil and air conditioning evaporator. Clean the plenum drain. (See Page 143)
Fuel System	Replace fuel pre-filter element and fuel tank vent filter. (See Page 149) (See Page 151)

Every 1500 Hours Or Every 24 Months

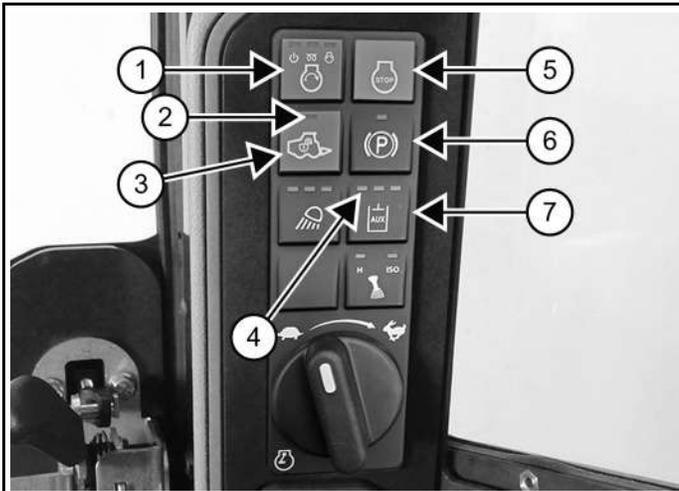
Coolant	Replace the coolant. (See Page 157)
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BOBCAT INTERLOCK CONTROL SYSTEM (BICS)

Inspecting The Bobcat Interlock Control System (BICS)

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

Figure 192



1. Inspect the BICS (Engine Stopped — Machine ON):
 - a. Sit in the operator's seat.
 - b. Fasten the seat belt.
 - c. Press the run button (Item 1) [Figure 192] or turn the key switch to run, but do not start the engine.
 - d. Lower the seat bar.
 - e. Press the parking brake button (Item 6) [Figure 192] to disengage parking brake.
 - f. Press the operate button (Item 3) [Figure 192].

Figure 193



- g. Verify two BICS icons [Figure 193] (Seat Bar Raised and Lift and Tilt Lockout) on the display are off.
- h. Verify the LED in the operate button (Item 2) [Figure 192] is on.
- i. Raise the seat bar fully.

Figure 194



- j. Verify all three BICS icons [Figure 194] (Seat Bar Raised, Lift and Tilt Lockout, and Parking Brake Engaged) on the display are on.
 - k. Verify the LED in the operate button (Item 2) [Figure 192] is off.
2. Inspect deactivation of the auxiliary hydraulics system (Engine Stopped — Machine ON):
 - a. Lower the seat bar.
 - b. Press the operate button (Item 3) [Figure 192].
 - c. Press the auxiliary hydraulics button (Item 7) [Figure 192].
 - d. Verify the LED in the auxiliary hydraulics button (Item 4) [Figure 192] is on.
 - e. Raise the seat bar fully.
 - f. Verify the LED in the auxiliary hydraulics button (Item 4) [Figure 192] is off.
3. Inspect the seat bar sensor (Engine RUNNING):
 - a. Lower the seat bar.
 - b. Press the parking brake button (Item 6) [Figure 192] to engage parking brake.
 - c. Start the engine and operate at low idle.
 - d. Press the operate button (Item 3) [Figure 192].

- e. While raising the lift arms, raise the seat bar fully. The lift arms must stop.
 - f. Repeat using the tilt function.
4. Inspect the traction lock and parking brake (Engine RUNNING):
- a. Lower the seat bar.
 - b. Press the parking brake button (Item 6) [Figure 192] to disengage parking brake.
 - c. Press the operate button (Item 3) [Figure 192].
 - d. Raise the seat bar fully.
 - e. Move steering levers or joysticks(s) slowly forward and backward. The traction lock must be engaged.
 - f. Lower the seat bar.
 - g. Press the operate button (Item 3) [Figure 192].
 - h. Press the parking brake button (Item 6) [Figure 192] to engage parking brake.
 - i. Move steering levers or joysticks(s) slowly forward and backward. The traction lock must be engaged.

See your Bobcat dealer for service if machine fails to stop.

NOTE: The parking brake icon on the display will remain on until the engine is started, the operate button is pressed, and the parking brake is disengaged.

5. Inspect deactivation of lift and tilt functions:
- a. Press the operate button (Item 3) [Figure 192].
 - b. Raise the lift arms approximately 2 m (6 ft) off the ground.
 - c. Press the stop button (Item 5) [Figure 192] and wait for the engine to come to a complete stop.
 - d. Press the run button (Item 1) [Figure 192].
 - e. Press the operate button (Item 3) [Figure 192].
 - f. Move the control (foot pedal or joystick) to lower the lift arms. Lift arms must not lower.
 - g. Move the control (foot pedal or joystick) to tilt the bucket (or attachment) forward. The bucket (or attachment) must not tilt forward.
 - h. Start the engine and operate at low idle.
 - i. Lower the lift arms fully.

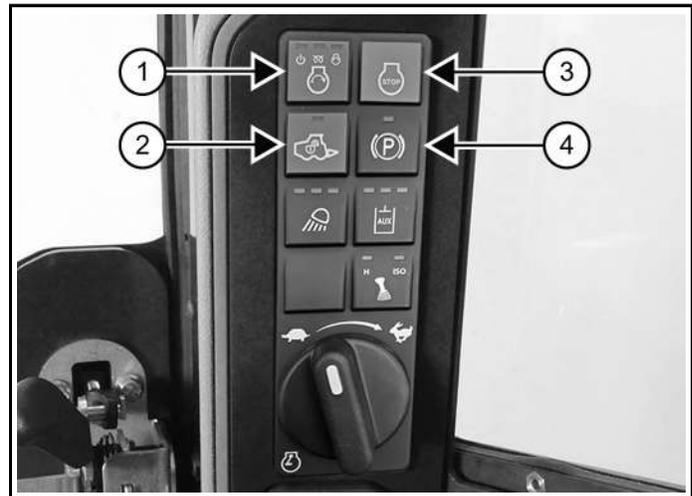
- j. Press the stop button (Item 5) [Figure 192] or turn the key switch to stop and wait for the engine to come to a complete stop before exiting the machine.

Inspecting The Lift Arm Bypass Control

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

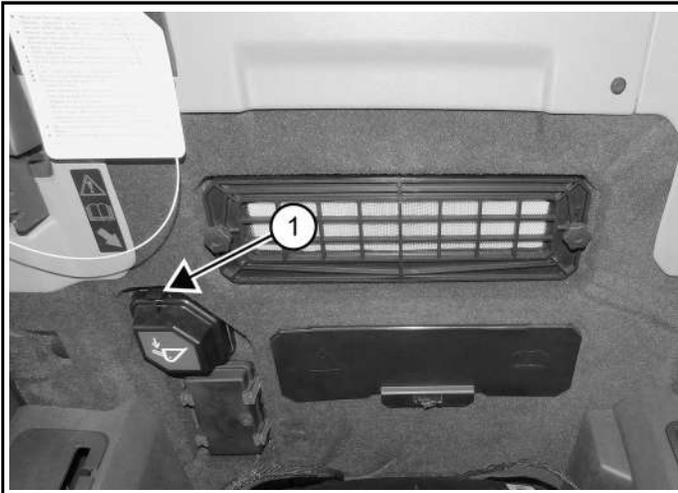
1. Sit in the operator's seat.
2. Fasten the seat belt.
3. Lower the seat bar.

Figure 195



4. Press the run button (Item 1) [Figure 195] or turn the key switch to run.
5. Press the parking brake button (Item 4) [Figure 195] to engage parking brake.
6. Start the engine and operate at low idle.
7. Press the operate button (Item 2) [Figure 195].
8. Raise the lift arms 2 m (6 ft) off the ground.
9. Press the stop button (Item 3) [Figure 195] or turn the key switch to stop and wait for the engine to come to a complete stop.

Figure 196



10. Press down on the latch (Item 1) [Figure 196] to allow the cover to hinge open at the bottom of the cover.

Figure 197



11. Turn the knob [Figure 197] 90° clockwise.
12. Pull out and hold the knob until the lift arms lower.
13. Close the cover.

⚠ WARNING

MODIFICATION HAZARD

Modifying the machine can cause serious injury or death.

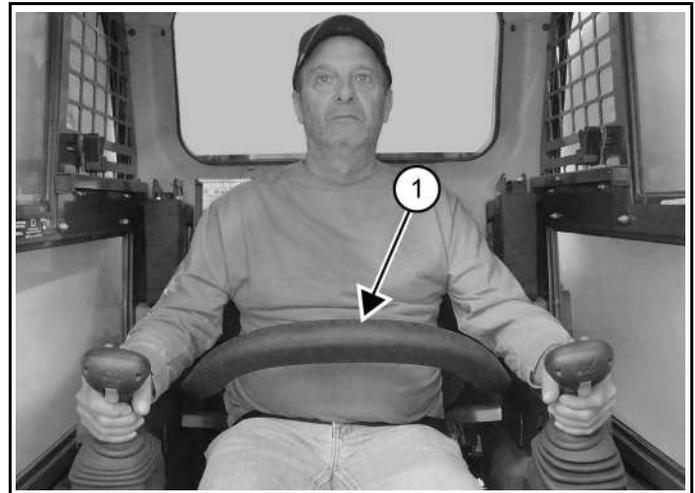
The Bobcat Interlock Control System (BICS™) must deactivate the lift, tilt and traction drive functions. If it does not, contact your dealer for service. DO NOT modify the system. ◀

W-2151

SEAT BAR RESTRAINT SYSTEM

Seat Bar Restraint System Control Description

Figure 198



The seat bar restraint system has a pivoting seat bar with armrests (Item 1) [Figure 198].

The operator controls the use of the seat bar. The seat bar in the down position helps to keep the operator in the seat.

Models with Standard Controls have electrical deactivation of lift and tilt functions. Activation of functions require the operator to lower the seat bar.

When the seat bar is down, the engine is running, the operate button is activated, and the brake is released; the lift, tilt, and traction drive functions can be operated.

When the seat bar is up, the lift and tilt functions are deactivated even though the foot pedals do not mechanically lock.

Models with Selectable Joystick Controls (SJC) have electrical deactivation of lift and tilt functions. Activation of functions require the operator to lower the seat bar.

When the seat bar is down, the engine is running, the operate button is activated, and the brake is released; the lift, tilt, and traction drive functions can be operated.

When the seat bar is up, the lift and tilt functions are deactivated even though the joysticks do not mechanically lock.

Inspecting Seat Bar Restraint System

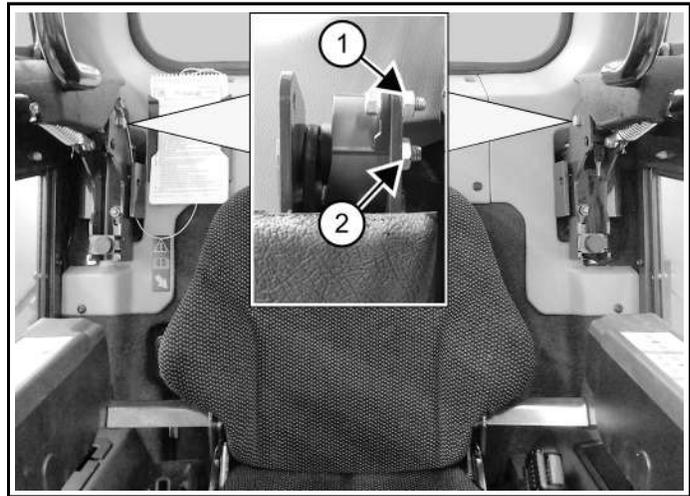
See the service schedule for the correct service interval. (See Service Schedule on Page 124)

1. Sit in the seat and fasten the seat belt.

2. Engage the parking brake.
3. Pull the seat bar all the way down.
4. Start the engine.
5. Press the operate button.
6. Operate the hydraulic controls to check that the lift and tilt functions operate correctly.
7. Raise the lift arms until the attachment is approximately 600 mm (2 ft) off the ground.
8. Raise the seat bar.
9. Move the hydraulic controls.
10. There must be no motion of the lift arms or tilt (attachment) when the controls are moved.
11. Lower the seat bar.
12. Press the operate button.
13. Lower the lift arms.
14. Operate the lift control.
15. While the lift arms are going up, raise the seat bar. The lift arms must stop.
16. Lower the seat bar.
17. Press the operate button.
18. Lower the lift arms.
19. Put the attachment flat on the ground.
20. Stop the engine.
21. Raise the seat bar.

Maintaining Seat Bar Restraint System

Figure 199



C2002168

1. Use compressed air to clean any debris or dirt from the pivot parts. Do not lubricate.
2. Inspect all mounting hardware:
 - The seat bar sensor nut (left side only) (Item 1) [Figure 199] torque is 6 – 8 N•m (50 – 70 in-lb).
 - The correct hinge nut (both sides) (Item 2) [Figure 199] torque is 34 – 38 N•m (25 – 28 ft-lb).
3. Replace parts that are worn or damaged if the seat bar system does not function correctly. Use only genuine Bobcat replacement parts.

⚠ WARNING

GENERAL HAZARD

Failure to follow instructions can cause serious injury or death.

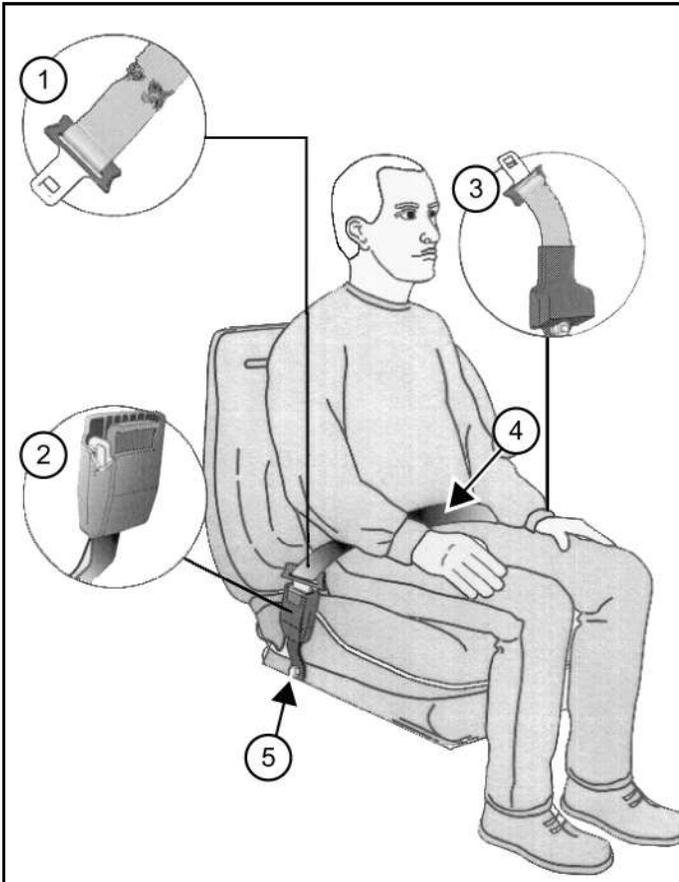
The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. See your dealer for service if hydraulic controls do not deactivate. ◀

W2465

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. ◀

W2496

Figure 200

NA3113c

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 200].

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 color 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 discolorations 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.

LIFT ARM SUPPORT

Lift Arm Support Description

⚠ DANGER

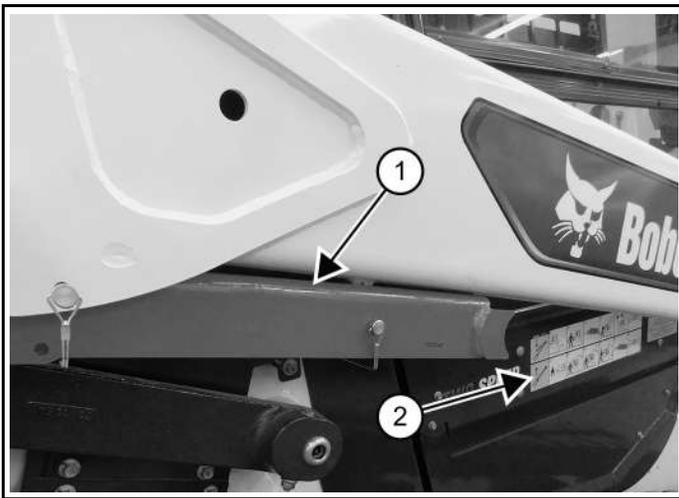
CRUSHING HAZARD

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 201



C201505A

The lift arm support (Item 1) [Figure 201] is used to support the lift arms while working on a machine with the lift arms up.

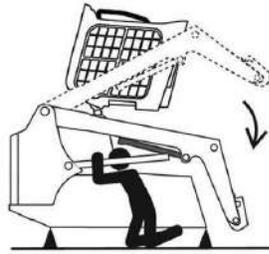
A decal (Item 2) [Figure 201] located on the right side of the operator cab provides instructions for installing and removing the lift arm support.

The procedures are described in more detail on the following pages.

(See Installing Lift Arm Support on Page 132) and
(See Removing Lift Arm Support on Page 133) .

Installing Lift Arm Support

⚠ DANGER



CRUSHING HAZARD

Avoid death due to lift arm movement.

- Disconnecting or loosening any hydraulic tubeline, hoses, fitting, component or a part failure can cause lift arms to drop.
- Keep out of this area when lift arms are raised unless supported by an approved lift arm support. Replace if damaged. ◀

D-1009

1. Remove attachment from the machine.
(See Removing Attachments on Page 110) or
(See Removing Attachments on Page 114) .

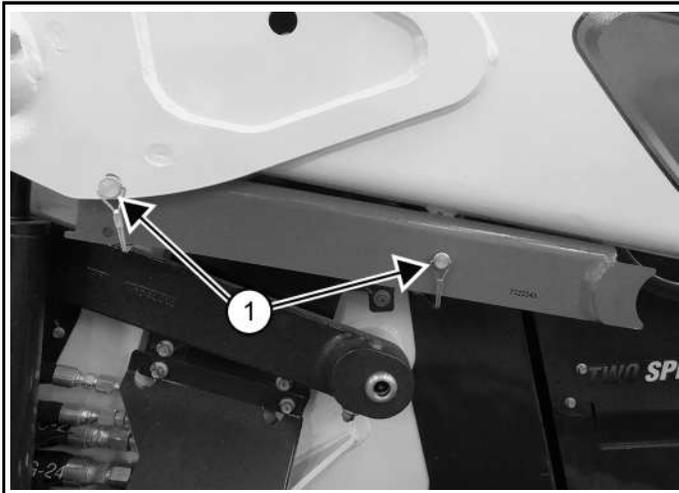
Figure 202



C200233

2. Put jackstands under the rear of the machine frame [Figure 202].

Figure 203



3. Remove the pins (Item 1) [Figure 203] to remove the lift arm support from the storage position.

The operator must stay in the operator seat with the seat belt fastened and the seat bar lowered until the lift arm support is installed.

4. Start the engine and raise the lift arms all the way up.

Figure 204



5. Have a second person install the lift arm support over the rod of one of the lift cylinders [Figure 204].

The lift arm support must be tight against the cylinder rod.

⚠ WARNING

PINCH POINT HAZARD
Keep hands clear during lift arm movement. ◀

W-3072

Figure 205



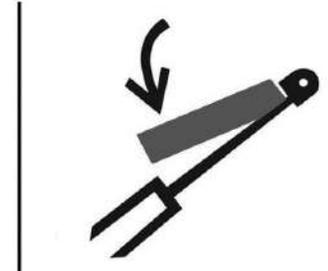
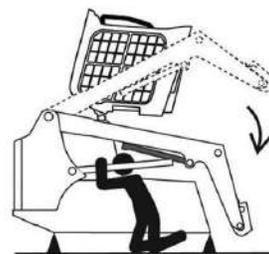
6. Lower the lift arms slowly until the lift arm support is held between the lift arms and the lift cylinder [Figure 205].

The tabs of the lift arm support must go past the end of the cylinder (Inset) [Figure 205].

7. Stop the engine.

Removing Lift Arm Support

⚠ DANGER



CRUSHING HAZARD

Avoid death due to lift arm movement.

- Disconnecting or loosening any hydraulic tubeline, hoses, fitting, component or a part failure can cause lift arms to drop.
- Keep out of this area when lift arms are raised unless supported by an approved lift arm support. Replace if damaged. ◀

D-1009

The operator must stay in the operator seat with the seat belt fastened and the seat bar lowered until the lift arm support is removed and the lift arms are lowered all the way.

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. Start the engine and raise the lift arms all the way up.

⚠ WARNING

PINCH POINT HAZARD
Keep hands clear during lift arm movement. ◀

W-3072

Figure 206



C205907

2. Have a second person remove the lift arm support [Figure 206] after the lift arms are all the way up.
3. Lower the lift arms all the way.
4. Stop the engine.

Figure 207



C205906

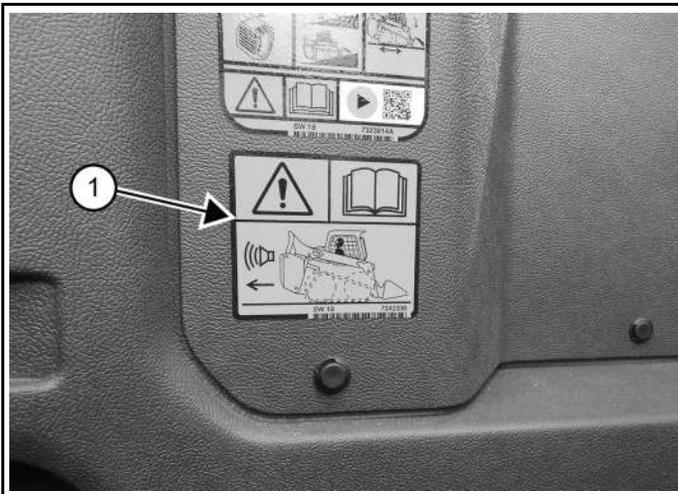
BACK-UP ALARM SYSTEM

Inspecting Back-Up Alarm System

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

The back-up alarm will sound when the operator moves both steering levers or joystick(s) into the reverse position. Slight movement of the controls into the reverse position is required with hydrostatic transmissions, before the back-up alarm will sound.

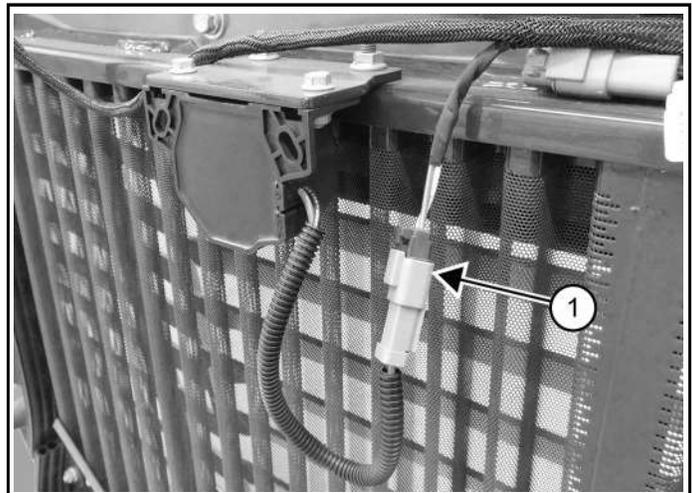
Figure 208



1. Inspect for damaged or missing back-up alarm decal (Item 1) [Figure 208] located near your right leg. Replace if required.
2. Sit in the operator seat.
3. Fasten the seat belt.
4. Engage the parking brake.
5. Pull the seat bar all the way down.
6. Start the engine.
7. Press the operate button.
8. Disengage the parking brake.
9. Move both steering levers or joystick(s) into the reverse position. The back-up alarm must sound when all wheels are moving in reverse.

The back-up alarm is located on the inside of the rear door.

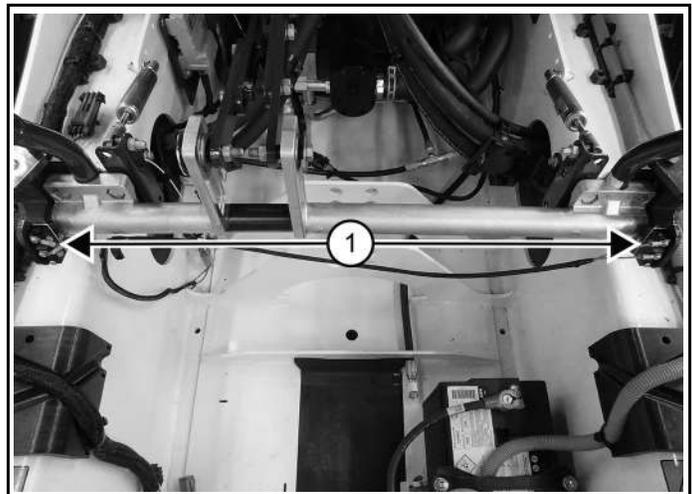
Figure 209



C200246A

The back-up alarm switches on machines equipped with standard controls are located alongside the steering bellcranks under the operator cab. (See Raising Operator Cab on Page 137)

Figure 210



C200247A

10. Inspect the back-up alarm electrical connector (Item 1) [Figure 209] and back-up alarm switches (if equipped) (Item 1) [Figure 210] for tightness and damage. Repair or replace any damaged components.

If the back-up alarm switches require adjustment, (See Adjusting Back-Up Alarm Switches on Page 136)

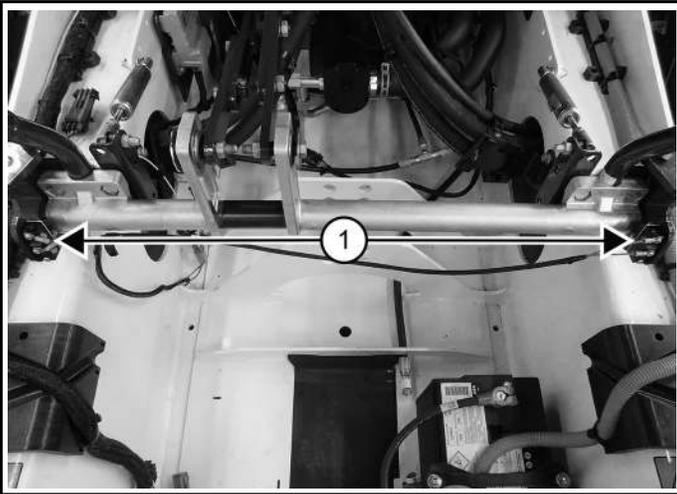
Adjusting Back-Up Alarm Switches

NOTE: Joystick equipped machines do not have back-up alarm switches and cannot be adjusted. See your Bobcat dealer for service if your back-up alarm does not sound.

Standard Controls (If Equipped)

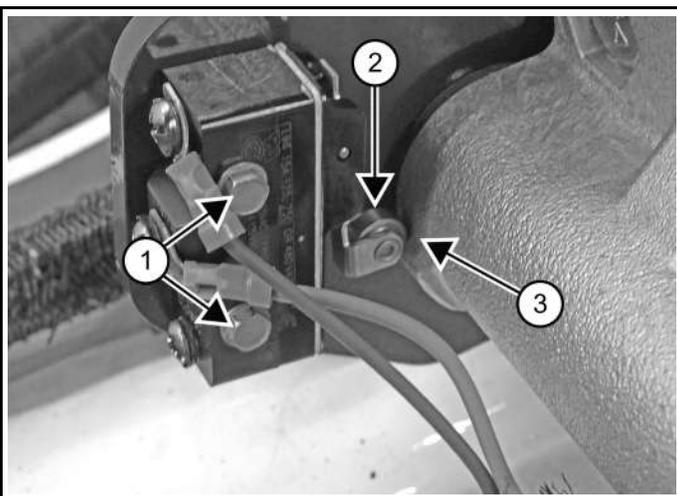
1. Stop the engine.
2. Raise the operator cab.
(See Raising Operator Cab on Page 137)
3. Put the steering levers into the neutral position.

Figure 211



The back-up alarm switches (Item 1) [Figure 211] are located alongside the steering bellcranks. Both switches must be adjusted properly for the back-up alarm to operate correctly.

Figure 212



4. Loosen the screws (Item 1) [Figure 212] securing the back-up alarm switch. (Right side shown)
5. Position the back-up alarm switch so that the roller (Item 2) just makes contact with the bellcrank (Item 3) [Figure 212] without compressing the switch spring.
6. Torque the screws (Item 1) [Figure 212] securing the switch to the bracket to 1,0 – 1,4 N•m (9 – 12 in-lb).
7. Repeat adjustment procedure for the other switch.
8. Lower the operator cab.
(See Lowering Operator Cab on Page 139)
9. Inspect back-up alarm system for proper function.
(See Inspecting Back-Up Alarm System on Page 135)

OPERATOR CAB

Inspecting Operator Cab

This Bobcat loader has an operator cab (ROPS and FOPS) as standard equipment to protect the operator from rollover and falling objects. The seat belt must be worn for rollover protection.

- Check the cab, mounting, and hardware for damage.
- Never modify the cab.
- Replace the cab and hardware if damaged. See your Bobcat dealer for parts.

ROPS – Roll-Over Protective Structure per ISO 3471 and FOPS – Falling-Object Protective Structure per ISO 3449, Level I. Level II is available.

Level I

Protection from falling bricks, small concrete blocks, and hand tools encountered in operations, such as: highway maintenance, landscaping, and other construction sites.

Level II

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

Cab Door Sensor Description

The cab door has a sensor installed in the door latch that deactivates the lift and tilt valves when the door is open.

Figure 213



NA3655B

The lift and tilt lockout icon [Figure 213] is OFF when:

- The door is closed.
- The machine is turned ON.
- The seat bar is lowered.
- The operate button is pressed.

The lift and tilt lockout icon [Figure 213] is ON when the door is open.

Raising Operator Cab

Always stop the engine before raising or lowering the operator cab.

1. Stop the machine on a level surface.
2. Lower the lift arms.

If the lift arms must be up while raising the operator cab, install the lift arm support.
(See Installing Lift Arm Support on Page 132)

Figure 214



C200233

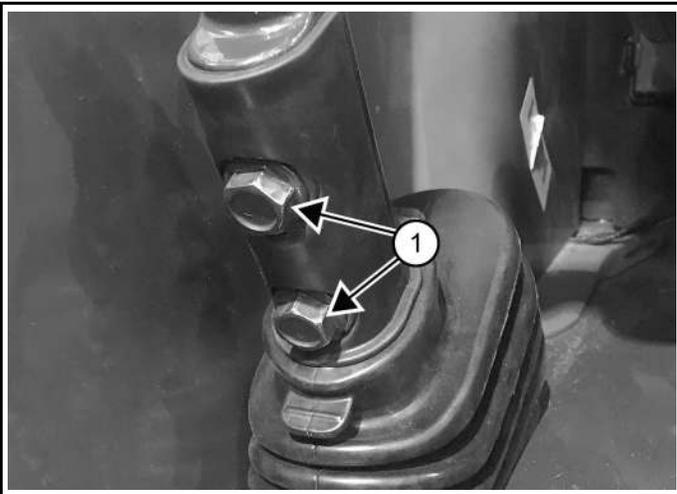
3. Install jackstands under the rear of the machine frame [Figure 214].
4. Perform the following steps if equipped with standard controls:

⚠ IMPORTANT

MACHINE DAMAGE HAZARD
 Raising operator cab without disconnecting steering levers can cause electrical harness damage. ◀

I2400

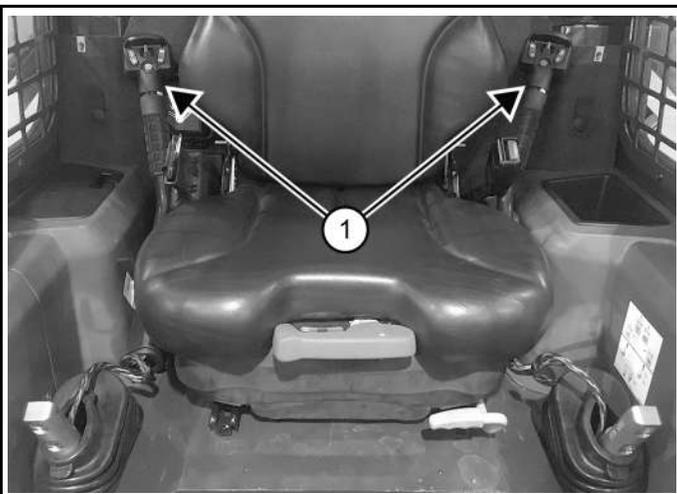
Figure 215



C200314A

- a. Remove the bolts (Item 1) [Figure 215] at the base of both steering levers. (Right side shown.) Retain the bolts for installation.

Figure 216



C200315A

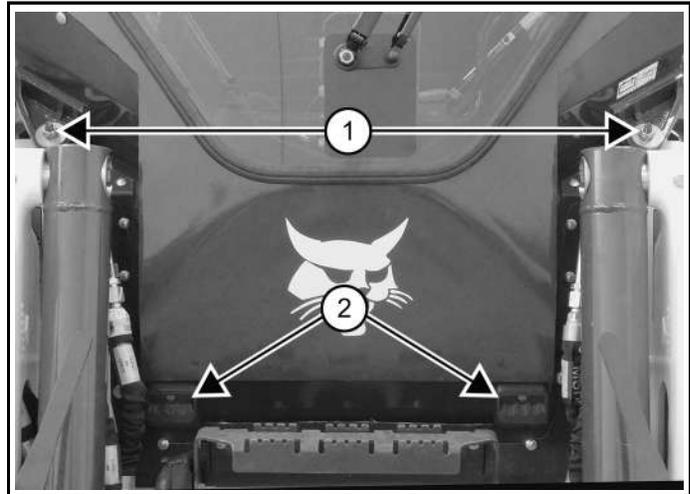
- b. Place the steering levers (Item 1) [Figure 216] into a position that prevents damage as the operator cab is raised.

⚠ WARNING

UNINTENDED MOVEMENT HAZARD
 Cab contacting controls can cause unexpected loader, lift arm or attachment movement leading to serious injury or death.
STOP ENGINE before raising or lowering cab. ◀

W-2758

Figure 217



C200249A

5. Remove the nuts and washers (Item 1) [Figure 217] at the front corners of the operator cab.
6. Lift on the grab handles (Item 2) [Figure 217] at the bottom of the operator cab.

Figure 218



C200596

7. Push the bottom of the operator cab slowly until the operator cab is all the way up and the latching mechanism engages [Figure 218].

Lowering Operator Cab

Always stop the engine before raising or lowering the operator cab.

Figure 219



C200596

1. Pull down on the bottom of the operator cab until stopped by the latching mechanism [Figure 219].

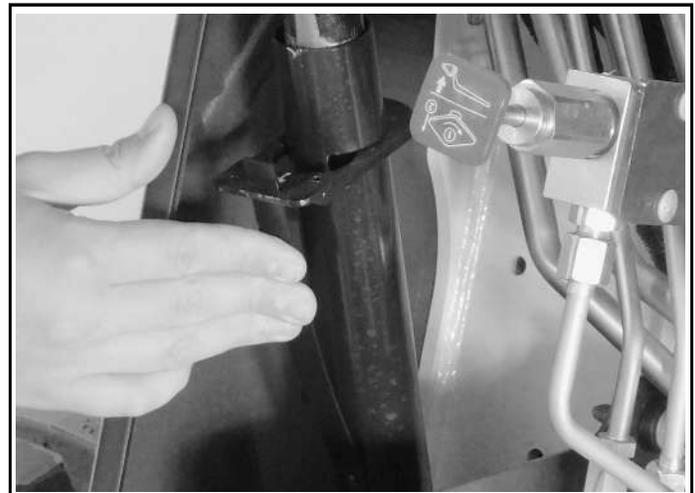
NOTE: The weight of the operator cab increases when equipped with options and accessories, such as: cab door, heater, and air conditioning. In these cases, the operator cab may need to be raised slightly from the latch to be able to release the latch.

⚠ WARNING

PINCHING HAZARD
Pinch point can cause injury.
Remove your hand from the latching mechanism when the cab is past the latch stop. ◀

W-2469

Figure 220



C200252

2. Support the operator cab [Figure 219] while a second person releases the latching mechanism [Figure 220]. Remove your hand from the latch mechanism when the operator cab is past the latch stop.

Figure 221

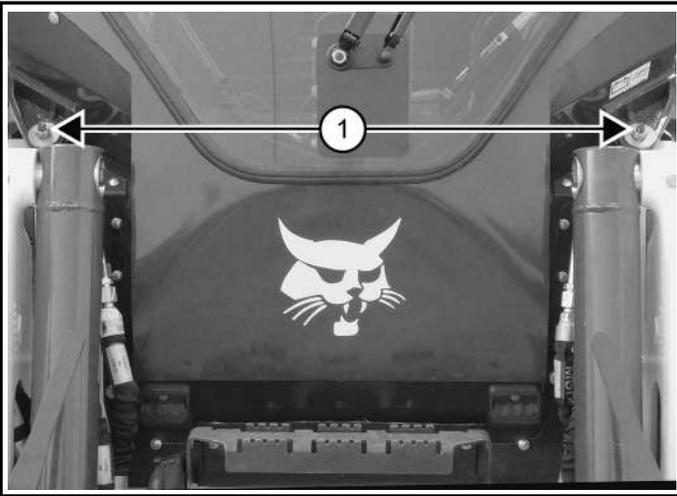


C200597

3. Use both hands on the grab handles to lower the operator cab all the way down [Figure 221].

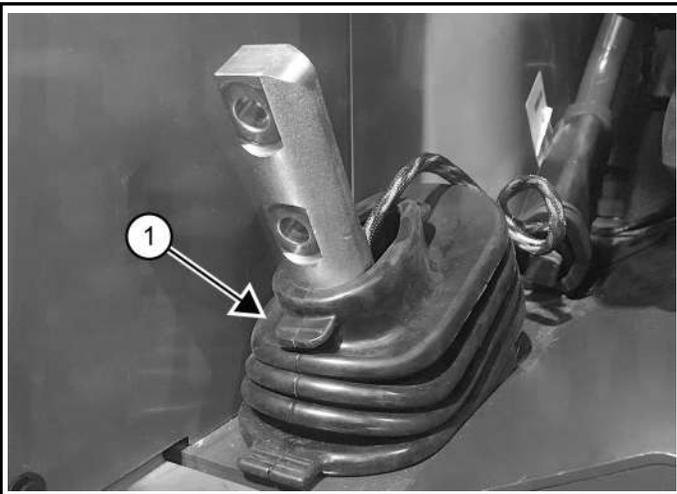
NOTE: Always use the grab handles to lower the operator cab.

Figure 222



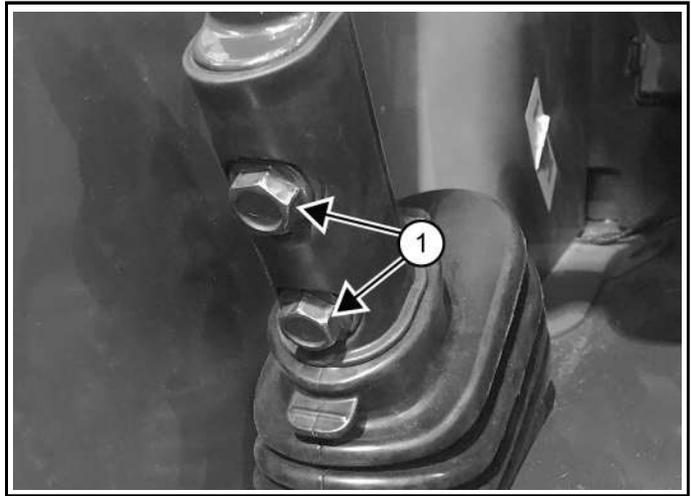
4. Install the washers and nuts (both sides) [Figure 222].
5. Tighten the nuts to 54 – 61 N•m (40 – 45 ft-lb) torque.
6. Perform the following steps if equipped with standard controls:

Figure 223



- a. Move the steering lever boots (Item 1) [Figure 223] into a position that allows installation of the steering levers. Ensure the harness is completely inside the boot. (Right side shown.)

Figure 224



- b. Install the steering levers and bolts (Item 1) [Figure 224].
- c. Tighten the bolts to 54 – 61 N•m (40 – 45 ft-lb) torque.
7. Remove the jackstands.

REAR DOOR (TAILGATE)

Opening And Closing Rear Door

Figure 225



C200254

1. Reach into the slot on the right side of the rear door and pull the latch handle [Figure 225].
2. Pull the rear door open.

⚠ WARNING

IMPACT HAZARD
Swinging rear door can seriously injure a bystander.
Keep the rear door closed when operating the machine. ◀

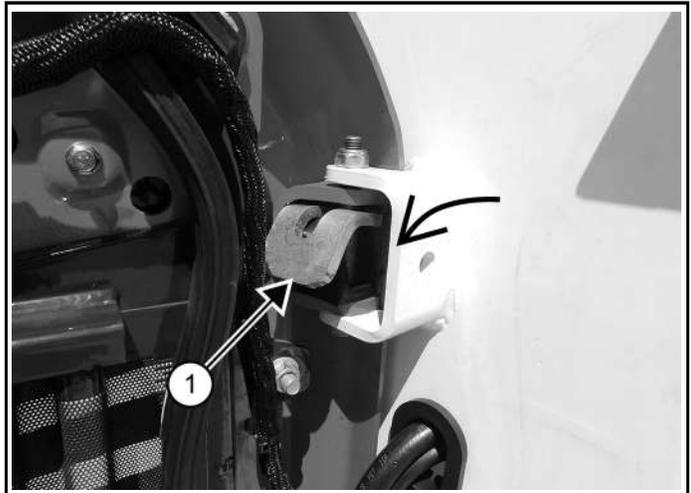
W-2020

3. Close the rear door.

Using Rear Door Stop

The rear door is equipped with a door stop feature on the top hinge.

Figure 226

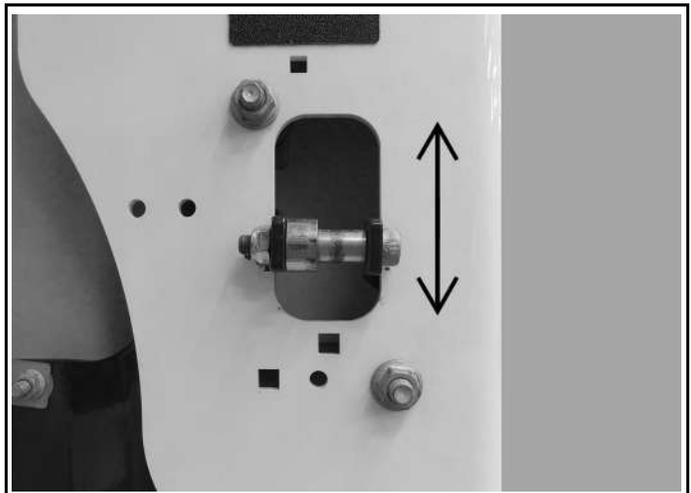


C200255A

1. Move the door stop (Item 1) [Figure 226] into the engaged position as shown to hold the door open.
2. Move the door stop in to allow the door to close.

Adjusting Rear Door Latch

Figure 227



C200256A

The door latch striker [Figure 227] can be adjusted up or down for alignment with the door latch.

The rear door must be closed before operating the machine.

REAR GRILLE

Raising Rear Grille

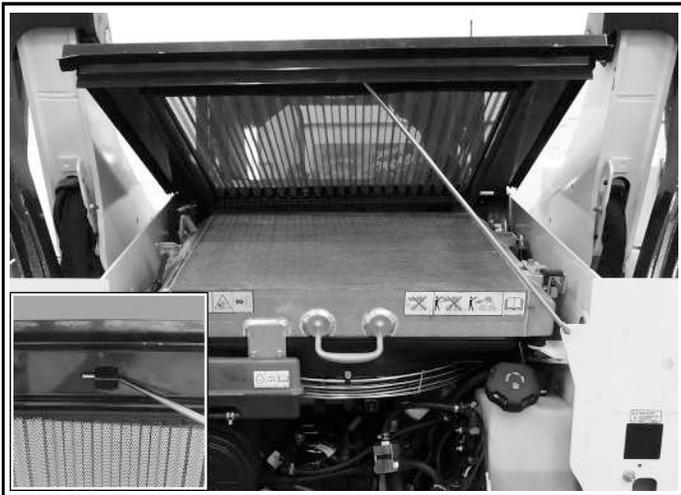
1. Stop the engine.
2. Open the rear door.

Figure 228



The prop rod (Item 1) [Figure 228] for the rear grille is stored alongside the fuel tank.

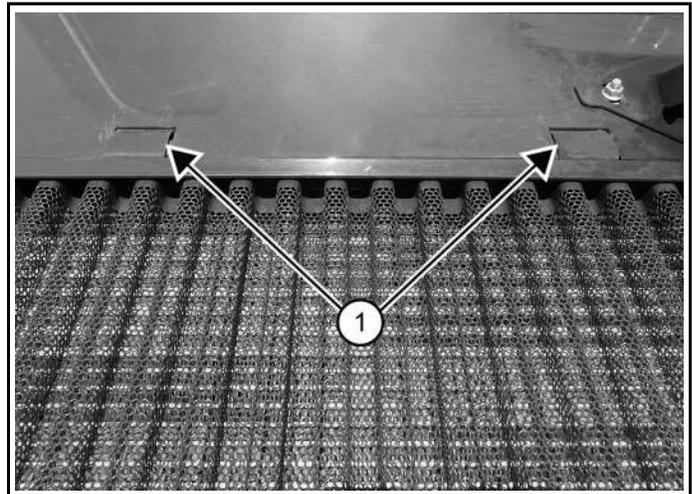
Figure 229



3. Raise the rear grille [Figure 229].
4. Insert the prop rod into the rear grille (Inset) [Figure 229].

Removing And Installing Rear Grille

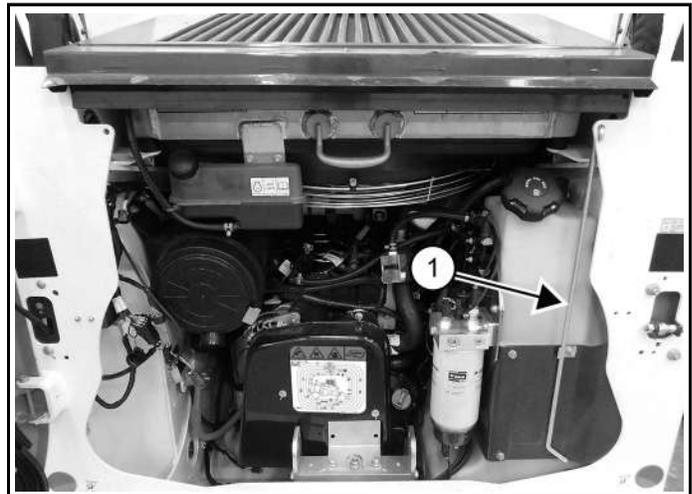
Figure 230



1. Raise the rear grille.
2. Pull the rear grille backward until the tabs (Item 1) [Figure 230] are free from the slots. This allows the rear grille to be removed for increased access.
3. Insert both tabs (Item 1) [Figure 230] into the slots and lower to install the rear grille.

Lowering Rear Grille

Figure 231



1. Remove the prop rod from the rear grille and lower the rear grille.
2. Clip the prop rod back into the storage position (Item 1) [Figure 231].
3. Close the rear door.

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

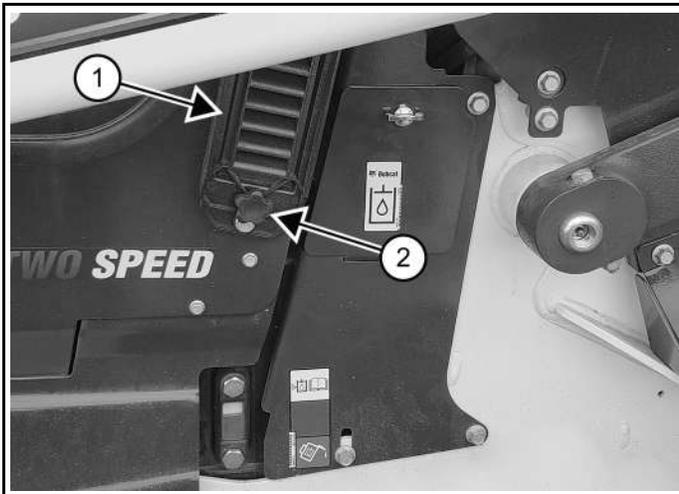
Cleaning HVAC Filters

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

Fresh Air Filter

The fresh air filter is located behind the left side window outside the operator cab.

Figure 232



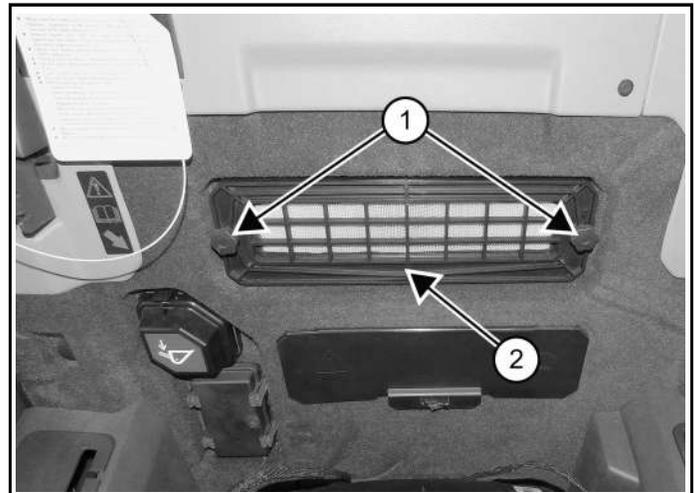
1. Remove the clamping knob (Item 2) and the filter cover (Item 1) [Figure 232].
2. Shake the filter or use low pressure air to remove dirt.

This procedure can be done several times before replacement is required.
3. Install the filter, the filter cover, and the clamping knob.

Recirculation Filter

The recirculation filter is located behind the operator's seat inside the operator cab.

Figure 233



1. Remove two clamping knobs (Item 1) and the filter cover (Item 2) [Figure 233].
2. Shake the filter or use low pressure air to remove dirt.

This procedure can be done several times before replacement is required.
3. Install the filter, the filter cover, and the clamping knobs.

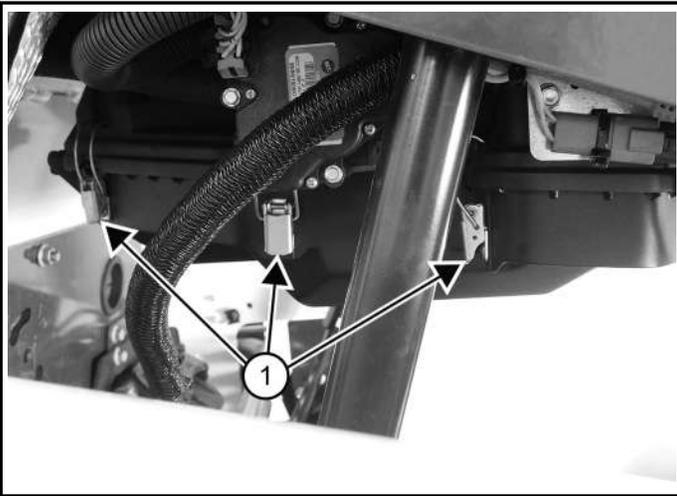
Cleaning Air Conditioning Evaporator And Heater Coil

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

The HVAC unit is located on the back of the operator cab.

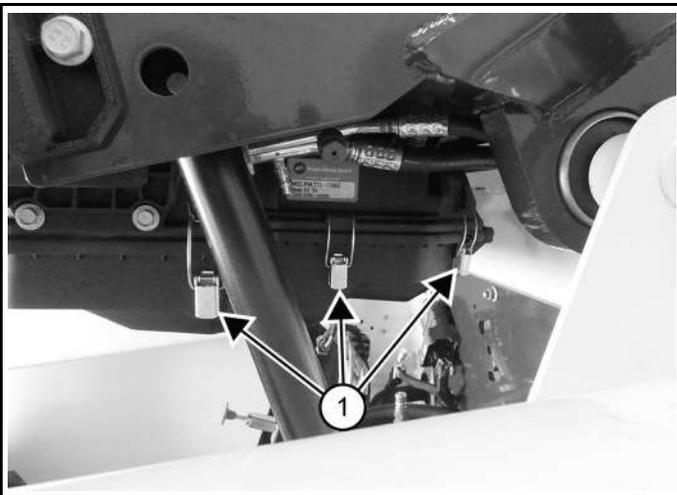
1. Stop the engine.
2. Raise the operator cab. (See Raising Operator Cab on Page 137)

Figure 234



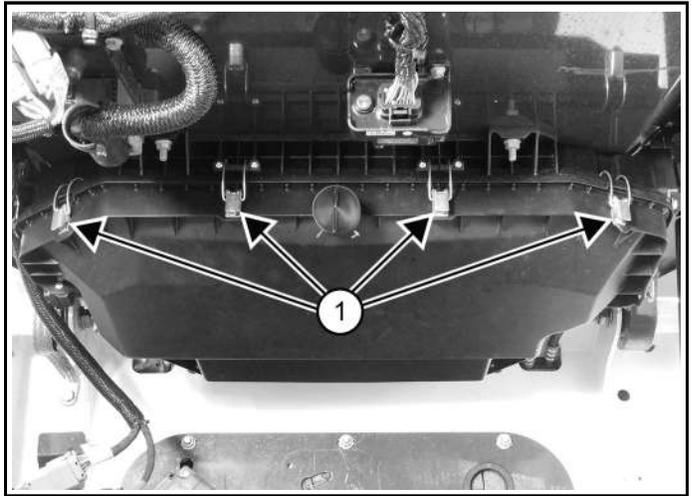
3. Unhook three cover latches (Item 1) [Figure 234] on the right side of the HVAC cover.

Figure 235



4. Unhook three cover latches (Item 1) [Figure 235] on the left side of the HVAC cover.

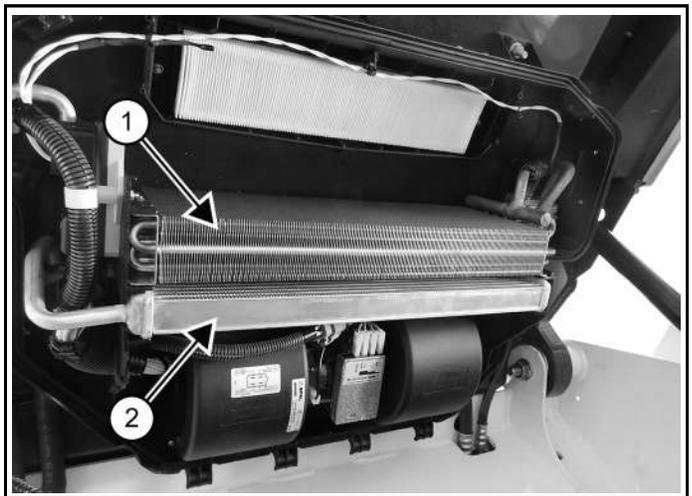
Figure 236



5. Unhook four cover latches (Item 1) [Figure 236] on the front side of the HVAC cover.
6. Allow the HVAC cover to swing open on the rear hinges.

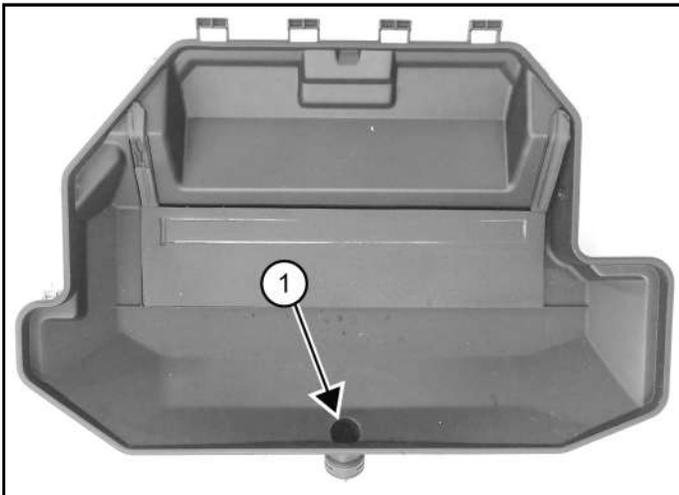
The cover can be removed at the hinge for increased access.

Figure 237



7. Use low pressure air or water to remove debris from the evaporator (Item 1) and heater coil (Item 2) [Figure 237].

Figure 238



8. Clean the plenum drain (Item 1) [Figure 238] to ensure it is not plugged by debris.
9. Swing the cover up into position.
10. Fasten the four front cover latches [Figure 236].
11. Fasten the six right and left side latches [Figure 234] and [Figure 235].

NOTE: Perform a thorough visual check to ensure that the cover and the cover seal are not deformed. The cover should seal tightly all around without any gaps.

12. Lower the operator cab.
(See Lowering Operator Cab on Page 139)

Cleaning Air Conditioning Condenser

The condenser should be cleaned with the radiator cooling package.
(See Cleaning Engine Cooling System on Page 155)

Lubricating Air Conditioning System

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

Troubleshooting 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 160) The refrigerant may need to be recharged if the air conditioning system circulates warm air.

ENGINE AIR CLEANER

Replacing Engine Air Filter Element (Outer)

Replace the air filters only when notified.

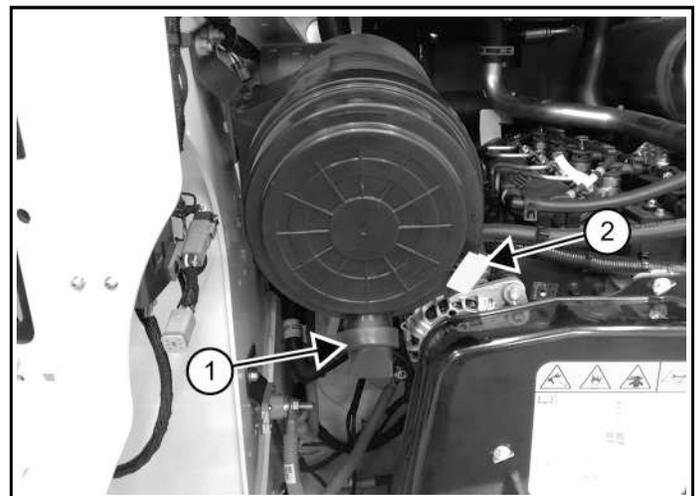
Replace the inner filter every second time the outer filter is replaced.

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).

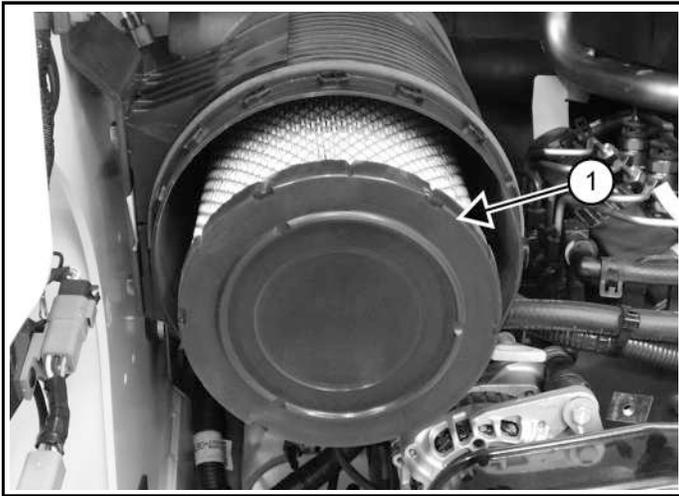
1. Stop the engine.
2. Open the rear door.

Figure 239



3. Pull the tab (Item 2) [Figure 239] to unlock the cover.
4. Rotate the cover counterclockwise a small amount to remove.

Figure 240



5. Remove the outer filter (Item 1) [Figure 240] 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 new outer filter. Push in until the filter contacts the base of the housing.
7. Install the cover so that the evacuator valve (Item 1) [Figure 239] is pointed down.
8. Rotate the cover clockwise a small amount.
9. Push the tab (Item 2) [Figure 239] in to lock the cover in place.
10. Close the rear door.

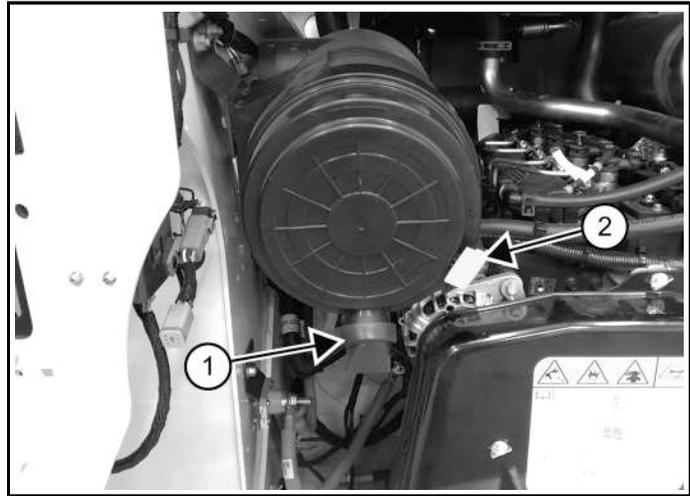
Replacing Engine Air Filter Element (Inner)

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.

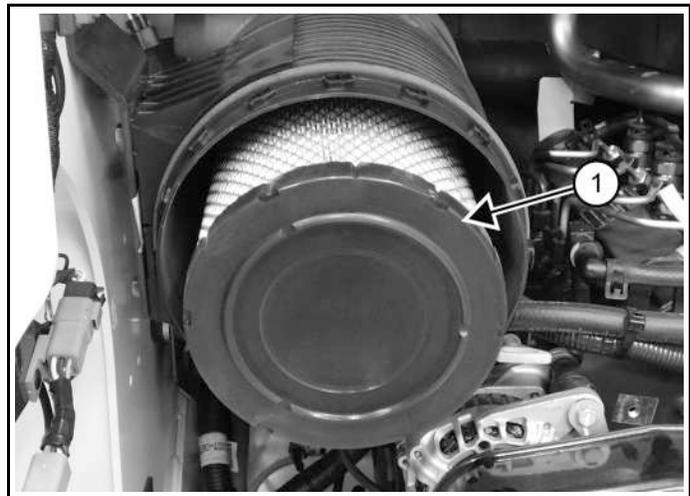
1. Stop the engine.
2. Open the rear door.

Figure 241



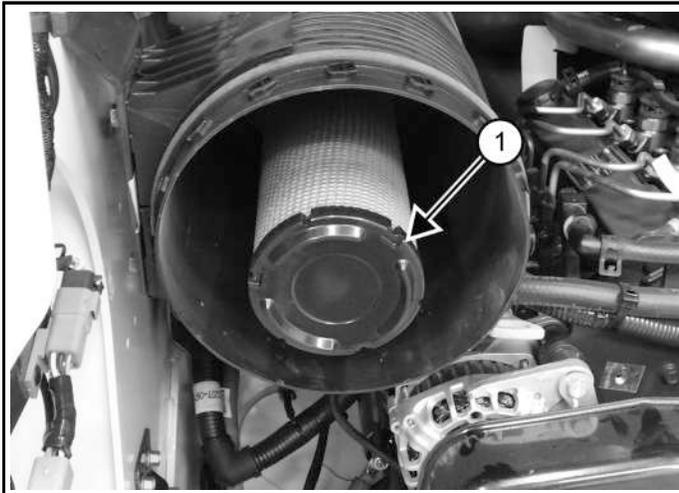
3. Pull the tab (Item 2) [Figure 241] to unlock the cover.
4. Rotate the cover counterclockwise a small amount to remove.

Figure 242



5. Remove the outer filter (Item 1) [Figure 242].

Figure 243



6. Remove the inner filter (Item 1) [Figure 243] 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.
7. Install new inner filter. Push in until the filter contacts the base of the housing.
8. Install the outer filter [Figure 242]. Push in until the filter contacts the base of the housing.
9. Install the cover so that the evacuator valve (Item 1) [Figure 241] is pointed down.
10. Rotate the cover clockwise a small amount.
11. Push the tab (Item 2) [Figure 241] in to lock the cover in place.
12. Close the rear door.

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 147)

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 stabilizer, 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

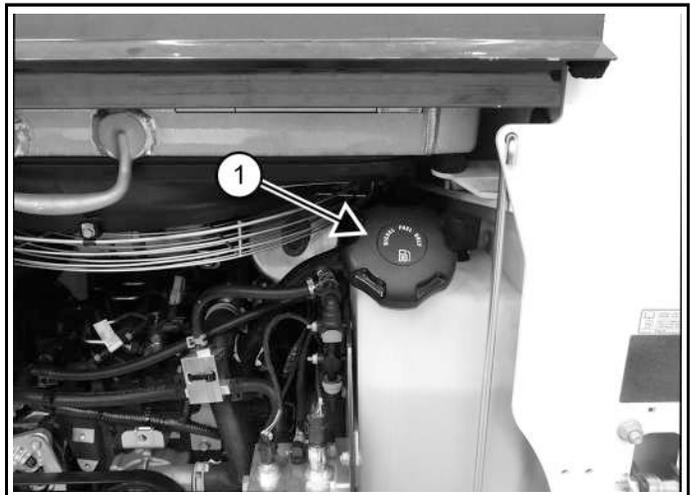
FIRE AND EXPLOSION HAZARDS

Failure to follow instructions can cause serious injury or death.

Stop and cool the engine before adding fuel. NO SMOKING!

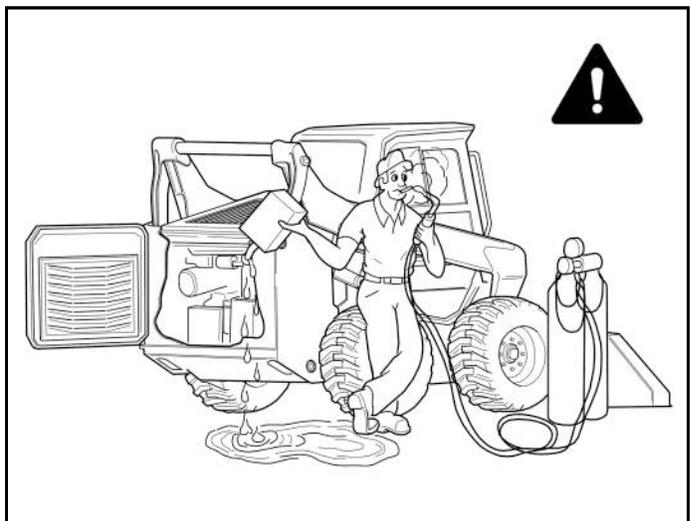
1. Stop the engine.
2. Open the rear door.

Figure 244



3. Remove the fuel fill cap (Item 1) [Figure 244].

Figure 245



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** [Figure 245].
5. Install and tighten the fuel fill cap (Item 1) [Figure 244].

NOTE: The fuel fill cap must be tightened until the cap clicks.

6. Close the rear door.

⚠ 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. ◀

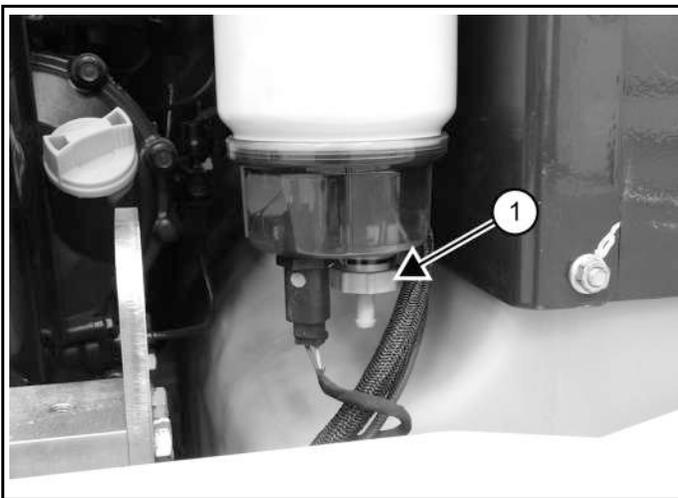
W2103

Removing Water From Main Fuel Filter

NOTE: This procedure requires the use of a spare 9 mm (3/8 in) hose approximately 300 mm (12 in) long.

Remove water from the main fuel filter only when notified.

1. Stop the engine.
2. Open the rear door.

Figure 246

P200273A

3. Attach a 9 mm (3/8 in) hose to the drain (Item 1) [Figure 246] 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 246] 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. ◀

W2103

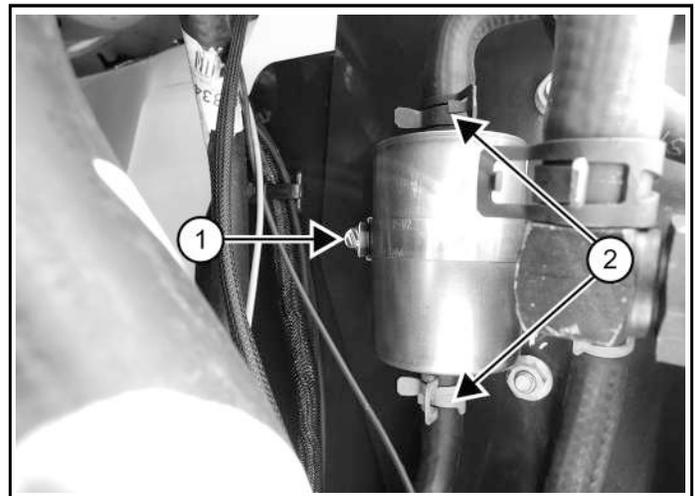
8. Close the rear door.

Replacing Fuel Pre-Filter

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

1. Stop the engine.
2. Open the rear door.

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

Figure 247

P200274A

3. Pinch off the upper and lower hoses to prevent spilled fuel while the hoses are disconnected from the pre-filter.
4. Move the upper and lower hose clamps (Item 2) [Figure 247] and remove the hoses from the pre-filter.
5. Loosen the clamp (Item 1) [Figure 247].
6. Remove the pre-filter and discard.
7. Install new pre-filter into clamp (Item 1) [Figure 247] and tighten clamp.
8. Install upper and lower hoses.
9. Move hose clamps (Item 2) [Figure 247] back into the correct position as shown.
10. Remove tools used to pinch off the upper and lower hoses.

⚠ WARNING

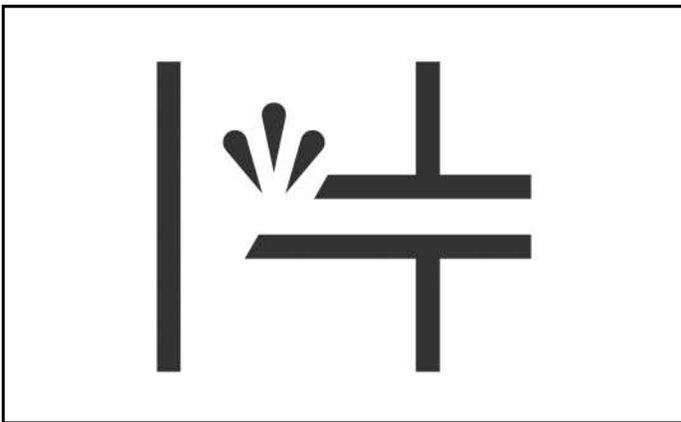
FIRE AND EXPLOSION HAZARD

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

11. Close the rear door.
12. Press run button on right control panel.

Figure 248



NA3543

13. Wait for the fuel priming in process icon [Figure 248] on the display to turn off.
14. Start the engine and allow to operate for one minute.
15. Stop the engine.

⚠ WARNING

INJECTION HAZARD

Pressurized 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

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

Replacing Main Fuel Filter

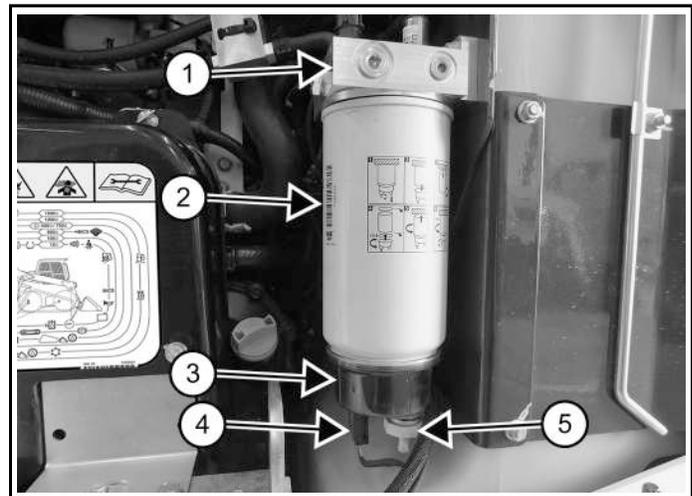
NOTE: This procedure requires the use of a spare 9 mm (3/8 in) hose approximately 300 mm (12 in) long.

Replace main fuel filter only when notified.

1. Stop the engine.

2. Open the rear door.

Figure 249



P200414A

3. Attach a 9 mm (3/8 in) hose to the drain (Item 5) [Figure 249] 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 249] 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 249].
10. Remove the fuel water separator (Item 3) from the fuel filter element (Item 2) [Figure 249].
11. Remove the fuel filter element (Item 2) from the fuel filter head (Item 1) [Figure 249].

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 three-fourths 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.

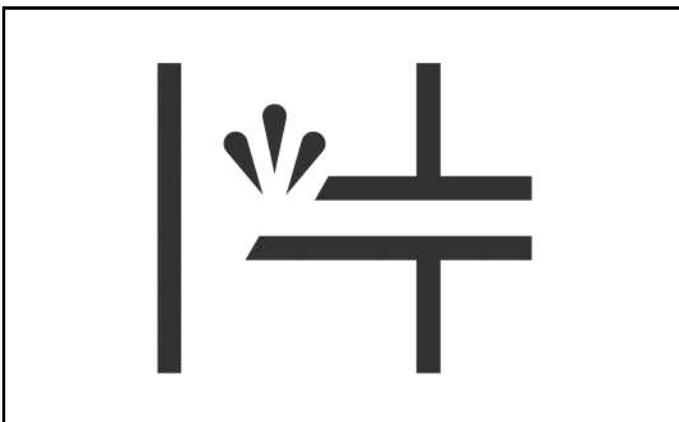
⚠ WARNING

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. ◀

W-2103

17. Close the rear door.
18. Press run button on right control panel.

Figure 250



19. Wait for the fuel priming in process icon [Figure 250] on the display to turn off.
20. Start the engine and allow to operate for one minute.
21. Stop the engine.

⚠ WARNING

INJECTION HAZARD
 Pressurized 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

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 124)

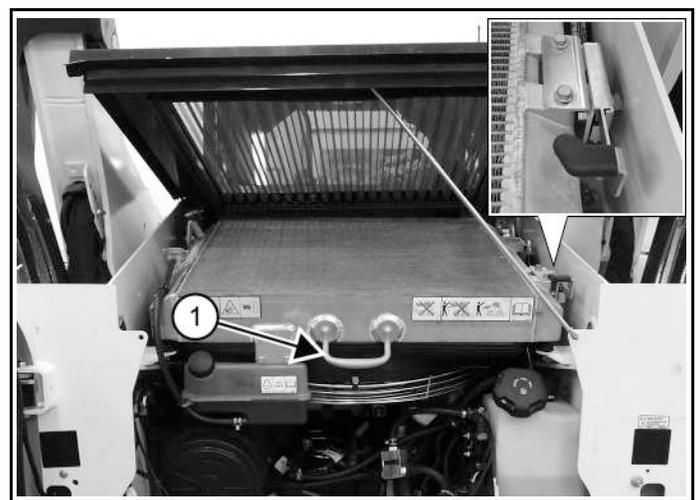
1. Stop the engine.
2. Open the rear door.
3. Raise the rear grille.
 (See Raising Rear Grille on Page 142)

⚠ WARNING

CUTTING AND BURN HAZARD
 Keep away from the operating machine.
 • Keep away from fan and moving parts. Do not operate with guard removed.
 • Do not touch hot surfaces. Allow to cool before servicing. ◀

W-2521

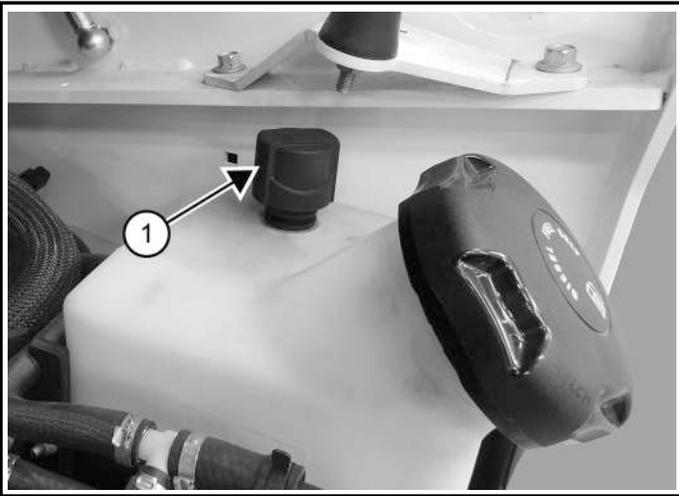
Figure 251



4. Press the release lever (Inset) [Figure 251] down.
5. Raise the radiator cooling package using the handle (Item 1) [Figure 251].

NOTE: Do not start the engine, add coolant, or add hydraulic fluid while the radiator cooling package is raised.

Figure 252



6. Remove the fuel tank vent filter (Item 1) [Figure 252] and discard.

The fuel tank vent filter is located behind the fuel fill cap.

7. Install new fuel tank vent filter and tighten to 5,6 – 6,8 N•m (50 – 60 in-lb) torque.
8. Lower the radiator cooling package using the handle until it locks into place [Figure 251].
9. Lower the rear grille.
(See Lowering Rear Grille on Page 142)
10. Close the rear door.

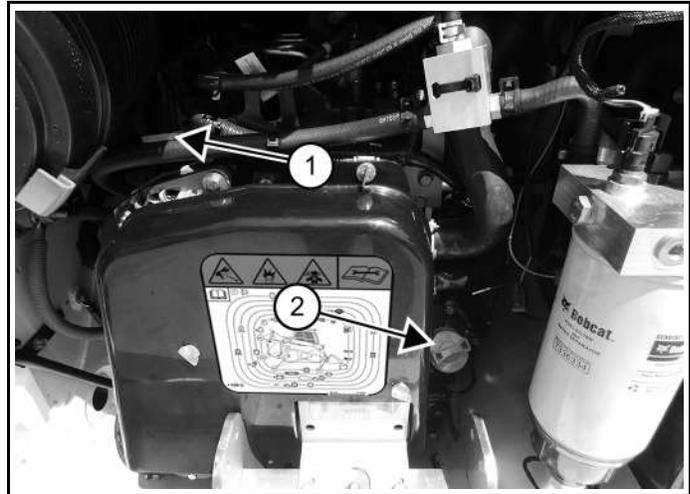
ENGINE LUBRICATION SYSTEM

Checking And Adding Engine Oil

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

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

Figure 253



4. Remove the dipstick (Item 1) [Figure 253].
5. Keep the oil level between the marks on the dipstick.
Do not overfill.
6. Remove the oil fill cap (Item 2) [Figure 253] to add engine oil.

⚠ WARNING

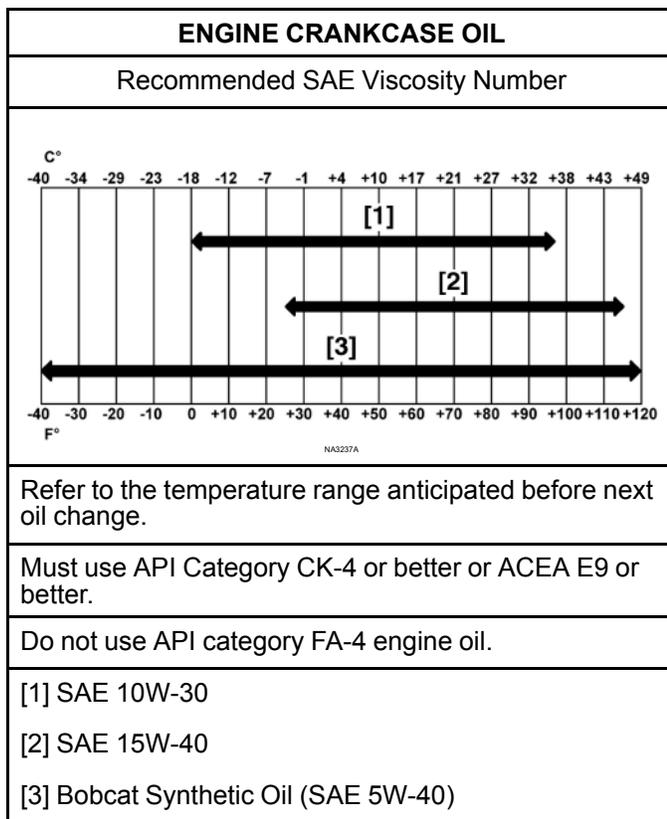
FIRE AND EXPLOSION HAZARD

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. ◀

7. Close the rear door.

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

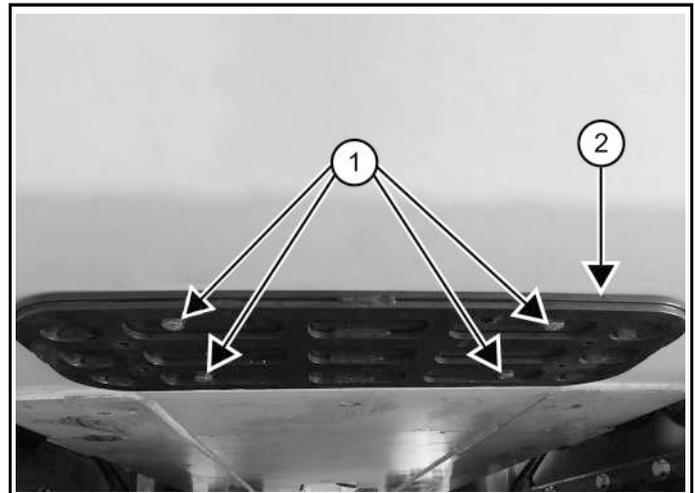
See the service schedule for the correct service interval. (See Service Schedule on Page 124)

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.

The access cover is located under the rear of the machine.

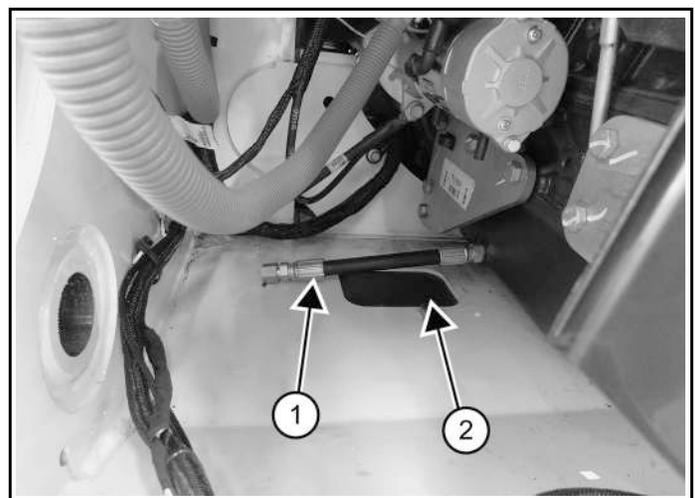
Figure 254



P200325A

3. Remove the access cover mounting bolts (Item 1) and remove the access cover (Item 2) [Figure 254].
4. Open the rear door.

Figure 255

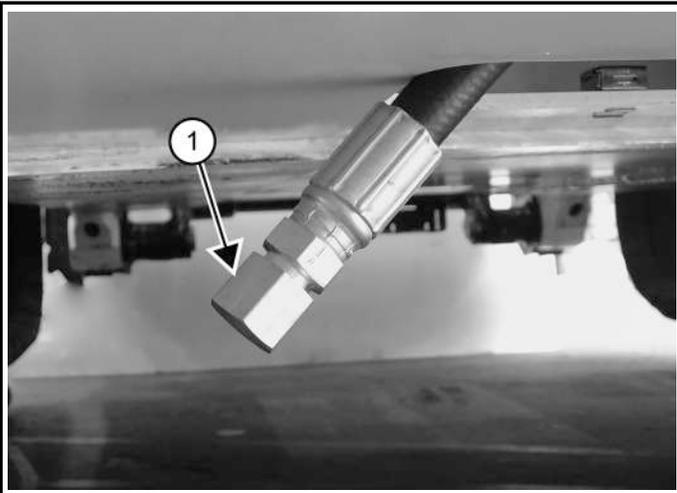


P200326A

5. Route the oil drain hose (Item 1) through the opening (Item 2) [Figure 255].

The oil drain hose is located on the left side of the engine compartment.

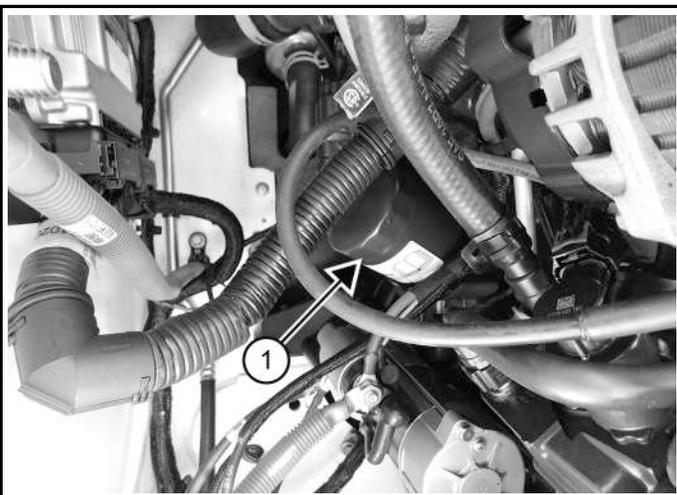
Figure 256



P200327A

6. Remove the oil drain cap (Item 1) [Figure 256] from the oil drain hose and drain the oil into a container.
7. Install the cap onto the drain hose when the fluid stops draining [Figure 256].
8. Remove the oil drain hose from the opening [Figure 255].
9. Install the access cover and the cover mounting bolts [Figure 254].
10. Recycle or dispose of used oil in an environmentally safe manner.

Figure 257



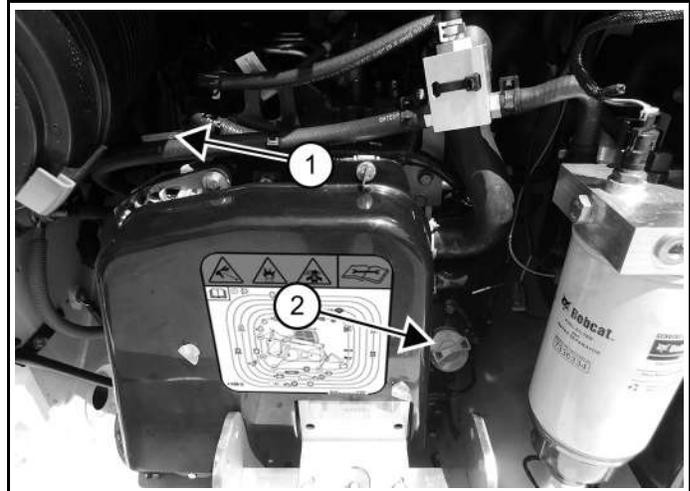
P200279A

The oil filter is located on the right side of the engine.

11. Remove the oil filter (Item 1) [Figure 257].
12. Clean the filter base.

13. Put clean oil on the new filter gasket.
14. Install the new filter and hand tighten.
Use genuine Bobcat filter only.

Figure 258



C200278B

15. Remove the oil fill cap (Item 2) [Figure 258].
16. Put oil into the engine and replace the oil fill cap. (See Loader Specifications on Page 219) Do not overfill.
17. Start the engine and allow to operate for several minutes.
18. Stop the engine.
19. Check for leaks at the filter.
20. Remove the dipstick (Item 1) [Figure 258] and check the oil level.
21. Add oil as needed if oil level is not at the top mark on the dipstick.
22. Install the dipstick.
23. Close the rear door.

⚠ 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 Engine Cooling System

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

1. Stop the engine.

⚠ WARNING

IMPACT AND INJECTION HAZARDS

Flying debris or pressurized 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. ◀

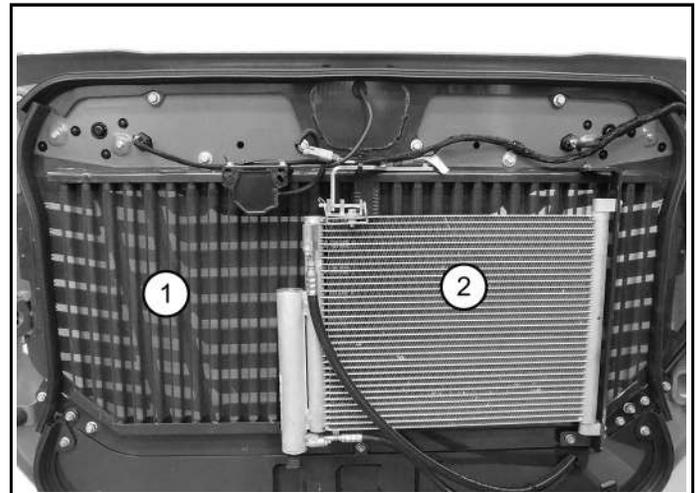
W-2019

Figure 259



2. Use low air pressure or low water pressure to clean the top of the rear grille (Item 1) [Figure 259].
3. Use low air pressure or low water pressure to clean the outside grille of the rear door (Item 2) [Figure 259].
4. Open the rear door.

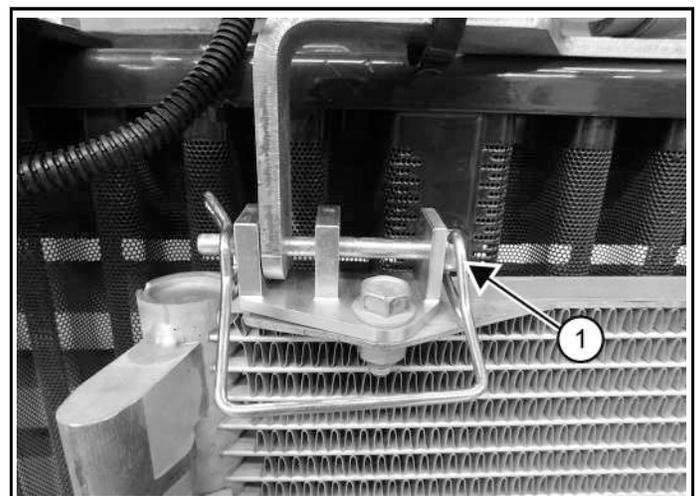
Figure 260



5. Use low air pressure or low water pressure to clean the inside grille of the rear door (Item 1) [Figure 260].
6. Use low air pressure or low water pressure to clean the air conditioning condenser (Item 2) [Figure 260], if equipped.

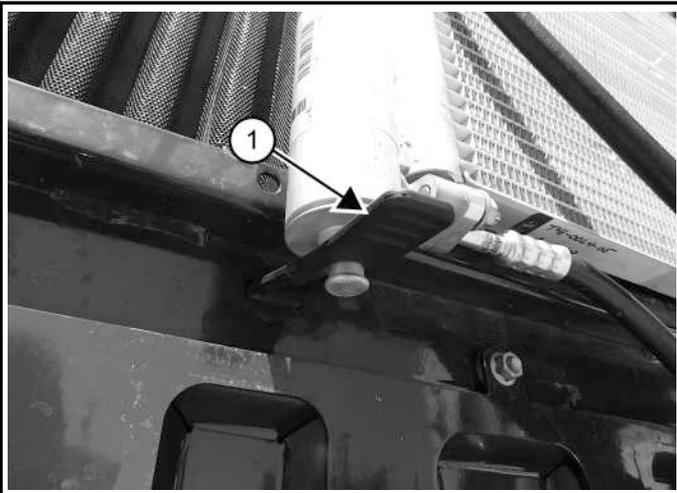
The condenser can be swung open to allow greater access for cleaning the area between the rear door and the condenser.

Figure 261



7. Remove the pin (Item 1) [Figure 261] at the top of the condenser.

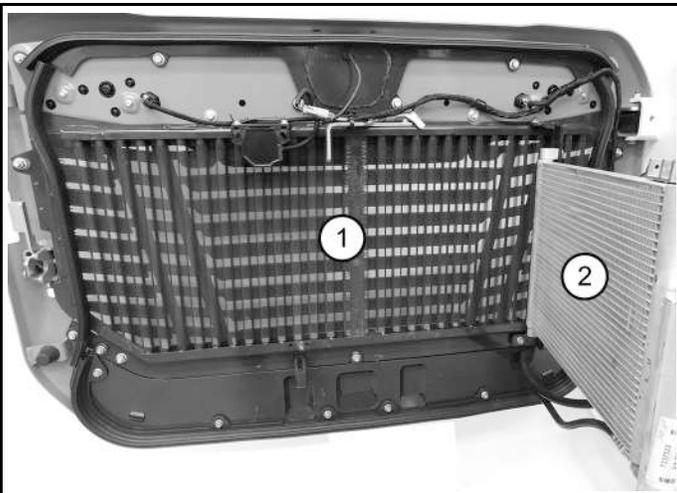
Figure 262



P200281A

- Unhook the rubber strap (Item 1) [Figure 262] at the bottom of the condenser.

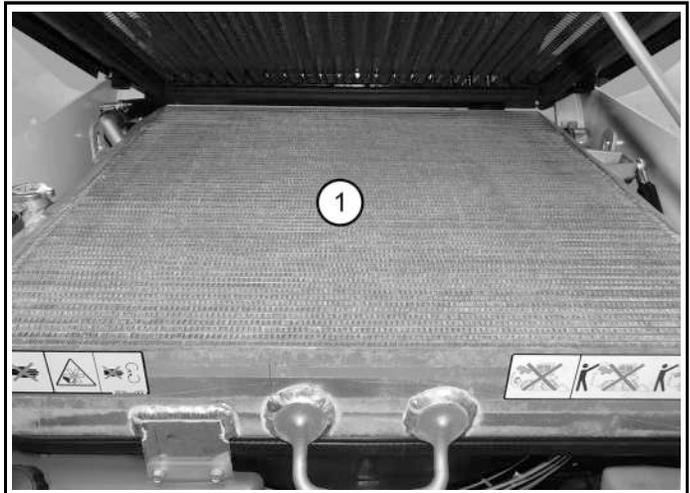
Figure 263



P200283A

- Use low air pressure or low water pressure to clean the inside grille of the rear door (Item 1) [Figure 263].
- Use low air pressure or low water pressure to clean the air conditioning condenser (Item 2) [Figure 263], if equipped.
- Raise the rear grille. (See Raising Rear Grille on Page 142)

Figure 264



P200282A

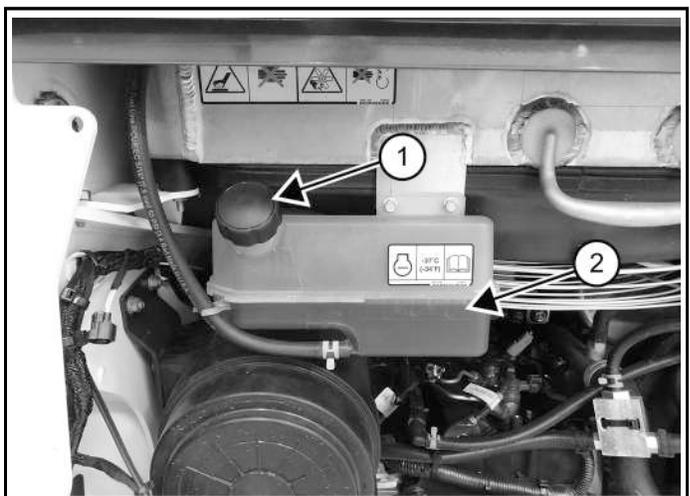
- Use low air pressure or low water pressure to clean the top of the radiator cooling package (Item 1) [Figure 264].
- Lower the rear grille. (See Lowering Rear Grille on Page 142)
- Close the rear door.

Checking And Adding Coolant

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

- Stop the engine.
- Open the rear door.

Figure 265



P200284A

3. Check the coolant level when the engine is cold. Coolant must be at the full cold mark (Item 2) [Figure 265].

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

Use a refractometer to check the condition of propylene glycol in your cooling system.

⚠ 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

4. Remove the coolant fill cap (Item 1) [Figure 265] to add coolant.

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 or 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. ◀

I-2124

5. 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 [Figure 265].
6. Install the coolant fill cap [Figure 265].
7. Close the rear door.

Replacing Coolant

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

NOTE: This procedure requires the use of a spare 19 mm (3/4 in) coolant hose approximately 600 mm (24 in) long.

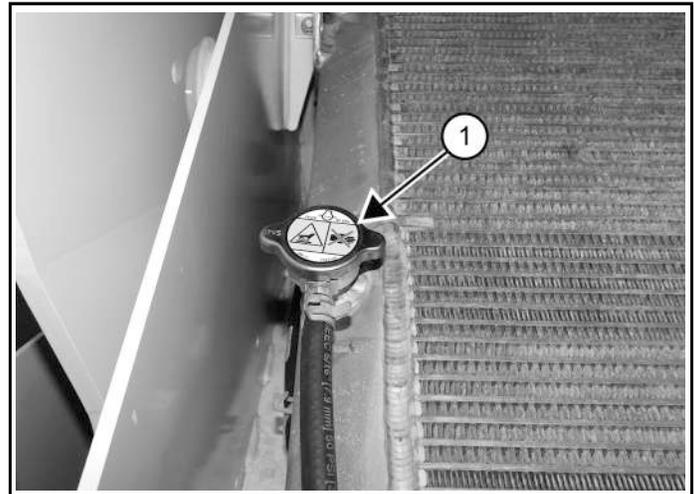
1. Stop the engine.
2. Open the rear door.
3. Raise the rear grille.
(See Raising Rear Grille on Page 142)

⚠ 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

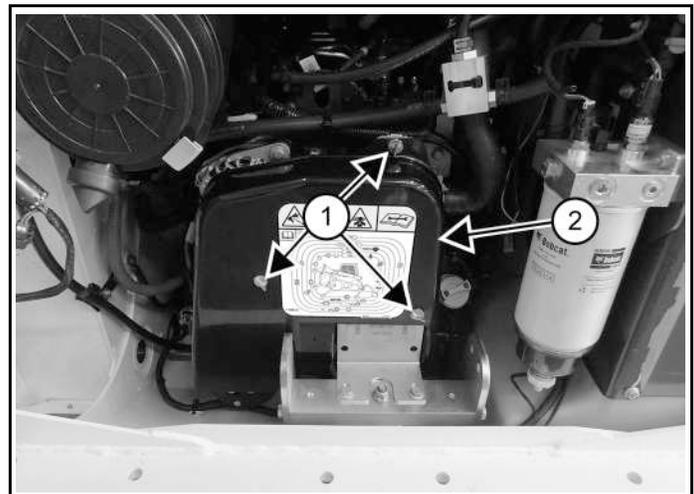
Figure 266



P200287A

4. Remove the radiator cap (Item 1) [Figure 266] to relieve cooling system pressure.
5. Install the radiator cap.

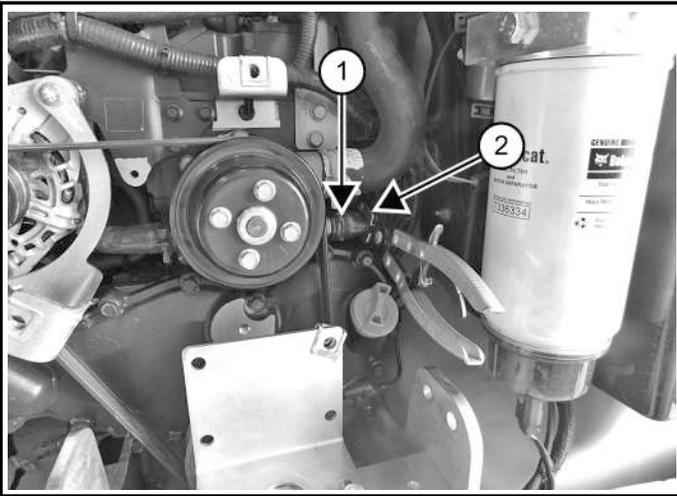
Figure 267



P200310A

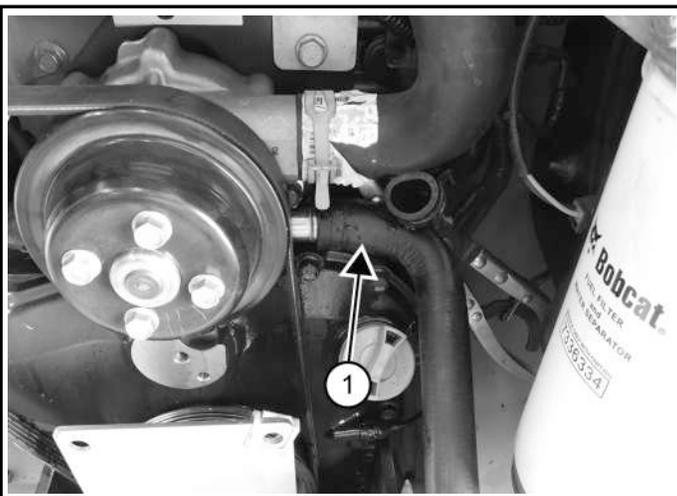
6. Loosen three fasteners (Item 1) and remove belt shield (Item 2) [Figure 267].

Figure 268



7. Pinch off the lower coolant hose using a locking hose pinching plier (Item 2) [Figure 268] or similar tool.
8. Remove the clamp (Item 1) [Figure 268] and disconnect the hose.

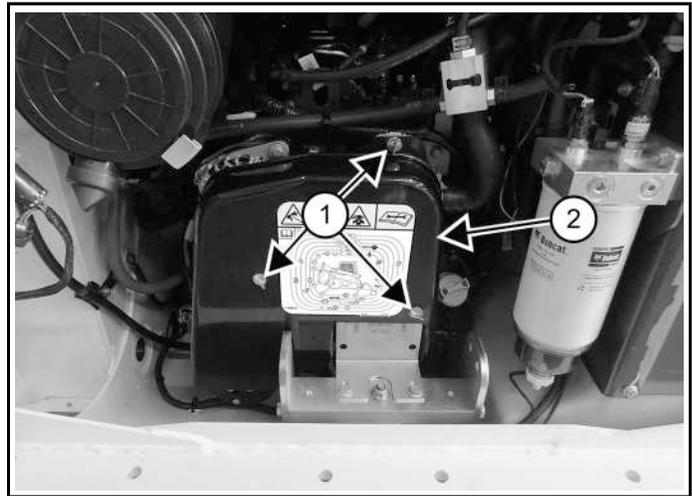
Figure 269



9. Quickly install the spare 19 mm (3/4 in) coolant hose (Item 1) [Figure 269].
10. Drain the coolant into a container.
11. Remove the radiator cap (Item 1) [Figure 266] to relieve cooling system pressure to drain the coolant faster.
12. Remove the spare 19 mm (3/4 in) coolant hose when the coolant has drained.
13. Install the coolant hose and clamp.

14. Remove the tool used to pinch off the coolant hose.

Figure 270



15. Install belt shield (Item 2) and tighten three fasteners (Item 1) [Figure 270].
16. Recycle or dispose of used coolant in an environmentally safe manner.
17. Mix new coolant in a separate container. (See Loader Specifications on Page 219)

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 or 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. ◀

18. Add premixed coolant, 47% water and 53% propylene glycol, to the radiator tank until the coolant level reaches the bottom of the fill neck.
19. Do not install the radiator cap at this time.
20. Close the rear door and operate the engine at low idle for two minutes.
21. Stop the engine.
22. Open the rear door.

23. Add premixed coolant to the radiator tank until the coolant level again reaches the bottom of the fill neck.
24. Install the radiator cap.
25. Lower the rear grille.
(See Lowering Rear Grille on Page 142)
26. Ensure coolant level in coolant tank is at the full cold mark.
(See Checking And Adding Coolant on Page 156)
27. Close the rear door.
28. Operate the engine until coolant reaches normal operating temperature.
29. Stop the engine.
30. Allow system to cool and recheck radiator tank level. Add premixed coolant to the radiator tank as needed until the coolant level reaches the bottom of the fill neck.
31. Check the coolant level in coolant tank when cool. Add premixed coolant as needed.
(See Checking And Adding Coolant on Page 156)

ELECTRICAL SYSTEM

Electrical System Description

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

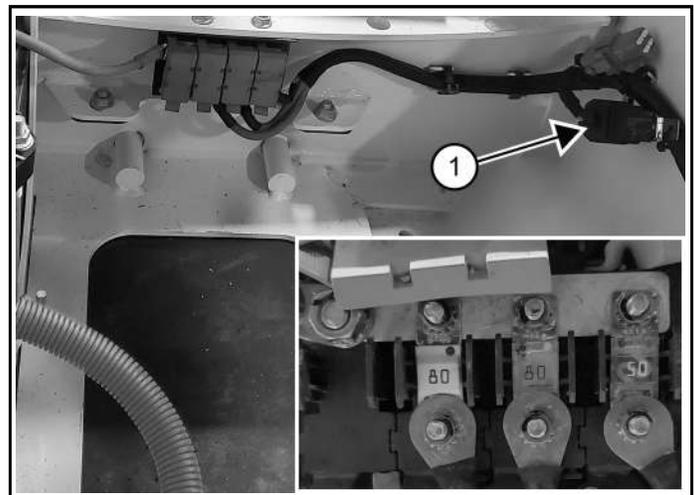
The electrical system is protected by fuses located in a master fuse panel, an operator cab fuse panel, and a mainframe fuse panel.

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 Panel

Figure 271

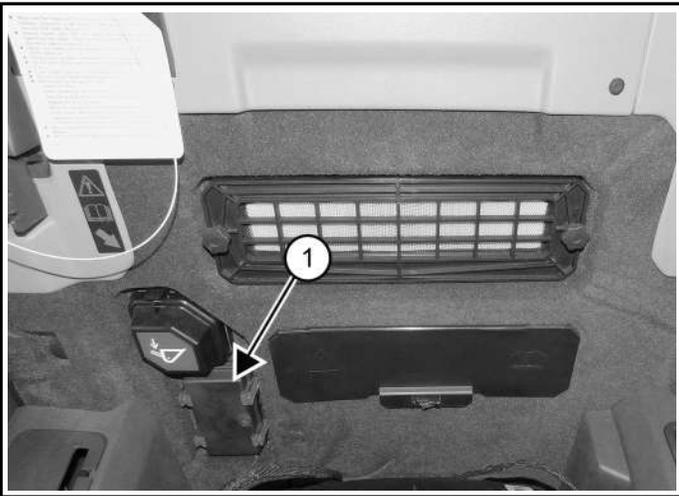


The master fuses (Inset) [Figure 271] are located next to the battery under the operator cab.
(See Raising Operator Cab on Page 137)

The glow plug relay (Item 1) [Figure 271] is located in the harness next to the master fuse panel under the operator cab. (See Raising Operator Cab on Page 137)

Operator Cab Fuse Panel

Figure 272

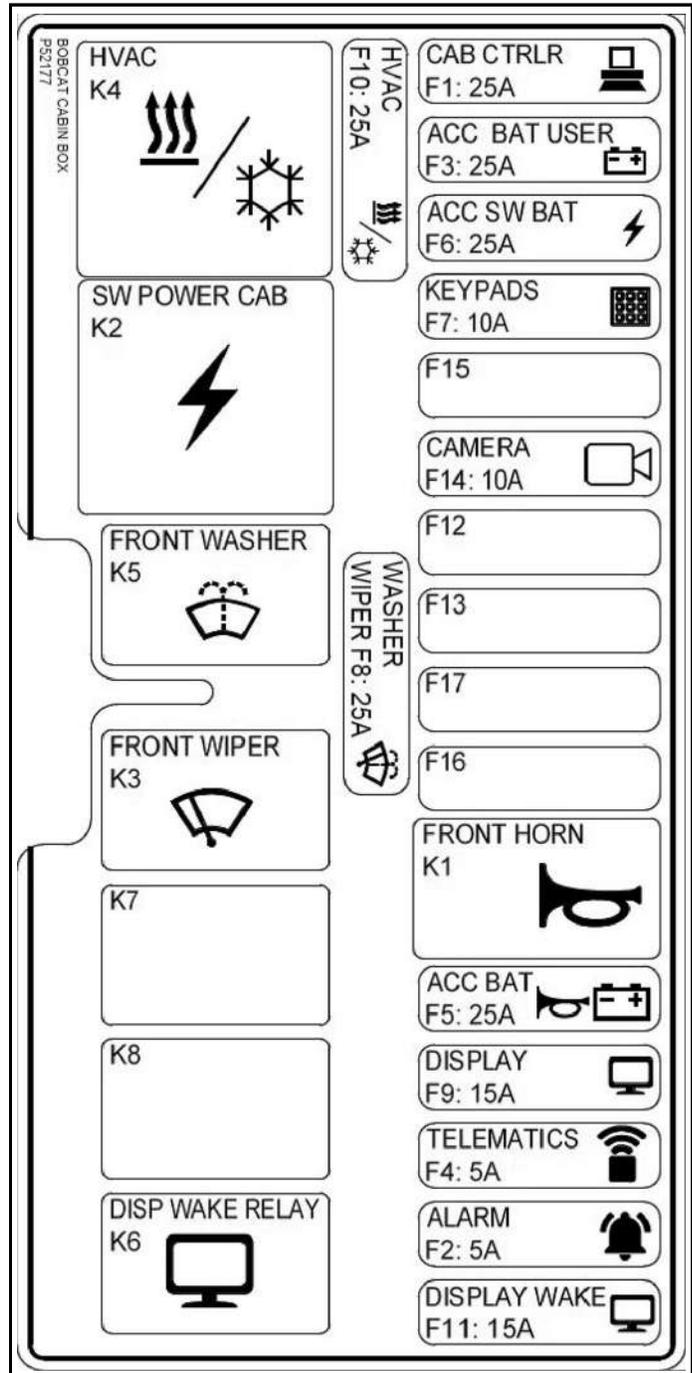


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The operator cab fuse panel is located behind the operator seat on the right side. The cover (Item 1) [Figure 272] can be removed by opening four latches while pressing the cover tightly closed.

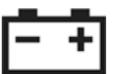
A decal located inside the fuse panel cover indicates fuse and relay location and fuse amperage ratings.

Figure 273



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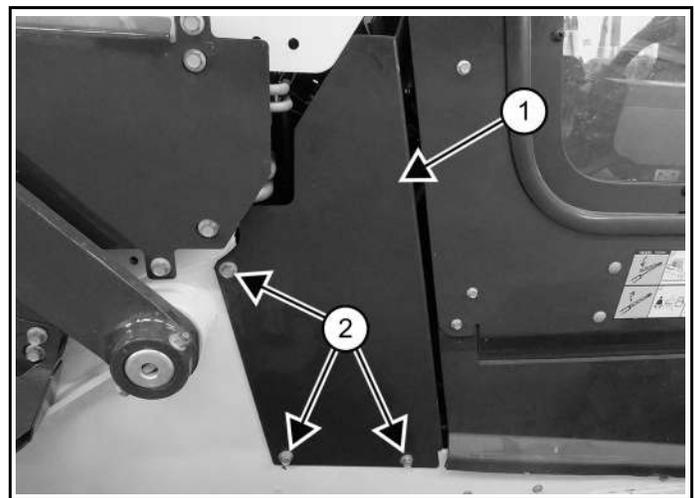
Fuse location and amperage ratings are shown in the table below and on the decal [Figure 273]. Relays are identified by the letter "R" in the AMP column.

REF	ICON	DESCRIPTION	AMP
F1		Cab Controller	25
F2		Alarm	5
F3		Accessories	25
F4		Telematics	5
F5		Accessories and Front Horn	25
F6		Accessories / Seat / Radio	25
F7		Keypads	10
F8		Front Wiper / Washer	25
F9		Display	15
F10		Heater / HVAC	25
F11		Display	15
F12		Not Used	--
F13		Not Used	--
F14		Camera	10
F15		Not Used	--
F16		Not Used	--

REF	ICON	DESCRIPTION	AMP
F17		Not Used	--
K1		Front Horn	R
K2		Switched Power	R
K3		Front Wiper	R
K4		Heater / HVAC	R
K5		Front Washer	R
K6		Display	R
K7		Not Used	--
K8		Not Used	--

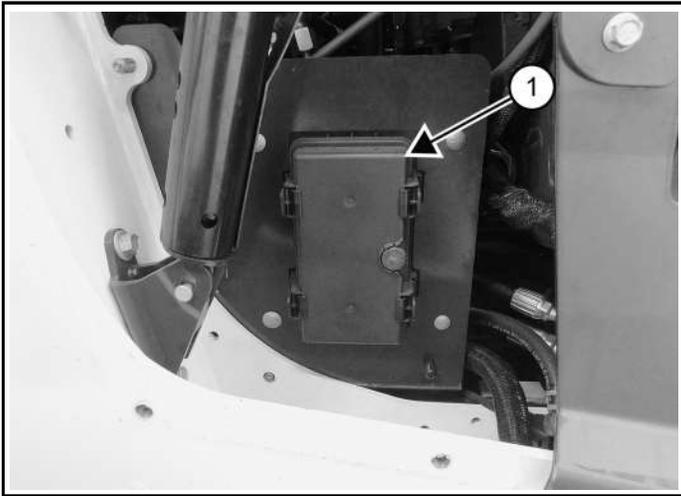
Mainframe Fuse Panel

Figure 274



Remove the bolts (Item 2) and the access panel (Item 1) [Figure 274] located on the right side of the machine behind the operator cab.

Figure 275

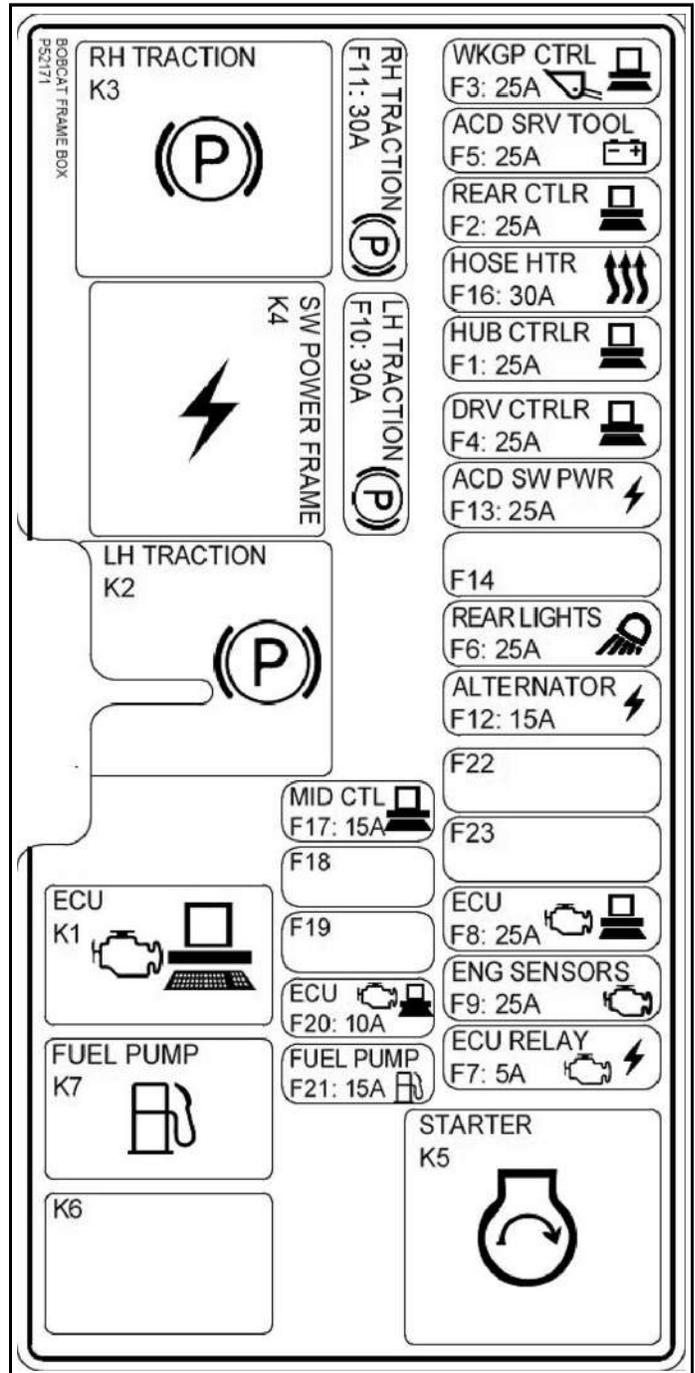


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The cover (Item 1) [Figure 275] can be removed by opening four latches while pressing the cover tightly closed.

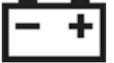
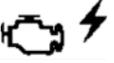
A decal located inside the fuse panel cover indicates fuse and relay location and fuse amperage ratings.

Figure 276



NAS357

Fuse location and amperage ratings are shown in the table below and on the decal [Figure 276]. Relays are identified by the letter "R" in the AMP column.

REF	ICON	DESCRIPTION	AMP
F1		Hub Controller	25
F2		Rear Auxiliary / Road Lights	25
F3		Workgroup Controller	25
F4		Drive Controller	25
F5		Attachments	25
F6		Rear Lights / Back-up Alarm	25
F7		Switched Power Relay	5
F8		Engine Controller	25
F9		Engine Sensors	25
F10		Left Traction Lock	30
F11		Right Traction Lock	30
F12		Alternator	15
F13		Attachments	25
F14		Not Used	--

REF	ICON	DESCRIPTION	AMP
F16		DEF Hoses	30
F17		Mid Controller	15
F18		Not Used	--
F19		Not Used	--
F20		Engine Controller	10
F21		Fuel Pump	15
F22		Not Used	--
F23		Not Used	--
K1		Engine Controller	R
K2		Left Traction Lock	R
K3		Right Traction Lock	R
K4		Switched Power	R
K5		Starter	R
K6		Not Used	--
K7		Fuel Pump	R

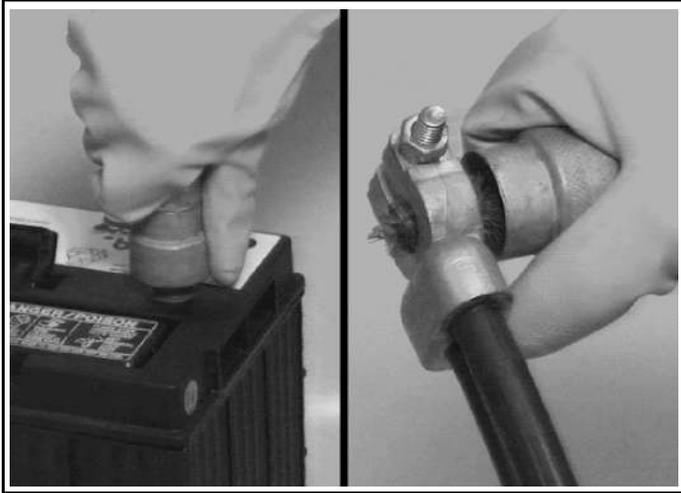
Battery Maintenance

See the Service Schedule for the correct service interval. (See Service Schedule on Page 124)

The Bobcat brand battery supplied with your machine is sealed and does not require watering. Proper charging

and storage are important to maximize the life of all batteries.

Figure 277



P200188

Simple steps for reliability and long battery life:

- Keep battery posts and terminals clean [Figure 277].
- 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 165)
- Check the battery state of charge every 30 days on machines that are not frequently used. (See Testing The Battery on Page 165)

⚠ 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. ◀

W-2085

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

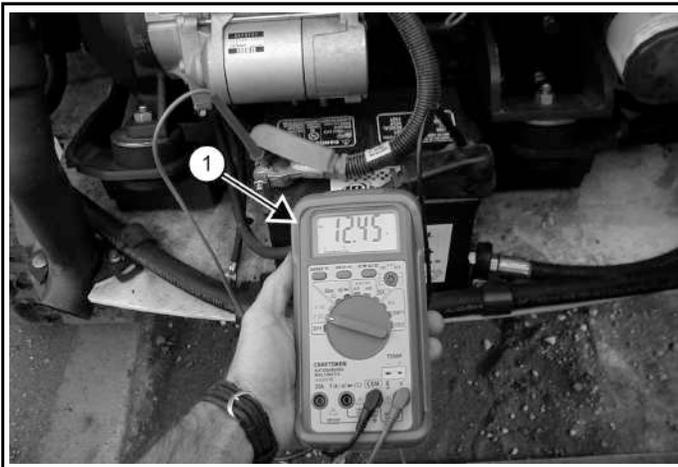
Use a good quality battery maintainer to keep the battery above 12.4 volts for machines that are not frequently used. Batteries below 12.4 volts must first be charged using a battery charger. Solar maintainers should have a minimum capacity of 10 watts to be effective.

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 278



P30036a

The simplest and most common check to determine battery state of charge is to use a digital multimeter or voltmeter (Item 1) [Figure 278].

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.

WARNING

EXPLOSION HAZARD

Battery gas can explode and cause serious injury or death.

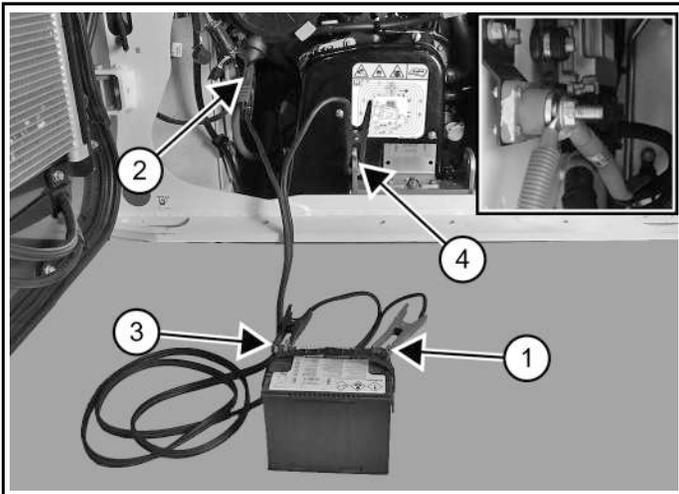
- **Keep arcs, sparks, flames and lighted tobacco away from batteries. When jumping from booster battery make final connection (negative) at machine frame.**
- **Do not jump start or charge a frozen or damaged battery. Warm battery to 16°C (60°F) before connecting to a charger. Unplug charger before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

W-2066

1. Stop the engine.

- Open the rear door.

Figure 279



- Connect the end of the first cable (Item 1) [Figure 279] to the positive (+) terminal of the booster battery.
- Connect the other end of the same cable (Item 2) to the positive (+) terminal (Inset) [Figure 279] on the machine frame.
- Connect the end of the second cable (Item 3) [Figure 279] to the negative (-) terminal of the booster battery.
- Connect the other end of the same cable (Item 4) [Figure 279] to the engine mount.
- Keep cables away from moving parts. Start the engine. (See Starting Engine on Page 100)
- After the engine has started, remove the negative (-) cable (Item 4) [Figure 279] first.
- Remove the cable from the positive (+) terminal (Item 2) [Figure 279].
- Remove the cables from the booster battery.
- Close the rear door.

⚠ 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 Battery

⚠ WARNING

CHEMICAL HAZARD

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

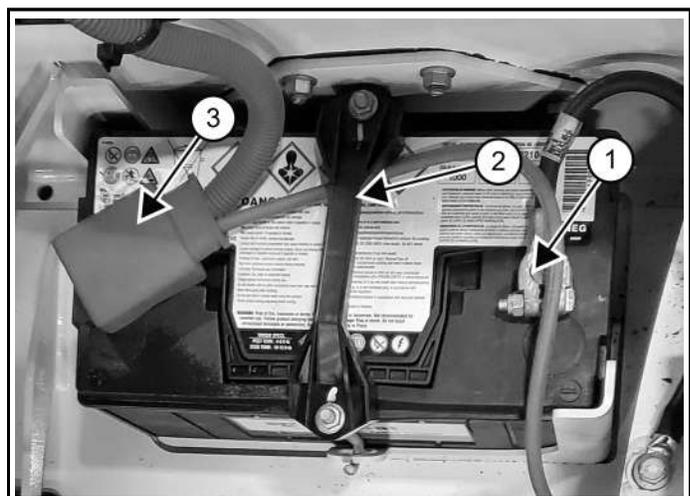
- Batteries contain acid that burns eyes and skin on contact. Wear safety goggles, protective clothing, and rubber gloves to keep acid off body.
- In case of acid contact, wash immediately with water. In case of eye contact, get prompt medical attention and wash eye with clean, cool water for at least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

W-2065

- Stop the engine.
- Raise the operator cab.
(See Raising Operator Cab on Page 137)

Do not touch any metal parts with the battery terminals.

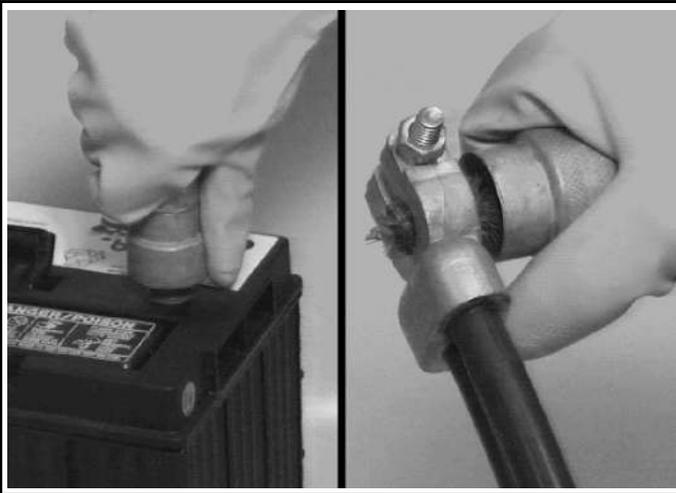
Figure 280



C204597A

3. Disconnect the negative (-) cable (Item 1) [Figure 280] from the battery.
4. Remove the battery hold-down clamp (Item 2) [Figure 280].
5. Disconnect the positive (+) cable (Item 3) [Figure 280] from the battery.
6. Remove the battery from the machine.

Figure 281



P200188

7. Always clean the battery terminals and cable ends when installing a new or used battery [Figure 281].
Do not touch any metal parts with the battery terminals.
8. Connect the negative (-) cable last to prevent sparks.
9. Connect and tighten the battery cables.
10. Install and tighten the battery hold-down clamp.
11. Put Bobcat Battery Saver or grease on the battery terminals and cable ends to prevent corrosion.
12. Lower the operator cab.
(See Lowering Operator Cab on Page 139)

⚠ 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

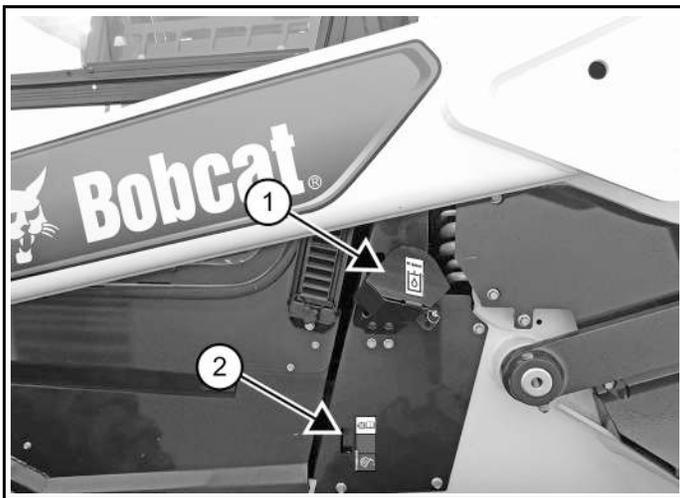
HYDRAULIC SYSTEM

Checking And Adding Hydraulic Fluid (Earlier Models)

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

1. Park the machine on a level surface.
2. Lower the lift arms.
3. Put the attachment flat on the ground or tilt the Bob-Tach fully back if no attachment is installed.
4. Stop the engine.

Figure 282

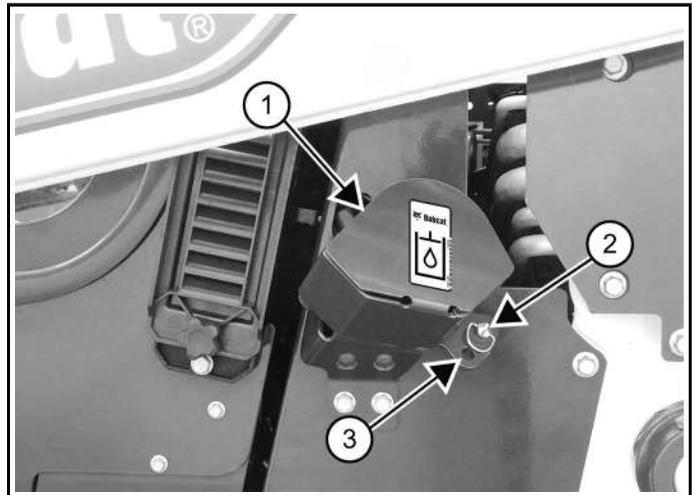


P200300A

5. Check the hydraulic fluid level in the sight gauge (Item 2) [Figure 282] on the left side of the machine. Keep the fluid level within the operating range.

The hydraulic fluid fill (Item 1) [Figure 282] is located on the left side of the machine.

Figure 283

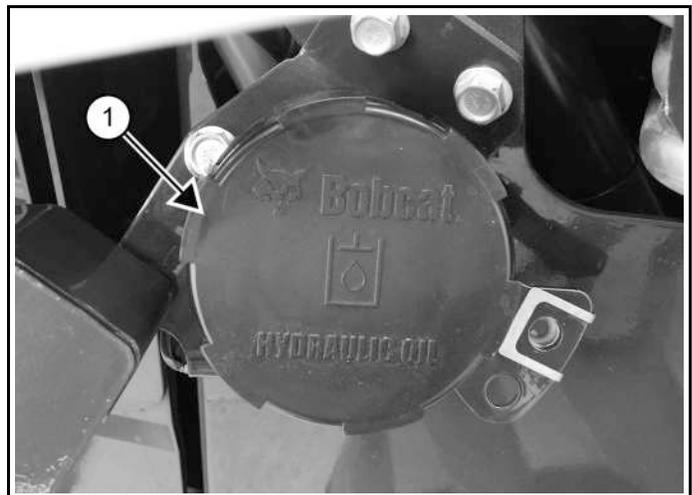


C200282B

6. Remove the fastener (Item 2) [Figure 283].
7. Rotate the hydraulic fill cover (Item 1) [Figure 283] open.

A lock can be installed in this hole (Item 3) [Figure 283] in the hydraulic fill cover.

Figure 284



P200289A

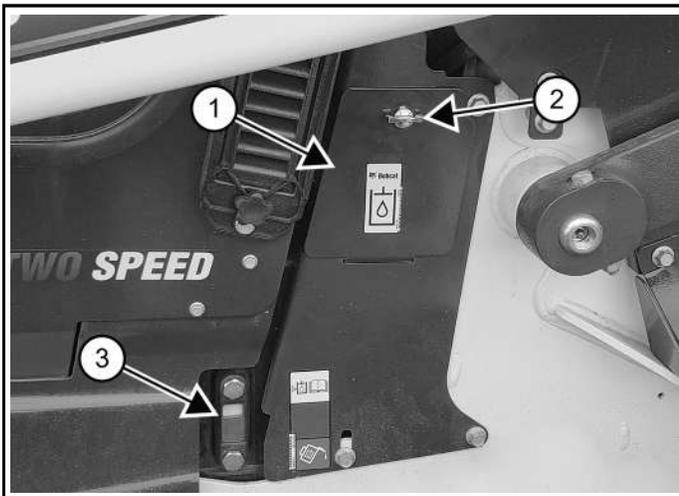
8. Remove the hydraulic fill cap (Item 1) [Figure 284].
9. Add fluid as needed to bring the level within the operating range in the sight gauge [Figure 282].
10. Install the fill cap [Figure 284].
11. Rotate the fill cover closed [Figure 283].
12. Install the fastener [Figure 283].

Checking And Adding Hydraulic Fluid

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

1. Park the machine on a level surface.
2. Lower the lift arms.
3. Put the attachment flat on the ground or tilt the Bob-Tach fully back if no attachment is installed.
4. Stop the engine.

Figure 285

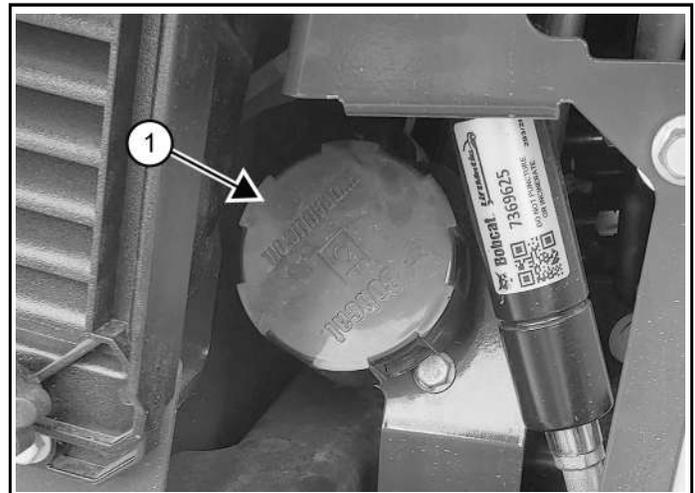


5. Check the hydraulic fluid level in the sight gauge (Item 3) [Figure 285] on the left side of the machine. Keep the fluid level within the operating range.

The hydraulic fluid fill (Item 1) [Figure 285] is located on the left side of the machine.

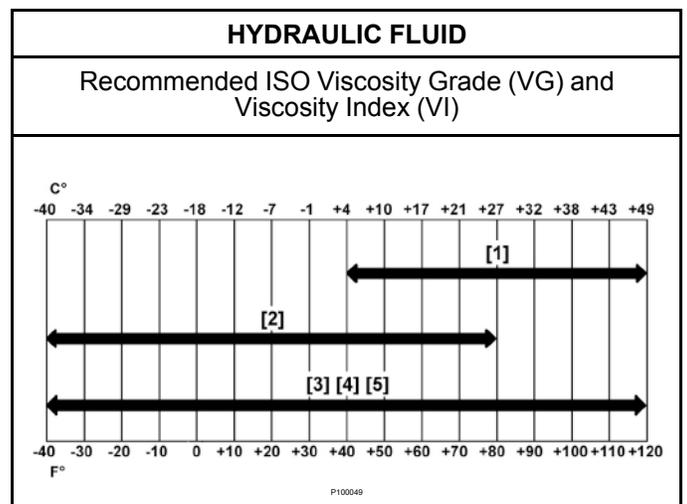
6. Loosen the fastener (Item 2) [Figure 285].
7. Allow the hydraulic fill cover (Item 1) [Figure 285] to rotate down.

Figure 286



8. Remove the hydraulic fill cap (Item 1) [Figure 286].
9. Add fluid as needed to bring the level within the operating range in the sight gauge [Figure 285].
10. Install the fill cap [Figure 286].
11. Rotate the fill cover closed [Figure 285].
12. Tighten the fastener [Figure 285].

Hydraulic Fluid Chart



HYDRAULIC FLUID

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 124)

NOTE: This procedure requires the use of a spare 22 mm (7/8 in) rubber hose approximately 900 mm (36 in) long.

Always replace the fluid if contaminated or after a major repair.

Always replace the hydraulic filters whenever the hydraulic fluid is replaced.

1. Stop the engine.
2. Open the rear door.
3. Raise the rear grille. (See Raising Rear Grille on Page 142)

⚠ WARNING

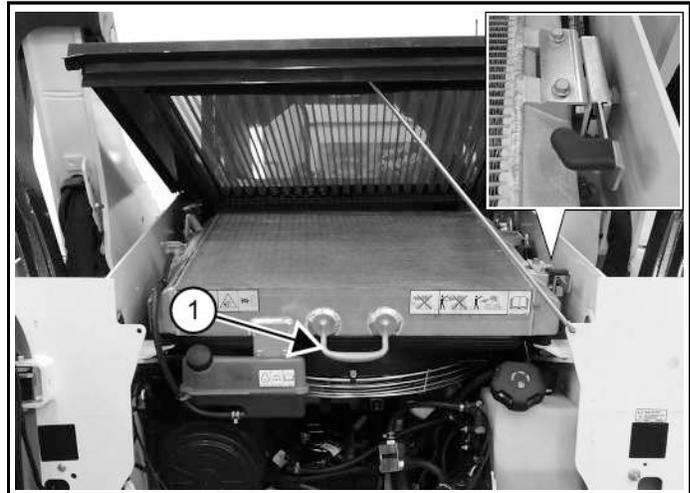
CUTTING AND BURN HAZARD

Keep away from the operating machine.

- Keep away from fan and moving parts. Do not operate with guard removed.
- Do not touch hot surfaces. Allow to cool before servicing.

W-2521

Figure 287



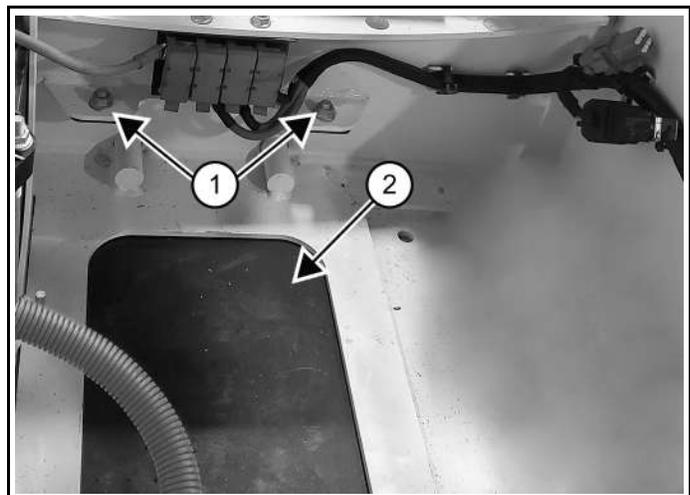
P200277A

4. Press the release lever (Inset) [Figure 287] down.
5. Raise the radiator cooling package using the handle (Item 1) [Figure 287].

NOTE: Do not start the engine, add coolant, or add hydraulic fluid while the radiator cooling package is raised.

6. Raise the operator cab. (See Raising Operator Cab on Page 137)

Figure 288



C204596A

7. Remove two bolts and nuts (Item 1) [Figure 288].
8. Slide the access cover (Item 2) [Figure 288] forward.

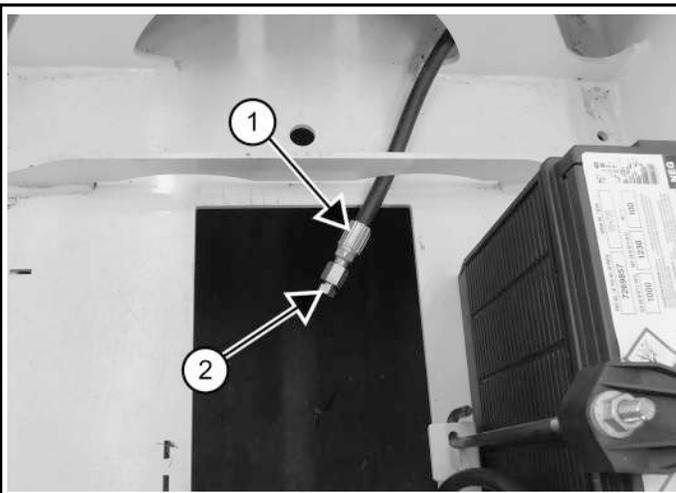
The hydraulic fluid drain hose is stored below the front edge of the hydraulic fluid reservoir [Figure 289].

Figure 289



C200324

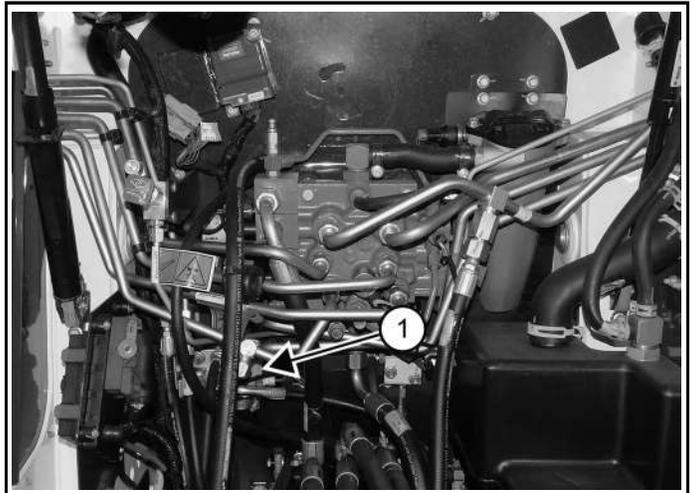
Figure 290



P200411A

9. Route the hydraulic fluid drain hose (Item 1) [Figure 290] through the access cover opening.
10. Remove the plug (Item 2) [Figure 290] from the drain hose and drain the fluid into a container.
11. Remove the hydraulic fill cap to drain the fluid faster. (See Checking And Adding Hydraulic Fluid (Earlier Models) on Page 168) (See Checking And Adding Hydraulic Fluid on Page 169)
12. Install the plug into the drain hose when the fluid stops draining and tighten to 23 N•m (17 ft-lb) torque.
13. Coil the hydraulic fluid drain hose and fasten in the storage location to prevent damage [Figure 289].

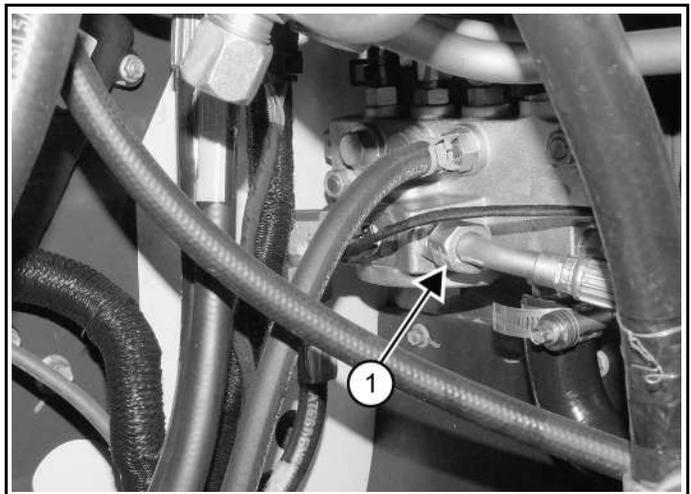
Figure 291



C204601A

14. Locate the case drain manifold (Item 1) [Figure 291].
15. Route the spare 22 mm (7/8 in) rubber hose through the access cover opening.

Figure 292

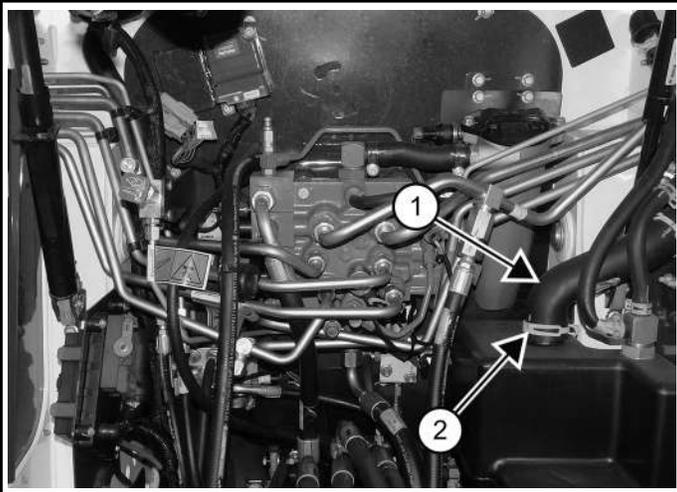


C204600A

16. Remove the hose (Item 1) [Figure 292] from the case drain manifold.
17. Quickly install the spare 22 mm (7/8 in) rubber hose onto the case drain manifold fitting.
18. Drain the fluid into a container.
19. Remove the spare hose when the fluid has drained.
20. Install the hose onto the case drain manifold fitting and tighten to 55 N•m (40 ft-lb) torque [Figure 292].
21. Slide the access cover closed [Figure 288].

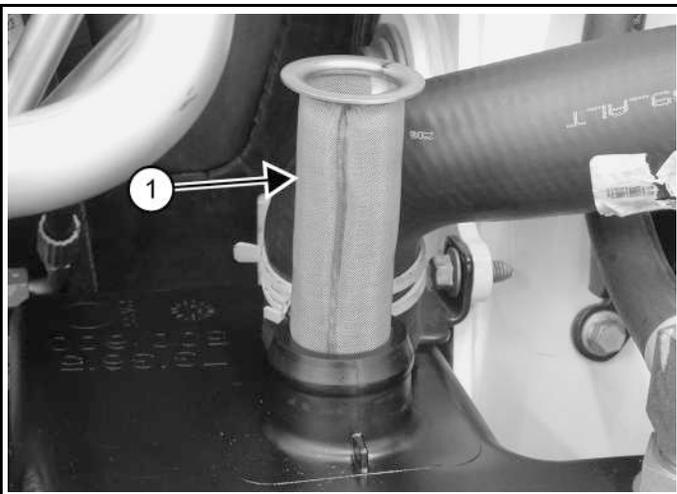
22. Install the access cover bolts and nuts [Figure 288].
23. Recycle or dispose of used fluid in an environmentally safe manner.

Figure 293



24. Loosen the clamp (Item 2) [Figure 293].
25. Remove the hose (Item 1) [Figure 293] from the hydraulic reservoir.

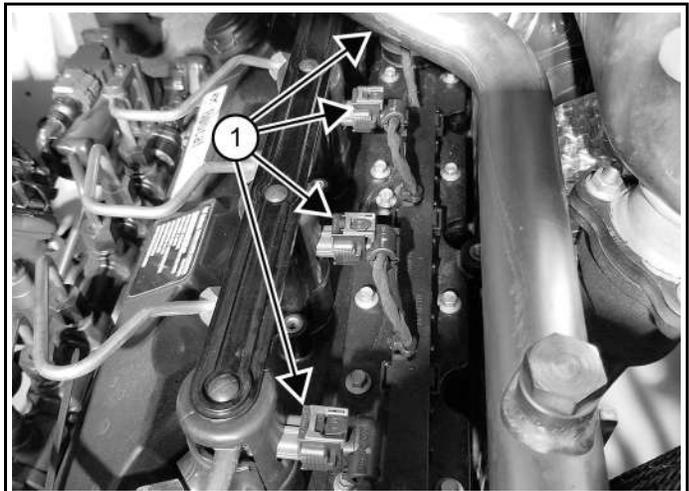
Figure 294



26. Remove and clean the hydraulic fill screen (Item 1) [Figure 294]. Use low air pressure to dry the screen.
27. Install hydraulic fill screen [Figure 294].
28. Install the hose and clamp onto the hydraulic reservoir [Figure 293].

29. Completely fill the hydraulic reservoir with hydraulic fluid. (See Loader Specifications on Page 219)
30. Install the hydraulic fill cap.
31. Lower the operator cab. (See Lowering Operator Cab on Page 139)

Figure 295



32. Disconnect four fuel injector electrical connectors (Item 1) [Figure 295] on top of the engine.
33. Lower the radiator cooling package using the handle until it locks into place [Figure 287].
34. Lower the rear grille. (See Lowering Rear Grille on Page 142)
35. Close the rear door.
36. Run the engine starter for 5 to 10 seconds. Do not allow the reservoir to empty during this step.
37. Press the stop button or turn the key switch to the stop position.
38. Add hydraulic fluid to the reservoir until the fluid level is within the operating range of the sight gauge. (See Checking And Adding Hydraulic Fluid (Earlier Models) on Page 168) (See Checking And Adding Hydraulic Fluid on Page 169)
39. Connect the four fuel injector electrical connectors [Figure 295].
40. Start the engine and operate the loader hydraulic controls.
41. Stop the engine.

⚠ WARNING

INJECTION HAZARD

Pressurized 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

42. Check for leaks.
43. Check the fluid level in the reservoir and add as needed.
(See Checking And Adding Hydraulic Fluid (Earlier Models) on Page 168)
(See Checking And Adding Hydraulic Fluid on Page 169)

⚠ 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. ◀

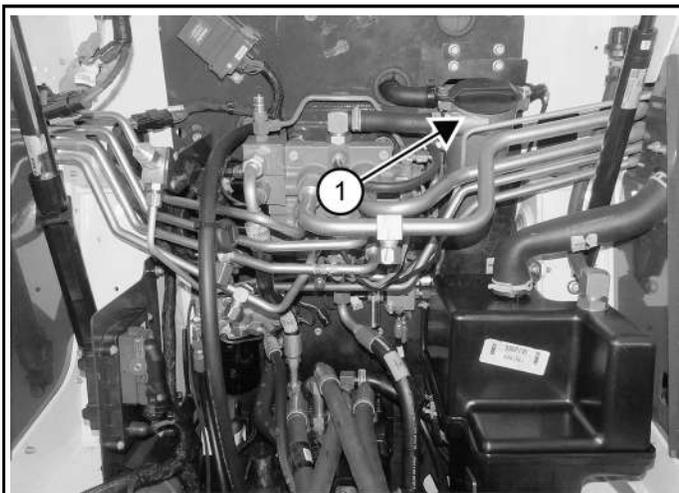
W-2103

Replacing Main Hydraulic Filter

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

1. Stop the engine.
2. Raise the operator cab.
(See Raising Operator Cab on Page 137)

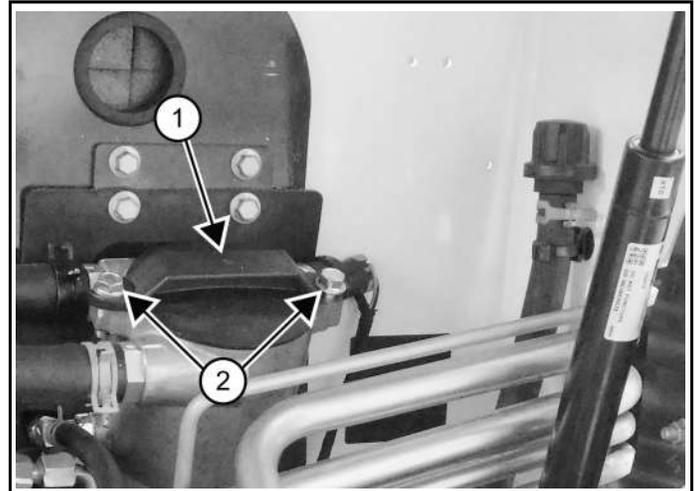
Figure 296



C200293B

3. Clean the top of the filter housing (Item 1) [Figure 296].

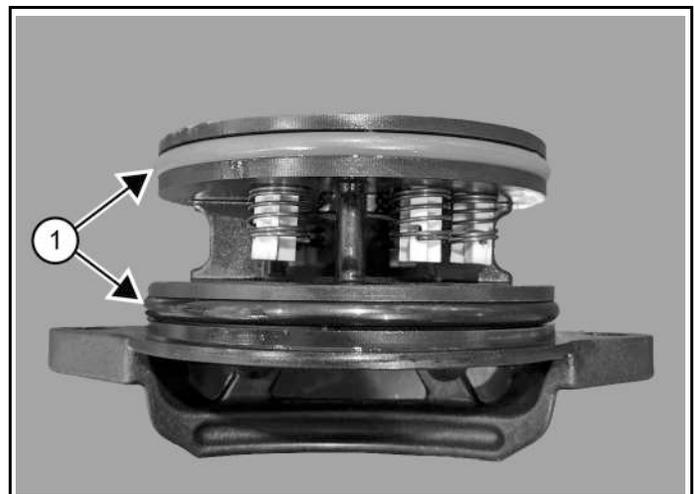
Figure 297



C200303A

4. Remove the bolts (Item 2) and rotate the filter cap (Item 1) [Figure 297] slightly.
5. Slowly pry the filter cap off the housing by hand.
6. Remove the filter element and discard.

Figure 298

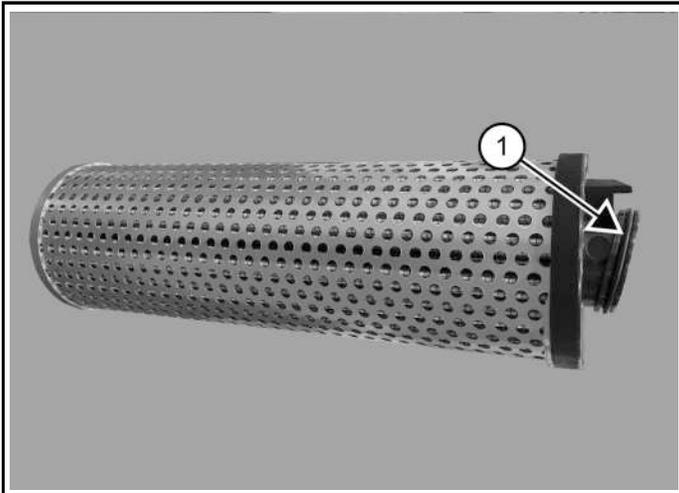


P200417A

7. Remove the filter cap O-rings (Item 1) [Figure 298] and discard.
8. Install new filter cap O-rings and lubricate with clean oil.

NOTE: The filter cap O-rings are not the same size. Take care to install each O-ring in the correct location.

Figure 299



P200418A

9. Lubricate the O-ring (Item 1) [Figure 299] on new filter element with clean oil.
10. Install new filter element into the filter cap ensuring that element is fully seated in the cap.
11. Install the filter cap and filter element assembly into the housing.
12. Install the bolts [Figure 297]. Alternate tightening the bolts to draw the cap down evenly.

Tighten the bolts to 27 – 41 N•m (20 – 30 ft-lb) torque.

⚠ 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. ◀

W2103

13. Lower the operator cab. (See Lowering Operator Cab on Page 139)
14. Start the engine and operate the loader hydraulic controls.
15. Stop the engine.

⚠ WARNING

INJECTION HAZARD

Pressurized 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. ◀

W2072

16. Check for leaks at the filter.
17. Check the fluid level in the reservoir and add as needed. (See Checking And Adding Hydraulic Fluid (Earlier Models) on Page 168) (See Checking And Adding Hydraulic Fluid on Page 169)

Replacing Hydraulic Charge Filter

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

1. Stop the engine.
2. Open the rear door.
3. Raise the rear grille. (See Raising Rear Grille on Page 142)

⚠ WARNING

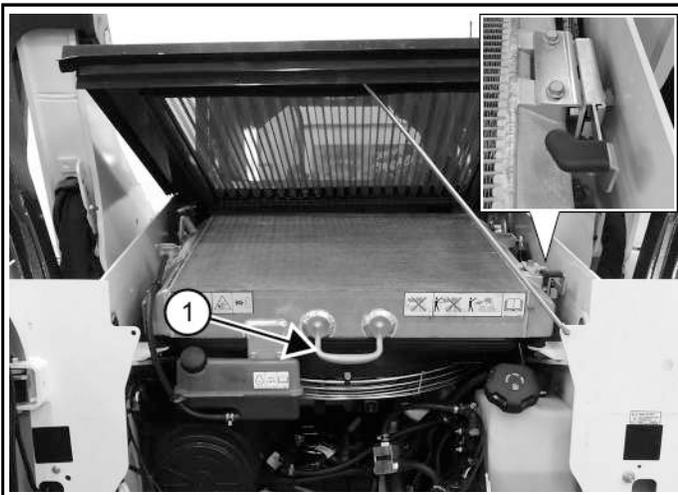
CUTTING AND BURN HAZARD

Keep away from the operating machine.

- Keep away from fan and moving parts. Do not operate with guard removed.
- Do not touch hot surfaces. Allow to cool before servicing. ◀

W2521

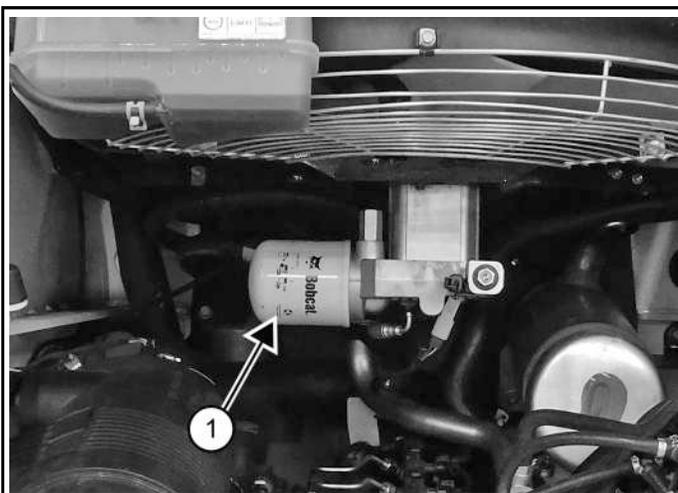
Figure 300



4. Press the release lever (Inset) [Figure 300] down.
5. Raise the radiator cooling package using the handle (Item 1) [Figure 300].

NOTE: Do not start the engine, add coolant, or add hydraulic fluid while the radiator cooling package is raised.

Figure 301



6. Put a suitable container below the filter, remove the filter (Item 1) [Figure 301] and discard.
7. Clean the filter base.
8. Put clean oil on the new filter gasket.
9. Install the new filter.

Tighten to 37 – 45 N•m (27 – 33 ft-lb) torque or 1/2 turn after filter gasket contacts filter base.

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

⚠ 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. ◀

11. Lower the radiator cooling package using the handle until it locks into place [Figure 300].
12. Lower the rear grille.
(See Lowering Rear Grille on Page 142)
13. Close the rear door.
14. Start the engine and operate the loader hydraulic controls.
15. Stop the engine.

⚠ WARNING

INJECTION HAZARD

Pressurized 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. ◀

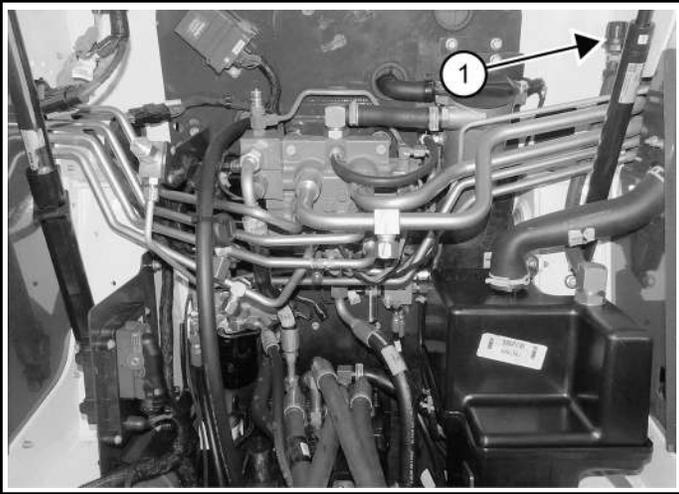
16. Check for leaks at the filter.
17. Check the fluid level in the reservoir and add as needed.
(See Checking And Adding Hydraulic Fluid (Earlier Models) on Page 168)
(See Checking And Adding Hydraulic Fluid on Page 169)

Replacing Hydraulic Reservoir Vent Filter

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

1. Stop the engine.
2. Raise the operator cab.
(See Raising Operator Cab on Page 137)

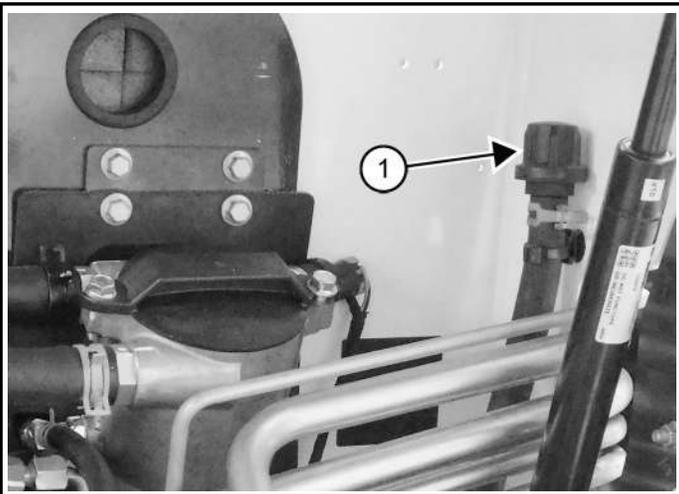
Figure 302



C200283D

3. Locate the vent filter (Item 1) [Figure 302].

Figure 303



C200303B

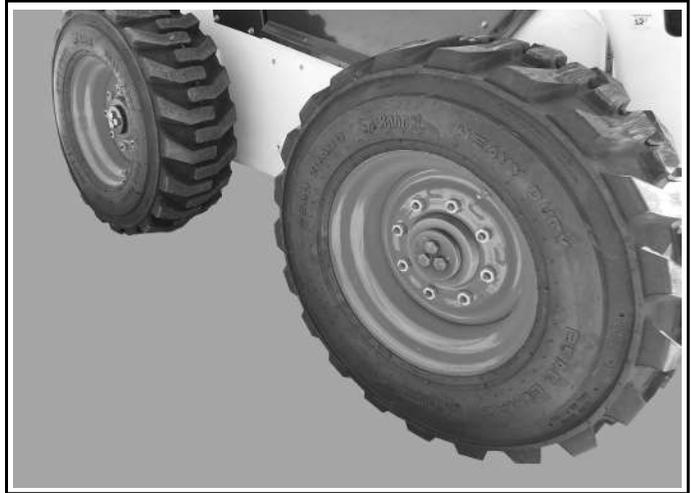
4. Remove the vent filter (Item 1) [Figure 303] and discard.
5. Install new vent filter.
6. Lower the operator cab.
(See Lowering Operator Cab on Page 139)

TIRE MAINTENANCE

Checking Wheel Nut Torque

See the service schedule for the correct service interval.
(See Service Schedule on Page 124)

Figure 304



C200306

Follow the torques below for the wheel nuts [Figure 304]:

- When installing wheel nuts, tighten to 217 N•m (160 ft-lb) torque.
- When checking wheel nut torque, set the torque wrench to 196 N•m (145 ft-lb) to prevent overtightening.

Rotating Tires

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

The same size tires must be used on each side of the machine. If different sizes are used, each tire will turn at a different rate and cause excessive wear. The tread bars of all the tires must face the same direction.

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

1. Check for correct pressure before operating the machine. (See Loader Specifications on Page 219)

⚠ IMPORTANT**MACHINE DAMAGE HAZARD**

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

Never exceed the **MAXIMUM** pressure shown on the sidewall of the tire.

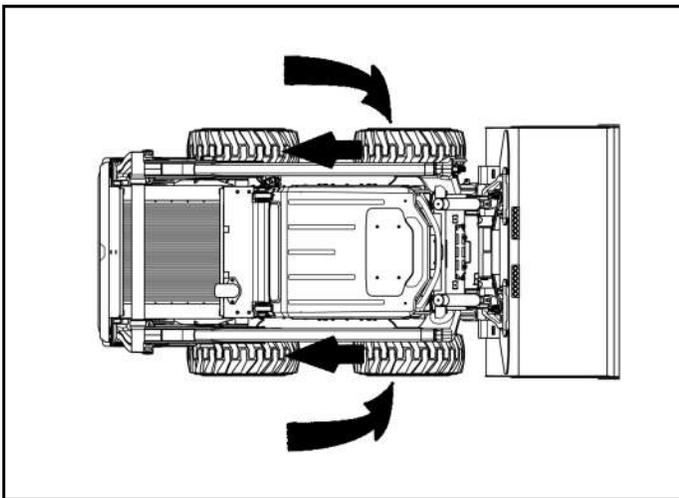
Use only tires of the same size and similar wear condition on the same machine

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

I-307

- During inflation of the tire, check the tire pressure frequently to avoid over inflation.

Figure 305



NA18105A

2. Rear tires usually wear faster than front tires. To keep tire wear even, move the front tires to the rear and rear tires to the front [Figure 305].

Mounting Tires

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

⚠ WARNING**EXPLOSION HAZARD**

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

Do not inflate tires above specified pressure. ◀

W-2078

- Avoid excessive pressure that can rupture the tire and cause serious injury or death.

FINAL DRIVE TRANSMISSION (CHAINCASES)

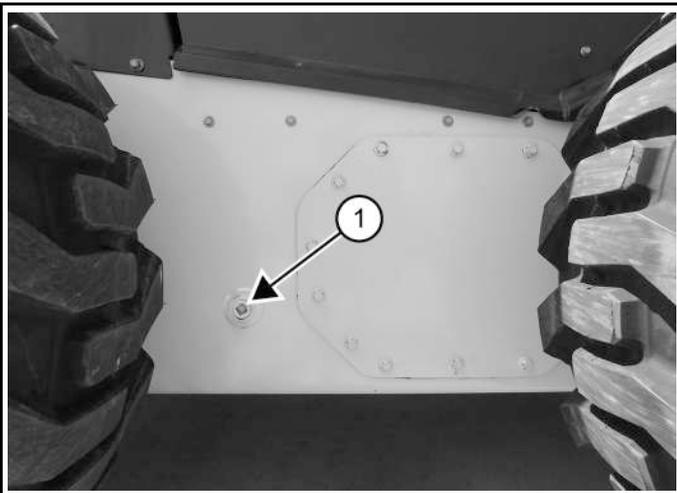
Checking And Adding Chaincase Fluid

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

The chaincases contain the final drive sprockets and chains. They use the same type fluid as the hydraulic system. (See Hydraulic Fluid Chart on Page 169)

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

Figure 306



3. Remove the check plug (Item 1) [Figure 306] from the side of the chaincase housing. (Right side shown.)

The check plugs are located between the tires on both sides of the machine.

4. The fluid level is correct if fluid can be reached with the tip of your finger through the hole.
5. If the level is low, add fluid through the check plug hole until fluid flows from the hole.
6. Install and tighten the plug [Figure 306].
7. Repeat for the other side.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

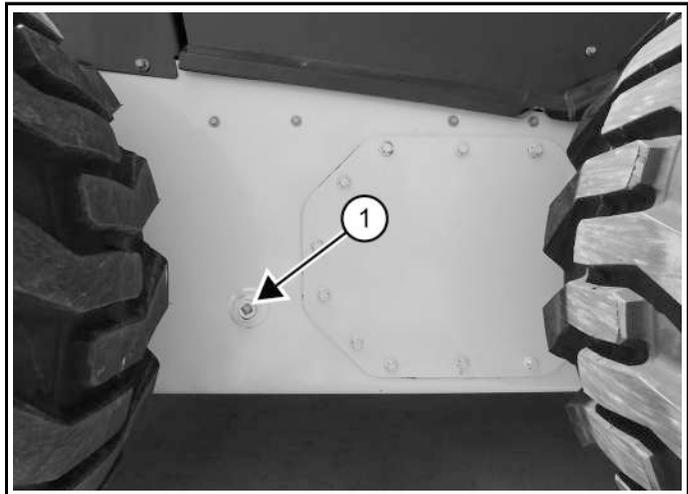
Failure to use care around combustibles can cause serious injury or death. Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. ◀

Replacing Chaincase Fluid

See the service schedule for the correct service interval. (See Service Schedule on Page 124)

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

Figure 307



3. Remove the check plug (Item 1) [Figure 307] from the side of the chaincase housing. (Right side shown.)

The check plugs are located between the tires on both sides of the machine.

4. Pump the fluid out of the chaincase [Figure 307].
5. Recycle or dispose of used fluid in an environmentally safe manner.
6. Add new fluid through the check plug hole until fluid flows from the hole. (See Loader Specifications on Page 219)
7. Install and tighten the plug [Figure 307].
8. Repeat for the other side.

⚠ 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. ◀

W2103

BELTS

Adjusting Belt (Machines Without Air Conditioning)

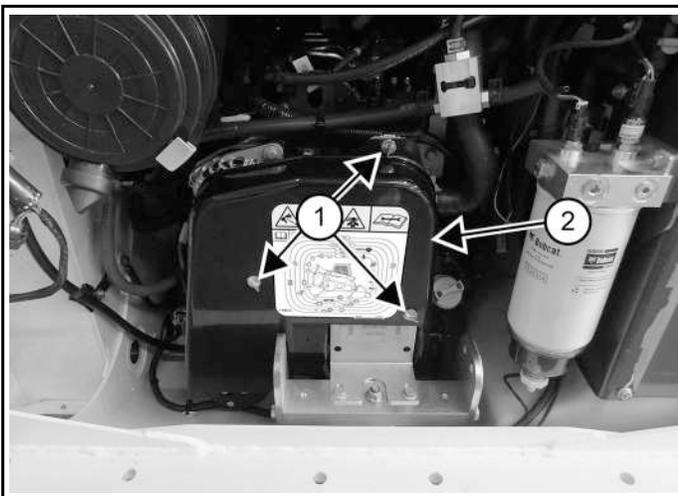
- This belt is a special maintenance free type that is pretensioned over the pulleys. This belt eliminates the need for a tensioning device and does not require periodic adjustment. Contact your Bobcat dealer for replacement parts.

Replacing Belt (Machines Without Air Conditioning)

A stretch fit belt tool is required to install the new belt. The tool is commonly available from an auto parts store or tool supplier.

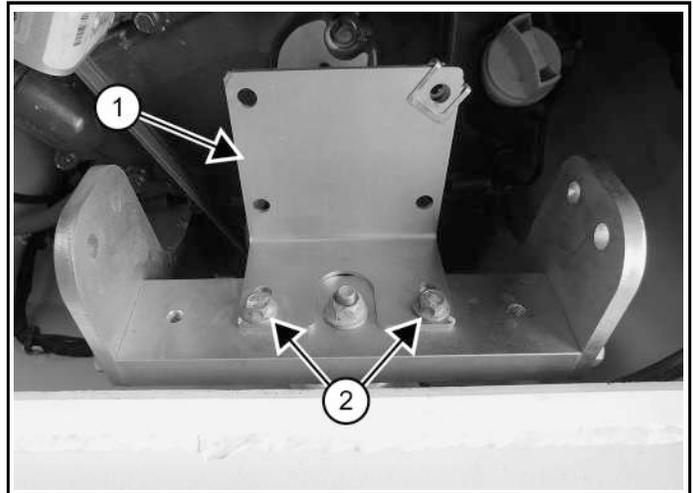
1. Stop the engine.
2. Open the rear door.

Figure 308



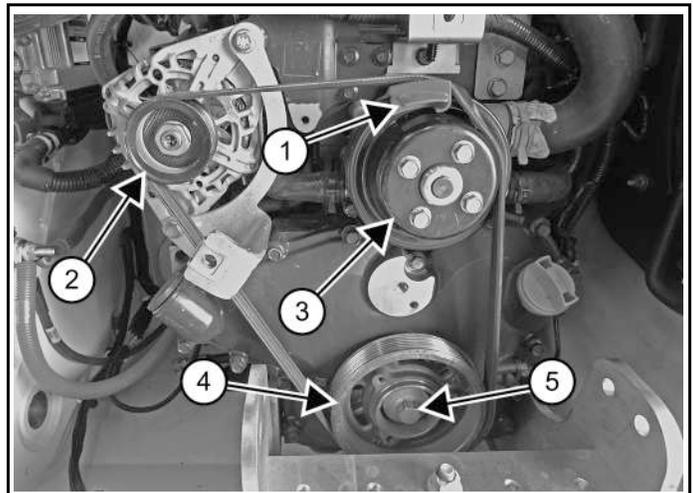
3. Loosen three fasteners (Item 1) and remove belt shield (Item 2) [Figure 308].

Figure 309



4. Remove two bolts (Item 2) and bracket (Item 1) [Figure 309].
5. Cut the old belt and remove the belt from the pulleys.
6. Inspect the pulleys for wear.

Figure 310



7. Install new belt around the crankshaft pulley (Item 4) and the alternator pulley (Item 2) [Figure 310].
8. Position the belt and the belt tool (Item 1) on the top side of the water pump pulley (Item 3) [Figure 310].
9. Rotate the engine clockwise using the large crankshaft pulley bolt (Item 5) [Figure 310].

Do not use the alternator pulley nut or the water pump pulley bolts.

10. Ensure the belt is fully installed on all three pulleys.
11. Repeat the procedure using the belt tool on each pulley if necessary until the belt is fully installed.
12. Remove the belt tool.
13. Install the bracket [Figure 309].
14. Install the belt shield [Figure 308].
15. Close the rear door.

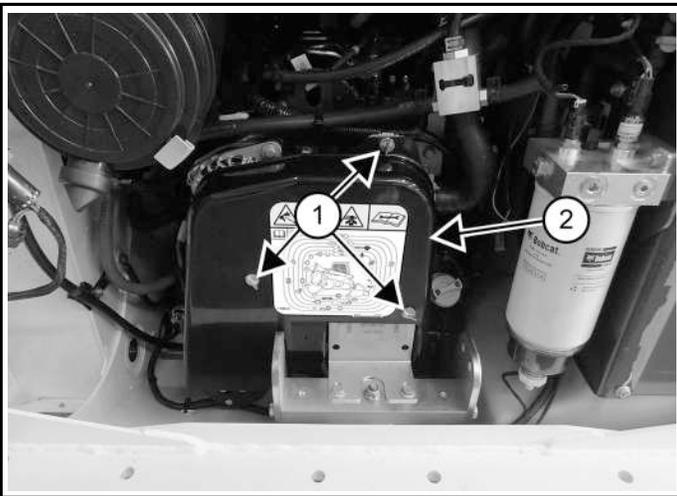
Adjusting Belt (Machines With Air Conditioning)

- The air conditioning belt has a spring loaded idler that constantly maintains the correct belt tension. This belt does not require periodic adjustment.

Replacing Belt (Machines With Air Conditioning)

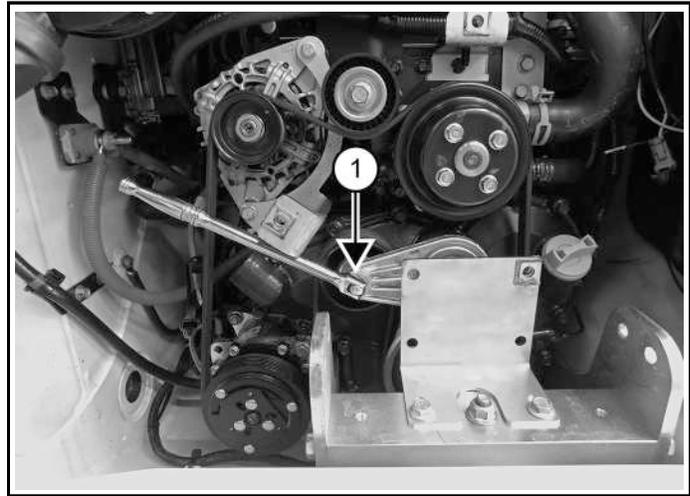
1. Stop the engine.
2. Open the rear door.

Figure 311



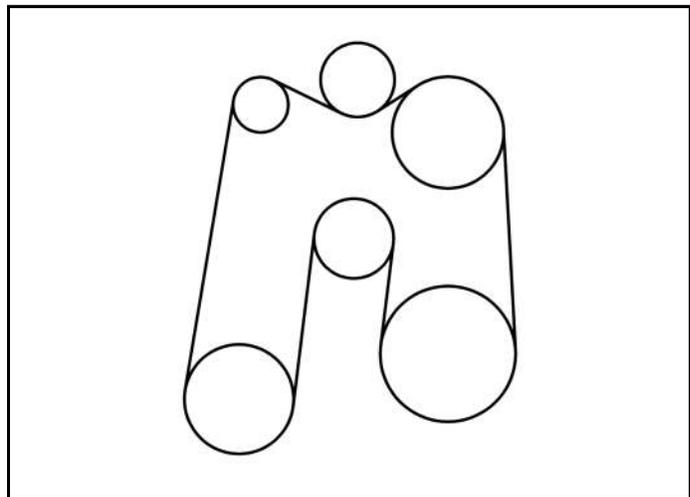
3. Loosen three fasteners (Item 1) and remove belt shield (Item 2) [Figure 311].

Figure 312



4. Insert a breaker bar into the hole provided in the idler pulley (Item 1) [Figure 312] and push down to release belt tension.
5. Remove the belt from the pulleys.
6. Inspect the pulleys for wear.

Figure 313



7. Install new belt around the pulleys using the routing diagram [Figure 313].
8. Allow idler pulley to tension belt and remove breaker bar.
9. Ensure the belt is fully installed on all six pulleys.
10. Install the belt shield [Figure 311].
11. Close the rear door.

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. ◀

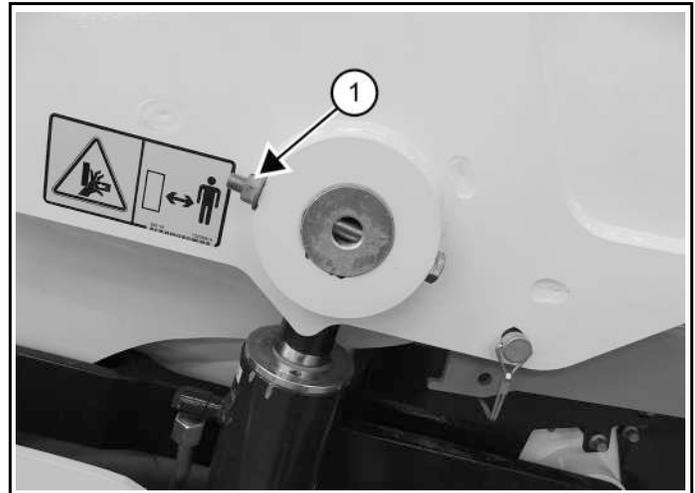
W-3015

See your Bobcat dealer for service if you believe that your automatic ride control accumulator charge is low.

PIVOT PINS

Checking Pivot Pin Torque

Figure 314



P200240A

Some lift arm and cylinder pivots have a large pin held in position with a retainer bolt and locknut (Item 1) [Figure 314].

- Ensure that the locknuts are tightened to 18,3 – 22,4 N•m (13.5 – 16.5 ft-lb) torque.

MACHINE LUBRICATION

Lubricating Grease Fittings

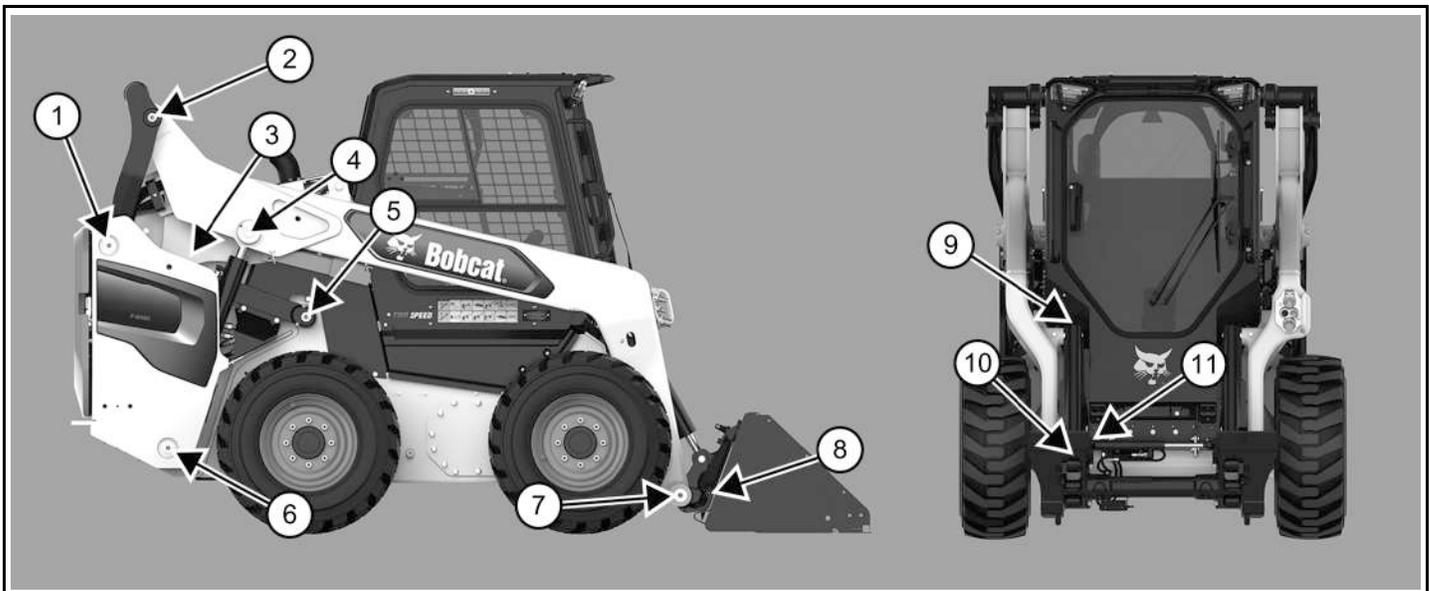
See the service schedule for the correct service interval. (See Service Schedule on Page 124)

Record the operating hours each time you lubricate the Bobcat machine.

Always use a good quality lithium based multipurpose grease when you lubricate the machine. Apply the lubricant until extra grease shows.

1. Remove attachment from the machine. (See Removing Attachments on Page 110) or (See Removing Attachments on Page 114)
2. Stop the engine.
3. Lubricate the following grease fittings:

Figure 315



P200601A

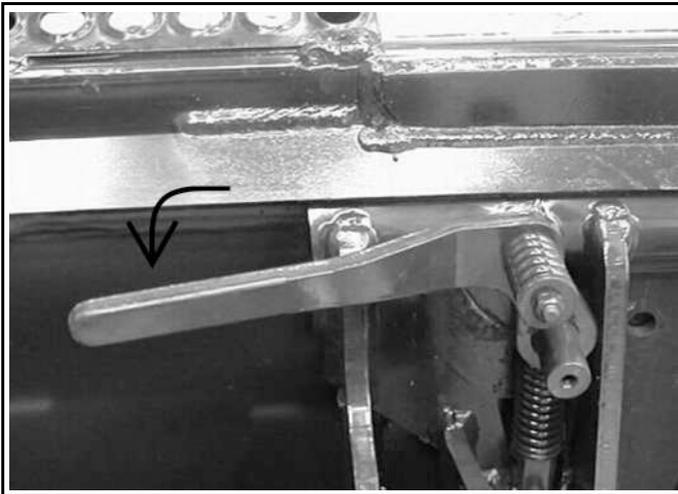
REF	DESCRIPTION	QUANTITY
1	Lower Follower Link	1 per side
2	Upper Follower Link	1 per side
3	Rear Driver Assembly	1 per side
4	Rod End Lift Cylinder	1 per side
5	Front Driver Assembly	1 per side
6	Base End Lift Cylinder	1 per side
7	Bob-Tach Pivot Pin	1 per side
8	Bob-Tach Wedge Pin	1 per side
9	Base End Tilt Cylinder	1 per side

REF	DESCRIPTION	QUANTITY
10	Rod End Tilt Cylinder	1 per side
11	Power Bob-Tach Hydraulic Cylinder (If equipped)	1 per side

BOB-TACH (HAND LEVER)

Inspecting And Maintaining Hand-Lever Bob-Tach

Figure 316



P855134

1. Move the Bob-Tach levers down to engage the wedges [Figure 316].

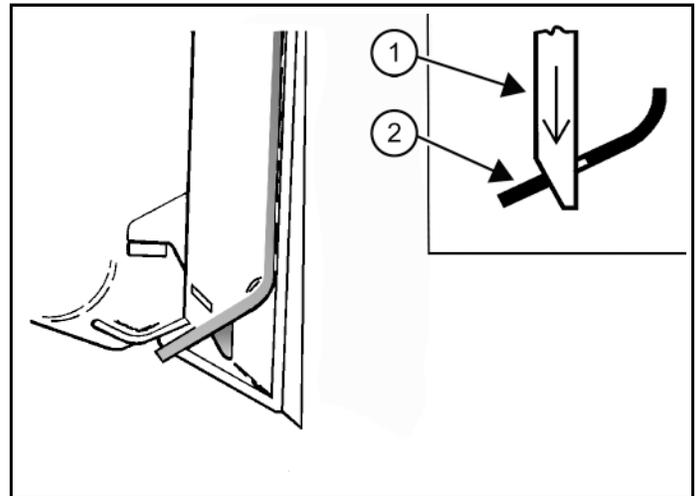
The levers and wedges must move freely.

⚠ 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

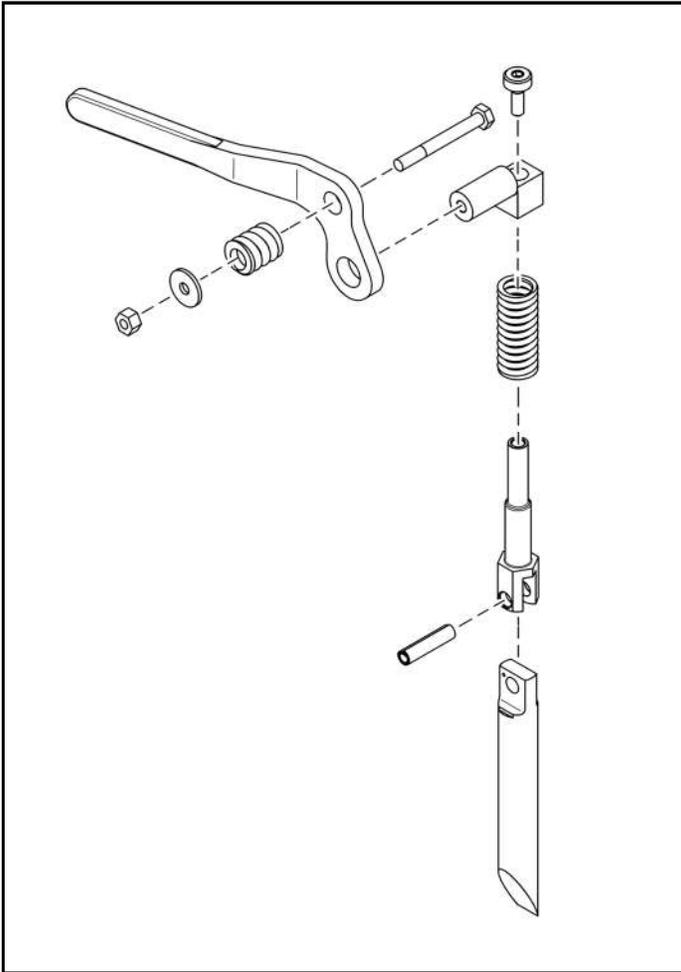
Figure 317



NA3450B

- The wedges (Item 1) [Figure 317] 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 317].
- If the wedges do not contact the lower edge of the holes [Figure 317], the attachment will be loose and can come off the Bob-Tach.

Figure 318



2. Inspect the mounting frame on the attachment and Bob-Tach, linkages, and wedges for excessive wear or damage [Figure 318].
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. and .

BOB-TACH (POWER)

Inspecting And Maintaining Power Bob-Tach

Figure 319



1. Push and hold the Bob-Tach Wedges Up button (Item 1) [Figure 319] until wedges are fully raised.
2. Push and hold the Bob-Tach Wedges Down button (Item 2) [Figure 319] until the wedges are fully down.

The levers and wedges must move freely.

⚠ WARNING

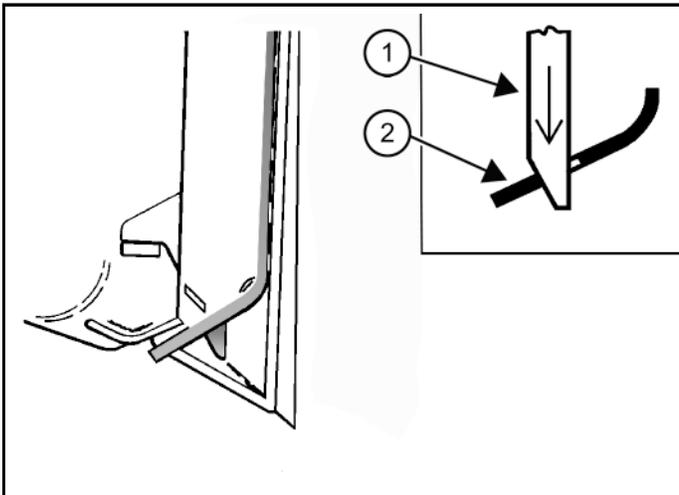
CRUSHING HAZARD

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

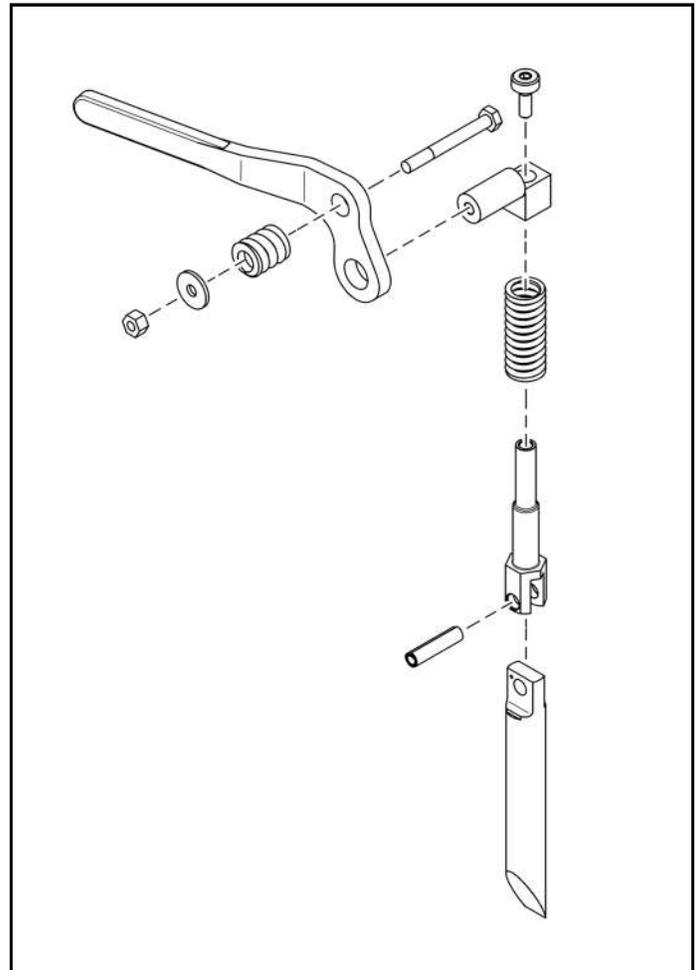
Figure 320



NA3450B

- The wedges (Item 1) [Figure 320] 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 320].
- If the wedges do not contact the lower edge of the holes [Figure 320], the attachment will be loose and can come off the Bob-Tach.

Figure 321



NA13065S

3. Inspect the mounting frame on the attachment and Bob-Tach, linkages, and wedges for excessive wear or damage [Figure 321].
4. Replace any parts that are damaged, bent, or missing.
5. Keep all fasteners tight.
6. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.
7. Lubricate the wedges.
(See Service Schedule on Page 124) and
(See Machine Lubrication on Page 182) .

MACHINE STORAGE AND RETURN TO SERVICE

Machine Extended Storage Procedure

You may decide to store your Bobcat machine for an extended period of time. Perform the procedures below for 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 tires.
- Put grease on any exposed cylinder rods.
- Put fuel stabilizer into the fuel tank and operate the engine a few minutes to circulate the stabilizer to the pump and fuel injectors.

If biodiesel blend fuel has been used, perform the following:

Drain the fuel tank, refill with 100% petroleum diesel fuel, add fuel stabilizer, and operate 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 into the neutral position.
- Remove the battery. Charge the battery. Store the battery in a cool dry location above freezing temperatures and charge the battery periodically during storage.
- Cover the exhaust pipe opening.
- Tag the machine to indicate that the machine is in storage condition.

Machine Return To Service Procedure

After the Bobcat machine has been in storage, perform the procedures below to return the machine to service:

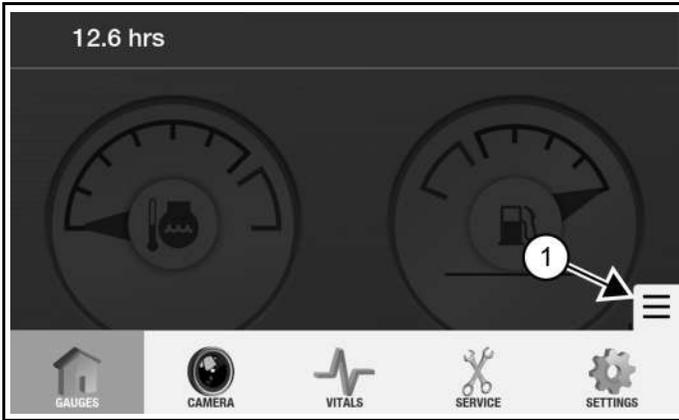
- Check the engine oil and hydraulic fluid levels; check coolant level.

- Install a fully charged battery.
- Remove grease from exposed cylinder rods.
- Check all belt tensions.
- Be sure all shields and guards are in position.
- Lubricate the machine.
- Check tire inflation and remove blocks from under frame.
- Remove cover from exhaust pipe opening.
- Start the engine and operate for a few minutes while observing the instrument panels and systems for correct operation.
- Operate machine, check for correct function.
- Stop the engine.
- Check for leaks. Repair as needed.

NAVIGATION (STANDARD DISPLAY)

Navigation Bar

Figure 322



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 322] 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 188)
- **SERVICE** -
(See Service (Standard Display) on Page 189)
- **SETTINGS** -
(See Settings (Standard Display) on Page 190)

Viewing Active Shortcuts

Figure 323



- The following icons can appear in the navigation handle position [Figure 323]. Selecting the icon will take you directly to the indicated screen.

ICON	DESCRIPTION	FUNCTION
	Navigation Handle	Opens and closes the navigation bar (See Navigation Bar on Page 187)
	Service Due	Opens the service screen (See Record A Service on Page 189)
	Software Update	Opens the software screen (See Software on Page 194)
	Machine Derate	Opens the machine performance screen (See Vital Detail And Machine Performance on Page 188)
	Warning	Opens the service codes screen (See View Service Codes on Page 189)

VITALS (STANDARD DISPLAY)

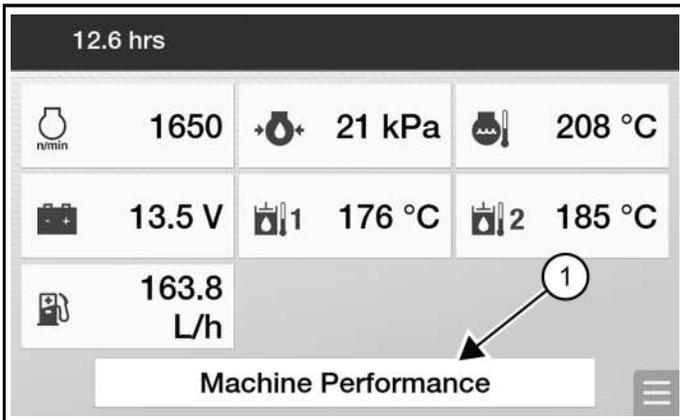
Vital Detail And Machine Performance

Figure 324



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 324].
2. Select **[VITALS]** (Item 2) [Figure 324].

Figure 325



3. The following vitals can be viewed in a digital format [Figure 325]:
 - Engine Speed (RPM)
 - Engine Oil Pressure
 - Engine Coolant Temperature
 - System Voltage
 - Hydraulic Fluid Temperature - Pump Case Drain
 - Hydraulic Fluid Temperature - Drive Motor Case Drain
 - Fuel Usage Per Hour

4. Select **[MACHINE PERFORMANCE]** (Item 1) [Figure 325] to view limitations or restrictions that prevent machine damage.

Figure 326

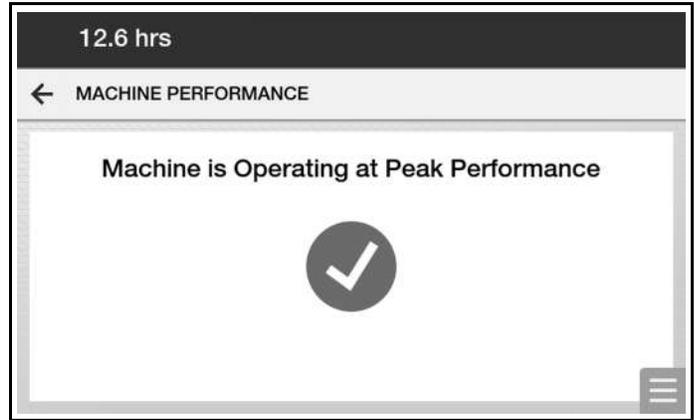
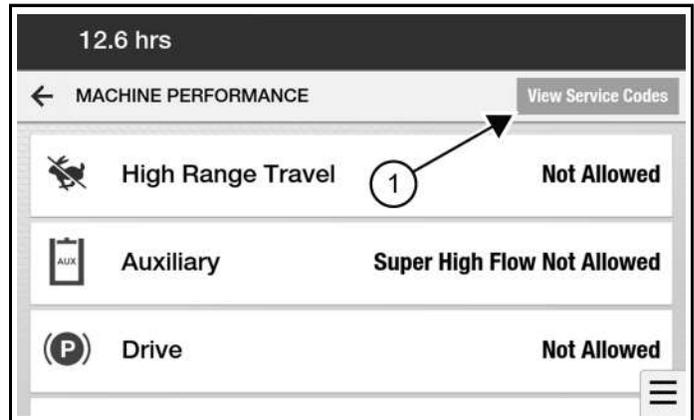


Figure 327



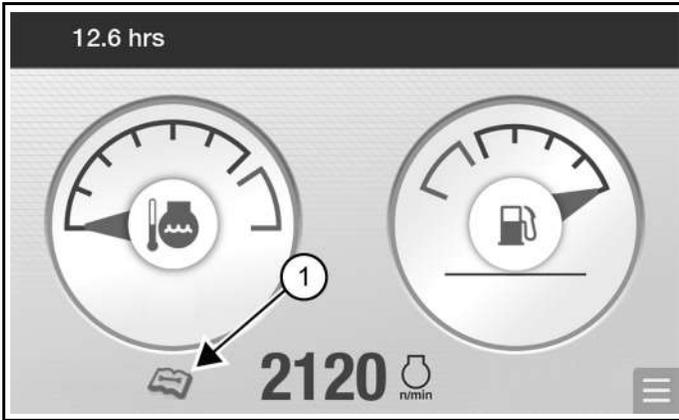
Examples of **MACHINE PERFORMANCE** screens are shown in [Figure 326] and [Figure 327]. Associated service codes may also be listed.

5. Select **[VIEW SERVICE CODES]** (Item 1) [Figure 327] to take you directly to the **SERVICE CODES** screen.

SERVICE (STANDARD DISPLAY)

Record A Service

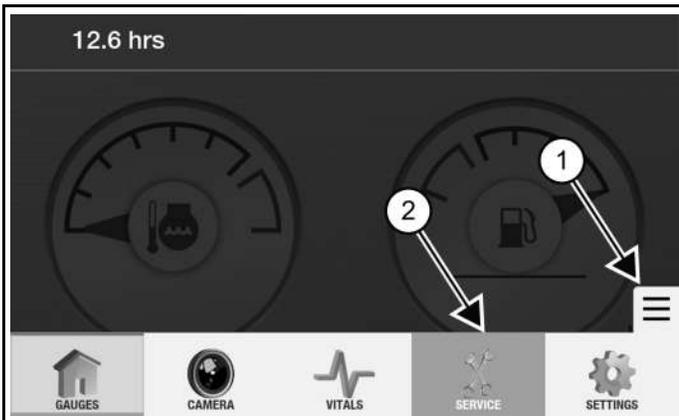
Figure 328



NA3697A

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 328].

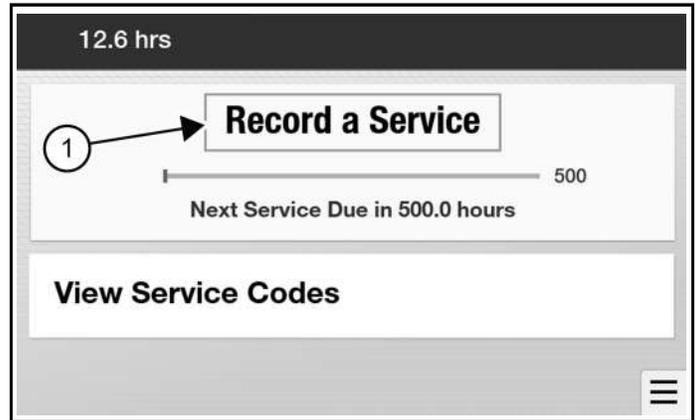
Figure 329



NA3700A

1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 329].
2. Select **[SERVICE]** (Item 2) [Figure 329].

Figure 330

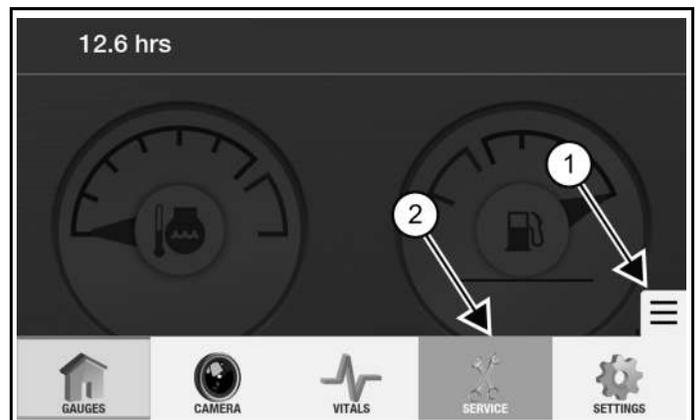


NA3699A

3. Select **[RECORD A SERVICE]** (Item 1) [Figure 330] to record the service as completed.

View Service Codes

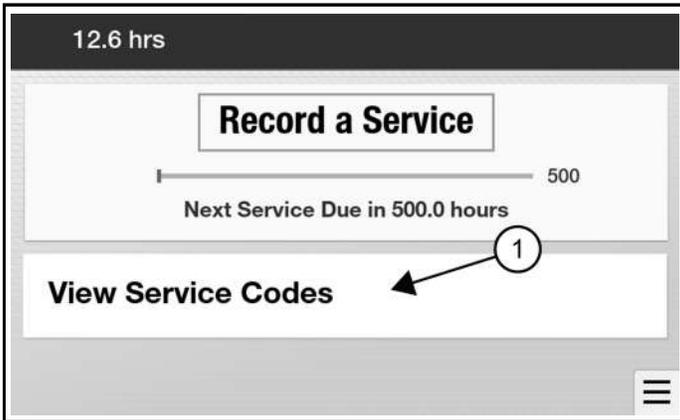
Figure 331



NA3700A

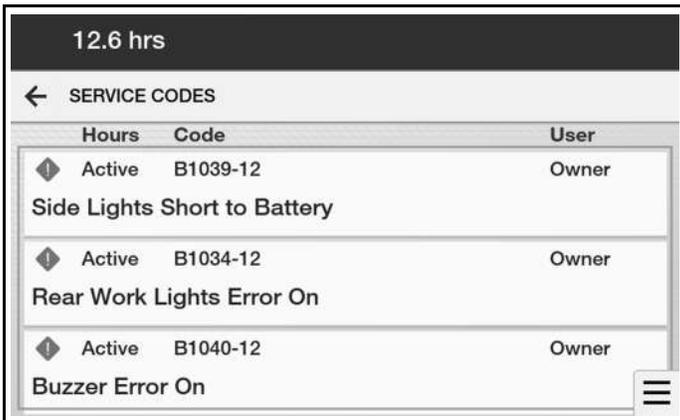
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 331].
2. Select **[SERVICE]** (Item 2) [Figure 331].

Figure 332



3. Select **[VIEW SERVICE CODES]** (Item 1) [Figure 332].

Figure 333



4. Scroll down if necessary to see all service codes [Figure 333].

SETTINGS (STANDARD DISPLAY)

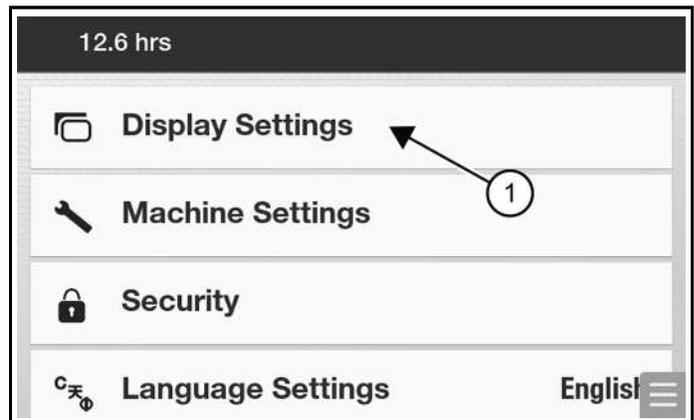
Display Settings

Figure 334



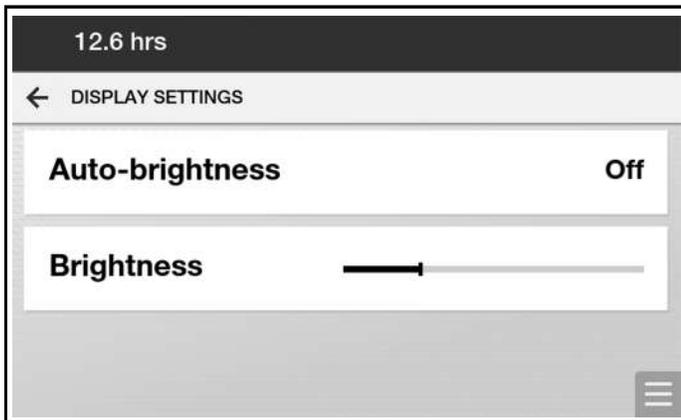
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 334].
2. Select **[SETTINGS]** (Item 2) [Figure 334].

Figure 335



3. Select **[DISPLAY SETTINGS]** (Item 1) [Figure 335].

Figure 336

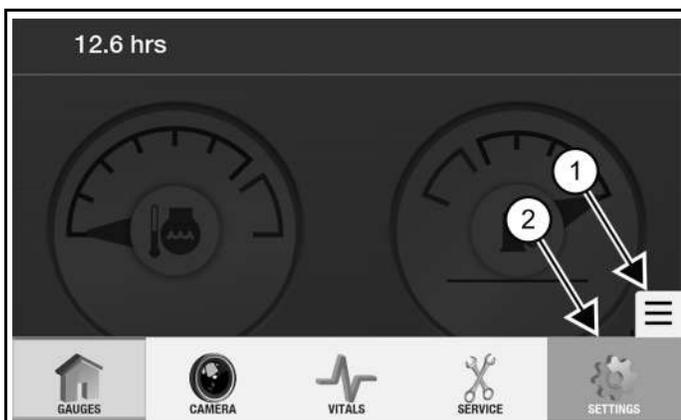


4. The following display settings are available [Figure 336]:

- Auto brightness on or off
- Screen brightness adjustment

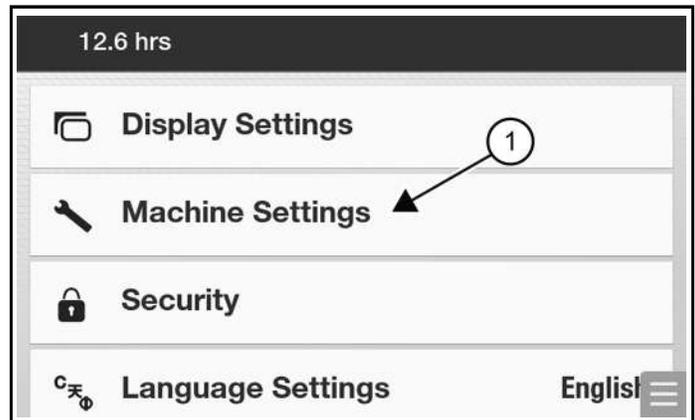
Machine Settings

Figure 337



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 337].
2. Select **[SETTINGS]** (Item 2) [Figure 337].

Figure 338



3. Select **[MACHINE SETTINGS]** (Item 1) [Figure 338].

Figure 339

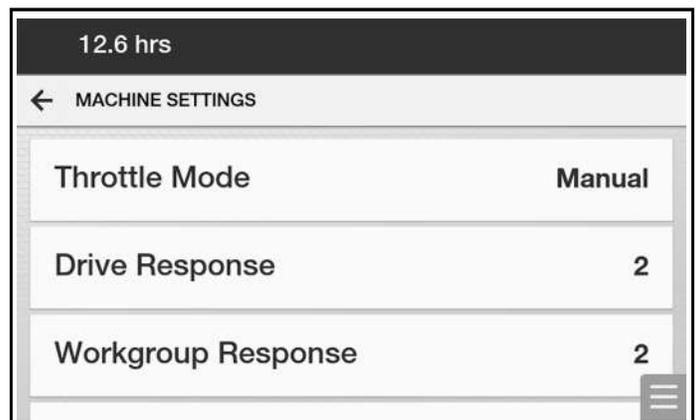
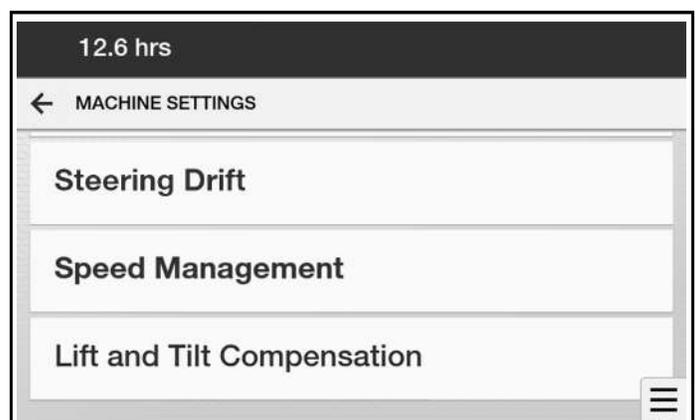


Figure 340

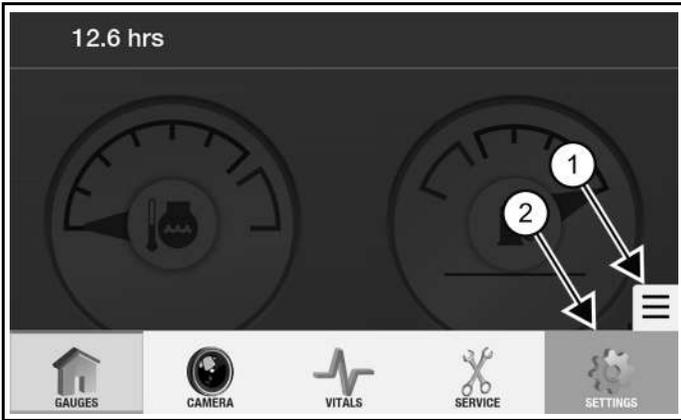


4. The following machine settings may be available depending on machine configuration [Figure 339] and [Figure 340]:

- Throttle Mode (See Auto Idle on Page 62) and (See Auto Throttle on Page 64)
- Drive Response (See Drive Response on Page 77)
- Workgroup Response (See Workgroup Response on Page 82)
- Steering Drift (See Steering Drift Compensation on Page 78)
- Speed Management (See Speed Management on Page 75)
- Lift and Tilt Compensation (See Lift and Tilt Compensation on Page 80)

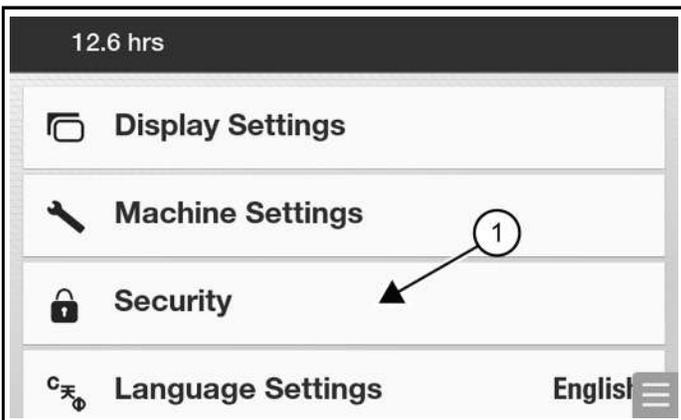
Security Settings

Figure 341



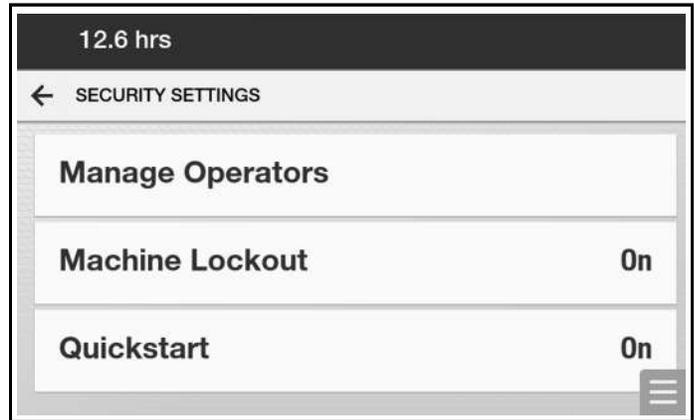
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 341].
2. Select **[SETTINGS]** (Item 2) [Figure 341].

Figure 342



3. Select **[SECURITY]** (Item 1) [Figure 342].

Figure 343



4. The following security settings are available [Figure 343]:

- Manage Operators (See Security Settings (Manage Operators) on Page 192)
- 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

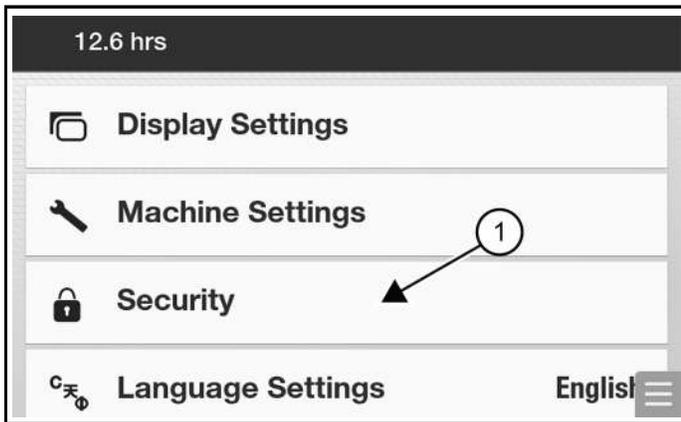
Security Settings (Manage Operators)

Figure 344



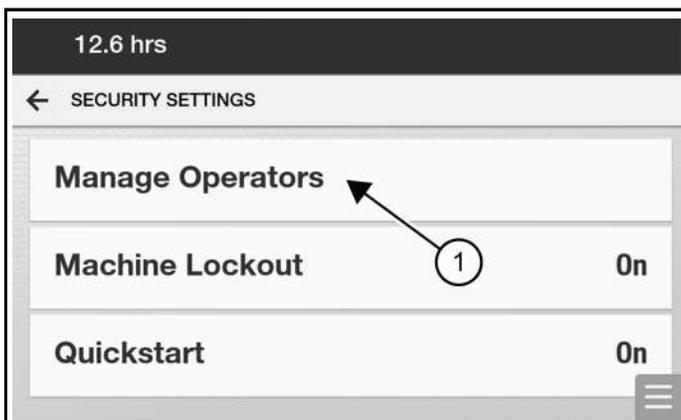
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 344].
2. Select **[SETTINGS]** (Item 2) [Figure 344].

Figure 345



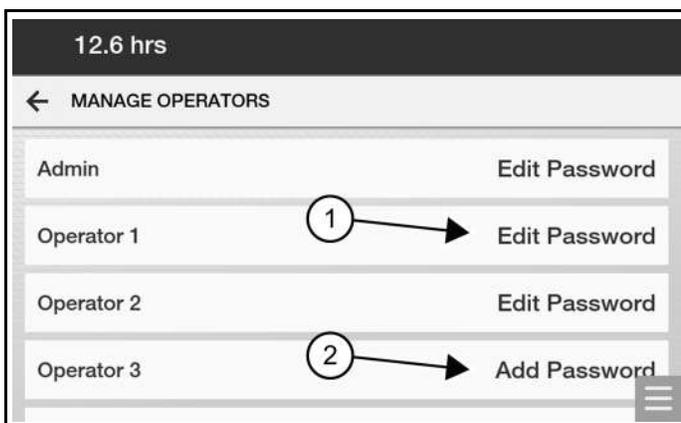
3. Select **[SECURITY]** (Item 1) [Figure 345].

Figure 346



4. Select **[MANAGE OPERATORS]** (Item 1) [Figure 346].

Figure 347



5. Select **[ADD PASSWORD]** (Item 2) [Figure 347] to enter a new operator.

A maximum of four operators can be assigned.

6. Select **[EDIT PASSWORD]** (Item 1) [Figure 347] to change a password.

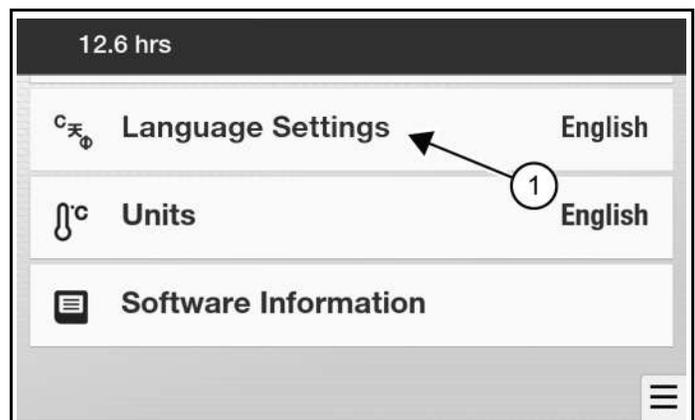
Language Settings

Figure 348



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 348].
2. Select **[SETTINGS]** (Item 2) [Figure 348].

Figure 349



3. Select **[LANGUAGE SETTINGS]** (Item 1) [Figure 349].

Figure 350



4. Scroll up or down and select the desired language [Figure 350]. The selected language will take effect immediately.

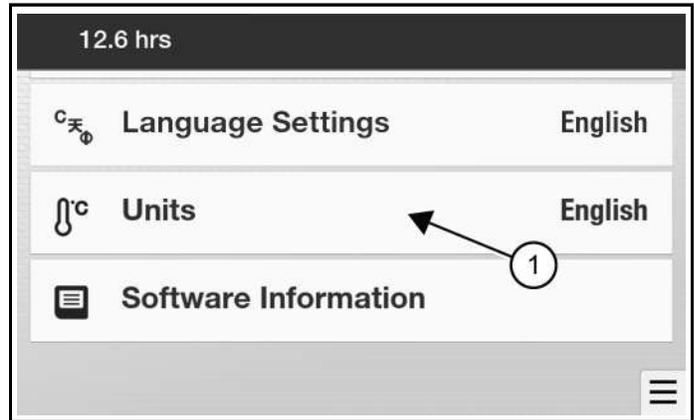
Units

Figure 351



1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 351].
2. Select **[SETTINGS]** (Item 2) [Figure 351].

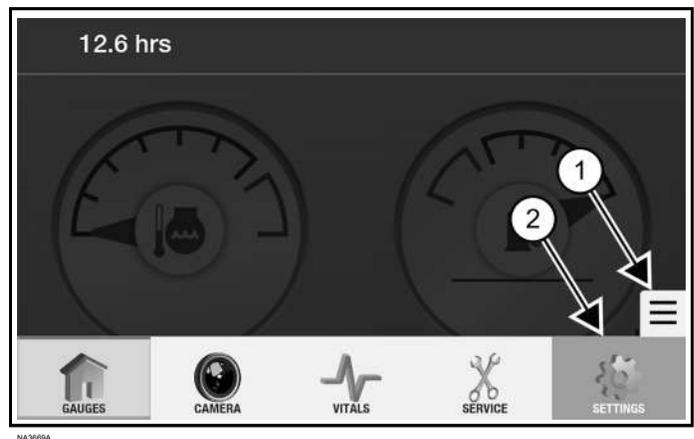
Figure 352



3. Scroll down and select **[UNITS]** (Item 1) [Figure 352] to toggle between English and Metric.

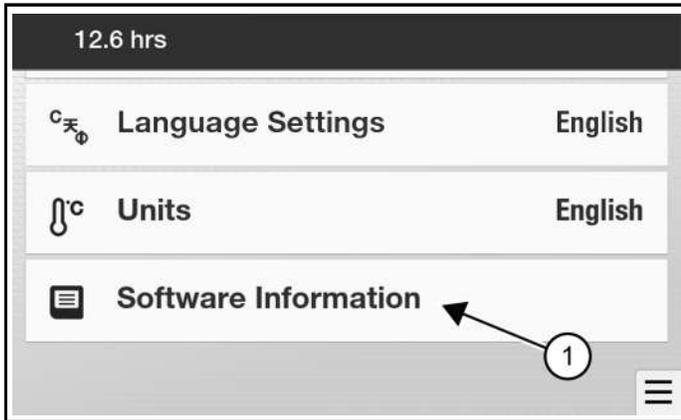
Software

Figure 353



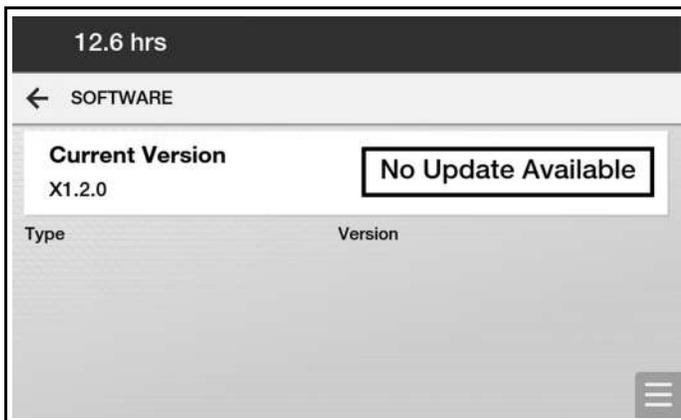
1. Select the **[NAVIGATION HANDLE]** icon (Item 1) [Figure 353].
2. Select **[SETTINGS]** (Item 2) [Figure 353].

Figure 354



3. Scroll down and select **[SOFTWARE INFORMATION]** (Item 1) [Figure 354].

Figure 355



4. Your machine's current software version is shown [Figure 355]. Software updates can only be performed by your dealer.

GAUGES (TOUCH DISPLAY)

Vital Detail And Machine Performance

Figure 356

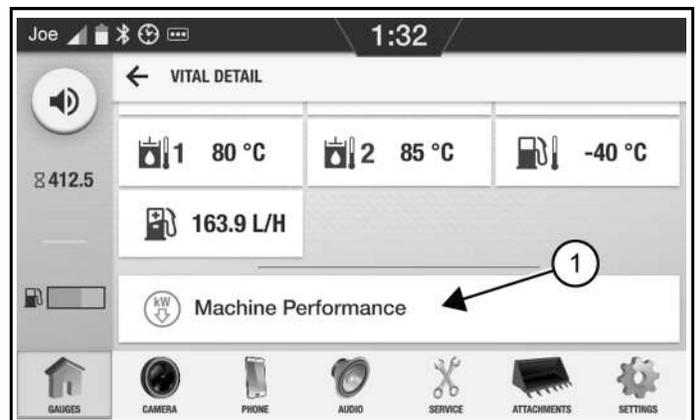


1. Select the **[VITAL DETAIL]** icon (Item 1) [Figure 356].

Figure 357



Figure 358



2. The following vitals can be viewed in a digital format [Figure 357] and [Figure 358]:

- Engine Speed (RPM)
- System Voltage
- Engine Oil Pressure
- Engine Oil Temperature
- Engine Coolant Temperature
- Intake Air Temperature
- Hydraulic Fluid Temperature - Pump Case Drain
- Hydraulic Fluid Temperature - Drive Motor Case Drain
- Fuel Temperature
- Fuel Consumption

3. Select **[MACHINE PERFORMANCE]** (Item 1) [Figure 358] to view limitations or restrictions that prevent machine damage.

Figure 359

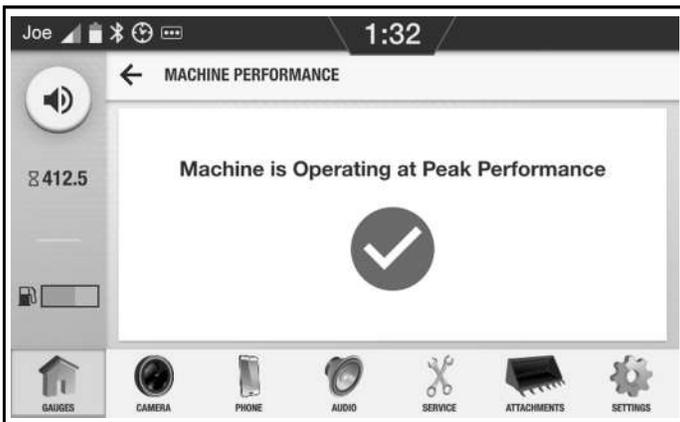
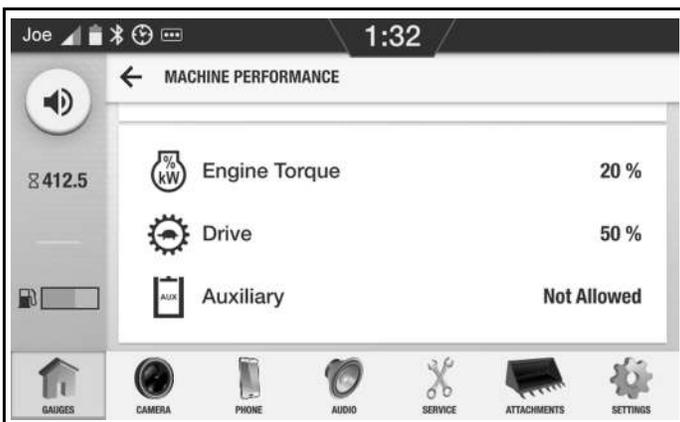


Figure 360



Examples of machine performance screens are shown in [Figure 359] and [Figure 360]. Associated service codes

may also be listed with a link to take you directly to the service codes screen.

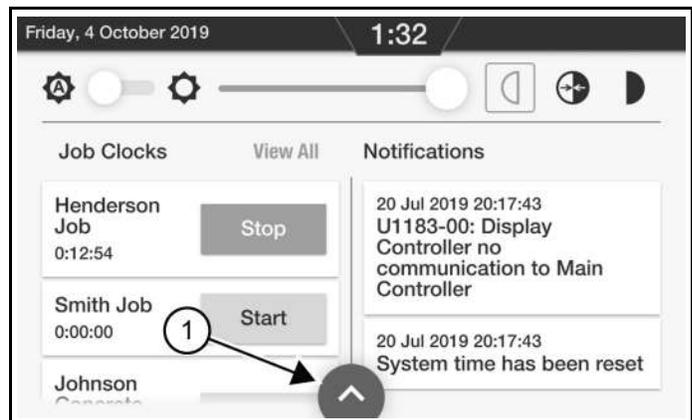
Notification Drawer

Figure 361



1. Select the **[CURRENT TIME]** icon (Item 1) [Figure 361] to open the notification drawer.

Figure 362



2. The notification drawer [Figure 362] provides quick access to:
 - Automatic screen brightness on / off setting
 - Screen brightness adjustment
 - Day / Night Mode settings (day, auto, night)
 - Job Clocks (See Job Clocks on Page 212)
 - Notifications - Selecting a notification will take you to the associated screen. Swiping right will dismiss the notification.
3. Select the **[ARROW UP]** icon (Item 1) [Figure 362] to close the notification drawer.

CAMERA (TOUCH DISPLAY)

Camera Settings

Figure 363



NA344C

1. Select **[CAMERA]** (Item 1) [Figure 363].

Figure 364



NA3584B

2. Select the **[CAMERA SETTINGS]** icon (Item 1) [Figure 364].

Figure 365



NA3585A

3. The following camera settings are available [Figure 365]:
 - Back-up lines on or off.
 - Adjustment of the back-up lines.
 - Center line on or off.
4. Select the **[BACK ARROW]** icon (Item 1) [Figure 365] to return to the **CAMERA** screen.

PHONE (TOUCH DISPLAY)

See your Touch Display User Guide for more information about phone settings.

AUDIO (TOUCH DISPLAY)

See your Touch Display User Guide for more information about audio settings.

SERVICE (TOUCH DISPLAY)

Record A Service

Figure 366



NA3647A

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 366].

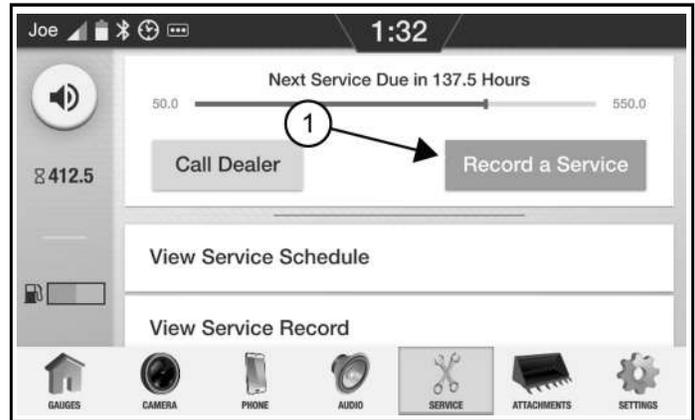
Figure 367



NA344D

1. Select **[SERVICE]** (Item 1) [Figure 367].

Figure 368

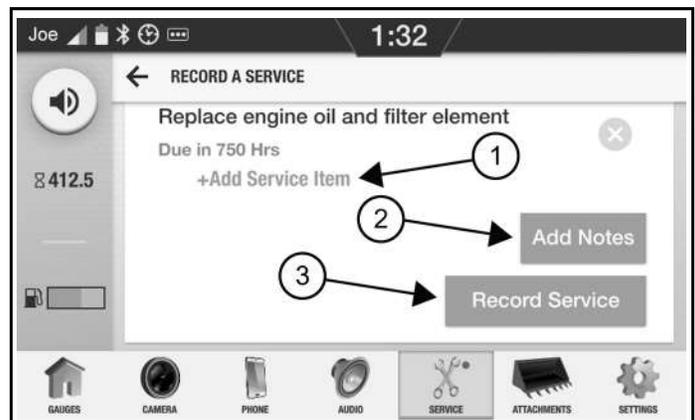


NA3586A

The time until next service due can be viewed at the top of the screen.

2. Select **[RECORD A SERVICE]** (Item 1) [Figure 368].

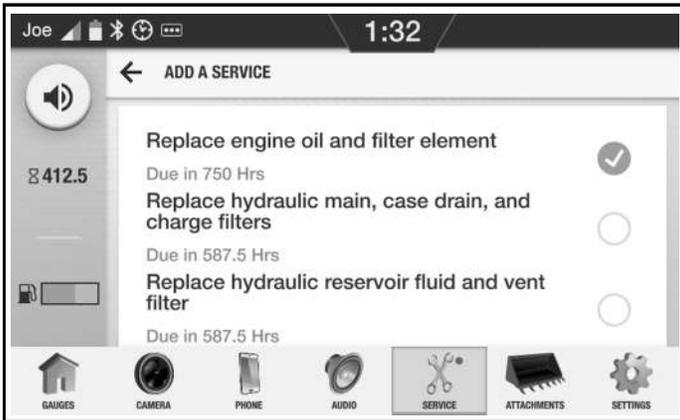
Figure 369



NA3586A

3. Select **[ADD SERVICE ITEM]** (Item 1) [Figure 369] to add new service items.

Figure 370



4. Select or deselect service items you want to add or remove from the service being recorded. Select **[BACK ARROW]** to return to **RECORD A SERVICE** screen [Figure 370].
5. Select **[ADD NOTES]** (Item 2) [Figure 369] to add any information you wish to save about the service being recorded.
6. Select **[RECORD SERVICE]** (Item 3) [Figure 369] to record the service.

View Service Schedule

Figure 371



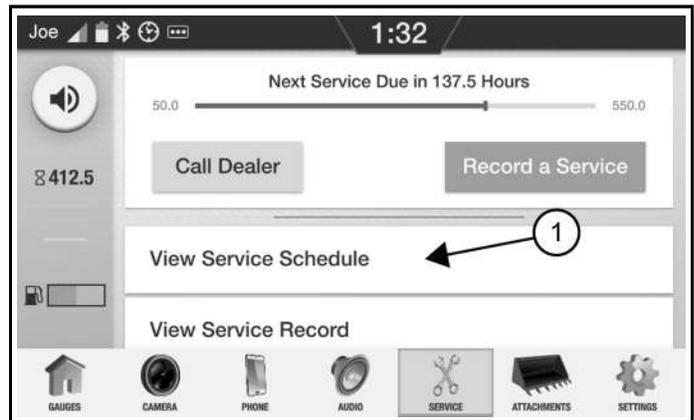
The service schedule information is based off the machine service schedule. The display will notify the operator 10 hours prior to the next service due and continue until the service is completed (Item 1) [Figure 371].

Figure 372



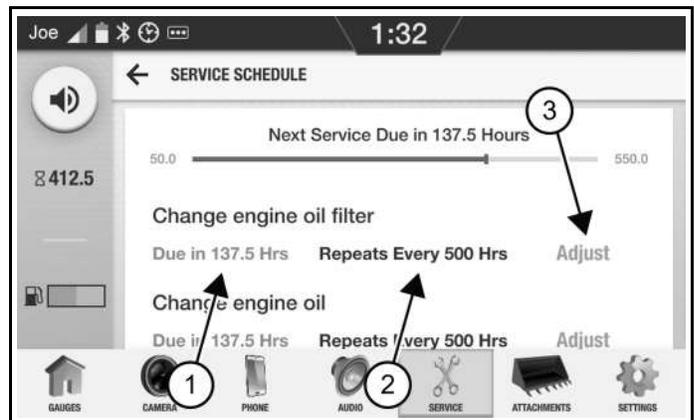
1. Select **[SERVICE]** (Item 1) [Figure 372].

Figure 373



2. Select **[VIEW SERVICE SCHEDULE]** (Item 1) [Figure 373].

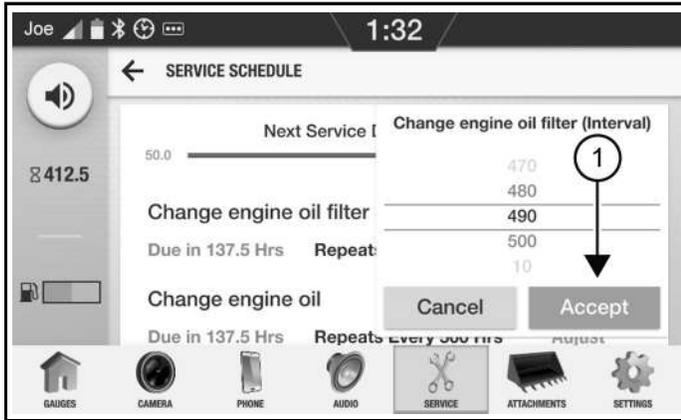
Figure 374



The time until the next service is due (Item 1) and the maintenance interval (Item 2) [Figure 374] are shown for each service item.

3. Select **[ADJUST]** (Item 3) [Figure 374] to change the maintenance interval of any service item. The interval can be more frequent, but cannot extend past the base requirement.

Figure 375



4. Scroll to the desired maintenance interval and select **[ACCEPT]** (Item 1) [Figure 375] to change the maintenance interval for that service item.

View Service Record

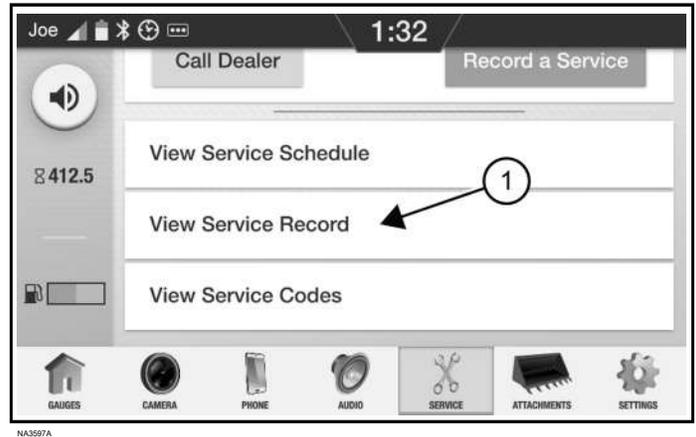
The service record is a list of all completed services for your machine.

Figure 376



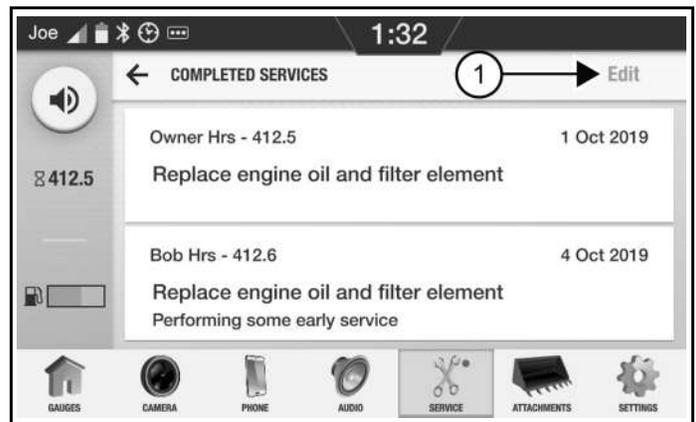
1. Select **[SERVICE]** (Item 1) [Figure 376].

Figure 377



2. Scroll down and select **[VIEW SERVICE RECORD]** (Item 1) [Figure 377].

Figure 378



3. Select **[EDIT]** (Item 1) [Figure 378] to remove a record. The master or owner password must be entered to continue if not already logged in with the owner password.

Figure 379



4. Scroll to the record you want to remove. Select the [-] icon (Item 2) and select **[SAVE]** (Item 3) to remove the service record or select the **[X]** icon (Item 1) [Figure 379] to cancel.

View Service Codes

Figure 380



1. Select **[SERVICE]** (Item 1) [Figure 380].

Figure 381



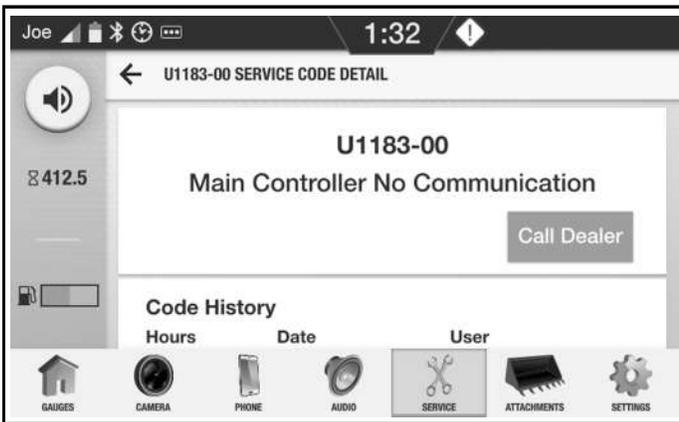
2. Scroll down and select **[VIEW SERVICE CODES]** (Item 1) [Figure 381].

Figure 382



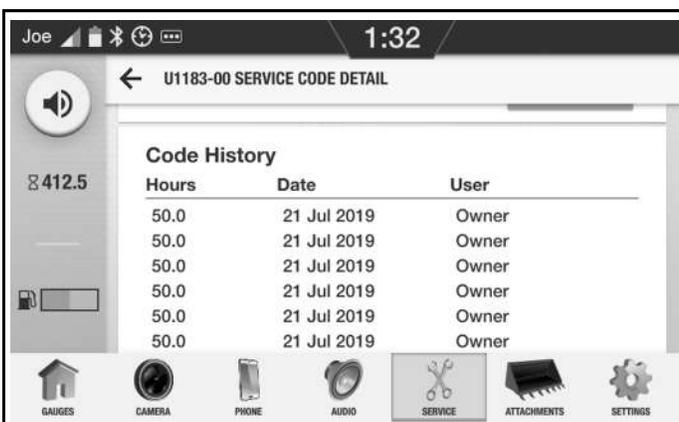
3. Scroll down if necessary to see all service codes [Figure 382].
4. Select any service code to see detailed information [Figure 382].

Figure 383



The **SERVICE CODE DETAIL** screen allows calling your dealer if they entered their phone number on the dealer screen and a phone is paired to the machine [Figure 383].

Figure 384



5. Scroll down to see a history that shows the machine hours, the date, and the operator logged in each time the code was activated [Figure 384].

ATTACHMENTS (TOUCH DISPLAY)

Attachment Information

The display has basic operating information and helpful tips for many attachments.

Refer to the attachment list for approved attachments for this machine.
(See Features, Accessories, And Attachments on Page 13)

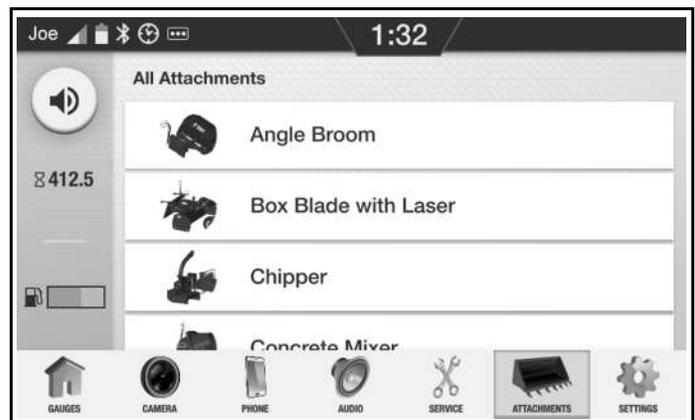
Always read and understand your attachment Operation & Maintenance Manual before using attachments.

Figure 385



1. Select **[ATTACHMENTS]** (Item 1) [Figure 385].

Figure 386



2. Scroll up or down and select the desired attachment [Figure 386].

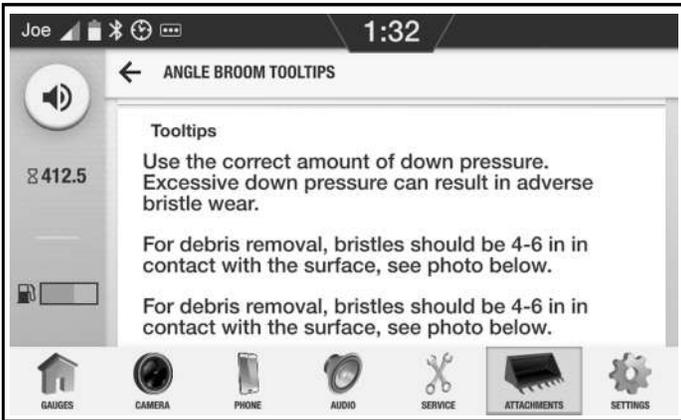
Figure 387



The basic control information for the attachment is shown [Figure 387].

3. Some attachments have more than one operating instruction. Select the **[LEFT]** or **[RIGHT]** arrow icons to view the additional instructions [Figure 387].

Figure 388



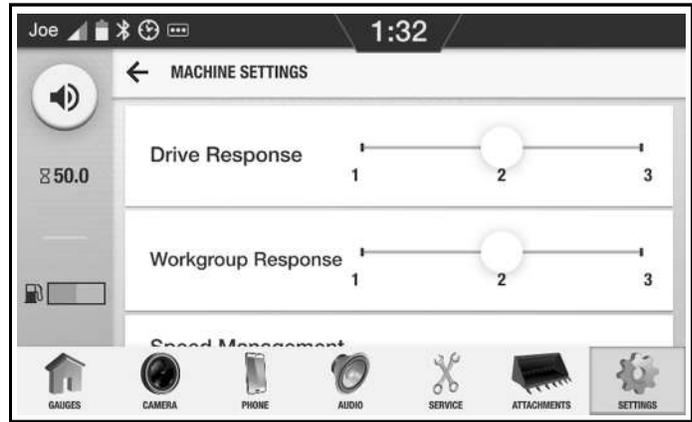
4. Scroll down to read the Tooltips for efficient use of the attachment [Figure 388].

SETTINGS (TOUCH DISPLAY)

Favorites

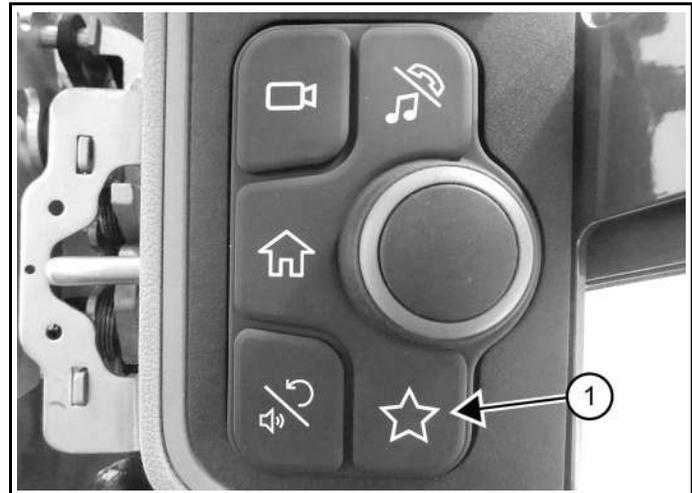
The favorite button on the jog shuttle can be configured to take you directly to screens that you commonly use.

Figure 389



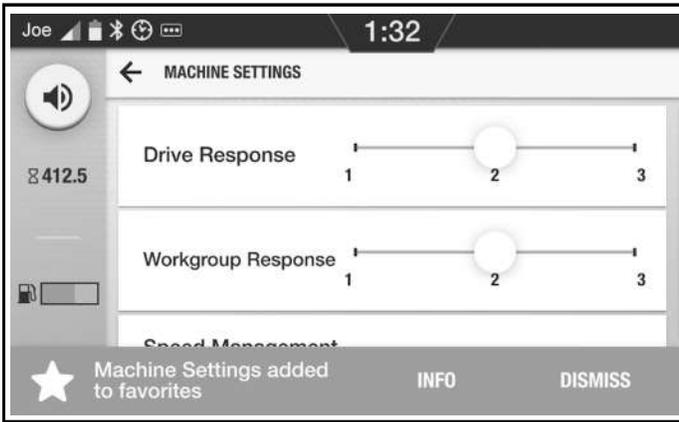
1. Navigate to a screen you commonly access [Figure 389].

Figure 390



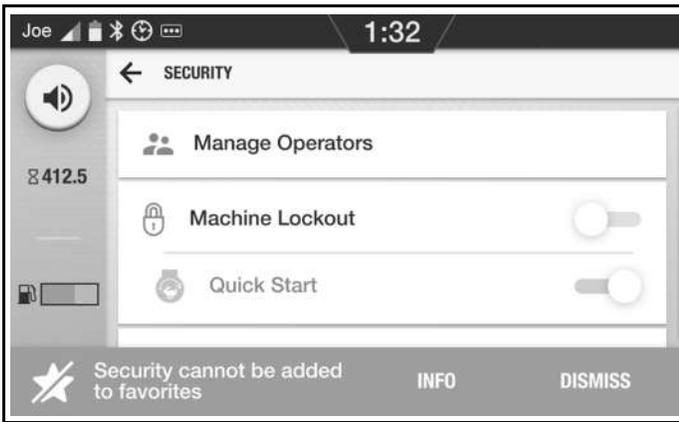
2. Press and hold the **[FAVORITE]** button (Item 1) [Figure 390] on the jog shuttle.

Figure 391



3. A notification will tell you that a favorite screen has been added [Figure 391].

Figure 392



Some screens are not allowed to be added to favorites [Figure 392].

Figure 393



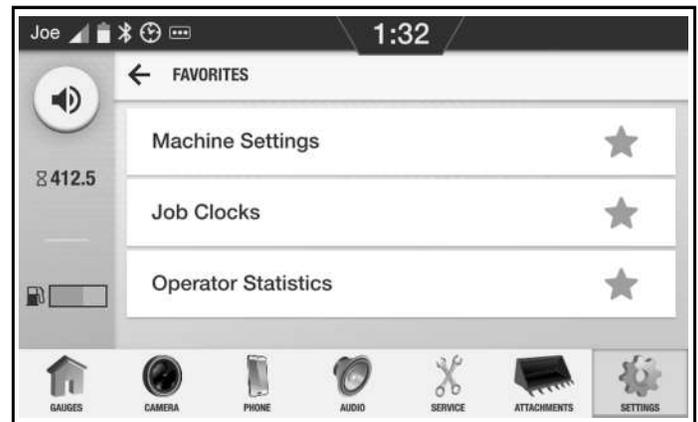
4. Select **[SETTINGS]** (Item 1) [Figure 393].

Figure 394



5. Select **[FAVORITES]** (Item 1) [Figure 394].

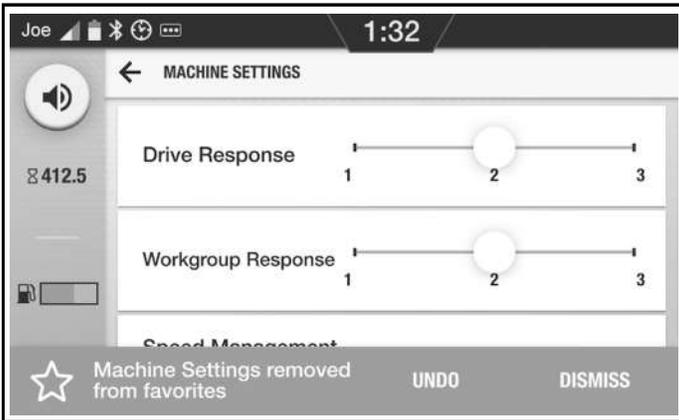
Figure 395



Your favorite screens are displayed [Figure 395].

Each press of the favorite button on the jog shuttle will cycle through your favorite screens.

Figure 396



6. Navigate to a screen you want to remove from favorites. Press and hold the **[FAVORITE]** button on the jog shuttle to remove the screen from your favorites [Figure 396].

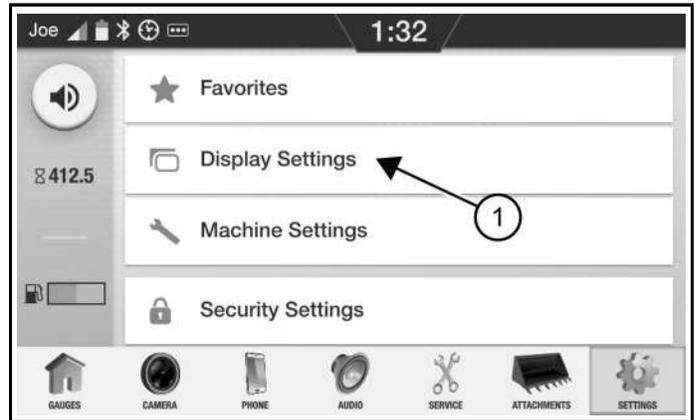
Display Settings

Figure 397



1. Select **[SETTINGS]** (Item 1) [Figure 397].

Figure 398



2. Select **[DISPLAY SETTINGS]** (Item 1) [Figure 398].

Figure 399

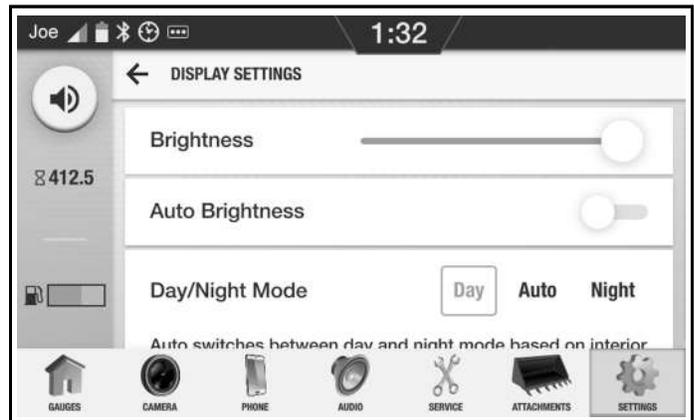
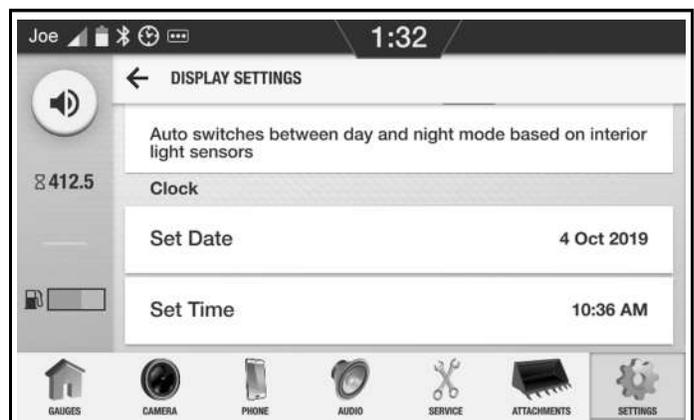


Figure 400



3. The following display settings are available [Figure 399] and [Figure 400]:

- Screen brightness adjustment (Not available when auto brightness is on.)
- Auto brightness on or off
- Day / night mode settings
- Set date
- Set time

Machine Settings

Figure 401



NA344F

1. Select **[SETTINGS]** (Item 1) [Figure 401].

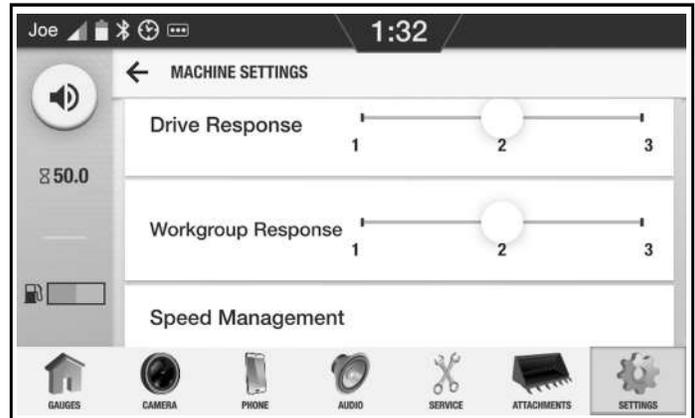
Figure 402



NA3613C

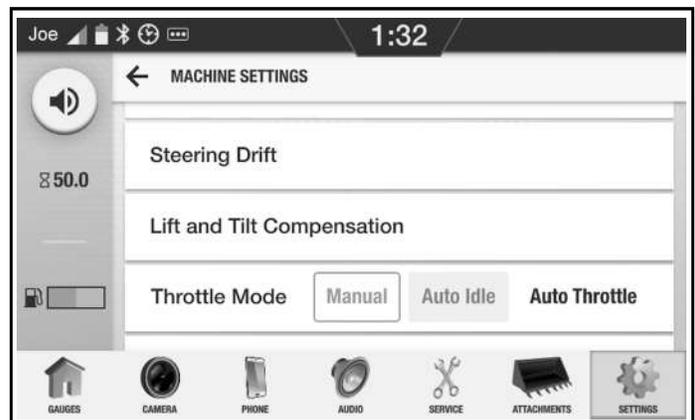
2. Select **[MACHINE SETTINGS]** (Item 1) [Figure 402].

Figure 403



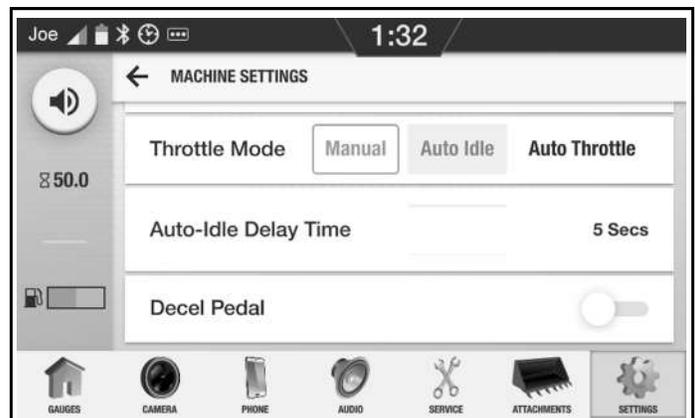
NA3650

Figure 404



NA3651

Figure 405



NA3652

3. The following machine settings may be available depending on machine configuration [Figure 403], [Figure 404], and [Figure 405]:
 - Drive Response (See Drive Response on Page 77)

- Workgroup Response (See Workgroup Response on Page 82)
- Speed Management (See Speed Management on Page 75)
- Steering Drift (See Steering Drift Compensation on Page 78)
- Lift and Tilt Compensation (See Lift and Tilt Compensation on Page 80)
- Throttle Mode (See Auto Idle on Page 62) and (See Auto Throttle on Page 64)
- Auto Idle Delay Time - Adjustable from 4 seconds to 250 seconds
- Decel Pedal (See Decel Pedal on Page 62)

Security Settings

Figure 406



1. Select **[SETTINGS]** (Item 1) [Figure 406].

Figure 407



2. Select **[SECURITY SETTINGS]** (Item 1) [Figure 407].

Figure 408

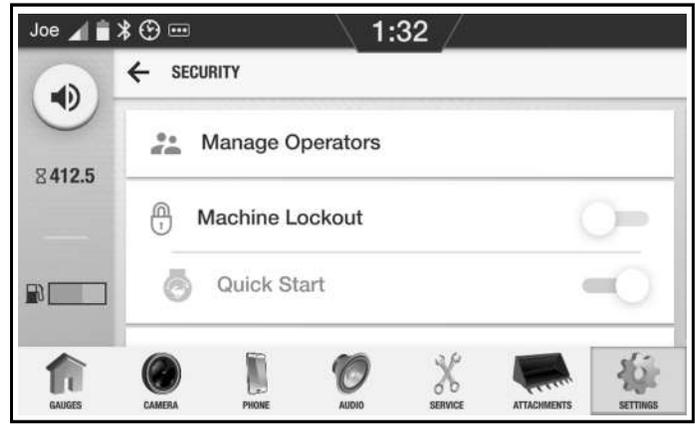


Figure 409



3. The following security settings are available [Figure 408] and [Figure 409]:
 - Manage Operators (See Security Settings (Manage Operators) on Page 209)
 - 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
 - Auto Lock Time at Key Off - Amount of time allowed to restart the machine without re-entering a password - Adjustable between immediate and 15 minutes
 - System Sleep Time at Key Off - Amount of time display will remain in sleep mode before turning off; sleep mode requires less time for the display to boot - Adjustable between off and 4 hours
 - Password Error Lockout - When on, five incorrect password attempts will temporarily lock out the machine.

Security Settings (Manage Operators)

Add Operator

Figure 410



NA344F

- 1. Select [SETTINGS] (Item 1) [Figure 410].

Figure 411



NA3613D

- 2. Select [SECURITY SETTINGS] (Item 1) [Figure 411].

Figure 412



NA3653A

- 3. Select [MANAGE OPERATORS] (Item 1) [Figure 412].

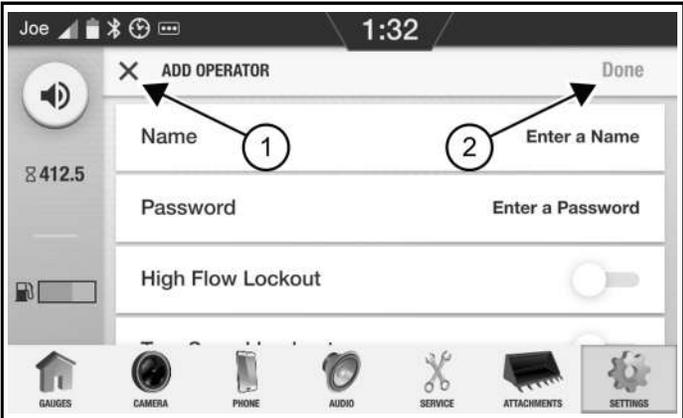
Figure 413



NA3653A

- 4. Select [ADD AN OPERATOR] (Item 1) [Figure 413] to enter a new operator.

Figure 414



NA3657A

5. The following information can be added [Figure 414]:
 - Operator Name
 - Operator Password
 - High-Flow Lockout on or off - When on, operator cannot activate high-flow auxiliary hydraulics
 - Two-Speed Lockout on or off - When on, operator cannot select high range speed
 - Radio Lockout on or off - When on, operator cannot operate radio
 - Phone Lockout on or off - When on, operator cannot connect phone
 - Max Forward - limits operator maximum travel speed in forward as a percentage of machine full travel speed
 - Max Reverse - limits operator maximum travel speed in reverse as a percentage of machine full travel speed
6. Select **[DONE]** (Item 2) to save changes or select the **[X]** icon (Item 1) [Figure 414] to cancel.

Edit Operator

Figure 415



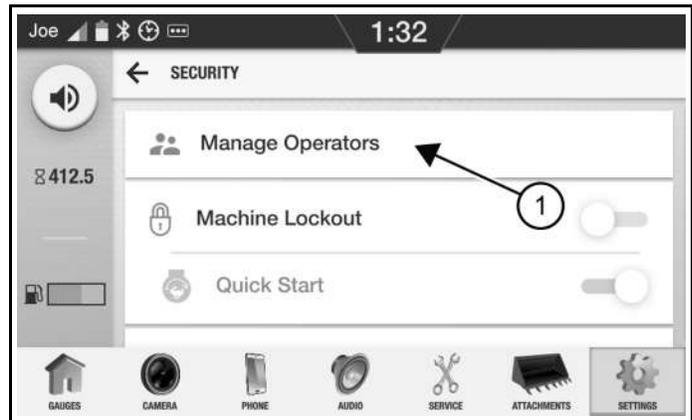
1. Select **[SETTINGS]** (Item 1) [Figure 415].

Figure 416



2. Select **[SECURITY SETTINGS]** (Item 1) [Figure 416].

Figure 417



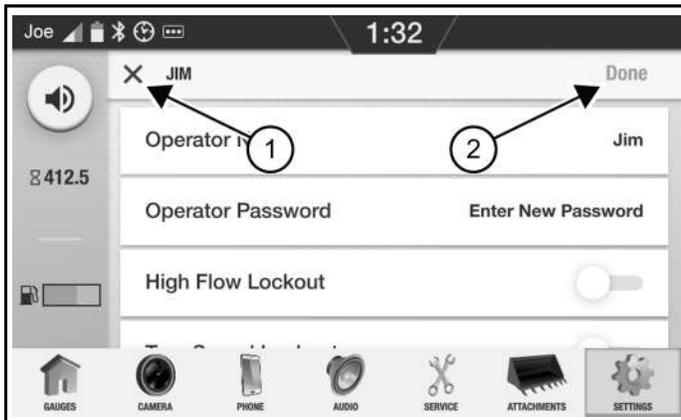
3. Select **[MANAGE OPERATORS]** (Item 1) [Figure 417].

Figure 418



- Select an **[OPERATOR'S NAME]** (Item 1) [Figure 418] to edit their information.

Figure 419



- The following information can be edited [Figure 419]:

- Operator Name
- Operator Password
- High-Flow Lockout on or off - When on, operator cannot activate high-flow auxiliary hydraulics
- Two-Speed Lockout on or off - When on, operator cannot select high range speed
- Radio Lockout on or off - When on, operator cannot operate radio
- Phone Lockout on or off - When on, operator cannot connect phone
- Max Forward - limits operator maximum travel speed in forward as a percentage of machine full travel speed
- Max Reverse - limits operator maximum travel speed in reverse as a percentage of machine full travel speed
- Delete Operator - Removes operator

- Select **[DONE]** (Item 2) to save changes or select the **[X]** icon (Item 1) [Figure 419] to cancel.

Operator Statistics

Figure 420



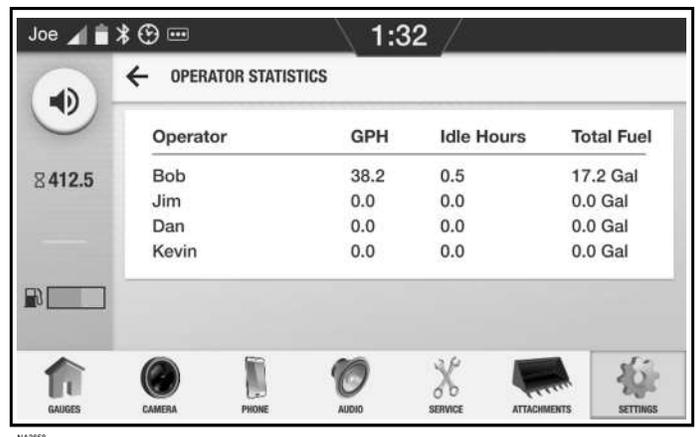
- Select **[SETTINGS]** (Item 1) [Figure 420].

Figure 421



- Scroll down and select **[OPERATOR STATISTICS]** (Item 1) [Figure 421].

Figure 422



3. The following information can be viewed for each operator [Figure 422]:

- Operator Name
- Fuel used per hour
- Idle Hours
- Total Fuel used

Job Clocks

Figure 423



NA344F

1. Select **[SETTINGS]** (Item 1) [Figure 423].

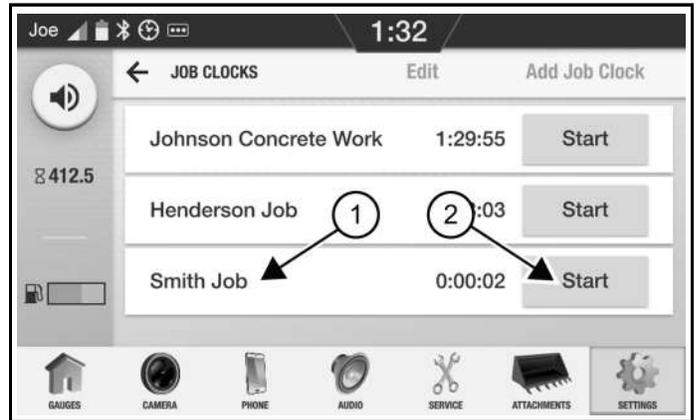
Figure 424



NA3614B

2. Scroll down and select **[JOB CLOCKS]** (Item 1) [Figure 424].

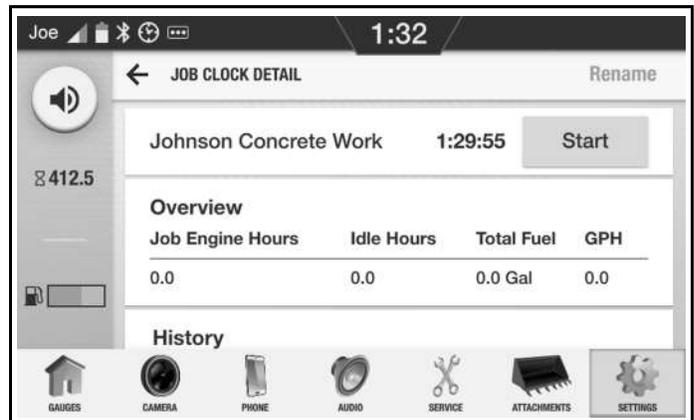
Figure 425



NA385A

3. Existing job clocks can be started by selecting **[START]** (Item 2). Job clock details can be viewed by selecting the **[JOB CLOCK NAME]** (Item 1) [Figure 425].

Figure 426



NA362

Figure 427



NA385A

4. The job clock detail screen provides the following information [Figure 426] and [Figure 427]:
 - Job name
 - Accumulated job time
 - Job Engine Hours
 - Idle Hours
 - Total Fuel used
 - Fuel used per hour
 - History by operator
5. The job clock name can be changed by selecting **[RENAME]** (Item 1) [Figure 427].

Adding And Removing Job Clocks

Add Job Clock

Figure 428



1. Select **[SETTINGS]** (Item 1) [Figure 428].

Figure 429



2. Scroll down and select **[JOB CLOCKS]** (Item 1) [Figure 429].

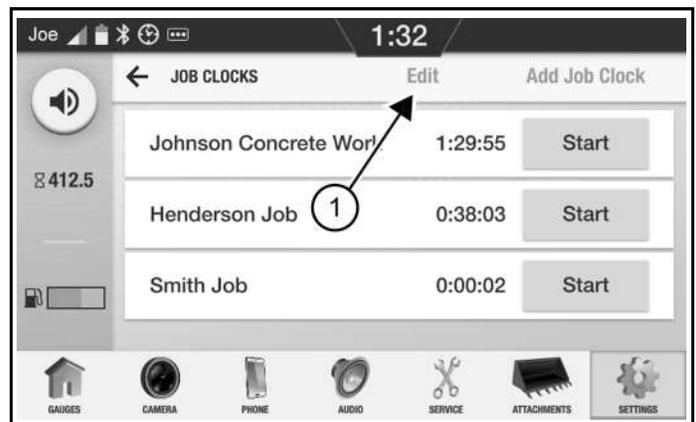
Figure 430



3. Select **[ADD JOB CLOCK]** (Item 1) [Figure 430] and add the name on the next screen.

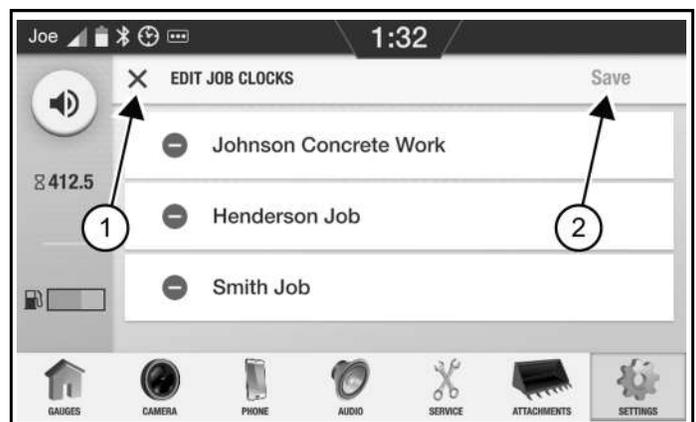
Remove Job Clock

Figure 431



1. Select **[EDIT]** (Item 1) [Figure 431].

Figure 432



2. Select the [-] icon next to the job clock name you want to remove [Figure 432].
3. Select [SAVE] (Item 2) to save changes or select the [X] icon (Item 1) [Figure 432] to cancel.

Language Settings

Figure 433



1. Select [SETTINGS] (Item 1) [Figure 433].

Figure 434



2. Scroll down and select [LANGUAGE SETTINGS] (Item 1) [Figure 434].

Figure 435



3. The current language is identified by a check mark icon (Item 1) [Figure 435].
4. Scroll up or down and select the desired language. The selected language will take effect immediately and is set for each operator.

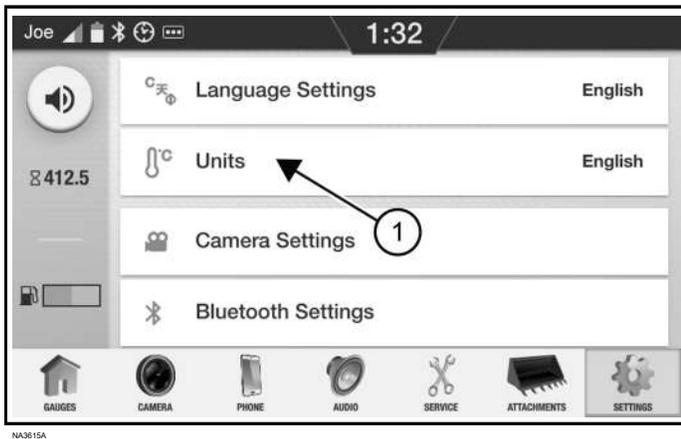
Units

Figure 436



1. Select [SETTINGS] (Item 1) [Figure 436].

Figure 437



2. Scroll down and select **[UNITS]** (Item 1) [Figure 437] to toggle between English and Metric.

Camera Settings

(See Camera Settings on Page 197)

Bluetooth Settings

See your Touch Display User Guide for more information about phone settings.

Audio Settings

See your Touch Display User Guide for more information about audio settings.

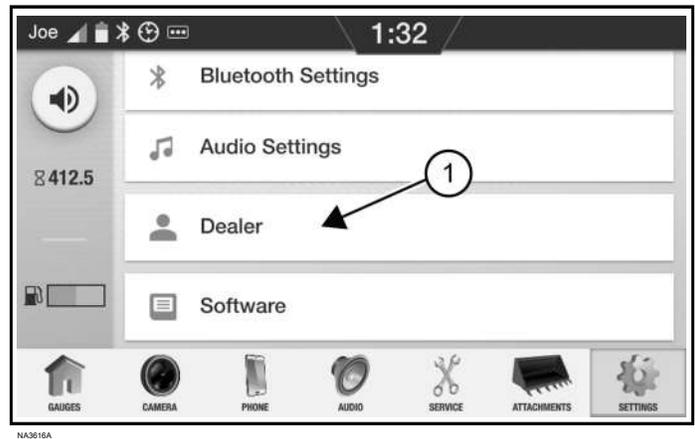
Dealer

Figure 438



1. Select **[SETTINGS]** (Item 1) [Figure 438].

Figure 439



2. Scroll down and select **[DEALER]** (Item 1) [Figure 439].

Figure 440



3. Your Bobcat dealer's information can only be changed by your dealer [Figure 440].
4. Press **[CALL]** (Item 1) [Figure 440] to call your dealer if they entered their phone number on this screen and a phone is connected to the machine.

Software

Figure 441



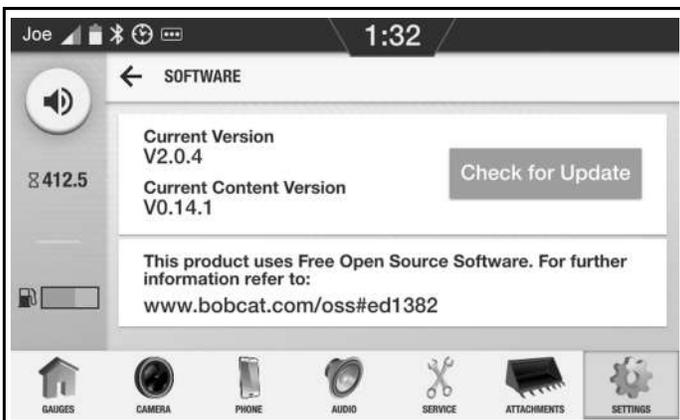
1. Select **[SETTINGS]** (Item 1) [Figure 441].

Figure 442



2. Scroll down and select **[SOFTWARE]** (Item 1) [Figure 442].

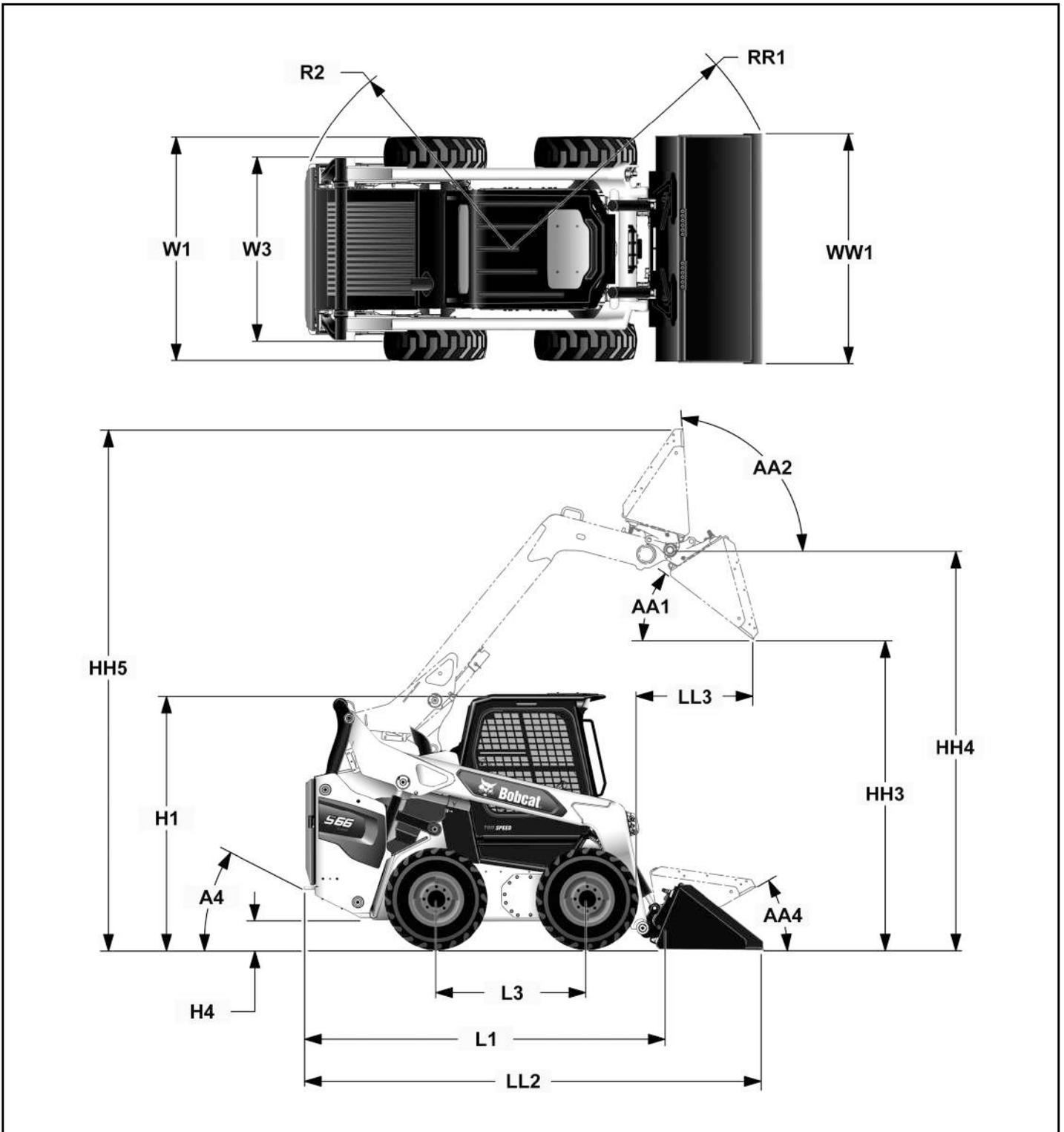
Figure 443



3. Your machine's current software versions are shown [Figure 443]. Software updates can only be performed by your dealer.

MACHINE DIMENSIONS

Figure 444



NA15918C

- Dimensions are given for loader equipped with standard tires and 68 in. Standard Duty bucket and may vary with other bucket types.
- Where applicable, specifications conform to SAE or ISO standards and are subject to change without notice.

R2	Rear of machine clearance radius	1692 mm (66.6 in)
RR1	Carry position machine clearance radius	2033 mm (80.1 in)
W1	Overall width	1702 mm (67.0 in)
W3	Tread	1326 mm (52.2 in)
WW1	Bucket width	1727 mm (68.0 in)
HH5	Overall operating height	3910 mm (153.9 in)
H1	Overall height	2045 mm (80.5 in)
A4	Angle of departure	25 degrees
H4	Ground clearance	189 mm (7.5 in)
L3	Wheelbase	1133 mm (44.6 in)
L1	Length without attachment	2718 mm (107.0 in)
LL2	Overall length	3427 mm (134.9 in)
AA2	Maximum rollback - fully raised	94 degrees
AA1	Dump angle	37 degrees
LL3	Reach - fully raised	869 mm (34.2 in)
HH3	Dump height	2396 mm (94.3 in)
AA4	Maximum rollback - carry position	31 degrees
HH4	Height to hinge pin	3048 mm (120.0 in)

Changes of structure or weight distribution of the loader can cause changes in control and steering response, and can cause failure of the loader parts.

LOADER SPECIFICATIONS

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, operating conditions, and other factors.

Performance Specifications

Rated Operating Capacity	1090 kg (2400 lb)
with 200 Pound Frame Mounted Counterweight Kit	1157 kg (2550 lb)
Tipping Load	2177 kg (4800 lb)
Operating Weight	3245 kg (7154 lb)
Breakout Force – Lift	2145 kg (4730 lb)
Breakout Force – Tilt	2440 kg (5378 lb)
Travel Speed:	
— Low Range	0 – 11,8 km/h (0 – 7.4 mph)
— High Range	0 – 17,7 km/h (0 – 11.0 mph)

Engine Specifications

Make / Model	Bobcat Engine / 2,4L Bobcat Engine, V2 Tier 4
Fuel	Ultra Low Sulfur Diesel
Cooling	53% Propylene Glycol / 47% Water Mixture
Horsepower:	
— ISO 9249 EEC / SAE J1349 Net	52,6 kW (70.5 hp) @ 2600 rpm
— ISO 14396 Gross	55,2 kW (74.0 hp) @ 2600 rpm
— SAE J1995 Gross	55,5 kW (74.4 hp) @ 2600 rpm
— Rated Power	55,2 kW (74.0 hp) @ 2600 rpm
Torque:	
— ISO 9249 EEC / SAE J1349 Net	266,1 N•m (196.3 ft-lb) @ 1800 rpm
— ISO 14396 Gross	280,0 N•m (206.5 ft-lb) @ 1800 rpm
— SAE J1995 Gross	281,4 N•m (207.5 ft-lb) @ 1800 rpm
— Rated Torque	280,0 N•m (206.5 ft-lb) @ 1800 rpm
Low Idle rpm	1025 - 1075
High Idle rpm	2575 - 2625
Number of Cylinders	4
Displacement	2400 cm ³ (146.5 in ³)

Bore / Stroke	90 mm / 94 mm (3.5 in / 3.7 in)
Lubrication	Gear Pump Pressure System with Filter
Crankcase Ventilation	Closed Breathing
Air Cleaner	Dry replaceable paper cartridge with separate safety element
Ignition	Diesel – Compression
Air Induction	Turbo-Charged and Charged Air Cooled
Starting Aid	Glow plugs automatically activated as needed in RUN position

Drive System Specifications

Main Drive	Fully hydrostatic, 4-wheel drive
Transmission	Infinitely variable tandem hydrostatic piston pumps, driving two fully reversing hydrostatic motors
Final Drive	Prestressed #80 HSOC endless roller chain (no master link) and sprockets in sealed chaincase with oil lubrication (Chains do not require periodic adjustments) Two chains per side with no idler sprocket
Axle Size	53,1 mm (2.09 in), heat treated
Wheel Bolts	Eight — 9/16 in. wheel bolts fixed to axle hubs

Control Specifications

Machine Steering	Direction and speed controlled by two hand operated steering levers or optional joystick(s)
Loader Hydraulics:	
— Lift and Tilt	Controlled by separate foot pedals or optional joystick(s)
— Front Auxiliary	Controlled by electrical switch on Right Hand steering lever or joystick
— Rear Auxiliary (If equipped)	Controlled by electrical switch on Left Hand steering lever or joystick
Auxiliary Pressure Release	Pressure relieved through quick couplers; Push couplers in, hold for 5 seconds
Engine	Hand operated speed control, additional foot operated speed control pedal with SJC option; key-type start switch or keypad and function error shutdown
Service Brake	Two independent hydrostatic systems controlled by two hand operated steering levers or optional joystick(s)
Secondary Brake	One of the hydrostatic transmissions
Parking Brake	Mechanical disc activated by manually operated button on right control panel

Hydraulic System Specifications

Pump Type	Engine driven, gear type
Pump Capacity – Standard-Flow	66,5 L/min (17.6 U.S. gpm)

Pump Capacity – High-Flow	101,8 L/min (26.9 U.S. gpm)
System Relief at Quick Couplers	23,8 – 24,5 MPa (238 – 245 bar) (3450 – 3550 psi)
Filter (Main Hydraulic)	Replaceable β 10(c) ≥ 200 ISO 16889, drop in element
Filter (Charge)	Replaceable β 12(c) ≥ 200 ISO 16889, spin on element
Filter (Hydraulic Reservoir Vent)	Replaceable 10 micron, thread on cap
Control Valve	3-Spool, open center with electric actuator controlled lift with float and tilt; Electro-hydraulic piloted auxiliary spool
Fluid Lines	SAE Standard tubelines, hoses, and fittings
Fluid Type	Bobcat Fluid, Hydraulic / Hydrostatic 6903117 – (Two – 2.5 U.S. gal) 6903118 – (5 U.S. gal) 6903119 – (55 U.S. gal)
Hydraulic Function Time:	
— Raise Lift Arms	3.8 seconds
— Lower Lift Arms	2.2 seconds
— Bucket Dump	2.3 seconds
— Bucket Rollback	1.6 seconds

Hydraulic Cylinder Specifications

Double-acting; lift cylinders have cushioning feature on lower, tilt cylinders have cushioning feature on dump and rollback	BORE	STROKE	ROD
Lift	69,9 mm (2.75 in)	551,2 mm (21.70 in)	44,5 mm (1.75 in)
Tilt	69,9 mm (2.75 in)	331,0 mm (13.03 in)	38,1 mm (1.50 in)

Electrical System Specifications

Alternator	Belt driven, 90 amperes, open frame
Battery	12 volt, 1000 cold cranking amperes @ -18°C (0°F), 186 minute reserve capacity @ 25 amperes
Starter	12 volt, gear type, 2,7 kW (3.62 hp)

Fluid Capacities

Fuel	107,1 L (28.3 U.S. gal)
Engine Oil with Filter Change	8,1 L (8.6 qt)
Engine Cooling System with Heater	10,4 L (11.0 qt)

Engine Cooling System without Heater	9,7 L (10.3 qt)
Hydraulic / Hydrostatic Reservoir	18,9 L (20.0 qt)
Hydraulic / Hydrostatic System	41,6 L (11.0 U.S. gal)
Chaincase Reservoir (Total for both chaincases)	26,5 L (7.0 U.S. gal)
Air Conditioning Refrigerant (R-134a)	0,73 kg (1.6 lb)

Tire Specifications

Super Float (Standard)	31 x 12 – 16.5, 10 Ply Rating
Standard Duty (If equipped)	10.00 – 16.5, 8 Ply Rating
Heavy Duty (If equipped)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Offset (If equipped)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Poly Fill (If equipped)	10.00 – 16.5, 10 Ply Rating
Heavy Duty Offset Poly Fill (If equipped)	10.00 – 16.5, 10 Ply Rating
Severe Duty (If equipped)	10.00 – 16.5, 10 Ply Rating
Solidflex (If equipped)	31 x 6 x 10
Recommended Pressure	Inflate tires to MAXIMUM pressure shown on the sidewall of the tire; DO NOT mix brands of tires used on the same machine

BOBCAT LOADER WARRANTY

Bobcat Company warrants to its authorized dealers and authorized dealers of Bobcat Equipment Ltd., who in turn warrant to the owner, that each new Bobcat loader with a delivery date on or after January 1, 2019 will be free from proven defects in material and workmanship with respect to (i) all components of the product except as otherwise specified herein for twenty-four (24) months, or a total of 2000 hours of use, whichever occurs first, (ii) tracks and Bobcat brand tires, for twelve (12) months on a prorated basis based on the remaining depth of the track or tire at the time any defect is discovered, (iii) Bobcat brand batteries, for an initial twelve (12) month warranty period and for an additional twelve (12) months thereafter, Bobcat Company shall reimburse a fixed portion of the cost of replacing the battery as designated by Bobcat in the event of a proven defect and (iv) auxiliary hydraulic quick couplers for six (6) months or 200 hours of use, whichever occurs first. The foregoing time periods shall all commence after delivery by the authorized Bobcat dealer to the original buyer.

During the warranty period, the authorized Bobcat dealer shall repair or replace, at Bobcat Company's option, without charge for parts and labor, any part of the Bobcat product except as otherwise specified herein which fails because of defects in material or workmanship. The owner shall provide the authorized Bobcat dealer with prompt written notice of the defect and allow reasonable time for repair or replacement. Bobcat Company may, at its option, require failed parts to be returned to the factory. Travel time of mechanics and transportation of the Bobcat product to the authorized Bobcat dealer for warranty work are the responsibility of the owner. The remedies provided in this warranty are exclusive.

This warranty does not cover replacement of scheduled service items such as oil, filters, tune-up parts, and other high-wear items. This warranty does not cover damages resulting from abuse, accidents, alterations, use of the Bobcat product with any accessory or attachment not approved by Bobcat Company, air flow obstructions, or failure to maintain or use the Bobcat product according to the instructions applicable to it.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS, EXCEPT THE WARRANTY OF TITLE. BOBCAT COMPANY DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BOBCAT COMPANY OR THE AUTHORIZED BOBCAT DEALER BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOSS OR INTERRUPTION OF BUSINESS, LOST PROFITS, OR LOSS OF MACHINE USE, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, STATUTE OR OTHERWISE, EVEN IF BOBCAT COMPANY OR THE AUTHORIZED BOBCAT DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE TOTAL LIABILITY OF BOBCAT COMPANY AND THE AUTHORIZED BOBCAT DEALERS WITH RESPECT TO THE PRODUCT AND SERVICES FURNISHED HEREUNDER SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED.

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EMISSION — RELATED WARRANTY

Bobcat Company

FEDERAL & CALIFORNIA EMISSION CONTROL SYSTEMS LIMITED WARRANTY for NON-ROAD ENGINES (CI)

OWNER'S WARRANTY RIGHTS AND OBLIGATIONS

The U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and Bobcat Company are pleased to explain the Federal and California Emission Control System Warranty on your 2020MY to 2022MY non-road engine. DOOSAN INFRACORE has designed, built and equipped the engine so as to conform at the time of sale with all applicable regulations of the EPA and of the California ARB. In California, new heavy-duty off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards.

Bobcat Company must warrant to the initial owner, and each subsequent owner, the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, improper maintenance or unapproved modifications of your engine. Your emission control system may include those parts listed below:

1. Fuel Metering System

Fuel Supply Pump (HP Pump), Injector, Common Rail, Glow Plug

2. Air-Induction System

Intake Manifold, Turbocharger System

3. Exhaust Gas Recirculation (EGR) System

EGR Valve, EGR Cooler

4. Catalyst or Thermal Reactor System

Diesel Oxidation Catalyst (DOC), Exhaust Manifold

5. Positive Crankcase Ventilation (PCV) System

PCV Valve

6. Electronic Control System

ECU, Cam / Crank Sensor, Coolant Temperature Sensor, MAF Sensor, MAP Sensor (Manifold Pressure Sensor), Inlet Boost Temperature Sensor, Fuel Temperature Sensor, Common Rail Pressure Sensor

7. Miscellaneous Items Used In Above Systems

Temperature and time sensitive valve and switches
Solenoids and wiring harnesses
Hoses, clamps, fittings and tubing, sealing gasket
Emission control information labels

Where a warrantable condition exists, Bobcat Company will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE

The 2020MY to 2022MY heavy-duty off-road engines are warranted for five years or 3,000 hours of operation, whichever occurs first. If any emission-related part on your engine is defective, the part will be repaired or replaced by Bobcat Company.

The warranty period shall begin on the date the machine is delivered to the first retail customer.

OWNER'S WARRANTY RESPONSIBILITIES

As the heavy-duty off-road engine owner, you are responsible for the performance of the **required maintenance listed in the Operation and Maintenance Manual**. Bobcat Company recommends that you retain all receipts covering maintenance on your heavy-duty off-road engine, but Bobcat Company cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the heavy-duty off-road engine owner, you should however be aware that Bobcat Company may deny you warranty coverage if your heavy-duty off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on Ultra Low Sulfur Diesel Fuel Only . Use of any other fuel may result in your engine no longer operating in compliance with the EPA's emissions requirements. You are responsible for initiating the warranty process. The EPA and California ARB suggest that you present your heavy-duty off-road engine to your Bobcat dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact your nearest authorized Bobcat dealer. To locate a Bobcat dealer, visit www.bobcat.com or call 1-800-743-4340, or contact:

Bobcat Company
250 East Beaton Drive
West Fargo, ND 58078

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SERVICE SCHEDULE SYMBOLS

These symbols are found on decal part number 7423521.

	Check tire condition and pressure		Check hydraulic hoses and tubelines for leaks
	Check back-up alarm for proper function		Check track tension, adjust as needed
	Check engine air intake ducting		Check parking brake for correct operation
	Check engine coolant level		Check accessory belt condition, replace as needed
	Lubricate grease fittings		Check battery cables and connections
	Check hydraulic fluid level		Replace engine oil and filter
	Clean engine cooling system		Replace hydraulic fluid and filters
	Check front horn for proper function		Clean air conditioning evaporator
BICS	Check BICS for correct function		Clean heater coil
	Check engine oil level		Replace fuel pre-filter and fuel tank vent filter
	Check seat belt condition		Replace engine coolant
	Drain water from main fuel filter when indicated		Replace fluid in chaincases
BICS 	Check lift arm bypass control for correct function		Replace fluid in drive motor brake cavities
	When equipped with diesel particulate filter (DPF)		

Reference Information

Skid-Steer 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): _____

 **WARNING** Cancer and Reproductive Harm. This product can expose you to chemicals including lead and lead compounds, mineral oils, and phthalates which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

 **WARNING** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.