



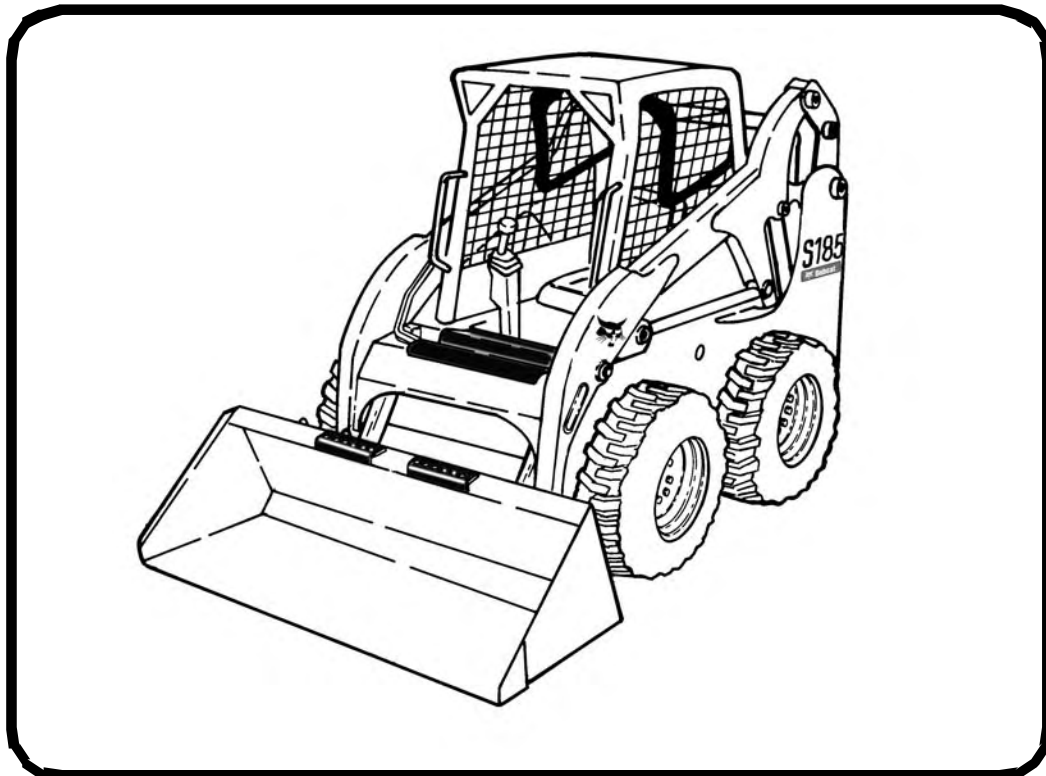
# Bobcat®

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## Operation & Maintenance Manual S185 Skid-Steer Loader

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S/N A3L911001 & Above  
S/N A3LH11001 & Above



EQUIPPED WITH  
BOBCAT INTERLOCK  
CONTROL SYSTEM (BICS™)





# OPERATOR SAFETY WARNINGS



## WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

## CORRECT



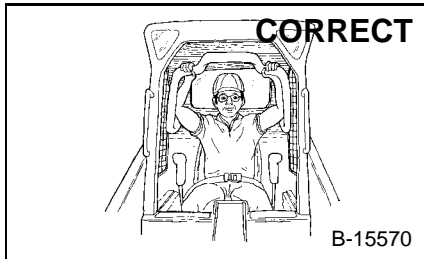
P-90216



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



Never use the loader without instructions. See machine signs (decals), Operation & Maintenance Manual, and Operator's Handbook.



## CORRECT

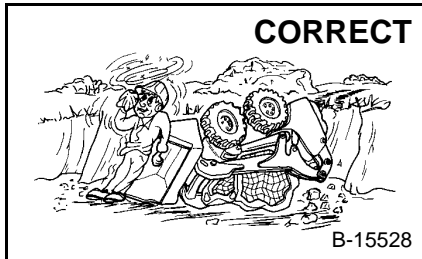
B-15570



Always use the seat bar and fasten seat belt snugly.



Always keep feet on the foot pedals or foot rest when operating loader.

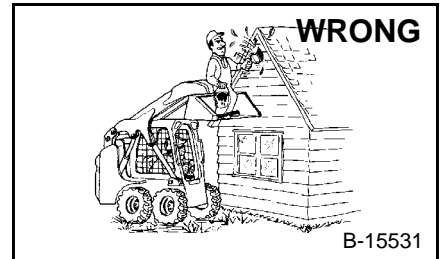


## CORRECT

B-15528



Never use loader without operator cab with ROPS and FOPS approval. Fasten your seat belt.

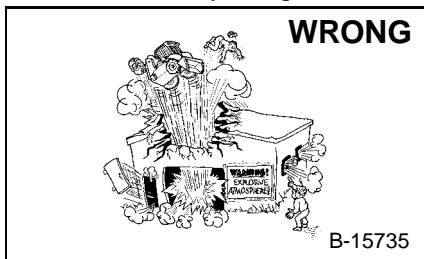


## WRONG

B-15531



Never use loader as man lift or elevating device for personnel.

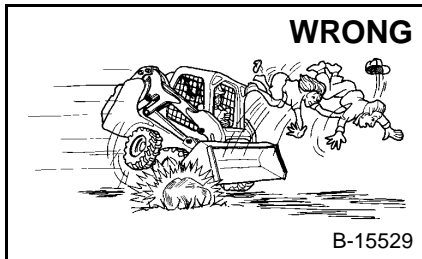


## WRONG

B-15735



Do not use loader in atmosphere with explosive dust, explosive gas, or where exhaust can contact flammable material.



## WRONG

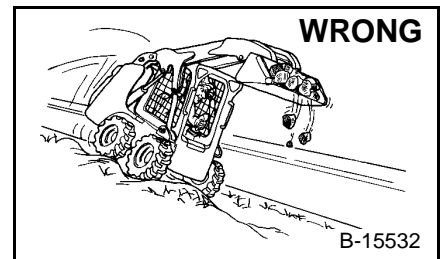
B-15529



Never carry riders.



Keep bystanders away from work area.



## WRONG

B-15532



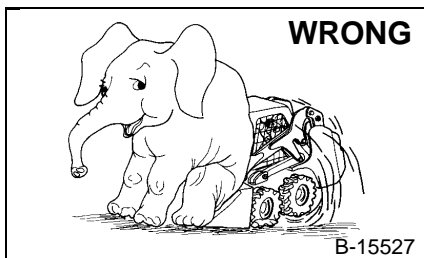
Always carry bucket or attachments as low as possible.



Do not travel or turn with lift arms up.



Load, unload, and turn on flat level ground.

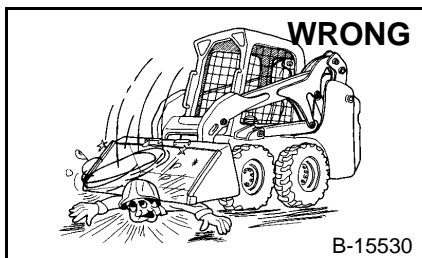


## WRONG

B-15527



Never exceed Rated Operating Capacity.



## WRONG

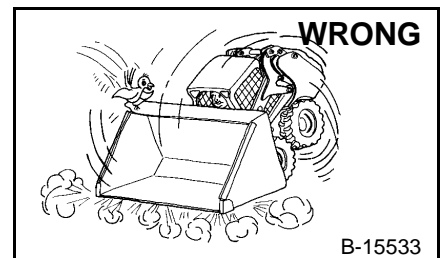
B-15530



Never leave loader with engine running or with lift arms up.



To park, engage parking brake and put attachment flat on the ground.



## WRONG

B-15533



Never modify equipment.



Use only attachments approved by Bobcat Company for this model loader.

## SAFETY EQUIPMENT

The Bobcat Loader must be equipped with safety items necessary for each job. Ask your dealer about attachments and accessories.

1. SEAT BELT: Check belt fasteners and check for damaged webbing or buckle.
2. SEAT BAR: When up, it must lock the loader controls.
3. OPERATOR CAB (ROPS and FOPS): It must be on the loader with all fasteners tight.
4. OPERATOR'S HANDBOOK: Must be in the cab.
5. SAFETY SIGNS (DECALS): Replace if damaged.
6. SAFETY TREADS: Replace if damaged.
7. GRAB HANDLES: Replace if damaged.
8. LIFT ARM SUPPORT DEVICE: Replace if damaged.
9. PARKING BRAKE
10. BOBCAT INTERLOCK CONTROL SYSTEM (BICS)



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## REFERENCE INFORMATION

Write the correct information for YOUR Bobcat loader in the spaces below. Always use these numbers when referring to your Bobcat loader.

Loader Serial Number \_\_\_\_\_  
Engine Serial Number \_\_\_\_\_

NOTES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:

Bobcat Company  
P.O. Box 128  
Gwinner, ND 58040-0128  
UNITED STATES OF AMERICA

Doosan Benelux SA  
Drève Richelle 167  
B-1410 Waterloo  
BELGIUM



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## FOREWORD

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat loader. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR BOBCAT LOADER. If you have any questions, see your Bobcat dealer. This manual may illustrate options and accessories not installed on your loader.

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**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 which we use to design, develop, manufacture and distribute Bobcat products.












British Standards Institute (BSI) is the Certified Registrar Bobcat Company chose to assess the Company's compliance with the ISO 9001 at Bobcat's manufacturing facilities in Gwinner and Bismarck, North Dakota (U.S.A.), Pontchateau (France), Dobris (Czech Republic) and the Bobcat corporate offices (Gwinner, Bismarck & West Fargo) in North Dakota. Only certified assessors, like BSI, 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.

**CALIFORNIA PROPOSITION 65 WARNING**

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

**REGULAR MAINTENANCE ITEMS**

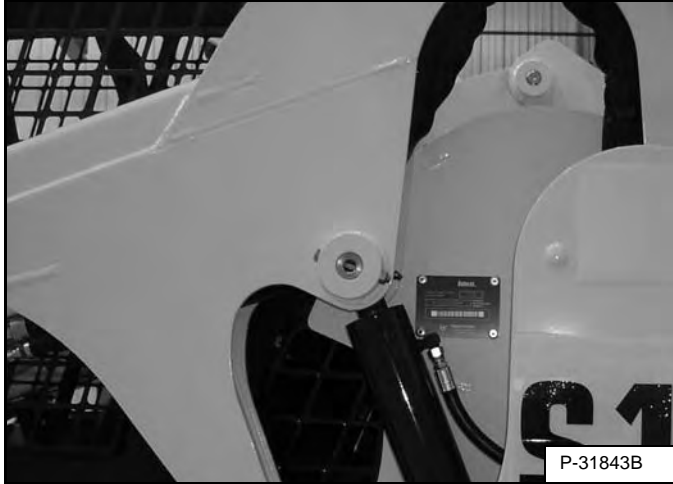
	ENGINE OIL FILTER (6 Pack) 6675517		HYDROSTATIC CASE DRAIN FILTERS 6661022
	FUEL FILTER 6667352		BATTERY 6674687
	AIR FILTER, Outer 6698057		FLUID, Hydraulic / Hydrostatic  6903117 - (2.5 U.S. gal) 6903118 - (5 U.S. gal) 6903119 - (55 U.S. gal)
	AIR FILTER, Inner 6698058		
	HYDRAULIC CHARGE FILTER 6686926 (Earlier Models) 6692337 (Later Models)		BREATHER CAP 6684923
	HYDROSTATIC FILTER  6661248		ANTI-FREEZE, Propylene Glycol  6983128 - Premixed 6983129 - Concentrate
<b>ENGINE OIL</b>		<b>ENGINE OIL</b>	
7023080	SAE 15W40 CE/SG (12 qt)	7023081	SAE 15W40 CE/SG (1 U.S. gal)
7023076	SAE 10W30 CE/SG (12 qt)	7023077	SAE 10W30 CE/SG (1 U.S. gal)
6903109	SAE 30W CE/SG (12 qt)	6903110	SAE 30W CE/SG (1 U.S. gal)
7023082	SAE 15W40 CE/SG (2.5 U.S. gal)		
7023078	SAE 10W30 CE/SG (2.5 U.S. gal)		
6903111	SAE 30W CE/SG (2.5 U.S. gal)		

**NOTE: Always verify Part Numbers with your Bobcat dealer.**

## SERIAL NUMBER LOCATIONS

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

**Figure 1**

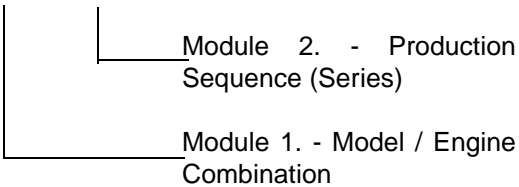


### Loader Serial Number

The loader serial number plate **[Figure 1]** is located on the outside of the loader frame.

Explanation of loader Serial Number:

XXXX XXXXX

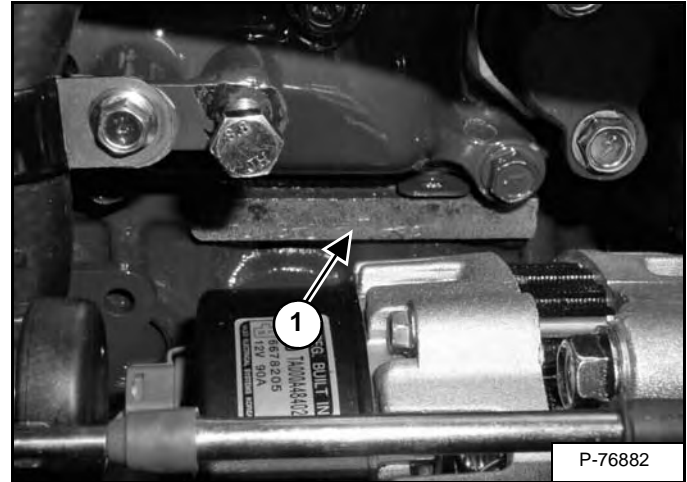


1. The four digit Model / Engine Combination Module number identifies the model number and engine combination.

2. The five digit Production Sequence Number identifies the order which the loader is produced.

## Engine Serial Number

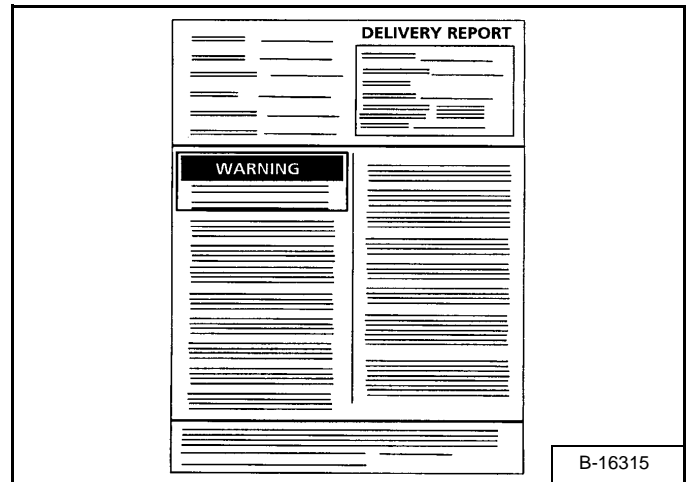
**Figure 2**



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

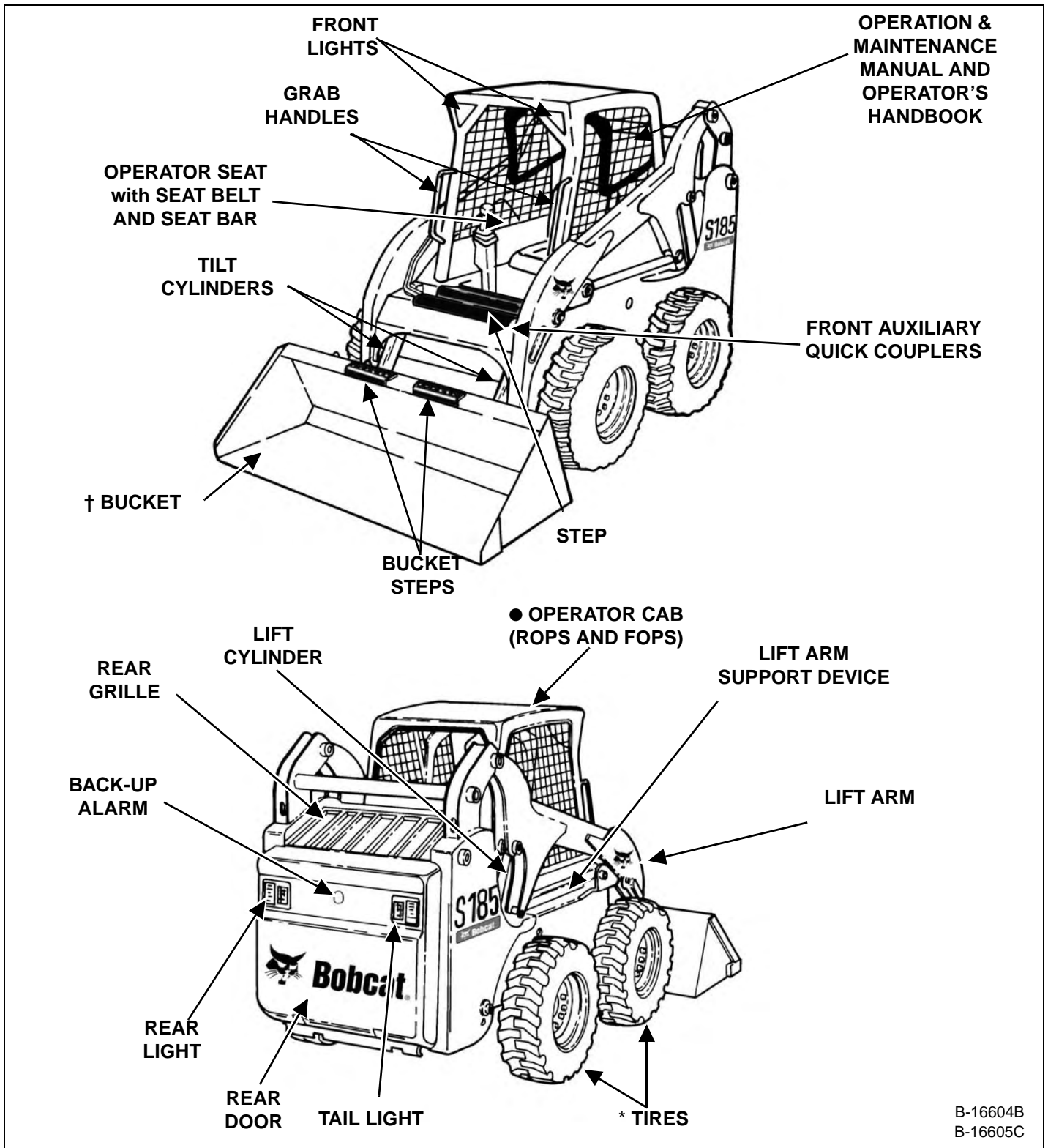
## DELIVERY REPORT

**Figure 3**



The delivery report **[Figure 3]** must be completed by the dealer and signed by the owner or operator when the Bobcat loader is delivered. An explanation of the form must be given to the owner.

## LOADER IDENTIFICATION



\* TIRES - The Bobcat loader is factory equipped with standard tires.

† BUCKETS - Several different buckets and other attachments are available for the Bobcat loader.

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

## FEATURES, ACCESSORIES AND ATTACHMENTS

### Standard Items

Model S185 Bobcat loaders are equipped with the following standard items:

- Adjustable Vinyl Seat
- Automatically Activated Glow Plugs
- Auxiliary Hydraulics
- Bobcat Interlock Control System (BICS™)
- Bob-Tach™
- Deluxe Cab (includes: interior insulation, top and rear windows, accessory harness, dome light and 12 volt power port) ROPS and FOPS Approved
- Engine / Hydraulic Systems Shutdown
- Front Horn / Back-up Alarm
- Instrumentation: Hourmeter, Engine Temperature and Fuel Gauges and Warning Lights
- Lift Arm Support Device
- Lights, Front and Rear
- Parking Brake
- Seat Bar
- Seat Belt
- Seat Belt with 3-Point Restraint (with Two-Speed Option)
- Spark Arrester Muffler
- Tires (10-16.5, Bobcat Standard Duty, 8 ply Rating)

### Options And Accessories

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

- Access Cover Kit (Foot Pedal Area)
- Accessories Electrical Harness
- Adjustable Air Ride Suspension Seat
- Adjustable Suspension Seat
- Advanced Control System (ACS) (Selectable Foot Pedal or Hand Control)
- Selectable Joystick Controls (SJC) (Selectable 'ISO' or 'H' Pattern Control)
- Auxiliary Hydraulics, Rear
- Auxiliary Hydraulics, Front - Right Hand Side
- Air Conditioning
- Attachment Control Device (ACD)
- Cab Door
- Cab Enclosure
- Cab Heater
- Catalytic Exhaust Purifier
- Counterweight Kit
- Deluxe Instrumentation Panel
- Dual Attachment Control Kit
- Engine Heater
- Extended Pedals

### Options And Accessories (Cont'd)

- Fire Extinguisher
- FOPS Kit (Level II)
- Fuel Sediment Bowl Kit
- GPS System
- High-Flow Auxiliary Hydraulics
- Hose Guide
- Hydraulic Bucket Positioning (Includes On / Off Selection)
- Keyless Start
- Lift Kit (Four-Point, Single-Point)
- Locking Fuel Cap
- MSHA Approval Kit
- Power Bob-Tach
- Radiator Screen Kit
- Radio Remote Control
- Rear Window Wiper
- Ride Control
- Rotating Beacon
- Seat Belt with 3-Point Restraint (Std. on Two-Speed Models)
- Seat Belt - 3 in. Wide
- Seat Belt - Retractable
- Sound Reduction Kit (Reduces noise at operator ear)
- Special Applications Kit
- Steel Tracks
- Strobe Light
- Tailgate Lock
- Tires:
  - Bobcat Heavy Duty 10-16.5 10 Ply Rating
  - Bobcat Severe Duty 10-16.5 10 Ply Rating
  - Bobcat Severe Duty Solidflex 10-16.5
  - Bobcat Severe Duty Poly-Fill 10-16.5 10 Ply Rating
  - Bobcat Heavy Duty Flotation 31X12-16.5 10 Ply
- Tool Container
- Two-Speed Travel
- Warning Lights: Four-Way Flasher (Includes Direction Signals)
- Vinyl Cab Enclosure
- Weighlog Kit
- Windows
  - Top and Rear Windows
  - Side Windows
  - Polycarbonate Rear Window
  - Polycarbonate Top Window
  - Externally Removable Rear Window

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



## FEATURES, ACCESSORIES AND ATTACHMENTS (CONT'D)

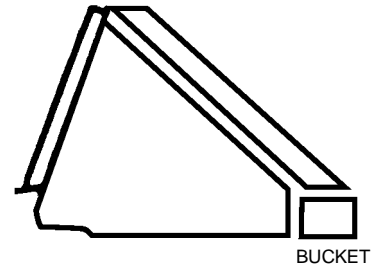
These and other attachments are approved for use on this model loader. Do not use unapproved attachments. Attachments not manufactured by Bobcat may not be approved.

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

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

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

## Buckets Available



Many bucket styles, widths and different capacities are available for a variety of different applications. They include Construction & 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

- Angle Broom
- Auger
- Backhoe
- Blades
  - Box Blade
  - Dozer Blade
  - Snow Blade
  - V-Blade
- Bob-Tach Backhoe
- Brush Saw
- Breaker, Hydraulic
- Buckets
- Bucket Adapter
- Chipper
- Combination Bucket
- Concrete Mixer
- Concrete Pump
- Digger
- Drop Hammer
- Dumping Hopper
- Flail Cutter
- Forks, Utility
- Grader
- Grapple, Farm / Utility
- Grapple, Industrial
- Grapple, Root
- Landplane
- Landscape Rake
- Mower
- Packer Wheel
- Pallet Forks
- Planer
- Rear Stabilizers
- Rotary Cutter (Brushcat™)
- Scarifier
- Scraper
- Seeder
- Snow Pusher
- Snowblower
- Sod Layer
- Soil Conditioner
- Spreader
- Steel Tracks
- Stump Grinder
- Sweeper
- Three-Point Hitch Adapter
- Tiller
- Tilt-Tatch
- Tree Spade
- Trench Compactor
- Trencher
- Utility Frame
- Vibratory Roller
- Water Kit
- Whisker Broom

## 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.**

- Chipper
- Flail Cutter
- Planer
- Rotary Cutter (Brushcat™)
- Snowblower
- Soil Conditioner
- Tiller
- Trencher
- Wheel Saw

## FEATURES, ACCESSORIES AND ATTACHMENTS (CONT'D)

### Special Applications Kit

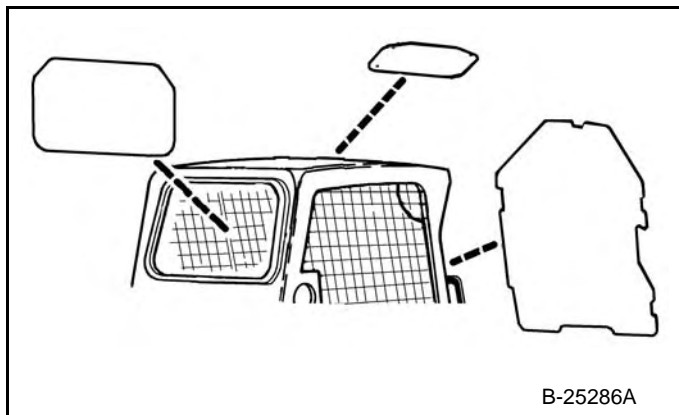
# WARNING

## AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 4



Available for special applications to restrict material from entering cab openings. Kit includes 12,7 mm (0.5 in) thick polycarbonate front door, top and rear windows [Figure 4].

See your Bobcat dealer for availability.

### Special Applications Kit Inspection And Maintenance

- Inspect for cracks or damage. Replace if required.
- Pre-rinse 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.
- Do not use abrasive or highly alkaline cleaners.
- Do not clean with metal blades or scrapers.

## **SAFETY & TRAINING RESOURCES**

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## SAFETY INSTRUCTIONS

### Before Operation

Carefully follow the operating and maintenance instructions in this manual.

The Bobcat loader 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 loader usage.

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

The dealer explains the capabilities and restrictions of the Bobcat loader 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 (some have restricted lift heights). They are designed for secure fastening to the Bobcat loader. 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 is 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 loader. It's brief instructions are convenient to 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.
- The Skid-Steer Loader Operating Training Course is available through your Bobcat dealer. This course is intended to provide rules and practices of correct operation of the Bobcat loader. The course is available in English and Spanish versions.
- Service Safety Training Courses are available from your Bobcat dealer. They provide information for safe 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 web sites [www.training.bobcat.com](http://www.training.bobcat.com) or [www.bobcat.com](http://www.bobcat.com)

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

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

## SAFETY INSTRUCTIONS (CONT'D)

### Safe Operation Is The Operator's Responsibility



Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-1285



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

I-2019-0284



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

D-1002-1107



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-2044-1107

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

Check all of the items on the Bobcat Service Schedule Decal under the 8-10 hour column 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 (ROC) of the machine. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of the 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.

SI SSL-0511

## SAFETY INSTRUCTIONS (CONT'D)

### Avoid Silica Dust



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

## 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 coolant 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



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.

SI SSL-0511

## FIRE PREVENTION (CONT'D)

### 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



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.

### 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).

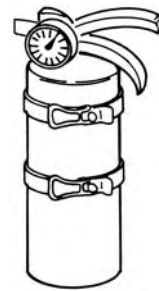
## Welding And Grinding

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 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



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.

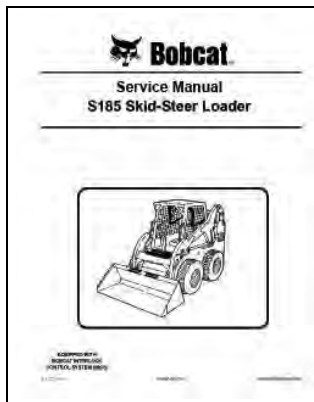
For the latest information on Bobcat products and the Bobcat Company, visit our web site at [training.bobcat.com](http://training.bobcat.com) or [www.bobcat.com](http://www.bobcat.com).



### OPERATION & MAINTENANCE MANUAL

6987011

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



### S185 SERVICE MANUAL

6987049

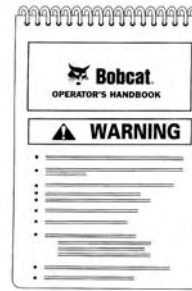
Complete maintenance instructions for your Bobcat loader.



### SAFETY MANUAL (English & Spanish)

6556500

Provides basic safety procedures and warnings for your Bobcat loader in both English and Spanish.



### OPERATOR'S HANDBOOK

6986651

Gives basic operation instructions and safety warnings.



### SKID-STEER LOADER OPERATOR TRAINING COURSE

6901726

Introduces operator to step-by-step basics of skid-steer loader operation. Also available in Spanish P/N 6902289.



### OPERATOR SAFETY VIDEO

6902176



### OPERATOR SAFETY DVD (English & Spanish)

6904762

Provides basic safety instructions contained in all Bobcat safety videos in both English and Spanish.



### SKID-STEER LOADER SERVICE SAFETY TRAINING COURSE

6900641

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

# MACHINE SIGNS (DECALS)

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

**Standard and ACS - 6727926**

**SJC - 7131519**

**6735140**

**6728539**

**Standard and ACS - 6728539**

**SJC - 7131518**

**6735140**

**EMERGENCY EXIT**

**Door Opt. - 6707852**

**7184779**

**SJC - 6737248**

**ACS - 6718706**

**Two-Speed Opt. 6725370**

**6737189**

**6718579**

**6986651**

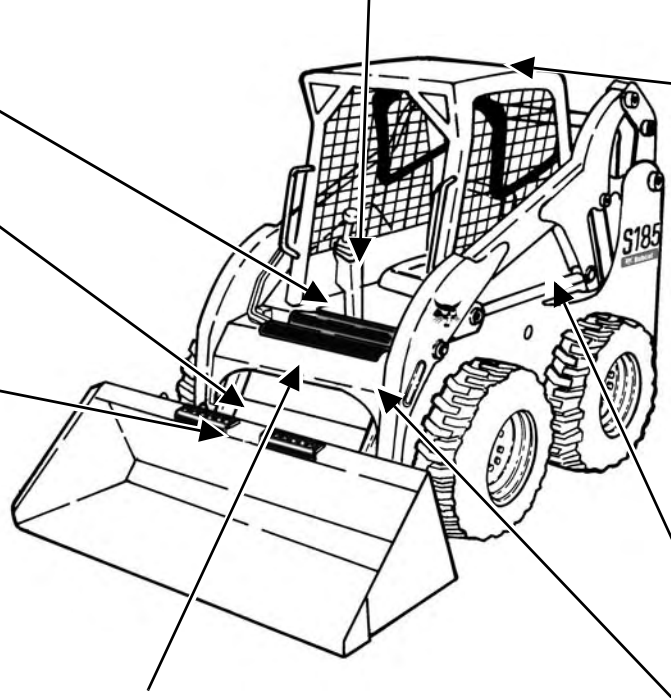
**6737189**

**6737189**

**7159779**  
(Inside Fuse Cover)

**6579528**  
(Behind Lift Arm Crossmember)

**6561383**  
(Behind Bob-Tach)



**Single-Point Lift 6533898 (2)**

**Single-Point Lift 7142139 (2)**

**Single-Point Lift 7142141 (2)**

**Four-Point Lift 7168019 (2)**

**Lift Kit Options**

**6577754 (2)**

**6702301**

**6702302**

**6710358**

**6731757**

# MACHINE SIGNS (DECALS) (CONT'D)

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

**FOR WINDOW REMOVAL**  
**PULL UP AND OUT**

**6726303**  
 (Externally Removable Rear Window only)

**IMPORTANT**  
 THIS MACHINE IS FACTORY EQUIPPED WITH A U.S.A. FORESTRY SERVICE APPROVED SPRINKLER SYSTEM FOR FIRE PROTECTION.

**6560573**

**PUSH TO RELEASE STOP**  
**6578368**

**WARNING**  
 CYLINDER CONTAINS HIGH PRESSURE GAS. DO NOT OPEN. OPENING CYLINDER CAN RELEASE ROD AND CAUSE INJURY OR DEATH.  
**6577754 (2)**

**TO INSTALL APPROVED LIFT ARM SUPPORT PIN 6716912:**

1. Remove Attachment From Loader.
2. Stay in Seat While Second Person Removes Lift Arm Support From Storage Position.
3. Raise Lift Arms While Second Person Positions Lift Arm Support Against Cylinder Head.
4. Lower Lift Arms Steadily Until Lift Arm Support Is Held Securely Between Lift Arm And Cylinder.

**TO REMOVE LIFT ARM SUPPORT:**

1. Raise Lift Arms While Second Person Removes Lift Arm Support From Cylinder Head.
2. Stay in Seat Until The Lift Arms Are Lowered All The Way.
3. Return Lift Arm Support To Storage Position And Secure With Clamping Knobs.

**6719018**

**DO NOT Add Ethylene Glycol Coolant COOLANT SYSTEM PROTECTED TO -34°F (-37°C) WITH BOBCAT™ PG COOLANT (Propylene Glycol)**  
 Check Condition With Refractometer See Operation and Maintenance Manual  
**6708929**

**7169699**

**BOBCAT™ HYDROSTATIC FLUIDS**  
**6565990**

**DANGER**  
 AVOID DEATH  
 • Disconnecting or loosening any hydraulic Sulfonics, hoses, fittings, components 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.  
**6717343 (2)**  
 (Under Cab)

**DANGER** **DANGER**  
**6809511 (4)**  
 (On Hose & Tubeline)

**6727595 (3)**

**WARNING** **SERVICE CHECKLIST AND SCHEDULE** **GENERAL LUBRICATION DIAGRAMS**

**AVOID INJURY OR DEATH**

- Keep clear of rear exhaust fan.
- Read and understand all warning labels.
- Keep body, loose objects and clothing away from rotating parts, hot parts and exhaust.
- Do not use loader in areas with explosive dust or gases or with flammable materials near exhaust.
- Never use either an existing fluid or any hydraulic fluid through attachment to a engine.
- Loading fluids under pressure can injure you and cause serious injury.
- Battery cables contain harmful acids. If acid contacts your skin, flush with water immediately. For contact with eyes, flush and get medical attention.
- Battery cables flammable and explosive gas. Keep area, sparks, flames and ignited battery cables.
- For jump start, connect negative cable to engine ground far from the battery. After jump start, disconnect negative connection at the engine first.
- Run engine until cool. Stop engine.

**6734534**

**LOW SULFUR OR ULTRA LOW SULFUR DIESEL FUEL ONLY**  
**SOLO COMBUSTIBLE DIESEL CON BAJA O ULTRA BAJA CONTENIDO DE SULFURO**  
**7152748**

**WARNING**  
 AVOID BURNS  
 • Hot surfaces. Do not touch.  
 • Allow to cool before servicing.  
**7160879**

**Inside Rear Door**



**Bobcat®**

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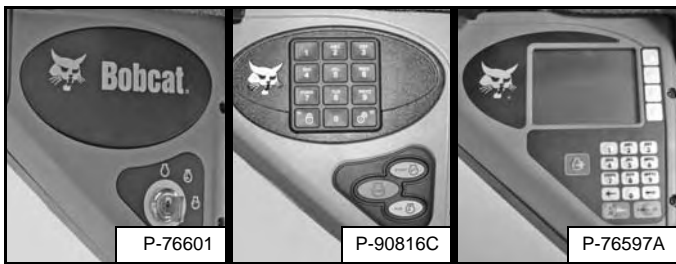
## INSTRUMENT PANEL IDENTIFICATION

Figure 5



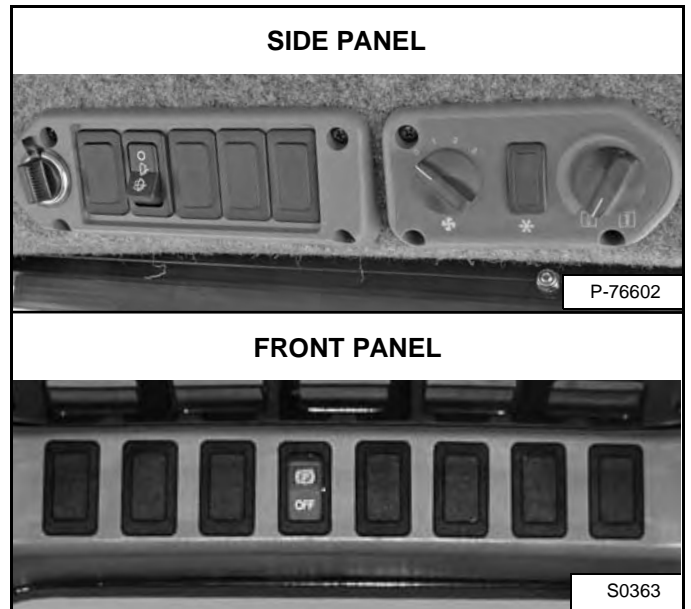
The left panel [Figure 5] is described on pages 28, 29 and 30. (See Left Panel on Page 28.)

Figure 6



The right panel [Figure 6] is described on pages 31 and 32. (See Standard Key Panel on Page 31.), (See Keyless Start Panel on Page 31.) or (See Deluxe Instrumentation Panel on Page 32.)

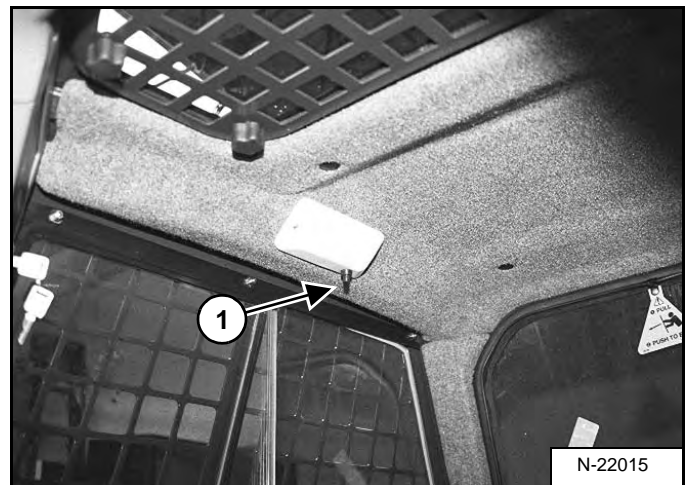
Figure 7



The side and front panels [Figure 7] are described on page 33. (See Side Panel on Page 33.) and (See Front Panel on Page 33.)

### Cab Light

Figure 8



Push the button (Item 1) [Figure 8] to turn the light ON. Push the button again to turn OFF.

## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Left Panel

Figure 9



The left instrument panel [Figure 9] is the same for Standard Key Panel, Keyless Start Panel and Deluxe Instrumentation Panel equipped machines.

The table on the facing page shows the DESCRIPTION and FUNCTION / OPERATION for each of the components of the left panel.

## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Left Panel (Cont'd)

REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	ENGINE TEMPERATURE GAUGE	Shows the engine coolant temperature.
2	LEFT TURN SIGNAL (Option)	Indicates left turn signals are ON.
3	GENERAL WARNING	Malfunction with one or more machine functions. (See Service Codes*)
4	TWO-SPEED (Option)	High range selected.
5	ENGINE MALFUNCTION	Engine malfunction or failure. (See Service Codes*)
6	ENGINE COOLANT TEMPERATURE	Engine coolant temperature high or sensor error.
7	DISPLAY SCREEN	Displays information. (See Display Screen in this manual.)
8	SEAT BELT	Instructs operator to fasten seat belt. Remains lit for 45 seconds.
9	SEAT BAR	The light comes on when the seat bar is UP.
10	LIFT & TILT VALVE	The light comes on when the lift and tilt functions cannot be operated.
11	PARKING BRAKE	The light comes on when the loader cannot be driven.
12	RIGHT TURN SIGNAL (Option)	Indicates right turn signals are ON.
13	SHOULDER BELT (Option)	Instructs operator to fasten shoulder belt when operating in high range. Remains lit while in high range.
14	HYDRAULIC SYSTEM MALFUNCTION	Hydraulic system malfunction or failure. (See Service Codes*)
15	FUEL	Fuel level low or sensor error.
16	FUEL GAUGE	Shows the amount of fuel in the tank.
17	LIGHTS	Press once for FRONT work lights and REAR taillights. (Left green LED will light.) Press a second time to add REAR work lights. (Left and right green LEDs will light.) Press a third time to turn all lights off. (Left and right green LEDs will be off.) Press and hold five seconds to display software version in display screen.
18	HIGH-FLOW (Option)	Press once to engage the HIGH-FLOW auxiliary hydraulics. (Left green LED will light.) Press a second time to disengage.
19	AUXILIARY HYDRAULICS	Press once to engage the auxiliary hydraulics. (Left green LED will light.) Press a second time to disengage.
20	INFORMATION	Cycles through (after each button press): <ul style="list-style-type: none"> <li>• Hourmeter (On start up)</li> <li>• Engine rpm</li> <li>• Battery voltage</li> <li>• Maintenance clock (Press and hold for seven seconds when displayed to reset the maintenance clock.)</li> <li>• Service codes*</li> </ul>
21	TRACTION LOCK OVERRIDE	Functions only when the seat bar is raised and the engine is running. Press once to unlock the brakes. Allows you to use the steering levers or joystick(s) to move the loader forward or backward when using the backhoe attachment. (See TRACTION LOCK OVERRIDE in this manual.) Press a second time to lock the brakes.
22	PRESS TO OPERATE LOADER	Press to activate the BICS™ when the seat bar is down and operator is seated in operating position. Button will light. Press and hold <b>three seconds</b> to engage Drive Response and Steering Drift Compensation. (See DRIVE RESPONSE and STEERING DRIFT COMPENSATION in this manual.)
23	ALARM	The alarm beeps when Error, Warning or Shutdown conditions exist.

\* See SYSTEM SETUP & ANALYSIS for Service Code description. (See DIAGNOSTIC SERVICE CODES on Page 151.)

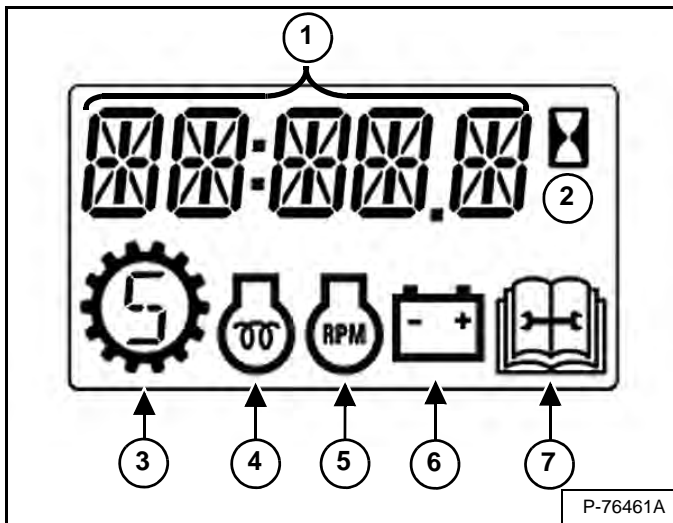
## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Display Screen

The display screen can display the following information:

- Operating hours.
- Engine revolutions per minute (rpm).
- Speed management setting.
- Maintenance clock countdown.
- Battery voltage.
- Service codes.
- Engine preheat countdown.
- Steering drift compensation setting.
- Drive response setting.

**Figure 10**



The display screen is shown in **[Figure 10]**. The data display will show operating hours upon startup.

1. **Data Display.**
2. **Hourmeter.**
3. **Speed Management.**
4. **Engine Preheat.**
5. **Engine Revolutions Per Minute.**
6. **Battery / Charging Voltage.**
7. **Service.**

## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Standard Key Panel

Figure 11

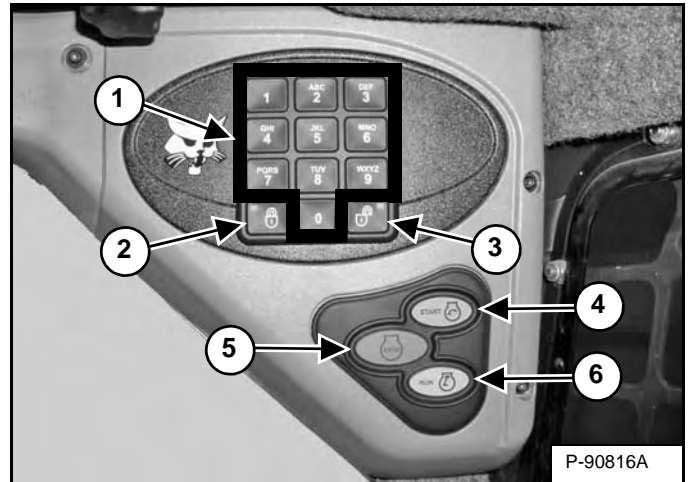


This machine may be equipped with a Standard Key Panel [Figure 11].

The Standard Key Panel is used to turn the loader electrical system on and off, and to start and stop the engine.

### Keyless Start Panel

Figure 12



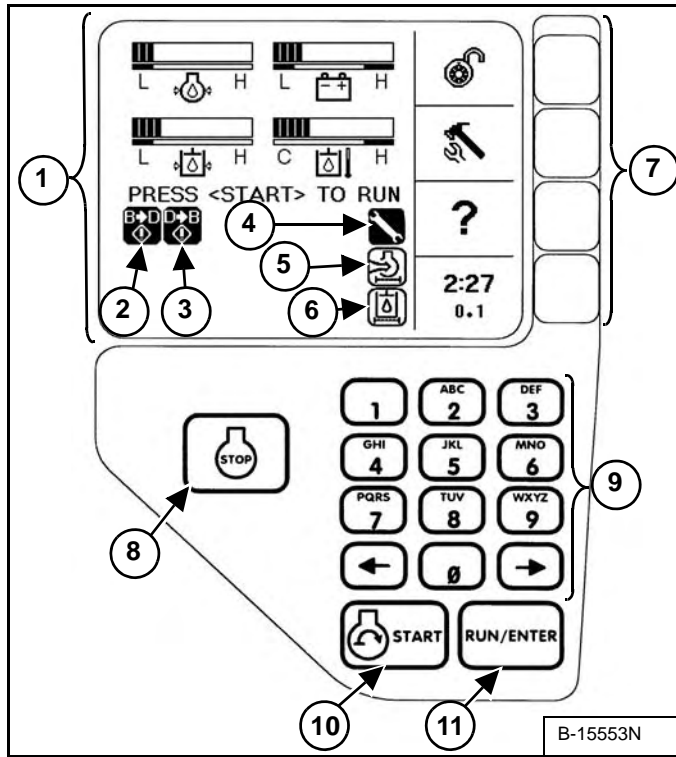
This machine may be equipped with a Keyless Start Panel [Figure 12].

1. **Keypad (keys 1 through 0):** Used to enter a number code (password) to allow starting the engine. An asterisk will show in the left panel display screen for each key press.
2. **LOCK Key:** Used to lock keypad. The lock key will display a red light to indicate a password is required to start the loader. (See Password Lockout Feature on Page 159.)
3. **UNLOCK Key:** Used to unlock keypad. The unlock key will display a green light to indicate the loader can be started without a password. (See Password Lockout Feature on Page 159.)
4. **START Button:** Used to start the engine.
5. **STOP Button:** Used to stop the engine and shut down the loader electrical system.
6. **RUN Button:** Used to turn on the loader electrical system.

## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Deluxe Instrumentation Panel

Figure 13

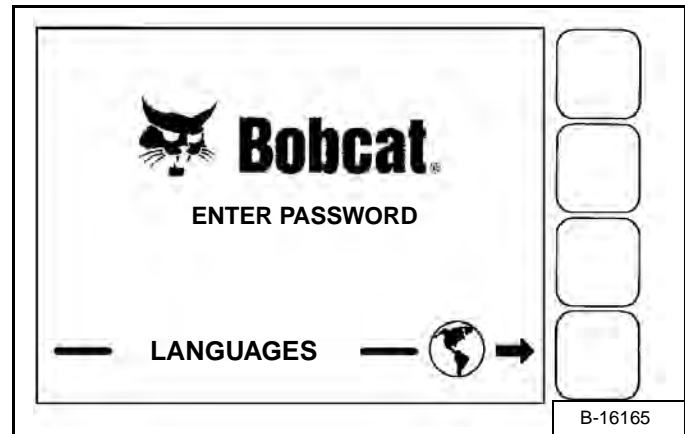


This machine may be equipped with a Deluxe Instrumentation Panel [Figure 13].

1. **Display Screen:** The Display Screen is where all system setup, monitoring, troubleshooting and error conditions are displayed.
2. **Bobcat Main Controller Error:** Indicates communication error between Bobcat Main Controller and Deluxe Instrumentation Panel. (See DIAGNOSTIC SERVICE CODES on Page 151.)
3. **Display Error:** Indicates communication error between instrument panel and Bobcat controller. (See DIAGNOSTIC SERVICE CODES on Page 151.)
4. **BobCARE PM<sup>SM</sup> Icon:** Indicates planned maintenance is due. (See MAINTENANCE CLOCK on Page 162.)
5. **Engine Air Filter Icon:** Indicates engine air filter requires service.
6. **Hydraulic Filter Icon:** Indicates hydraulic filter requires service.
7. **Selection Buttons:** The four Selection Buttons allow you to select items from the Display Screen and scroll through screens.
8. **Stop Button:** Used to stop the engine and shut down the loader electrical system.

9. **Keypad:** The numeric keypad has two functions:
  - To enter a number code (password) to allow starting the engine.
  - To enter a number as directed for further use of the Display Screen.
10. **Start Button:** Used to start the engine.
11. **Run / Enter Button:** Used to turn on the loader electrical system.

Figure 14



The first screen you will see on your new loader will be as shown in [Figure 14].

When this screen is on the display you can enter the password and start the engine or change the Display Screen setup features.

**NOTE:** Your new loader (with Deluxe Instrumentation Panel) will have an Owner Password. Your dealer will provide you with this password. Change the password to one that you will easily remember to prevent unauthorized use of your loader. (See Changing The Owner Password on Page 159.) Keep your password in a safe place for future needs.

Change Language: Press the Selection Button at the end of the arrow [Figure 14] to go to the next screen. Use the Keypad to select the number of the language.

Press EXIT. The screen will return to [Figure 14]. You can then enter the password and start the engine.

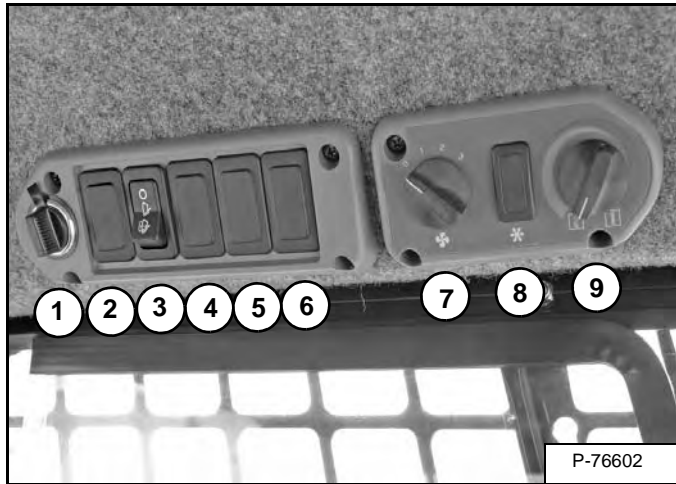
See CONTROL PANEL SETUP for further description of screens to setup the system for your use. (See CONTROL PANEL SETUP on Page 157.)

**NOTE:** Pressing the EXIT key will go to the previous screen and you can continue pressing until you get to the initial (home) screen. **SHORTCUT:** Press the "0" (zero) key to get to the home screen immediately.

## INSTRUMENT PANEL IDENTIFICATION (CONT'D)

### Side Panel

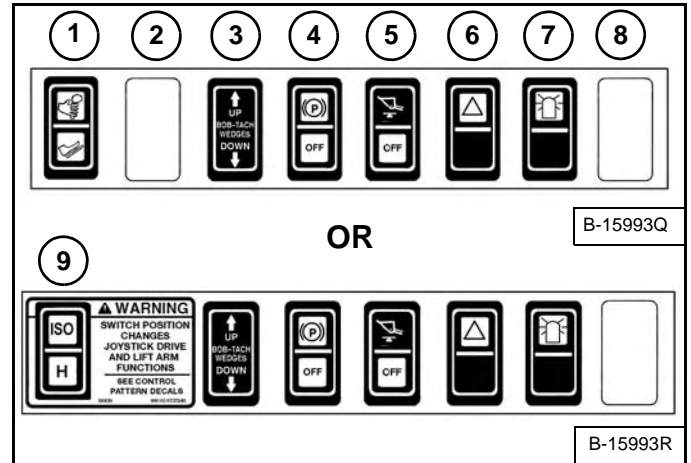
Figure 15



REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	POWER PORT	Provides a 12 volt receptacle for accessories.
2	NOT USED	---
3	FRONT WIPER (Option)	Press the bottom of the switch to start the front wiper (press and hold for washer fluid). Press the top of the switch to stop the wiper.
4	REAR WIPER (Option)	Press the bottom of the switch to start the rear wiper (press and hold for washer fluid). Press the top of the switch to stop the wiper.
5	NOT USED	---
6	NOT USED	---
7	FAN MOTOR (Option)	Turn clockwise to increase fan speed; counterclockwise to decrease. There are four positions; OFF-1-2-3.
8	AIR CONDITIONING SWITCH (Option)	Press bottom of switch to start; top to stop. Fan Motor (Item 7) must be ON for A/C to operate.
9	TEMPERATURE CONTROL (Option)	Turn clockwise to increase the temperature; counterclockwise to decrease.

### Front Panel

Figure 16



**NOTE: Parking Brake (Item 4) [Figure 16] is standard on all loaders.**

REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	ADVANCED CONTROL SYSTEM (ACS) (Option)	Press the top to select Hand Controls; bottom to select Foot Controls.
2	NOT USED	---
3	POWER BOB-TACH (Option)	Press and hold the up arrow to disengage the Bob-Tach wedges. Press and hold the down arrow to engage the wedges into the mounting frame holes.
4	PARKING BRAKE (Standard on all loaders)	Press the top to engage the PARKING BRAKE; bottom to disengage.
5	HYDRAULIC BUCKET POSITIONING (Option)	Press the top to engage Hydraulic Bucket Positioning; bottom to disengage.
6	HAZARD LIGHTS (Option)	Press the top to turn the HAZARD LIGHTS ON; bottom to turn OFF.
7	ROTATING BEACON (Option)	Press the top to turn the ROTATING BEACON ON; bottom to turn OFF.
8	NOT USED	---
9	SELECTABLE JOYSTICK CONTROLS (SJC) (Option)	Press the top to select 'ISO' Control Pattern; bottom to select 'H' Control Pattern.

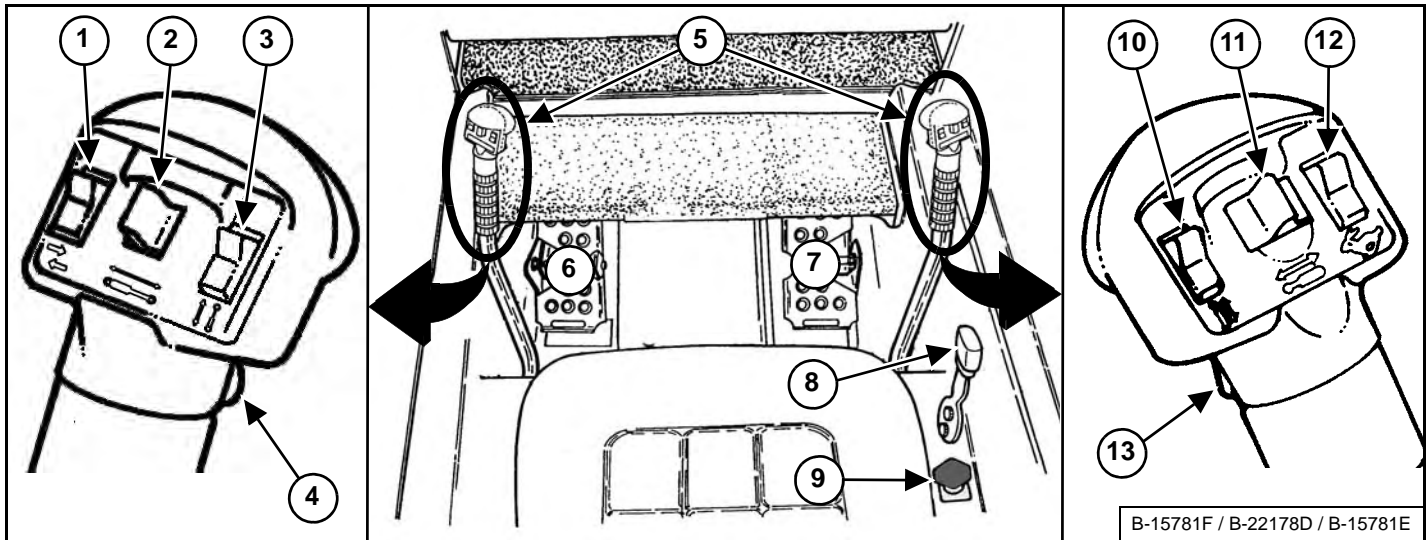
## CONTROL IDENTIFICATION

This loader has three control configurations available to operate lift / tilt functions and driving / steering the loader:

- Standard Controls - Uses foot pedals for lift and tilt functions.  
Uses steering levers for driving and steering the loader.
- Advanced Control System (ACS) (Option) - Uses a choice of foot pedals or handles for lift and tilt functions.  
Uses steering levers for driving and steering the loader.
- Selectable Joystick Controls (SJC) (Option) - Uses joysticks for lift / tilt functions and driving / steering the loader.

### Standard Controls

Figure 17



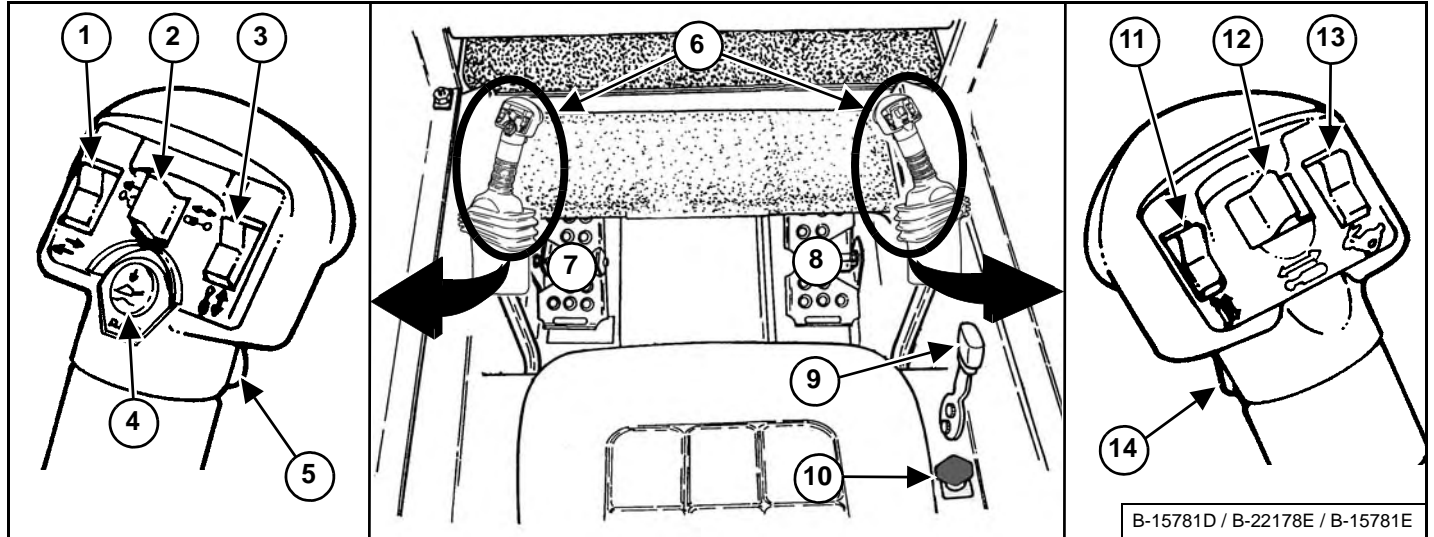
REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	TURN SIGNALS (Option)	Press the top to activate right signal; bottom to activate left signal; center position to turn off.
2	REAR AUXILIARY HYDRAULICS (Option) Also: ATTACHMENT FUNCTION CONTROL	See REAR Auxiliary Hydraulics Operation in this manual. See ATTACHMENT CONTROL DEVICE in this manual.
3	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
4	FRONT HORN	Press the front switch to sound the front horn.
5	STEERING LEVERS	See DRIVING AND STEERING THE LOADER in this manual.
6	LIFT ARM PEDAL	See HYDRAULIC CONTROLS in this manual.
7	TILT PEDAL	See HYDRAULIC CONTROLS in this manual.
8	ENGINE SPEED CONTROL	See ENGINE SPEED CONTROL in this manual.
9	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
10	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
11	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
12	TWO-SPEED CONTROL (Option)	See TWO-SPEED CONTROL in this manual.
13	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.



## CONTROL IDENTIFICATION (CONT'D)

### Advanced Control System (ACS)

Figure 18

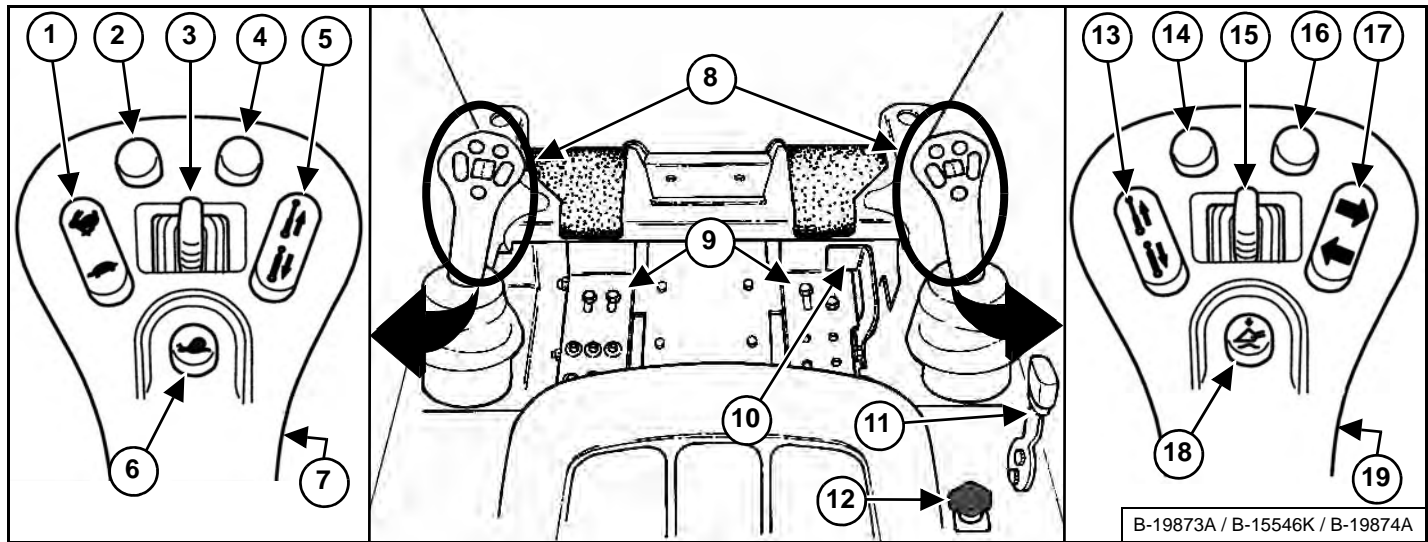


REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	TURN SIGNALS (Option)	Press the top to activate right signal; bottom to activate left signal; center position to turn off.
2	REAR AUXILIARY HYDRAULICS (Option) Also: ATTACHMENT FUNCTION CONTROL	See REAR Auxiliary Hydraulics Operation in this manual. See ATTACHMENT CONTROL DEVICE in this manual.
3	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
4	FLOAT CONTROL	See HYDRAULIC CONTROLS in this manual.
5	FRONT HORN	Press the front switch to sound the front horn.
6	STEERING LEVERS AND LIFT / TILT HANDLES	See DRIVING AND STEERING THE LOADER and HYDRAULIC CONTROLS in this manual.
7	LIFT ARM PEDAL	See HYDRAULIC CONTROLS in this manual.
8	TILT PEDAL	See HYDRAULIC CONTROLS in this manual.
9	ENGINE SPEED CONTROL	See ENGINE SPEED CONTROL in this manual.
10	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
11	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
12	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
13	TWO-SPEED CONTROL (Option)	See TWO-SPEED CONTROL in this manual.
14	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.

## CONTROL IDENTIFICATION (CONT'D)

### Selectable Joystick Controls (SJC)

Figure 19



REF. NO.	DESCRIPTION	FUNCTION / OPERATION
1	TWO-SPEED CONTROL (Option) Also: SPEED MANAGEMENT	See TWO-SPEED CONTROL in this manual. See SPEED MANAGEMENT in this manual.
* 2	STEERING DRIFT COMPENSATION Also: DRIVE RESPONSE	See STEERING DRIFT COMPENSATION in this manual. See DRIVE RESPONSE in this manual.
3	REAR AUXILIARY HYDRAULICS (Option) Also: ATTACHMENT FUNCTION CONTROL	See REAR Auxiliary Hydraulics Operation in this manual. See ATTACHMENT CONTROL DEVICE in this manual.
* 4	STEERING DRIFT COMPENSATION Also: DRIVE RESPONSE	See STEERING DRIFT COMPENSATION in this manual. See DRIVE RESPONSE in this manual.
5	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
6	SPEED MANAGEMENT	See SPEED MANAGEMENT in this manual.
7	FRONT HORN	Press the front switch to sound the front horn.
8	JOYSTICKS	See DRIVING AND STEERING THE LOADER and HYDRAULIC CONTROLS in this manual.
9	FOOTRESTS	Keep your feet on the footrests at all times.
10	ENGINE SPEED CONTROL (FOOT)	See ENGINE SPEED CONTROL in this manual.
11	ENGINE SPEED CONTROL (HAND)	See ENGINE SPEED CONTROL in this manual.
12	LIFT ARM BYPASS CONTROL	See LIFT ARM BYPASS CONTROL in this manual.
13	ATTACHMENT FUNCTION CONTROL	See ATTACHMENT CONTROL DEVICE in this manual.
* 14	NOT USED	---
15	FRONT AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation in this manual.
* 16	NOT USED	---
17	TURN SIGNALS (Option)	Press the top to activate right signal; press again to turn off. Press the bottom to activate left signal; press again to turn off.
18	FLOAT CONTROL	See HYDRAULIC CONTROLS in this manual.
19	CONTINUOUS FLOW CONTROL FOR AUXILIARY HYDRAULICS	See FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW) in this manual.

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

## SEAT BAR RESTRAINT SYSTEM

### Operation

Figure 20



The seat bar restraint system has a pivoting seat bar with armrests (Item 1) [Figure 20].

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

### AVOID 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.**

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When the seat bar is down, the engine is running, the PRESS TO OPERATE LOADER 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, tilt and traction drive functions are deactivated and both foot pedals (if equipped) will be locked when returned to neutral position.

## WARNING

### AVOID 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-2463-1110

## BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

### Operation

# ! WARNING

### AVOID 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-2151-1111

Figure 21



The Bobcat Interlock Control System (BICS™) has a pivoting seat bar with armrests (Item 1) [Figure 21]. The operator controls the use of the seat bar.

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 functions can be operated. The seat belt must be fastened anytime you operate the machine.

# ! WARNING

### AVOID 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-2261-0909

Figure 22



There are three display lights (Items 1, 2 and 3) [Figure 22] located on the left instrument panel that must be OFF to fully operate the machine.

When the seat bar is lowered, the engine is running, the PRESS TO OPERATE LOADER button is activated, 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

### AVOID 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.

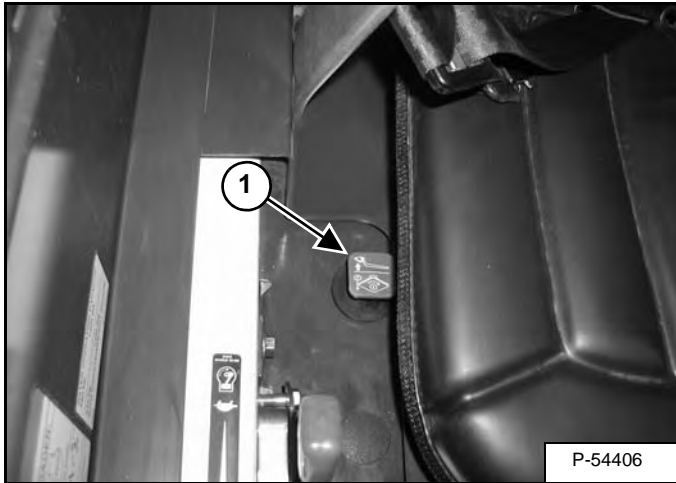
The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

W-2463-1110

## LIFT ARM BYPASS CONTROL

### Operation

Figure 23



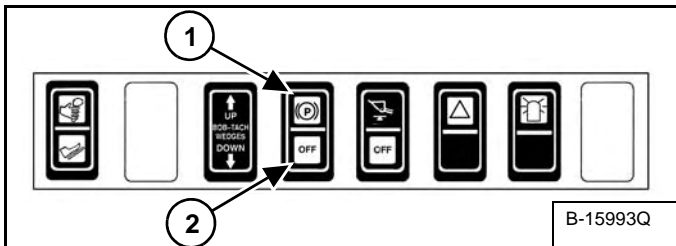
The lift arm bypass control (Item 1) [Figure 23] is used to lower the lift arms if the lift arms cannot be lowered during normal operations.

1. Sit in the operator's seat.
2. Fasten the seat belt and lower the seat bar.
3. Turn the knob (Item 1) [Figure 23] clockwise 1/4 turn.
4. Pull up and hold the knob until the lift arms lower.

## PARKING BRAKE

### Operation

Figure 24



Press the top of the switch (Item 1) [Figure 24] to engage the parking brake. The red light in the switch will turn on. The traction drive system will be locked.

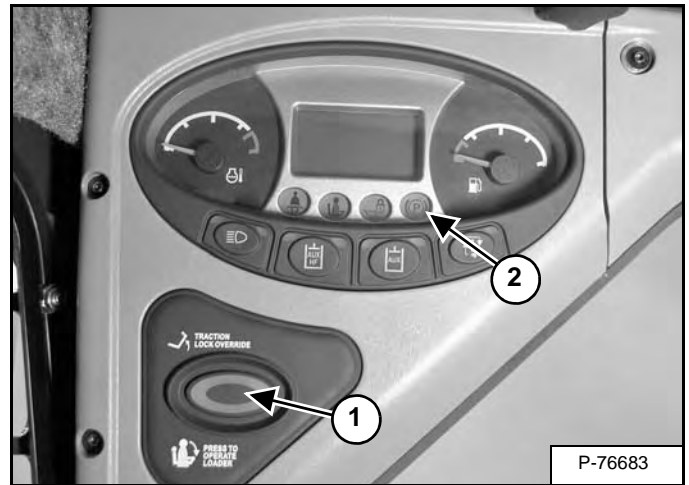
Press the bottom of the switch (Item 2) [Figure 24] to disengage the parking brake. The red light in the switch will turn off. The traction drive system will be unlocked.

**NOTE:** The PARKING BRAKE light on the left instrument panel will remain ON until the engine is started, the PRESS TO OPERATE LOADER button is pressed and the parking brake is disengaged.

## TRACTION LOCK OVERRIDE

### Operation

Figure 25



(Functions Only When The Seat Bar Is Raised And The Engine Is Running) There is a TRACTION LOCK OVERRIDE button (Item 1) [Figure 25] on the left instrument panel which will allow you to use the steering levers to move the loader forward and backward when using the backhoe attachment.

- Press the TRACTION LOCK OVERRIDE button once to unlock traction drive. The PARKING BRAKE light (Item 2) [Figure 25] will be OFF.
- Press the button a second time to lock the traction drive. The PARKING BRAKE light (Item 2) [Figure 25] will be ON.

**NOTE:** The TRACTION LOCK OVERRIDE button will unlock the traction drive when the seat bar is raised and the engine is running.

**NOTE:** The TRACTION LOCK OVERRIDE button will function if the parking brake is in the engaged or disengaged position and the engine is running. If the parking brake switch is turned ON, the red light in the parking brake switch will turn OFF when TRACTION LOCK OVERRIDE is engaged.

## EMERGENCY EXIT

The front opening on the operator cab and rear window provide exits.

### Rear Window

Figure 26



Pull on the tag on the top of the rear window to remove the rubber cord [Figure 26].

Push the rear window out of the rear of the operator cab.

Figure 27



Exit through the rear of the operator cab [Figure 27].

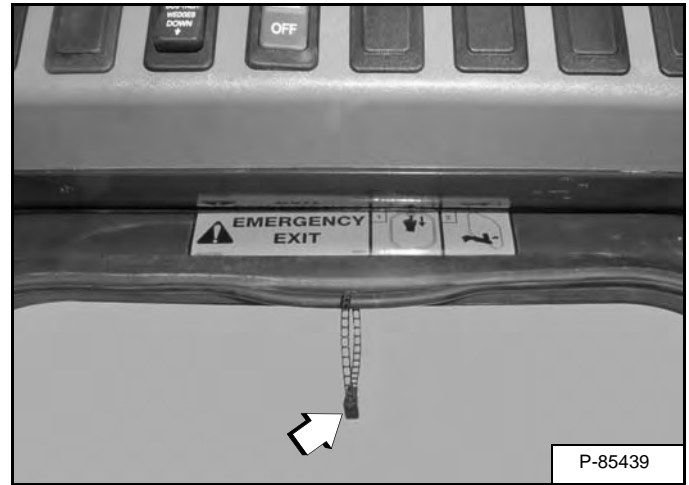
### Front Door

This machine may be equipped with a Front Door.

**NOTE:** When an Operator Cab Enclosure Kit is installed, the window of the front door can be used as an emergency exit [Figure 28].

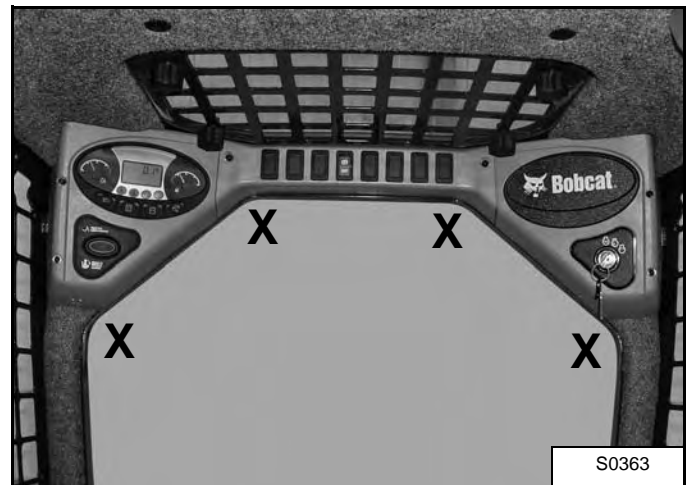
**NOTE:** If the loader has a Special Application Door Kit installed, the window of the front door is NOT an emergency exit.

Figure 28



Pull the plastic loop at the top of the window in the front door to remove the rubber cord [Figure 28].

Figure 29



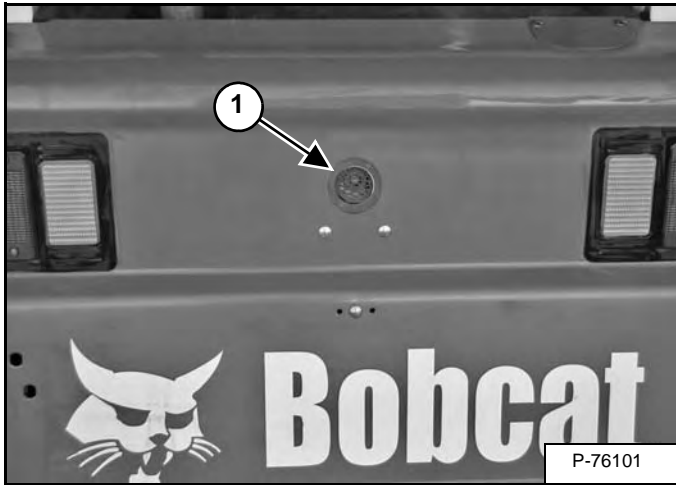
Push the window out with your foot at any corner of the window [Figure 29].

Exit through the front door.

## BACK-UP ALARM SYSTEM

### Description

Figure 30



The back-up alarm (Item 1) [Figure 30] 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 loader 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 loader is equipped with a back-up alarm.

Operators must be trained to **always** look in the direction of travel, **including when operating the loader 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.

### Operation

## **WARNING**

### **AVOID INJURY OR DEATH**

- **Always keep bystanders away from the work area and travel path.**
- **The operator must always look in the direction of travel.**
- **The back-up alarm must sound when operating the machine in the reverse direction.**

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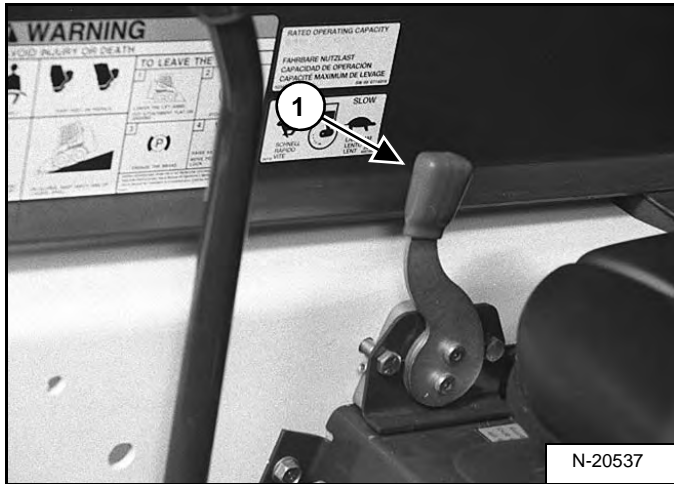
The back-up alarm will sound when the operator moves both steering levers or joystick(s) into the reverse position. Slight movement of the steering levers into the reverse position is required with hydrostatic transmissions, before the back-up alarm will sound.

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 BACK-UP ALARM SYSTEM on Page 109.)

## ENGINE SPEED CONTROL

### Operation

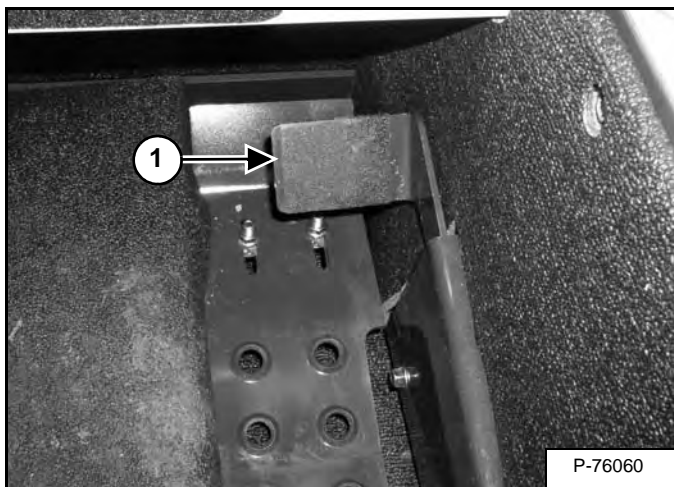
Figure 31



The engine speed control lever is at the right side of the operator's seat (Item 1) [Figure 31].

Move the lever forward to increase engine speed. Move backward to decrease engine speed.

Figure 32



There is a foot operated engine speed control pedal (Item 1) [Figure 32] in addition to the engine speed control lever on SJC equipped machines. It is located on the right side floor above the footrest.



## DRIVING AND STEERING THE LOADER

### Available Control Configurations

The loader has three configurations available:

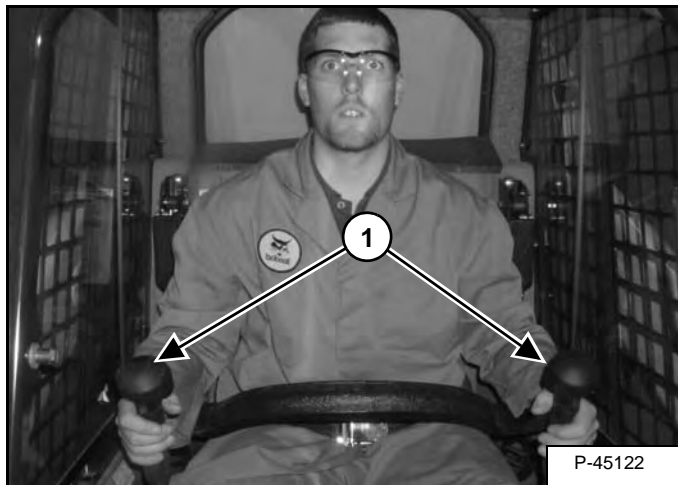
- *Standard Controls* - Two Steering Levers control drive and steering functions.
- *Advanced Control System (ACS) (Option)* - Two Steering Levers control drive and steering functions.
- *Selectable Joystick Controls (SJC) (Option)* -

*(‘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.

### Operation (Standard And ACS)

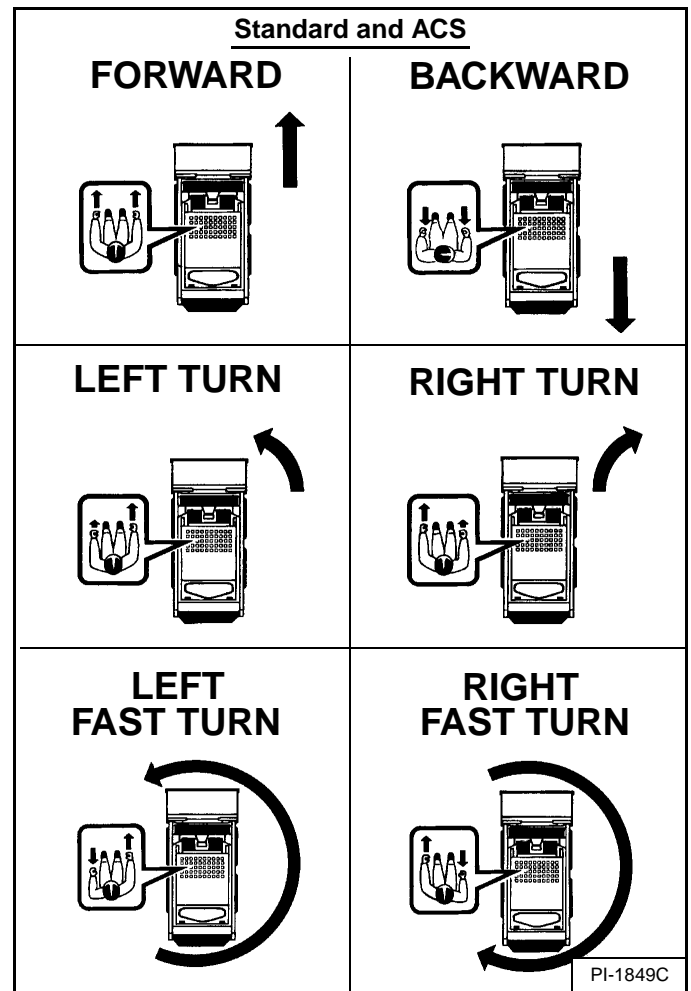
Figure 33



The steering levers (Item 1) [Figure 33] are on the left and right side in front of the seat.

Move the levers smoothly. Avoid sudden starting and stopping.

Figure 34



The steering levers control forward and backward travel and turning the loader [Figure 34].

**Forward Travel** - Push both levers forward.

**Reverse Travel** - Pull both levers backward.

**Normal Turning** - Move one lever farther forward than the other.

**Fast Turning** - Push one lever forward and pull the other lever backward.

## **WARNING**

### AVOID INJURY OR DEATH

When operating the machine:

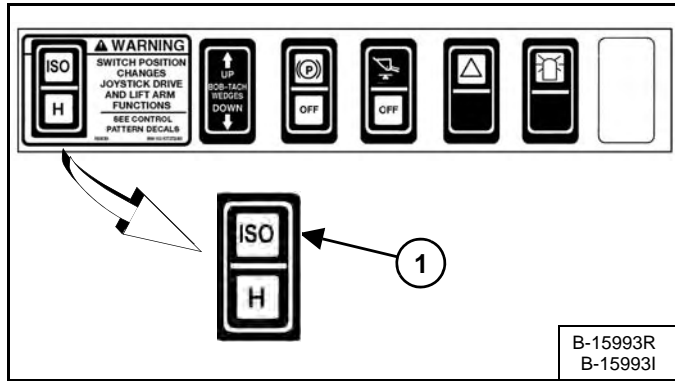
- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the pedal controls or footrests and hands on the controls.

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## DRIVING AND STEERING THE LOADER (CONT'D)

### Operation (SJC) In 'ISO' Control Pattern

Figure 35



Select the 'ISO' control pattern by pressing the top of the switch (Item 1) [Figure 35].



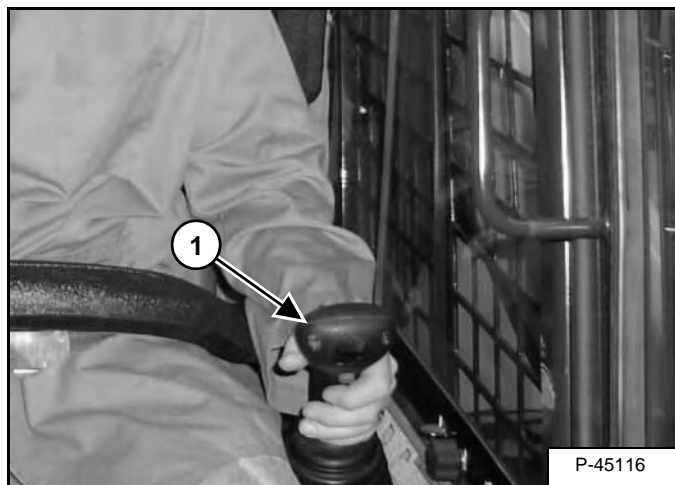
#### AVOID INJURY OR DEATH

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the foot rests and hands on control levers.

W-2399-0501

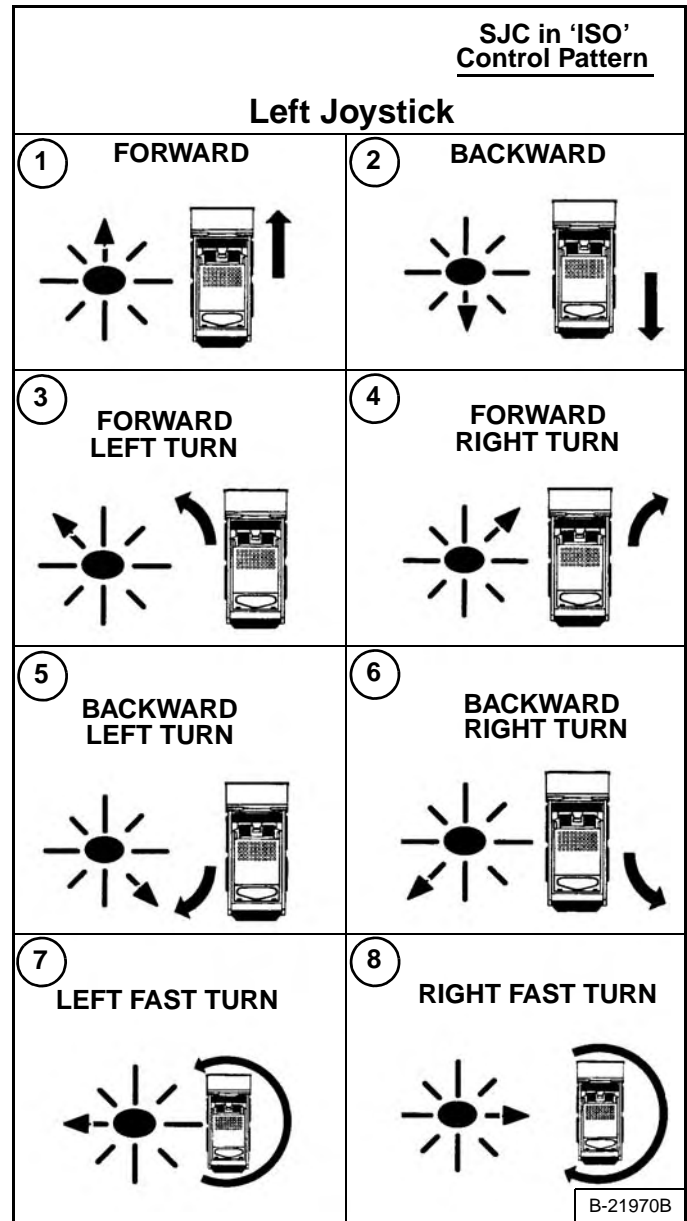
Figure 36



The joystick that controls drive and steering is on the left side in front of the seat (Item 1) [Figure 36].

Move the joystick smoothly. Avoid sudden starting and stopping.

Figure 37



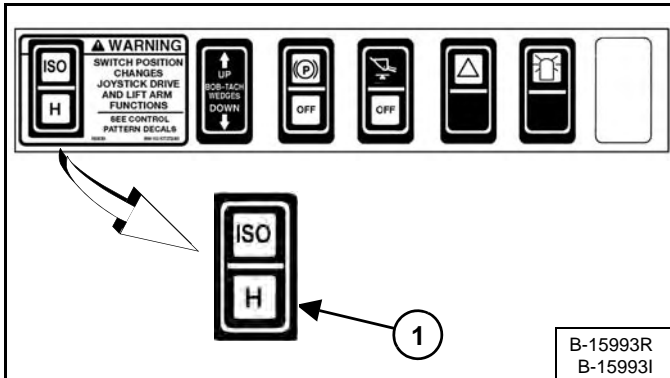
Left Joystick Functions (Drive And Steering) [Figure 37].

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.

## DRIVING AND STEERING THE LOADER (CONT'D)

### Operation (SJC) In 'H' Control Pattern

Figure 38



Select the 'H' control pattern by pressing the bottom of the switch (Item 1) [Figure 38].



#### AVOID INJURY OR DEATH

When operating the machine:

- Keep the seat belt fastened snugly.
- The seat bar must be lowered.
- Keep your feet on the foot rests and hands on control levers.

W-2399-0501

Figure 39



Both joysticks control drive and steering and are located on the left and right side in front of the seat (Item 1) [Figure 39].

Move the joysticks smoothly. Avoid sudden starting and stopping.

Figure 40

Left Joystick	Right Joystick	SJC in 'H' Control Pattern
① N	N	↑ FORWARD
② N	N	↓ BACKWARD
③ N	N	↶ LEFT TURN
④ N	N	↷ RIGHT TURN
⑤ N	N	↶↷ LEFT FAST TURN
⑥ N	N	↷↶ RIGHT FAST TURN

#### Joystick Functions (Drive And Steering) [Figure 40]

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

##### Using The 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 loader.

## TWO-SPEED CONTROL

### Description

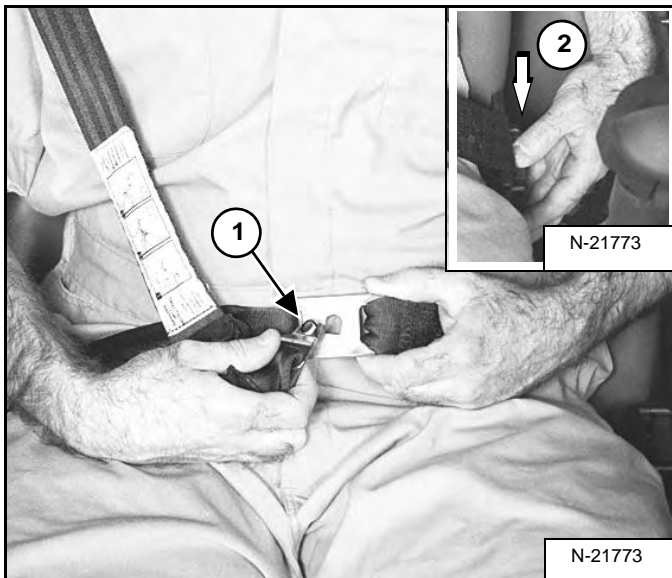
This machine may be equipped with Two-Speed. Two-speed allows you to reduce cycle times when there is a long travel distance between the dig site and the dump site. You can also use the two-speed when traveling from one job site to another at faster speeds.

# ! WARNING

**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-2754-0908

Figure 41



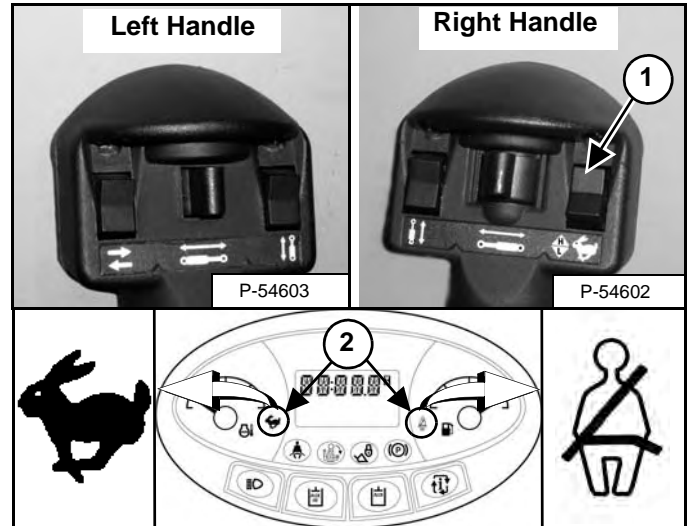
**NOTE: The 3-point restraint must be used when selecting two-speed operation [Figure 41].**

Connect the shoulder belt to the lap belt (Item 1). Pull the lap belt across to the left side of the seat (Item 2) [Figure 41] and fasten.

The shoulder belt must be positioned over your right shoulder and lap belt over your lower hips [Figure 41].

## Operation (Standard And ACS) (If Equipped)

Figure 42



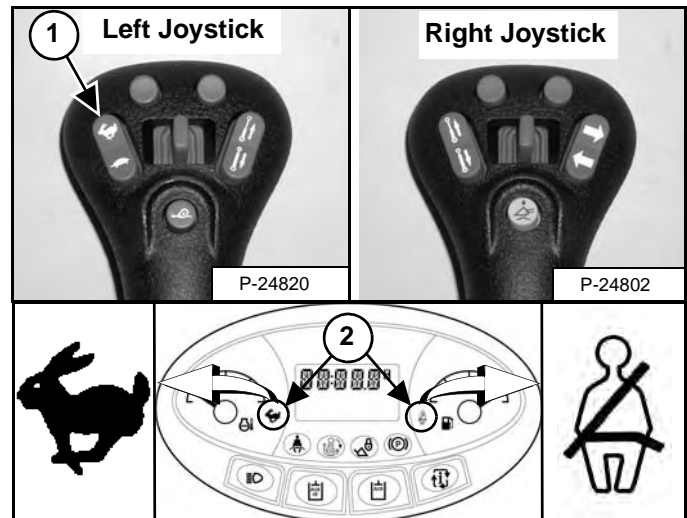
Press the top of the switch (Item 1) on the right handle for high range. The two-speed and shoulder belt icons located on the left instrument panel (Item 2) [Figure 42] will come on.

**NOTE: This toggle switch retains the selected range. The loader will be in high range speed at start-up if the switch is in the high range position.**

Press the bottom of the switch for low range.

## Operation (SJC) (If Equipped)

Figure 43



**NOTE: You must disengage Speed Management before you can select high range.**

Press the top of the switch (Item 1) on the left joystick for high range. The two-speed and shoulder belt icons located on the left instrument panel (Item 2) [Figure 43] will come on.

Press the bottom of the switch for low range.

## SPEED MANAGEMENT

Speed Management is available on SJC equipped machines.

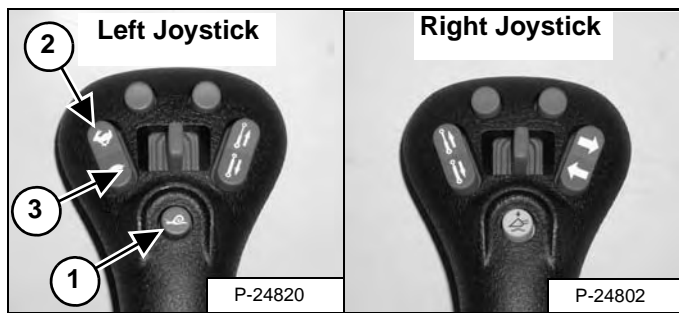
### Operation

Speed Management allows the loader 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)

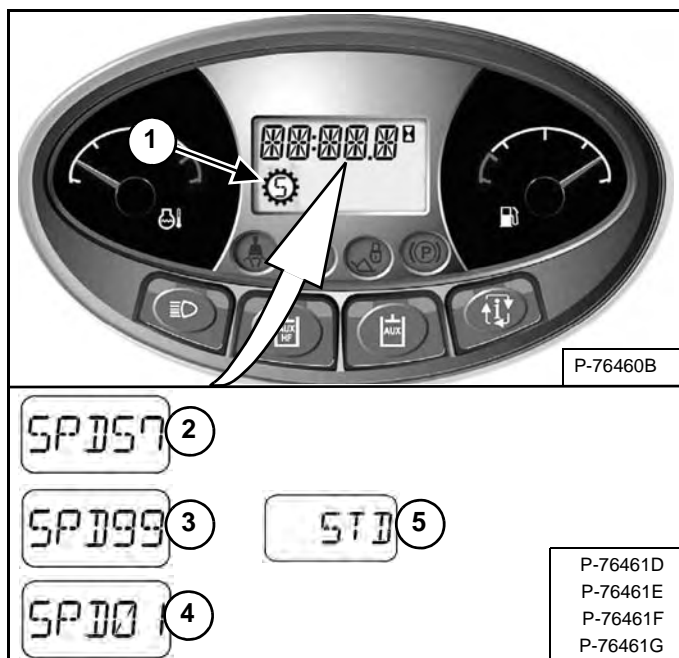
**NOTE: Two-Speed Loaders Only - You must be in low range speed to engage Speed Management.**

Figure 44



Press the button (Item 1) [Figure 44] on the left joystick once to engage Speed Management.

Figure 45



The Speed Management icon (Item 1) [Figure 45] 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 the factory default setting of 57% of Standard Travel Speed and the percentage [SPD 57] will appear in the display (Item 2) [Figure 45].

**NOTE: The factory default setting can be changed by the operator. (See Changing The Factory Default Setting on Page 48.)**

While Speed Management is engaged, press the top of the Speed Control switch (Item 2) [Figure 44] to increase the speed up to 99% [SPD 99] or the bottom of the switch (Item 3) [Figure 44] to decrease the speed down to 1% [SPD 01]. The percentages will appear in the display (Items 2, 3 and 4) [Figure 45].

Press button (Item 1) [Figure 44] again to disengage Speed Management and return to Standard Travel Speed. [STD] (Item 5) [Figure 45] will appear in the display.

The system will retain the speed percentage as long as the key remains ON or the STOP button has not been pressed.

**EXAMPLE: You can be using the machine at 40% and then disengage Speed Management to reposition the loader, then re-engage Speed Management. The speed percentage will still be at 40%.**

**EXAMPLE: Turning the key OFF or pressing the STOP button will return the Speed Management setting to default. The next time you start the engine and engage Speed Management, the speed will be at 57% (factory default setting) or the last default setting saved by the operator. (See Changing The Factory Default Setting on Page 48.)**

**NOTE: Two-Speed Loaders Only - You must disengage Speed Management before you can select high range.**

## SPEED MANAGEMENT (CONT'D)

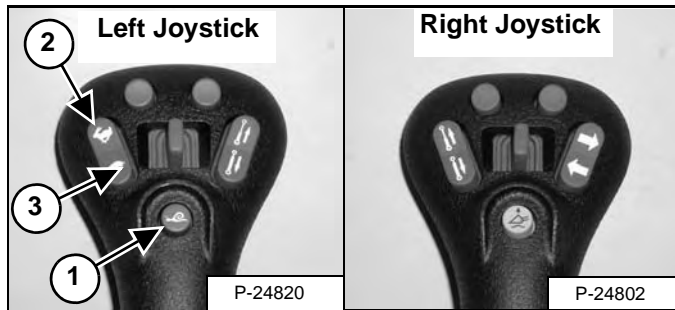
### Changing The Factory Default Setting

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 changed to 28% of Standard Travel Speed instead of the factory default setting of 57%. Each time you start the machine and first select Speed Management, the machine will default to 28% of Standard Travel Speed.

Engage Speed Management. (See Operation on Page 47.)

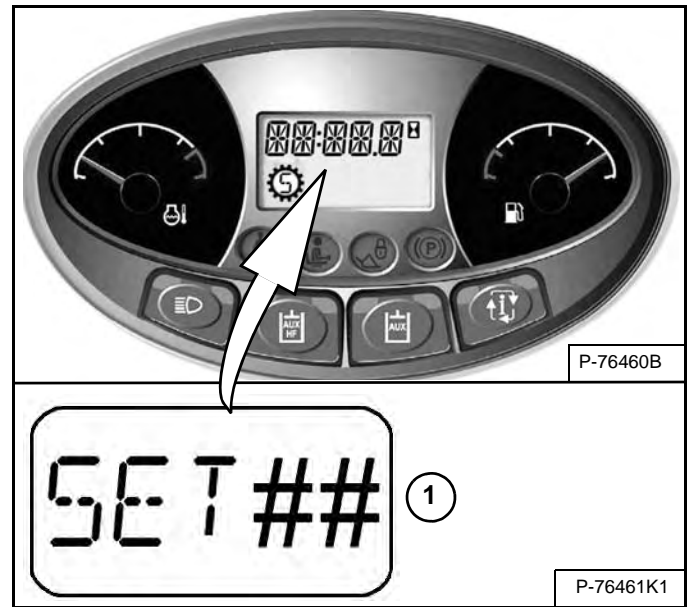
Figure 46



Adjust the speed percentage higher (Item 2) or lower (Item 3) [Figure 46] by pressing the Speed Control switch until the desired default setting is displayed.

Press and hold the button (Item 1) [Figure 46] on the left joystick to save the default setting.

Figure 47



The alarm will beep once, display [SET ##] (## will be the percentage you selected) (Item 1) [Figure 47] and remain in Speed Management mode.

Pressing the button (Item 1) [Figure 46] on the left joystick or turning the machine off will disengage Speed Management and return the loader to Standard Travel Speed.

When Speed Management is first selected each time the machine is started, the percentage you selected will be the 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.

## DRIVE RESPONSE

Drive Response is available on SJC equipped machines.

**NOTE: An upgrade to the loader software may be required if this feature does not function as described in this manual. See your Bobcat dealer to update your machine software version if necessary.**

### Description

Drive Response changes how responsive (more or less) the loader 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 and various job conditions and attachment use.

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

There are three drive response settings:

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

## Operation

**NOTE: Changes CANNOT be performed until the seat bar is lowered, the engine is started and the PRESS TO OPERATE LOADER button is pressed to activate the BICS™.**

Perform pre-starting and starting procedures:

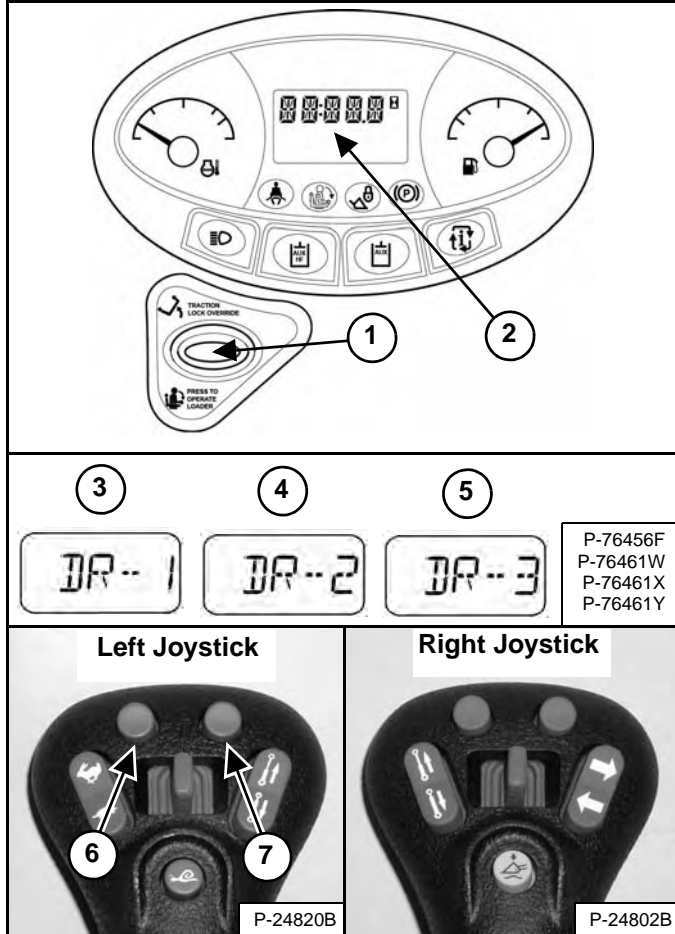
1. Fasten seat belt.
2. Lower seat bar.
3. Place joysticks in neutral position.
4. Start the engine.
5. Press the PRESS TO OPERATE LOADER button.
6. Current drive response setting will be displayed briefly in the data display.

**NOTE: Raising the seat bar or changing control mode (ISO / H) will cause the machine to disengage from drive response. The last displayed setting will remain in effect until the STOP button is pressed or the key is turned OFF.**

## DRIVE RESPONSE (CONT'D)

### Operation (Cont'd)

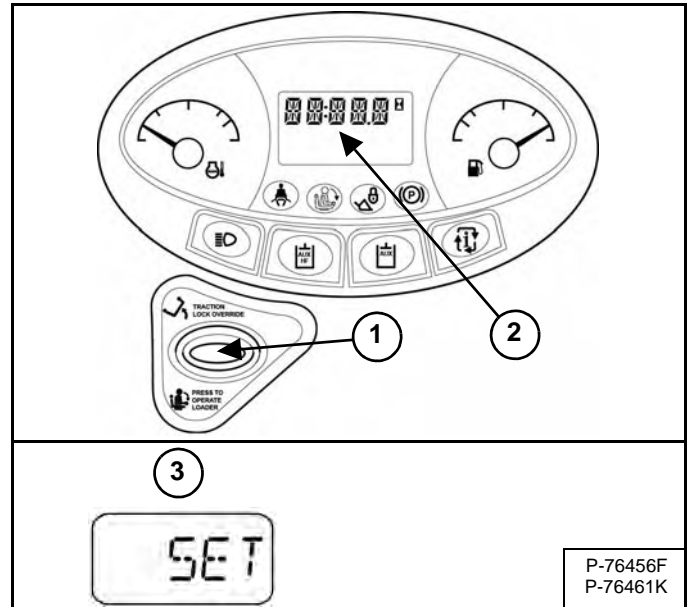
Figure 48



Press and hold the PRESS TO OPERATE LOADER button (Item 1) for **three seconds** to adjust the loader drive response setting. The current drive response setting will appear in the data display (Item 2) [Figure 48].

Press the upper left button (Item 6) on the left joystick to scroll down through the three settings. Press the upper right button (Item 7) on the left joystick to scroll up through the three drive response settings. The new drive response setting (Item 3, 4 or 5) will appear in the data display (Item 2) [Figure 48]. Adjustments to drive response will be effective immediately.

Figure 49



### Saving The Drive Response Setting:

The current drive response setting can be saved by pressing and holding the PRESS TO OPERATE LOADER button (Item 1) for **three seconds**. [SET] (Item 3) will appear in the data display (Item 2) [Figure 49] and the machine will exit from the drive response adjustment menu.

### OR

Press the PRESS TO OPERATE LOADER button to exit from the drive response adjustment menu without saving the current setting.

The current steering drift compensation setting (See STEERING DRIFT COMPENSATION on Page 51.) will appear in the data display (Item 2) [Figure 49] and the upper left and upper right buttons on the left joystick will no longer make changes to drive response.

**NOTE: The last displayed drive response setting will remain in effect until the STOP button is pressed or the key is turned OFF. The machine will revert back to the last saved drive response setting the next time it is started.**

Adjustments to steering drift compensation can now be made (See STEERING DRIFT COMPENSATION on Page 51.)

### OR

Press the PRESS TO OPERATE LOADER button again to exit from the steering drift compensation menu.



## STEERING DRIFT COMPENSATION

Steering Drift Compensation is available on SJC equipped machines.

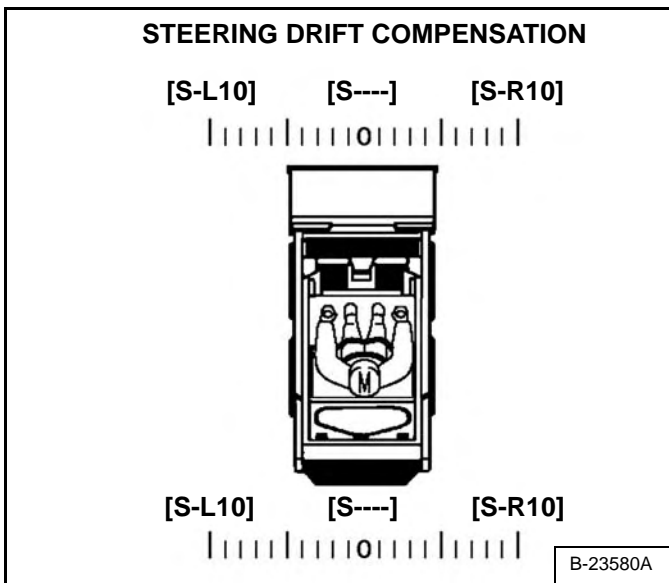
### Description

Steering Drift Compensation can be used to reduce steering drift to maintain a desired travel path in both forward and reverse directions.

Examples of applications where this feature can be used:

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

Figure 50



Steering drift compensation contains a total of 21 settings. Steering drift compensation can be set to any point from neutral to [S-L10] left and from neutral to [S-R10] right. [S----] is displayed when set for neutral [Figure 50].

## Operation

**NOTE: Changes CANNOT be performed until the seat bar is lowered, the engine is started and the PRESS TO OPERATE LOADER button is pressed to activate the BICS™.**

Perform pre-starting and starting procedures:

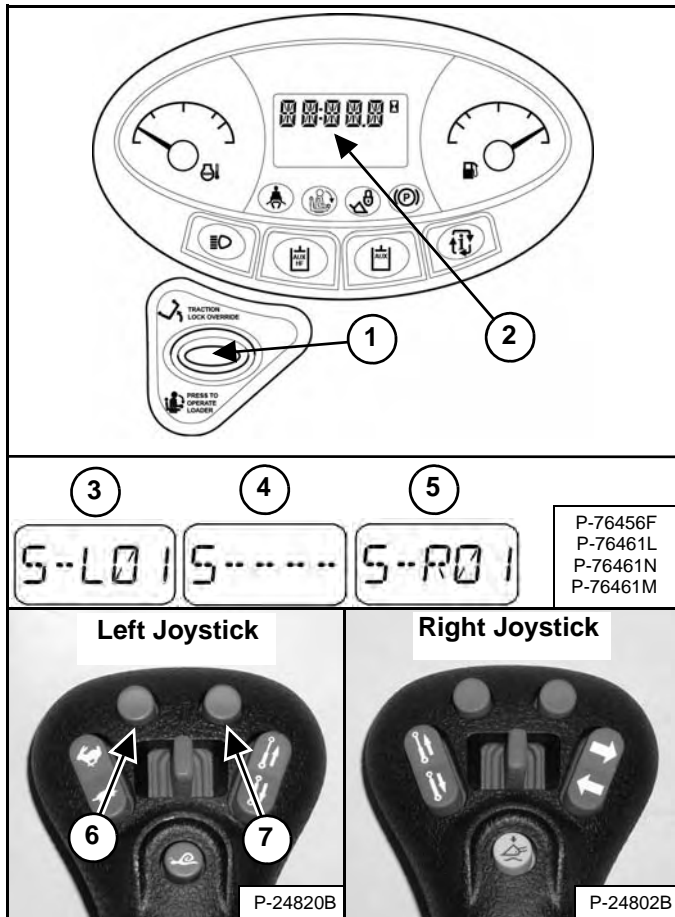
1. Fasten seat belt.
2. Lower seat bar.
3. Place joysticks in neutral position.
4. Start the engine.
5. Press the PRESS TO OPERATE LOADER button.
6. Current drive response setting will be displayed briefly in the data display.

**NOTE: Raising the seat bar or changing control mode (ISO / H) will cause the machine to disengage from steering drift compensation. The last displayed setting will remain in effect until the STOP button is pressed or the key is turned OFF.**

## STEERING DRIFT COMPENSATION (CONT'D)

### Operation (Cont'd)

Figure 51

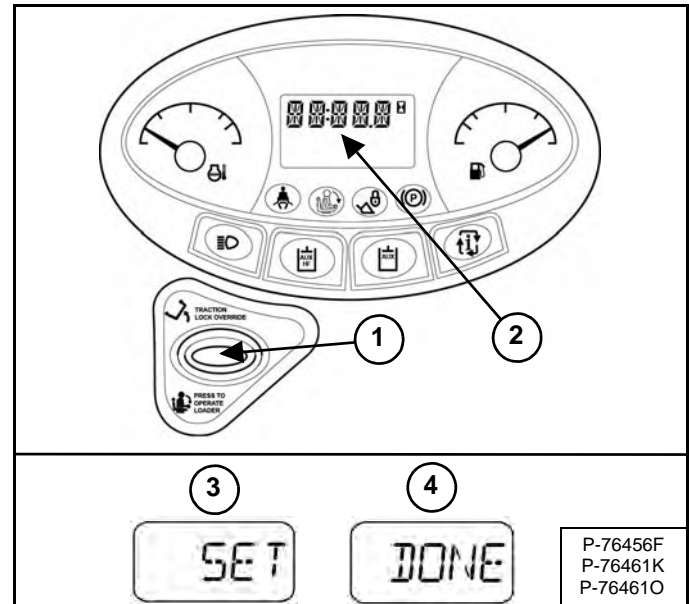


Press and hold the PRESS TO OPERATE LOADER button (Item 1) for **three seconds** to enter the drive response adjustment menu. Press the PRESS TO OPERATE LOADER button (Item 1) again to adjust the loader steering drift compensation setting. The current steering drift compensation setting will appear in the data display (Item 2) [Figure 51].

Press the upper left button (Item 6) on the left joystick to adjust the machine left. [S-L01] (Item 3) through a maximum of [S-L10] will appear in the data display (Item 2) [Figure 51]. The number will increase by one each time you press the button. The higher the number, the greater the amount of steering drift compensation to the left. Adjustments to steering drift compensation will be effective immediately.

Press the upper right button (Item 7) on the left joystick to adjust back toward center. The display will decrease down to neutral displayed as [S----] (Item 4). Another press of the upper right button will cause [S-R01] (Item 5) to appear in the data display (Item 2) [Figure 51]. The number will increase by one each time you press the button up to a maximum of [S-R10]. The higher the number, the greater the amount of steering drift compensation to the right. Adjustments to steering drift compensation will be effective immediately.

Figure 52



### Saving The Steering Drift Compensation Setting:

The current steering drift compensation setting can be saved by pressing and holding the PRESS TO OPERATE LOADER button (Item 1) for **three seconds**. [SET] (Item 3) will appear in the data display (Item 2) [Figure 52] and the machine will exit from the steering drift compensation adjustment menu.

### OR

Press the PRESS TO OPERATE LOADER button to exit from the steering drift compensation adjustment menu without saving the current setting. [DONE] (Item 4) will appear in the data display (Item 2) [Figure 52] and the upper left and upper right buttons on the left joystick will no longer make changes to steering drift compensation.

**NOTE: The last displayed steering drift compensation setting will remain in effect until the STOP button is pressed or the key is turned OFF. The machine will revert back to the last saved setting the next time it is started.**

## HYDRAULIC CONTROLS

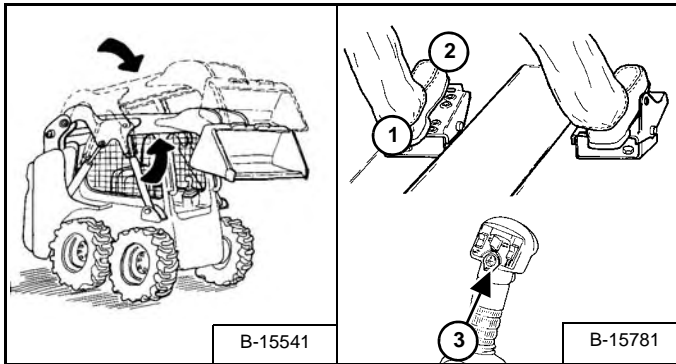
### Description

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

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

### Standard Controls (Also ACS In FOOT Pedal Mode)

#### Figure 53



#### Lift Arm Operation - (Left Pedal)

Push the heel (Item 1) **[Figure 53]** of the pedal to raise the lift arms.

Push the toe (Item 2) **[Figure 53]** of the pedal to lower the lift arms.

#### Lift Arm Float Position - (Left Pedal)

Push the toe (Item 2) **[Figure 53]** of the pedal all the way forward until it locks into the float position.

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

Raise the lift arms to disengage the float position.

#### Lift Arm Float Position (With ACS) - (Left Pedal)

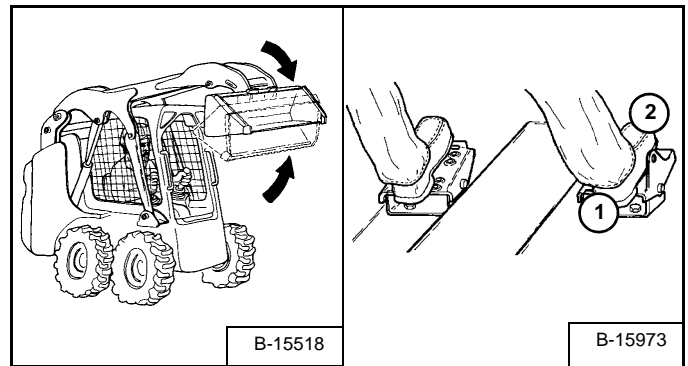
Press and hold the Float button (Item 3) **[Figure 53]**.

Push the toe (Item 2) **[Figure 53]** of the pedal forward to lower the lift arms. Then release the float button.

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

Raise the lift arms to disengage the float position.

#### Figure 54



#### Tilt Operation - (Right Pedal)

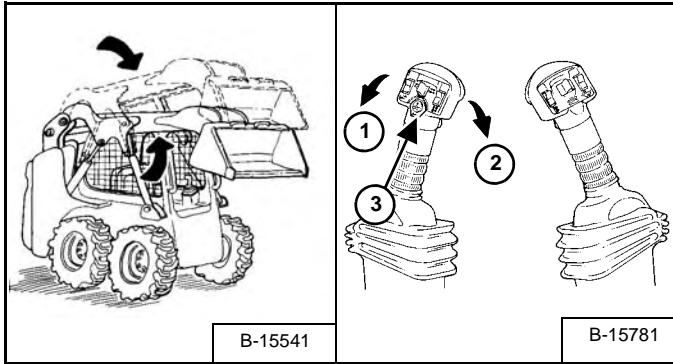
Push the heel (Item 1) **[Figure 54]** of the pedal to tilt the bucket backward.

Push the toe (Item 2) **[Figure 54]** of the pedal to tilt the bucket forward.

## HYDRAULIC CONTROLS (CONT'D)

### Advanced Control System (ACS) In HAND Control Mode

Figure 55



#### Lift Arm Operation - (Left Hand Lever)

Move the lever outward (Item 1) [Figure 55] to raise the lift arms.

Move the lever inward (Item 2) [Figure 55] to lower the lift arms.

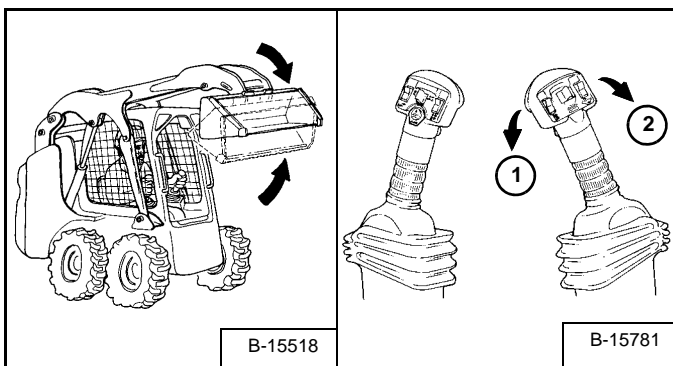
#### Lift Arm Float Position - (Left Hand Lever)

Press and hold the Float button (Item 3) [Figure 55] while the lever is in neutral. Move the lever to lift arm down position (Item 2) [Figure 55], then release the button.

Press Float button (Item 3) [Figure 55] again or move the lever to lift arm up position to disengage.

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

Figure 56



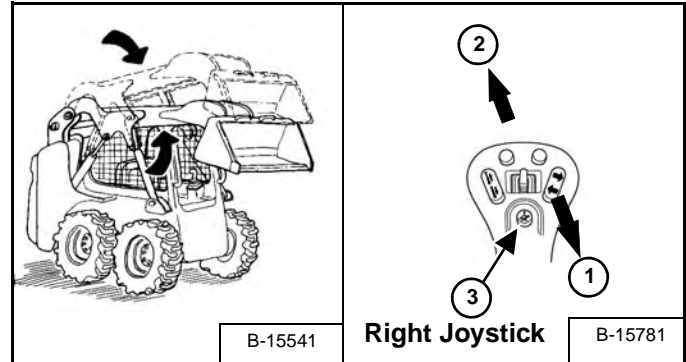
#### Tilt Operation - (Right Hand Lever)

Move the lever inward (Item 1) [Figure 56] to tilt the bucket backward.

Move the lever outward (Item 2) [Figure 56] to tilt the bucket forward.

### Selectable Joystick Controls (SJC) In 'ISO' Control Pattern

Figure 57



#### Lift Arm Operation - (Right Hand Joystick)

Move the joystick backward (Item 1) [Figure 57] to raise the lift arms.

Move the joystick forward (Item 2) [Figure 57] to lower the lift arms.

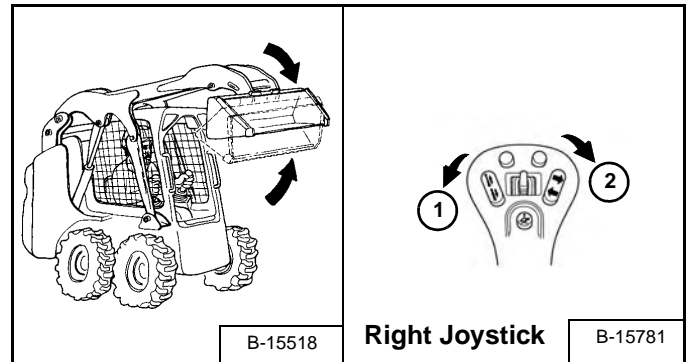
#### Lift Arm Float Position - (Right Hand Joystick)

Press and hold the Float button (Item 3) [Figure 57] while the joystick is in neutral. Move the joystick to lift arm down position (Item 2) [Figure 57], then release the button.

Press Float button (Item 3) again or move the joystick to lift arm up position (Item 1) [Figure 57] to disengage.

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

Figure 58



#### Tilt Operation - (Right Hand Joystick)

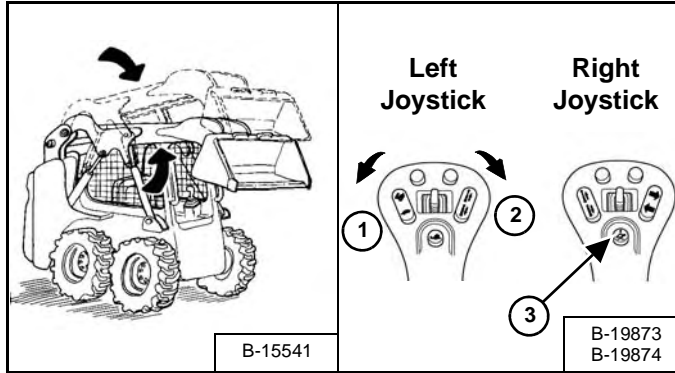
Move the joystick inward (Item 1) [Figure 58] to tilt the bucket backward.

Move the joystick outward (Item 2) [Figure 58] to tilt the bucket forward.

## HYDRAULIC CONTROLS (CONT'D)

### Selectable Joystick Controls (SJC) In 'H' Control Pattern

**Figure 59**



#### Lift Arm Operation - (Left Hand Joystick)

Move the joystick outward (Item 1) [Figure 59] to raise the lift arms.

Move the joystick inward (Item 2) [Figure 59] to lower the lift arms.

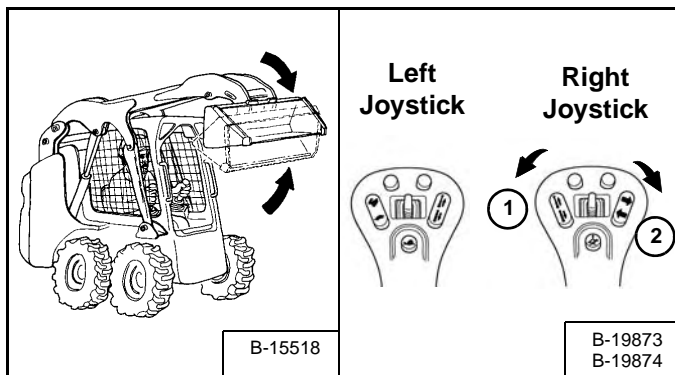
#### Lift Arm Float Position - (Left And Right Hand Joysticks)

Press and hold the Float button (Item 3) [Figure 59] while the joysticks are in neutral. Move the left joystick to lift arm down position (Item 2) [Figure 59], then release the button.

Press Float button (Item 3) [Figure 59] again or move the left joystick to lift arm up position to disengage.

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

**Figure 60**



#### Tilt Operation - (Right Hand Joystick)

Move the joystick inward (Item 1) [Figure 60] to tilt the bucket backward.

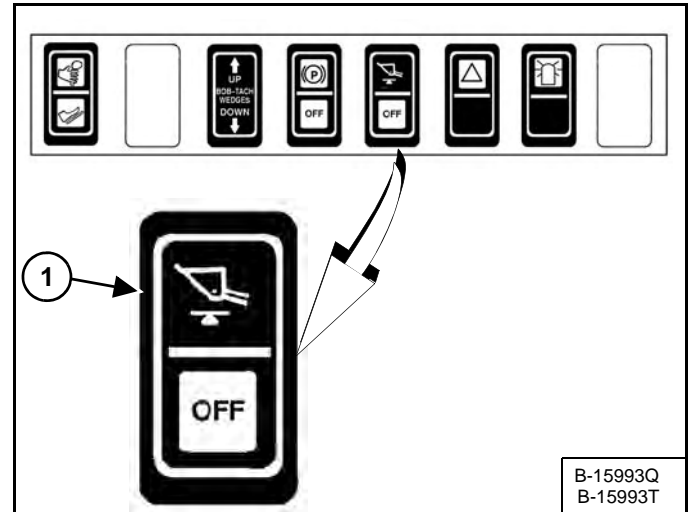
Move the joystick outward (Item 2) [Figure 60] to tilt the bucket forward.

## Hydraulic Bucket Positioning

This machine may be equipped with Hydraulic Bucket Positioning.

The function of hydraulic bucket positioning is to keep the bucket in the same approximate position it is in before you begin raising the lift arms.

**Figure 61**



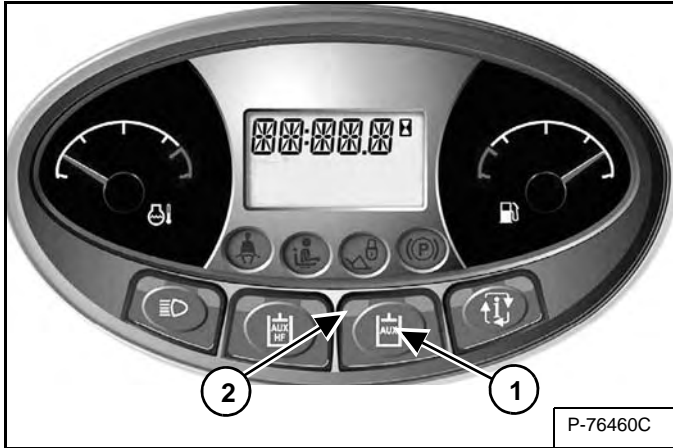
Press the top of the BUCKET POSITIONING switch (Item 1) [Figure 61] to engage the bucket positioning function. The amber light in the switch will turn on. Press the bottom of the switch to disengage. The amber light will turn off.

Bucket positioning functions only during upward lift cycle.

## HYDRAULIC CONTROLS (CONT'D)

### FRONT Auxiliary Hydraulics Operation

Figure 62

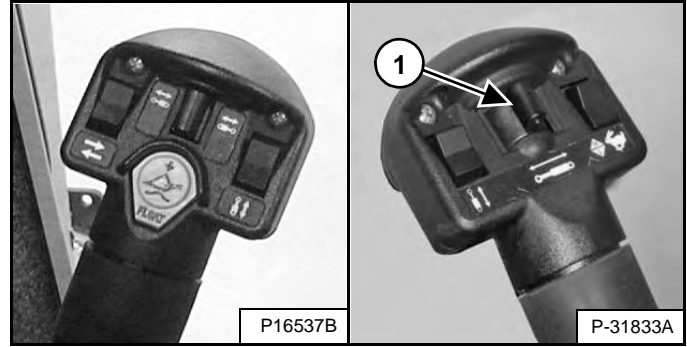


Press the auxiliary hydraulics button (Item 1) **[Figure 62]** once to engage auxiliary hydraulics.

The light (Item 2) **[Figure 62]** will be ON.

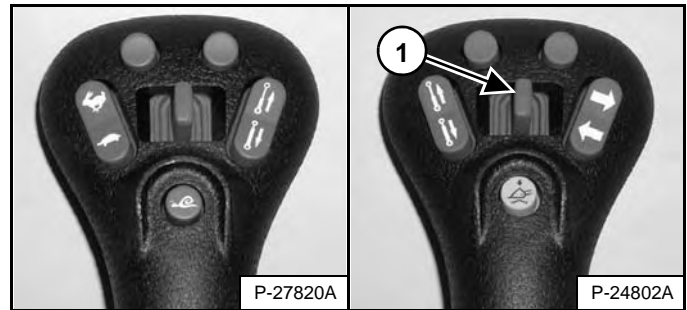
*Standard And ACS (If Equipped)*

Figure 63



*SJC (If Equipped)*

Figure 64



Move the front auxiliary hydraulic switch (Item 1) **[Figure 63]** or **[Figure 64]** to the right or left to change the fluid flow direction of the front quick couplers. If you move the switch half-way, the auxiliary functions move at approximately one-half speed; release the switch to stop auxiliary functions. (EXAMPLE: Open and close grapple teeth.)

To disengage, press the auxiliary hydraulics button (Item 1) **[Figure 62]** again.

The light (Item 2) **[Figure 62]** will be OFF.

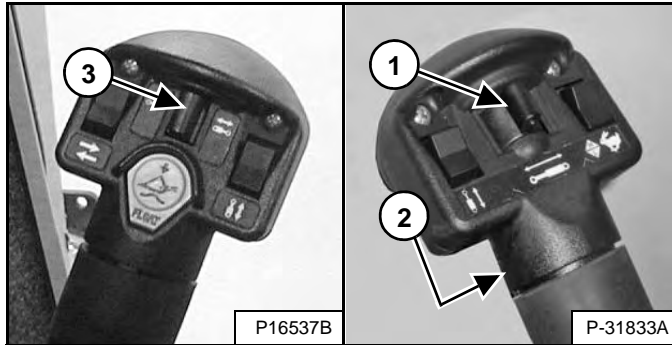
**NOTE: When the operator is seated and raises the seat bar, the Auxiliary Hydraulic System (Front and Rear) will deactivate.**

## HYDRAULIC CONTROLS (CONT'D)

### FRONT Auxiliary Hydraulics Operation (CONTINUOUS FLOW)

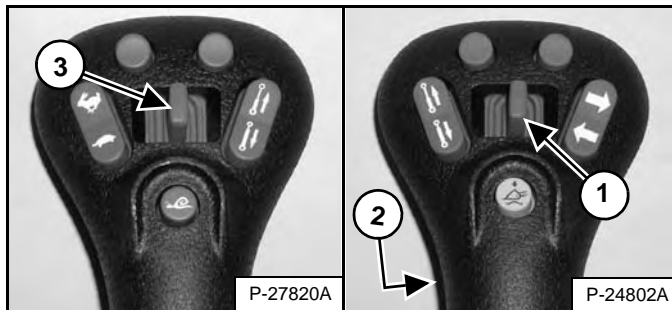
Standard And ACS (If Equipped)

Figure 65



SJC (If Equipped)

Figure 66



After engaging auxiliary hydraulics, press the front switch (Item 2) [Figure 65] or [Figure 66] to give the front quick couplers a constant flow of fluid with the female coupler being pressurized. (EXAMPLE: Operate a backhoe.)

**REVERSE CONTINUOUS FLOW** - To set reverse flow (male coupler pressurized), engage auxiliary hydraulics, then, while holding the auxiliary switch (Item 1) [Figure 65] or [Figure 66] to the left, press the front switch (Item 2) [Figure 65] or [Figure 66].

**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.**

To release from continuous operation, press the front switch (Item 2) [Figure 65] or [Figure 66] a second time.

**NOTE: When the operator is seated and raises the seat bar, the Auxiliary Hydraulic System (Front and Rear) will deactivate.**

### REAR Auxiliary Hydraulics Operation

This machine may be equipped with Rear Auxiliary Hydraulics.

Figure 67



Figure 68



The switches on the left hand lever or joystick control the rear auxiliary hydraulics.

Press the auxiliary hydraulics button (Item 1) [Figure 67] once to engage auxiliary hydraulics.

The light (Item 2) [Figure 67] will be ON.

Push the switch (Item 3) [Figure 65] or [Figure 66] to the right or left to change the fluid flow direction to rear quick couplers [Figure 68]. (EXAMPLE: Raise and lower rear stabilizers.)

To disengage, press the auxiliary hydraulics button (Item 1) [Figure 67] again.

The light (Item 2) [Figure 67] will be OFF.

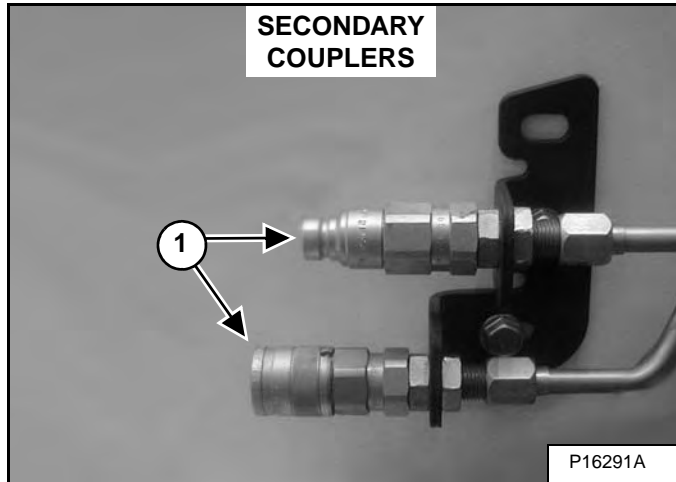
**NOTE: When the operator is seated and raises the seat bar, the Auxiliary Hydraulic System (Front and Rear) will deactivate.**

## HYDRAULIC CONTROLS (CONT'D)

### Secondary Front Auxiliary Hydraulics Operation

This machine may be equipped with Secondary Front Auxiliary Hydraulics.

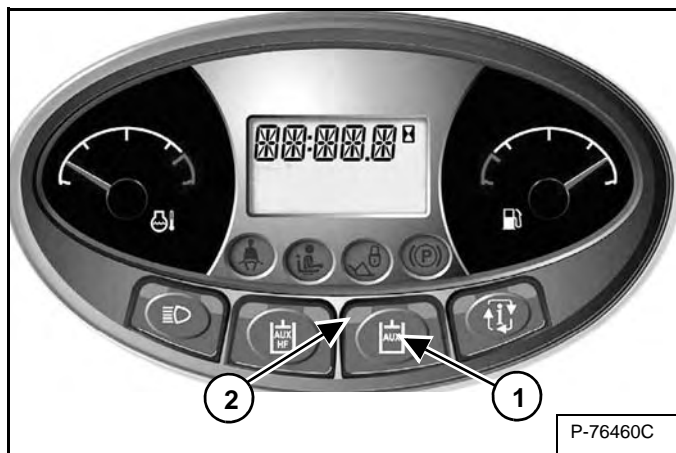
Figure 69



The secondary front auxiliary quick couplers (Item 1) [Figure 69] are available as a Field Installed Accessory. These are used when there is a need for additional auxiliary hydraulics. (EXAMPLE: Side shift on the Planer.)

Connect the attachment to the secondary front auxiliary hydraulics (Item 1) [Figure 69].

Figure 70

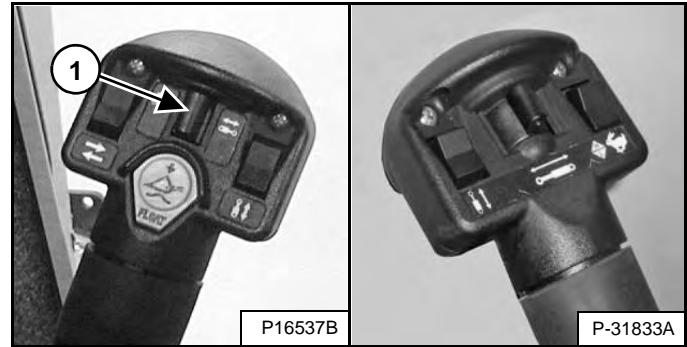


Press the auxiliary hydraulics button (Item 1) [Figure 70] once to engage auxiliary hydraulics.

The light (Item 2) [Figure 70] will be ON.

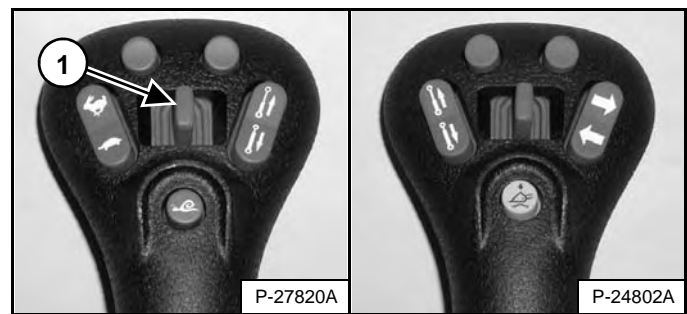
Standard And ACS (If Equipped)

Figure 71



SJC (If Equipped)

Figure 72



Push switch (Item 1) [Figure 71] or [Figure 72] to the right or left to change fluid flow direction. (EXAMPLE: Side shift on the Planer.)

**NOTE: The secondary front auxiliary hydraulics and the rear auxiliary hydraulics operate from the same auxiliary section of the control valve. To operate an attachment with secondary front auxiliary hydraulics, you must disconnect any attachment connected to the rear auxiliary hydraulic quick couplers.**

To disengage, press the auxiliary hydraulics button (Item 1) [Figure 70] again.

The light (Item 2) [Figure 70] will be OFF.

**NOTE: When the operator is seated and raises the seat bar, the Auxiliary Hydraulic System (Front and Rear) will deactivate.**

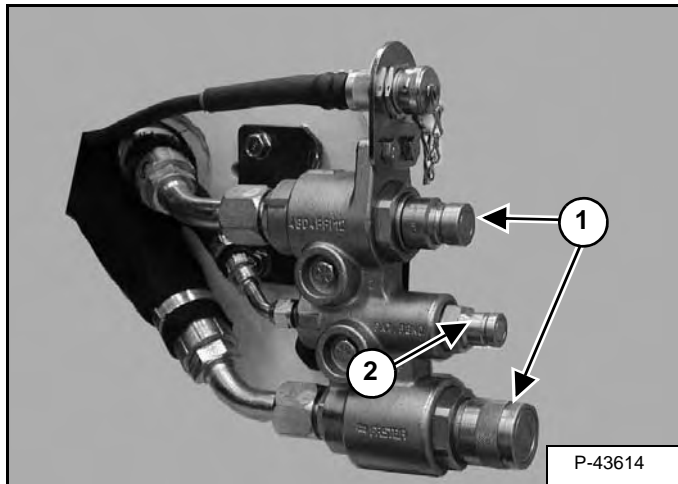


## HYDRAULIC CONTROLS (CONT'D)

### High-Flow Hydraulics Operation

This machine may be equipped with High-Flow Hydraulics.

Figure 73



The High-Flow function provides additional flow to the system to operate an attachment which requires more hydraulic flow. (EXAMPLE: Planer)

Connect the attachment to the quick couplers (Item 1) [Figure 73].

Some attachments may have a case drain which needs to be connected to the small quick coupler (Item 2) [Figure 73].

Figure 74



Press the HIGH FLOW button (Item 1) [Figure 74].

The light (Item 2) [Figure 74] will be ON.

To disengage, press the HIGH FLOW button (Item 1) [Figure 74] again.

The light (Item 2) [Figure 74] will be OFF.

## Quick Couplers

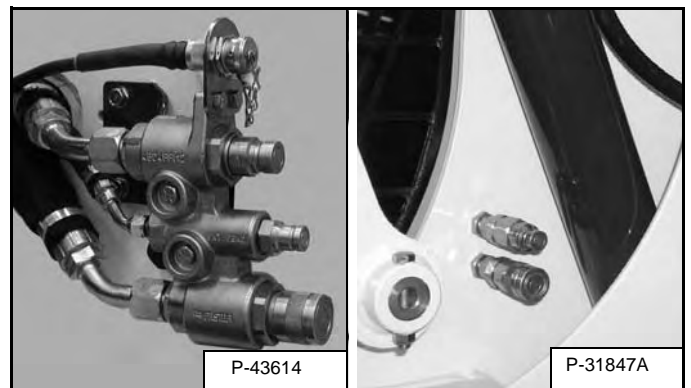
**! WARNING**

### AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.

W-2072-0807

Figure 75



*To Connect:* Remove dirt or debris from the surface of both the male and female couplers, and from the outside diameter of the male coupler. Visually check the couplers for corroding, cracking, damage or excessive wear. If any of these conditions exist, the coupler(s) [Figure 75] must be replaced.

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler.

*To Disconnect:* Hold the male coupler. Retract the sleeve on the female coupler until the couplers disconnect.

**! WARNING**

### AVOID BURNS

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

W-2220-0396

## HYDRAULIC CONTROLS (CONT'D)

### Relieve Auxiliary Hydraulic Pressure (Loader And Attachment)

**! WARNING**

#### AVOID BURNS

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

W-2220-0396

**! WARNING**

#### AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.

W-2072-0807

#### Front Auxiliary Quick Couplers

*When Connecting:* Push the quick couplers tightly together and hold for five seconds; the pressure is automatically relieved as the couplers are installed.

*When Disconnecting:* Push the quick couplers tightly together and hold for five seconds; then retract the sleeve until the couplers disconnect.

#### Rear Auxiliary And Secondary Front Auxiliary Quick Couplers

Put the attachment flat on the ground.

Stop the engine and turn the key to RUN or press the RUN button.

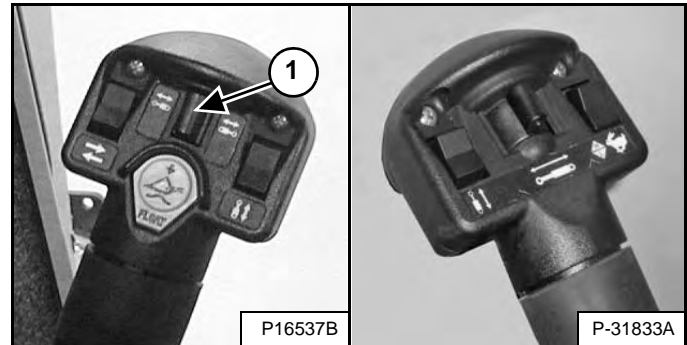
Figure 76



Press the auxiliary hydraulics button (Item 1) [Figure 76].

*Standard And ACS (If Equipped)*

Figure 77



*SJC (If Equipped)*

Figure 78



Move the rear auxiliary hydraulic switch (Item 1) [Figure 77] or [Figure 78] to the right and left several times.

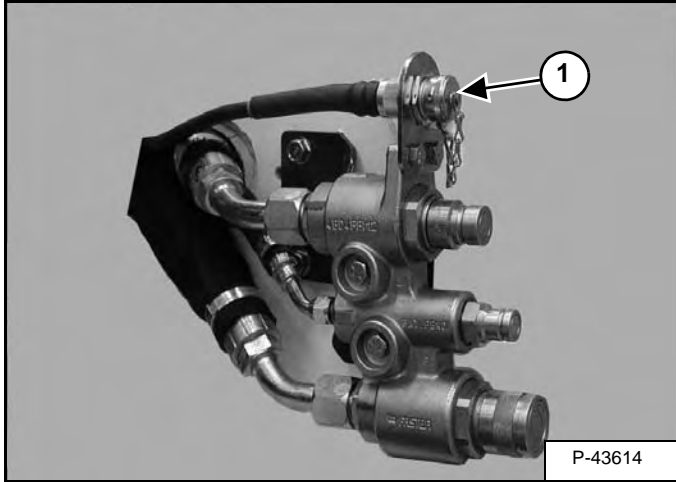
Turn the key to OFF or press the STOP button.

## ATTACHMENT CONTROL DEVICE (ACD)

This machine may be equipped with an Attachment Control Device.

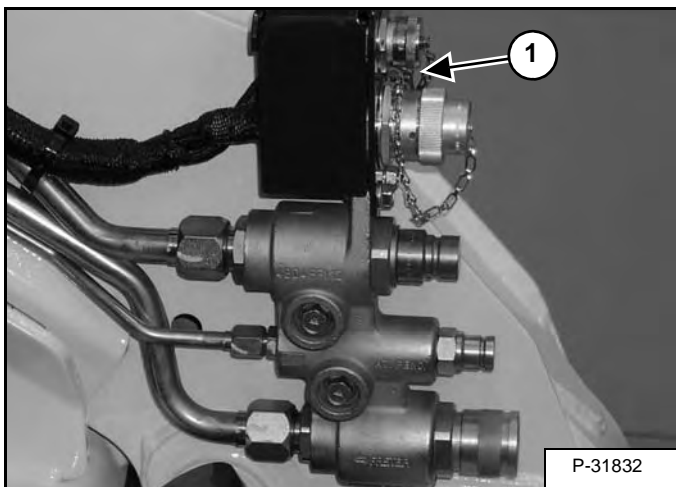
### Description

Figure 79



Connect the attachment electrical harness to the attachment control device (Item 1) [Figure 79].

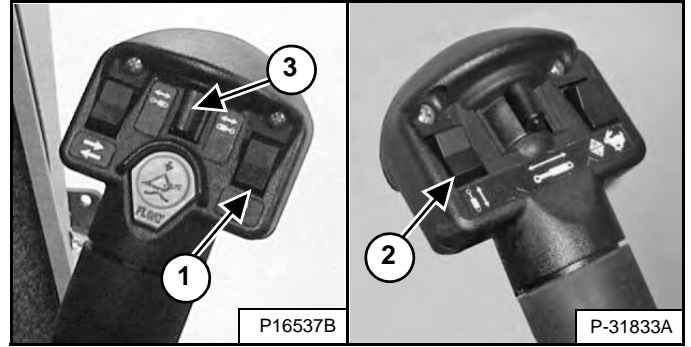
Figure 80



You will need the Dual-Connector (7-pin / 14-pin) kit (Item 1) [Figure 80] to operate early model attachments. See your Bobcat loader dealer.

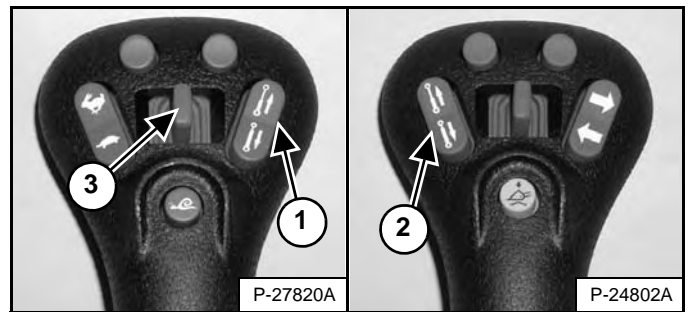
Standard And ACS (If Equipped)

Figure 81



SJC (If Equipped)

Figure 82



Additional switches (Items 1, 2 and 3) [Figure 81] or [Figure 82] on the right and left control handles or joysticks are used to control some attachment functions through the attachment control device.

**NOTE:** ACD takes over the function of auxiliary hydraulic switch (Item 3) [Figure 81] or [Figure 82] from Rear Auxiliary Hydraulics and Secondary Front Auxiliary Hydraulics when an attachment electrical harness is attached to the ACD.

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

Figure 83

### SERVICE CHECKLIST AND SCHEDULE

**EVERY 10 HRS (BEFORE STARTING THE LOADER)**

- **ENGINE OIL & FILTER** - Check level and add as needed. Do not overfill. Change oil and filter after first 50 Hrs, then refer to Operation & Maintenance Manual for proper change interval for your Model.
- **ENGINE AIR FILTER** - Check condition indicator and/ or display. Service only when required. Do not use compressed air to clean elements.
- **ENGINE AIR SYSTEM** - Check for leaks and damaged components.
- **ENGINE COOLING SYSTEM** - Clean debris from grill, oil cooler and radiator. Check coolant level cold; add coolant mixture if required.
- **FUEL FILTER** - Remove trapped water.
- **LOADER LIFT ARMS, LIFT LINKS, CYLINDERS, BOB-TACH PIVOT & WEDGES, STEERING CYLINDERS (AWS Machines Only)** - Lubricate with multipurpose lithium based grease.
- **SEAT BELT, SEAT BAR AND CONTROL INTERLOCKS** - Check function. Repair or replace as needed. Clean dirt and debris from moving parts.
- **BICS** - Check for correct function. Clean dirt and debris from moving parts. Lift and Tilt functions MUST NOT operate with seat bar raised.
- **TIRES** - Check air pressure. Inflate to MAXIMUM pressure shown on sidewall of tire.
- **GENERAL** - Check for loose or broken parts, damaged operator cab, instrument operation, loose wheel nuts or track sprocket nuts, oil leaks, damaged or missing safety signs (decals).

**EVERY 50 HRS**

- **HYDRAULIC FLUID, HOSES AND TUBELINES** - Check fluid level and add if required. Check for damage and for leaks. Repair or replace as needed.
- **FINAL DRIVE TRANSMISSION (CHAINCASE, Wheel Machines Only)** - Check fluid level and add if required.
- **HYDRAULIC & STEERING CONTROLS (PEDALS, HAND, and/ or JOYSTICK)** - Check for correct operation. Adjust as needed.
- **WHEEL NUTS / TRACK DRIVE SPROCKETS** - Check for loose nuts and tighten as needed.

**EVERY 100 HRS**

- **SPARK ARRESTOR MUFFLER** - Empty spark chamber. (If equipped.)
- **BATTERY** - Check battery for damage, hold down clamps, cables, connections and electrolyte level. Add distilled water as needed.
- **DRIVE LINE** - Lubricate Engine-to-Pump Coupler with multipurpose lithium based grease. (If equipped.)
- **STEERING LEVER PIVOTS** - Lubricate with multipurpose lithium based grease. (If equipped.)
- **FUEL FILTER** - Replace filter.
- **KING PINS (AWS Machines Only)** - Lubricate with multipurpose lithium based grease.
- **ENGINE / HYDRAULIC DRIVE BELT** - Check for wear or damage. Adjust or replace as needed. (If equipped.)
- **FAN DRIVE GEARBOX** - Check fluid level and add if required. (If equipped.)
- **OTHER DRIVE BELTS (Hydrostatic pump, water pump, alternator, and air conditioner - if equipped)** - Check condition and tension. Adjust or replace as needed.
- **BICS** - Check function of Lift Arm By-Pass control.

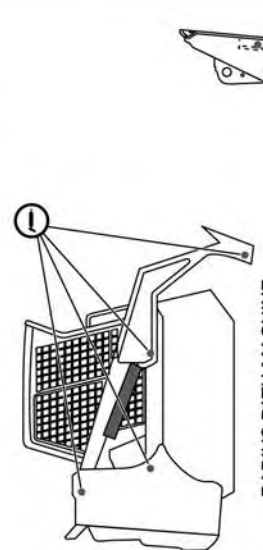
**EVERY 500 HRS**

- **FAN / HYDRAULIC / HYDROSTATIC SYSTEM** - Replace filter. Replace reservoir breather cap.
- **STEERING VALVE INLINE FILTER (AWS Only)** - Replace filter.
- **HYDROSTATIC MOTOR CARRIER (Track Machines Only)** - Replace oil.

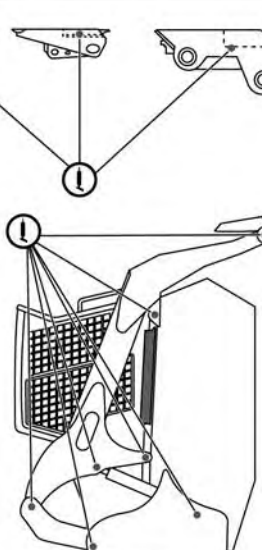
**EVERY 1000 HRS**

- **HYDRAULIC RESERVOIR** - Replace fluid.
- **FINAL DRIVE TRANSMISSION (Chaincase on Wheel Machines Only)** - Replace fluid.
- **TRACK ROLLER, IDLER ASSEMBLIES (Track Machines Only)** - Replace fluid (if required).
- **DRIVE MOTOR CASE OIL FILTER** - Replace filter (if equipped.)
- **WHEEL BEARING & OUTER SPLINES (AWS only)** - Repack wheel bearings, grease internal splines in hub yoke. (Dealer Service Only)

### GENERAL LUBRICATION DIAGRAMS



**RADIUS PATH MACHINE**



**VERTICAL PATH MACHINE**


● TYPICAL GREASE POINTS

### WARNING

#### AVOID INJURY OR DEATH

- Keep door 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 loader 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. 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 loader engine last (never at the battery). After jump start, remove negative connection at the engine first.
- Exhaust gases can kill. Always ventilate.

**SEE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION AND INSTRUCTIONS.**



Use Genuine Bobcat Replacement Parts

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## DAILY INSPECTION (CONT'D)

### Daily Inspection And Maintenance

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The Service Schedule [Figure 83] is a guide for correct maintenance of the Bobcat loader. It is located inside the rear door of the loader and also in the MACHINE SIGN TRANSLATION section of this manual. (See Service Schedule (6734534) on Page 165.)

- Engine Oil Level
- Hydraulic / Hydrostatic Fluid Level
- Engine Air Filter - Check System for Damage or Leaks
- Engine Coolant Level - Check System for Damage or Leaks
- Operator Cab and Cab Mounting Hardware
- Seat Belt
- Seat Bar and Control Interlocks
- Bobcat Interlock Control System (BICS™)
- Front Horn and Back-up Alarm - Check for proper function
- Grease Pivot Pins (Lift Arms, Bob-Tach, Cylinders, Bob-Tach Wedges)
- Tires - Check for Wear, Damage, Correct Air Pressure
- Fuel Filter - Remove Trapped Water
- Loose or Broken Parts - Repair or Replace as Necessary
- Safety Treads and Safety Signs (Decals) - Replace as necessary
- Lift Arm Support Device - Replace if damaged

## WARNING

**Operator must have instructions before operating the machine. Untrained operators can cause injury or death.**

W-2001-0502

**NOTE: Fluids such as engine oil, hydraulic fluid, coolant, etc. 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.**

# IMPORTANT

## PRESSURE WASHING DECALS

- **Never direct the stream at a low angle toward the decal that could damage the decal causing it to peel from the surface.**
- **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-2226-0910

## PRE-STARTING PROCEDURE

### Entering The Loader

Figure 84



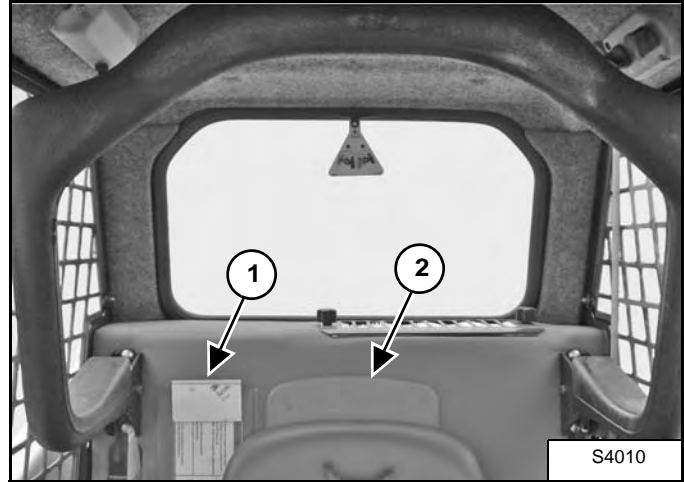
Use the bucket or attachment steps, grab handles and safety treads (on the loader lift arms and frame) to get on and off the loader **[Figure 84]**. Do not jump.

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

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 85



Read and understand the Operation & Maintenance Manual and the Operator's Handbook (Item 1) **[Figure 85]** before operating the loader.

The Operation & Maintenance Manual and other manuals can be kept in a container (Item 2) **[Figure 85]** provided behind the operator seat.

## **WARNING**

### **AVOID INJURY OR DEATH**

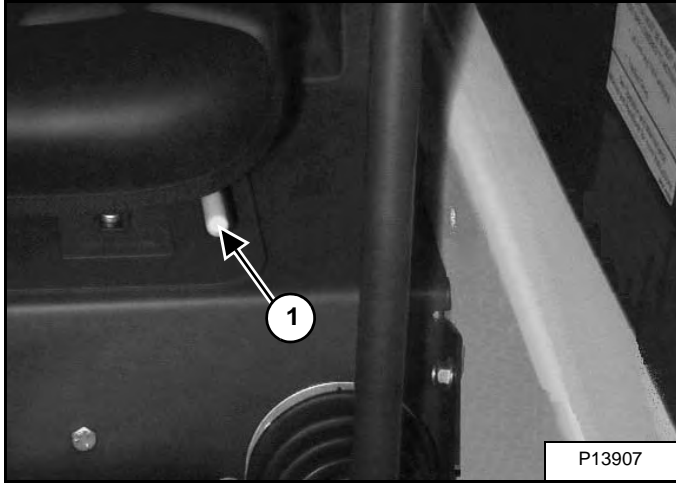
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

## PRE-STARTING PROCEDURE (CONT'D)

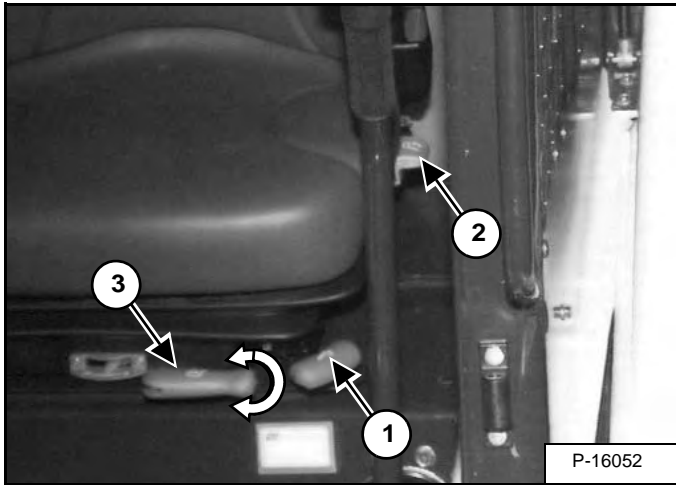
### Seat Adjustment

Figure 86



Pull the seat lever (Item 1) [Figure 86] out to adjust the seat position for comfortable operation of the loader controls.

Figure 87

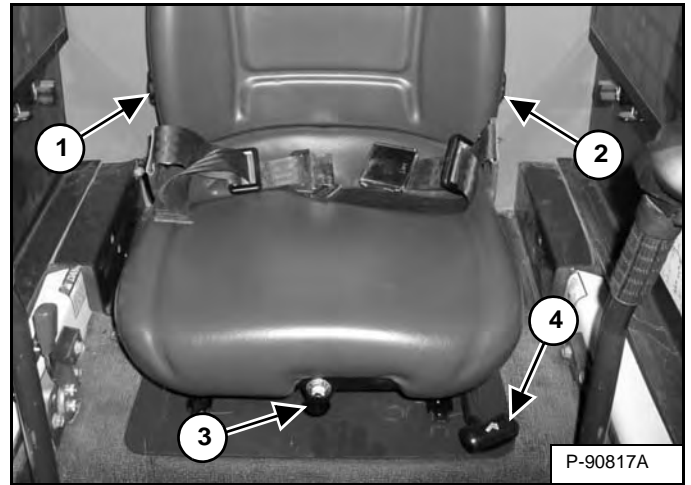


*Suspension Seat - (Option and Loaders with Two-Speed)*  
Pull the lever (Item 1) [Figure 87] up to adjust the seat position for comfortable operation of the loader controls.

Pull the lever (Item 2) [Figure 87] up to adjust the angle of the seat back.

Turn the lever (Item 3) [Figure 87] to adjust the seat cushion for weight of the operator.

Figure 88



*Air Ride Suspension Seat - (Option)* Turn the knob (Item 1) [Figure 88] to adjust the angle of the seat back.

Turn the knob (Item 2) [Figure 88] to adjust the lumbar support.

Push the knob (Item 3) [Figure 88] in and hold to increase the amount of air in the seat suspension. Pull the knob out and hold to decrease the amount of air in the seat suspension.

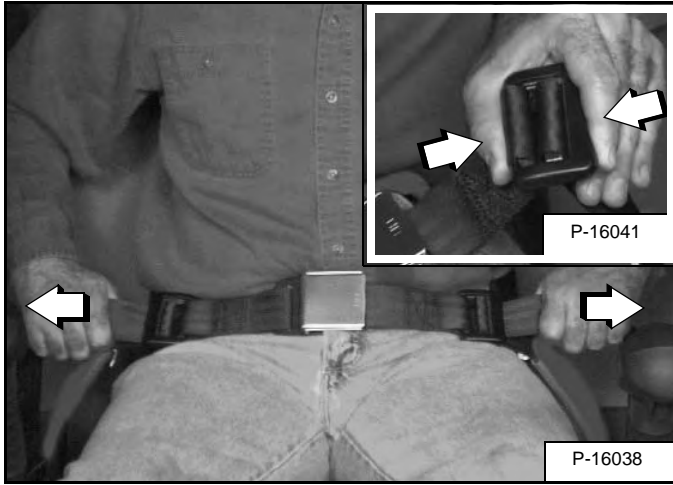
**NOTE:** The loader electrical system must be turned ON to increase the amount of air in the seat suspension.

Pull the lever (Item 4) [Figure 88] up to adjust the seat position for comfortable operation of the loader controls.

## PRE-STARTING PROCEDURE (CONT'D)

### Seat Belt Adjustment

Figure 89

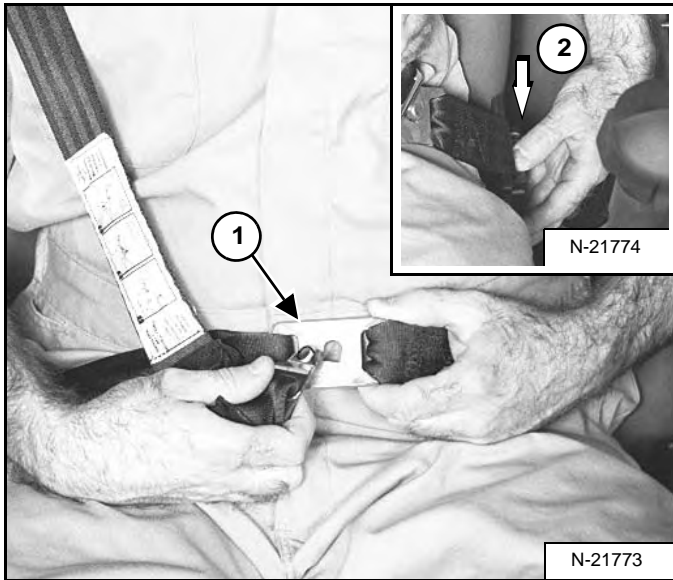


Squeeze both seat belt adjusters to release and lengthen each half of the seat belt [Figure 89].

Fasten the seat belt.

Pull the ends of the belt through the belt adjusters so that the seat belt is snug and the buckle is centered between your hips [Figure 89].

Figure 90



**3-Point Restraint** - (Option and Loaders with Two-Speed) Connect the shoulder belt to the lap belt (Item 1) [Figure 90]. Pull the lap belt across to the left side of the seat (Item 2) [Figure 90] and fasten.

The shoulder belt must be positioned over your right shoulder and lap belt over your lower hips [Figure 90].

# IMPORTANT

Check the seat belt and shoulder belt retractors for correct operation.

Keep retractors clean and replace as necessary.

I-2199-0200

### Seat Bar

Figure 91



Lower the seat bar and engage the parking brake [Figure 91].

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 loader.

# ! WARNING

## AVOID 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-2261-0909



## STARTING THE ENGINE

### Standard Key Panel

# ! WARNING

### AVOID INJURY OR DEATH

- Engines can have hot parts and hot exhaust gas. Keep flammable material away.
- Do not use machines in atmosphere containing explosive gas.

W-2051-1086

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Figure 92



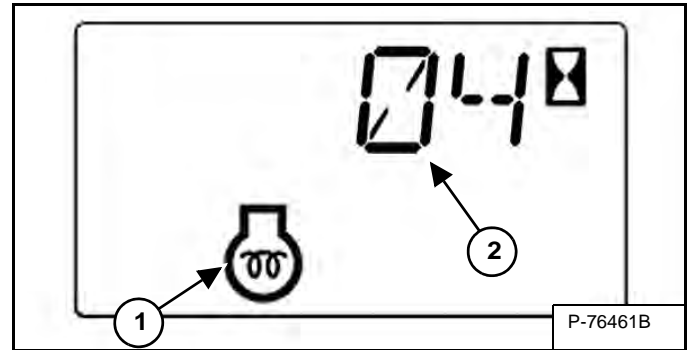
Set the engine speed control to the idle position [Figure 92].

Figure 93



Turn the key switch to RUN (Item 1) [Figure 93]. The indicator lights on the left instrument panel will come ON briefly and the Instrument Panel / monitoring system will do a self test.

Figure 94



The machine will cycle the air intake heater (glow plugs) automatically based on temperature. The engine preheat icon (Item 1) will be ON and the cycle time remaining will show in the data display (Item 2) [Figure 94].

When the engine preheat icon goes OFF, turn the key switch to START (Item 2). Release the key when the engine starts and allow it to return to the RUN position (Item 1) [Figure 93].

**NOTE:** Make sure both hand controls (ACS) or joysticks (SJC) are in the neutral position before starting the engine. Do not move the levers or joysticks from the neutral position when turning the key to RUN or START with the BICS™ activated.

# ! WARNING

### AVOID INJURY OR DEATH

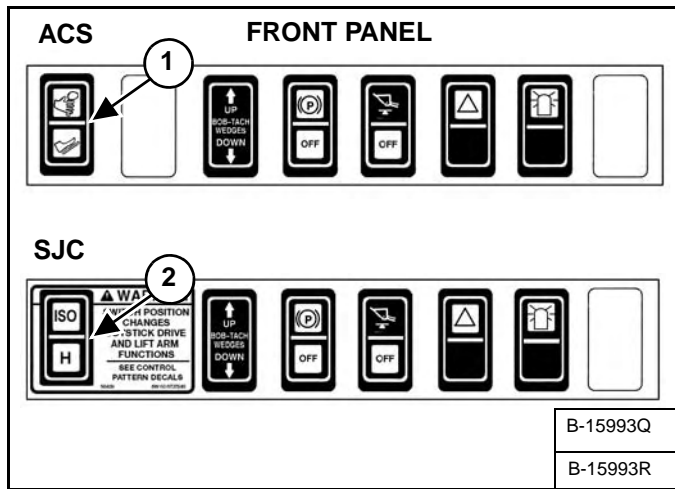
- Fasten seat belt, start and operate only from the operator's seat.
- Never wear loose clothing when working near machine.

W-2135-1108

## STARTING THE ENGINE (CONT'D)

### Standard Key Panel (Cont'd)

Figure 95

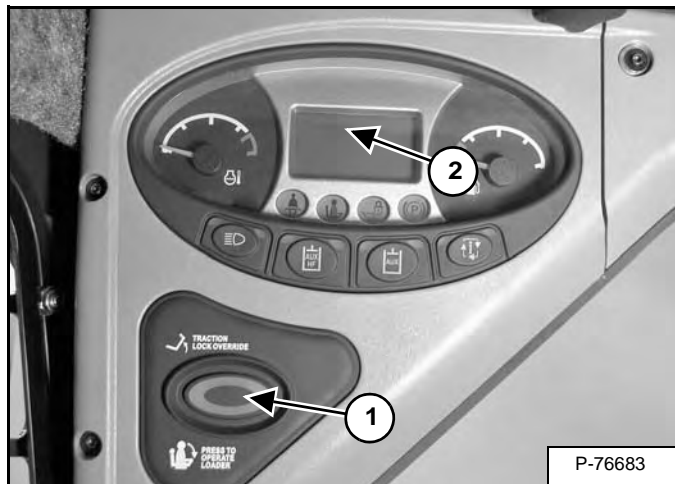


(ACS) Select hand control or foot pedal operation (Item 1) [Figure 95].

OR

(SJC) Select 'ISO' or 'H' Control Pattern (Item 2) [Figure 95].

Figure 96



Press the PRESS TO OPERATE LOADER button (Item 1) [Figure 96] to activate the BICS™ and to perform hydraulic and loader functions.

(SJC) The current drive response setting will be displayed briefly in the data display (Item 2) each time the PRESS TO OPERATE LOADER button (Item 1) [Figure 96] is pressed.

NOTE: (SJC) The light of the current switch position (ISO or H) will flash, which will indicate PRESS TO OPERATE LOADER is required. The light will flash when the key switch is ON and continue to flash until the PRESS TO OPERATE LOADER button is pressed, thereafter the light will become solid. If the mode (ISO / H) is changed while driving, the active mode light will remain solid and the pending mode light will flash. When operation of the machine is returned to neutral, the active mode light will then turn off and the pending mode light will continue to flash until the PRESS TO OPERATE LOADER button is pressed.

**! WARNING**

### AVOID INJURY OR DEATH

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the engine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

W-2050-0807

## STARTING THE ENGINE (CONT'D)

### Keyless Start Panel



#### AVOID INJURY OR DEATH

- Engines can have hot parts and hot exhaust gas. Keep flammable material away.
- Do not use machines in atmosphere containing explosive gas.

W-2051-1086

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Figure 97

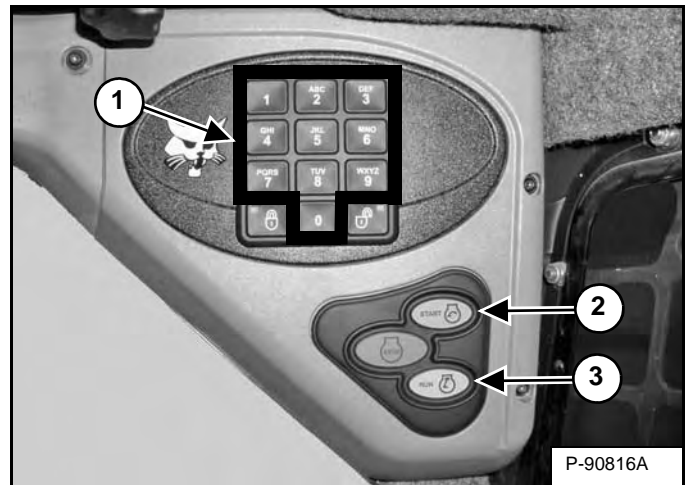


Set the engine speed control to the idle position [Figure 97]

**NOTE:** Loaders with a Keyless Start Panel have a permanent, randomly generated Master Password set at the factory. Your loader will have an Owner Password. The password can be changed to prevent unauthorized use of your loader. (See Changing The Owner Password on Page 159.) Keep your password in a safe place for future needs.

**NOTE:** The Password Lockout feature can be used to allow starting of the loader without a password. (See Password Lockout Feature on Page 159.)

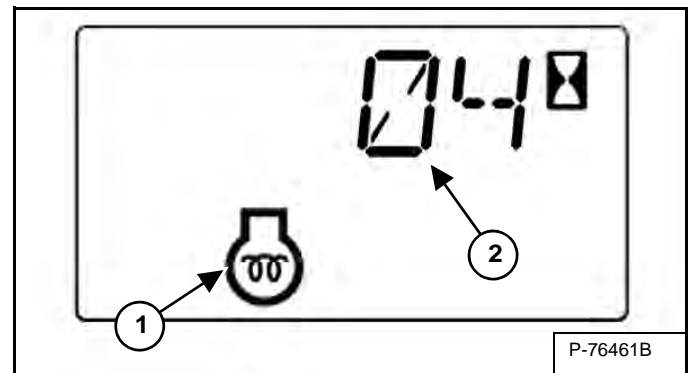
Figure 98



Press the RUN button (Item 3) [Figure 98].

Use the numeric keypad (Item 1) to enter the password, then press the RUN button (Item 3) [Figure 98].

Figure 99



The machine will cycle the air intake heater (glow plugs) automatically based on temperature. The engine preheat icon (Item 1) will be ON and the cycle time remaining will show in the data display (Item 2) [Figure 99].

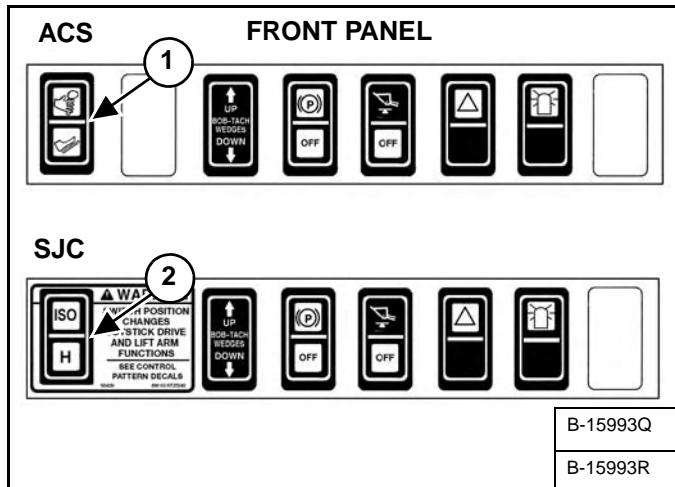
When the engine preheat icon goes OFF, press the START button (Item 2) [Figure 98]. Release the button when the engine starts.

## STARTING THE ENGINE (CONT'D)

### Keyless Start Panel (Cont'd)

**NOTE:** Make sure both hand controls (ACS) or joysticks (SJC) are in the neutral position before starting the engine. Do not move the levers or joysticks from the neutral position when pressing the RUN / ENTER or START buttons with the BICS™ activated.

Figure 100



(ACS) Select hand control or foot pedal operation (Item 1) [Figure 100].

OR

(SJC) Select 'ISO' or 'H' Control Pattern (Item 2) [Figure 100].

Figure 101



Press the PRESS TO OPERATE LOADER button (Item 1) [Figure 101] to activate the BICS™ and to perform hydraulic and loader functions.

(SJC) The current drive response setting will be displayed briefly in the data display (Item 2) each time the PRESS TO OPERATE LOADER button (Item 1) [Figure 101] is pressed.

**NOTE:** (SJC) The light of the current switch position (ISO or H) will flash, which will indicate PRESS TO OPERATE LOADER is required. The light will flash when the RUN button has been pressed and continue to flash until the PRESS TO OPERATE LOADER button is pressed, thereafter the light will become solid. If the mode (ISO / H) is changed while driving, the active mode light will remain solid and the pending mode light will flash. When operation of the machine is returned to neutral, the active mode light will then turn off and the pending mode light will continue to flash until the PRESS TO OPERATE LOADER button is pressed.

**! WARNING**

### AVOID INJURY OR DEATH

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the engine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

W-2050-0807

## STARTING THE ENGINE (CONT'D)

### Deluxe Instrumentation Panel



#### AVOID INJURY OR DEATH

- Engines can have hot parts and hot exhaust gas. Keep flammable material away.
- Do not use machines in atmosphere containing explosive gas.

W-2051-1086

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Figure 102

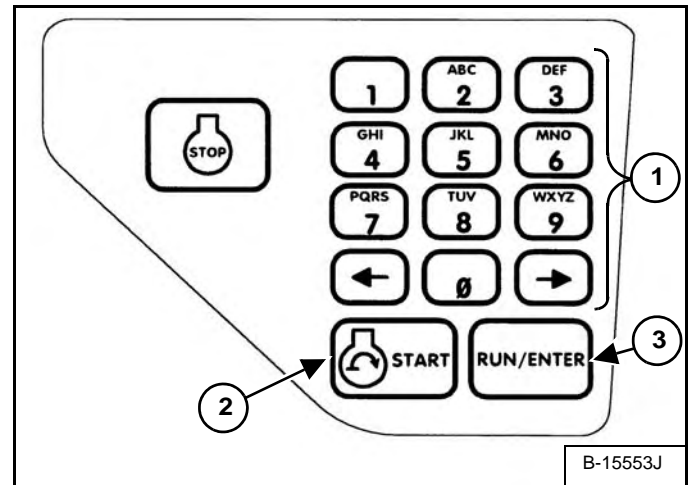


Set the engine speed control to the idle position [Figure 102]

**NOTE:** Loaders with a Deluxe Instrumentation Panel have a permanent, randomly generated Master Password set at the factory. Your loader will be assigned an Owner Password. Your dealer will provide you with this password. Change the password to one that you will easily remember to prevent unauthorized use of your loader. (See Changing The Owner Password on Page 160.) Keep your password in a safe place for future needs.

**NOTE:** The Password Lockout feature can be used to allow starting of the loader without a password. (See Password Lockout Feature on Page 161.)

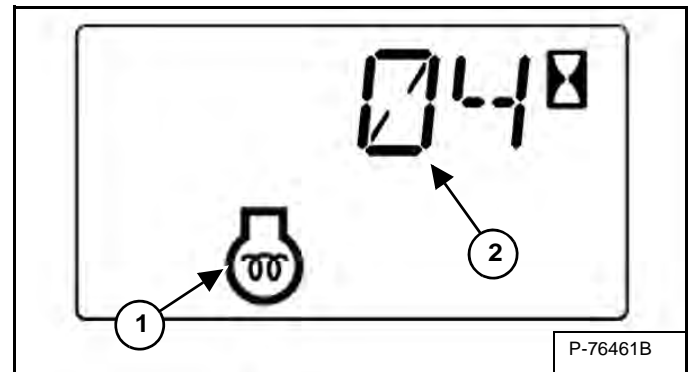
Figure 103



Press the RUN / ENTER button (Item 3) [Figure 103].

Use the numeric keypad (Item 1) to enter the password, then press the RUN / ENTER button (Item 3) [Figure 103].

Figure 104



The machine will cycle the air intake heater (glow plugs) automatically based on temperature. The engine preheat icon (Item 1) will be ON and the cycle time remaining will show in the data display (Item 2) [Figure 104].

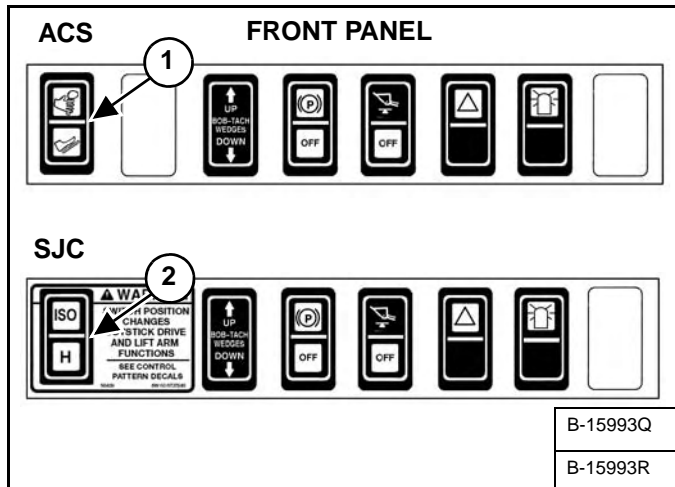
When the engine preheat icon goes OFF, press the START button (Item 2) [Figure 103]. Release the button when the engine starts.

## STARTING THE ENGINE (CONT'D)

### Deluxe Instrumentation Panel (Cont'd)

**NOTE:** Make sure both hand controls (ACS) or joysticks (SJC) are in the neutral position before starting the engine. Do not move the levers or joysticks from the neutral position when pressing the RUN / ENTER or START buttons with the BICS™ activated.

Figure 105



(ACS) Select hand control or foot pedal operation (Item 1) [Figure 105].

OR

(SJC) Select 'ISO' or 'H' Control Pattern (Item 2) [Figure 105].

Figure 106



Press the PRESS TO OPERATE LOADER button (Item 1) [Figure 106] to activate the BICS™ and to perform hydraulic and loader functions.

(SJC) The current drive response setting will be displayed briefly in the data display (Item 2) each time the PRESS TO OPERATE LOADER button (Item 1) [Figure 106] is pressed.

**NOTE:** (SJC) The light of the current switch position (ISO or H) will flash, which will indicate PRESS TO OPERATE LOADER is required. The light will flash when the RUN button has been pressed and continue to flash until the PRESS TO OPERATE LOADER button is pressed, thereafter the light will become solid. If the mode (ISO / H) is changed while driving, the active mode light will remain solid and the pending mode light will flash. When operation of the machine is returned to neutral, the active mode light will then turn off and the pending mode light will continue to flash until the PRESS TO OPERATE LOADER button is pressed.



### AVOID INJURY OR DEATH

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the engine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

W-2050-0807

## STARTING THE ENGINE (CONT'D)

### Cold Temperature Starting



#### AVOID INJURY OR DEATH

**Do not use ether with glow plug (preheat) systems. Explosion can result which can cause injury, death, or severe engine damage.**

W-2071-0907

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 120.)
- Make sure the battery is fully charged.
- Install an engine heater, available from your Bobcat loader dealer.
- Move engine speed control lever halfway before starting. Return to idle position after the engine starts.

**NOTE:** The display screen of the Deluxe Instrumentation Panel may not be immediately visible when the temperature is below -26°C (-15°F). It may take 30 seconds to several minutes for the display screen to warm up. All systems remain monitored even when the display screen is off.

## STARTING THE ENGINE (CONT'D)

### Warming The Hydraulic / Hydrostatic System

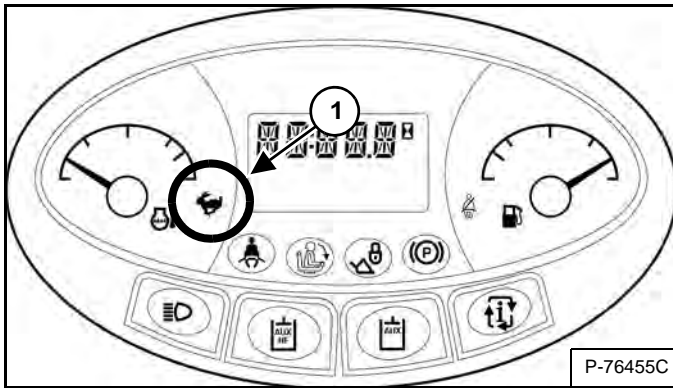
# IMPORTANT

When the temperature is below  $-30^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ), hydrostatic oil must be warmed before starting. The hydrostatic system will not get enough oil at low temperatures and will be damaged. Park the machine in an area where the temperature will be above  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) if possible.

I-2007-0910

Let the engine run for a minimum of five minutes to warm the engine and hydrostatic transmission fluid before operating the loader.

Figure 107

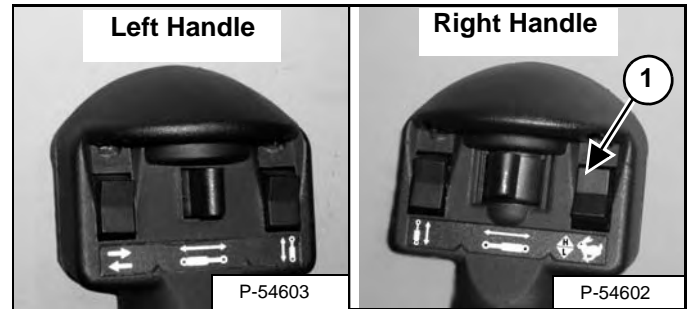


The two-speed icon (Item 1) [Figure 107] will flash slowly if the operator attempts to engage two-speed operation before the hydraulic / hydrostatic system has been adequately warmed up.

**NOTE:** There is a minimum three minute delay if the two-speed icon is flashing slowly. The machine will automatically warm up the hydraulic / hydrostatic fluid and notify the operator when fluid is warm enough for two-speed operation by turning off the two-speed icon.

Standard And ACS (If Equipped)

Figure 108

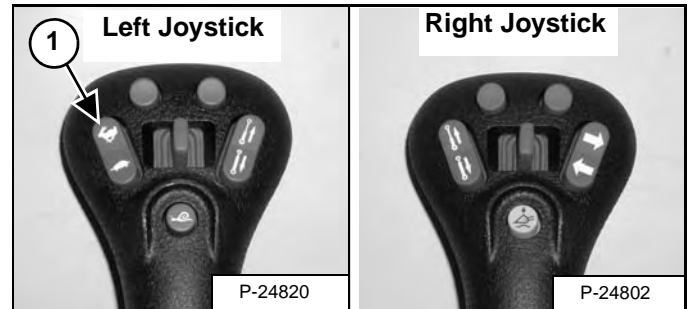


Press the bottom of the two-speed switch (Item 1) [Figure 108] to cycle system back to single speed when the two-speed icon (Item 1) [Figure 107] stops flashing. Then press the top of the switch (Item 1) [Figure 108] to enter two-speed operation.

**NOTE:** Returning the two-speed switch to single speed operation will turn the flashing icon off immediately.

SJC (If Equipped)

Figure 109



Press the top of the two-speed switch (Item 1) [Figure 109] to enter two-speed operation when the two-speed icon (Item 1) [Figure 107] stops flashing.

**NOTE:** Returning the two-speed switch to single speed operation will turn the flashing icon off immediately.



## MONITORING THE DISPLAY PANELS

### Left Panel

Figure 110



Frequently monitor the temperature and fuel gauges and BICS™ lights (all BICS™ lights must be OFF to operate loader) [Figure 110].

After the engine is running, frequently monitor the left instrument panel [Figure 110] for error conditions.

The associated icon will be ON if there is an error condition.

**EXAMPLE:** Engine Coolant Temperature is High

The Engine Over-Temperature icon (Item 1) [Figure 110] will be ON.

Press the Information button (Item 2) [Figure 110] to cycle the data display until the service code screen is displayed. One of the following SERVICE CODES will be displayed.

- M0810 Engine Coolant Temperature High
- M0811 Engine Coolant Temperature Extremely High

Find the cause of the error code and correct before operating the loader again. (See Service Codes List on Page 152.)

## Warning And Shutdown

When a WARNING condition exists, the associated icon light will come ON and there will be 3 beeps from the alarm. If this condition is allowed to continue, there may be damage to the engine or loader hydraulic systems.

When a SHUTDOWN condition exists, the associated icon light will come ON and there will be a continuous beep from the alarm. The monitoring system will automatically stop the engine in 15 seconds. The engine can be restarted to move or relocate the loader.

The SHUTDOWN feature is associated with the following icons:

**General Warning**  
**Engine Malfunction**  
**Engine Coolant Temperature**  
**Hydraulic System Malfunction**

## STOPPING THE ENGINE AND LEAVING THE LOADER

### Procedure

Stop the loader on level ground.

Fully lower the lift arms and put the attachment flat on the ground.

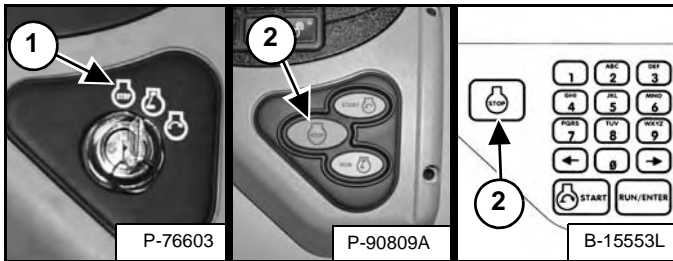
Figure 111



Pull the engine speed control fully backward [Figure 111] to decrease the engine speed.

Engage the parking brake.

Figure 112



Turn the key switch to the STOP position (Item 1) or press the STOP button (Item 2) [Figure 112].

**NOTE:** If the loader lights are ON, they will remain ON for approximately 90 seconds after turning the loader OFF.

Raise the seat bar and make sure the lift and tilt functions are deactivated.

Unbuckle the seat belt.

Remove the key from the switch (Standard Key Panel) to prevent operation of the loader by unauthorized personnel.

**NOTE:** Activating the Password Lockout Feature on machines with the Keyless Start Panel or the Deluxe Instrumentation Panel allows operation of the loader without using a password. (See Password Lockout Feature on Page 159.) or (See Password Lockout Feature on Page 161.)

Figure 113



Exit the loader using grab handles, safety tread and steps (maintaining a 3-point contact) [Figure 113].

**! WARNING**

**AVOID 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-2463-1110

## COUNTERWEIGHTS

### Description

Counterweights can be installed on the loader. See your Bobcat dealer for information about approved loader counterweights and configurations for your job application and attachment.

### Effect On The Loader And Loader Operation

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

Counterweights installed on your loader can affect the loader 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 loader Rated Operating Capacity (ROC) which could improve attachment performance in some applications. Some examples are:

- Using pallet forks with palletized loads.
- Using grapples or bale forks.
- 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 loader is already equipped with accessories like Over Tire Steel Tracks, 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 your attachments and accessories.

## ATTACHMENTS

### Choosing The Correct Bucket



#### AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

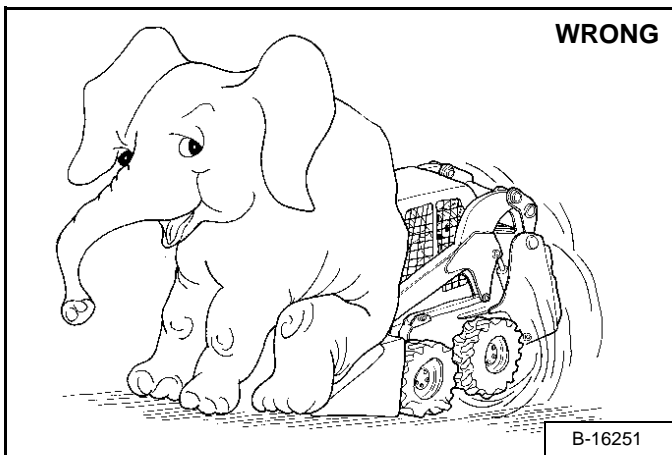
**NOTE: Warranty is void if non-approved attachments are used on the Bobcat loader.**

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 loader is shown on a decal in the operator cab. (See Performance on Page 184.)

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 very dense material is loaded, the volume must be reduced to prevent overloading.

Figure 114



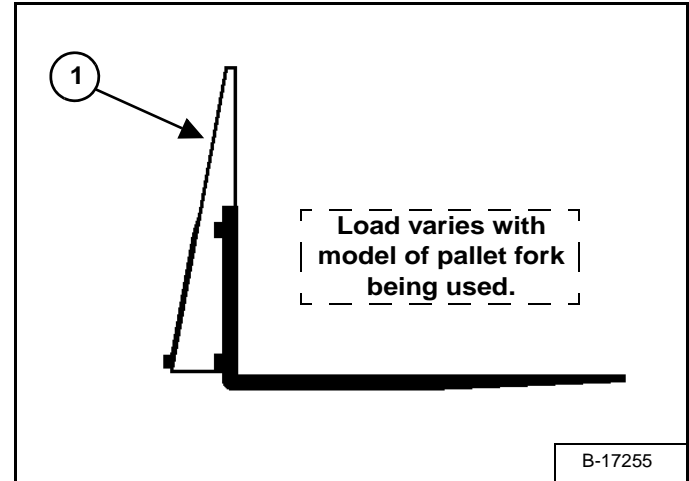
Exceeding the ROC [Figure 114] can cause the following problems:

- Steering the loader 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 loader. Partial loads make steering more difficult.

### Pallet Forks

Figure 115



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 115].

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.



#### AVOID INJURY OR DEATH

**Do not exceed Rated Operating Capacity (ROC). Excessive load can cause tipping or loss of control.**

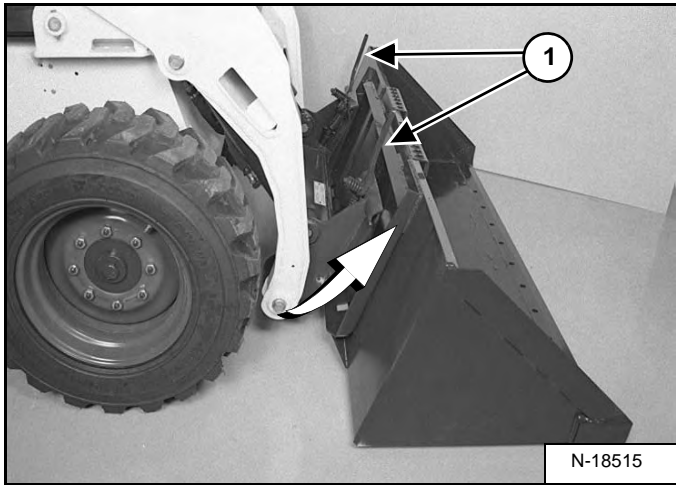
W-2053-0903

## ATTACHMENTS (CONT'D)

### Installing And Removing The Attachment (Hand Lever Bob-Tach)

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

Figure 116



#### Installing

Pull the Bob-Tach levers all the way up (Item 1) [Figure 116].

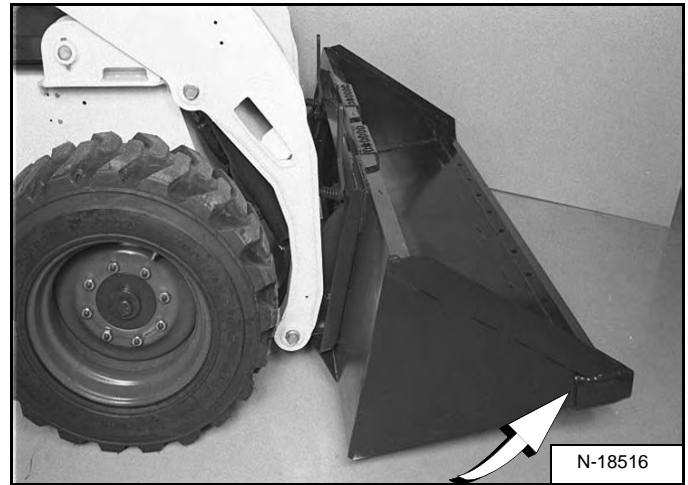
Enter the loader and perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Lower the lift arms and tilt the Bob-Tach forward.

Drive the loader forward until the top edge of the Bob-Tach is completely under the top flange of the bucket [Figure 116] (or other attachment). Be sure the Bob-Tach levers do not hit the bucket.

Figure 117



Tilt the Bob-Tach backward until the cutting edge of the bucket (or other attachment) is slightly off the ground to ensure the mounting frame is tight to the Bob-Tach [Figure 117].

Stop the engine and exit the loader. (See STOPPING THE ENGINE AND LEAVING THE LOADER on Page 76.)

## **WARNING**

### AVOID 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.

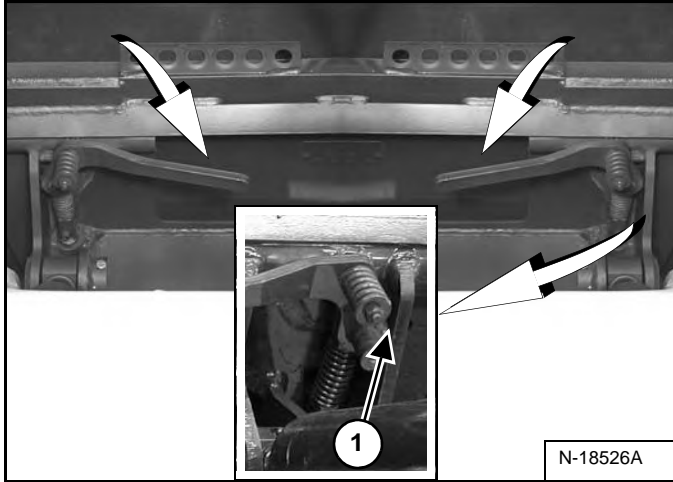
W-2463-1110

## ATTACHMENTS (CONT'D)

### Installing And Removing The Attachment (Hand Lever Bob-Tach) (Cont'd)

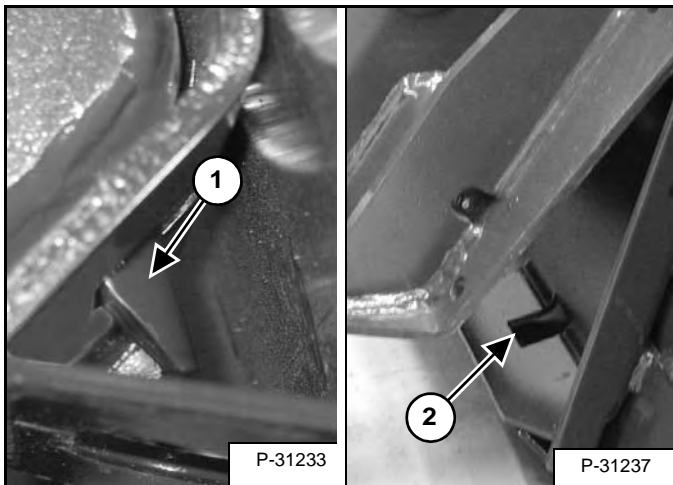
*Installing (Cont'd)*

**Figure 118**



Push down on the Bob-Tach levers until they are fully engaged in the locked position (Item 1) [Figure 118] (wedges fully extended).

**Figure 119**



The wedges (Item 1) must extend through the holes (Item 2) [Figure 119] in the mounting frame of the bucket (or other attachment), securely fastening the bucket to the Bob-Tach.

## **WARNING**

### AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

### *Removing*

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

Stop the engine and exit the loader. (See STOPPING THE ENGINE AND LEAVING THE LOADER on Page 76.)

## **WARNING**

### AVOID 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-2463-1110

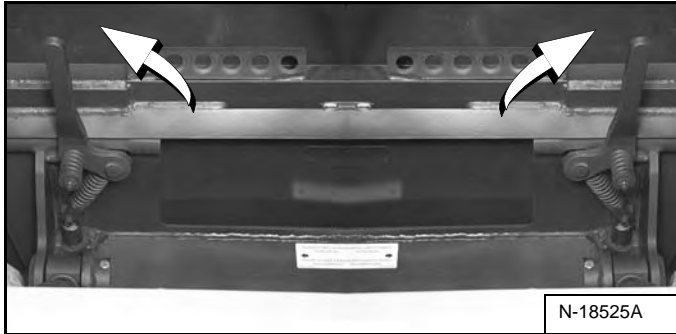
Disconnect attachment electrical harness, water line and hydraulic lines, if applicable, from the loader. (See Relieve Auxiliary Hydraulic Pressure (Loader And Attachment) on Page 60.)

## ATTACHMENTS (CONT'D)

### Installing And Removing The Attachment (Hand Lever Bob-Tach) (Cont'd)

Removing (Cont'd)

Figure 120



Pull the Bob-Tach levers [Figure 120] all the way up.



Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

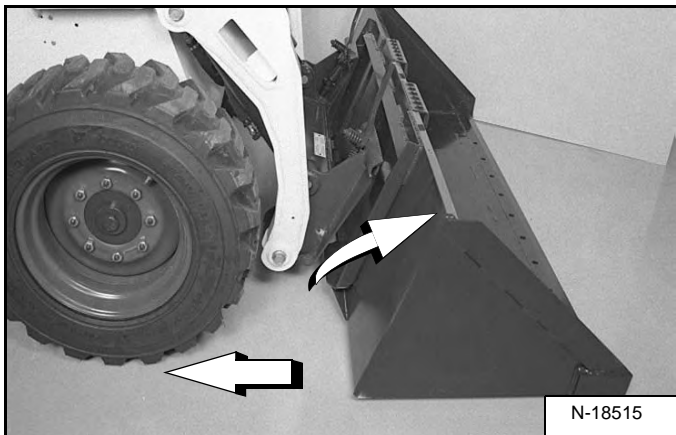
W-2054-1285

Enter the loader.

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Figure 121



Tilt the Bob-Tach forward and move the loader backward, away from the bucket or attachment [Figure 121].

### Installing And Removing The Attachment (Power Bob-Tach)

This machine may be equipped with a Power Bob-Tach.

Installing

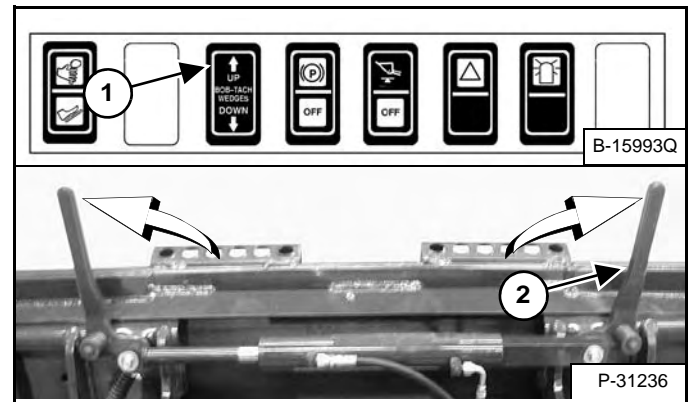
The Bob-Tach is used for fast changing of buckets and attachments. See the appropriate attachment Operation & Maintenance Manual to install other attachments.

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

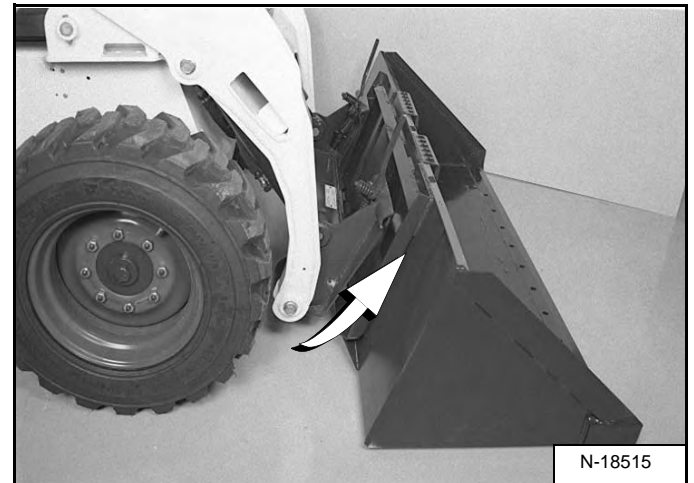
Lower the lift arms and tilt the Bob-Tach forward.

Figure 122



Push and hold BOB-TACH “WEDGES UP” switch (Item 1) (Front Panel) until levers (Item 2) [Figure 122] are in unlocked position (wedges fully raised).

Figure 123



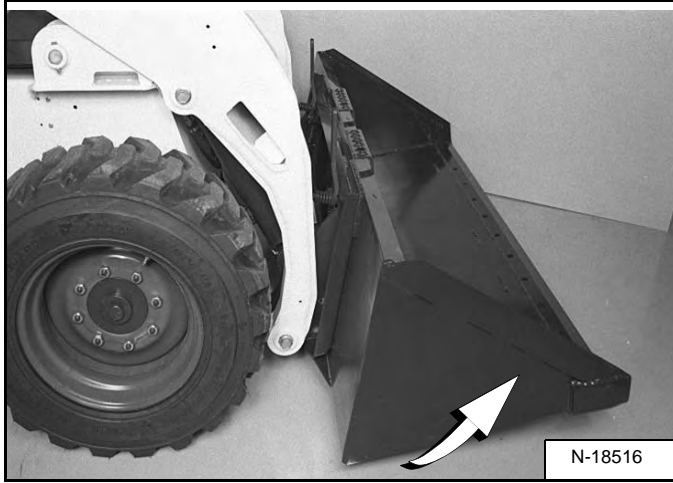
Drive the loader forward until the top edge of the Bob-Tach is completely under the top flange of the bucket [Figure 123] (or other attachment). Be sure the Bob-Tach levers do not hit the bucket.

## ATTACHMENTS (CONT'D)

### Installing And Removing The Attachment (Power Bob-Tach) (Cont'd)

*Installing (Cont'd)*

**Figure 124**

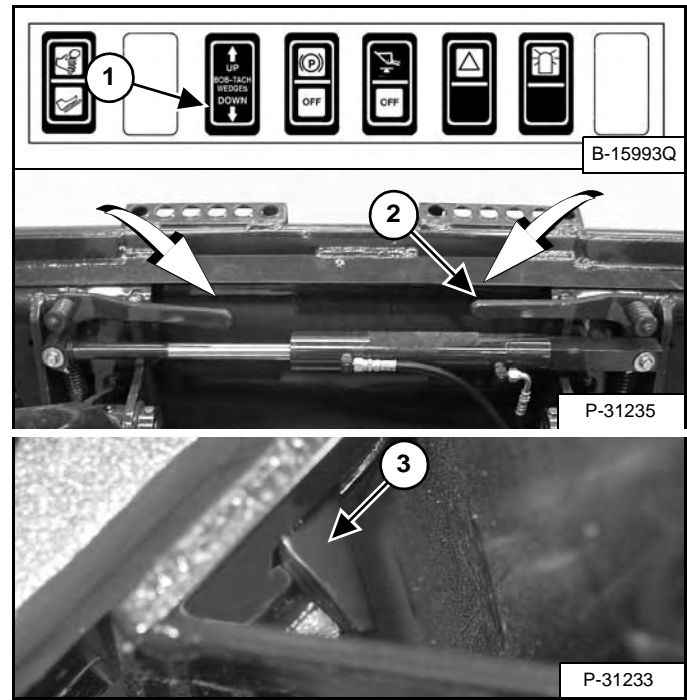


Tilt the Bob-Tach backward until the cutting edge of the bucket (or other attachment) is slightly off the ground [Figure 124].

Push and hold BOB-TACH “WEDGES UP” switch (Item 1) [Figure 122] (Front Panel) to make sure the levers are all the way up.

**NOTE: The Power Bob-Tach system has continuous pressurized hydraulic oil 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 switch (WEDGES UP) to be sure both wedges are fully raised before installing the attachment.**

**Figure 125**



Push and hold BOB-TACH “WEDGES DOWN” switch (Front Panel) (Item 1) until levers are fully engaged in the locked position (Item 2) [Figure 125] (wedges fully engaged).

The wedges (Item 3) [Figure 125] must extend through the holes in the mounting frame of the bucket (or other attachment), securely fastening the bucket to the Bob-Tach.

## **WARNING**

### **AVOID INJURY OR DEATH**

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208



## ATTACHMENTS (CONT'D)

### Installing And Removing The Attachment (Power Bob-Tach) (Cont'd)

#### Removing

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

If the attachment has electrical, water or hydraulic connections to the loader:

1. Stop the engine and exit the loader. (See STOPPING THE ENGINE AND LEAVING THE LOADER on Page 76.)



#### AVOID INJURY OR DEATH

Before you leave the operator's seat:

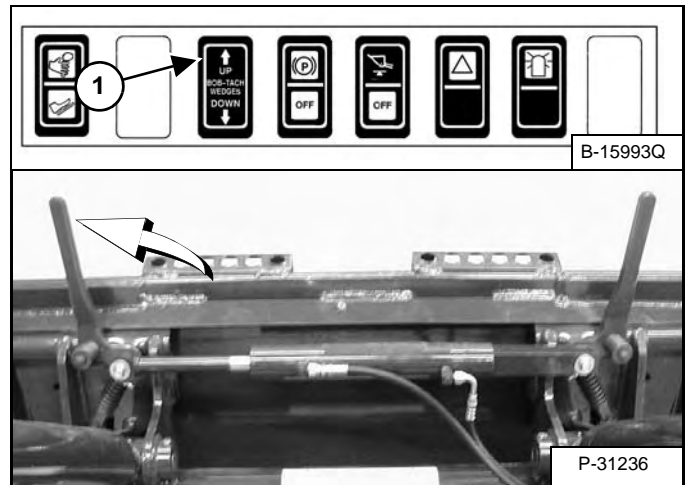
- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.

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-2463-1110

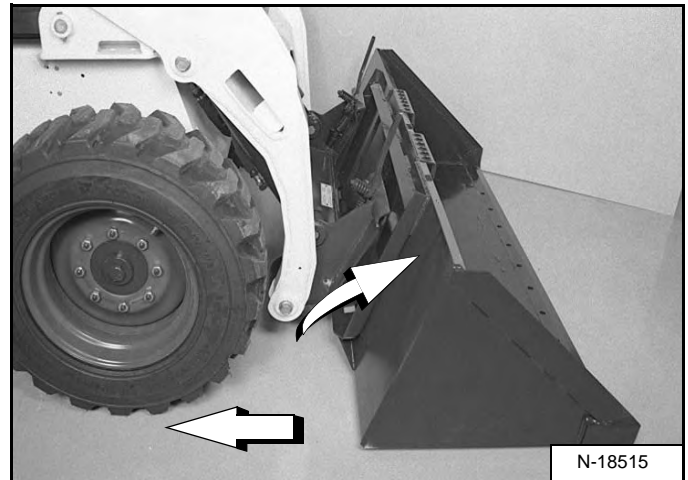
2. Disconnect attachment electrical harness and water or hydraulic lines, if applicable, from the loader. (See Relieve Auxiliary Hydraulic Pressure (Loader And Attachment) on Page 60.)
3. Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 64.)
4. Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Figure 126



Push and hold the BOB-TACH "WEDGES UP" switch (Front Panel) (Item 1) [Figure 126] until the wedges are fully raised.

Figure 127



Tilt the Bob-Tach forward and move the loader backward, away from the bucket or attachment [Figure 127].

**NOTE:** The Power Bob-Tach system has continuous pressurized hydraulic oil 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 switch (WEDGES UP) when removing an attachment to be sure both wedges are fully raised.

## OPERATING PROCEDURE

### Inspect The Work Area

Before beginning operation, inspect the work area for unsafe conditions.

Look for sharp drop-offs or rough terrain. Have underground utility lines (gas, electrical, water, sewer, irrigation, etc.) located and marked.

Remove objects or other construction material that could damage the loader or cause personal injury.

Always check ground conditions before starting your work:

- 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 loader.

## IMPORTANT

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

I-2015-0284

Operate the loader with engine at full speed for maximum horsepower. Move the steering levers only a small amount to operate the loader slowly.

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

### Operating Near An Edge Or Water

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

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



## WARNING

### MACHINE TIPPING OR ROLL OVER CAN CAUSE SERIOUS INJURY OR DEATH

- **Keep the lift arms as low as possible.**
- **Do not travel or turn with the lift arms up.**
- **Turn on level ground. Slow down when turning.**
- **Go up and down slopes, not across them.**
- **Keep the heavy end of the machine uphill.**
- **Do not overload the machine.**
- **Check for adequate traction.**

W-2018-1109

### Driving On Public Roads

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

## OPERATING PROCEDURE (CONT'D)

### Operating With A Full Bucket

Figure 128

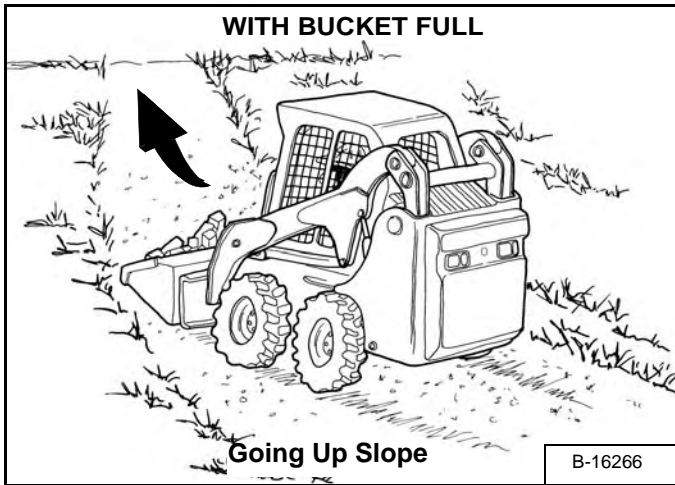
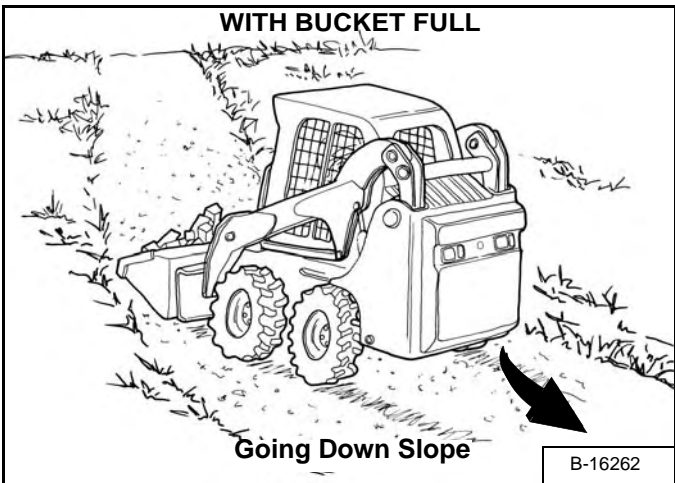


Figure 129



With a full bucket, go up or down the slope with the heavy end toward the top of the slope [Figure 128] and [Figure 129].

### Operating With An Empty Bucket

Figure 130

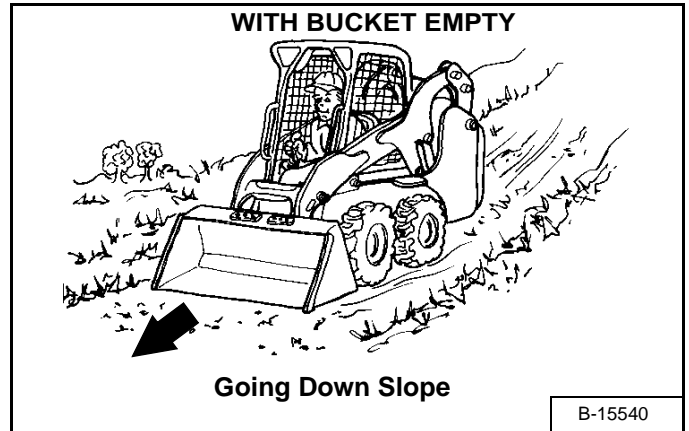
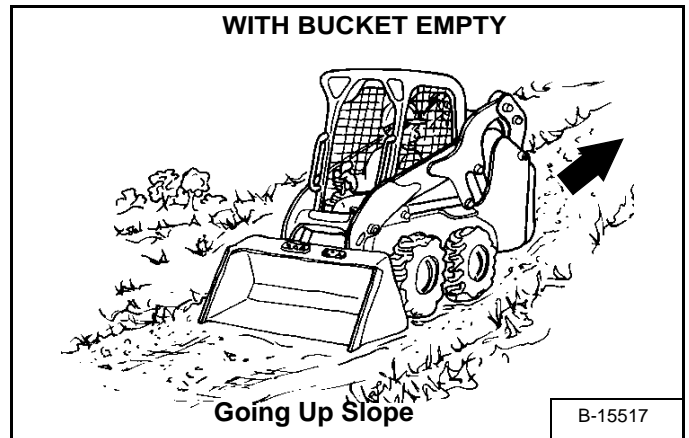


Figure 131



With an empty bucket, go down or up the slope with the heavy end toward the top of the slope [Figure 130] and [Figure 131].

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

## OPERATING PROCEDURE (CONT'D)

### Filling And Emptying The Bucket (Foot Pedals)

#### Filling

Figure 132

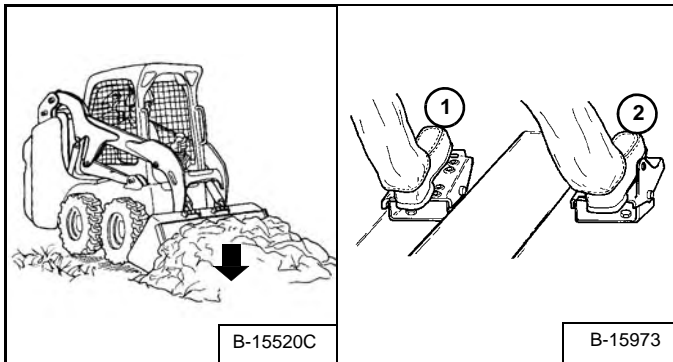
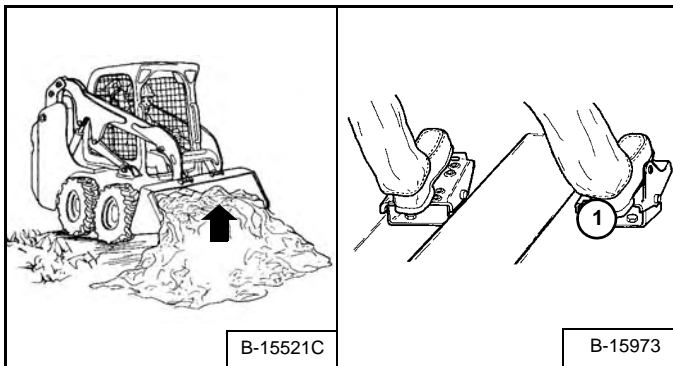


Figure 133



Lower the lift arms all the way (Item 1) [Figure 132].

Tilt the bucket forward (Item 2) [Figure 132] until the cutting edge of the bucket is on the ground.

Drive slowly forward into the material. Tilt the bucket backward (Item 1) [Figure 133] all the way when the bucket is full.

Drive backward away from the material.

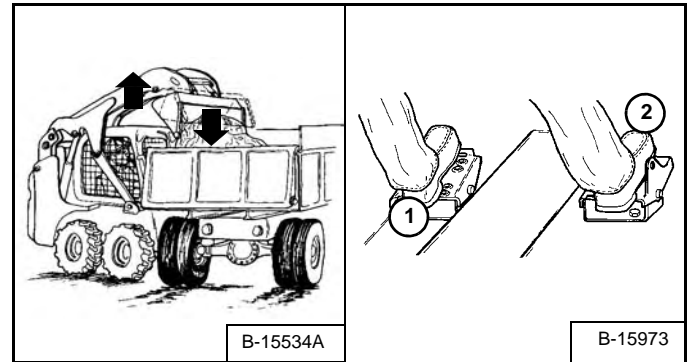
## ! WARNING

Load, unload and turn on flat level ground. Do not exceed Rated Operating Capacity (ROC) shown on sign (decals) in cab. Failure to obey warnings can cause the machine to tip or roll over and cause injury or death.

W-2056-0903

#### Emptying

Figure 134



Keep the bucket low when moving to the area where you want to empty the bucket.

Raise the lift arms (Item 1) [Figure 134]. Level the bucket (Item 2) [Figure 134] while raising the lift arms to help prevent material from falling off the back of the bucket.

Drive forward slowly until the bucket is over the top of the truck box or bin.

Empty the bucket (Item 2) [Figure 134]. If all the material is near the side of the truck or bin, use the bucket tilt to move it to the other side.

## ! WARNING

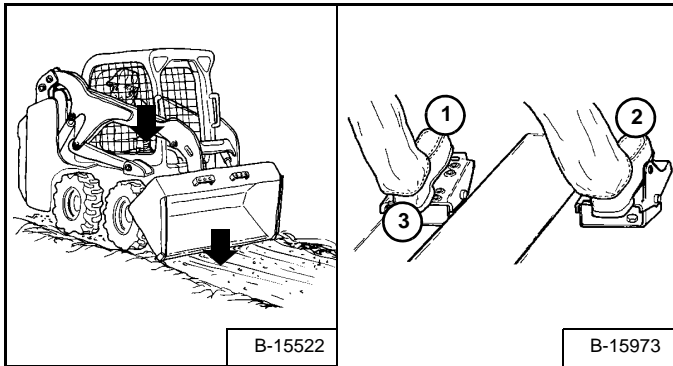
Never dump over an obstruction, such as a post, that can enter the operator cab. The machine could tip forward and cause injury or death.

W-2057-0694

## OPERATING PROCEDURE (CONT'D)

### Leveling The Ground Using Float (Foot Pedals)

Figure 135



Put the lift arms in *float* position by pushing the pedal all the way forward (Item 1) [Figure 135] until the pedal is locked in the forward position.

Tilt the bucket forward (Item 2) [Figure 135] to change the position of the cutting edge of the bucket.

With the bucket tilted farther forward, there is more force on the cutting edge and more loose material can be moved.

Drive backward to level loose material.

Push the bottom of the lift pedal (Item 3) [Figure 135] to unlock the float position.

# IMPORTANT

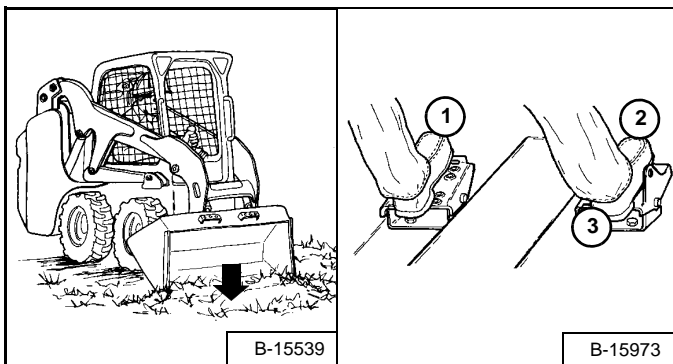
Never drive forward when the hydraulic control for lift arms is in float position.

I-2005-1285

### Digging And Filling A Hole (Foot Pedals)

#### Digging

Figure 136

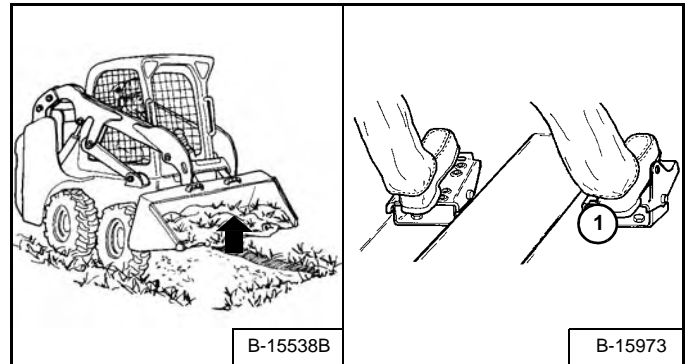


Lower the lift arms all the way (Item 1) [Figure 136]. Put the cutting edge of the bucket on the ground (Item 2) [Figure 136].

Drive forward slowly and continue to tilt the bucket down (Item 2) [Figure 136] until it enters the ground.

Raise the cutting edge a small amount (Item 3) [Figure 136] to increase traction and keep an even digging depth. Continue to drive forward until the bucket is full. When the ground is hard, raise and lower the cutting edge of the bucket (Items 2 and 3) [Figure 136] while driving forward slowly.

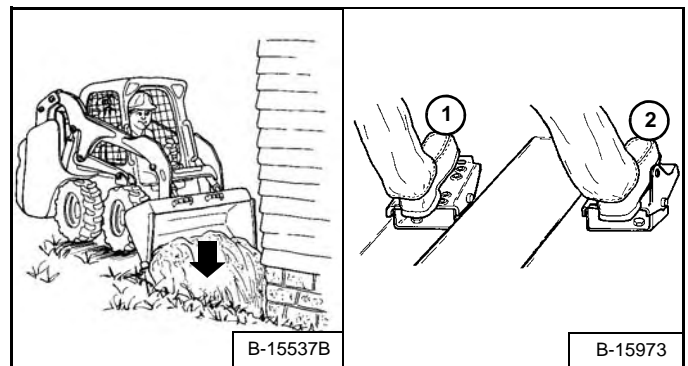
Figure 137



Tilt the bucket backward (Item 1) [Figure 137] as far as it will go when the bucket is full.

#### Filling

Figure 138



Lower the lift arms (Item 1) [Figure 138] and put the cutting edge of the bucket on the ground (Item 2) [Figure 138]. Drive forward to the edge of the hole to push the material into the hole.

Tilt the bucket forward (Item 2) [Figure 138] as soon as it is past the edge of the hole.

If necessary, raise the lift arms to empty the bucket.

## OPERATING PROCEDURE (CONT'D)

### Filling And Emptying The Bucket (ACS - Handles, SJC - 'H' Pattern)

#### Filling

Figure 139

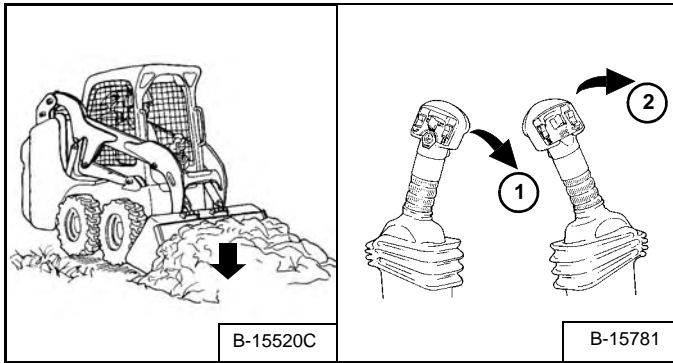
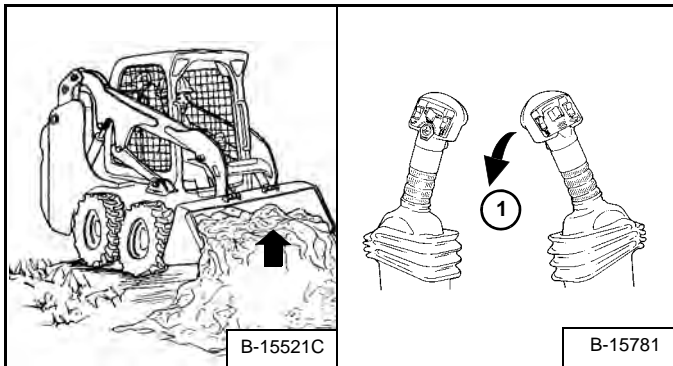


Figure 140



Lower the lift arms all the way (Item 1) [Figure 139].

Tilt the bucket forward (Item 2) [Figure 139] until the cutting edge of the bucket is on the ground.

Drive slowly forward into the material. Tilt the bucket backward (Item 1) [Figure 140] all the way when the bucket is full.

Drive backward away from the material.

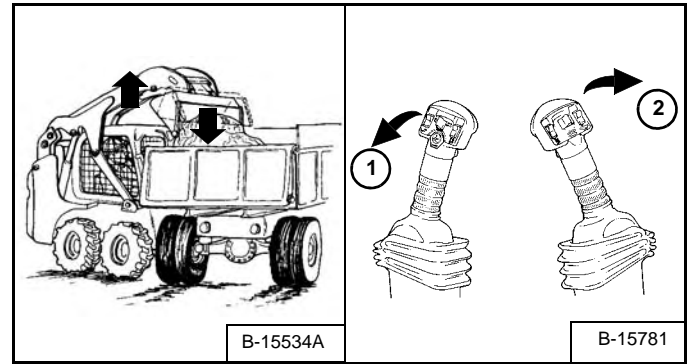
## WARNING

Load, unload and turn on flat level ground. Do not exceed Rated Operating Capacity (ROC) shown on sign (decal) in cab. Failure to obey warnings can cause the machine to tip or roll over and cause injury or death.

W-2056-0903

#### Emptying

Figure 141



Keep the bucket low when moving to the area where you want to empty the bucket.

Raise the lift arms (Item 1) [Figure 141]. Level the bucket (Item 2) [Figure 141] while raising the lift arms to help prevent material from falling off the back of the bucket.

Drive forward slowly until the bucket is over the top of the truck box or bin.

Empty the bucket (Item 2) [Figure 141]. If all material is near the side of the truck or bin, use the bucket tilt to move it to the other side.

## WARNING

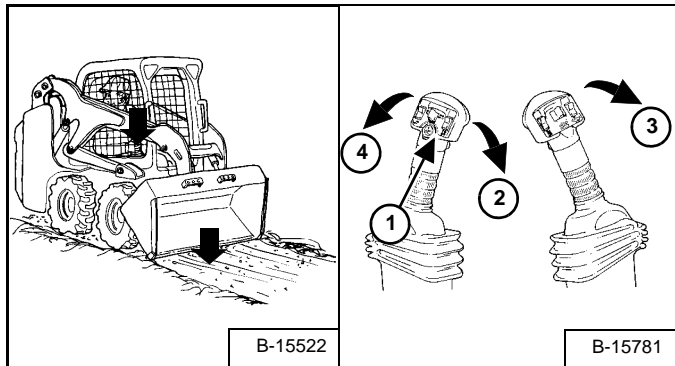
Never dump over an obstruction, such as a post, that can enter the operator cab. The machine could tip forward and cause injury or death.

W-2057-0694

## OPERATING PROCEDURE (CONT'D)

### Leveling The Ground Using Float (ACS - Handles, SJC - 'H' Pattern)

Figure 142



Press and hold the float button (Item 1) **[Figure 142]** while the lever is in neutral. While lowering the lift arms (Item 2) **[Figure 142]**, release the float button.

Tilt the bucket forward (Item 3) **[Figure 142]** to change the position of the cutting edge of the bucket.

With the bucket tilted farther forward, there is more force on the cutting edge and more loose material can be moved.

Drive backward to level loose material.

To disengage float, press the float button again or raise the lift arms (Item 4) **[Figure 142]**.

## IMPORTANT

**Never drive forward when the hydraulic control for lift arms is in float position.**

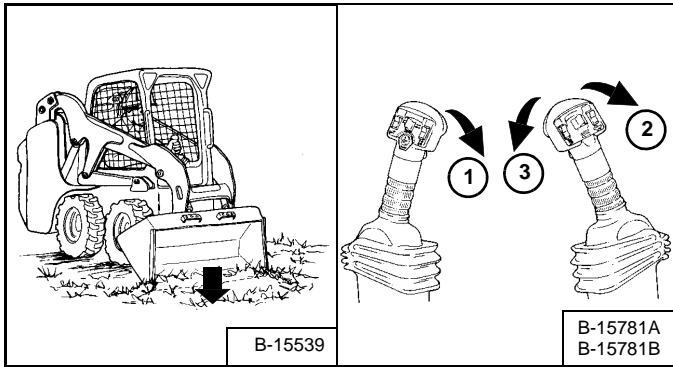
I-2005-1285

## OPERATING PROCEDURE (CONT'D)

### Digging And Filling A Hole (ACS - Handles, SJC - 'H' Pattern)

#### Digging

Figure 143

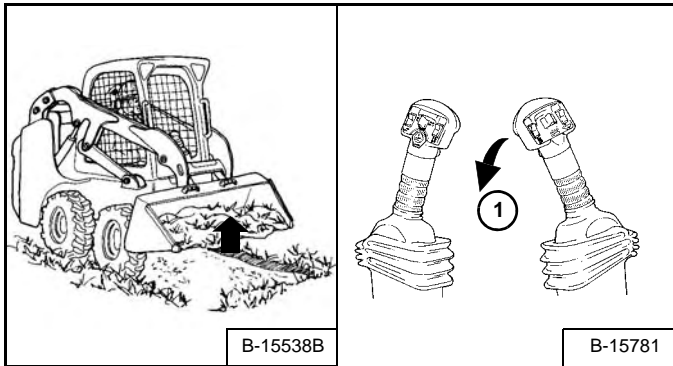


Lower the lift arms all the way (Item 1) [Figure 143]. Tilt the bucket forward (Item 2) [Figure 143] until the cutting edge of the bucket is on the ground.

Drive forward slowly and continue to tilt the bucket down (Item 2) [Figure 143] until it enters the ground.

Tilt the bucket backward a small amount (Item 3) [Figure 143] to increase traction and keep an even digging depth. Continue to drive forward until the bucket is full. When the ground is hard, raise and lower the cutting edge (Items 2 and 3) [Figure 143] while driving forward.

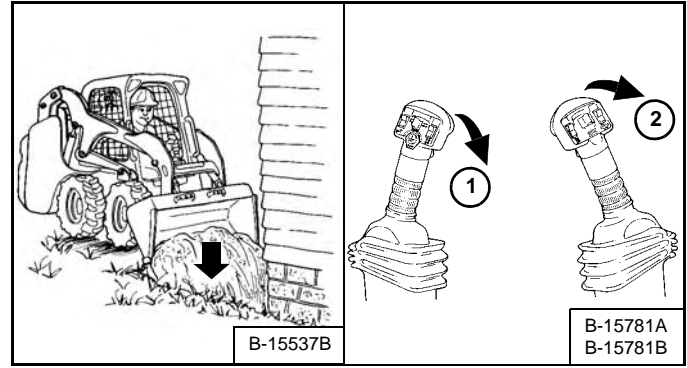
Figure 144



Tilt the bucket backward (Item 1) [Figure 144] as far as it will go when the bucket is full.

#### Filling

Figure 145



Lower the lift arms (Item 1) [Figure 145] and put the cutting edge of the bucket on the ground (Item 2) [Figure 145]. Drive forward to the edge of the hole to push the material into the hole.

Tilt the bucket forward (Item 2) [Figure 145] as soon as it is past the edge of the hole.

If necessary, raise the lift arms to empty the bucket.



## OPERATING PROCEDURE (CONT'D)

### Filling And Emptying The Bucket (SJC - 'ISO' Pattern)

#### Filling

Figure 146

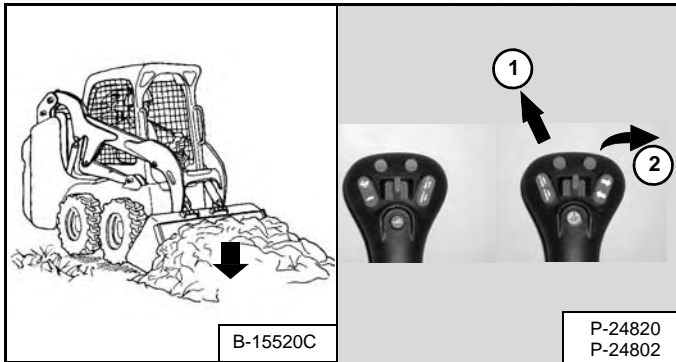
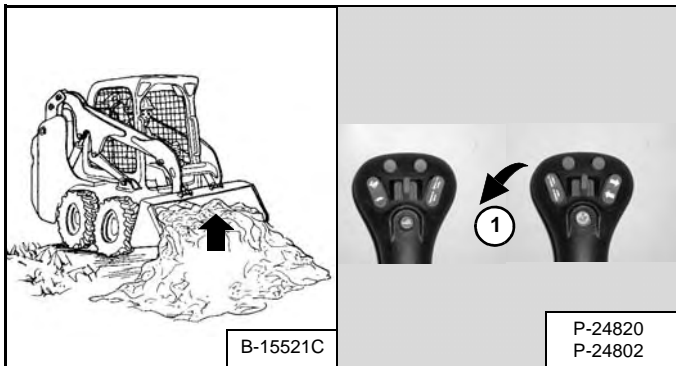


Figure 147



Lower the lift arms all the way (Item 1) [Figure 146].

Tilt the bucket forward (Item 2) [Figure 146] until the cutting edge of the bucket is on the ground.

Drive slowly forward into the material. Tilt the bucket backward (Item 1) [Figure 147] all the way when the bucket is full.

Drive backward away from the material.

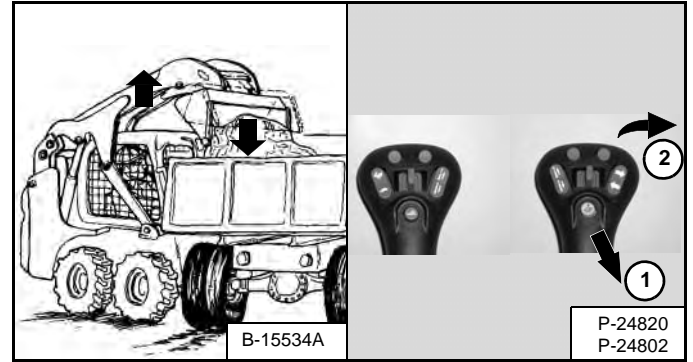
## ! WARNING

Load, unload and turn on flat level ground. Do not exceed Rated Operating Capacity (ROC) shown on sign (decal) in cab. Failure to obey warnings can cause the machine to tip or roll over and cause injury or death.

W-2056-0903

#### Emptying

Figure 148



Keep the bucket low when moving to the area where you want to empty the bucket.

Raise the lift arms (Item 1) [Figure 148]. Level the bucket (Item 2) [Figure 148] while raising the lift arms to help prevent material from falling off the back of the bucket.

Drive forward slowly until the bucket is over the top of the truck box or bin.

Empty the bucket (Item 2) [Figure 148]. If all material is near the side of the truck or bin, use the bucket tilt to move it to the other side.

## ! WARNING

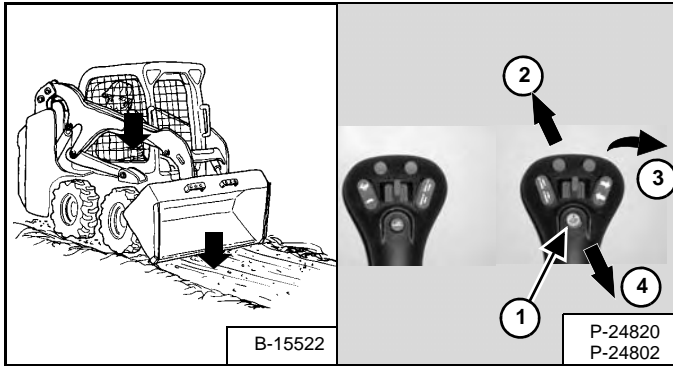
Never dump over an obstruction, such as a post, that can enter the operator cab. The machine could tip forward and cause injury or death.

W-2057-0694

## OPERATING PROCEDURE (CONT'D)

### Leveling The Ground Using Float (SJC - 'ISO' Pattern)

Figure 149



Press and hold the float button (Item 1) [Figure 149] while the joystick is in neutral. While lowering the lift arms (Item 2) [Figure 149], release the float button.

Tilt the bucket forward (Item 3) [Figure 149] to change the position of the cutting edge of the bucket.

With the bucket tilted farther forward, there is more force on the cutting edge and more loose material can be moved.

Drive backward to level loose material.

To disengage, press the float button again or raise the lift arms (Item 4) [Figure 149].

## IMPORTANT

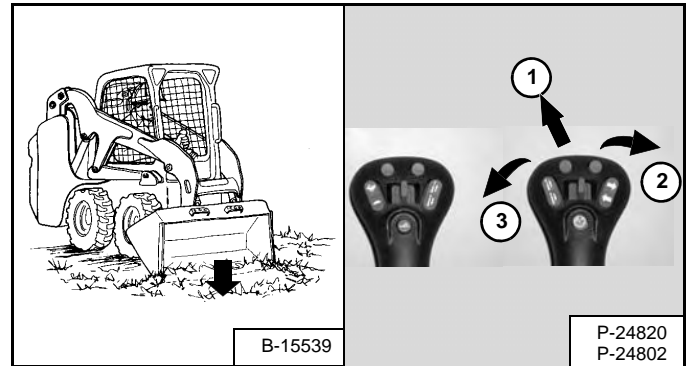
Never drive forward when the hydraulic control for lift arms is in float position.

I-2005-1285

### Digging And Filling A Hole (SJC - 'ISO' Pattern)

#### Digging

Figure 150



Lower the lift arms all the way (Item 1) [Figure 150]. Put the cutting edge of the bucket on the ground (Item 2) [Figure 150].

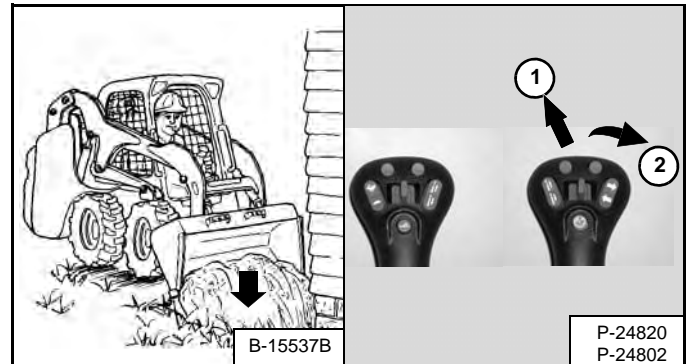
Drive forward slowly and continue to tilt the bucket down (Item 2) [Figure 150] until it enters the ground.

Raise the cutting edge a small amount (Item 3) [Figure 150] to increase traction and keep an even digging depth. Continue to drive forward until the bucket is full. When the ground is hard, raise and lower the cutting edge (Items 2 and 3) [Figure 150] while driving forward.

Tilt the bucket backward (Item 3) [Figure 150] as far as it will go when the bucket is full.

#### Filling

Figure 151



Lower the lift arms (Item 1) [Figure 151] and put the cutting edge of the bucket on the ground (Item 2) [Figure 151]. Drive forward to the edge of the hole to push the material into the hole.

Tilt the bucket forward (Item 2) [Figure 151] as soon as it is past the edge of the hole.

If necessary, raise the lift arms to empty the bucket.

## **TOWING THE LOADER**

### **Procedure**

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

- The loader can be lifted onto a transport vehicle.
- The loader 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 might be slight wear to the tires when the loader is skidded.

The towing chain (or cable) must be rated at 1.5 times the weight of the loader. (See Performance on Page 184.)

## LIFTING THE LOADER

### Single-Point Lift

# ! WARNING

### AVOID INJURY OR DEATH

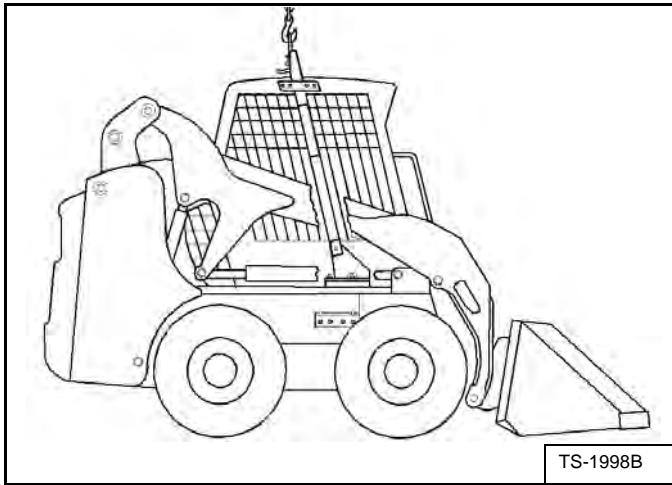
- Before lifting, check fasteners on single point lift and operator cab.
- Assemble front cab fasteners as shown in this manual.
- Never allow riders in the cab or bystanders within 5 m (15 ft) while lifting the machine.

W-2007-0910

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

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

Figure 152



Attach lift to lift eye [Figure 152].

**NOTE:** Be sure the lifting equipment is of adequate size and capacity for the weight of the loader. (See Performance on Page 184.)

### Four-Point Lift

# ! WARNING

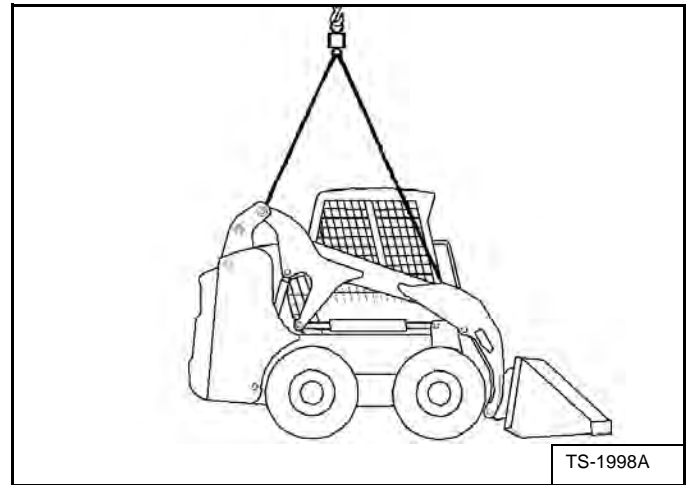
### AVOID INJURY OR DEATH

- 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-2160-0910

The loader can be lifted with the Four-Point Lift which is available as a kit from your Bobcat loader dealer.

Figure 153



Attach cables or chains to lift eyes [Figure 153].

**NOTE:** Be sure the lifting equipment is of adequate size and capacity for the weight of the loader. (See Performance on Page 184.)

## TRANSPORTING THE LOADER ON A TRAILER

### Loading And Unloading



#### AVOID SERIOUS INJURY OR DEATH

Adequately designed ramps of sufficient strength are needed to support the weight of the machine when loading onto a transport vehicle. Wood ramps can break and cause personal injury.

W-2058-0807

Be sure the transport and towing vehicles are of adequate size and capacity for weight of loader. (See Performance on Page 184.)

Figure 154

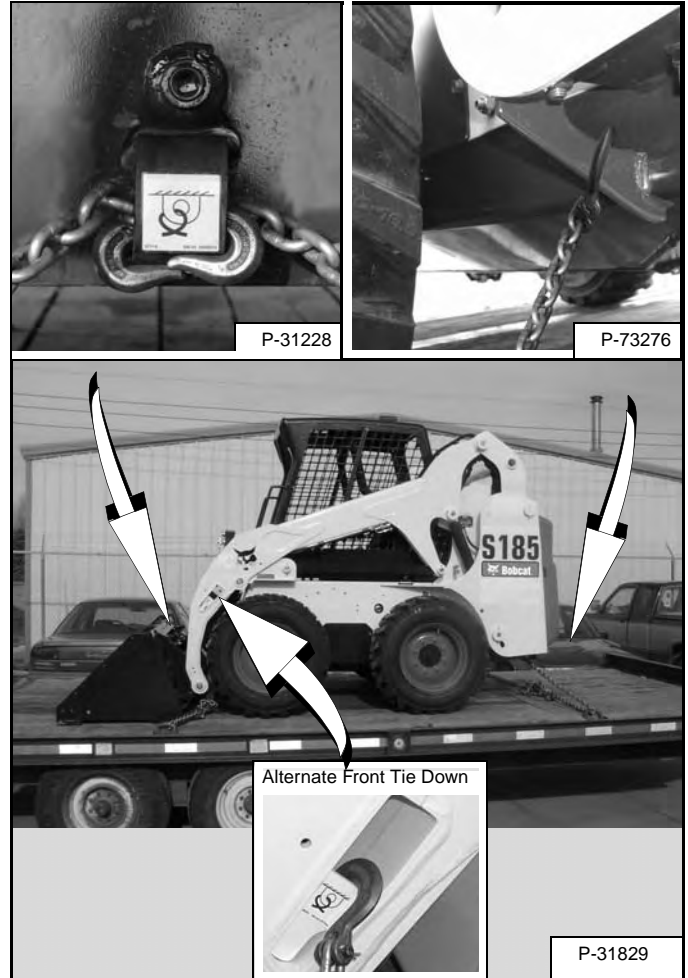


A loader with an empty bucket or no attachment must be loaded backward onto the transport vehicle [Figure 154].

The rear of the trailer must be blocked or supported (Item 1) [Figure 154] when loading or unloading the loader to prevent the front end of the trailer from raising up.

## Fastening

Figure 155



Use the following procedure to fasten the Bobcat loader to the transport vehicle to prevent the loader from moving during sudden stops or when going up or down slopes [Figure 155].

- Lower the bucket or attachment to the floor.
- Stop the engine.
- Engage the parking brake.
- Install chains at the front and rear loader tie down positions [Figure 155].
- Fasten each end of the chain to the transport vehicle.



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# MAINTENANCE SAFETY



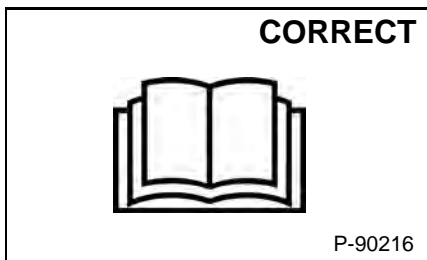
## WARNING

Instructions are necessary before operating or servicing machine. 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.

W-2003-0807

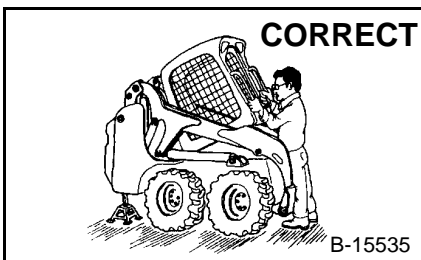


**Safety Alert Symbol:** This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



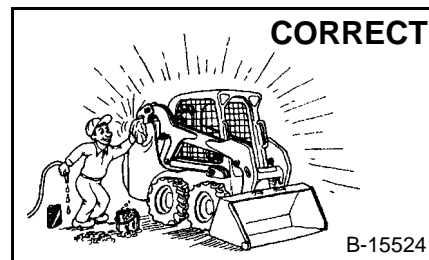
P-90216

⚠ Never service the Bobcat Skid-Steer Loader without instructions.



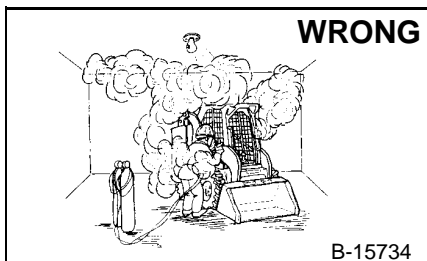
B-15535

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



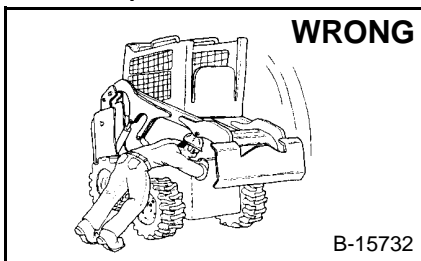
B-15524

⚠ Cleaning and maintenance are required daily.



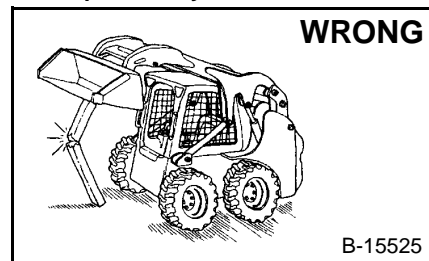
B-15734

- ⚠ 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.



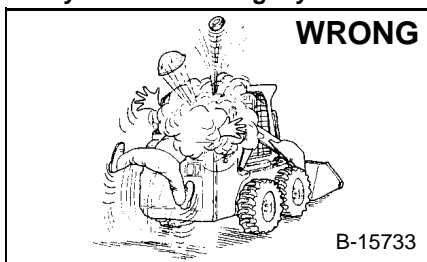
B-15732

⚠ 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 device. Replace it if damaged.



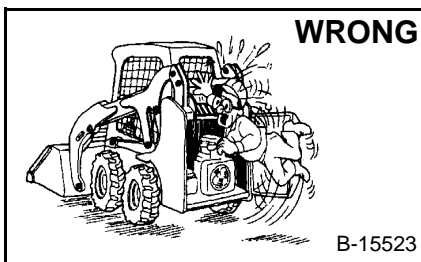
B-15525

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



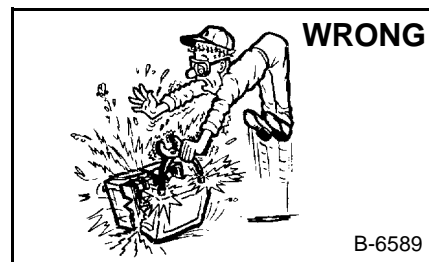
B-15733

- ⚠ 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.



B-15523

- ⚠ 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.



B-6589

- ⚠ 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.

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.

MSW07-0409




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## SERVICE SCHEDULE

### Chart

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Bobcat loader.

 <b style="font-size: 2em; margin-left: 10px;">WARNING</b>	<p><b>Instructions are necessary before operating or servicing machine. Read and understand the Operation &amp; 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.</b></p> <p style="text-align: right; font-size: 0.8em;">W-2003-0807</p>
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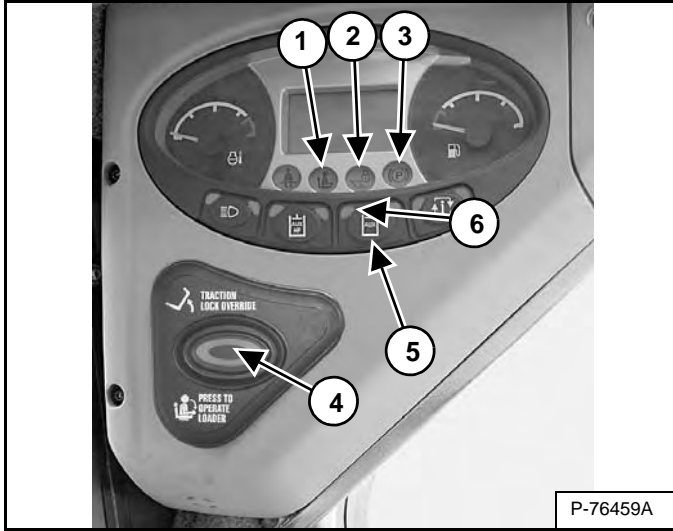
SERVICE SCHEDULE		HOURS					
ITEM	SERVICE REQUIRED	8-10	50	100	■ 250	■ 500	■ 1000
Engine Oil	Check the oil level and add as needed. Do not overfill.						
Engine Air Filter and Air System	Check display panel. Service only when required. Check for leaks and damaged components.						
Engine Cooling System	Clean debris from oil cooler, radiator and grille. Check coolant level COLD and add premixed coolant as needed.						
Fuel Filter	Remove the trapped water.						
Lift Arms, Cylinders, Bob-Tach Pivot Pins and Wedges	Lubricate with multipurpose lithium based grease.						
Tires	Check for damaged tires and correct air pressure. Inflate to MAXIMUM pressure shown on the sidewall of the tire.						
Seat Bar, Control Interlocks, Seat Belt, Seat Belt Retractors	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.						
Bobcat Interlock Control Systems (BICS™)	Check for correct function. Lift and Tilt functions MUST NOT operate with seat bar raised. See details in this Manual.						
Front Horn / Back-up Alarm	Check for proper function.						
Safety Signs and Safety Treads	Check for damaged signs (decals) and safety treads. Replace any signs or safety treads that are damaged or worn.						
Operator Cab	Check the fastening bolts, washers and nuts. Check the condition of the cab.						
Indicators and Lights	Check for correct operation of all indicators and lights.						
Heater and A/C Filters (If Equipped)	Clean or replace filters as needed.						
Hydraulic Fluid, Hoses and Tubelines	Check fluid level and add as needed. Check for damage and leaks. Repair or replace as needed.						
Final Drive Trans. (Chaincase),	Check fluid level and add as needed.						
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 TIRE MAINTENANCE in this manual.)	□					
Spark Arrester Muffler	Clean the spark chamber.						
Battery	Check cables, connections and electrolyte level. Add distilled water as needed.						
Steering Lever Pivots	Grease fittings.						
Fuel Filter	Replace filter element.						
Engine / Hydro. Drive Belt	Check for wear or damage. Check idler arm stop.		▲				
Drive Belts (Alternator, air conditioning, water pump)	Check condition and tension. Adjust or replace as needed.						
Bobcat Interlock Control System (BICS™)	Check the function of the lift arm bypass control.						
Engine Oil and Filter	Replace oil and filter.		▲	*			
Hydraulic / Hydrostatic Filter, Charge Filter, Reservoir Breather	Replace the hydraulic / hydrostatic filter, charge filter, and the reservoir breather.		●				
Final Drive Trans. (Chaincase)	Replace the fluid.						
Hydraulic Reservoir	Replace the fluid.						
Case Drain Filters	Replace the filters.		▲				
Engine Valves	Adjust the engine valves.					○	
Coolant	Replace the coolant						○
		Every 2 years					

- Or every 12 months.
- ▲ Perform at first 50 hours, then as scheduled.
- Check every 8 - 10 hours for the first 24 hours, then at 50 hour intervals.
- Replace the hydraulic / hydrostatic filter element after the first 50 hours, then when service code [M0217] is displayed or as scheduled.
- \* Change oil and filter every 100 hours when operating under severe conditions.
- Perform at first 500 hours, then as scheduled.

## BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

### Inspecting The BICS™ (Engine STOPPED - Key ON)

Figure 156



1. Sit in operator's seat. Turn key to RUN or press RUN button. Lower seat bar and disengage parking brake. Press the PRESS TO OPERATE LOADER button (Item 4). Two BICS™ lights (Items 1 and 2) [Figure 156] [SEAT BAR AND LIFT & TILT VALVE] on left instrument panel must be OFF. The PRESS TO OPERATE LOADER button will light.
2. Raise seat bar fully. All three BICS™ lights (Items 1, 2 and 3) [Figure 156] [SEAT BAR, LIFT & TILT VALVE AND PARKING BRAKE] on left instrument panel must be ON. The PRESS TO OPERATE LOADER button light will turn OFF.

### Inspecting Deactivation Of The Auxiliary Hydraulics System (Engine STOPPED - Key ON)

3. Sit in operator's seat, lower seat bar and press the PRESS TO OPERATE LOADER button (Item 4). Press the auxiliary hydraulics button (Item 5). The auxiliary hydraulics light will be ON (Item 6) [Figure 156]. Raise the seat bar. The light must be OFF.

### Inspecting The Seat Bar Sensor (Engine RUNNING)

4. Sit in operator's seat, lower seat bar, engage parking brake and fasten seat belt.
5. Start engine and operate at low idle. Press the PRESS TO OPERATE LOADER button. While raising the lift arms, raise the seat bar fully. The lift arms must stop. Repeat using the tilt function.

### Inspecting The Traction Lock (Engine RUNNING)

6. Fasten seat belt, disengage parking brake, press the PRESS TO OPERATE LOADER button and raise seat bar fully. Move steering levers or joystick(s) slowly forward and backward. The TRACTION lock must be engaged. Lower the seat bar. Press the PRESS TO OPERATE LOADER button.
7. Engage parking brake and move steering levers or joystick(s) slowly forward and backward. The TRACTION lock must be engaged.

**NOTE:** The PARKING BRAKE light on the left instrument panel will remain ON until the engine is started, the PRESS TO OPERATE LOADER button is pressed and the parking brake is disengaged.

### Inspecting The Lift Arm Bypass Control

8. Raise the lift arms 2 m (6 ft) off the ground. Stop engine. Turn lift arm bypass control knob clockwise 1/4 turn. Pull up and hold lift arm bypass control knob until lift arms slowly lower.

### Inspecting Deactivation Of Lift And Tilt Functions (ACS And SJC)

9. Sit in operator's seat and fasten seat belt. Lower seat bar, start engine and press the PRESS TO OPERATE LOADER button.
10. Raise lift arms about 2 m (6 ft) off the ground.
11. Turn key OFF or press STOP button, and wait for the engine to come to a complete stop.
12. Turn key ON or press RUN button. Press the PRESS TO OPERATE LOADER button, move the control (foot pedal, hand control or joystick) to lower the lift arms. Lift arms must not lower.
13. Move the control (foot pedal, hand control or joystick) to tilt the bucket (or attachment) forward. The bucket (or attachment) must not tilt forward.

**WARNING**

**AVOID 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-2151-1111

## SEAT BAR RESTRAINT SYSTEM

### Description

The seat bar restraint system has a pivoting seat bar with armrests.

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 hydraulic valve spool interlocks for the lift and tilt functions. The spool interlocks require the operator to lower the seat bar in order to operate the foot pedal controls.

When the seat bar is down, the PRESS TO OPERATE LOADER button is activated and the engine is running, the lift, tilt and traction drive functions can be operated.

When the seat bar is up, the lift and tilt control pedals are locked when returned to the NEUTRAL position.

**Models with Advanced Control System (ACS)** have mechanical interlocks for the handles and pedals. The interlocks for the handles and pedals require the operator to lower the seat bar in order to operate the selected controls.

When the seat bar is down, the PRESS TO OPERATE LOADER button is activated and the engine is running, the lift, tilt and traction drive functions can be operated using the selected controls (handles or foot pedals).

When the seat bar is up, the handles and pedals are locked when returned to the NEUTRAL position.

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

When the seat bar is down, the PRESS TO OPERATE LOADER button is activated and the engine is running, the lift, tilt and traction drive functions can be operated.

When the seat bar is up, the joystick functions are deactivated even though the joystick does not mechanically lock.

### Inspecting

Sit in the seat and fasten the seat belt. Engage the parking brake. Pull the seat bar all the way down. Start the engine. Press the PRESS TO OPERATE LOADER button.

Operate the hydraulic controls to check that both the lift and tilt functions operate correctly. Raise the lift arms until the attachment is about 600 mm (2 ft) off the ground.

Raise the seat bar. Move the hydraulic controls. Pedals and handles (if equipped) must be firmly locked in the NEUTRAL position (except joysticks). There must be no motion of the lift arms or tilt (attachment) when the controls are moved.

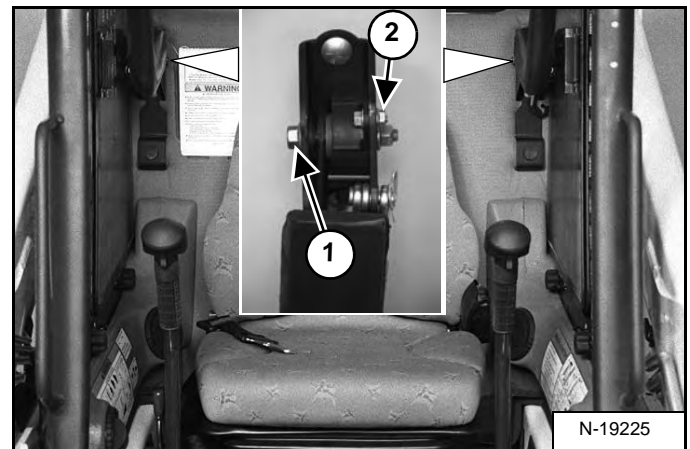
Lower the seat bar, press the PRESS TO OPERATE LOADER button and lower the lift arms. Operate the lift control. While the lift arms are going up, raise the seat bar. The lift arms must stop.

Lower the seat bar, press the PRESS TO OPERATE LOADER button, lower the lift arms and put the attachment flat on the ground. Stop the engine. Raise the seat bar. Operate the foot pedals and handles (if equipped) to be sure they are firmly locked in the NEUTRAL position (except joysticks).

### Maintaining

See the SERVICE SCHEDULE for correct service interval. (See SERVICE SCHEDULE on Page 103.)

Figure 157



Use compressed air to clean any debris or dirt from the pivot parts. Do not lubricate. Inspect all mounting hardware. The correct hinge bolt (Item 1) torque is 34 - 38 N•m (25 - 28 ft-lb). The seat bar sensor nut (left side only) (Item 2) [Figure 157] torque is 6 - 8 N•m (50 - 70 in-lb).

If the seat bar system does not function correctly, replace parts that are worn or damaged. Use only genuine Bobcat replacement parts.

 **WARNING**

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

W-2465-111

## SEAT BELT

### Inspection And Maintenance

# WARNING

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

W-2466-0703

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.

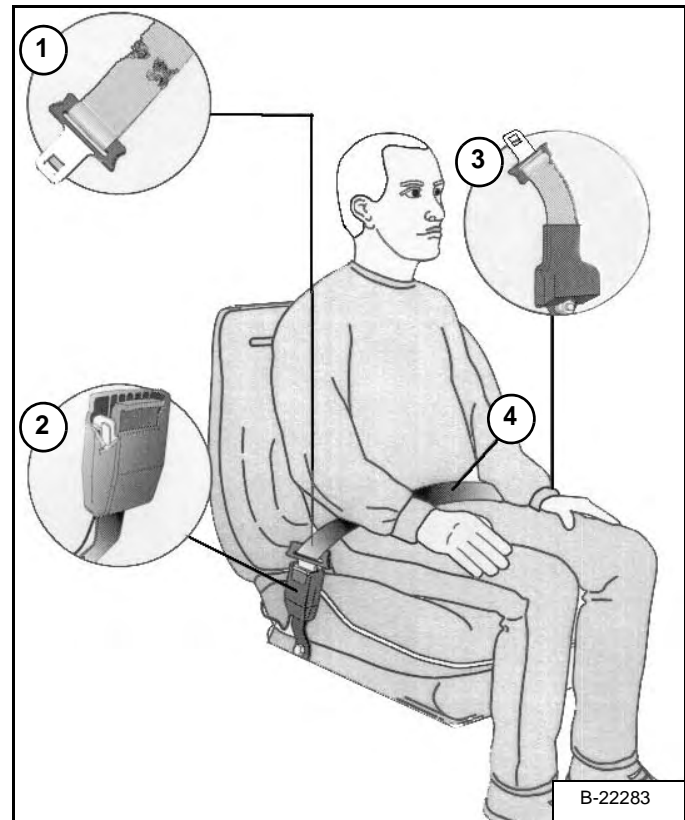
Any seat belt system that shows cuts, fraying, extreme or unusual wear, significant discolorations due to ultraviolet UV exposure, dusty / dirty conditions, abrasion to the seat belt webbing, or damage to the buckle, latch plate, retractor (if equipped), hardware or any other obvious problem should be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

The items below are referenced in **[Figure 158]**.

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, deformed or buckle is not damaged or casing 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.

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

Figure 158





## LIFT ARM SUPPORT DEVICE

### Installing

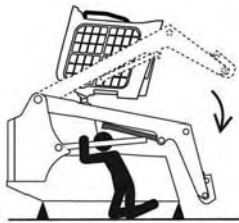
# ! WARNING

Never work on a machine with the lift arms up unless the lift arms are secured by an approved lift arm support device. Failure to use an approved lift arm support device can allow the lift arms or attachment to fall and cause injury or death.

Service lift arm support device if damaged or if parts are missing. Using a damaged lift arm support or with missing parts can cause lift arms to drop causing injury or death.

W-2572-0407

# ! DANGER



P-90328

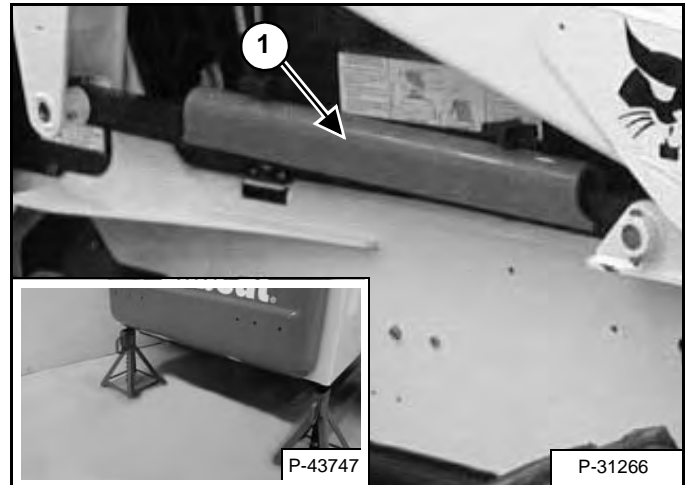
### AVOID DEATH

- Disconnecting or loosening any hydraulic tubeline, hose, 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-1009-0409

Remove attachment from the loader. (See Installing And Removing The Attachment (Hand Lever Bob-Tach) on Page 79.) **OR** (See Installing And Removing The Attachment (Power Bob-Tach) on Page 81.)

Figure 159



Put jackstands under the rear corners of the loader frame (Inset) [Figure 159].

Remove the lift arm support device (Item 1) [Figure 159] 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 device is installed.

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

Figure 160



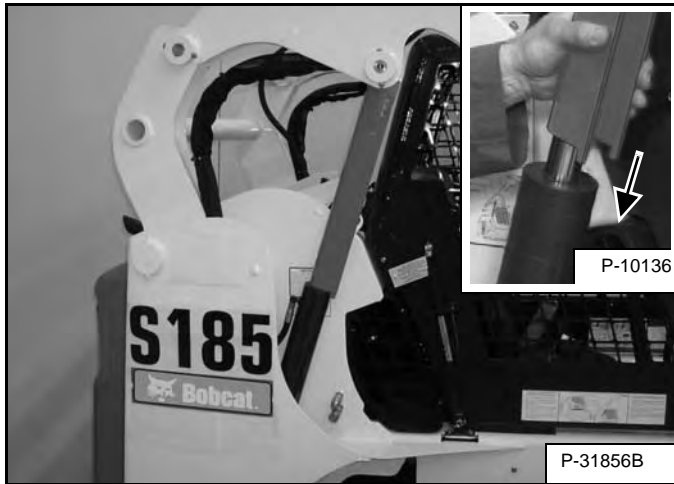
Have a second person install the lift arm support device over the rod of one of the lift cylinders [Figure 160].

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

## LIFT ARM SUPPORT DEVICE (CONT'D)

### Installing (Cont'd)

Figure 161



Lower the lift arms slowly until the lift arm support device is held between the lift arms and the lift cylinder **[Figure 161]**. The tabs of the lift arm support device must go past the end of the cylinder (Inset) **[Figure 161]**.

### Removing

The operator must be in the operator's seat, with the seat belt fastened and seat bar lowered, until the lift arm support device is removed and the lift arms are lowered all the way.

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

Have a second person remove the lift arm support device.

Lower the lift arms all the way and stop the engine.

Return the lift arm support device to the storage position and secure with clamping knobs.

Remove the jackstands.

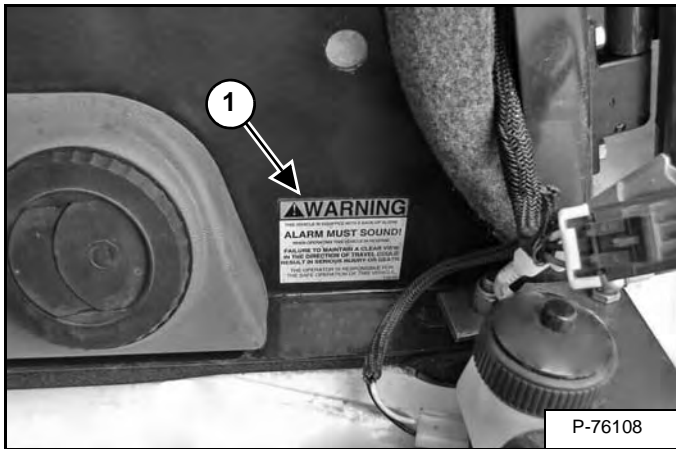
## BACK-UP ALARM SYSTEM

### Description

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.

### Inspecting

Figure 162



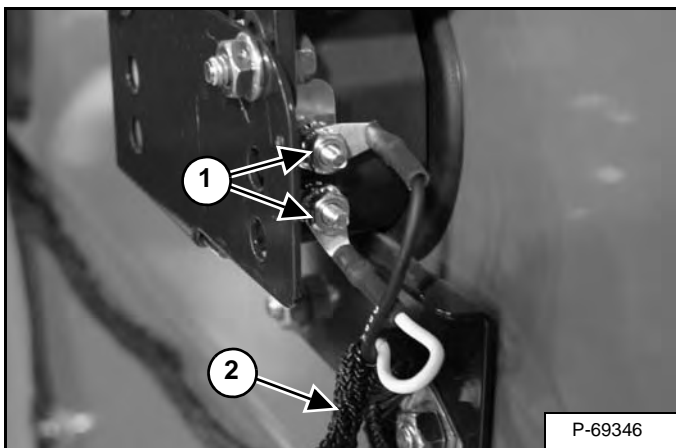
Inspect for damaged or missing back-up alarm decal (Item 1) [Figure 162]. Replace if required.

Sit in the seat and fasten the seat belt. Engage the parking brake. Pull the seat bar all the way down. Start the engine. Press the PRESS TO OPERATE LOADER button. Disengage the parking brake.

Move both steering levers or joystick(s) into the reverse position. The back-up alarm must sound when all wheels or both tracks are moving in reverse.

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

Figure 163



Inspect the back-up alarm electrical connections (Item 1) [Figure 163], wire harness (Item 2) [Figure 163] and back-up alarm switches (if equipped) (Item 2) [Figure 164] for tightness and damage. Repair or replace any damaged components.

If the back-up alarm switches require adjustment, (See Adjusting Switch Position on Page 109.)

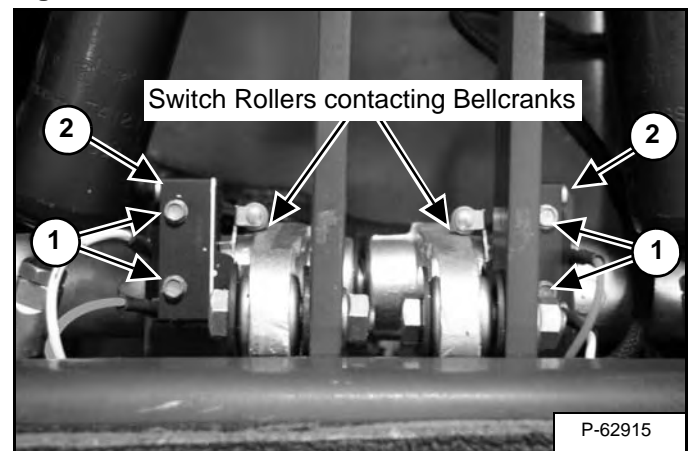
### Adjusting Switch Position

**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 And ACS (If Equipped)

Stop the engine and raise the operator cab. (See Raising on Page 110.)

Figure 164



Place the steering levers in the neutral position.

Loosen the screws (Item 1) [Figure 164] securing the back-up alarm switches.

Position the back-up alarm switch rollers so that they just make contact with bellcranks without compressing the switch springs [Figure 164]. Torque the screws (Item 1) [Figure 164] securing the switches to the bracket to 1,6 - 2,1 N•m (14 - 19 in-lb).

Lower the operator cab. (See Lowering on Page 111.) Inspect back-up alarm system for proper function. (See Inspecting on Page 109.)

## 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.

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

ROPS / FOPS - Roll Over protective Structure per ISO 3471, and Falling Object Protective Structure per SAE J1043 and 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.



**Never modify operator cab by welding, grinding, drilling holes or adding attachments unless instructed to do so by Bobcat Company. Changes to the cab can cause loss of operator protection from rollover and falling objects, and result in injury or death.**

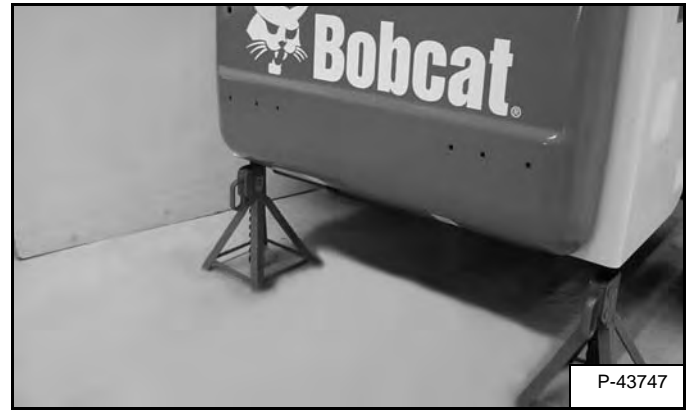
W-2069-0200

### Raising

Always stop the engine before raising or lowering the cab.

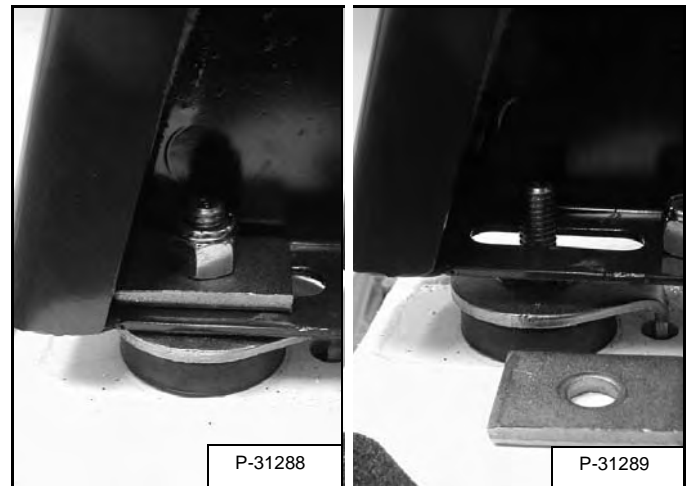
Stop the loader on a level surface. Lower the lift arms. If the lift arms must be up while raising the operator cab, install the lift arm support device. (See LIFT ARM SUPPORT DEVICE on Page 107.)

Figure 165



Install jackstands under the rear of the loader frame [Figure 165].

Figure 166



Remove the nuts and plates [Figure 166] (both sides) at the front corners of the cab.



**UNEXPECTED LOADER, LIFT ARM OR ATTACHMENT MOVEMENT CAUSED BY CAB CONTACT WITH CONTROLS CAN CAUSE SERIOUS INJURY OR DEATH**

- **STOP ENGINE** before raising or lowering cab.

W-2758-0908

**NOTE:** On some machines, the operator cab frame could contact the steering levers while raising or lowering the operator cab. The engine **MUST** be stopped before raising or lowering the operator cab.

## OPERATOR CAB (CONT'D)

### Raising (Cont'd)

Figure 167



Lift on the grab handles and bottom of the operator cab [Figure 167] slowly until the cab is all the way up and the latching mechanism engages.

### Lowering

Always stop the engine before raising or lowering the cab.

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

Figure 168



Pull down on the bottom of the operator cab until it stops at the latching mechanism [Figure 168].

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

## WARNING

**UNEXPECTED LOADER, LIFT ARM OR ATTACHMENT MOVEMENT CAUSED BY CAB CONTACT WITH CONTROLS CAN CAUSE SERIOUS INJURY OR DEATH**

- **STOP ENGINE** before raising or lowering cab.

W-2758-0908

**NOTE:** On some machines, the operator cab frame could contact the steering levers while raising or lowering the operator cab. The engine **MUST** be stopped before raising or lowering the operator cab.

Support the cab and release the latching mechanism (Inset) [Figure 168]. Remove your hand from the latch mechanism when the cab is past the latch stop. Use both hands to lower the cab all the way down.

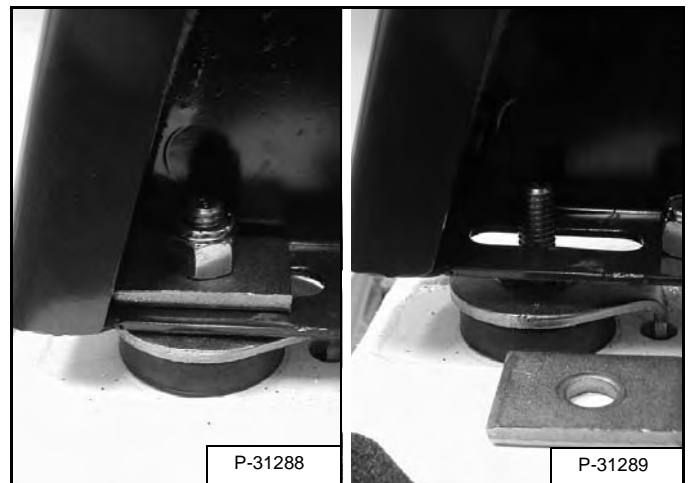
## WARNING

**PINCH POINT CAN CAUSE INJURY**

Remove your hand from the latching mechanism when the cab is past the latch stop.

W-2469-0803

Figure 169



Install the plates and nuts (both sides) [Figure 169].

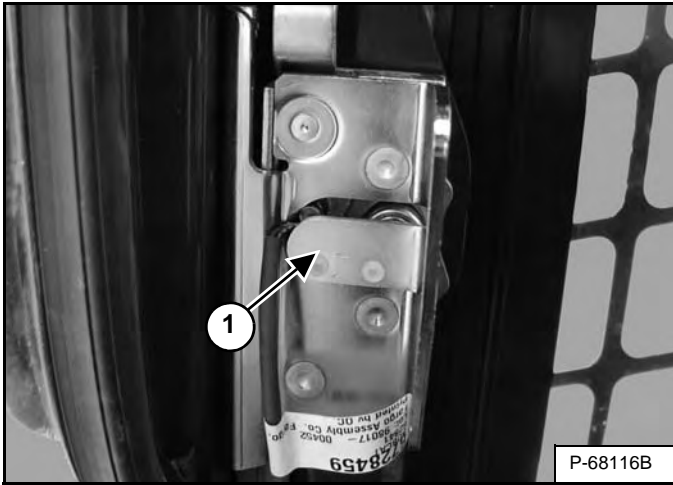
Tighten the nuts to 54 - 61 N•m (40 - 45 ft-lb) torque.

## OPERATOR CAB (CONT'D)

### Cab Door Sensor

This machine may be equipped with a Cab Door Sensor.

**Figure 170**



The cab door has a sensor (Item 1) [Figure 170] installed which deactivates the lift and tilt valves when the door is open.

**Figure 171**



The LIFT & TILT VALVE light (Item 1) [Figure 171] will be OFF when the door is closed, the key switch is turned to RUN or the RUN / ENTER button is pressed, the seat bar is lowered and the PRESS TO OPERATE LOADER button is pressed.

**Figure 172**



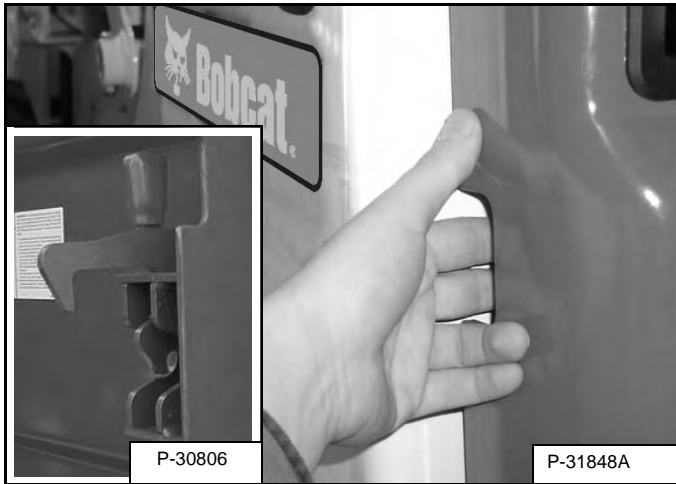
The LIFT & TILT VALVE light (Item 1) [Figure 171] will be ON when the door is open, the key switch is turned to RUN or the RUN / ENTER button is pressed, the seat bar is lowered and the PRESS TO OPERATE LOADER button is pressed.

[DOOR] will appear in the data display [Figure 172].

## REAR DOOR (TAILGATE)

### Opening And Closing

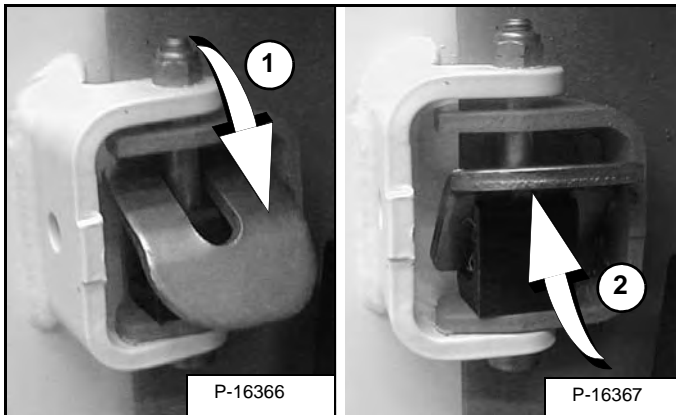
Figure 173



Reach into the slot in the rear door and pull the latch handle [Figure 173].

Pull the rear door open.

Figure 174



Move the door stop into the engaged position (Item 1) [Figure 174] to hold the door open.

Move the door stop up (Item 2) [Figure 174] to disengage the door stop and allow the door to close.

Close the rear door.

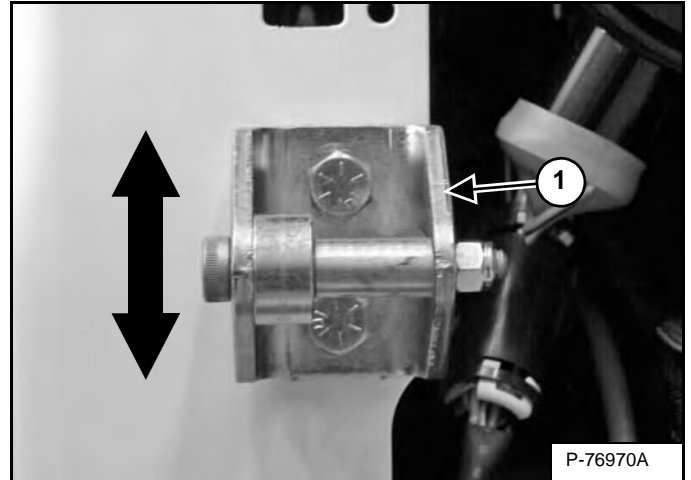
## WARNING

Keep the rear door closed when operating the machine. Failure to do so could seriously injure a bystander.

W-2020-1285

## Adjusting

Figure 175



The door latch (Item 1) [Figure 175] can be adjusted up or down for alignment with the door latch mechanism.

Close the rear door before operating the loader.

## REAR GRILLE

### Removing

Open the rear door.

Figure 176



Lift and pull the rear grille to remove it from the loader [Figure 176].

### Installing

Align the tabs of the rear grille into the slots in the loader frame (Inset) [Figure 176].

Lower the rear grille and close the rear door.

## HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

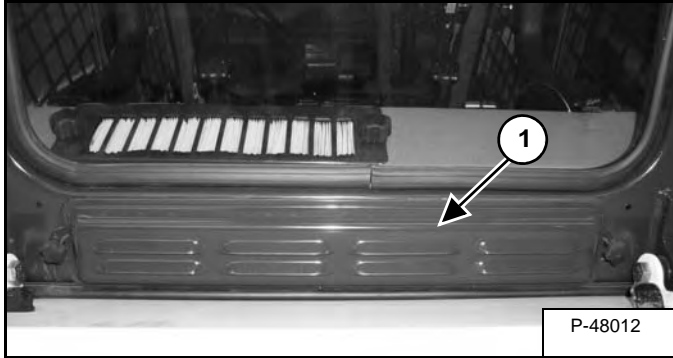
This machine may be equipped with a Heating System or HVAC.

### Cleaning And Maintenance

The heating and HVAC systems require regular inspection and maintenance. (See SERVICE SCHEDULE on Page 103.)

### Filters

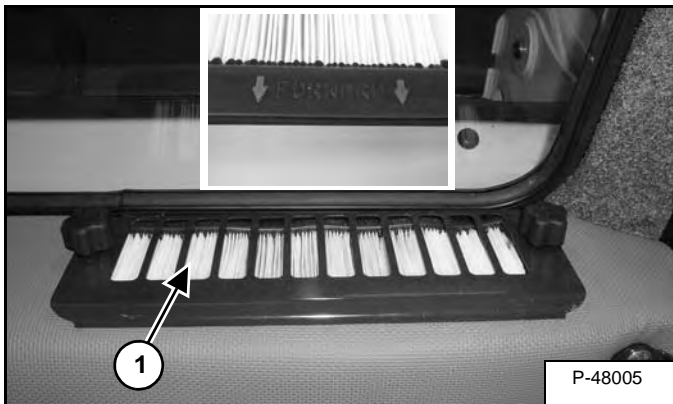
Figure 177



The *Fresh Air Filter* (Item 1) [Figure 177] is located below the rear window outside the cab. Remove the clamping knobs, filter cover and filter.

Shake the filter or use low pressure air to remove dirt. This can be done several times before replacement is required. Install the filter, filter cover and clamping knobs.

Figure 178



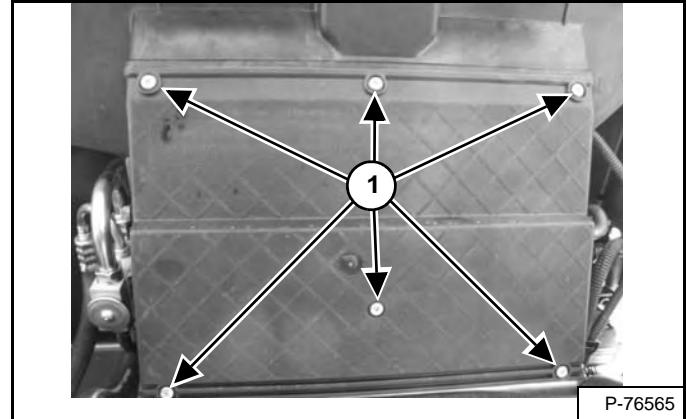
The *Recirculation Filter* (Item 2) [Figure 178] is located in front of the rear window inside the cab. Remove the clamping knobs, filter cover, and filter.

Shake the filter or use a vacuum to clean. This can be done several times before replacement is required. Install the filter with the arrows pointing forward (Inset) [Figure 178], install the filter cover and clamping knobs.

## Evaporator / Heater Coil

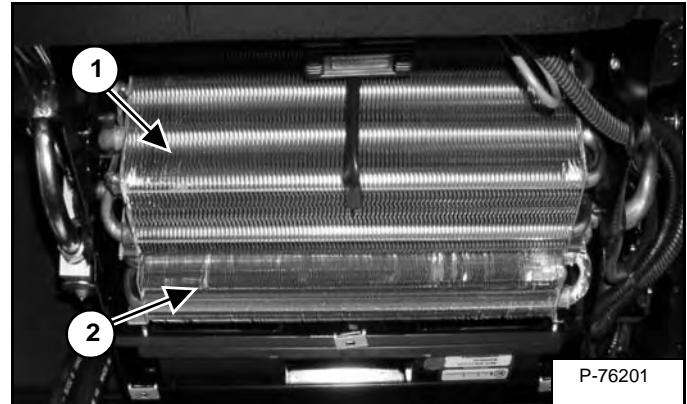
Raise the operator cab. (See Raising on Page 110.)

Figure 179



Remove the cover screws (Item 1) [Figure 179] and remove the cover.

Figure 180



Use low pressure air or water to remove debris from the evaporator (Item 1) and heater coil (Item 2) [Figure 180].

Install the cover and lower the operator cab. (See Lowering on Page 111.)

### Condenser

The condenser should be cleaned with the oil cooler and the radiator. (See Cleaning on Page 121.)

### Air Conditioning Lubrication

Run the air conditioning for about five minutes every week to lubricate the internal components.

### Troubleshooting

If the fan does not run, or the air conditioning does not turn on, check the fuse. (See ELECTRICAL SYSTEM on Page 123.)

If the air conditioning system circulates warm air, the refrigerant may need to be recharged.



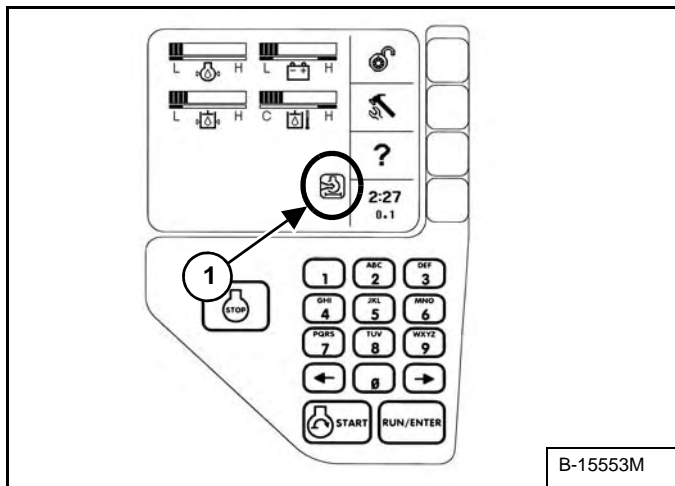
## AIR CLEANER SERVICE

### Replacing Filter Elements

Figure 181



Figure 182



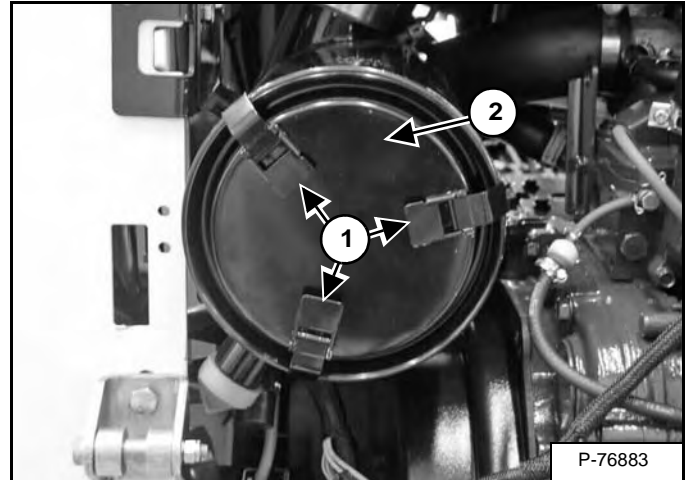
It is important to change the air filter element only when necessary. The Service indicator (Item 1) will FLASH and service code **[M0117]** (Air Filter Plugged) will show in the Data Display (Item 2) when the Information button (Item 3) **[Figure 181]** is held for two seconds.

The Air Cleaner icon on the Deluxe Instrumentation Panel, if equipped, will be ON (Item 1) **[Figure 182]**.

Replace the inner filter every third time the outer filter is replaced or as indicated.

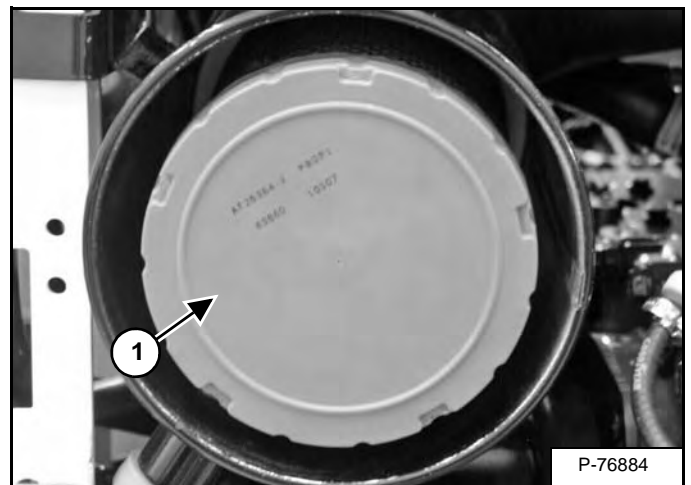
## Outer Filter

Figure 183



Open the latches (Item 1) and remove the dust cover (Item 2) **[Figure 183]**.

Figure 184



Pull the outer filter element (Item 1) **[Figure 184]** out and discard.

**NOTE: Make sure all sealing surfaces are free of dirt and debris.**

Install new filter element. Push all the way in until it contacts the base of the housing.

Install the dust cover and secure the latches **[Figure 183]**.

## AIR CLEANER SERVICE (CONT'D)

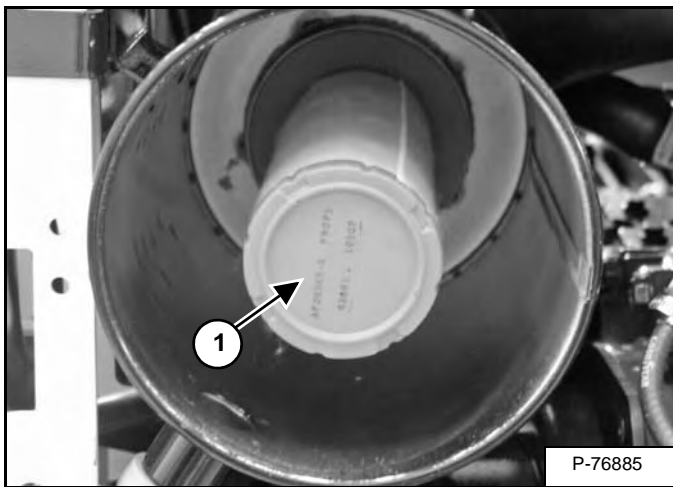
### Replacing Filter Elements (Cont'd)

#### Inner Filter

Only replace the inner filter element under the following conditions:

- Replace the inner filter element every *third* time the outer filter is replaced.
- After the outer element has been replaced, start the engine and run at full rpm. If the HOURMETER / CODE DISPLAY shows **[M0117]** (Air Filter Plugged), replace the inner filter element.

**Figure 185**



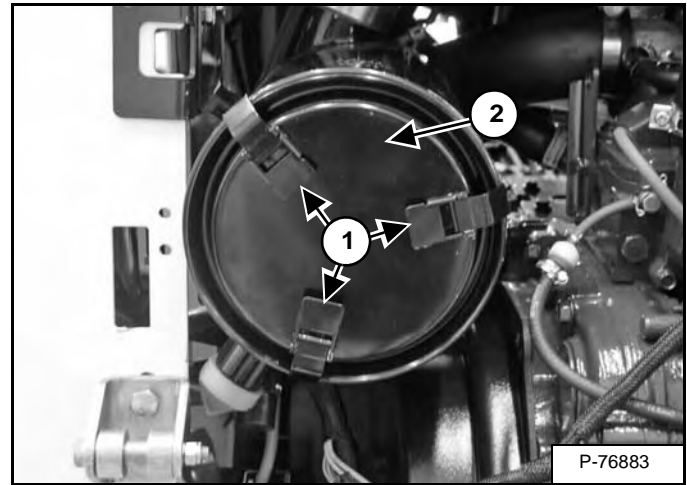
Remove the inner filter element (Item 1) **[Figure 185]**.

**NOTE: Make sure all sealing surfaces are free of dirt and debris.**

Install new filter element. Push all the way in until it contacts the base of the housing.

Install the outer element **[Figure 184]**.

**Figure 186**



Install the dust cover (Item 2) and secure the latches (Item 1) **[Figure 186]**.

## FUEL SYSTEM

### Fuel Specifications

Use only clean, high quality diesel fuel, Grade No. 2 or Grade No. 1.

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

TEMPERATURE C° (F°)	NO. 2	NO. 1
-9° (+15°)	100%	0%
Down to -29° (-20°)	50%	50%
Below -29° (-20°)	0%	100%

At a minimum, low sulfur diesel fuel must be used in this machine. Low sulfur is defined as 500 mg/kg (500 ppm) sulfur maximum.

The following fuels may also be used in this machine:

- Ultra low sulfur diesel fuel. Ultra low sulfur is defined as 15 mg/kg (15 ppm) sulfur maximum.
- Biodiesel blend fuel - Must contain no more than five percent biodiesel mixed with low sulfur or ultra low sulfur petroleum based diesel. This is commonly marketed as B5 blended diesel fuel. B5 blended diesel fuel must meet ASTM D975 (US Standard) or EN590 (EU Standard) 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 five percent biodiesel can affect engine life and cause deterioration of hoses, tubelines, injectors, injector pump and seals.

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. Extended 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.**

## FUEL SYSTEM (CONT'D)

### Filling The Fuel Tank

# ! WARNING

## AVOID INJURY OR DEATH

Stop and cool the engine before adding fuel. **NO SMOKING!** Failure to obey warnings can cause an explosion or fire.

W-2063-0807

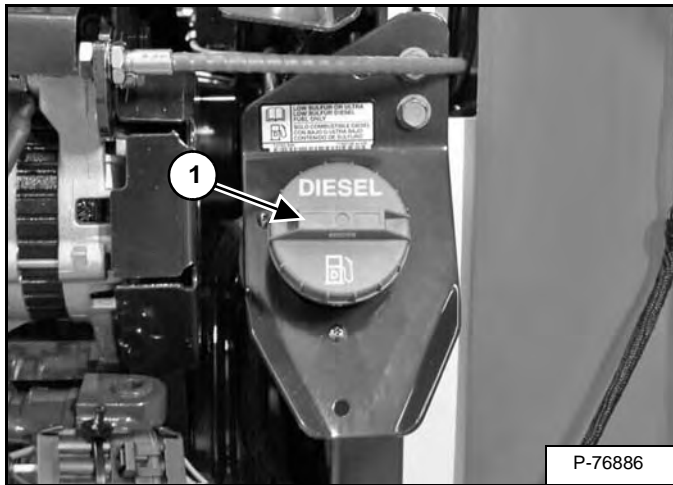
# ! WARNING

## AVOID INJURY OR DEATH

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

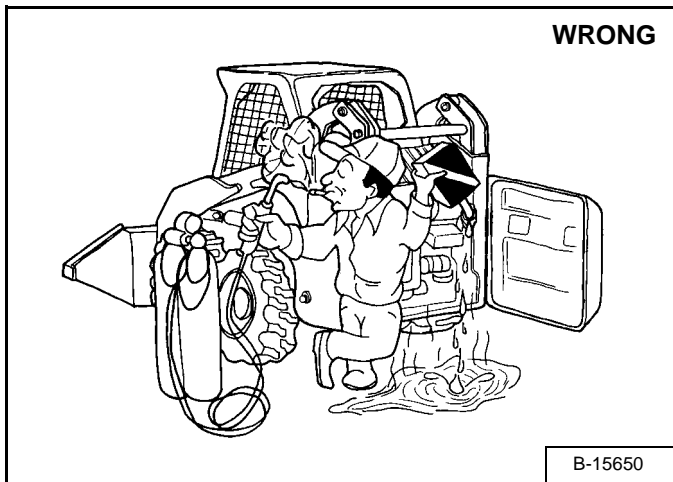
W-2103-0508

Figure 187



Remove the fill cap (Item 1) [Figure 187].

Figure 188



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 188].

Install and tighten the fuel cap (Item 1) [Figure 187].

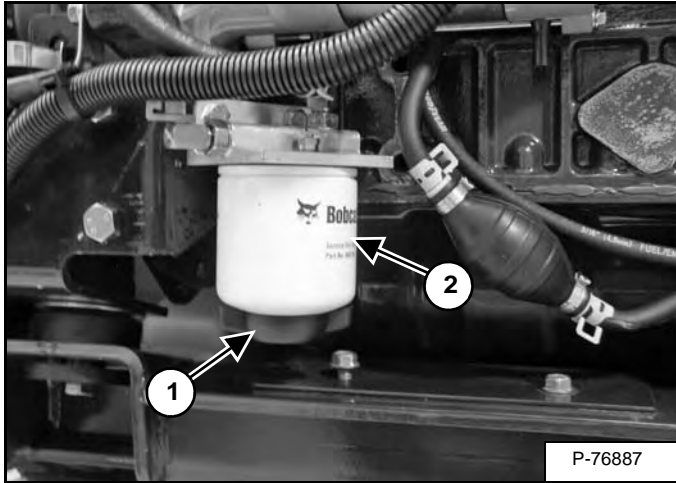
## FUEL SYSTEM (CONT'D)

### Fuel Filter

For the service interval for removing water from, or replacing the fuel filter (See SERVICE SCHEDULE on Page 103.)

#### Removing Water

Figure 189



Loosen the drain (Item 1) [Figure 189] at the bottom of the filter element to remove water from the filter.

#### Replacing Element

Remove the filter element (Item 2) [Figure 189].

Clean the area around the filter housing. Put clean oil on the seal of the new filter element. Install the fuel filter, and hand tighten.

Remove air from the fuel system. (See Removing Air From The Fuel System on Page 119.)

## WARNING

### AVOID INJURY OR DEATH

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

W-2103-0508

## Removing Air From The Fuel System

After replacing the filter element or when the fuel tank has run out of fuel, the air must be removed from the fuel system before starting the engine.

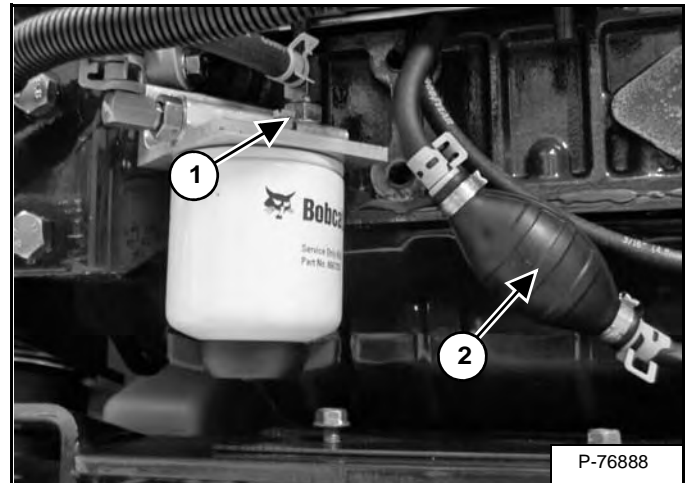
## WARNING

### AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.

W-2072-0807

Figure 190



Open the vent (Item 1) [Figure 190] on the fuel filter housing.

Squeeze the hand pump (priming bulb) (Item 2) [Figure 190] until fuel flows from the vent with no air bubbles.

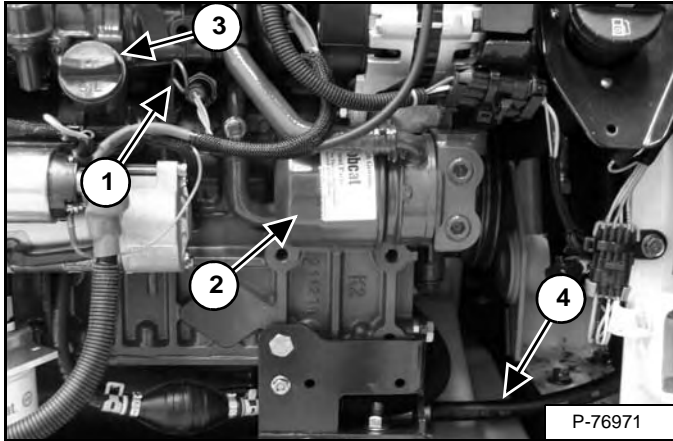
Close the vent (Item 1) [Figure 190].

## ENGINE LUBRICATION SYSTEM

### Checking And Adding Engine Oil

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

**Figure 191**

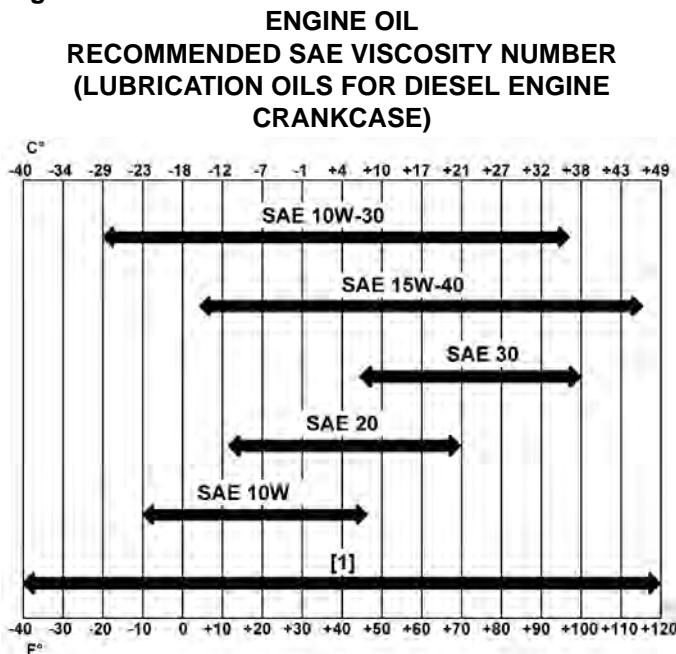


Park the machine on level ground. Open the rear door and remove the dipstick (Item 1) [Figure 191].

Keep the oil level between the marks on the dipstick. Do not overfill.

### Engine Oil Chart

**Figure 192**



**TEMPERATURE RANGE ANTICIPATED BEFORE NEXT OIL CHANGE (DIESEL ENGINES MUST USE API CLASSIFICATION CI-4 OR BETTER)**

[1] Synthetic Oil - Use recommendation from Synthetic Oil Manufacturer.

Use good quality engine oil that meets API Service Classification of CI-4 or better [Figure 192].

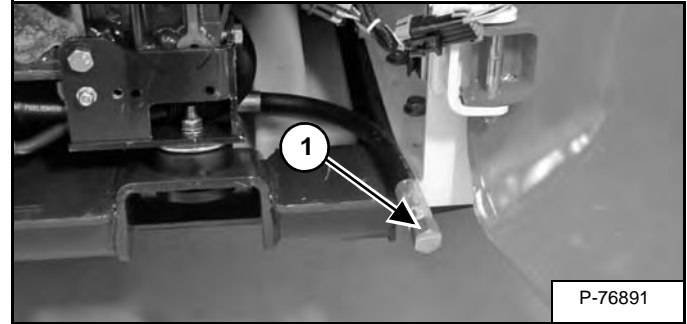
### Removing And Replacing Oil And Filter

For the service interval for replacing the engine oil and filter (See SERVICE SCHEDULE on Page 103.)

Run the engine until it is at operating temperature. Stop the engine.

Open the rear door and remove the drain hose from its storage position (Item 4) [Figure 191].

**Figure 193**



Remove the oil drain cap (Item 1) [Figure 193] and drain the oil into a container. Recycle or dispose of used oil in an environmentally safe manner.

Install the oil drain cap.

Remove the oil filter (Item 2) [Figure 191] and clean the filter housing surface.

Use genuine Bobcat filter only. Put oil on the new filter gasket, install the filter and hand tighten.

Remove the fill cap (Item 3) [Figure 191]. Put oil in the engine. For the correct quantity (See Capacities on Page 186.) Do not overfill.

Start the engine and let it run for several minutes. Stop the engine and check for leaks at the filter.

Remove the dipstick (Item 1) [Figure 191] and check the oil level.

Add oil as needed if it is not at the top mark on the dipstick. Install the dipstick and close the rear door.



**AVOID INJURY OR DEATH**  
Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire.

W-2103-0508

## ENGINE COOLING SYSTEM

Check the cooling system every day to prevent overheating, loss of performance or engine damage.

# WARNING

### AVOID 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 is present.
- Engine is running.
- Tools are being used.

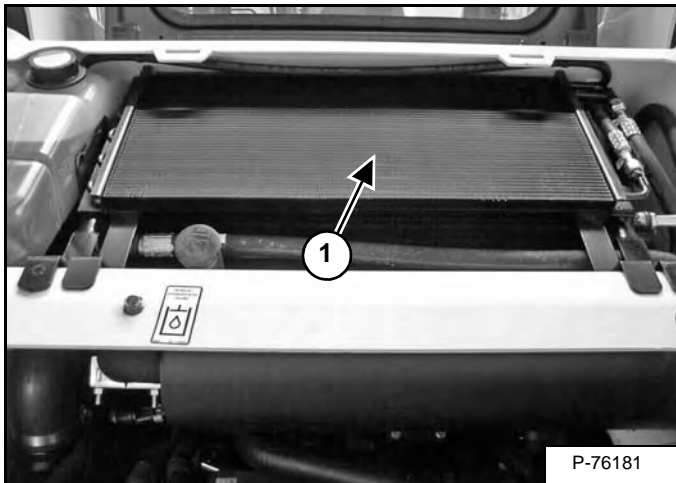
W-2019-0907

### Cleaning

Open the rear door. (See REAR DOOR (TAILGATE) on Page 113.)

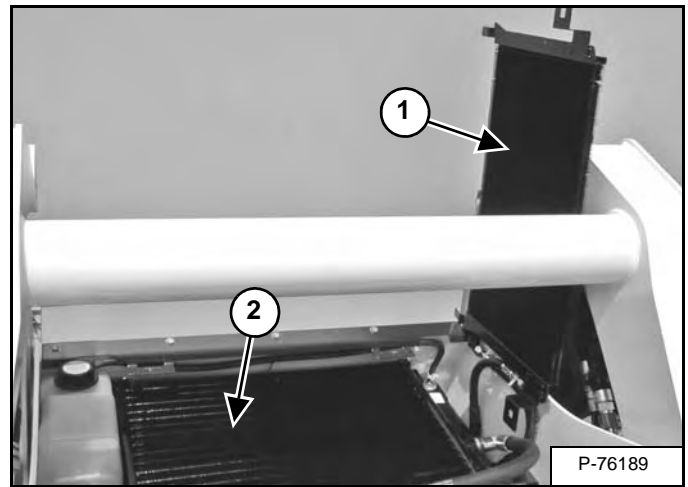
Remove the rear grille. (See REAR GRILLE on Page 113.)

Figure 194



Use low air pressure or water pressure to clean the top of the air conditioning condenser (Item 1) [Figure 194], if equipped.

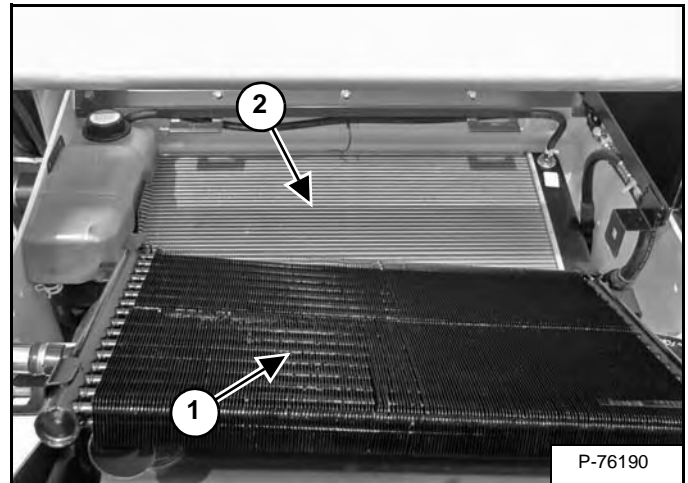
Figure 195



**NOTE:** Be careful when raising and lowering the air conditioning condenser so that the air conditioning condenser does not fall on the oil cooler and damage the fins.

Raise the air conditioning condenser (Item 1) and use low air pressure or water pressure to clean the top of the oil cooler (Item 2) [Figure 195].

Figure 196



**NOTE:** Be careful when raising and lowering the oil cooler so that the oil cooler does not fall on the radiator and damage the fins.

Raise the oil cooler (Item 1) and use low air pressure or water pressure to clean the top of the radiator (Item 2) [Figure 196].

Lower the oil cooler.

Lower the air conditioning condenser, if equipped.

Check the cooling system for leaks.

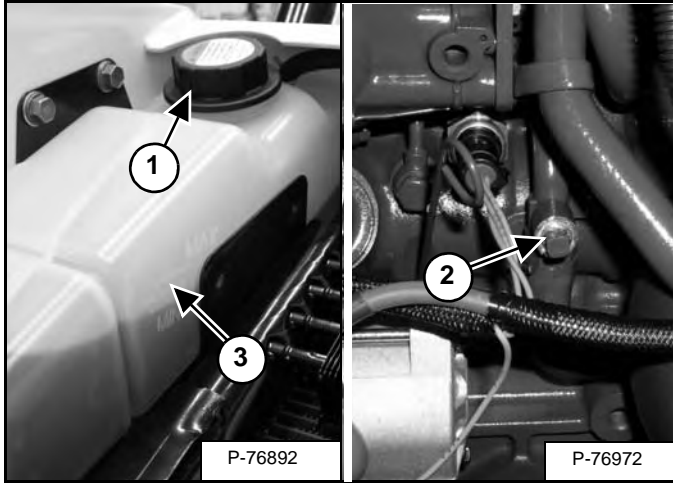
Install the rear grille and close the rear door.

## ENGINE COOLING SYSTEM (CONT'D)

### Removing And Replacing Coolant

Open the rear door and remove the rear grille.

Figure 197



Remove the coolant fill cap (Item 1) [Figure 197].

Remove the plug (Item 2) [Figure 197] located between the oil filter and the starter. Drain the coolant into a container.

After all the coolant is removed, install the plug. Recycle or dispose of coolant in an environmentally safe manner.

Mix new coolant in a separate container. (See Capacities on Page 186.)

**NOTE: The loader is factory filled with propylene glycol coolant (purple color). DO NOT mix propylene glycol with ethylene glycol.**

Add premixed coolant, 47% water and 53% propylene glycol to the recovery tank. (See Checking Level on Page 122.)

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.

Fill the tank until it is at the lower marker on the tank and replace the coolant fill cap.

**NOTE: When installing the coolant fill cap, the cap must be tightened until it clicks.**

Run the engine until it is at operating temperature. Stop the engine. Check the coolant level when cool. Use a refractometer to check the condition of propylene glycol in your cooling system. Add coolant as needed.

Install the rear grille and close the rear door.

### Checking Level

Open the rear door and raise the rear grille.

Check coolant level using the level markers (Item 3) [Figure 197] on the tank. Coolant must be at the bottom marker when the engine is cold; top marker when hot.

Close the rear door before operating the loader.

## IMPORTANT

### AVOID ENGINE DAMAGE

Always use the correct ratio of water to antifreeze.

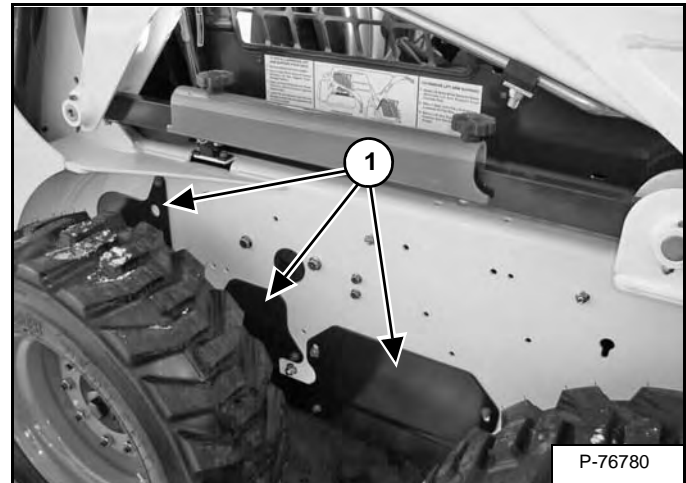
Too much antifreeze reduces cooling system efficiency and may cause serious premature engine damage.

Too little antifreeze reduces the additives which protect the internal engine components; reduces the boiling point and freeze protection of the system.

Always add a premixed solution. Adding full strength concentrated coolant can cause serious premature engine damage.

I-2124-0497

Figure 198



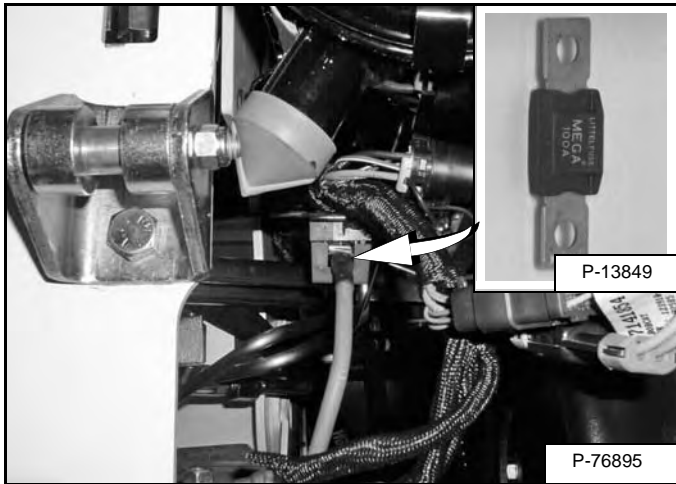
**NOTE: All access covers (Item 1) [Figure 198] (both sides) must be in place to ensure correct air flow through the oil cooler which will ensure cooling for engine and hydraulic system.**



## ELECTRICAL SYSTEM

### Description

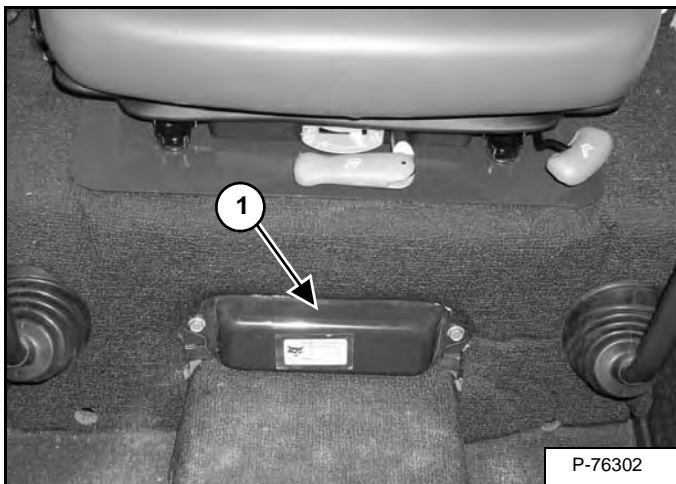
Figure 199



The loader has a 12 volt, negative ground alternator charging system. The electrical system is protected by fuses located in the cab on the steering control panel, and a 100 ampere master fuse [Figure 199] in the engine compartment on the left side of the engine, under the air cleaner. 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 Location / Identification

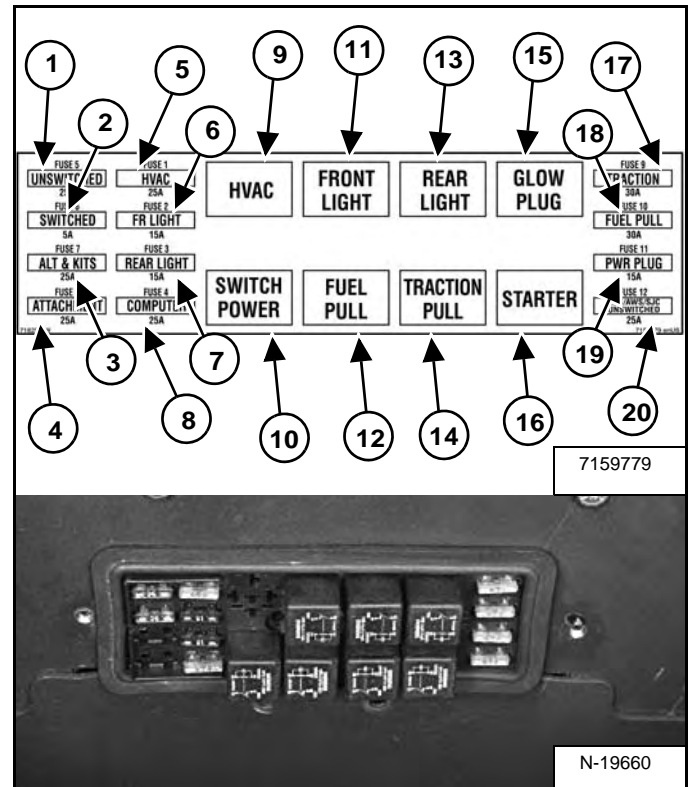
Figure 200



The electrical system is protected from overload by fuses and relays under the fuse panel cover (Item 1) [Figure 200]. A decal is inside the cover to show location and amperage ratings.

Remove the cover to check or replace the fuses.

Figure 201



The location and sizes are shown below and [Figure 201].

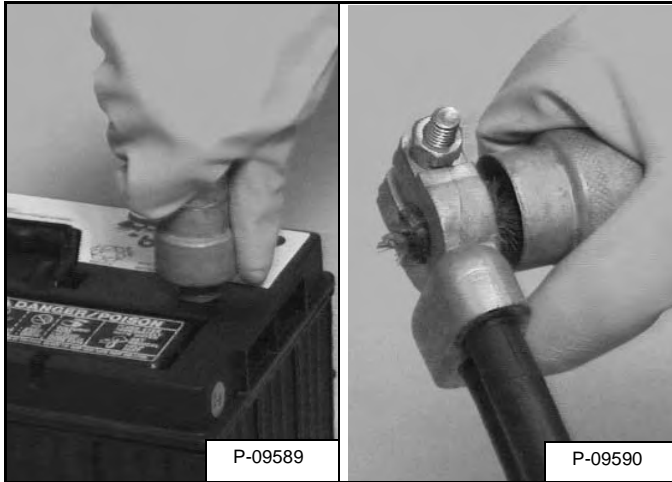
REF	DESCRIPTION	AMP	REF	DESCRIPTION	AMP
1	Unswitched Horn	25	11	Front & Marker Lights	R
2	ACS/AWS/SJC Switched	5	12	Fuel Shutoff	R
3	Alternator & Accessories Back-up Alarm	25	13	Rear Lights	R
4	Attachments	25	14	Traction	R
5	Heater & Air Conditioning	25	15	Glow Plugs	R
6	Front & Marker Lights	15	16	Starter	R
7	Rear Lights	15	17	Traction	30
8	Bobcat Controller	25	18	Fuel Shutoff	30
9	Heater & Air Conditioning	R	19	Power Plug	15
10	Switch Power	R	20	ACS/AWS/SJC Unswitched	25

R - Relay

## ELECTRICAL SYSTEM (CONT'D)

### Battery Maintenance

Figure 202



The battery cables must be clean and tight **[Figure 202]**. Check electrolyte level in the battery. Add distilled water as needed. Remove acid or corrosion from battery and cables with sodium bicarbonate (baking soda) and water solution.

Put Battery Saver (6988074) or grease on the battery terminals and cable ends to prevent corrosion.

## **WARNING**

### **AVOID INJURY OR DEATH**

**Batteries contain acid which burns eyes and skin on contact. Wear 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 15 minutes.**

**If electrolyte is taken internally drink large quantities of water or milk! DO NOT induce vomiting. Get prompt medical attention.**

W-2065-0807

## ELECTRICAL SYSTEM (CONT'D)

### Using A Booster Battery (Jump Starting)

If it is necessary to use a booster battery to start the engine, 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 OFF or the STOP button must be pressed. The booster battery must be 12 volt.

## WARNING

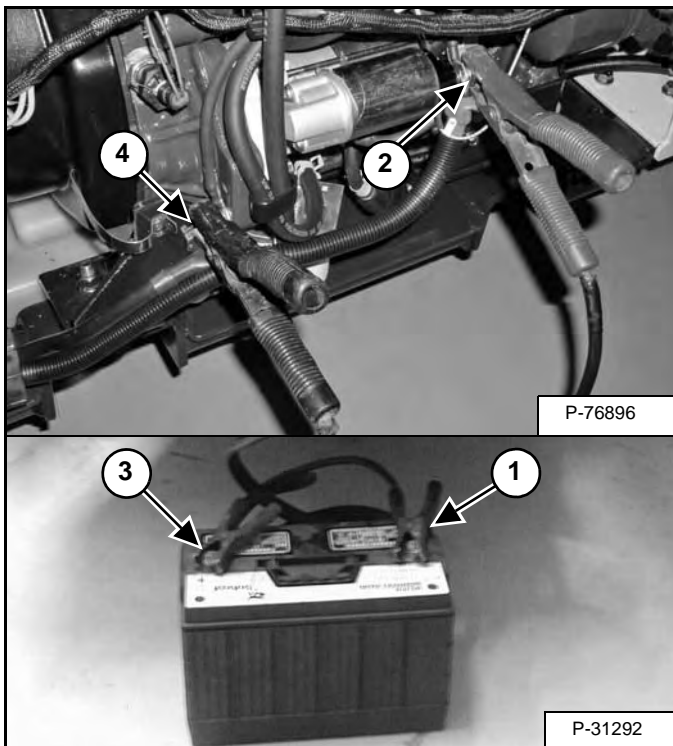
### BATTERY GAS CAN EXPLODE AND CAUSE SERIOUS INJURY OR DEATH

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 battery. Never lean over battery while boosting, testing or charging.

W-2066-0910

Figure 203



Connect the end of the first cable (Item 1) [Figure 203] to the positive (+) terminal of the booster battery. Connect the other end of the same cable (Item 2) [Figure 203] to the positive terminal on the loader starter.

Connect the end of the second cable (Item 3) [Figure 203] to the negative terminal of the booster battery. Connect the other end of the same cable (Item 4) [Figure 203] to the engine.

Keep cables away from moving parts. Start the engine. (See STARTING THE ENGINE on Page 67.)

After the engine has started, remove the ground (-) cable (Item 4) [Figure 203] first. Remove the cable from the positive terminal (Item 2) [Figure 203].

## IMPORTANT

Damage to the alternator can occur if:

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

I-2023-1285

## ELECTRICAL SYSTEM (CONT'D)

### Removing And Installing Battery

# ! WARNING

### AVOID INJURY OR DEATH

Batteries contain acid which burns eyes and skin on contact. Wear goggles, protective clothing and rubber gloves to keep acid off body.

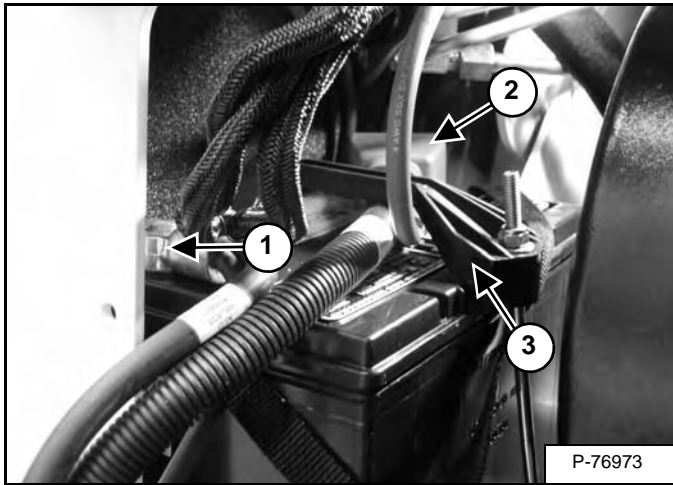
In case of acid contact, wash immediately with water. In case of eye contact get prompt medical attention and wash eye with clean, cool water for at least 15 minutes.

If electrolyte is taken internally drink large quantities of water or milk! DO NOT induce vomiting. Get prompt medical attention.

W-2065-0807

Open the rear door.

Figure 204



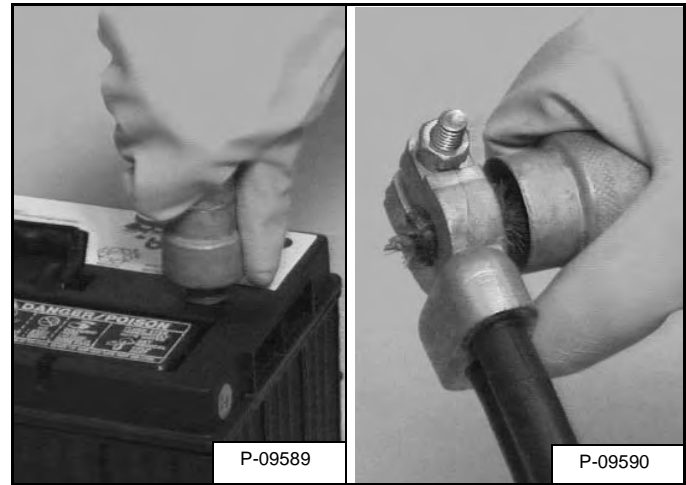
Disconnect the negative (-) cable (Item 1) [Figure 204].

Remove the battery hold down clamp (Item 3) [Figure 204].

Disconnect the positive (+) cable (Item 2) [Figure 204] from the battery.

Remove the battery from the loader.

Figure 205



Always clean the battery terminals and cable ends when installing a new or used battery [Figure 205].

When installing the battery in the loader, do not touch any metal parts with the battery terminals.

Connect the negative (-) cable last to prevent sparks.

Connect and tighten the battery cables.

Install and tighten the battery hold down.

# ! WARNING

### 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 battery. Never lean over battery while boosting, testing or charging.

W-2066-0910

## HYDRAULIC / HYDROSTATIC SYSTEM

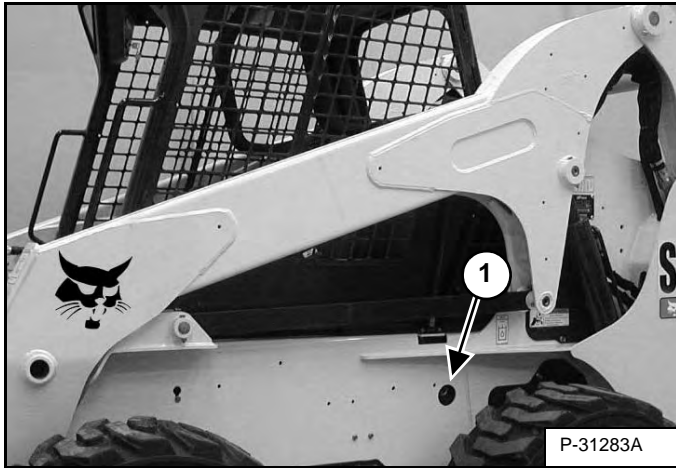
### Checking And Adding Fluid

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

Put the loader on a level surface, lower the lift arms and tilt the Bob-Tach fully back.

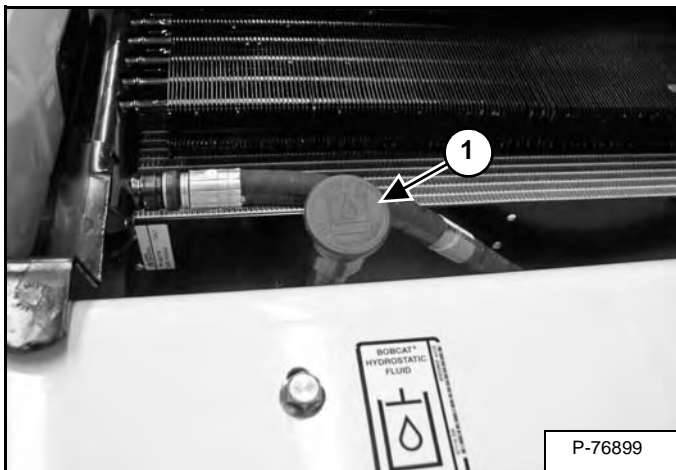
Stop the engine.

Figure 206



Check the fluid level in the sight gauge (Item 1) [Figure 206].

Figure 207



Open the rear door and remove the rear grille. Remove the fill cap (Item 1) [Figure 207].

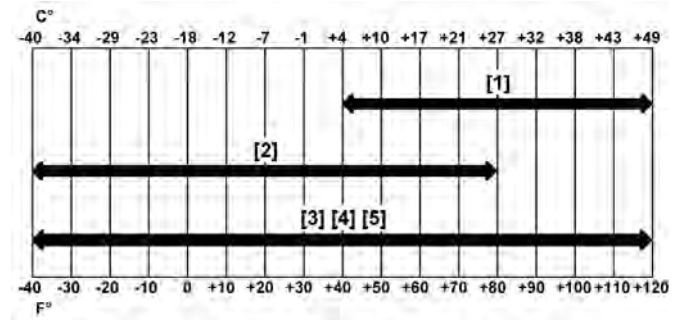
Add fluid as needed to bring the level to the center of the sight gauge. Install the fill cap (Item 1) [Figure 207].

Install the rear grille and close the rear door.

## Hydraulic / Hydrostatic Fluid Chart

Figure 208

### HYDRAULIC / HYDROSTATIC FLUID RECOMMENDED ISO VISCOSITY GRADE (VG) AND VISCOSITY INDEX (VI)



### TEMPERATURE RANGE ANTICIPATED DURING MACHINE USE

- [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 [Figure 208]. (See Hydraulic System on Page 185.)

## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

### Removing And Replacing Hydraulic Fluid

For the correct service interval (See SERVICE SCHEDULE on Page 103.)

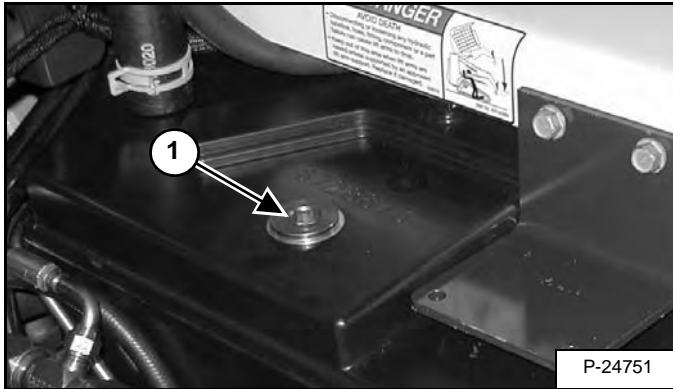
Replace the fluid if it becomes contaminated or after major repair.

Always replace the hydraulic / hydrostatic filter, the case drain filters and the hydraulic charge filter whenever the hydraulic fluid is replaced. (See Removing And Replacing Hydraulic / Hydrostatic Filter on Page 128.)

Open the rear door and remove the rear grille. Remove the fill cap.

Raise the operator cab. (See Raising on Page 110.)

**Figure 209**



Remove the plug from the top of the reservoir (Item 1) [Figure 209]. Pump the fluid out of the reservoir and into a container.

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

**! WARNING**

#### AVOID INJURY OR DEATH

**Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire.**

W-2103-0508

Install the plug (Item 1) [Figure 209] and lower the operator cab. (See Lowering on Page 111.)

Add the correct fluid to the reservoir until the fluid level is at the center of the sight gauge. (See Checking And Adding Fluid on Page 127.)

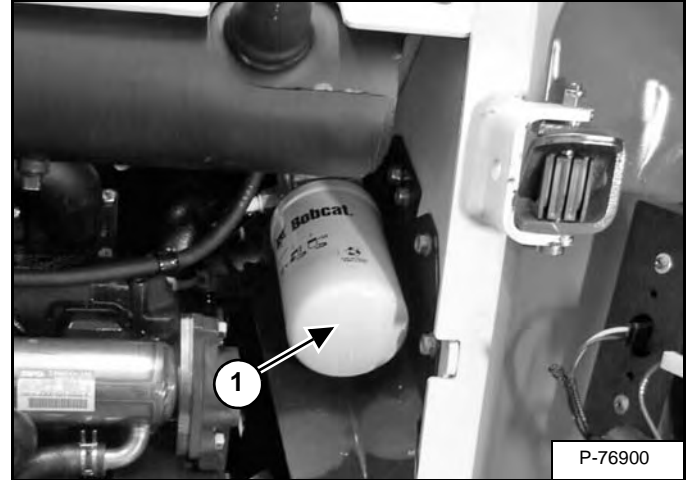
Replace the fill cap, install the rear grille and close the rear door.

### Removing And Replacing Hydraulic / Hydrostatic Filter

For the correct service interval. (See SERVICE SCHEDULE on Page 103.)

Open the rear door.

**Figure 210**



Remove the filter (Item 1) [Figure 210].

Clean the surface of the filter housing where the filter seal contacts the housing. Put clean oil on the seal of the new filter element. Install and hand tighten the filter element.

**! WARNING**

#### AVOID INJURY OR DEATH

**Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire.**

W-2103-0508

Close the rear door before operating the loader.

Start the engine and operate the loader hydraulic controls.

Stop the engine and check for leaks at the filter.

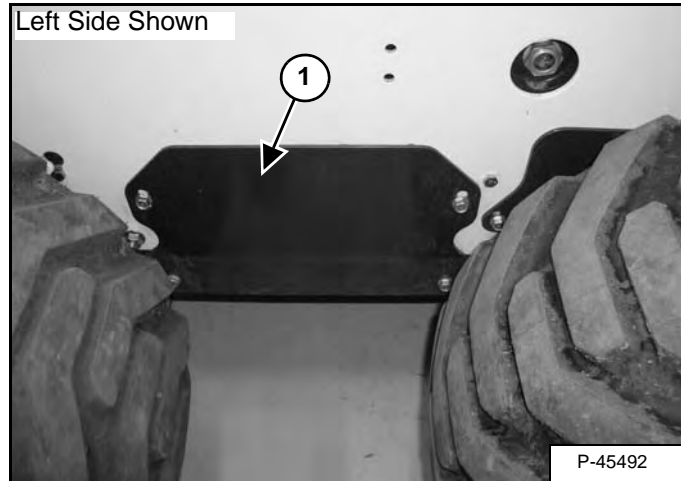
Check the fluid level in the reservoir and add as needed. (See Checking And Adding Fluid on Page 127.)

## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

### Removing And Replacing Hydraulic Case Drain Filters (Single Speed Loaders)

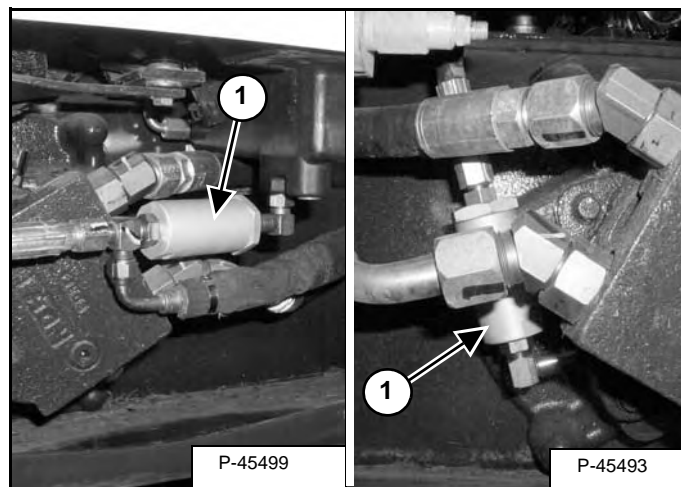
For the correct service interval (See SERVICE SCHEDULE on Page 103.)

Figure 211



Remove both hydrostatic motor covers (Item 1) [Figure 211].

Figure 212



Remove the case drain filter assemblies (Item 1) [Figure 212] near the hydrostatic motors. Install the fittings from the old filter assembly onto the new filter assembly. Install new filter assemblies. Install motor covers.

## WARNING

### AVOID INJURY OR DEATH

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

W-2103-0508

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

Start the engine and operate the loader hydraulic controls.

## WARNING

### AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.

W-2072-0807

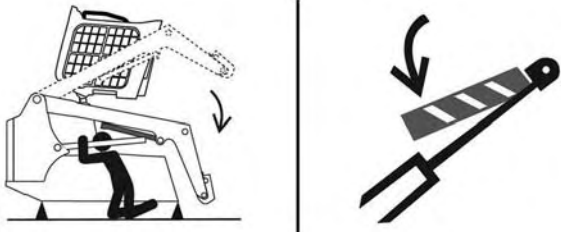
Stop the engine and check for leaks at the filter assemblies.

Check the fluid level in the reservoir and add as needed. (See Checking And Adding Fluid on Page 127.)

## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

### Removing And Replacing Hydraulic Case Drain Filters (Two-Speed Loaders)

Raise the lift arms and install the lift arm support device. (See LIFT ARM SUPPORT DEVICE on Page 107.)



P-90328

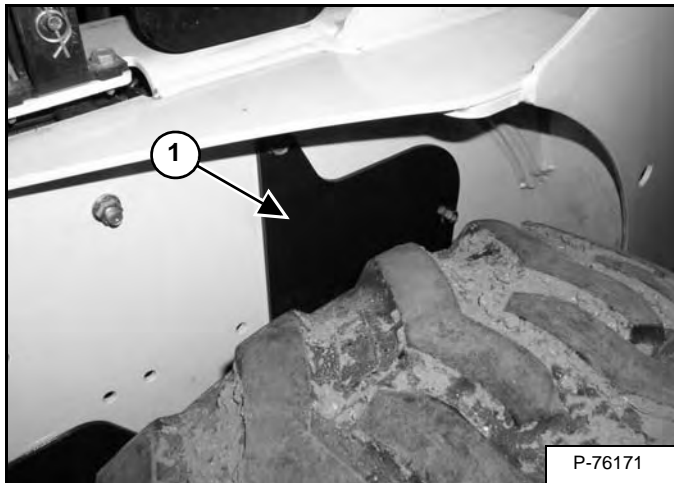
#### AVOID DEATH

- Disconnecting or loosening any hydraulic tubeline, hose, 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-1009-0409

Raise the operator cab. (See Raising on Page 110.)

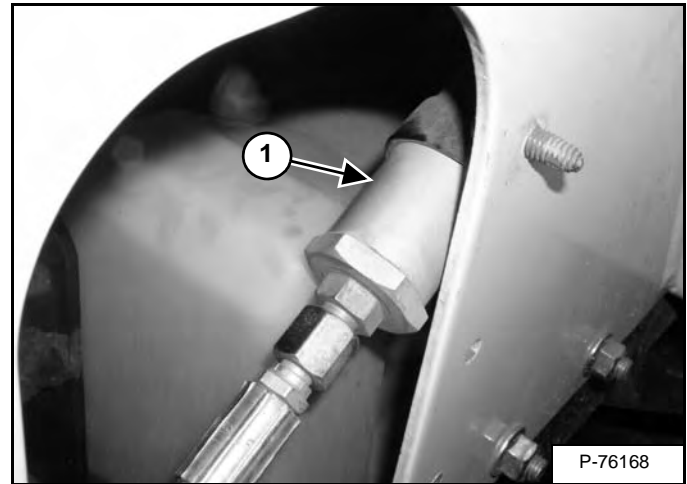
Figure 213



P-76171

Remove the left side access cover (Item 1) [Figure 213] near the rear tire.

Figure 214



P-76168

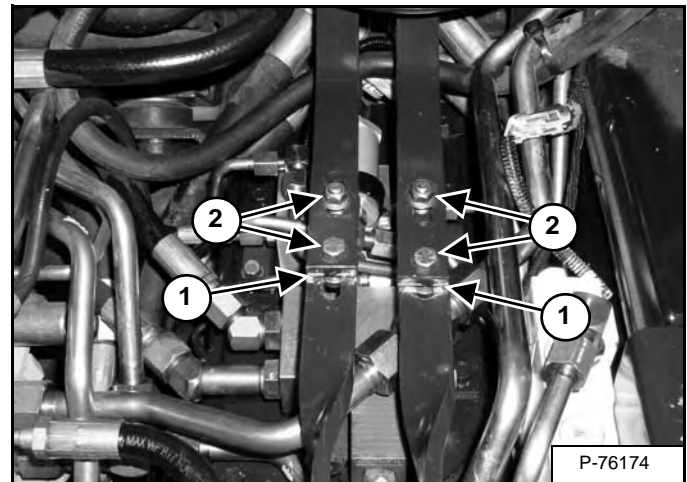
Remove the case drain filter assembly (Item 1) [Figure 214]. Install the fittings from the old filter assembly onto the new filter assembly.

Install new case drain filter assembly and replace the side access cover.

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

SJC equipped machines skip ahead to [Figure 216].

Figure 215



P-76174

Scribe a mark across the top of the steering linkage bars (Item 1) [Figure 215] which are connected to the steering shaft on the control panel.

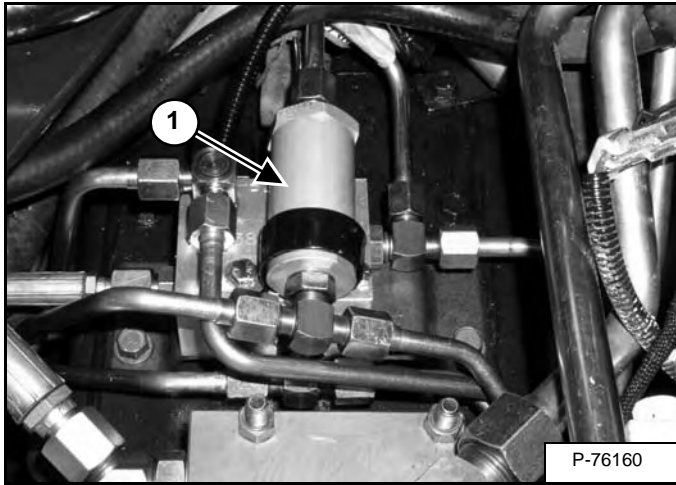
Remove the four steering linkage mounting bolts (Item 2) [Figure 215].



## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

### Removing And Replacing Hydraulic Case Drain Filters (Two-Speed Loaders) (Cont'd)

Figure 216



Remove the case drain filter assembly (Item 1) [Figure 216]. Install the fittings from the old filter assembly onto the new filter assembly.

Install new case drain filter assembly.

## WARNING

### AVOID INJURY OR DEATH

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

W-2103-0508

Standard Controls and ACS only: Align the marks on the steering linkage bars. Install the steering linkage mounting bolts (Item 2) [Figure 215] in the proper orientation (two bolts facing up and two bolts facing down). Tighten the steering linkage mounting bolts to 47,5 - 54,2 N•m (35 - 40 ft-lb).

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

Lower the operator cab. (See Lowering on Page 111.)

Remove the lift arm support device and lower the lift arms. (See LIFT ARM SUPPORT DEVICE on Page 107.)

Start the engine and operate the loader hydraulic controls.

## WARNING

### AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.

W-2072-0807

Stop the engine and check for leaks at the filter assemblies.

Check the fluid level in the reservoir and add as needed. (See Checking And Adding Fluid on Page 127.)

## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

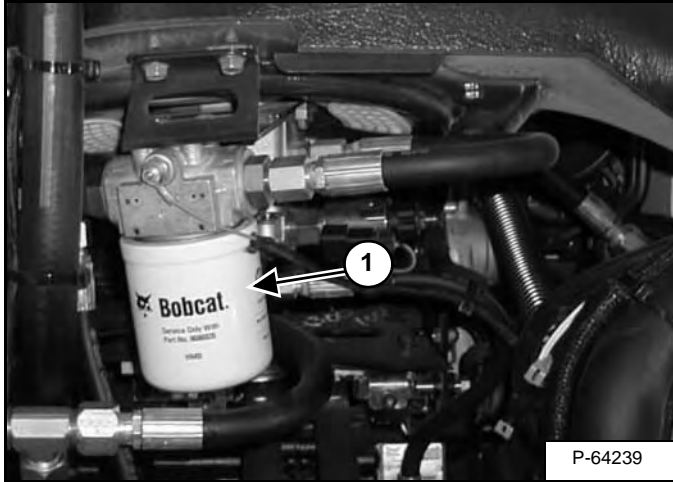
### Removing And Replacing Hydraulic Charge Filter

For the correct service interval (See SERVICE SCHEDULE on Page 103.)

Raise the operator cab. (See Raising on Page 110.)

*Earlier Models*

**Figure 217**



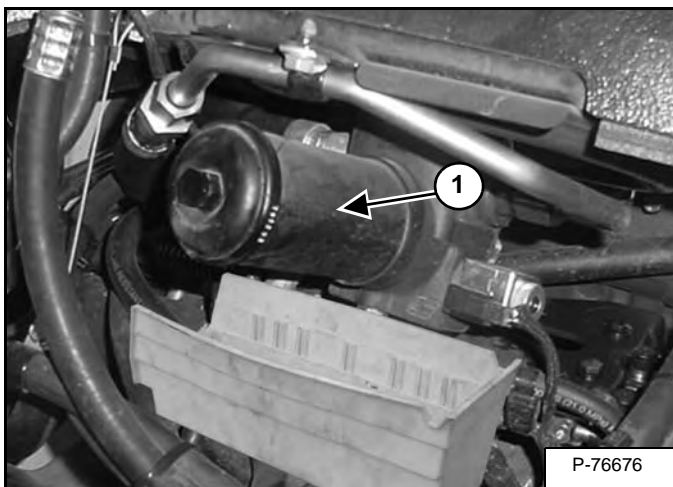
Remove the filter (Item 1) [Figure 217].

Clean the surface of the filter housing where the filter seal contacts the housing.

Put clean oil on the seal of the new filter. Install and hand tighten the new filter.

*Later Models*

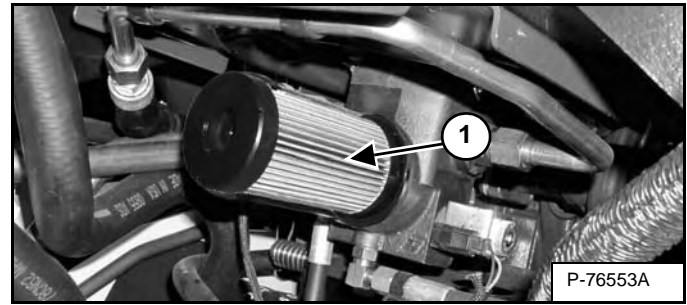
**Figure 218**



Place a suitable container below the filter housing and remove the filter housing (Item 1) [Figure 218].

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

**Figure 219**



Remove and discard the filter element (Item 1) [Figure 219].

Clean the surface of the filter housing and the filter base where they contact the filter element seal.

Put clean oil on the seal of the new filter element. Install the element on the filter base. Install and hand tighten the filter housing to 47 - 54 N•m (35 - 40 ft-lb) torque.

*All Models*

**! WARNING**

#### AVOID INJURY OR DEATH

**Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire.**

W-2103-0508

Lower the operator cab. (See Lowering on Page 111.)

Start the engine and operate the loader hydraulic controls.

**! WARNING**

#### AVOID INJURY OR DEATH

**Diesel fuel or hydraulic fluid under pressure can penetrate skin or 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 physician familiar with this injury.**

W-2072-0807

Stop the engine and check for leaks at the filter.

Check the fluid level in the reservoir and add as needed. (See Checking And Adding Fluid on Page 127.)

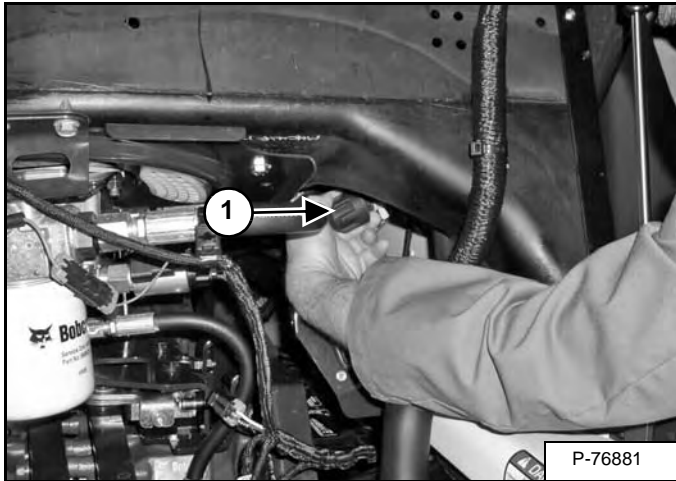
## HYDRAULIC / HYDROSTATIC SYSTEM (CONT'D)

### Breather Cap

For the correct service interval (See SERVICE SCHEDULE on Page 103.)

Raise the operator cab. (See Raising on Page 110.)

**Figure 220**



Remove the breather cap (Item 1) **[Figure 220]** and discard.

Install new breather cap.

Lower the operator cab. (See Lowering on Page 111.)

## SPARK ARRESTER MUFFLER

### Cleaning Procedure

See the SERVICE SCHEDULE for service interval for cleaning the spark arrester muffler. (See SERVICE SCHEDULE on Page 103.)

Do not operate the loader with a defective exhaust system.

## IMPORTANT

This machine is factory equipped with a U.S.D.A. Forestry Service approved spark arrester exhaust system.

The spark arrester muffler, if equipped, must be cleaned to keep it in working condition. The spark arrester muffler must be serviced by dumping the spark chamber every 100 hours of operation.

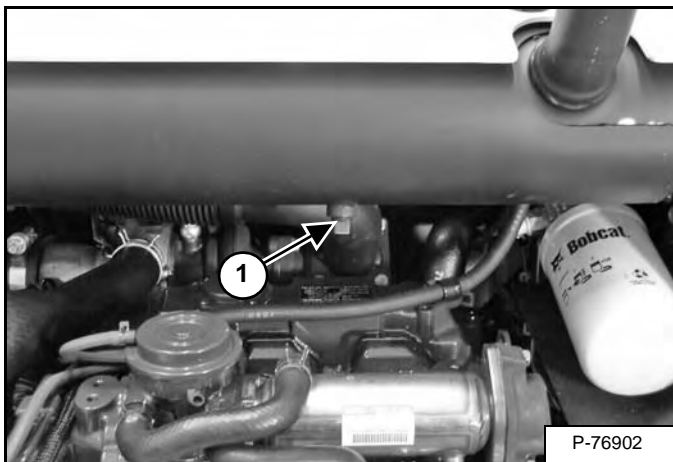
On some models, the turbocharger functions as the spark arrester and must operate correctly for proper spark arrester function.

If this machine is operated on flammable forest, brush, or grass covered land, it must be equipped with a spark arrester attached to the exhaust system and maintained in working order. Failure to do so will be in violation of California State Law, Section 4442. PRC. Refer to local laws and regulations for spark arrester requirements.

I-2284-0111

Stop the engine. Open the rear door.

Figure 221



Remove the plug (Item 1) [Figure 221] from the bottom of the muffler.

## ! WARNING

When the engine is running during service, the driving and steering controls must be in neutral and the parking brake engaged. Failure to do so can cause injury or death.

W-2006-1209

Start the engine and run for about 10 seconds while a second person, wearing safety glasses, holds a piece of wood over the outlet of the muffler.

This will force contaminants out through the cleanout hole.

Stop the engine.

Install and tighten the plug.

Close the rear door.

## ! WARNING

### AVOID INJURY OR DEATH

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the engine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

W-2050-0807

## ! WARNING

Stop engine and allow the muffler to cool before cleaning the spark chamber. Wear safety goggles. Failure to obey can cause serious injury.

W-2011-1285

## ! WARNING

Never use machine in atmosphere with explosive dust or gases or where exhaust can contact flammable material. Failure to obey warnings can cause injury or death.

W-2068-1285

## TIRE MAINTENANCE

### Wheel Nuts

Figure 222



See your SERVICE SCHEDULE for the service interval to check the wheel nuts [Figure 222]. (See SERVICE SCHEDULE on Page 103.)

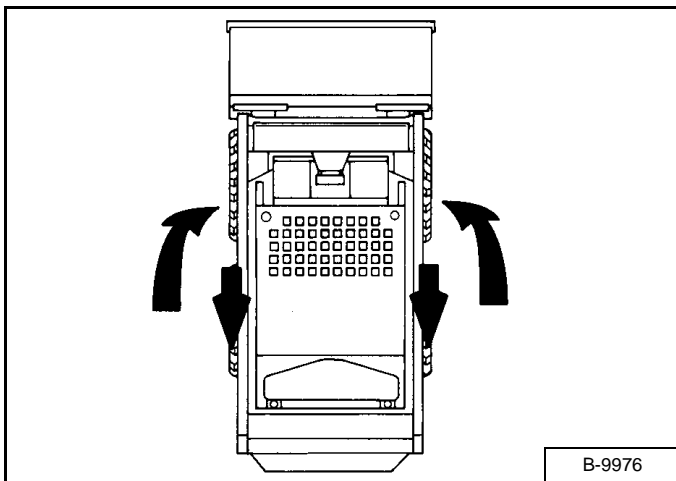
When *installing* wheel nuts, tighten to 217 N•m (160 ft-lb) torque.

When *checking* wheel nut torque, set the torque wrench to 190 N•m (140 ft-lb) to prevent over-tightening.

### Rotating

Check the tires regularly for wear, damage and pressure.

Figure 223



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 223].

It is important to keep the same size tires on each side of the loader. If different sizes are used, each tire will be turning 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 and loss of stability and handling capability. Check for correct pressure before operating the loader.

### Mounting

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.

Avoid excessive pressure which can rupture the tire and cause serious injury or death.

During inflation of the tire, check the tire pressure frequently to avoid over inflation.

**! WARNING**

### AVOID INJURY OR DEATH

**Do not inflate tires above specified pressure. Failure to use correct tire mounting procedure can cause an explosion which can result in injury or death.**

W-2078-1007

**IMPORTANT**

**Inflate tires to the MAXIMUM pressure shown on the sidewall of the tire. DO NOT mix brands of tires used on the same machine.**

I-2057-1010

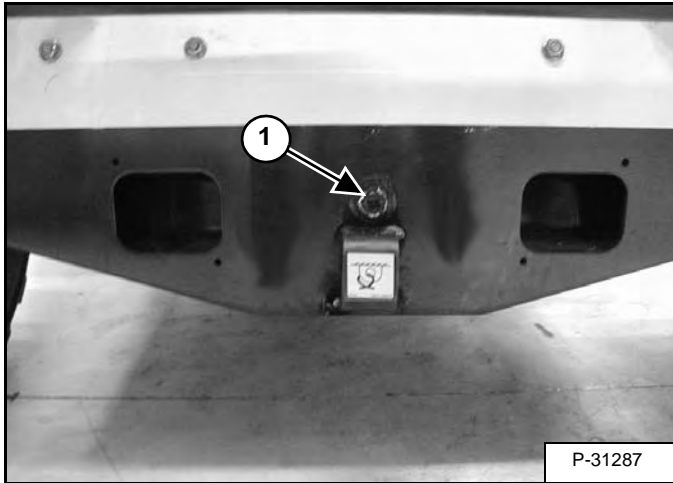
## FINAL DRIVE TRANSMISSION (CHAINCASE)

### Checking And Adding Oil

The chaincase contains the final drive sprockets and chains and uses the same type of oil as the hydraulic / hydrostatic system. (See Hydraulic System on Page 185.)

Park the loader on a level surface and stop the engine.

**Figure 224**



Remove the drain plug (Item 1) [Figure 224] from the front of the chaincase housing.

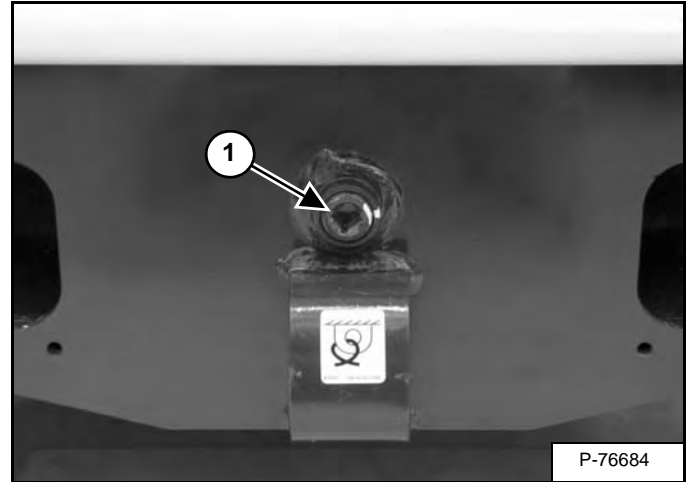
If oil can be reached with the tip of your finger through the hole, the oil level is correct.

If the level is low, add oil through the check plug hole until the oil flows from the hole.

Install and tighten the plug.

## Removing And Replacing Oil

**Figure 225**



Remove the check plug (Item 1) [Figure 225] from the front of the chaincase housing.

**Figure 226**



Remove the oil from the chaincase [Figure 226].

Recycle or dispose of the used oil in an environmentally safe manner.

Add oil through the check plug hole until the oil flows from the hole.

**! WARNING**

### AVOID INJURY OR DEATH

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

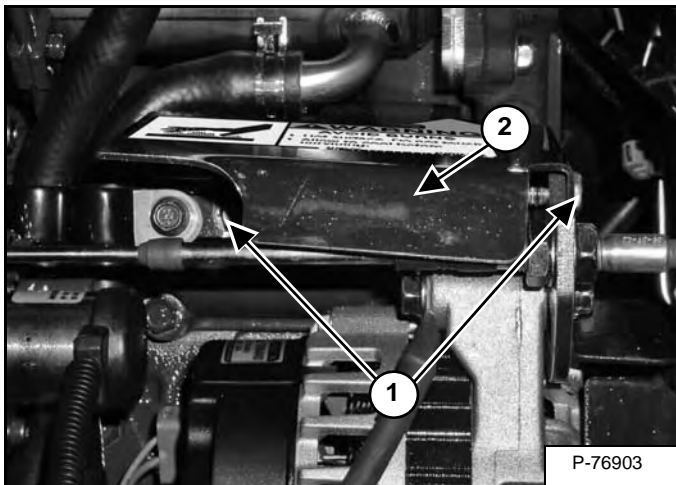
W-2103-0508

## ALTERNATOR BELT

### Belt Adjustment

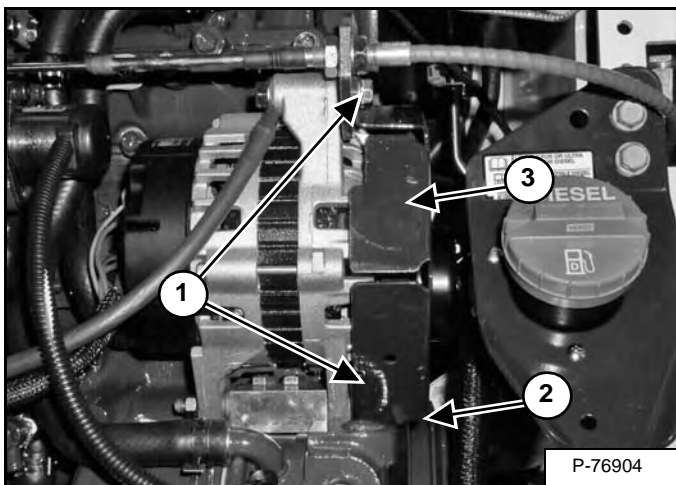
Stop the engine and open the rear door.

**Figure 227**



Loosen the alternator shield mounting bolts (Item 1) and remove the alternator shield (Item 2) **[Figure 227]**.

**Figure 228**



Loosen the alternator mounting and adjustment bolts (Item 1) **[Figure 228]**.

Move the alternator to tighten the belt. The tension is correct when there is 8,0 mm (5/16 in) movement at the middle of the belt span (Item 2) **[Figure 228]** with 66 N (15 lb) of force.

Tighten the adjustment and mounting bolts (Item 1) **[Figure 228]**.

Install the alternator shield and tighten mounting bolts.

Close the rear door before operating the loader.

### Belt Replacement

Remove the air conditioning belt, if equipped. (See AIR CONDITIONING BELT on Page 138.)

Loosen the alternator shield mounting bolts (Item 1) and remove the alternator shield (Item 2) **[Figure 227]**.

Loosen the alternator mounting and adjustment bolts (Item 1) and remove the alternator belt shield (Item 3) **[Figure 228]**.

Move the alternator forward as far as it will go.

Remove the belt from the pulleys and inspect the pulleys for wear. Replace as needed.

Install new alternator belt.

Install alternator belt shield (Item 3) **[Figure 228]**.

Adjust the belt. (See Belt Adjustment on Page 137.)

Install the alternator shield and tighten mounting bolts.

Install the air conditioning belt, if equipped. (See AIR CONDITIONING BELT on Page 138.)

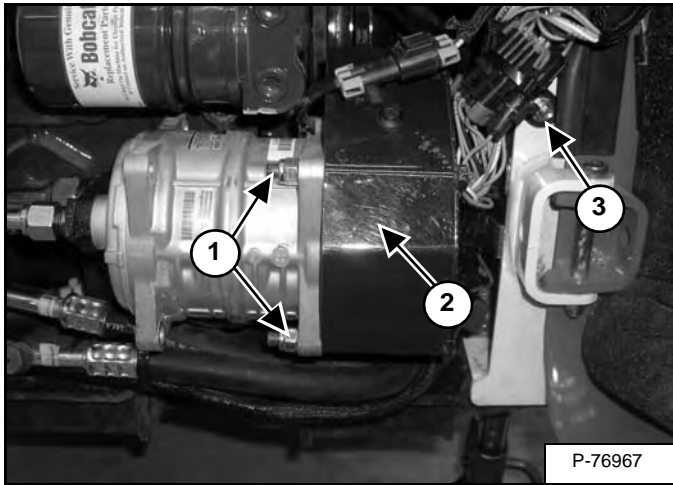
Close the rear door before operating the loader.

## AIR CONDITIONING BELT

### Belt Adjustment

Stop the engine and open the rear door.

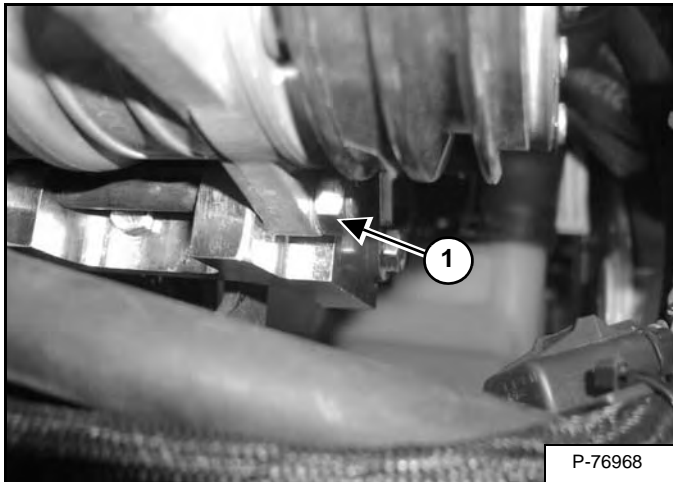
**Figure 229**



Remove bolt (Item 3) [Figure 229] holding harness clamp.

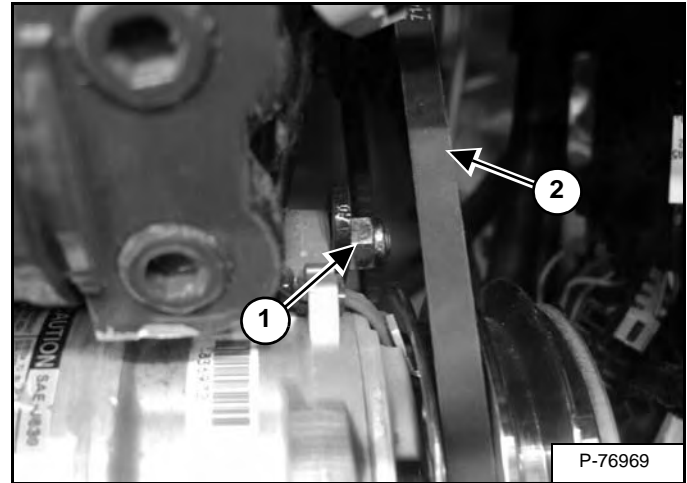
Remove nuts (Item 1) and remove belt shield (Item 2) [Figure 229].

**Figure 230**



Loosen the mounting nut (Item 1) [Figure 230] at bottom of compressor.

**Figure 231**



Loosen the adjustment nut (Item 1) [Figure 231] at top of compressor.

Move the air conditioning compressor toward the rear of machine to tighten the belt. The tension is correct when there is 4,0 mm (0.16 in) movement at the middle of the belt span (Item 2) [Figure 231] with 16,5 - 17,7 N (3.72 - 3.98 lb) of force.

Tighten the mounting and adjustment nuts, install belt shield and install harness clamp and bolt.

Close the rear door before operating the loader.

### Belt Replacement

Stop the engine and open the rear door.

Remove bolt (Item 3) [Figure 229] holding harness clamp.

Remove nuts (Item 1) and remove belt shield (Item 2) [Figure 229].

Loosen the mounting nut (Item 1) [Figure 230] at bottom of compressor.

Loosen the adjustment nut (Item 1) [Figure 231] at top of compressor.

Move the air conditioning compressor toward the front of the machine to loosen the belt.

Remove the belt from the pulleys and inspect the pulleys for wear. Replace as needed.

Install new air conditioning belt.

Adjust the belt. (See Belt Adjustment on Page 138.)

Close the rear door before operating the loader.



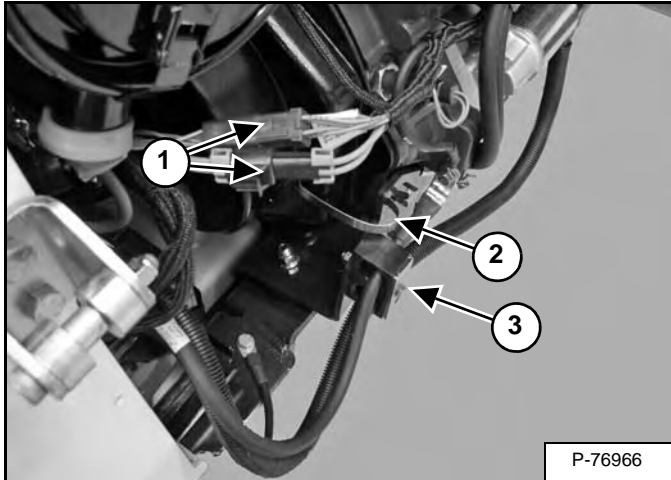
## DRIVE BELT

### Belt Adjustment

Stop the engine and open the rear door.

Disconnect the negative battery cable.

Figure 232



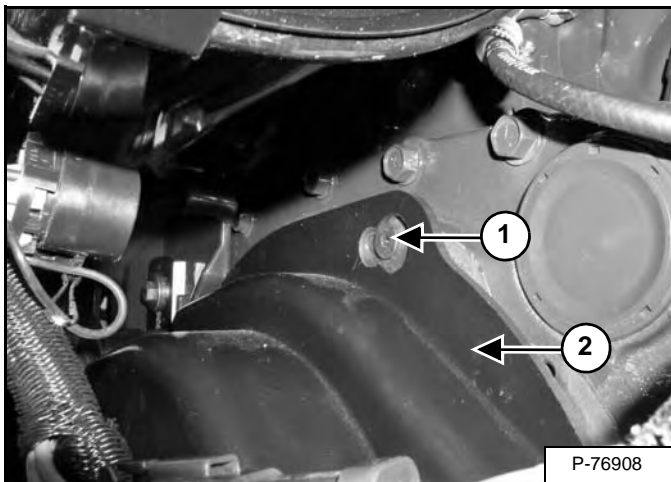
Disconnect the two electrical connectors (Item 1) [Figure 232].

Unhook the drive belt shield clip (Item 2) [Figure 232].

Remove the bolt and nut (Item 3) [Figure 232] from the cable bracket.

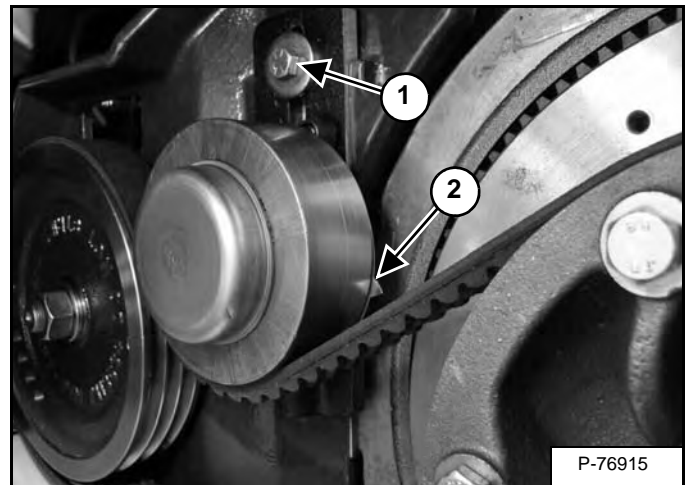
Move the cables to allow removal of the drive belt shield.

Figure 233



Do **NOT** loosen the drive belt shield mounting bolts (Top bolt shown) (Item 1). Slide the drive belt shield (Item 2) toward the front of the loader to unseat the shield from the top and bottom drive belt housing bolts. Remove the drive belt shield (Item 2) [Figure 233].

Figure 234



Loosen the spring loaded drive idler mounting bolt (Item 1) [Figure 234].

**NOTE:** The pointer will be at the 1 o'clock position when the spring loaded drive idler is not under tension.

Push the idler pulley against the belt using a pry bar. The pointer will be at the 3 o'clock position (Item 2) [Figure 234] when the idler pulley is properly adjusted.

Tighten the spring loaded drive idler mounting bolt (Item 1) [Figure 234] to 34 - 38 N•m (25 - 28 ft-lb) torque.

## DRIVE BELT (CONT'D)

### Belt Adjustment (Cont'd)

Figure 235

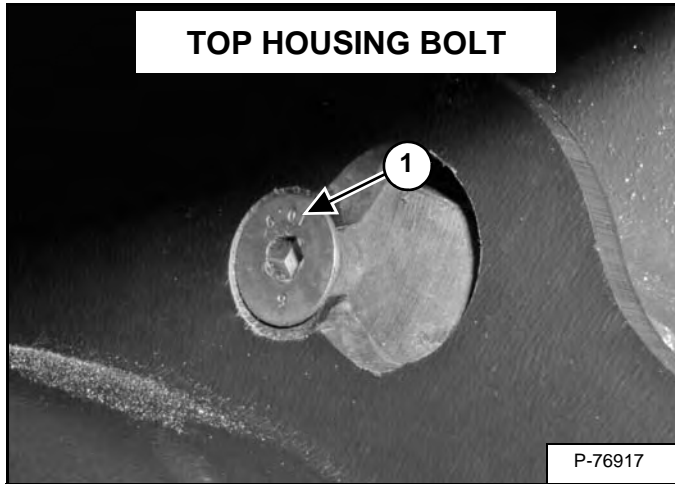
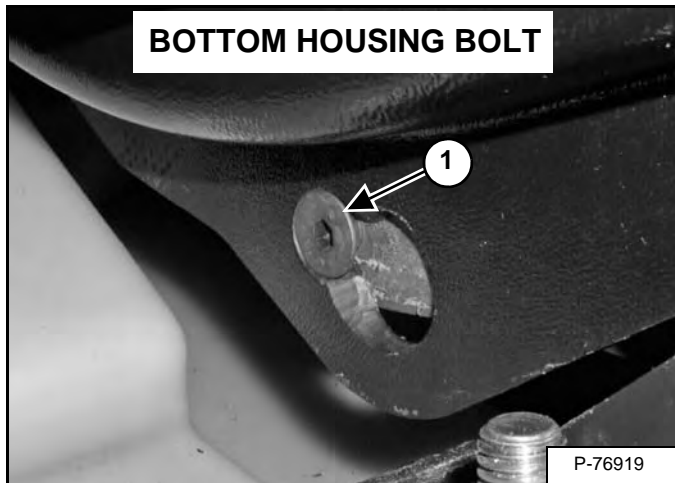
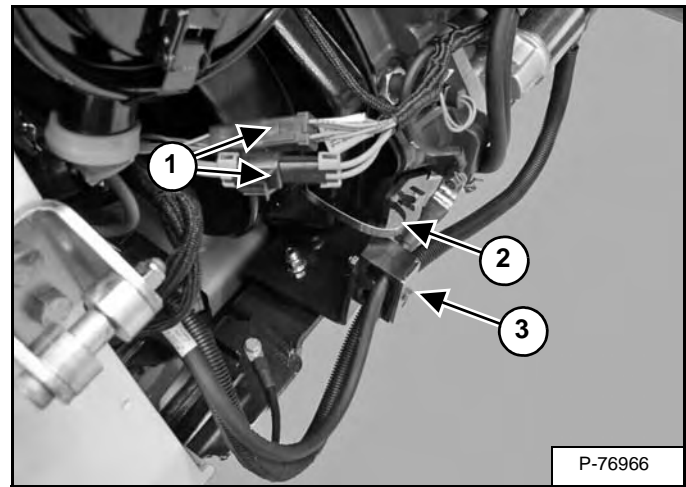


Figure 236



Position the drive belt shield over the drive belt housing bolts and slide the drive belt shield toward the back of the loader to fully seat the shield onto the top and bottom drive belt housing bolts (Item 1) [Figure 235] and [Figure 236].

Figure 237



Connect the two electrical connectors (Item 1) [Figure 237].

Hook the drive belt shield clip (Item 2) [Figure 237] in place.

Install the cable bracket and tighten the bolt and nut (Item 3) [Figure 237].

Connect the negative battery cable.

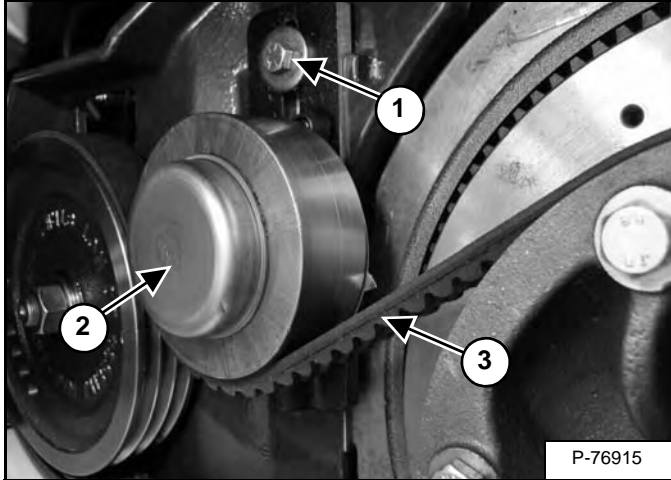
Close the rear door before operating the loader.

## DRIVE BELT (CONT'D)

### Belt Replacement

Follow the procedure under drive belt adjustment to loosen the spring loaded drive idler. (See Belt Adjustment on Page 139.)

**Figure 238**



Remove the spring loaded drive idler mounting bolt (Item 1) and spring loaded drive idler (Item 2) **[Figure 238]**.

Remove the drive belt (Item 3) **[Figure 238]** from the pump pulley and flywheel and remove the belt from the loader.

Install new drive belt. Install the spring loaded drive idler. Apply Loctite® 242 to the mounting bolt (Item 1) **[Figure 238]** and install the mounting bolt and washer.

Continue the procedure under drive belt adjustment to adjust the drive belt and complete installation of removed and disconnected components. (See Belt Adjustment on Page 139.)

Close the rear door before operating the loader.

## LUBRICATING THE LOADER

### Lubrication Locations

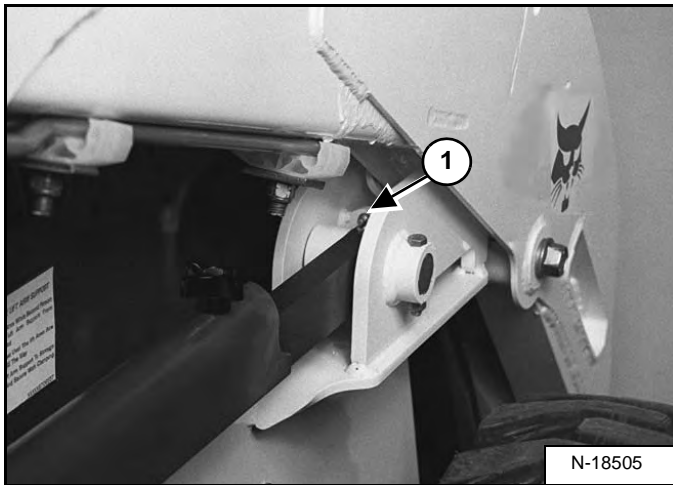
Lubricate the loader as specified for the best performance of the loader. (See SERVICE SCHEDULE on Page 103.)

Record the operating hours each time you lubricate the Bobcat Loader.

Always use a good quality lithium based multipurpose grease when you lubricate the loader. Apply lubricant until extra grease shows.

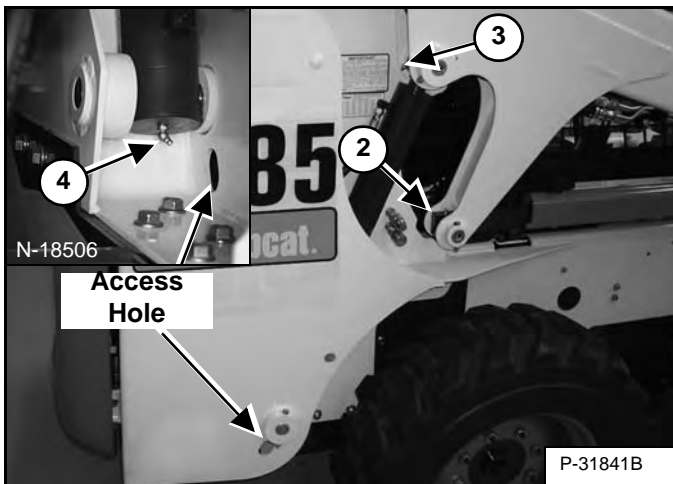
Lubricate the following:

#### Figure 239



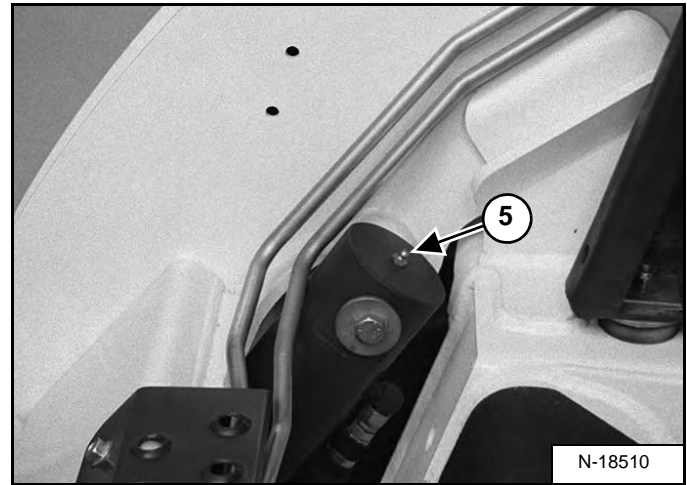
1. Stabilizer Rod - Front (Both Sides) (2) [Figure 239]

#### Figure 240



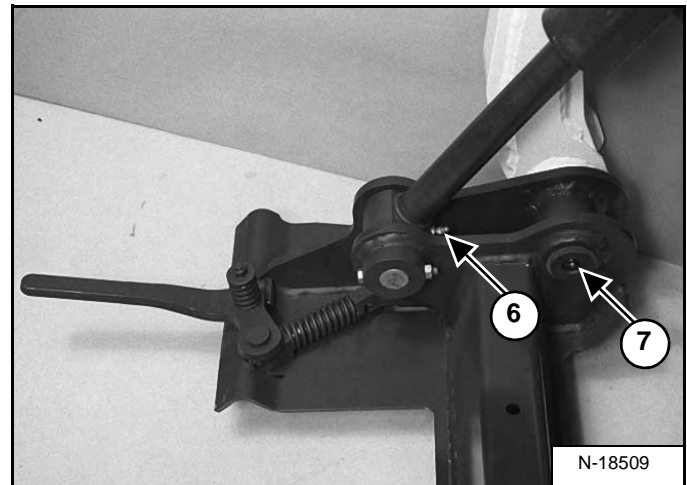
2. Stabilizer Rod - Rear (Both Sides) (2) [Figure 240].
3. Lift Cylinder Rod End (Both Sides) (2) [Figure 240].
4. Lift Cylinder Base End (Both Sides) (2) [Figure 240].

#### Figure 241



5. Tilt Cylinder Base End (Both Sides) (2) [Figure 241].

#### Figure 242

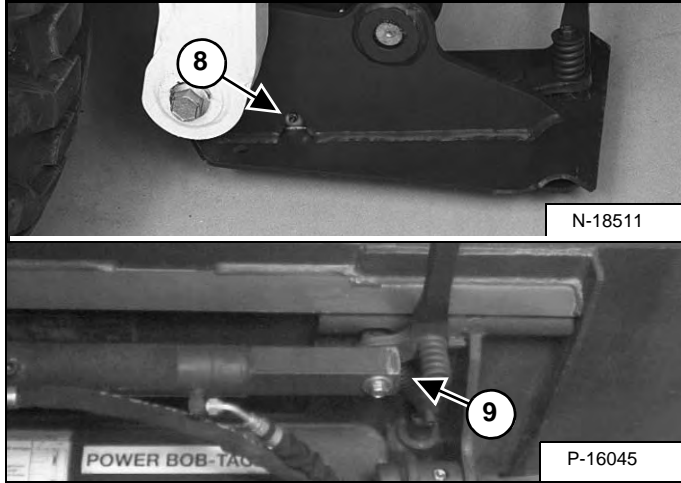


6. Tilt Cylinder Rod End (Both Sides) (2) [Figure 242].
7. Bob-Tach Pivot Pin (Both Sides) (2) [Figure 242].

## LUBRICATING THE LOADER (CONT'D)

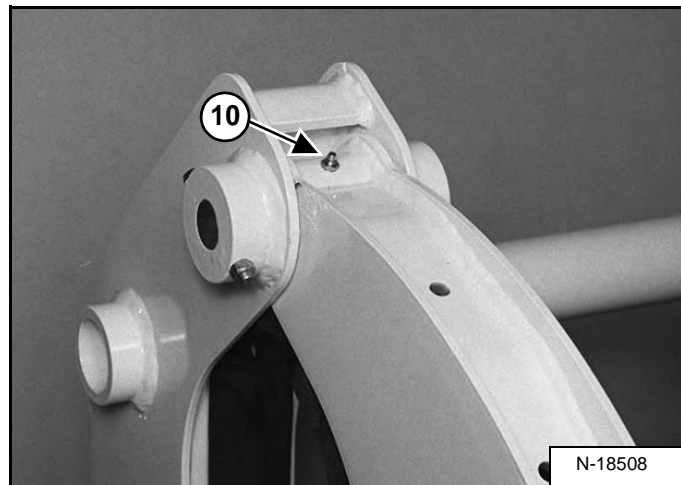
### Lubrication Locations (Cont'd)

Figure 243



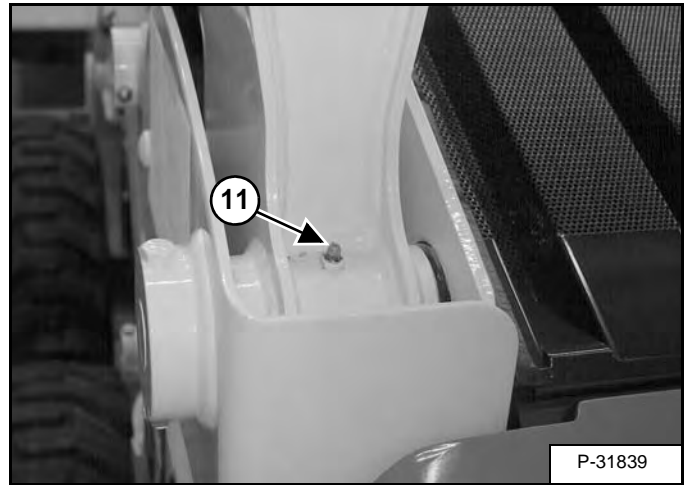
- 8. Bob-Tach Wedge (Both Sides) (2) [Figure 243].
- 9. Power Bob-Tach Cylinder (Both Sides) (2) [Figure 243].

Figure 244



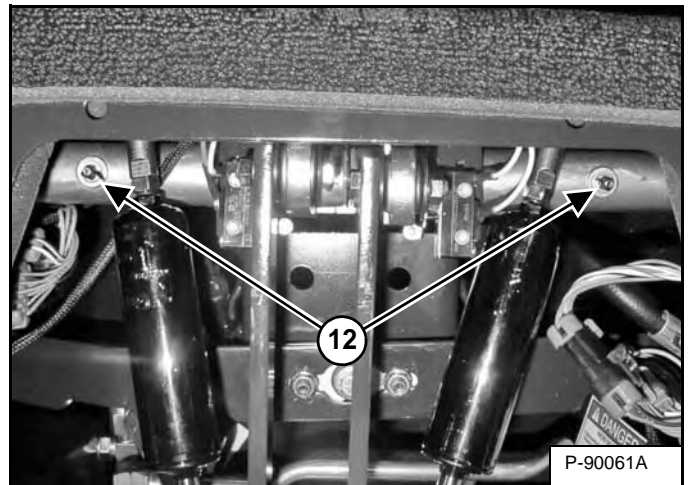
- 10. Lift Arm Pivot Pin (Both Sides) (2) [Figure 244].

Figure 245



- 11. Lift Arm Link Pivot Pin (Both Sides) (2) [Figure 245].

Figure 246



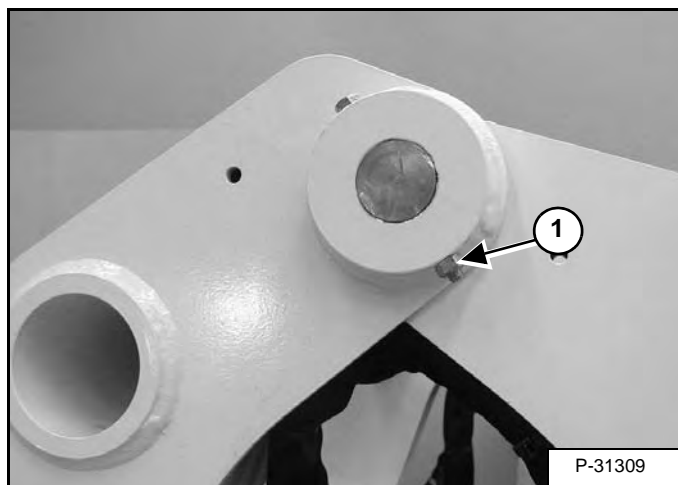
**NOTE: SJC equipped machines do not have a steering lever shaft.**

- 12. 250 Hours: Steering Lever Shaft (2) [Figure 246].

## PIVOT PINS

### Inspection And Maintenance

Figure 247



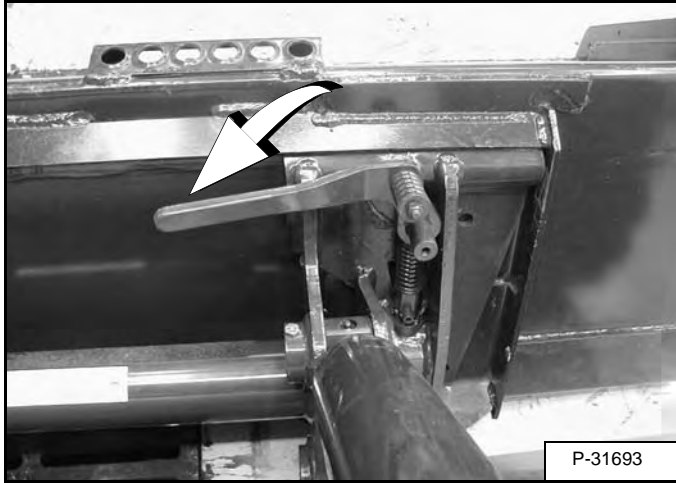
All lift arm and cylinder pivots have a large pin held in position with a retainer bolt and lock nut (Item 1) **[Figure 247]**.

Check that the lock nuts are tightened to 48 - 54 N•m (35 - 40 ft-lb) torque.

## BOB-TACH (HAND LEVER)

### Inspection And Maintenance

Figure 248



Move the Bob-Tach levers down to engage the wedges [Figure 248].

The levers and wedges must move freely.

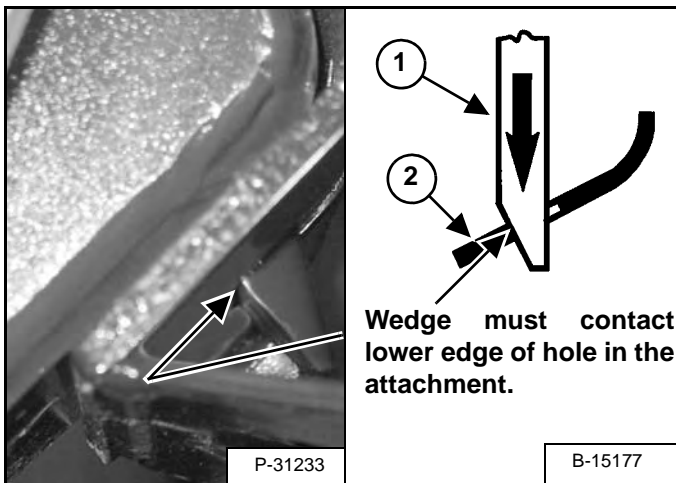
## WARNING

### AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

Figure 249

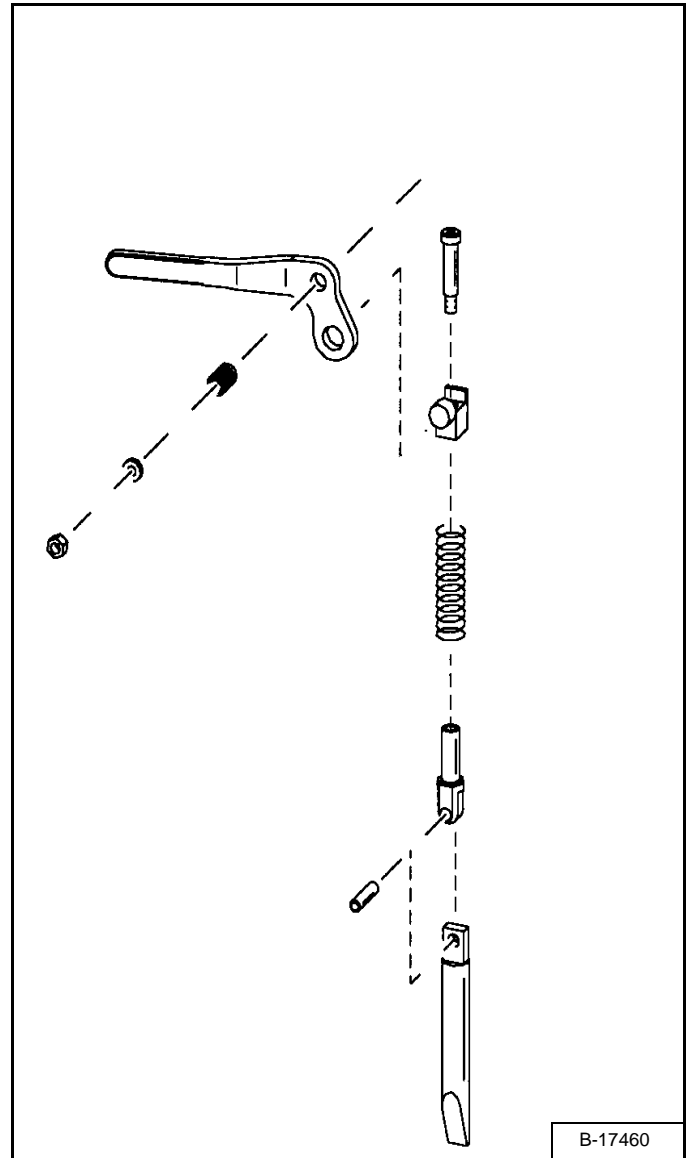


The wedges (Item 1) [Figure 249] must extend through the holes in the attachment mounting frame.

The spring loaded wedge (Item 1) must contact the lower edge of the hole in the attachment (Item 2) [Figure 249].

If the wedge does not contact the lower edge of the hole [Figure 249], the attachment will be loose and can come off the Bob-Tach.

Figure 250



Inspect the mounting frame on the attachment and Bob-Tach, linkages and wedges for excessive wear or damage [Figure 250]. Replace any parts that are damaged, bent or missing. Keep all fasteners tight.

Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

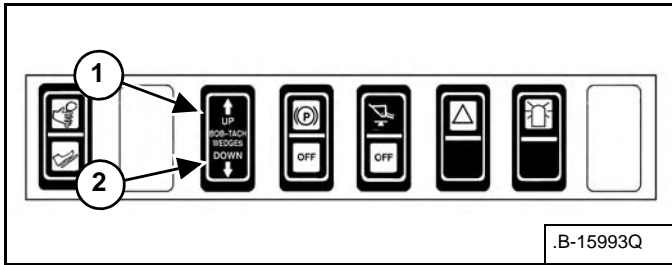
Lubricate the wedges. (See SERVICE SCHEDULE on Page 103.) (See LUBRICATING THE LOADER on Page 142.)

## BOB-TACH (POWER)

This machine may be equipped with a Power Bob-Tach.

### Inspection And Maintenance

Figure 251



Push and hold the BOB-TACH “WEDGES UP” switch (Item 1) until wedges are fully raised. Push and hold the BOB-TACH “WEDGES DOWN” switch (Item 2) [Figure 251] until the wedges are fully down.

The levers and wedges must move freely.

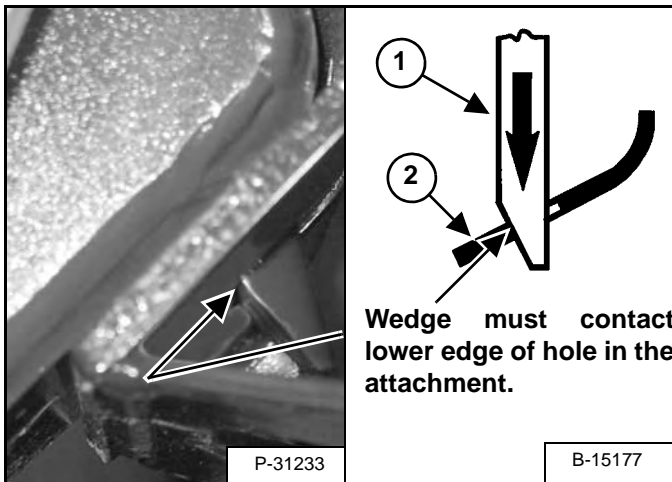
## WARNING

### AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

Figure 252

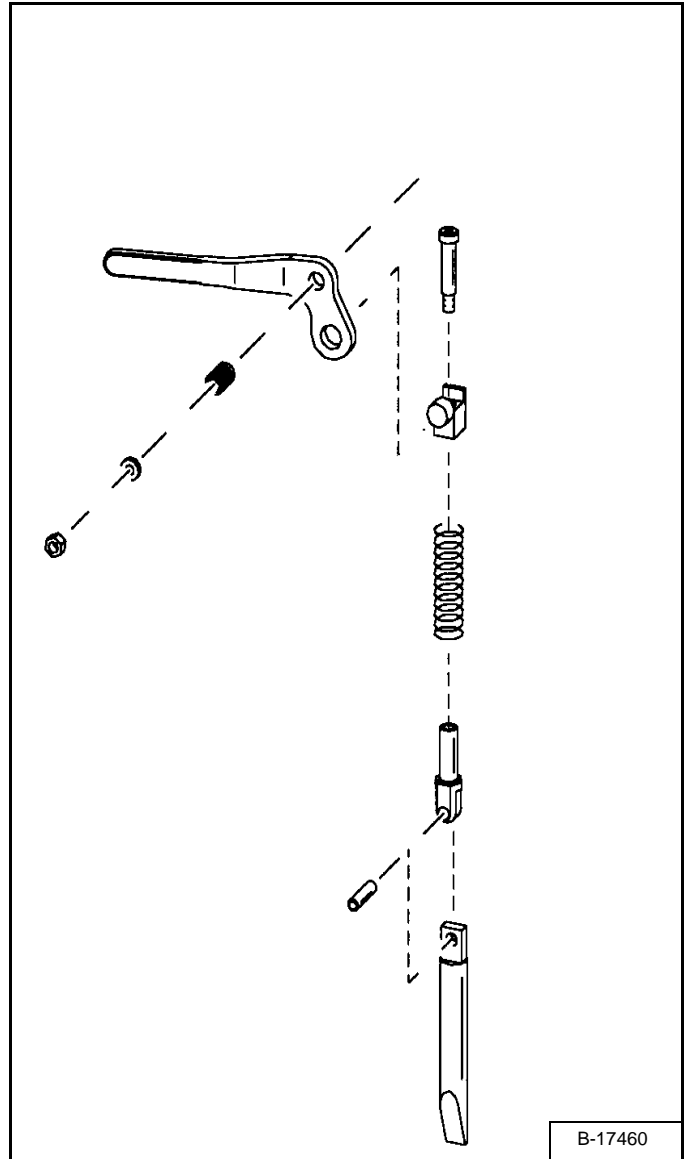


The wedges (Item 1) [Figure 252] must extend through the holes in the attachment mounting frame.

The spring loaded wedge (Item 1) must contact the lower edge of the hole in the attachment (Item 2) [Figure 252].

If the wedge does not contact the lower edge of the hole [Figure 252], the attachment will be loose and can come off the Bob-Tach.

Figure 253



Inspect the mounting frame on the attachment and Bob-Tach, linkages and wedges for excessive wear or damage [Figure 253]. Replace any parts that are damaged, bent or missing. Keep all fasteners tight.

Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See SERVICE SCHEDULE on Page 103.) (See LUBRICATING THE LOADER on Page 142.)



## LOADER STORAGE AND RETURN TO SERVICE

### Storage

Sometimes it may be necessary to store your Bobcat loader for an extended period of time. Below is a list of items to perform before storage.

- Thoroughly clean the loader including the engine compartment.
- Lubricate the loader.
- Replace worn or damaged parts.
- Park the loader 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 in the fuel tank and run 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 run the engine for at least 30 minutes.

- Drain and flush the cooling system. Refill with premixed coolant.
- Replace all fluids and filters (engine, hydraulic / hydrostatic).
- Replace air cleaner, heater and air conditioning filters.
- Put all controls in neutral position.
- Remove the battery. Be sure the electrolyte level is correct then charge the battery. Store it in a cool dry place above freezing temperatures and charge it periodically during storage.
- Cover the exhaust pipe opening.
- Tag the machine to indicate that it is in storage condition.

### Return To Service

After the Bobcat loader has been in storage, it is necessary to follow a list of items to return the loader to service.

- Check the engine and hydraulic oil 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 place.
- Lubricate the loader.
- Check tire inflation and remove blocks from under frame.
- Remove cover from exhaust pipe opening.
- Start the engine and let run for a few minutes while observing the instrument panels and systems for correct operation.
- Operate machine, check for correct function.
- Stop the engine and check for leaks. Repair as needed.



**Bobcat®**

## SYSTEM SETUP & ANALYSIS

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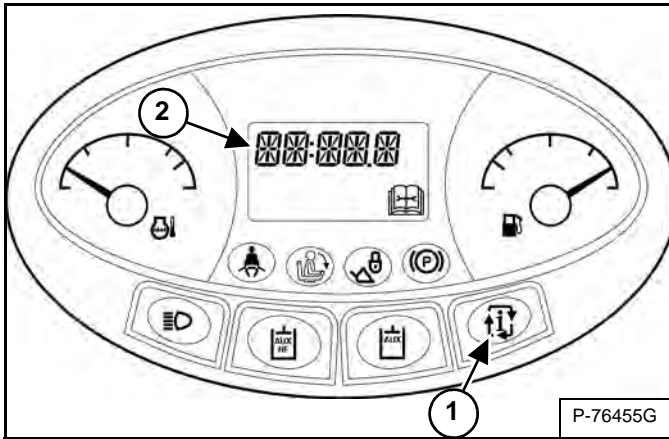
**Bobcat®**

## DIAGNOSTIC SERVICE CODES

### Viewing Service Codes

The Service Codes will aid your dealer in diagnosing conditions which can damage your machine.

Figure 254



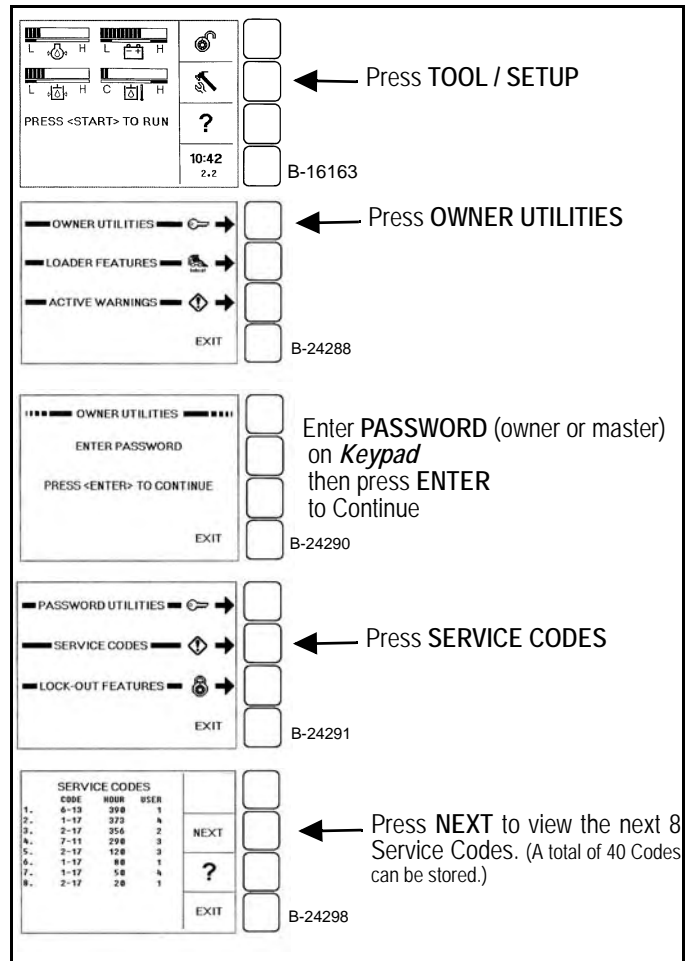
Press the INFORMATION button (Item 1) to cycle the DATA DISPLAY (Item 2) [Figure 254] until the service code screen is displayed. If more than one SERVICE CODE is present, the codes will scroll on the DATA DISPLAY.

**NOTE:** Corroded or loose grounds can cause multiple service codes and / or abnormal symptoms. All instrument panel lights flashing, alarm sounding, headlights and taillights flashing, could indicate a bad ground. The same symptoms could apply if the voltage is low, such as loose or corroded battery cables. If you observe these symptoms, check grounds and positive leads first.

## Deluxe Instrumentation Panel

The optional Deluxe Instrumentation Panel offers an additional view of service codes.

Figure 255



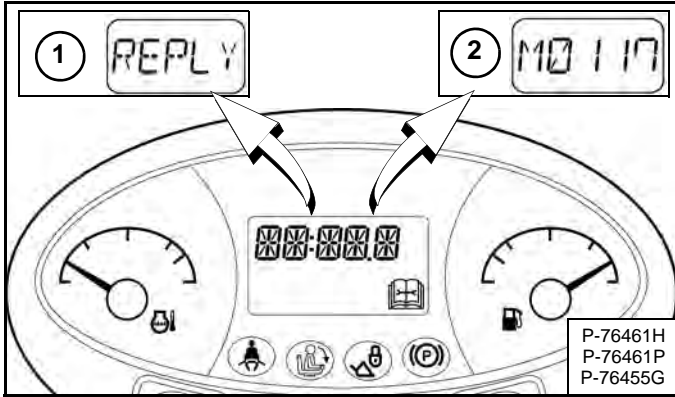
The Display Panel will list the Code Number, (CODE) hourmeter reading when the error occurred (HOUR), and the User (USER) who was logged in to operate the machine when the error occurred [Figure 255].

A total of 40 Codes can be stored. When more than 40 codes occur, the oldest code will disappear and the newest code will be in the number 1 position.

## DIAGNOSTIC SERVICE CODES (CONT'D)

### Service Codes List

Figure 256



Service Codes may be either a word (Item 1) or a number (Item 2) [Figure 256].

The following word errors may be displayed:

**[REPLY]** One or both instrument panel(s) not communicating with the controller.

**[CODE]** The controller is asking for a password. (Keyless Start and Deluxe Instrumentation Panels only.)

**[ERROR]** The wrong password was entered. (Keyless Start and Deluxe Instrumentation Panels only.)

**[SHTDN]** A shutdown condition exists.

**[DOOR]** Operator cab door is open. (Lift and Tilt functions will not operate.)

CODE	DESCRIPTION	CODE	DESCRIPTION
A0618	Wheel speed out of range	A8406	ACD output 'E' short to ground
A3623	ACD not programmed	A8407	ACD output 'E' open circuit
A4621	Sensor supply 2 out of range high	A8432	ACD output 'E' overcurrent
A4622	Sensor supply 2 out of range low	A8502	ACD output 'F' error ON
A4721	Sensor supply 1 out of range high	A8503	ACD output 'F' error OFF
A4722	Sensor supply 1 out of range low	A8505	ACD output 'F' short to battery
A8002	ACD output 'A' error ON	A8506	ACD output 'F' short to ground
A8003	ACD output 'A' error OFF	A8507	ACD output 'F' open circuit
A8005	ACD output 'A' short to battery	A8532	ACD output 'F' overcurrent
A8006	ACD output 'A' short to ground	A8602	ACD output 'G' error ON
A8007	ACD output 'A' open circuit	A8603	ACD output 'G' error OFF
A8032	ACD output 'A' overcurrent	A8605	ACD output 'G' short to battery
A8102	ACD output 'B' error ON	A8606	ACD output 'G' short to ground
A8103	ACD output 'B' error OFF	A8607	ACD output 'G' open circuit
A8105	ACD output 'B' short to battery	A8702	ACD output 'H' error ON
A8106	ACD output 'B' short to ground	A8703	ACD output 'H' error OFF
A8107	ACD output 'B' open circuit	A8705	ACD output 'H' short to battery
A8132	ACD output 'B' overcurrent	A8706	ACD output 'H' short to ground
A8202	ACD output 'C' error ON	A8707	ACD output 'H' open circuit
A8203	ACD output 'C' error OFF	A8802	Reverse solenoid error ON
A8205	ACD output 'C' short to battery	A8803	Reverse solenoid error OFF
A8206	ACD output 'C' short to ground		
A8207	ACD output 'C' open circuit	D3905	Left joystick X-axis not in neutral
A8232	ACD output 'C' overcurrent	D3907	Left joystick Y-axis not in neutral
A8302	ACD output 'D' error ON	D4007	Right joystick Y-axis not in neutral
A8303	ACD output 'D' error OFF	D7501	CAN joystick communication error
A8305	ACD output 'D' short to battery	D7504	No communication from drive controller
A8306	ACD output 'D' short to ground	D7505	Left joystick X-axis not in neutral
A8307	ACD output 'D' open circuit	D7507	Left joystick Y-axis not in neutral
A8332	ACD output 'D' overcurrent	D7508	Right joystick Y-axis not in neutral
A8402	ACD output 'E' error ON	D7509	Operating mode switch short to ground or battery
A8403	ACD output 'E' error OFF	D7510	Improper joysticks installed
A8405	ACD output 'E' short to battery	D7511	Left speed sensor not connected

## DIAGNOSTIC SERVICE CODES (CONT'D)

### Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
D7512	Right speed sensor not connected	D7564	Left rear steer retract short to ground
D7513	Right front wheel angle sensor stuck	D7565	Steer pressure short to ground
D7514	Left front wheel angle sensor stuck	D7566	Back-up alarm error OFF
D7515	Right rear wheel angle sensor stuck	D7567	No communication from Gateway controller
D7516	Left rear wheel angle sensor stuck	D7568	Angle sensors not calibrated
D7517	Left swash plate not in neutral	D7569	Battery voltage out of range high
D7518	Right swash plate not in neutral	D7570	Interrupted power (also occurs after software update)
D7519	Left joystick X-axis out of range high	D7571	Battery voltage out of range low
D7521	Left joystick Y-axis out of range high	D7572	Drive pump not calibrated
D7522	Right joystick Y-axis out of range high	D7573	Operating mode switch flipped while operating
D7523	Right front wheel angle sensor out of range high	D7574	Right wheel speed uncommanded motion
D7524	Left front wheel angle sensor out of range high	D7575	Left wheel speed uncommanded motion
D7525	Right rear wheel angle sensor out of range high	D7576	No communication from ACS controller
D7526	Left rear wheel angle sensor out of range high	D7577	Left speed sensor out of range high
D7527	Left swash plate out of position	D7578	Right speed sensor out of range high
D7528	Right swash plate out of position	D7579	Left speed sensor out of range low
D7529	Left joystick X-axis out of range low	D7580	Right speed sensor out of range low
D7531	Left joystick Y-axis out of range low	D7581	Right front steer retract short to battery
D7532	Right joystick Y-axis out of range low	D7582	Left front steer retract short to battery
D7533	Right front wheel angle sensor out of range low	D7583	Right rear steer retract short to battery
D7534	Left front wheel angle sensor out of range low	D7584	Left rear steer retract short to battery
D7535	Right rear wheel angle sensor out of range low	D7585	Sensor supply 1 out of range high
D7536	Left rear wheel angle sensor out of range low	D7586	Sensor supply 2 out of range high
D7537	Sensor supply 1 out of range low	D7587	Software update required
D7538	Sensor supply 2 out of range low	D7588	Switched power stuck ON
D7539	Left swash plate sensor out of range high	D7589	Switched power error OFF
D7540	Left swash plate sensor out of range low	D7590	Drive calibration performed
D7541	Right swash plate sensor out of range high	D7591	Left swash plate sensor reversed
D7542	Right swash plate sensor out of range low	D7592	Right swash plate sensor reversed
D7543	Left forward drive solenoid error ON	D7593	Right speed sensor unresponsive
D7544	Left reverse drive solenoid error ON	D7594	Left speed sensor unresponsive
D7545	Right forward drive solenoid error ON	D7595	Left speed sensor reversed
D7546	Right reverse drive solenoid error ON	D7596	Right speed sensor reversed
D7547	Right front steer extend short to battery	D7597	Controller programmed
D7548	Left front steer extend short to battery	D7598	In drive calibration mode
D7549	Right rear steer extend short to battery	D7599	In angle calibration mode
D7550	Left rear steer extend short to battery		
D7551	Steer pressure short to battery	H1121	Boost Sensor out of range high
D7552	Back-up alarm error ON	H1122	Boost Sensor out of range low
D7553	Left forward drive solenoid error OFF	H1221	Right Primary out of range high
D7554	Left reverse drive solenoid error OFF	H1222	Right Primary out of range low
D7555	Right forward drive solenoid error OFF	H1224	Right Primary not in neutral
D7556	Right reverse drive solenoid error OFF	H1321	Left Primary out of range high
D7557	Right front steer extend short to ground	H1322	Left Primary out of range low
D7558	Right front steer retract short to ground	H1324	Left Primary not in neutral
D7559	Left front steer extend short to ground	H2005	Boost solenoid short to battery
D7560	Left front steer retract short to ground	H2006	Boost solenoid short to ground
D7561	Right rear steer extend short to ground	H2007	Boost solenoid open circuit
D7562	Right rear steer retract short to ground	H2032	Boost solenoid overcurrent
D7563	Left rear steer extend short to ground	H2205	Pressure control solenoid short to battery

**DIAGNOSTIC SERVICE CODES (CONT'D)****Service Codes List (Cont'd)**

<b>CODE</b>	<b>DESCRIPTION</b>	<b>CODE</b>	<b>DESCRIPTION</b>
H2206	Pressure control solenoid short to ground	H7328	Remote control no signal
H2207	Pressure control solenoid open circuit	H7404	Main controller no communication
H2232	Pressure control solenoid overcurrent	H7604	Left hand panel no communication
H2305	Rear base solenoid short to battery		
H2306	Rear base solenoid short to ground	L0102	Left panel button 1 error ON
H2307	Rear base solenoid open circuit	L0202	Left panel button 2 error ON
H2332	Rear base solenoid overcurrent	L0302	Left panel button 3 error ON
H2405	Rear rod solenoid short to battery	L0402	Left panel button 4 error ON
H2406	Rear rod solenoid short to ground	L7404	Left panel main controller no communication
H2407	Rear rod solenoid open circuit	L7672	Left panel programming error
H2432	Rear rod solenoid overcurrent		
H2505	Rear aux relief short to battery	M0116	Air filter not connected
H2506	Rear aux relief short to ground	M0117	Air filter plugged
H2507	Rear aux relief open circuit	M0216	Hydraulic/Hydrostatic filter not connected
H2605	Front base solenoid short to battery	M0217	Hydraulic/Hydrostatic filter plugged
H2606	Front base solenoid short to ground	M0309	Battery voltage low
H2607	Front base solenoid open circuit	M0310	Battery voltage high
H2632	Front base solenoid overcurrent	M0311	Battery voltage extremely high
H2705	Front rod solenoid short to battery	M0314	Battery voltage extremely low
H2706	Front rod solenoid short to ground	M0322	Battery voltage out of range low
H2707	Front rod solenoid open circuit	M0409	Engine oil pressure low
H2732	Front rod solenoid overcurrent	M0414	Engine oil pressure extremely low
H2805	Diverter rod solenoid short to battery	M0415	Engine oil pressure shutdown
H2806	Diverter rod solenoid short to ground	M0421	Engine oil pressure out of range high
H2807	Diverter rod solenoid open circuit	M0422	Engine oil pressure out of range low
H2905	High-flow solenoid short to battery	M0509	Hydraulic charge pressure low
H2906	High-flow solenoid short to ground	M0510	Hydraulic charge pressure high
H2907	High-flow solenoid open circuit	M0511	Hydraulic charge pressure extremely high
H2932	High-flow solenoid overcurrent	M0514	Hydraulic charge pressure extremely low
H3028	Controller memory failure	M0515	Hydraulic charge pressure shutdown
H3128	Interrupted power failure	M0521	Hydraulic charge pressure out of range high
H3648	ACD multiple	M0522	Hydraulic charge pressure out of range low
H3913	Left joystick grip no communication	M0610	Engine speed high
H3916	Left joystick not connected	M0611	Engine speed extremely high
H3928	Left joystick failure	M0613	Engine speed no signal
H3948	Left joystick multiple	M0615	Engine speed shutdown
H4013	Right joystick grip no communication	M0618	Engine speed out of range
H4016	Right joystick not connected	M0634	Engine speed invalid data from ECU
H4028	Right joystick failure	M0710	Hydraulic oil temperature high
H4048	Right joystick multiple	M0711	Hydraulic oil temperature extremely high
H4302	Horn error ON	M0715	Hydraulic oil temperature shutdown
H4303	Horn error OFF	M0721	Hydraulic oil temperature out of range high
H4423	Auxiliary not programmed	M0722	Hydraulic oil temperature out of range low
H4502	Right signal error ON	M0810	Engine coolant temperature high
H4503	Right signal error OFF	M0811	Engine coolant temperature extremely high
H4602	Left signal error ON	M0815	Engine coolant temperature shutdown
H4603	Left signal error OFF	M0821	Engine coolant temperature out of range high
H4721	Sensor supply 1 out of range high	M0822	Engine coolant temperature out of range low
H4722	Sensor supply 1 out of range low	M0909	Fuel level low
H7314	Remote control failure	M0921	Fuel level out of range high



## DIAGNOSTIC SERVICE CODES (CONT'D)

### Service Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
M0922	Fuel level out of range low	M2821	Throttle secondary out of range high
M1016	Hydraulic charge filter not connected	M2822	Throttle secondary out of range low
M1017	Hydraulic charge filter plugged	M3128	Interrupted power failure
M1121	Seat bar sensor out of range high	M3204	Workgroup no communication
M1122	Seat bar sensor out of range low	M3304	Deluxe panel no communication
M1128	Seat bar sensor failure	M3404	Deluxe panel no communication
M1305	Fuel hold solenoid short to battery	M3505	Hydraulic fan short to battery
M1306	Fuel hold solenoid short to ground	M3506	Hydraulic fan short to ground
M1307	Fuel hold solenoid open circuit	M3507	Hydraulic fan open circuit
M1402	Fuel pull output error ON	M3532	Hydraulic fan overcurrent
M1403	Fuel pull output error OFF	M3705	Two-speed secondary short to battery
M1407	Fuel pull output open circuit	M3706	Two-speed secondary short to ground
M1428	Fuel pull output failure	M3707	Two-speed secondary open circuit
M1502	Traction lock pull output error ON	M3732	Two-speed secondary overcurrent
M1503	Traction lock pull output error OFF	M3805	Auxiliary hydraulic lock short to battery
M1507	Traction lock pull output open circuit	M3806	Auxiliary hydraulic lock short to ground
M1528	Traction lock pull output failure	M3807	Auxiliary hydraulic lock open circuit
M1605	Traction lock hold solenoid short to battery	M3832	Auxiliary hydraulic lock overcurrent
M1606	Traction lock hold solenoid short to ground	M4109	Alternator low
M1607	Traction lock hold solenoid open circuit	M4110	Alternator high
M1705	Hydraulic lock valve solenoid short to battery	M4304	Keyless panel no communication
M1706	Hydraulic lock valve solenoid short to ground	M4404	Auxiliary no communication
M1707	Hydraulic lock valve solenoid open circuit	M4521	Water in fuel sensor out of range high
M1732	Hydraulic lock valve solenoid overcurrent	M4522	Water in fuel sensor out of range low
M1805	Lift spool lock short to battery	M4530	Water in fuel sensor fault
M1806	Lift spool lock short to ground	M4621	5 volt sensor supply out of range high
M1807	Lift spool lock open circuit	M4622	5 volt sensor supply out of range low
M1832	Lift spool lock overcurrent	M4721	8 volt sensor supply out of range high
M2005	Two-speed primary short to battery	M4722	8 volt sensor supply out of range low
M2006	Two-speed primary short to ground	M4802	Front light relay error ON
M2007	Two-speed primary open circuit	M4803	Front light relay error OFF
M2032	Two-speed primary overcurrent	M4807	Front light relay open circuit
M2102	Glow plug output error ON	M4902	Rear light relay error ON
M2103	Glow plug output error OFF	M4903	Rear light relay error OFF
M2107	Glow plug output open circuit	M4907	Rear light relay open circuit
M2128	Glow plug output failure	M5002	Front light output error ON
M2202	Starter output error ON	M5003	Front light output error OFF
M2203	Starter output error OFF	M5007	Front light output open circuit
M2207	Starter output open circuit	M5028	Front light output failure
M2228	Starter output failure	M5102	Rear light output error ON
M2302	Starter relay error ON	M5103	Rear light output error OFF
M2303	Starter relay error OFF	M5107	Rear light output open circuit
M2402	Fuel pull relay error ON	M5128	Rear light output failure
M2403	Fuel pull relay error OFF	M5202	PTOL switch error ON
M2502	Traction pull relay error ON	M5221	PTOL switch out of range high
M2503	Traction pull relay error OFF	M5222	PTOL switch out of range low
M2602	Glow plug relay error ON	M5305	PTOL LED short to battery
M2603	Glow plug relay error OFF	M5306	PTOL LED short to ground
M2721	Throttle primary out of range high	M5405	Tilt spool lock short to battery
M2722	Throttle primary out of range low	M5406	Tilt spool lock short to ground

## DIAGNOSTIC SERVICE CODES (CONT'D)

### Service Codes List (Cont'd)

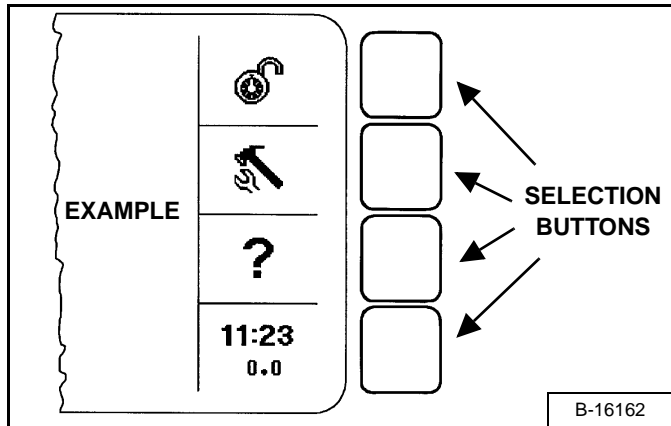
CODE	DESCRIPTION	CODE	DESCRIPTION
M5407	Tilt spool lock open circuit	M8615	Engine speed derate shutdown
M5432	Tilt spool lock overcurrent	M8625	Engine speed derate unresponsive
M5902	DPF force regeneration switch error ON	M8715	Torque derate shutdown
M5948	DPF switch multiple	M8725	Torque derate unresponsive
M6002	DPF inhibit regeneration switch error ON		
M6402	Switched power relay error ON	W3223	ACS calibration required
M6403	Switched power relay error OFF	W3224	ACS calibration performed
M6505	EEC power short to battery	W3225	ACS calibration failed
M6506	EEC power short to ground	W3231	Tilt actuator fault
M6507	EEC power open circuit	W3232	Tilt actuator wiring fault
M6604	EEC power no communications	W3233	Tilt handle wiring fault
M6702	HVAC output error ON	W3234	Tilt actuator not in neutral
M6703	HVAC output error OFF	W3235	Tilt handle / pedal not in neutral
M6707	HVAC output open circuit	W3236	Lift actuator fault
M6728	HVAC output failure	W3237	Lift actuator wiring fault
M6802	HVAC relay error ON	W3238	Lift handle wiring fault
M6803	HVAC relay error OFF	W3239	Lift actuator not in neutral
M7002	Switched power output error ON	W3240	Lift handle / pedal not in neutral
M7003	Switched power output error OFF	W3241	No communication
M7007	Switched power output open circuit	W3249	Lift actuator short to ground
M7028	Switched power output failure	W3250	Tilt actuator short to ground
M7102	Electric fan 1 output error ON	W3251	Lift actuator short to battery
M7103	Electric fan 1 output error OFF	W3252	Tilt actuator short to battery
M7128	Electric fan 1 output failure	W3253	Lift handle / pedal short to ground
M7202	Electric fan 1 relay error ON	W3254	Tilt handle / pedal short to ground
M7203	Electric fan 1 relay error OFF	W3255	Lift handle / pedal short to battery
M7207	Electric fan 1 relay open circuit	W3256	Tilt handle / pedal short to battery
M7304	Remote control no communication	W3257	Lift actuator reduced performance
M7316	Remote control not connected	W3258	Tilt actuator reduced performance
M7423	Main controller not programmed	W3259	Lift actuator wrong direction
M7472	Main controller in boot code	W3260	Tilt actuator wrong direction
M7497	Main controller software updated	W3261	Handle lock short to ground
M7504	Drive no communication	W3262	Handle lock short to battery
M7604	Left display panel no communication	W3263	Pedal lock short to ground
M7748	Key switch multiple	W3264	Pedal lock short to battery
M7839	Hourmeter changed	W3265	Sensor supply voltage out of range
M7974	Door open	W3266	Battery voltage out of range
M8541	DPF automatic regeneration active	W3267	Handle/pedal switch flipped while operating
M8542	DPF automatic regeneration active	W3268	Lift handle information error
M8543	DPF regeneration required	W3270	Right hand drive short to ground
M8550	DPF service regeneration required	W3271	Right hand drive short to battery
M8551	DPF regeneration required but inhibited	W3274	Left joystick X-axis out of range
M8552	DPF regeneration required but inhibited	W3275	Interrupted unswitched power
M8553	DPF service regeneration required	W3276	CAN joystick information error
M8554	DPF service regeneration required	W3277	Remote control information error
M8560	DPF service regeneration active	W3297	Controller programmed
M8561	DPF service regeneration active	W3905	Left joystick X-axis not in neutral
M8562	DPF service regeneration active	W4005	Right joystick X-axis not in neutral
M8563	DPF service regeneration active	W4007	Right joystick Y-axis not in neutral
M8564	DPF service regeneration active		

## CONTROL PANEL SETUP

### Right Panel Setup (Deluxe Instrumentation Panel)

#### Icon Identification

Figure 257

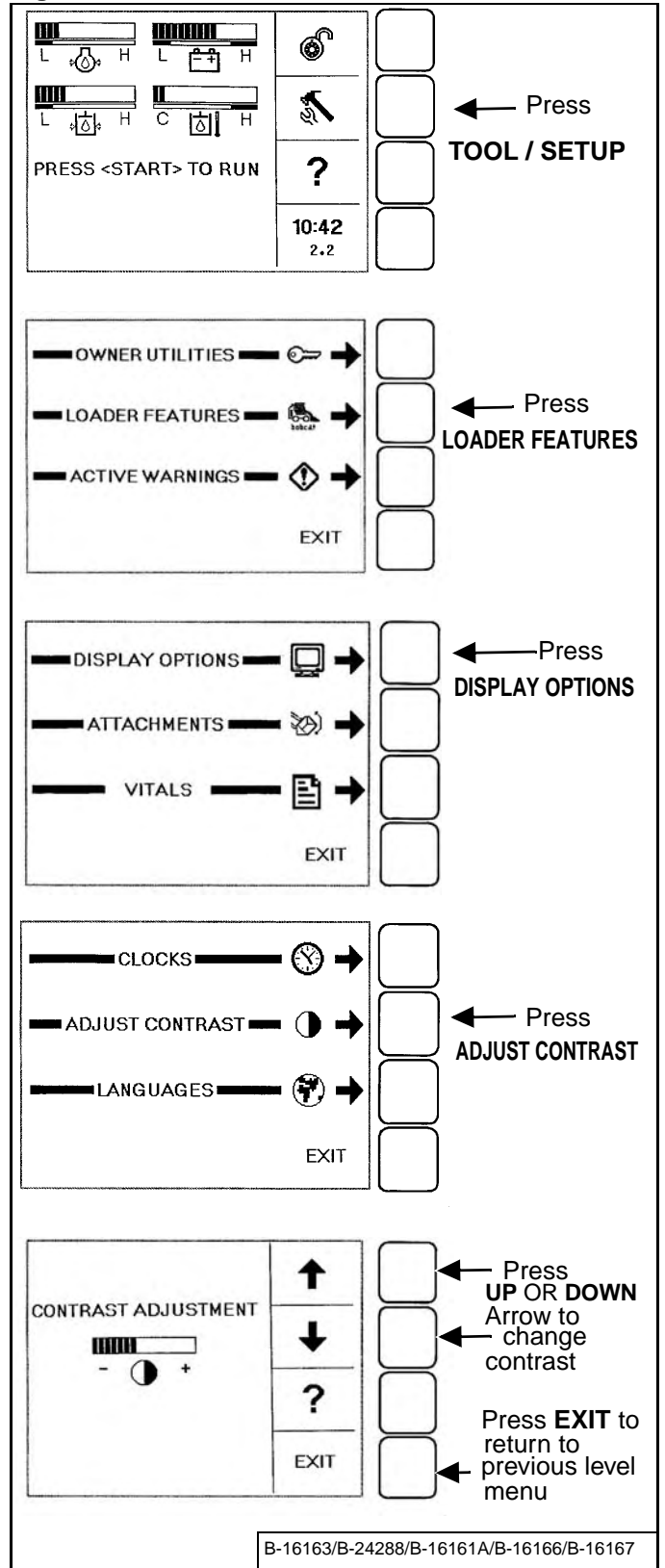


Make selection by pressing the SELECTION BUTTON adjacent to the icon [Figure 257].

ICON	DESCRIPTION
	<b>LOCK / UNLOCK:</b> Allows machine to be locked / unlocked. You must lock machine to activate security system.
	When system is unlocked, the user can press RUN / ENTER then press START to begin operation. A valid password will need to be entered at startup to run a locked machine.
	<b>TOOL / SETUP:</b> Access system options. Use to set clock, check system warnings, select language, set passwords, etc.
	<b>HELP:</b> Access help on current menu item.
<b>EXIT</b>	<b>EXIT</b> returns you to previous level menu.
11:23 0.0	<b>CLOCK / JOB CLOCK:</b> Press to clear or lock job clock; TOOL / SETUP to set time.
	<b>UP ARROW:</b> Goes backward one screen.
	<b>DOWN ARROW:</b> Goes forward one screen.
	<b>OUTLINE ARROWS:</b> No screen available (backward / forward).
	<b>SELECTION ARROW:</b> Use to select menu item.
<b>NEXT</b>	Goes to the NEXT screen in series. EXAMPLE: the next Active Warning screen.
<b>INFO</b>	Goes to more information about attachments.
<b>YES / NO</b>	Answer yes / no to current setup question.
<b>CLEAR</b>	Removes previously installed password.
<b>SET</b>	Set accepts current installed password.

## Examples

Figure 258



## CONTROL PANEL SETUP (CONT'D)

### Right Panel Setup (Deluxe Instrumentation Panel) (Cont'd)

More Examples

#### Clocks

Press . . .

**TOOL / SETUP**  
**LOADER FEATURES**  
**DISPLAY OPTIONS**  
**CLOCKS**

#### SET CLOCK

Use the keypad to set time.

Press **RUN / ENTER** to set clock.

Press **EXIT** to return to previous level menu.

#### RESET JOB CLOCK (Password required)

(Job Clock keeps a running total for job hours)

Press **CLEAR** to reset Job Clock to zero.

Press **LOCK / UNLOCK** to unlock.

Enter Password and press **RUN / ENTER**.

#### Languages

Press . . .

**TOOL / SETUP**  
**LOADER FEATURES**  
**DISPLAY OPTIONS**

#### LANGUAGES

Select the language, press **RUN / ENTER**.

Press **EXIT** to return to previous level menu.

**Vitals** (Monitor the engine, hydraulic / hydrostatic, electrical functions when engine is running.)

Press . . .

**TOOL / SETUP**  
**LOADER FEATURES.**

#### VITALS

Press **SELECTION ARROW** to select METRIC or ENGLISH (M / E) readouts

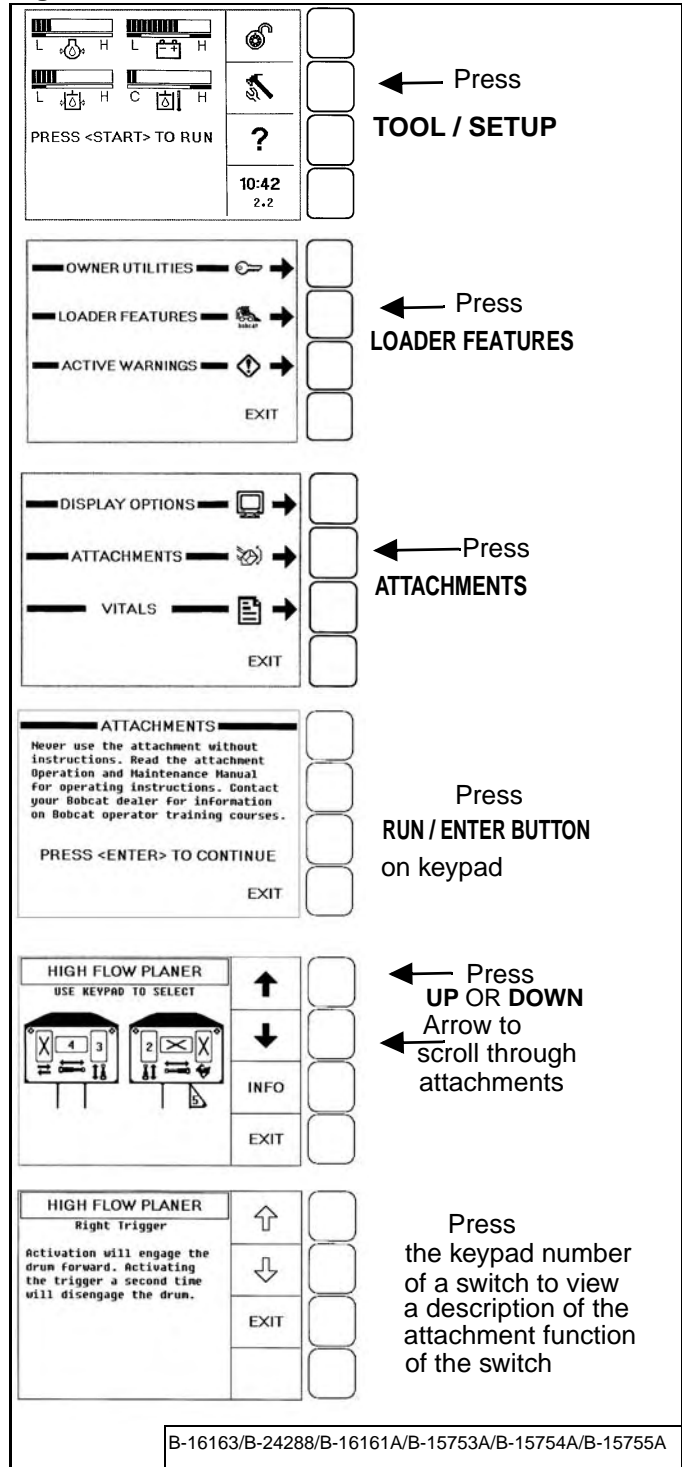
You can monitor real-time readouts of:

- Engine Oil Pressure**
- Engine Coolant Temperature**
- Hydraulic Charge Pressure**
- Hydraulic Oil Temperature**
- System Voltage**
- Engine Speed**

## Attachment Control Information (Deluxe Instrumentation Panel)

The Deluxe Instrumentation Panel allows the user to view information concerning the operation of Bobcat attachments.

Figure 259



The Deluxe Instrumentation Panel is easy to use. Continue to set your own preferences for running / monitoring your Bobcat loader.

Attachments are listed alphabetically [Figure 259]. Press the exit button to return one screen or press the "0" (zero) key to return to the home screen immediately.

## PASSWORD SETUP (KEYLESS START PANEL)

### Password Description

#### Master Password:

A permanent, randomly selected password set at the factory which cannot be changed. This password is used for service by the Bobcat dealer if the owner password is not known; or to change the owner password.

#### Owner Password:

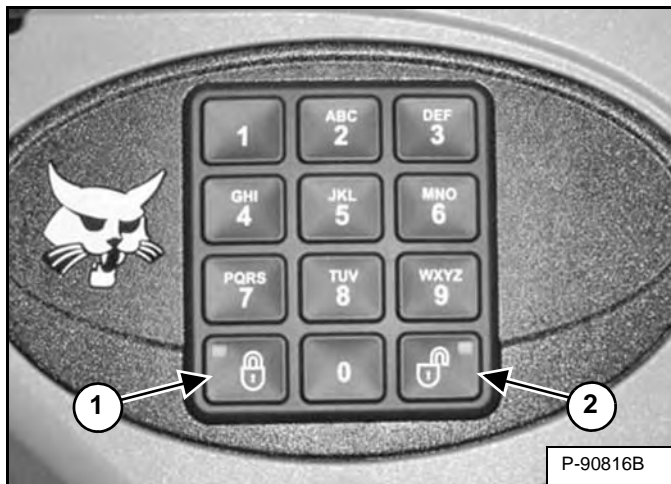
Allows for full use of the loader. It must be used to change the owner password.

### Changing The Owner Password

Press the RUN button to turn on the loader electrical system.

Enter the five digit owner password using the number keys (1 through 0) if locked.

Figure 260



Press and hold the lock (Item 1) and unlock (Item 2) [Figure 260] keys for two seconds.

The lock key red light will flash and the left panel display screen will show [ENTER].

Enter a new five digit password using the number keys (1 through 0). An asterisk will show in the left panel display screen for each key press.

The left panel display screen will show [AGAIN].

Enter the new five digit password again.

The lock key red light will become solid.

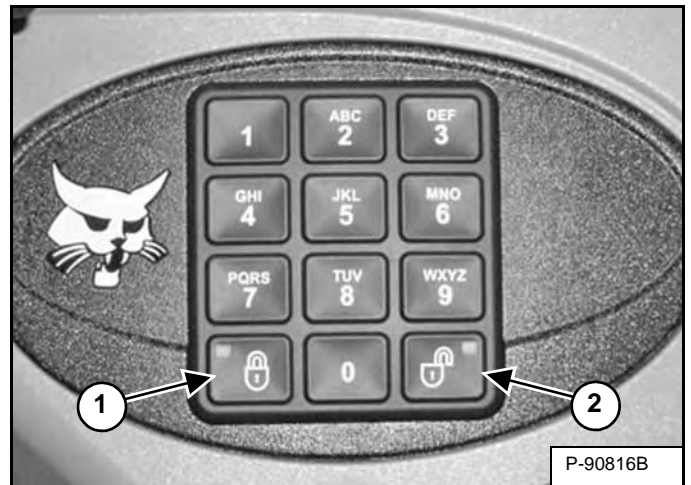
### Password Lockout Feature

This feature allows the owner to unlock the password feature so that a password does not need to be used every time the engine is started.

Press the RUN button to turn on the loader electrical system.

Enter the five digit owner password using the number keys (1 through 0).

Figure 261



Press the unlock key (Item 2) [Figure 261].

The left panel display screen will show [CODE].

Enter the five digit owner password using the number keys (1 through 0). The unlock key green light will flash, then become solid.

The loader can now be started without using a password.

**NOTE: Use the following procedure to reset the machine lock so that the loader requires a password to start the engine.**

Press the RUN button to turn on the loader electrical system.

Press the lock key (Item 1) [Figure 261].

The lock key red light will flash and the left panel display screen will show [CODE].

Enter the five digit owner password using the number keys (1 through 0). The unlock key green light will flash, then the lock key red light will become solid.

You must now enter the password every time to start the loader.

## PASSWORD SETUP (DELUXE INSTRUMENTATION PANEL)

Password Setup is available on machines with a Deluxe Instrumentation Panel.

### Password Description

All new machines with a Deluxe Instrumentation Panel arrive at Bobcat dealerships with the keypad in locked mode. This means that a password must be used to start the engine.

For security purposes, your dealer may change the password and also set it in the locked mode. Your dealer will provide you with the password.

#### Master Password:

A permanent, randomly selected password set at the factory which cannot be changed. This password is used for service by the Bobcat dealer if the owner password is not known; or to change the owner password.

#### Owner Password:

Allows for full use of the loader and to setup the Deluxe Instrumentation Panel. There is only one owner password. It must be used to change the owner or user passwords. Owner should change the password as soon as possible for security of the loader.

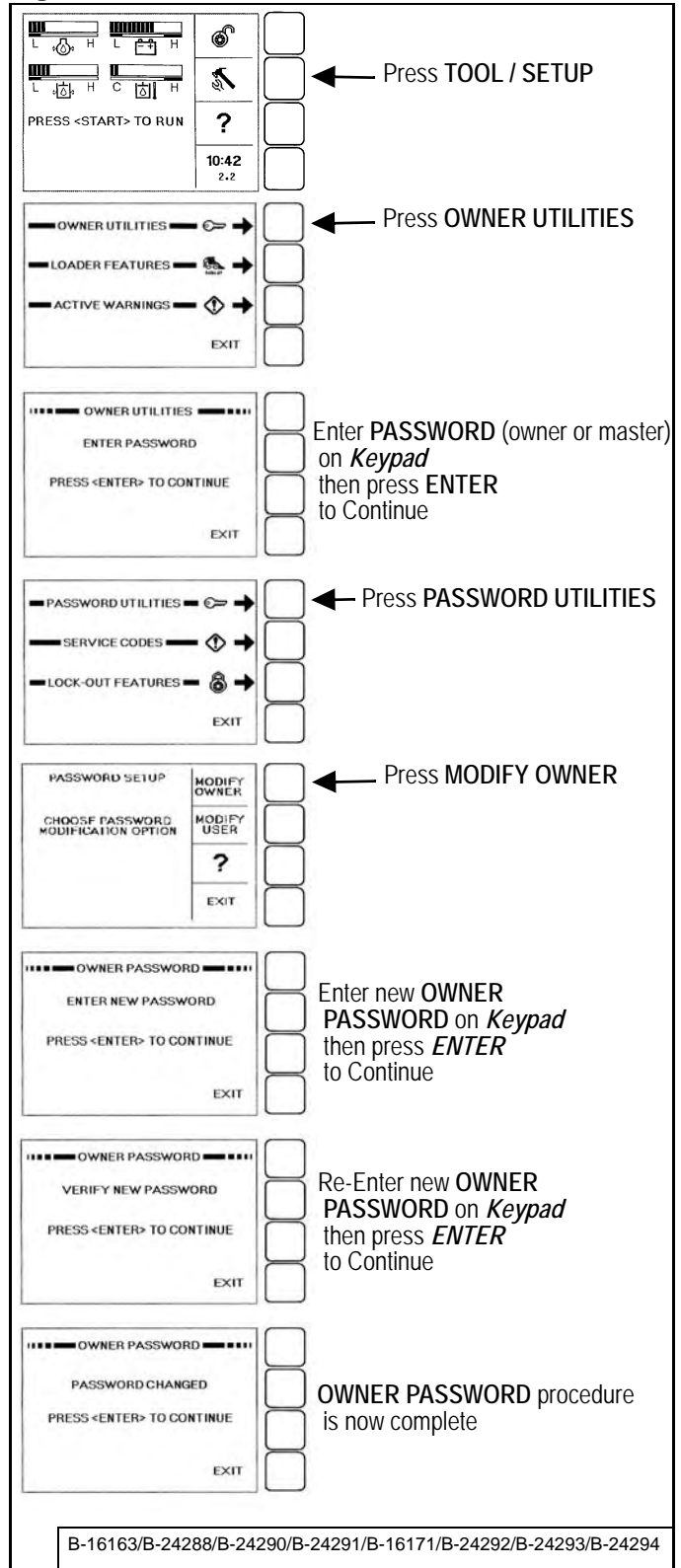
#### User Password:

Allows starting and operating the loader; cannot change password or any of the other setup features.

For the procedures to change passwords (See Changing The Owner Password on Page 160.) (See Changing The User Passwords on Page 161.)

## Changing The Owner Password

Figure 262



# PASSWORD SETUP (DELUXE INSTRUMENTATION PANEL) (CONT'D)

## Changing The User Passwords

Figure 263

Press TOOL / SETUP

Press OWNER UTILITIES

Enter PASSWORD (owner or master) on *Keypad* then press ENTER to Continue

Press PASSWORD UTILITIES

Press MODIFY USER

Enter USER number on *Keypad* (There can be up to 8 different Users, each with their own password) then press *ENTER* to Continue

Enter USER PASSWORD on *Keypad* then press *ENTER* to Continue

USER PASSWORD procedure is now complete. Enter another USER number

OR

Press EXIT

B-16163/B-24288/B-24290/B-24291/B-16171/B-24295/B-24296/B-24297A

## Password Lockout Feature

This feature allows the owner to unlock the password feature so that a password does not need to be used every time the engine is started.

Figure 264

Press LOCK / UNLOCK

Enter OWNER PASSWORD on *Keypad* then press ENTER to Continue

Press UNLOCK MACHINE

Press EXIT

Machine is now UNLOCKED and can be started without using a password

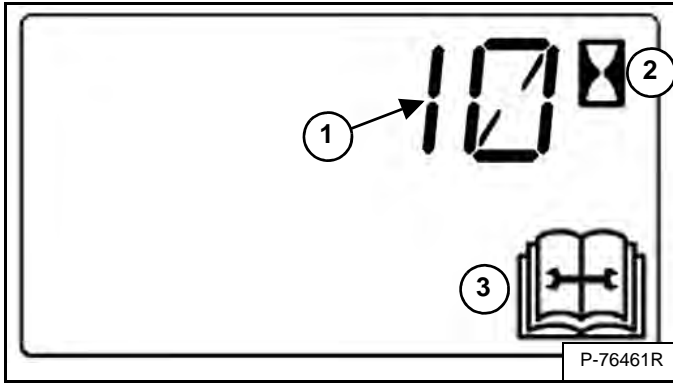
B-16163/P-76075/P-76076/P-76076A/P-76077

## MAINTENANCE CLOCK

### Description

The Maintenance Clock alerts the operator when the next service interval is due. *EXAMPLE:* The Maintenance Clock can be set to a 250 hour interval as a reminder for the next 250 hour planned maintenance.

**Figure 265**



During machine operation, a two beep alarm will sound when there are less than 10 hours until the next planned maintenance.

The remaining hours before maintenance is required will appear in the data display (Item 1) for five seconds while the service icon (Item 3) and hourmeter icon (Item 2) [Figure 265] flash.

**NOTE: The display will show negative numbers after counting down to zero.**

The display will then revert back to the previous display and will appear for five seconds every time the machine is started until the maintenance clock is reset.

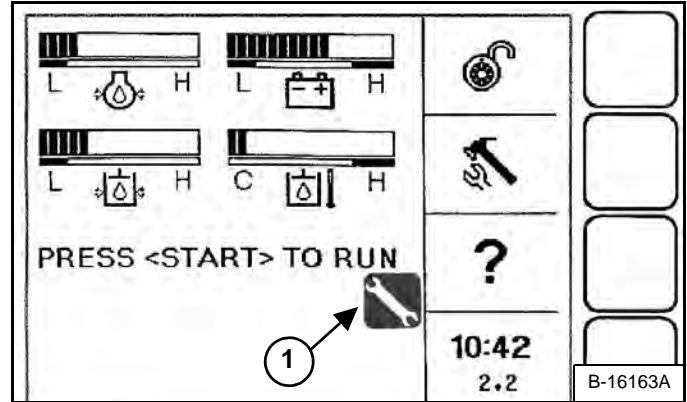
**Figure 266**



The Deluxe Instrumentation Panel, if equipped, will display a message (Item 1) [Figure 266] alerting the operator to service the machine.

This message will remain for 10 seconds before reverting back to the previous screen and will appear for 10 seconds every time the machine is started until the maintenance clock is reset.

**Figure 267**



The Deluxe Instrumentation Panel, if equipped, will display a wrench icon (Item 1) [Figure 267] alerting the operator to service the machine. This icon will remain on the display until the maintenance clock is reset.

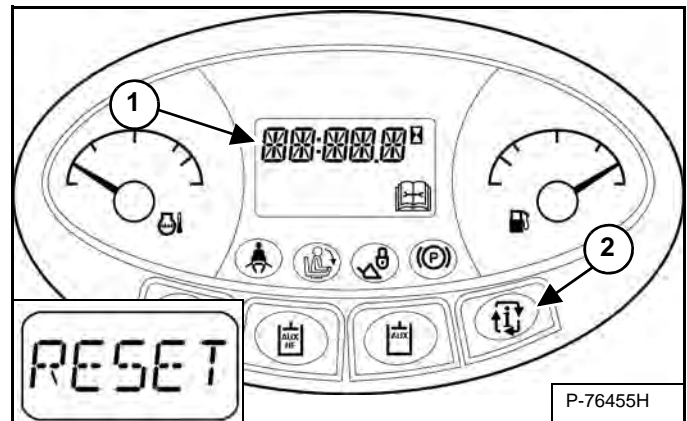
**NOTE: Loaders equipped with a Standard Key Panel or Keyless Start Panel will not display the BobCARE<sup>SM</sup> PM message or wrench icon on the right panel.**

### Setup

See your Bobcat dealer about installation of this feature.

### Reset

**Figure 268**



Press the information button (Item 2) until the display screen (Item 1) [Figure 268] shows the maintenance clock.

Press and hold the information button (Item 2) for seven seconds until [RESET] (Inset) appears in the display screen (Item 1) [Figure 268].



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**Bobcat®**

## SERVICE CHECKLIST AND SCHEDULE

**EVERY 10 HRS (BEFORE STARTING THE LOADER)**

- ▲ **ENGINE OIL & FILTER** - Check level and add as needed. Do not overfill. Change oil and filter after first 50 Hrs, then refer to Operation & Maintenance Manual for proper change interval for your Model.
- **ENGINE AIR FILTER** - Check condition indicator and/ or display. Service only when required. Do not use compressed air to clean elements.
- **ENGINE AIR SYSTEM** - Check for leaks and damaged components.
- **ENGINE COOLING SYSTEM** - Clean debris from grill, oil cooler and radiator. Check coolant level cold; add coolant mixture if required.
- **FUEL FILTER** - Remove trapped water.
- **LOADER LIFT ARMS, LIFT LINKS, CYLINDERS, BOB-TACH PIVOT & WEDGES, STEERING CYLINDERS (AWS Machines Only)** - Lubricate with multipurpose lithium based grease.
- **SEAT BELT, SEAT BAR AND CONTROL INTERLOCKS** - Check function. Repair or replace as needed. Clean dirt and debris from moving parts.
- **BICS** - Check for correct function. Clean dirt and debris from moving parts. Lift and Tilt functions MUST NOT operate with seat bar raised.
- **TIRES** - Check air pressure. Inflate to MAXIMUM pressure shown on sidewall of tire.
- **GENERAL** - Check for loose or broken parts, damaged operator cab, instrument operation, loose wheel nuts or track sprocket nuts, oil leaks, damaged or missing safety signs (decals).

**EVERY 50 HRS**

- **HYDRAULIC FLUID, HOSES AND TUBELINES** - Check fluid level and add if required. Check for damage and for leaks. Repair or replace as needed.
- **FINAL DRIVE TRANSMISSION (CHAINCASE, Wheel Machines Only)** - Check fluid level and add if required.
- **HYDRAULIC & STEERING CONTROLS (PEDALS, HAND, and/or JOYSTICK)** - Check for correct operation. Adjust as needed.
- **WHEEL NUTS / TRACK DRIVE SPROCKETS** - Check for loose nuts and tighten as needed.
- **TRACK TENSION (Track Machines Only)** - Check tension and adjust as needed.

**EVERY 100 HRS**

- **SPARK ARRESTOR MUFFLER** - Empty spark chamber. (If equipped.)
- **BATTERY** - Check battery for damage, hold down clamps, cables, connections and electrolyte level. Add distilled water as needed.
- **DRIVE LINE** - Lubricate Engine-to-Pump Coupler with multipurpose lithium based grease. (If equipped.)

**EVERY 250 HRS**

- **STEERING LEVER PIVOTS** - Lubricate with multipurpose lithium based grease. (If equipped.)
- **FUEL FILTER** - Replace filter.
- ▲ **KING PINS (AWS Machines Only)** - Lubricate with multipurpose lithium based grease.
- ▲ **ENGINE / HYDRAULIC DRIVE BELT** - Check for wear or damage. Adjust or replace as needed. (If equipped.)
- **FAN DRIVE GEARBOX** - Check fluid level and add if required. (If equipped.)
- **OTHER DRIVE BELTS (Hydrostatic pump, water pump, alternator, and air conditioner - if equipped.)** - Check condition and tension. Adjust or replace as needed.
- **BICS** - Check function of Lift Arm By-Pass control.

**EVERY 500 HRS**

- **FAN / HYDRAULIC / HYDROSTATIC SYSTEM** - Replace filter. Replace reservoir breather cap.
- **STEERING VALVE INLINE FILTER (AWS Only)** - Replace filter.
- **HYDROSTATIC MOTOR CARRIER (Track Machines Only)** - Replace oil.

**EVERY 1000 HRS**

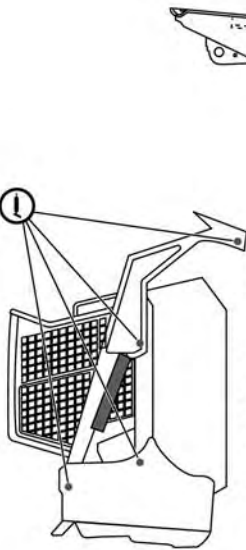
- **HYDRAULIC RESERVOIR** - Replace fluid.
- **FINAL DRIVE TRANSMISSION (Chaincase on Wheel Machines Only)** - Replace fluid.
- **TRACK ROLLER, IDLER ASSEMBLIES (Track Machines Only)** - Replace fluid (if required).
- ▲ **DRIVE MOTOR CASE DRAIN FILTER** - Replace filter (if equipped.)
- **WHEEL BEARING & OUTER SPLINES (AWS only)** - Repack wheel bearings, grease internal splines in hub yoke. (Dealer Service Only)

**NOTES:**

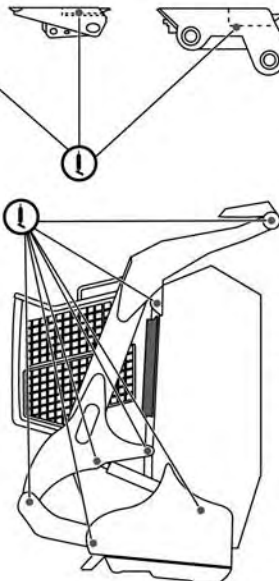
- \* Replace element sooner if transmission warning indicator remains on for more than 5 minutes after hydraulic fluid is at operating temperature.
- ▲ Service at first 50 Hours, then as scheduled.
- See Operation & Maintenance Manual for correct fluid specifications, filter part number and location, and appropriate service interval for your Model.

**SEE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION AND INSTRUCTIONS.**

## GENERAL LUBRICATION DIAGRAMS




**RADIUS PATH MACHINE**



**VERTICAL PATH MACHINE**

● **TYPICAL GREASE POINTS**



**Use Genuine Bobcat Replacement Parts**

## WARNING

### AVOID INJURY OR DEATH

- Keep door 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 loader 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. 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 loader engine last (never at the battery). After jump start, remove negative connection at the engine first.
- Exhaust gases can kill. Always ventilate.

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S185 Operation & Maintenance Manual

**ADVERTENCIA**

- EVITE LESIONES O LA MUERTE**
- Mantenga la puerta cerrada, excepto para efectuar el servicio.
  - Mantenga el motor libre de materiales inflamables.
  - Mantenga el cuerpo, los objetos sueltos y la ropa alejados de los contactos eléctricos, las piezas en movimiento, las piezas calientes y los escapes.
  - No utilice la cargadora en espacios que contengan polvo, gases explosivos o material inflamable cerca del escape.
  - Nunca utilice éter o líquido de arranque en un motor con bujías incandescentes. Utilice solo los aditivos para el arranque aprobados por el fabricante del motor.
  - Las fugas de líquido bajo presión pueden penetrar la piel y provocar lesiones graves.
  - El ácido de la batería produce quemaduras graves; usa anteojos protectores. Si el ácido entra en contacto con los ojos, la piel o la ropa, enjuague con agua. En caso de entrar en contacto con los ojos, enjuaguelos y solicite atención médica de inmediato.
  - La batería genera gas inflamable y explosivo. Mantenga alejados los arcos, las chispas, las llamas y el tabaco encendido.
  - Para realizar un puente de arranque, conecte en último lugar el cable negativo al motor de la cargadora (nunca a la batería). Después del puente de arranque, retire en primer lugar la conexión negativa del motor.
  - Los gases del escape pueden ser letales. Ventíle siempre.

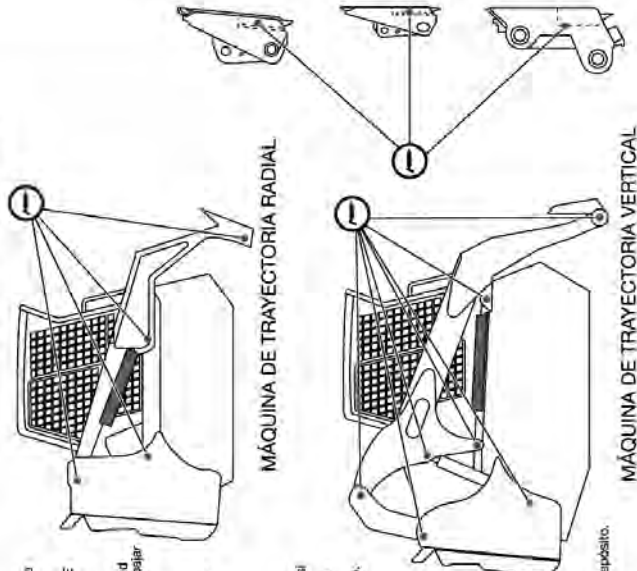
**LISTA DE CONTROL Y PROGRAMA DEL SERVICIO DE MANTENIMIENTO**

- CADA 10 HORAS (ANTES DE ENCENDER EL CARGADOR)**
- **ACEITE Y FILTRO DEL MOTOR:** controle el nivel de aceite y agregue más cantidad si es necesario. No sobrecargue. Cambie el aceite y el filtro luego de las primeras 50 horas. Luego, consulte el Manual de funcionamiento y mantenimiento para ver la frecuencia de mantenimiento apropiada para el modelo de su máquina.
  - **FILTRO DE AIRE DEL MOTOR:** revise el indicador de estado y/o la pantalla. Repare solo cuando sea necesario. No utilice el motor si el filtro de aire está sucio.
  - **SISTEMA DE AIRE DEL MOTOR:** verifique si hay partículas o componentes dañados.
  - **SISTEMA DE ENFRIAMIENTO DEL MOTOR:** limpie y elimine la suciedad que haya en la pantalla, en el refrigerante de aceite y en el radiador. Verifique el nivel de fluido de refrigerante y agregue la cantidad necesaria.
  - **FILTRO DEL COMBUSTIBLE:** retire el agua que queda acumulada.
  - **BOMBAS DE INYECCIÓN, CONECTORES DE ELECCIÓN, CLAVES, PIVOTES, PIVOTE Y CUÑAS BOB-TACH, Y CILINDROS DE BOMBAS DE INYECCIÓN:** revise el nivel de aceite y agregue más cantidad si es necesario.
  - **CONTROL DE SEGURIDAD, APOYABRAZOS Y SEGUROS DE CONTROL:** verifique si funcionan correctamente. Repare o reemplace según sea necesario. Limpie la suciedad y los desechos de las piezas en movimiento.
  - **SISTEMA DE ENCLAVAMIENTO DE CONTROLES BOBCAT (BICS):** verifique si funciona correctamente. Limpie la suciedad y los desechos de las piezas en movimiento. Cuando se utilicen las funciones de elevación e inclinación, NO SE DEBE trabajar con la barra del asiento elevada.
  - **NEUMÁTICOS:** verifique la presión del aire. Infile los neumáticos a la presión MÁXIMA, como se muestra en el lateral del neumático.
  - **GENERAL:** verifique que no haya partes sueltas o rotas, que la cabina del operador no se encuentre dañada, el funcionamiento de los instrumentos y que las tuercas de las ruedas o las tuercas del engranaje de tracción no estén flojas. Controle también las fugas de aceite y la señalización de seguridad dañada o faltante (etiquetas).
- CADA 50 HORAS**
- **FLUIDO HIDRÁULICO, MANGUERAS Y TUBOS:** controle el nivel de fluido y agregue según sea necesario.
  - **TRANSMISIÓN FINAL:** revise el nivel de aceite y agregue más cantidad si es necesario.
  - **CONTROLES DE DIRECCIÓN HIDRÁULICA (PEDALES, CONTROLES MANUALES Y/O PALANCA DE MANDO):** verifique si funcionan correctamente. Ajuste según sea necesario.
  - **TUERCAS DE RUEDAS Y ENGRANAJES DE TRANSMISIÓN DE LA TRACCIÓN:** verifique que las tuercas no estén sueltas y ajustelas según sea necesario.
  - **CAJAS DE ENGRANAJES DE LA BANDA DE TRACCIÓN (solo en máquinas de tracción):** verifique la tensión y ajústela según sea necesario.
  - **CAJAS DE ENGRANAJES DE LA BANDA DE TRACCIÓN (solo en máquinas de tracción):** verifique la tensión y ajústela según sea necesario.
  - **SILENCIADOR PARACHISPAS:** revise la cámara de chispas (si corresponde).
  - **BATERÍA:** verifique la batería por daños, gaseos de sujetadores, cables, conexiones y nivel de electrolitos. Agregue agua destilada según sea necesario.
  - **LÍNEA DE TRANSMISIÓN:** lubrique con engrasador multiuso a base de litio (si corresponde).
  - **CADA 250 HORAS:**
    - **PIVOTES DE LA PALANCA DE DIRECCIÓN:** lubrique con engrasador multiuso a base de litio (si corresponde).
    - **PIVOTES DE LA PALANCA DE DIRECCIÓN (solo en máquinas con sistema AMS):** lubrique con engrasador multiuso a base de litio.
    - **PIVOTES DE DIRECCIÓN (solo en máquinas con sistema AMS):** lubrique con engrasador multiuso a base de litio.
    - **MOTOR / CORREA IMPULSORA HIDRÁULICA:** controle que no estén gaseados o dañados.
    - **MOTOR / CORREA IMPULSORA HIDRÁULICA:** controle que no estén gaseados o dañados.
    - **Ajuste o reemplace según sea necesario (si corresponde).**
  - **CAJA DE ENGRANAJES DEL VENTILADOR:** controle el nivel de fluido y agregue según sea necesario (si corresponde).
  - **OTROS CINTURONES DE SEGURIDAD (Bomba hidráulica, bomba de agua, alternador y aire acondicionado, etc.):** asegure que la conexión y la tensión, ajuste o reemplace según sea necesario.
  - **SISTEMA DE ENCLAVAMIENTO DE CONTROLES BOBCAT (BICS):** verifique el funcionamiento del control de elevación del brazo de elevación.
- CADA 500 HORAS**
- **VENTILADOR / SISTEMA HIDRÁULICO / HIDROSTÁTICO:** reemplace el filtro. Reemplace la cubierta del respirador del depósito.
  - **FILTRO DE ENTRADA DE LA VALVULA DE DIRECCIÓN (solo en máquinas con sistema AMS):** reemplace el filtro.
  - **PORTADOR DEL MOTOR HIDROSTÁTICO (solo en máquinas de tracción):** reemplace el aceite.
- CADA 1000 HORAS**
- **TRANSMISIÓN FINAL:** reemplace el fluido.
  - **TRANSMISIÓN FINAL (solo en máquinas de tracción):** reemplace el fluido.
  - **RODILLO DE TRACCIÓN, CONJUNTO DE RODILLOS AUXILIARES (solo en máquinas de tracción):** reemplace el fluido (si corresponde).
  - **FILTRO DE DRENAJE DE LA CAJA DEL MOTOR DE TRANSMISIÓN:** reemplace el filtro (si corresponde).
  - **COJINETES DE LAS RUEDAS Y RANURAS EXTERIORES (solo en máquinas con sistema AMS):** vuelva a untar grasa en los cojinetes de las ruedas y lubrique las ranuras externas en la horquilla del cubo. (Solo servicio de mantenimiento del distribuidor)

**NOTAS:**

- Reemplace el elemento cuanto antes si el indicador de advertencia de la transmisión permanece encendido durante más de 5 minutos luego de que el fluido hidráulico haya alcanzado la temperatura de funcionamiento.
  - Realice un servicio de mantenimiento después de las primeras 50 horas y luego, según el programa.
  - Consulte el Manual de funcionamiento y mantenimiento acerca de las especificaciones de fluidos, los números de piezas de filtro y las ubicaciones, así como la frecuencia apropiada para realizar el mantenimiento a su modelo de máquina.
- CONSULTE EL MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO PARA OBTENER MÁS INFORMACIÓN E INSTRUCCIONES.**

**DIAGRAMAS GENERALES DE LUBRICACIÓN**



Utilice piezas originales Bobcat de repuesto

**AVERTISSEMENT**

**RISQUE DE BLESSURE OU DE MORT**

- Gardez la porte fermée sauf pour des opérations d'entretien.
- Débarrassez le moteur de tout matériau inflammable.
- Maintenez le corps, les objets mobiles et les vêtements à l'écart des contacts électriques, des pièces mobiles, des pièces brûlantes et de l'échappement.
- N'utilisez pas la chargeuse dans des lieux contenant des poussières ou des gaz explosifs ou avec des matériaux inflammables à proximité de l'échappement.
- N'utilisez jamais d'éther ou de liquide d'aide au démarrage sur les moteurs diesel équipés de bougies de préchauffage.
- Utilisez uniquement des aides au démarrage approuvées par le fabricant du moteur.
- En cas de fuite, le liquide sous pression peut pénétrer dans la peau et provoquer des blessures graves.
- Portez des lunettes de protection car l'acide contenu dans une batterie provoque des brûlures graves. En cas de contact d'acide sur les yeux, le peau ou les vêtements, rincez abondamment à l'eau. En cas de contact sur les yeux, rincez abondamment et consultez immédiatement un médecin.
- La batterie génère des gaz inflammables et explosifs. Maintenez-la à l'écart des arcs, des étincelles, des flammes et des cigarettes allumées.
- En cas de démarrage forcé, connectez le câble négatif au moteur de la chargeuse en dernier (jamais à la batterie). Après un démarrage forcé, retirez en premier la connexion négative au moteur.
- Les gaz d'échappement peuvent être mortels. Veillez à toujours aérer la zone.

**LISTE DE CONTRÔLE ET PÉRIODICITÉ DES ENTRETIENS**

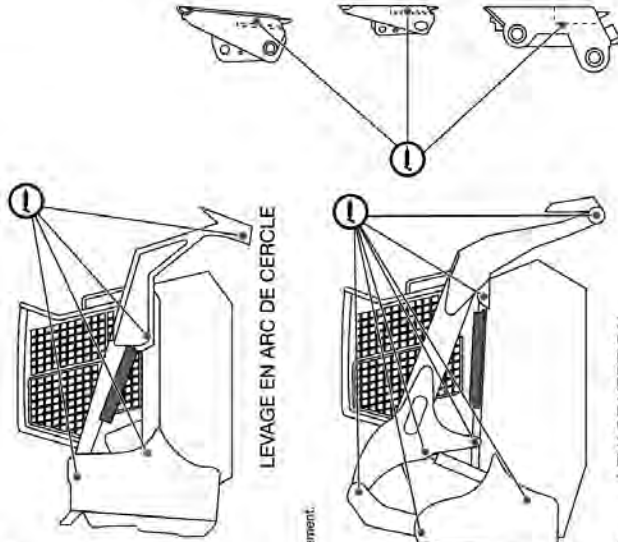
- **TOUTES LES 10 H (AVANT DE DEMARRER LA CHARGEUSE)**
  - **HUILE ET FILTRE MOTEUR** - Vérifiez le niveau et faites l'appoint si nécessaire. Ne déposez pas le niveau indiqué. Changez l'huile et le filtre après les 50 premières heures, puis consultez le manuel d'utilisation et d'entretien pour connaître la périodicité de changement d'huile pour votre modèle.
  - **FILTRES À AIR DU MOTEUR** - Vérifiez l'indicateur d'état et/ou l'affichage. N'effectuez que l'entretien nécessaire. N'utilisez pas d'air comprimé pour nettoyer les éléments.
  - **CIRCUIT DE VENTILATION DU MOTEUR** - Vérifiez l'étanchéité et l'état des éléments.
  - **CIRCUIT DE REPRODUCTION DU MOTEUR** - Ôtez les débris de la grille, du refroidisseur d'huile et du radiateur.
  - **VEUILLEZ VÉRIFIER LE NIVEAU DE LIQUIDE DE REPRODUCTION À FROID**; faites l'appoint au besoin.
  - **BRAS DE LEVAGE DE LA CHARGEUSE (APPLICATIONS DE LEVAGE, VÉRINS, PIVOT ET CALES DU BOB-TACH, VÉRINS)** - Vérifiez le serrage des écrous, des boulons et des vis à base de lithium.
  - **CEINTURE DE SÉCURITÉ ARCEAU DE SIÈGE ET VERRILLAGE DES COMMANDES** - Vérifiez la bon fonctionnement. Réajustez ou remplacez-les au besoin. Éliminez toute trace de saleté ou tout débris des pièces mobiles.
  - **BICS** - Vérifiez son bon fonctionnement. Éliminez les saletés et les débris des pièces mobiles. Les fonctions de levage et de cageage NE DOIVENT PAS fonctionner lorsque l'anneau de siège est relevé.
  - **PNEUS** - Vérifiez la pression. Gonflez à la pression MAXIMALE indiquée sur la paroi du pneu.
  - **GÉNÉRAL** - Contrôlez toute pièce desserrée ou endommagée, le bon état de la cabine de l'opérateur, le fonctionnement des instruments, le serrage des écrous de roues ou des écrous de galets de chenilles, les fuites d'huile, les autocollants abîmés ou manquants.
- **TOUTES LES 30 H**
  - **HUILE HYDRAULIQUE, FLEXIBLES ET CONDUITES** - Vérifiez le niveau d'huile et faites l'appoint, le cas échéant. Vérifiez la présence de dégât ou de fuite. Effectuez les réparations ou les remplacements requis.
  - **TRANSMISSION FINALE (CARTER DE CHAÎNE, machines sur roues uniquement)** - Vérifiez le niveau du fluide et faites l'appoint si nécessaire.
  - **COMMANDES HYDRAULIQUES ET DE DIRECTION (PÉDALES, POIGNÉE et/ou MANIPULATEUR)** - Vérifiez leur bon fonctionnement.
  - **ÉCROUS DE ROUES / BARBOTINS D'ENTRAÎNEMENT FINAL** - Vérifiez le serrage des écrous, resserrés-les si nécessaire.
  - **TENSION DES CHENILLES (machines à chenilles uniquement)** - Vérifiez la tension et effectuez les réglages nécessaires.
  - **SILENCIEUX PARE-ÉTINCELLES** - Vidaz la chambre à étincelles (le cas échéant).
  - **BATTERIE** - Vérifiez l'état de la batterie, des brides de fixations, des câbles, des connexions et le niveau d'électrolyte. Ajoutez de l'eau distillée si nécessaire.
  - **CHAÎNE CINÉMATIQUE** - Graissez la rallonge moteur/pompe avec de la graisse multi-usages à base de lithium (le cas échéant).
- **TOUTES LES 250 H**
  - **PIVOTS DES LEVIER DE DIRECTION** - Graissez avec de la graisse multi-usages à base de lithium (le cas échéant).
  - **FILTRE D'ALIMENTATION** - Remplacez le filtre.
  - **AXES DE FUSEES (machines à roues directrices uniquement)** - Graissez avec de la graisse multi-usages à base de lithium.
  - **COURROIE D'ENTRAÎNEMENT MOTEUR / HYDRAULIQUE** - Vérifiez que la courroie n'est ni usée ni déformée.
  - **ÉLECTRIQUE** - Vérifiez les réglages et les remplissages requis (le cas échéant).
  - **FILTRES À AIR** - Vérifiez le niveau d'huile et faites l'appoint si nécessaire (le cas échéant).
  - **AUTRES COURROIES D'ENTRAÎNEMENT** - Vérifiez l'état et la tension. Effectuez les réglages ou les remplissages requis (le cas échéant).
  - **BICS** - Vérifiez le bon fonctionnement de la commande de débrayage des bras de levage.
- **TOUTES LES 500 H**
  - **VENTILATEUR / CIRCUIT HYDROSTATIQUE / HYDRAULIQUE** - Remplacez le filtre.
  - **FILTRE INTÉGRÉ DU CLAPET DE DIRECTION (modèles à roues directrices uniquement)** - Remplacez le filtre.
  - **PORTE-MOTEUR HYDROSTATIQUE (machines sur chenilles uniquement)** - Remplacez l'huile.
  - **RÉSERVOIR HYDRAULIQUE** - Remplacez le fluide.
  - **TRANSMISSION FINALE (carter de chaînes, machines sur roues uniquement)** - Remplacez l'huile.
  - **ENSEMBLES GALETS DE CHENILLE/ROUE DE TENSION (machines sur chenilles uniquement)** - Remplacez le fluide (si nécessaire).
  - **FILTRE DE RETOUR DE CARTER DU MOTEUR D'ENTRAÎNEMENT** - Remplacez le filtre (le cas échéant).
  - **ROULEMENT DE ROUES ET CANNELURES MALES (modèles à roues directrices uniquement)** - Graissez à plein les roulements de roues. Graissez les cannelures, les nœuds de la fourche (entretien par le concessionnaire uniquement).

**REMARQUES :**

- remplacez l'élément plus tôt si le témoin d'avertissement de la transmission reste allumé pendant plus de 5 minutes une fois que l'huile hydraulique a atteint la température de fonctionnement.
- Effectuez l'entretien après 50 heures, puis selon le tableau.
- Consultez le manuel d'utilisation et d'entretien pour les spécifications sur les huiles, le numéro de pièce et l'emplacement du filtre, et la périodicité d'entretien appropriée pour votre modèle.

**CONSULTEZ LE MANUEL D'UTILISATION ET D'ENTRETIEN POUR DES INSTRUCTIONS ET DES INFORMATIONS SUPPLÉMENTAIRES.**

**SCHEMAS GÉNÉRAUX DE GRAISSAGE**



**POINTS DE GRAISSAGE TYPIQUES**



Utilisez des pièces de rechange Bobcat d'origine

73094 SW

6734534E PCA  
REVISION 01/2010

## MACHINE SIGN TRANSLATIONS (CONT'D)


### Danger (6702301)

	<b>⚠ DANGER</b>
	<p><b>AVOID DEATH</b></p> <ul style="list-style-type: none"> <li>Attachment can be forced against the ground and cause front wheels to raise.</li> <li>Never go under or reach under lift arms or lift cylinder without an approved lift arm support device installed.</li> </ul> <p>67116 SW 6702301D enUS</p>


	<b>⚠ PELIGRO</b>
	<p><b>EVITE ACCIDENTES FATALES</b></p> <ul style="list-style-type: none"> <li>El implemento puede ser forzado contra el suelo y causar la elevación de los neumáticos delanteros.</li> <li>Jamás pase ni se estire por debajo de los brazos de elevación o del cilindro de elevación sin un dispositivo de soporte aprobado instalado.</li> </ul> <p>67116 SW 6702301D enUS</p>

	<b>⚠ DANGER</b>
	<p><b>EVITER LA MORT</b></p> <ul style="list-style-type: none"> <li>L'accessoire peut être appuyé contre le sol et soulever les roues avant.</li> <li>Ne jamais aller sous ni mettre les mains sous les bras ou le verin de levage sans qu'un arrêt de bras de levage approuvé soit installé.</li> </ul> <p>67116 SW 6702301D enUS</p>

### Danger (6702302)

	<b>⚠ DANGER</b>
	<p><b>AVOID DEATH</b></p> <ul style="list-style-type: none"> <li>Keep out of this area when lift arms are raised unless supported by an approved lift arm support device.</li> <li>Moving lift arm control or failure of a part can cause lift arms to drop.</li> </ul> <p>62554 SW 6702302F enUS</p>

	<b>⚠ PELIGRO</b>
	<p><b>EVITE MUERTES</b></p> <ul style="list-style-type: none"> <li>Manténgase alejado del área cuando los brazos de elevación estén elevados, a menos que cuenten con un dispositivo de sostén aprobado.</li> <li>Si se mueve el control de los brazos de elevación o si falla alguna de las piezas, es posible que éstos se caigan.</li> </ul> <p>62554 SW 6702302F enUS</p>

	<b>⚠ DANGER</b>
	<p><b>RISQUE MORTEL</b></p> <ul style="list-style-type: none"> <li>Restez à l'écart de cette zone lorsque les bras de levage sont relevés sauf s'ils sont soutenus par un arrêté approuvé.</li> <li>Le déplacement d'une commande de bras de levage ou la défaillance d'une pièce peut provoquer la chute des bras de levage.</li> </ul> <p>62554 SW 6702302F enCA</p>

### Warning (6577754)

<b>⚠ WARNING</b>
<p>CYLINDER CONTAINS HIGH PRESSURE GAS. DO NOT OPEN. OPENING CYLINDER CAN RELEASE ROD AND CAUSE INJURY OR DEATH. 6577754</p>

<b>⚠ ADVERTENCIA</b>
<p>EL CILINDRO CONTIENE GAS DE ALTA PRESIÓN. NO LO ABRA. SI SE ABRE EL CILINDRO, SE PUEDE LIBERAR EL VASTAGO Y SE PUEDEN OCASIONAR LESIONES O LA MUERTE. 29779 SW 6577754 AR</p>

<b>⚠ AVERTISSEMENT</b>
<p>LES VERINS RENFERMENT UN GAZ SOUS PRESSION. N'OUVREZ JAMAIS UN VERIN, SOUS PEINE DE VOIR S'ÉCHAPPER BRUTALEMENT LA TIGE, CAUSANT AINSI DES BLESSURES GRAVES, VOIRE MORTELLES. DV-99-6577754-FR</p>

### Danger (6717343)

	<b>⚠ DANGER</b>
	<p><b>AVOID DEATH</b></p> <ul style="list-style-type: none"> <li>Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause lift arms to drop.</li> <li>Keep out of this area when lift arms are raised unless supported by an approved lift arm support. Replace if damaged.</li> </ul> <p>67116 SW 6717343A enUS</p>

	<b>⚠ PELIGRO</b>
	<p><b>EVITE MUERTES</b></p> <ul style="list-style-type: none"> <li>Si se desconecta o afloja algún tubo, manguera, accesorio o componente hidráulico, o si falla alguna de las piezas, es posible que los brazos de elevación se caigan.</li> <li>Manténgase alejado del área cuando los brazos de elevación estén elevados, a menos que cuenten con un dispositivo de sostén aprobado. Si se encuentran dañados, cámbielos.</li> </ul> <p>67116 SW 6717343A enAR</p>

	<b>⚠ DANGER</b>
	<p><b>RISQUE MORTEL</b></p> <ul style="list-style-type: none"> <li>Le débranchement ou le desserrage de conduites, raccords, tuyaux ou composants hydrauliques ou une pièce hydraulique défectueuse peuvent entraîner une chute des bras de levage.</li> <li>Restez éloigné de la zone où les bras de levage sont relevés, sauf s'ils sont maintenus par un arrêté de bras de levage approuvé. Remplacez-le en cas de dommages.</li> </ul> <p>67116 SW 6717343A enCA</p>



**MACHINE SIGN TRANSLATIONS (CONT'D)**

**Important (6560573)**

**IMPORTANT**

THIS MACHINE IS FACTORY EQUIPPED WITH A U.S.D.A. FORESTRY SERVICE APPROVED SPARK ARRESTOR EXHAUST SYSTEM.

THE SPARK ARRESTOR MUFFLER, IF EQUIPPED, MUST BE CLEANED TO KEEP IT IN WORKING CONDITION. THE SPARK ARRESTOR MUFFLER MUST BE SERVICED BY DUMPING THE SPARK CHAMBER EVERY 100 HRS OF OPERATION.

ON SOME MODELS, THE TURBOCHARGER FUNCTIONS AS THE SPARK ARRESTOR AND MUST OPERATE CORRECTLY FOR PROPER SPARK ARRESTOR FUNCTION.

[ IF THIS MACHINE IS OPERATED ON FLAMMABLE FOREST, BRUSH, OR GRASS COVERED LAND, IT MUST BE EQUIPPED WITH A SPARK ARRESTOR ATTACHED TO THE EXHAUST SYSTEM AND MAINTAINED IN WORKING ORDER. FAILURE TO DO SO WILL BE IN VIOLATION OF CALIFORNIA STATE LAW, SECTION 4442. PRC. REFER TO LOCAL LAWS AND REGULATIONS FOR SPARK ARRESTOR REQUIREMENTS. ]

SEE THE OPERATION AND MAINTENANCE MANUAL FOR MORE INSTRUCTIONS.

62554 SW      6560573G enUS

**IMPORTANT**

CETTE MACHINE EST ÉQUIPÉE EN USINE D'UN SYSTÈME D'ÉCHAPPEMENT PARE-ÉTINCELLES APPROUVÉ PAR LE SERVICE AMÉRICAIN DES EAUX ET FORÊTS (U.S.D.A. FORESTRY SERVICE).

LE CAS ÉCHÉANT, LE SILENCIEUX PARE-ÉTINCELLES DOIT ÊTRE ENTRETENU POUR ASSURER SON BON FONCTIONNEMENT. CET ENTRETIEN CONSISTE À REMPLACER LA CHAMBRE À ÉTINCELLES TOUTES LES 100 HEURES D'EXPLOITATION.

SUR CERTAINS MODÈLES, LA FONCTION DE PARE-ÉTINCELLES EST ASSURÉE PAR LE TURBOCOMPRESSEUR QUI DOIT FONCTIONNER CORRECTEMENT POUR REMPLIR SA FONCTION.

[ SI VOUS UTILISEZ LA MACHINE EN FORÊT, SUR TERRAIN HERBEUX OU DANS DES TAILLIS, VOUS DEVEZ ÉQUIPER LE SYSTÈME D'ÉCHAPPEMENT D'UN PARE-ÉTINCELLES ET LE GARDER EN BON ÉTAT DE FONCTIONNEMENT. LE NON RESPECT DE CETTE OBLIGATION CONTREVIENT À LA LOI DE L'ÉTAT DE CALIFORNIE, SECTION 4442 PRC. VEUILLEZ VOUS RÉFÉRER AUX LOIS ET RÉGLEMENTS LOCAUX POUR CONNAÎTRE LES EXIGENCES EN MATIÈRE DE PARE-ÉTINCELLES. ]

VEUILLEZ CONSULTER LE MANUEL DE L'OPÉRATEUR ET D'ENTRETIEN POUR DES INSTRUCTIONS COMPLÉMENTAIRES.

62554 SW      6560573G enUS

**IMPORTANTE**

ESTA MÁQUINA ESTÁ EQUIPADA DE FÁBRICA CON UN SILENCIADOR DEL SISTEMA PARACHISPAS APROBADO POR EL SERVICIO DE SILVICULTURA DE LA U.S.D.A.

EL SILENCIADOR DEL SISTEMA PARACHISPAS, SI ESTÁ EQUIPADO, DEBE LIMPIARSE PARA MANTENERSE EN CONDICIONES DE TRABAJO. ASÍ MISMO, SE LE DEBE DAR SERVICIO VACIANDO LA CÁMARA DE CHISPAS CADA 100 HORAS DE OPERACIÓN.


EN ALGUNOS MODELOS, EL TURBOCARGADOR FUNCIONA COMO EL PARACHISPAS Y DEBE OPERAR CORRECTAMENTE COMO TAL.

[ SI VA A OPERAR ESTA MÁQUINA EN BOSQUES INFLAMABLES O EN TERRENOS CUBIERTOS DE RAMAS O CÉSPED, DEBE DISPONER DE UN SISTEMA PARACHISPAS EN EL SISTEMA DE ESCAPE Y MANTENERLO EN BUENAS CONDICIONES DE TRABAJO. NO CUMPLIR ESTA ADVERTENCIA INFRINGIRÁ LA SECCIÓN 442 DE LA LEY DEL ESTADO DE CALIFORNIA. CONSULTE LAS LEYES Y REGLAMENTOS LOCALES ACERCA DE LOS REQUERIMIENTOS PARA UTILIZAR SISTEMAS PARACHISPAS. ]

PARA MAYORES INSTRUCCIONES, CONSULTE EL MANUAL DE OPERACIÓN Y MANTENIMIENTO.

62554 SW      6560573G enUS

**Warning (7160879)**



**WARNING**

**AVOID BURNS**

- Hot surface. Do not touch.
- Allow to cool before servicing.

71846 SW      7160879 enUS



**ADVERTENCIA**

**EVITE QUEMADURAS**

- Superficie caliente. No tocar.
- Deje que se enfríe antes de realizar el servicio de mantenimiento.

71846 SW      7160879 esAR



**AVERTISSEMENT**

**DANGER DE BRÛLURE**

- Surface chaude. Ne la touchez pas.
- Laissez-la refroidir avant tout entretien.

71846 SW      7160879 frCA

MACHINE SIGN TRANSLATIONS (CONT'D)

Warning (6728539)

<b>⚠ WARNING</b>											
<b>AVOID INJURY OR DEATH</b>											
			<b>TO LEAVE THE LOADER:</b>								
NEVER USE THE LOADER WITHOUT INSTRUCTIONS. READ OPERATION AND MAINTENANCE MANUAL AND HANDBOOK.	USE SEAT BAR. FASTEN SEAT BELT SECURELY.	KEEP FEET ON PEDALS OR FOOT REST.	<table border="1"> <tr> <td style="text-align: center;">1 </td> <td style="text-align: center;">2 </td> </tr> <tr> <td>LOWER THE LIFT ARMS. PUT ATTACHMENT FLAT ON GROUND.</td> <td>STOP THE ENGINE.</td> </tr> <tr> <td style="text-align: center;">3 </td> <td style="text-align: center;">4 </td> </tr> <tr> <td>ENGAGE THE BRAKE.</td> <td>RAISE SEAT BAR. MOVE PEDALS AND HAND CONTROLS UNTIL BOTH LOCK.</td> </tr> </table>	1	2	LOWER THE LIFT ARMS. PUT ATTACHMENT FLAT ON GROUND.	STOP THE ENGINE.	3	4	ENGAGE THE BRAKE.	RAISE SEAT BAR. MOVE PEDALS AND HAND CONTROLS UNTIL BOTH LOCK.
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LOWER THE LIFT ARMS. PUT ATTACHMENT FLAT ON GROUND.	STOP THE ENGINE.										
3	4										
ENGAGE THE BRAKE.	RAISE SEAT BAR. MOVE PEDALS AND HAND CONTROLS UNTIL BOTH LOCK.										
			<p>Weitere Anweisungen finden sie in der Bedienungs- und Instandhaltungsanleitung. Para más instrucciones, vea el Manual de Operación y Mantenimiento. Voir le Manuel de l'opérateur et d'entretien pour d'autres renseignements.</p> <p>67116 SW 6728539C en/US</p>								
DO NOT TRAVEL OR TURN WITH LIFT ARMS UP. LOAD, UNLOAD AND TURN ON FLAT LEVEL GROUND. DO NOT EXCEED RATED OPERATING CAPACITY (SEE SIGN ON LOADER).	NEVER MODIFY EQUIPMENT OR USE ATTACHMENTS NOT APPROVED BY BOBCAT COMPANY.	ON SLOPES, KEEP HEAVY END OF LOADER UPHILL.									

<b>⚠ ADVERTENCIA</b>											
<b>EVITE LESIONES O ACCIDENTES FATALES</b>											
			<b>PARA SALIR DEL CARGADOR:</b>								
JAMÁS USE EL CARGADOR SIN LEER LAS INSTRUCCIONES. LEA EL MANUAL DE OPERACIÓN Y MANTENIMIENTO Y LA GUÍA.	USE LA BARRA DEL ASIENTO. ABRÓCHESE EL CINTURÓN DE SEGURIDAD CON FIRMEZA.	MANTENGA LOS PIES EN LOS PEDALS O APOYAPIES.	<table border="1"> <tr> <td style="text-align: center;">1 </td> <td style="text-align: center;">2 </td> </tr> <tr> <td>BAJE LOS BRAZOS DE ELEVACIÓN. COLOQUE EL IMPLEMENTO EN EL SUELO.</td> <td>PARA DETENGA EL MOTOR</td> </tr> <tr> <td style="text-align: center;">3 </td> <td style="text-align: center;">4 </td> </tr> <tr> <td>COLOQUE EL FRENO</td> <td>LEVANTE LA BARRA DEL ASIENTO. MUEVA LOS PEDALES Y CONTROLES MANUALES HASTA QUE AMBOS SE BLOQUEEN.</td> </tr> </table>	1	2	BAJE LOS BRAZOS DE ELEVACIÓN. COLOQUE EL IMPLEMENTO EN EL SUELO.	PARA DETENGA EL MOTOR	3	4	COLOQUE EL FRENO	LEVANTE LA BARRA DEL ASIENTO. MUEVA LOS PEDALES Y CONTROLES MANUALES HASTA QUE AMBOS SE BLOQUEEN.
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			<p>Weitere Anweisungen finden sie in der Bedienungs- und Instandhaltungsanleitung. Para más instrucciones, vea el Manual de Operación y Mantenimiento. Voir le Manuel de l'opérateur et d'entretien pour d'autres renseignements.</p> <p>67116 SW 6728539C en/US</p>								
NO SE DESPLACE O GIRE CON LOS BRAZOS DE ELEVACIÓN ARRIBA. CARGUE, DESCARGUE Y GIRE SOBRE SUELOS PLANOS NIVELADOS. NO EXCEDA LA CAPACIDAD DE OPERACIÓN NOMINAL (VEA EL AVISO EN EL CARGADOR).	JAMÁS MODIFIQUE EL EQUIPO O USE IMPLEMENTOS NO APROBADOS POR BOBCAT COMPANY.	EN PENDIENTES, MANTENGA EL EXTREMO PESADO DEL CARGADOR CUESTA ARRIBA.									

<b>⚠ ATTENTION</b>											
<b>EVITER LES BLESSURES OU LA MORT</b>											
			<b>POUR QUITTER LA CHARGEUSE:</b>								
NE VOUS SERVEZ JAMAIS DE LA CHARGEUSE SANS INSTRUCTIONS. USEZ LE MANUEL DE L'OPERATEUR ET D'ENTRETIEN AINSI QUE LE GUIDE D'UTILISATION.	UTILISEZ L'ARCEAU DE SECURITE. ATTACHEZ SOIGNEUSEMENT LA CEINTURE DE SECURITE	MAINTENEZ LES PIEDS SUR LES PEDALES	<table border="1"> <tr> <td style="text-align: center;">1 </td> <td style="text-align: center;">2 </td> </tr> <tr> <td>ABASUSSEZ KES BRAS DE LEVAGE POSEZ L'EQUIPEMENT A PLAT SUR LE SOL.</td> <td>ARRÊTEZ LE MOTEUR</td> </tr> <tr> <td style="text-align: center;">3 </td> <td style="text-align: center;">4 </td> </tr> <tr> <td>ACTIVEZ LE FREIN DE STATIONNEMENT</td> <td>RELEVEZ L'ARCEAU DE SIEGE. DEPLACEZ LES PEDALES ET LES COMMANDES MANUELLES JUSQU'À CE QU'ELLES SOIENT TOUTES DEUX VERROUILLÉES.</td> </tr> </table>	1	2	ABASUSSEZ KES BRAS DE LEVAGE POSEZ L'EQUIPEMENT A PLAT SUR LE SOL.	ARRÊTEZ LE MOTEUR	3	4	ACTIVEZ LE FREIN DE STATIONNEMENT	RELEVEZ L'ARCEAU DE SIEGE. DEPLACEZ LES PEDALES ET LES COMMANDES MANUELLES JUSQU'À CE QU'ELLES SOIENT TOUTES DEUX VERROUILLÉES.
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			<p>Weitere Anweisungen finden sie in der Bedienungs- und Instandhaltungsanleitung. Para más instrucciones, vea el Manual de Operación y Mantenimiento. Voir le Manuel de l'opérateur et d'entretien pour d'autres renseignements.</p> <p>67116 SW 6728539C en/US</p>								
NE PAS SE DÉPLACER NI VIRER AVEC LES BRAS RELEVÉS. CHARGEZ DÉCHARGEZ ET VIREZ SUR UN SOL PLAT EL HORIZONTAL. NE DÉPASSEZ PAS LE CAPACITÉ OPERATIONNELLE (CONSULTER L'AUTOCOLLANT APPOSÉ SUR LA CHARGEUSE)	NE JAMAIS MODIFIER L'EQUIPEMENT NI SE SERVIR D'ACCESSOIRES QUE NE SONT PAS APROUVÉS PAR BOBCAT COMPANY.	DANS LES PENTES, MAINTENEZ TOUJOURS LA PARTIE LA PLUS LOURDE DE LA CHARGEUSE VERS LE HAUT.									



MACHINE SIGN TRANSLATIONS (CONT'D)

Warning (6718706)

**WARNING**



Unexpected loader, lift arm or attachment movement caused by cab contact with steering levers can cause serious injury or death.

BEFORE RAISING OR LOWERING CAB:

- Stop engine

70485 SW 6718706B enUS

**ADVERTENCIA**



El movimiento inesperado del cargador, brazo de elevación o implemento causado por el contacto de la cabina con las palancas de direccionamiento puede causar lesiones serias o accidentes fatales.

ANTES DE LEVANTAR O BAJAR LA CABINA:

- Apague el motor

70485 SW 6718706B esAR

**AVERTISSEMENT**



Un mouvement intempestif de la chargeuse, du bras de levage ou de l'accessoire dû au contact de la cabine avec les leviers de direction peut entraîner des blessures graves, voire mortelles.

AVANT DE RELEVER OU D'ABAISSE LA CABINE :

- Arrêtez le moteur

70485 SW 6718706B frCA

Warning (6710358)

**WARNING**



AVOID INJURY OR DEATH

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

62702 SW 6710358B enUS

**ADVERTENCIA**



EVITE LESIONES O LA MUERTE

- Nunca lleve ocupantes.
- Nunca utilice la cargadora para levantar personas o como plataforma de trabajo.

62702 SW 6710358B esAR

**AVERTISSEMENT**



RISQUE DE BLESSURE OU DE MORT

- Ne transportez jamais de passagers.
- N'utilisez jamais la chargeuse comme élévateur pour le personnel ou comme plateforme de travail.

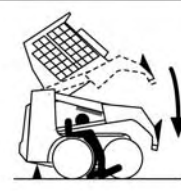
62702 SW 6710358B frCA

Danger (6809511)

**DANGER**

AVOID DEATH

- 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.



70485 SW 6809511C enUS

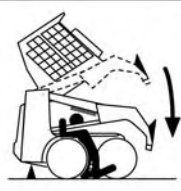
**DANGER**

70485 SW 6809511C enUS

**DANGER**

AVOID DEATH

- 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.



70485 SW 6809511C enUS

**PELIGRO**

EVITE LESIONES FATALES

- Desconectar las líneas hidráulicas puede provocar que los brazos de elevación o el implemento se caigan.
- Utilice siempre un soporte aprobado cuando los brazos de elevación están levantados.



62245 SW 05 6809511 AR

**PELIGRO**

70485 SW 6809511C esAR

**PELIGRO**

EVITE LESIONES FATALES

- Desconectar las líneas hidráulicas puede provocar que los brazos de elevación o el implemento se caigan.
- Utilice siempre un soporte aprobado cuando los brazos de elevación están levantados.



62245 SW 05 6809511 AR

**DANGER**

DANGER DE MORT

- Le débranchement des conduites hydrauliques peut provoquer la chute des bras de levage ou de l'accessoire.
- Utilisez toujours un arrêt de bras de levage approuvé quand les bras de levage sont relevés.



70485 SW 6809511C frCA

**DANGER**

70485 SW 6809511C frCA

**DANGER**

DANGER DE MORT

- Le débranchement des conduites hydrauliques peut provoquer la chute des bras de levage ou de l'accessoire.
- Utilisez toujours un arrêt de bras de levage approuvé quand les bras de levage sont relevés.



70485 SW 6809511C frCA

MACHINE SIGN TRANSLATIONS (CONT'D)

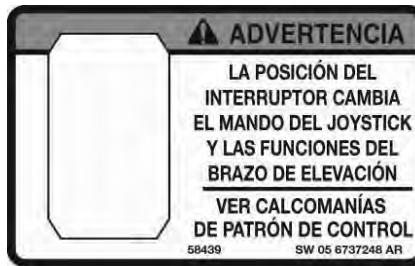
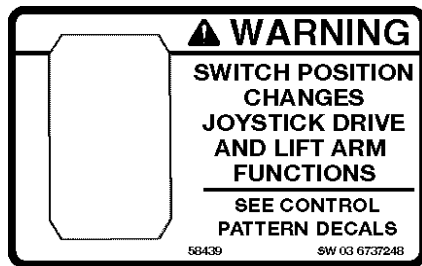
Warning (6725370)



Warning (6737189)



Warning (6737248)



Lift Arm Support Device (6719018)

**TO INSTALL APPROVED LIFT ARM SUPPORT P/N 6718312:**

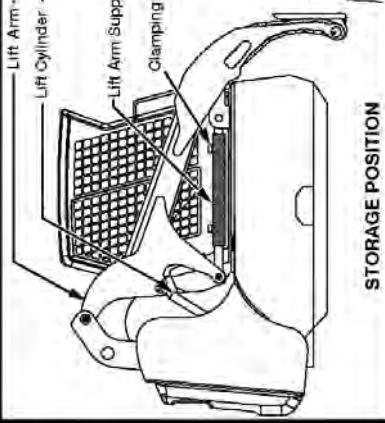
1. Remove Attachment From Loader.
2. Stay in Seat While Second Person Removes Lift Arm Support From Storage Position.
3. Raise Lift Arms While Second Person Positions Lift Arm Support Against Cylinder Rod.
4. Lower Lift Arms Slowly Until Lift Arm Support is Held Securely Between Lift Arm And Cylinder.

57045

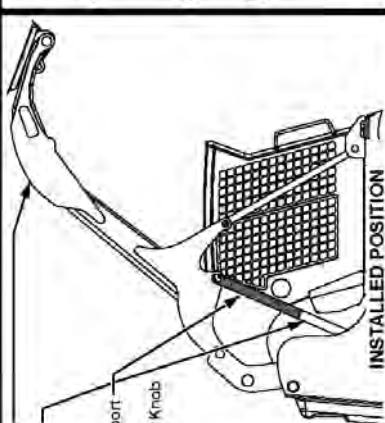
**TO REMOVE LIFT ARM SUPPORT:**

1. Raise Lift Arms While Second Person Removes Lift Arm Support From Cylinder Rod.
2. Stay in Seat Until The Lift Arms Are Lowered All The Way.
3. Return Lift Arm Support To Storage Position And Secure With Clamping Knobs.

SW 02 6719018



STORAGE POSITION



INSTALLED POSITION

**CÓMO INSTALAR EL SOPORTE APROBADO DEL BRAZO DE ELEVACIÓN P/N 6718312:**

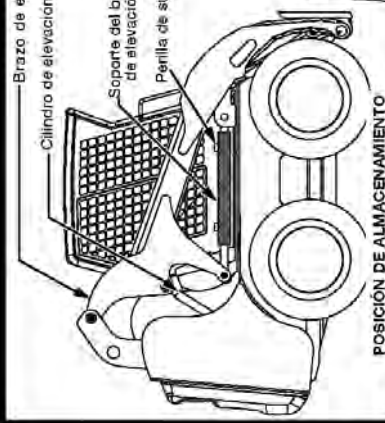
1. Retire el implemento del cargador.
2. Permanezca en el asiento mientras otra persona retira el soporte del brazo de elevación de la posición de almacenamiento.
3. Levante los brazos de elevación mientras otra persona coloque el soporte del brazo de elevación contra el vástago del cilindro.
4. Baje los brazos de elevación lentamente hasta que el soporte se encuentre bien asegurado entre el brazo de elevación y el cilindro.

53751

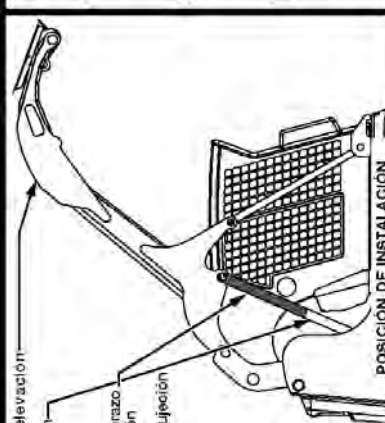
**PARA RETIRAR EL SOPORTE DEL BRAZO DE ELEVACIÓN:**

1. Levante los brazos de elevación mientras otra persona retira el soporte de el vástago del cilindro.
2. Permanezca en el asiento hasta que los brazos de elevación estén completamente abajo.
3. Regrese el soporte del brazo de elevación a la posición de almacenamiento y asegúrelo con las perillas de sujeción.

SW 01 6719018 AR



POSICIÓN DE ALMACENAMIENTO



POSICIÓN DE INSTALACIÓN

**MONTAGE DE L'ARRÊT DE BRAS DE LEVAGE N/P6718312 :**

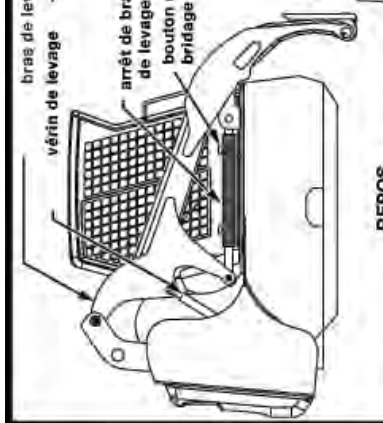
1. Retirer l'arrêt de bras de levage de sa position de repos.
2. Il faut que l'opérateur soit sur le siège.
3. Relevez les bras à bout de course. Demander à un aide de monter l'arrêt de bras de levage sur la tige d'un des vérins de levage.
4. L'arrêt de bras de levage doit être bien appuyé sur la tige du vérin. Abaissez lentement les bras de levage jusqu'à ce que l'arrêt soit coincé entre les bras et le vérin de levage.

57045

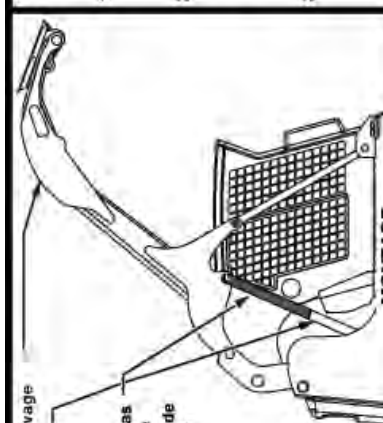
**DEPOSE DE L'ARRÊT DE BRAS DE LEVAGE :**

1. Relevez les bras à bout de course. Demander à un aide de retirer l'arrêt de bras de levage.
2. Il faut que l'opérateur soit sur le siège jusqu'à ce que l'arrêt de bras de levage soit déposé et que les bras de levage soient abaissés à bout de course
3. Remettez l'arrêt de bras de levage dans sa position de repos et le fixer à l'aide de boutons de bridage.

G7-03-6719018-FR



REPOS



MONTAGE

**RIGHT JOYSTICK - ISO**

LOWER LIFT ARMS

BUCKET TILT

BUCKET TILT

JOYSTICK

RAISE LIFT ARMS

**RIGHT JOYSTICK - H**

RIGHT SIDE FORWARD

BUCKET TILT

BUCKET TILT

JOYSTICK

RIGHT SIDE BACKWARD

69848 SW 7131518A enUS

**FLOAT "DETENT"**

- Press yellow float button on right joystick while lowering lift arms.

## WARNING

### AVOID INJURY OR DEATH

<p>NEVER USE THE LOADER WITHOUT INSTRUCTIONS. READ OPERATION AND MAINTENANCE MANUAL AND HANDBOOK.</p>	<p>USE SEAT BAR. FASTEN SEAT BELT SECURELY.</p>	<p>KEEP FEET ON FOOTRESTS.</p>	<p>NEVER MODIFY EQUIPMENT OR USE ATTACHMENTS NOT APPROVED BY BOBCAT COMPANY.</p>
<p>DO NOT TRAVEL OR TURN WITH LIFT ARMS UP, AND TURN ON FLAT LEVEL GROUND. DO NOT EXCEED RATED OPERATING CAPACITY (SEE SIGN ON LOADER).</p>	<p>ON SLOPES, KEEP HEAVY END OF LOADER UPHILL.</p>	<p>LOWER THE LIFT ARMS. PUT ATTACHMENT FLAT ON GROUND.</p>	<p>ENGAGE THE BRAKE</p>
<p>TO LEAVE THE LOADER:</p>			
<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>
<p>STOP THE ENGINE</p> <p>RAISE SEAT BAR</p>			

Weitere Anweisungen finden sie in der Bedienungs- und Wartungsanleitung.  
 Para más instrucciones, vea el Manual de Operación y Mantenimiento.  
 Voir le Manuel de l'opérateur et d'entretien pour d'autres renseignements.

**JOYSTICK DERECHO - ISO**

BAJE LOS BRAZOS DE ELEVACIÓN

INCLINACIÓN DEL CUBIETAJE

JOYSTICK

ELEVE LOS BRAZOS DE ELEVACIÓN

**JOYSTICK DERECHO - H**

LADO DERECHO HACIA DELANTE

INCLINACIÓN DEL CUBIETAJE

JOYSTICK

LADO DERECHO HACIA DETRÁS

69848 SW 7131518A esAR

**BLOQUEO DE LA "FLOTACION"**

- Presione el botón amarillo de flotación del joystick derecho mientras baja los brazos de elevación.

## ADVERTENCIA

### PELIGRO DE LESIONES O DE MUERTE

<p>NO USE NUNCA LA CARGADORA SIN INSTRUCCIONES. LEA EL MANUAL DE UTILIZACIÓN Y MANTENIMIENTO Y EL FROTADOR.</p>	<p>USE LA BARRA DE SEGURIDAD. APROXÍMESE BIEN AL CINTURÓN DE SEGURIDAD.</p>	<p>MANTENGA LOS PIES EN EL RESPUESTE.</p>	<p>NO MODIFIQUE EL EQUIPO NUNCA NI UTILICE ACCESORIOS NO APROBADOS POR BOBCAT COMPANY.</p>
<p>DO NOT TRAVEL OR TURN WITH LIFT ARMS UP, AND TURN ON FLAT LEVEL GROUND. DO NOT EXCEED RATED OPERATING CAPACITY (SEE SIGN ON LOADER).</p>	<p>ON SLOPES, KEEP HEAVY END OF LOADER UPHILL.</p>	<p>LOWER THE LIFT ARMS. PUT ATTACHMENT FLAT ON GROUND.</p>	<p>ENGAGE THE BRAKE</p>
<p>PARA BAJARSE DE LA CARGADORA:</p>			
<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>
<p>PARA BAJARSE DE LA CARGADORA:</p> <p>STOP THE ENGINE</p> <p>RAISE SEAT BAR</p>			

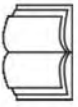


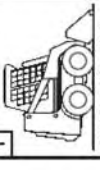

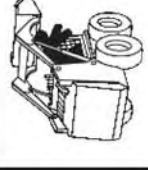
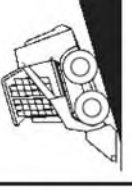



Weitere Anweisungen finden sie in der Bedienungs- und Wartungsanleitung.  
 Para más instrucciones, vea el Manual de Operación y Mantenimiento.  
 Voir le Manuel de l'opérateur et d'entretien pour d'autres renseignements.

# MACHINE SIGN TRANSLATIONS (CONT'D)

## Warning (7131518) (Cont'd)

### AVERTISSEMENT

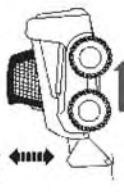
#### RISQUE DE BLESSURE GRAVE VOIRE MORTELLE

 <p style="font-size: small;">NE JAMAIS UTILISER LA CHARGEUSE SANS INSTRUCTIONS, LIRE LE GUIDE DE L'OPERATEUR ET D'ENTRETIEN ET LE MANUEL DE L'OPERATEUR.</p>	 <p style="font-size: small;">UTILISER L'ARCEAU DE SIEGE, SERRER LA CEINTURE DE SECURITE.</p>	 <p style="font-size: small;">GARDER LES PIEDS SUR LES REPOSE-PIEDS.</p>	 <p style="font-size: small;">1 ABASSER LES BRAS DE PORTER L'ACCESSOIRE A PLAT SUR LE SOL.</p>
 <p style="font-size: small;">NE PAS DEPLACER NI FAIRE TOURNER LA CHARGEUSE AVEC LES BRAS LEVES EN TERRAIN PLAT. NE PAS DEPASSER LA CAPACITE DE LA CHARGEUSE (VOIR ETIQUETTE SUR LA MACHINE).</p>	 <p style="font-size: small;">NE JAMAIS MODIFIER D'OUVERTEMENT ET UTILISER AUCUN ACCESSOIRE NON APPROUVE PAR BOBCAT COMPANY.</p>	 <p style="font-size: small;">SUR LES PENTES, MAINTENIR LE COTE LOURD DE LA CHARGEUSE VERS LE HAUT.</p>	<p style="font-size: small;">2 SORTIE DE LA CHARGEUSE:</p>  <p style="font-size: small;">ARRETER LE MOTEUR.</p>
		<p style="font-size: small;">3 ENGAGER LE FREIN DE STATIONNEMENT.</p> 	<p style="font-size: small;">4 LEVER L'ARCEAU DE SIEGE.</p> 

Weitere Anweisungen finden sie in der Bedienungs- und Instandhaltungsanleitung. Fürs mais instructions, see el Manual de Operacion y Mantenimiento. Voir le Manual de l'opérateur et d'entretien pour d'autres renseignements.

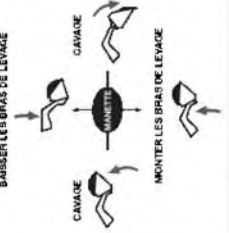
DETENTE DU FLOTTEMENT

• Appuyer sur le bouton jaune de flottement de la manette droite en baissant les bras de levage.



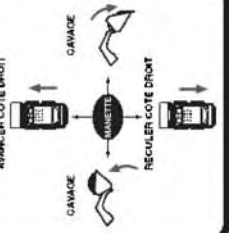
#### MANETTE DROITE - ISO

BASSER LES BRAS DE LEVAGE



#### MANETTE DROITE - H

AVANCER COTE DROIT






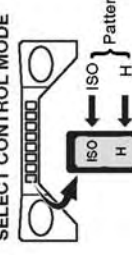
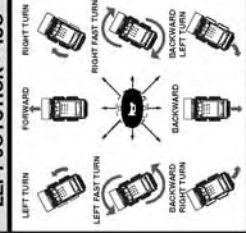
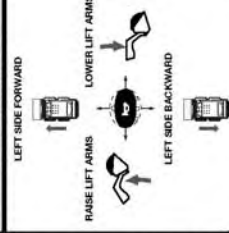
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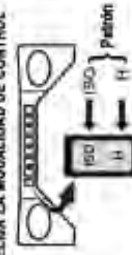

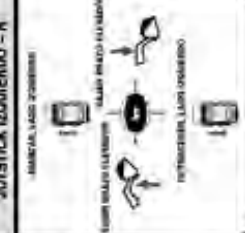
175

S185 Operation & Maintenance Manual



Warning (7131519)

<p><b>ENTERING THE LOADER</b></p> 	<p><b>OPERATING THE LOADER</b></p> 	<p><b>LEAVING THE LOADER</b></p> 
<p><b>OPERATION INSTRUCTIONS FOR SELECTABLE JOYSTICK CONTROLS (SJC)</b></p> <p><b>TO OPERATE LOADER:</b></p> <ol style="list-style-type: none"> <li>1. Fasten seat belt and lower seat bar.</li> <li>2. Put joystick controls in <u>neutral</u>.</li> <li>3. Start engine.</li> <li>4. Select control mode (ISO or H pattern) on center instrument panel.</li> <li>5. Activate green "PRESS TO OPERATE LOADER" button on left instrument panel.</li> </ol> <ul style="list-style-type: none"> <li>• If hydraulic or drive functions do not operate, stop engine. Check that both joysticks are in the <u>neutral</u> position. Re-start engine.</li> </ul> <p>Note: Activate "PRESS TO OPERATE LOADER" button again if seat bar is raised and lowered or key is turned off.</p> <p><b>See Operation &amp; Maintenance Manual and Handbook for more instructions.</b></p>		
<p><b>WARNING</b></p> <p><b>ACCIDENTAL LOADER MOVEMENT CAN CAUSE INJURY OR DEATH</b></p> <ul style="list-style-type: none"> <li>• Drive and lift arm functions operate on different joysticks in each mode.</li> <li>• Know and understand the selected control mode before operating.</li> </ul> <p><b>SELECT CONTROL MODE</b></p> 		
<p><b>LEFT JOYSTICK - ISO</b></p>  <p><b>LEFT JOYSTICK - H</b></p> 		

<p><b>PARA ENTRAR AL CARGADOR</b></p> 	<p><b>PARA OPERAR EL CARGADOR</b></p> 	<p><b>PARA BAJAR DEL CARGADOR</b></p> 
<p><b>INSTRUCCIONES DE OPERACIÓN DEL JOYSTICK CON SELECCIÓN DE CONTROL (SJC)</b></p> <p><b>PARA OPERAR EL CARGADOR:</b></p> <ol style="list-style-type: none"> <li>1. Abroche el cinturón de seguridad y baje la barra del asiento.</li> <li>2. Coloque los controles del joystick en posición neutral.</li> <li>3. Encienda el motor.</li> <li>4. Elija la modalidad de control (patrón ISO o H) en el panel de instrumentos central.</li> <li>5. Active el botón verde "PRESS TO OPERATE LOADER" en el panel de instrumentos izquierdo.</li> </ol> <ul style="list-style-type: none"> <li>• Detenga el motor si los sistemas hidráulicos o de transmisión no funcionan. Revise que ambos joystick estén en posición neutral. Encienda el motor de nuevo.</li> </ul> <p>Note: Active de nuevo el botón "PRESS TO OPERATE LOADER" si se sube o baja la barra del asiento o la llave se coloca en posición Off.</p> <p><b>Consulte el manual de operación y mantenimiento como también el manual del operador para mayores instrucciones</b></p>		
<p><b>ADVERTENCIA</b></p> <p><b>EL MOVIMIENTO ACCIDENTAL DEL CARGADOR PUEDE PROVOCAR LESIONES O ACCIDENTES FATALES</b></p> <ul style="list-style-type: none"> <li>• La transmisión y el brazo elevador operan en joysticks diferentes en cada modalidad.</li> <li>• Conozca y entienda la modalidad de control que se va a utilizar de operar la máquina.</li> </ul> <p><b>ELIJA LA MODALIDAD DE CONTROL</b></p> 		
<p><b>JOYSTICK IZQUIERDO - ISO</b></p>  <p><b>JOYSTICK IZQUIERDO - H</b></p> 		

MACHINE SIGN TRANSLATIONS (CONT'D)

Warning (7131519) (Cont'd)

**ENTRÉE DANS LA CHARGEUSE**

**UTILISATION DE LA CHARGEUSE**

**SORTIE DE LA CHARGEUSE**

**INSTRUCTIONS D'UTILISATION DES COMMANDES PAR MANIPULATEUR (S/C)**

**POUR UTILISER LA CHARGEUSE :**

1. Attachez la ceinture de sécurité et abaissez l'arceau de siège.
2. Placez les commandes du manipulateur au point mort.
3. Démarrez le moteur.
4. Sélectionnez le mode de commande (ISO ou H) sur le tableau de bord central.
5. Appuyez sur le bouton "PRESS TO OPERATE LOADER" du tableau de bord gauche.

- Si les opérations hydrauliques ou de traction ne fonctionnent pas, arrêtez le moteur. Vérifiez que les deux manipulateurs sont bien au point mort. Redémarrez le moteur.

Remarque : actionnez de nouveau le bouton "PRESS TO OPERATE LOADER" si vous avez relevé puis abaissé l'arceau de siège ou si la clé est en position OFF.

Voir le Manuel et le Guide de l'Opérateur et d'Entretien pour des instructions supplémentaires.

**AVERTISSEMENT**

UN MOUVEMENT ACCIDENTEL DE LA CHARGEUSE APPRÉHENSIF POUR LES PASSAGERS. BLESSURES GRAVES, VOIRE MORTELLES

- Les fonctions de traction et de levage se commandent sur un manipulateur différent selon le mode.
- Vous devez lire soigneusement et comprendre le mode. Les commandes sélectionnées avant d'activer la chargeuse.

**SÉLECTIONNEZ LE MODE DE COMMANDE**

Schéma

**MANIPULATEUR GAUCHE - ISO**

**MANIPULATEUR GAUCHE - H**

7131519B 11 458511Z

Warning (6579528)

**WARNING**

**AVOID INJURY OR DEATH**

**CARRY LOAD LOW**

FAILURE TO OBEY CAN CAUSE TIPPING OR ROLLOVER OR LOSS OF LOAD OR VISIBILITY.

62702 SW 6579528C enUS

**ADVERTENCIA**

**EVITE LESIONES O LA MUERTE**

**LLEVE LA CARGA BAJA**

EL INCUMPLIMIENTO PUEDE PROVOCAR TRASTORNOS, VUELCOS, PERDIDA DE LA CARGA O DE LA VISIBILIDAD.

62702 SW 6579528C esAR

**AVERTISSEMENT**

**RISQUE DE BLESSURE OU DE MORT**

**GARDEZ LA CHARGE PRÈS DU SOL**

LE NON RESPECT PEUT ENTRAÎNER UN BASCULEMENT, UN TONNEAU OU UNE PERTE DE VISIBILITÉ OU DE LA CHARGE.

62702 SW 6579528C frCA

Warning (7168019)

**▲ WARNING**



**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.
- No riders on loader and keep 15 ft (5m) away while lifting.
  - See Operation & Maintenance Manual for more information.

7168019 enUS

70395 SW

**▲ ADVERTENCIA**



**UNA FALLO EN EL  
CONJUNTO DE  
ELEVACIÓN  
PUEDE PROVOCAR  
HERIDAS GRAVES  
O LA MUERTE**

**ANTES DE LEVANTAR LA  
PALA MECÁNICA:**

1. Verifique los herrajes y sujetadores en todos los puntos de elevación para garantizar que la torsión sea la correcta.
  2. Controle que los puntos de elevación no estén dañados ni haya grietas en la soldadura. Repare o reemplace los componentes según sea necesario.
- No debe haber ocupantes en la cargadora. Manténgase a una distancia de 15 pies (5 m) durante la elevación.
  - Consulte el Manual de funcionamiento y mantenimiento para obtener más información.

7168019 esAR

70395 SW

**▲ AVERTISSEMENT**



**UNE DÉFAILLANCE  
DE L'ENSEMBLE  
DE LEVAGE  
PEUT ENTRAÎNER DES  
BLESSURES GRAVES,  
VOIRE MORTELLES.**

**AVANT DE SOULEVER  
LA CHARGEUSE :**

1. Vérifiez que le couple de serrage de la visserie et des fixations est approprié.
  2. Vérifiez que les points de levage ne sont pas endommagés et que leurs soudures ne sont pas fissurées. Réparez les composants endommagés ou remplacez-les selon le besoin.
- Pas de passager sur la chargeuse et gardez toute personne à une distance d'au moins 5 m pendant le levage.
  - Consultez le manuel d'entretien et d'utilisation pour plus d'informations.

7168019 frCA

70395 SW



Warning (7142141)

**⚠ WARNING**



**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.

- No riders on loader during lifting. Keep 15 ft (5 m) away while lifting.
- See Operation & Maintenance Manual for more information.

71738 SW 7142141A enUS

**⚠ ADVERTENCIA**



**UNA FALLA DEL CONJUNTO ELEVADOR PUEDE PROVOCAR LESIONES GRAVES O FATALIDADES.**


**ANTES DE LEVANTAR EL CARGADOR:**

1. Revise el hardware y sujetadores del elevador de una punta y si la cabina del operador (ROPS) tiene el torque adecuado.
2. Inspeccione si el elevador de una punta está averiado o tiene soldaduras agrietadas. Repare o reponga los componentes, si es del caso.

- No transporte personas en el cargador mientras lo levanta. Manténgalos a 15 pies (5 m) de distancia mientras lo levanta.
- Para mayor información, ver el manual de operación y mantenimiento.

71738 SW 7142141A ar

**⚠ AVERTISSEMENT**



**UNE DÉFAILLANCE DE L'ENSEMBLE DE LEVAGE PEUT ENTRAÎNER DES BLESSURES GRAVES, VOIRE MORTELLES.**

**AVANT DE SOULEVER LA CHARGEUSE :**

1. Vérifiez que le couple de serrage de la visserie de fixation et des fixations de l'ensemble de levage à point unique et de la cabine de l'opérateur (ROPS) est correct.
2. Vérifiez que l'ensemble de levage à point unique n'est pas endommagé et que ses soudures ne sont pas fissurées. Réparez les composants endommagés ou remplacez-les selon le besoin.

- Personne ne doit se trouver sur la chargeuse durant son levage. Maintenez toute personne à une distance d'au moins 5 m pendant le levage.
- Consultez le manuel & d'entretien et d'utilisation pour plus d'informations.

71738 SW 7142141A fr



**Bobcat®**

## SPECIFICATIONS

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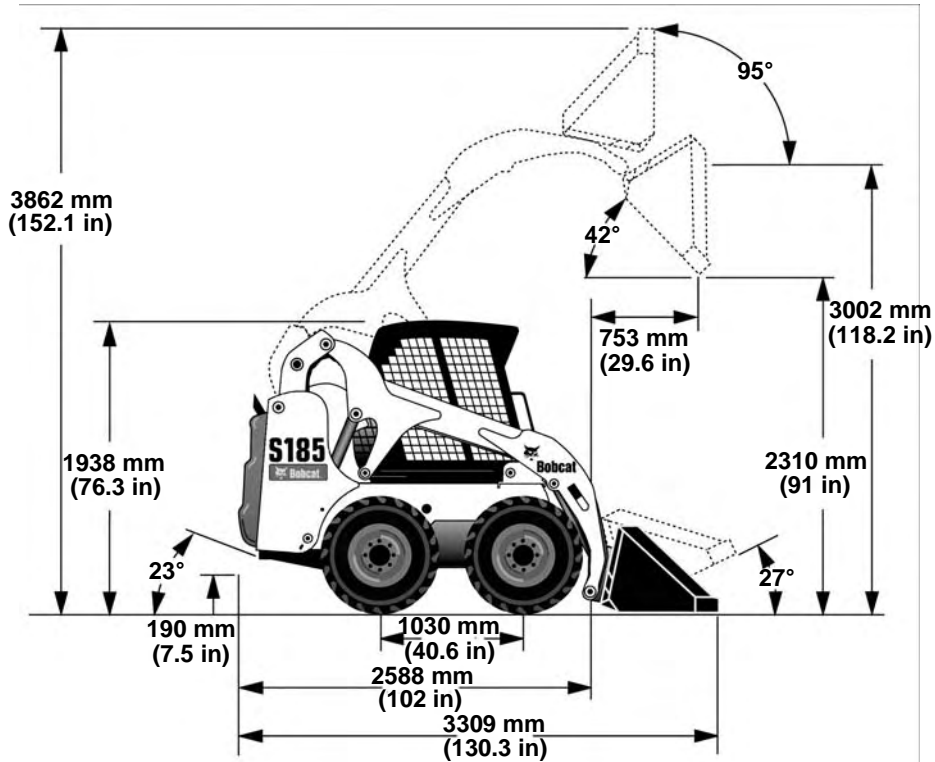


**Bobcat®**

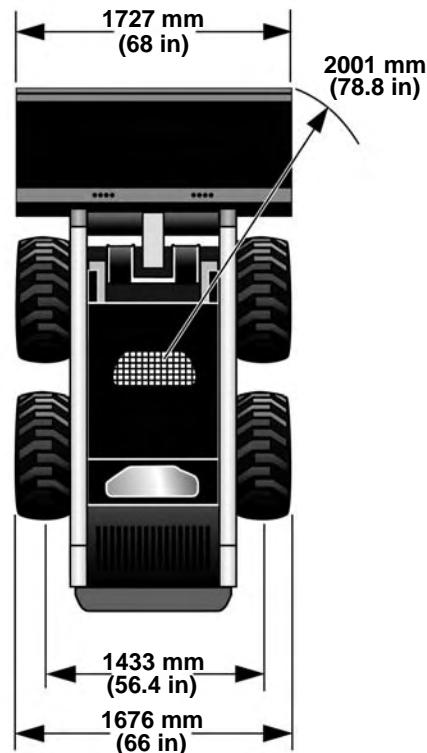
## (S185) LOADER SPECIFICATIONS

### Machine Dimensions

- Dimensions are given for loader equipped with standard tires and 68 in. Construction & Industrial bucket and may vary with other bucket types. All dimensions are shown in millimeters. Respective imperial dimensions are given in inches enclosed by parentheses.
- Where applicable, specifications conform to SAE or ISO standards and are subject to change without notice.



B-16433



B-16432

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.

## (S185) LOADER SPECIFICATIONS (CONT'D)

### Performance

Rated Operating Capacity (ISO)	839 kg (1850 lb)
with 200 Pound Frame Mounted Counterweight Kit	907 kg (2000 lb)
Tipping Load (ISO)	1849 kg (4076 lb)
Operating Weight	2821 kg (6220 lb)
Travel Speed	
- Single Speed Loader	11,8 km/h (7.3 mph)
- Two-Speed Loader (Opt.) Low/High	12,1 km/h (7.5 mph) / 17,9 km/h (11.1 mph)
SAE Breakout Force - Lift	1588 kg (3500 lb)
SAE Breakout Force - Tilt	1554 kg (3425 lb)
Push Force	1905 kg (4200 lb)

### Engine

Make / Model	Kubota / V2607-DI-TE3B Interim Tier IV
Fuel / Cooling	Diesel / Liquid
Horsepower (SAE Net)	43,3 kW (58 hp) @ 2700 rpm
Torque (SAE Net)	193,9 N•m (143 ft-lb) @ 1425 rpm
Number of Cylinders	4
Displacement	2,6 L (158.7 in <sup>3</sup> )
Bore / Stroke	87 mm / 110 mm (3.425 in / 4.33 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
Starting Aid	Glow Plugs - Automatically activated as needed in RUN position.
Low Idle	1175 - 1325 rpm
High Idle	2760 - 2900 rpm

### Drive System

Main Drive	Hydrostatic 4-wheel drive
Transmission	Infinitely variable tandem hydrostatic piston pumps, driving two fully reversing hydrostatic motors.
Final Drive Chains	Prestressed #80 HSOC endless roller chain (no master link) and sprockets in sealed chaincase with oil lubrication (No adjustment need ed). Two chains per side with no idler sprocket.
Total Engine to Wheel Reduction	33:1
Axle Size	50,8 mm (2.00 in), heat treated
Wheel Bolts	Eight - 9/16 in. Wheel Bolts fixed to axle hubs

**(S185) LOADER SPECIFICATIONS (CONT'D)****Controls**

Vehicle Steering	Direction and speed controlled by two hand operated steering levers <i>or</i> optional joystick(s).
Loader Hydraulics - Lift and Tilt - Front Auxiliary - Rear Auxiliary (Option)	Controlled by separate foot pedals or optional Advanced Control System (ACS) or optional Selectable Joystick Control (SJC) Controlled by electrical switch on Right Hand steering lever or optional Right Hand Selectable Joystick Control (SJC) Controlled by electrical switch on Left Hand steering lever or optional Left Hand Selectable Joystick Control (SJC)
Auxiliary Pressure Release	Pressure relieved through front quick couplers. Push couplers in, hold for 5 seconds.
Engine	Hand lever speed control; key-type start switch <i>or</i> optional Deluxe Instrumentation Panel and function error shutdown.
Service Brake	Two independent hydrostatic systems controlled by two hand operated steering levers <i>or</i> optional joystick(s).
Secondary Brake	One of the hydrostatic transmissions.
Parking Brake (Standard on Single Speed and Two-Speed Loaders)	Mechanical disc, manually operated switch on front instrument panel.

**Hydraulic System**

Pump Type	Engine driven gear type
Pump Capacity - Standard - High-Flow Option	64 L/min (16.9 U.S. gpm) @ 2850 Engine rpm @ 91% efficiency 100 L/min (26.4 U.S. gpm) @ 2850 Engine rpm @ 91% efficiency
System Relief at Quick Couplers	22,4 - 23,1 MPa (224 - 231 bar) (3250 - 3350 psi)
Filters	Full flow replaceable, 3-micron synthetic media element
Hydraulic Cylinders Bore Diameter: Lift Cylinder (2) Tilt Cylinder (2) Rod Diameter: Lift Cylinder (2) Tilt Cylinder (2) Stroke: Lift Cylinder (2) Tilt Cylinder (2)	Double-acting; tilt cylinders have cushioning feature on dump and rollback 63,5 mm (2.5 in) 69,8 mm (2.75 in) 38,1 mm (1.50 in) 34,9 mm (1.375 in) 601 mm (23.67 in) 335 mm (13.19 in)
Control Valve	3 spool, open center type with float detent on lift and electrically controlled auxiliary spool.
Fluid Type	BOBCAT FLUID, Hydraulic/Hydrostatic 6903117 - (2.5 U.S. gal) 6903118 - (5 U.S. gal) 6903119 - (55 U.S. gal)
Fluid Lines	SAE Standard tubelines, hoses and fittings
Hydraulic Function Time: Raise Lift Arms Lower Lift Arms Bucket Dump Bucket Rollback	3.5 Seconds 2.4 Seconds 2.4 Seconds 1.9 Seconds

## (S185) LOADER SPECIFICATIONS (CONT'D)

### Electrical

Alternator	Belt driven, 90 amperes ventilated
Battery	12 volts, 600 cold cranking amperes @ -18°C (0°F) 115 minute reserve capacity at 25 amperes
Starter	12 volts, gear type, 2,7 kW (3.62 hp)
Instrumentation	<p><b>Gauges:</b> Engine Coolant Temperature, Fuel Level. <b>Warning lights:</b> Fuel Level, Seat Belt, Engine Coolant Temperature, Engine Malfunction, Hydraulic Malfunction, General Warning. <b>Indicators:</b> BICS™ Functions, Two-Speed, 3-Point Shoulder Belt, Turn Signals, Engine Preheat. <b>Data Display:</b> Operating Hours, Engine rpm, Speed Management Setting, Maintenance Clock Countdown, Battery Voltage, Service Codes, Engine Preheat Countdown, Steering Drift Compensation Setting. <b>Other:</b> Audible Alarm, Lights, Option / Accessory Switches.</p> <p><b>Optional Deluxe Instrumentation Panel:</b> *Additional bar-type gauges for: Engine Oil Pressure, System Voltage, Hydrostatic Charge Pressure and Hydraulic Oil Temperature. *Additional Features Included: Keyless Start, Digital Clock, Job Clock, Attachment Control Information, High-Flow / Two-Speed / Password Lockouts, Multi-language Display, Help Screens, Diagnostic Capability and Engine / Hydraulic Systems Shutdown Function.</p>

### Capacities

Fuel Tank	90,8 L (24 U.S. gal)
Engine Oil with filter	9,7 L (10.25 qt)
Engine Cooling System without heater with Heater	Propylene Glycol / water mixture (53% PG / 47% water) 12,6 L (13.3 qt) 13,7 L (14.5 qt)
Hydraulic/Hydrostatic Reservoir	18,2 L (4.8 U.S. gal)
Hydraulic/Hydrostatic System (including Reservoir)	34,1 L (9 U.S. gal)
Chaincase Reservoir	30,3 L (8 U.S. gal)

### Tires

Bobcat Standard Duty	Bobcat Standard Duty 10 - 16.5 8 Ply Rating
Bobcat Severe Duty	Bobcat Severe Duty 10 - 16.5 10 Ply Rating
Bulky Hulk	Bobcat Super Float 31 x 12 - 16.5 10 Ply Rating
Recommended Pressure	Inflate tires to MAXIMUM pressure shown on the side wall of the tire. DO NOT mix brands of tires used on the same loader.



## WARRANTY

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**Bobcat®**

# WARRANTY

## Bobcat Loaders

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 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 twelve (12) months, (ii) the drive belt from the hydrostatic pump to the engine, for thirty six (36) months, provided that after the initial twelve month warranty period, such warranty shall be limited to parts only and does not include labor, (iii) 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, and (iv) Bobcat brand batteries, for an additional twelve (12) months after the initial twelve month warranty period, provided that Bobcat Company shall only reimburse a fixed portion of the cost of replacing the battery during such additional twelve months. 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 apply to diesel engine fuel injection pumps and injectors or tires (except Bobcat brand tires). The owner shall rely solely on the warranty, if any, of the respective manufacturers thereof. 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.**



## WARRANTY (CONT'D)

In this emissions limited warranty, the term "Manufacturer" means Kubota Corporation as the holder of the U.S. Environmental Protection Agency (U.S. EPA) Certificate of Conformity and California Executive Order for the vehicle. The emission control limited warranty is in addition to the standard limited warranty for your vehicle.

Your Bobcat dealer is authorized to perform all warranty and service repairs on your diesel engine. To locate a Bobcat dealer, visit [www.bobcat.com](http://www.bobcat.com) or call 1-800-743-4340.

# KUBOTA Corporation

## FEDERAL & CALIFORNIA EMISSION CONTROL SYSTEMS LIMITED WARRANTY for NON-ROAD ENGINES (CI)

The U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and KUBOTA Corporation are pleased to explain the Federal and California Emission Control System Warranty on your non-road engine. In California, new heavy duty off-road engines must be designed, built and equipped to meet California's stringent anti-smog standards adopted by the Air Resources Board pursuant to its authority in Chapter 1 and 2, Part 5, Division 26 of the California Health and Safety Code. In other states of the U.S.A., new non-road engines subject to the provisions of 40 CFR 1039 subpart A must be designed, built and equipped, at the time of sale, to meet the U.S. EPA regulations for nonroad engines.

KUBOTA must warrant the emission control system on your Compression Ignition engine for the period of time listed below provided there has been no abuse, vandalism, neglect, improper maintenance or unapproved modifications to your engine. This emission warranty is applicable in all states of the U.S.A., its provinces and territories regardless of whether an individual state, province, or territory has enacted warranty provisions that differ from the Federal warranty provisions. This emission warranty is also applicable in all provinces and territories of CANADA.

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

Where a warrantable condition exists, KUBOTA will repair your engine at no cost to you, including diagnosis (if the diagnostic work is performed at an authorized dealer), parts and labor.

### EMISSION DESIGN AND DEFECT WARRANTY COVERAGE

The emissions warranty period for the engine begins on the original date of sale to the initial purchaser and continues for each subsequent purchaser for the period mentioned below.

The emissions warranty period for all engines rated under 19kW (25Hp) is 2000 hours of operation or two (2) years of use, whichever first occurs.

The emissions warranty period for constant speed engines rated under 37kW (50Hp) with rated speeds greater than or equal to 3000 rpm is 2000 hours of operation or two (2) years of use, whichever first occurs.

The emissions warranty period for all other engines not already listed is 3000 hours of operation or five (5) years of use, whichever first occurs.

If any emission related part on your engine is defective, the part will be repaired or replaced by KUBOTA free of charge.

### OWNER'S WARRANTY RESPONSIBILITIES

(a) As the engine owner, you are responsible for the performance of the required maintenance listed in your KUBOTA operator's manual. KUBOTA recommends that you retain all receipts covering maintenance on your engine, but KUBOTA cannot deny a warranty claim solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

(b) As the engine owner, you should be aware, however, that KUBOTA may deny your warranty coverage if your engine or a part has failed due to abuse, vandalism, neglect, improper maintenance or unapproved modifications.

(c) 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 Federal or California's emissions requirements.

(d) You are responsible for presenting your engine to the nearest dealer or service station authorized by KUBOTA when a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

(e) If you have any questions regarding your warranty rights and responsibilities or the location of the nearest authorized dealer or distributor, you should contact: KUBOTA ENGINE AMERICA CORPORATION, Service Department at 1-800-532-9808, [EEWRI@kubotaengine.com](mailto:EEWRI@kubotaengine.com) or KUBOTA TRACTOR CORPORATION, National Service Department at 1-800-558-2682, [KubotaEmissionsWarranty@kubota.com](mailto:KubotaEmissionsWarranty@kubota.com) or KUBOTA CANADA LTD at (905) 294-7477.

### COVERAGE

KUBOTA warrants to the initial purchaser and each subsequent purchaser that your engine will be designed, built and equipped, at the time of sale, to meet all applicable regulations. KUBOTA also warrants to the initial purchaser and each subsequent purchaser that your engine shall be free from defects in materials and workmanship which cause the engine to fail to conform to applicable regulations for the period mentioned above from the original date of sale.

KUBOTA shall remedy warranty defects at any authorized KUBOTA engine dealer or warranty station. Any authorized work done at an authorized dealer or warranty station shall be free of charge to the owner if such work determines that a warranted part is defective. Any KUBOTA approved or equivalent replacement part (including any KUBOTA approved aftermarket part) may be used for any warranty maintenance or repairs on emission related parts, and must be provided free of charge to the owner if the part is still under warranty.

KUBOTA is liable for damages to other engine components caused by the failure of a warranted part still under warranty. The use of replacement parts not equivalent to the original parts may impair the effectiveness of your engine emission control system. If such a replacement part is used in the repair or maintenance of your engine, and KUBOTA determines it is defective or causes a failure of a warranted part, your claim for repair of your engine may be denied.

Listed below are the parts covered by the Federal and California Emission Control Systems Warranty. Some parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part. The warranted parts are (if applicable):

- |  |                                       |   |
|--|---------------------------------------|---|
| 1) Air-Induction System                    | 4) Electronic Control System          | 6) Particulate Controls   |
| a) Intake Manifold                         | a) ECU                                | a) Any device used to capture particulate emissions.                      |
| b) Turbocharger System                     | b) Engine Speed / Timing Sensor       | b) Any device used in the regeneration of the particulate control device. |
| c) Charge Air Cooling System (Intercooler) | c) Accelerator Position Sensor        | c) Control Device Enclosures and Manifolding                              |
| 2) Catalyst or Thermal Reactor System      | d) Coolant Temperature Sensor         | d) Diesel Particulate Filter Temperature Sensor                           |
| a) Catalytic converter                     | e) Atmospheric Pressure Sensor        | e) Differential Pressure Sensor   |
| b) Exhaust manifold                        | f) Intake Pressure Sensor             | 7) Miscellaneous Items  |
| 3) Fuel Injection System                   | g) Intake Manifold Temperature Sensor | a) Closed Breather System   |
| a) Fuel Supply Pump                        | h) Intake Air Flow Sensor             | b) Hoses*, Clamps*, Fittings, Tubing*                                     |
| b) Injector                                | i) Common Rail Pressure Sensor        | c) Gaskets, Seals   |
| c) Injection Pipe                          | 5) Exhaust Gas Recirculation System   | d) Kubota supplied engine Wiring Harnesses                                |
| d) Common Rail                             | a) EGR Valve                          | e) Kubota supplied engine Elec. Connectors                                |
| e) Smoke Puff Limiter                      | b) EGR Cooler                         | f) Air Cleaner Element*, Fuel Filter Element*                             |
| f) Speed Timer                             | c) EGR Valve Opening Rate Sensor      | g) Emission Control Information Labels                                    |
| g) Cold Advance Timer                      |                                       |   |
| h) Injection Pump                          |                                       |   |

\*Warranty period is equivalent to manufacturer's recommended first replacement interval as stated in the applicable model's operator's manual and/or service (workshop) manual.

### MAINTENANCE REQUIREMENTS

The owner is responsible for the performance of the required maintenance as defined by KUBOTA in the operator's manual.

### LIMITATIONS

This Emission Control System Warranty shall not cover any of the following:

(a) Repair or replacement required because of misuse or neglect, improper maintenance, repairs improperly performed or replacements not conforming to KUBOTA specifications that adversely affect performance and/or durability, and alteration or modifications not recommended or approved in writing by KUBOTA.

(b) Replacement of parts and other services and adjustments necessary for required maintenance at and after the first scheduled replacement point.

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