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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:

FOREWORD

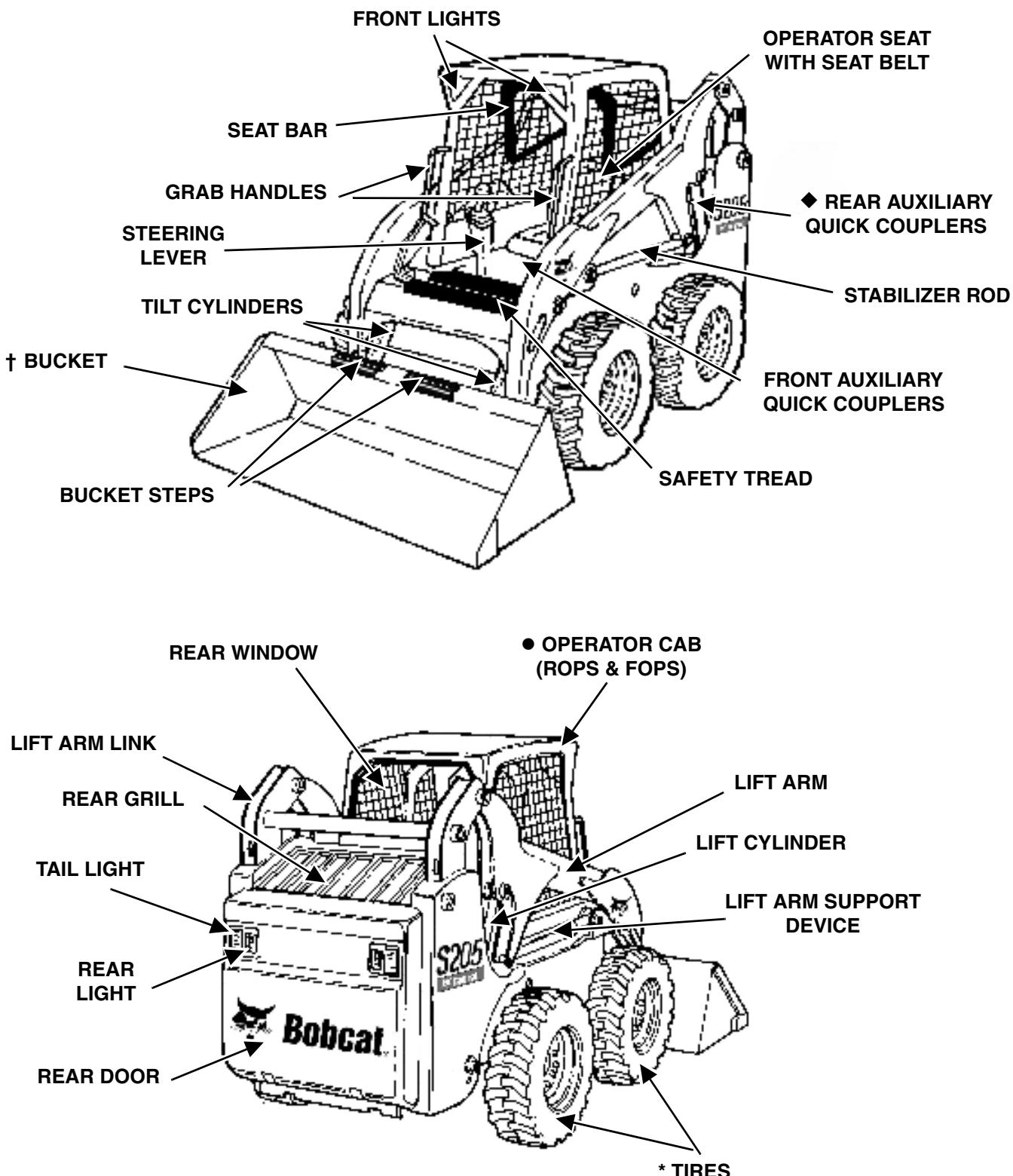
SAFETY

**OPERATING
INSTRUCTIONS**

**PREVENTIVE
MAINTENANCE**

**SYSTEM SETUP
& ANALYSIS**

SPECIFICATIONS



B-16604C
B-16605B

◆ Optional or Field Accessory (Not Standard Equipment)

* TIRES - Tires shown may not be standard. The machine is factory equipped with standard tires. Other tires are available.

† BUCKET - Several different buckets and other attachments are available for this machine.

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

SAFETY INSTRUCTIONS (CONT'D)

Safe Operation Is The Operator's Responsibility



Safety Alert Symbol

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



WARNING

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

W-2001-1285

IMPORTANT

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

I-2019-0284



WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause injury or death.

W-2044-1285

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 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 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.

Know the Work Conditions

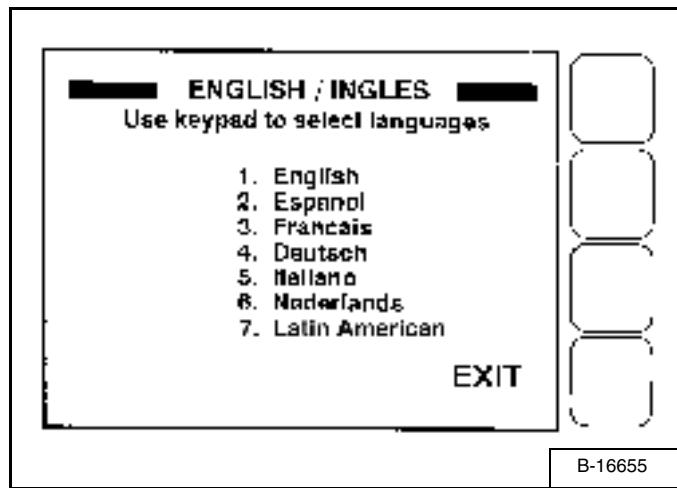
- Know the weight of the materials being handled. Avoid exceeding the Rated Operating Capacity of the machine. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of the load if handling dense material.
- The operator must know any prohibited uses or work areas, for example, he or she needs to know about excessive slopes.
- Know the location of any underground lines.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, hearing protection or Special Applications Kits are required for some work. See your Bobcat dealer about Bobcat Safety Equipment for your model.

SI SSL-0206

INSTRUMENT PANEL IDENTIFICATION (CONT'D)

Right Panel (Keyless) (Cont'd)

Figure 9



Use the Keypad to select the number of the language [Figure 9].

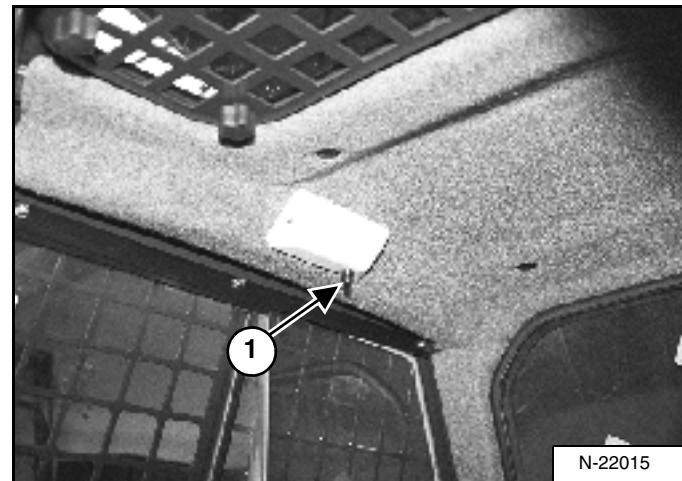
Press EXIT. The screen will return to [Figure 8]. You can then enter the password and start the engine.

(See DISPLAY CONTROLLER PANEL SETUP on Page 111) for further description of screens to setup the system for your use.

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.

Cab Light

Figure 10



Push the button (1) [Figure 10] to turn the light ON. Push the button again to turn OFF.

DRIVING AND STEERING THE LOADER

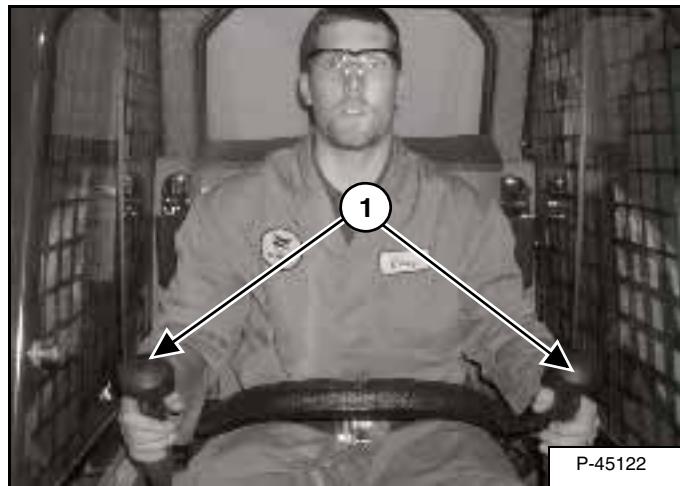
Available Controls Configurations

The loader has three configurations available:

- *Standard Controls* - Two Steering Levers control drive and steering functions.
- *Advanced Control System (ACS) (Option or Field Accessory)* - 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 20



The control levers (1) [Figure 20] are on the left and right side in front of the seat.

Move levers smoothly. Avoid sudden starting and stopping.



WARNING

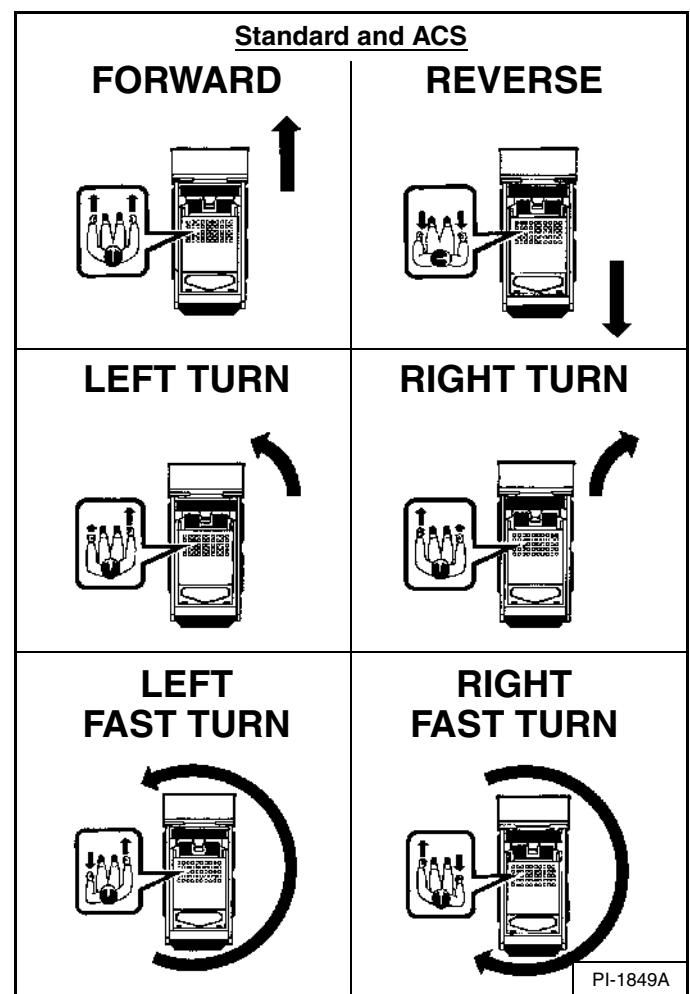
AVOID INJURY OR DEATH

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 steering levers.

W-2261-0799

Figure 21



The levers control forward and reverse travel and turning the loader [Figure 21].

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.

For slow travel speed, push the steering levers forward only a small amount.

To increase travel speed, push both levers farther forward.

For maximum pushing force, push the levers forward only a small amount with the engine at full speed.

HYDRAULIC CONTROLS (CONT'D)

Auxiliary Hydraulics Operation (VARIABLE FLOW)

Figure 39

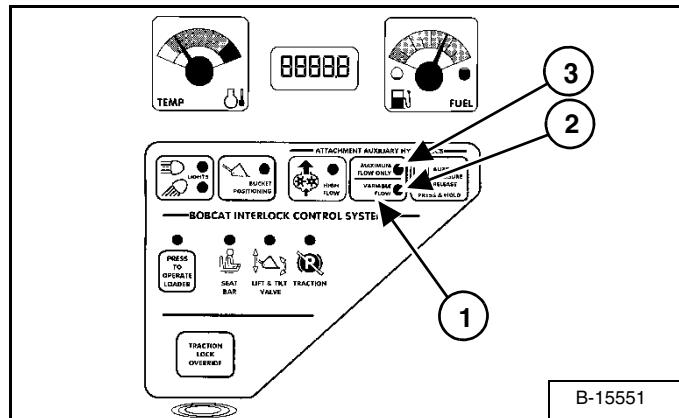
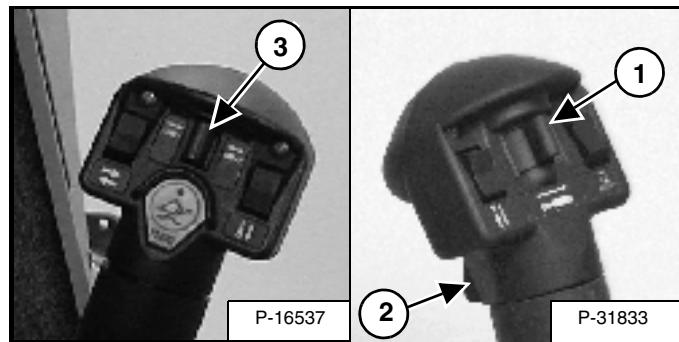


Figure 40



VARIABLE FLOW allows for slow-to-fast movement of auxiliary functions. If you move the auxiliary switch (1) [Figure 40] half-way, the auxiliary functions move at approximately one-half speed.

Press the auxiliary hydraulics button (1) [Figure 39] once.

The light (2) [Figure 39] will be ON.

To disengage, press the auxiliary hydraulics button (1) [Figure 39] two more times.

Both lights (2 and 3) [Figure 39] will be OFF.

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

Auxiliary Hydraulics Operation (MAXIMUM FLOW ONLY)

MAXIMUM FLOW ONLY allows for fast movement only. If you move the auxiliary switch (1 or 3) [Figure 40], the auxiliary functions move at fast speed; release the switch to stop auxiliary functions.

Press the auxiliary hydraulics button (1) [Figure 39] two times.

The light (3) [Figure 39] will be ON.

To disengage, press the auxiliary hydraulics button (1) [Figure 39] again.

Both lights (2 and 3) [Figure 39] will be OFF.

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

FRONT Auxiliary Hydraulics Operation (VARIABLE FLOW)

Press the auxiliary hydraulics button for VARIABLE FLOW.

Push the switch (1) [Figure 40] to the right or left to change the fluid flow direction of the front quick couplers. (EXAMPLE: Open and close grapple teeth.)

FRONT Auxiliary Hydraulics Operation (MAXIMUM FLOW)

Press the auxiliary hydraulics button for MAXIMUM FLOW.

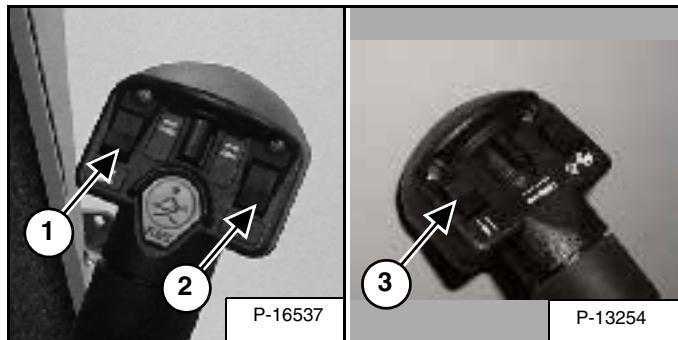
Push the switch (1) [Figure 40] to the right or left to change the fluid flow direction of the front quick couplers. (EXAMPLE: Open and close grapple teeth.)

Press again to disengage.

HYDRAULIC CONTROLS (CONT'D)

High-Flow Hydraulics Operation (If Equipped) (Cont'd)

Figure 46

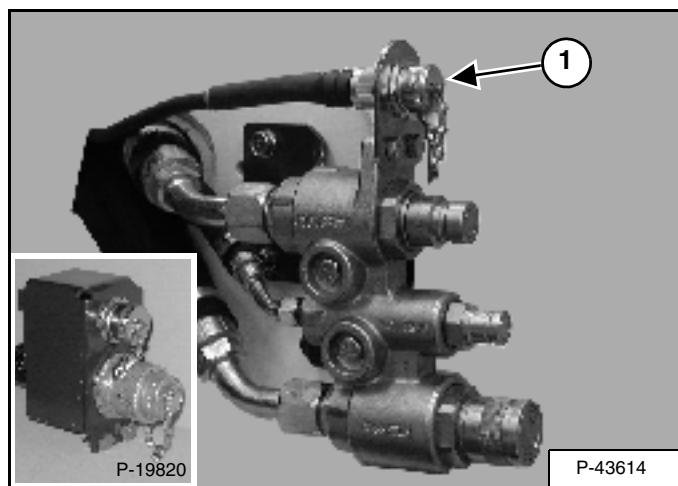


You can use additional switches (1, 2, and 3) [Figure 46] on the right and left control handles for functions which control some attachments.

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

Attachment Control Device (ACD) (If Equipped)

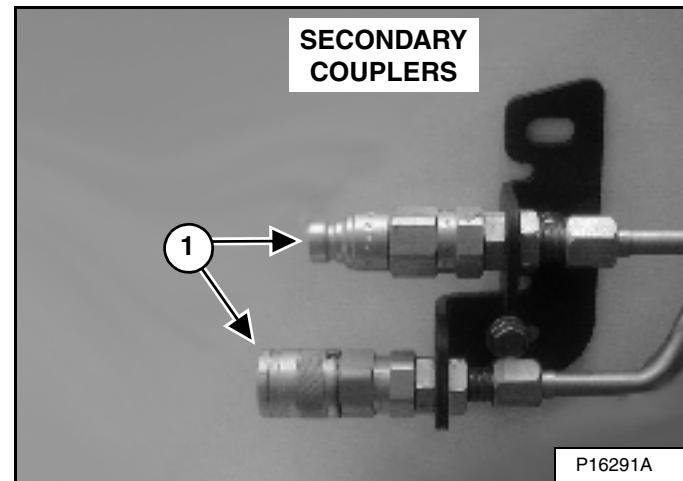
Figure 47



You will need the Dual-Connector (7-pin / 14-pin) kit (1) [Figure 47] to operate early model attachments. See your Bobcat Loader dealer.

Secondary Front Auxiliary Hydraulics (If Equipped)

Figure 48

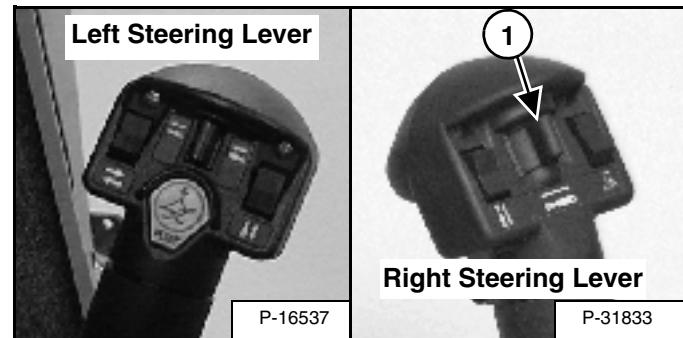


The secondary front auxiliary quick couplers (1) [Figure 48] are available as Field Installed Accessory. These are used when there is a need for additional auxiliary hydraulics (EXAMPLE: Planer side shift).

Connect the attachment to the secondary auxiliary hydraulics (1) [Figure 48].

Set the Auxiliary Hydraulic Button for *Variable Flow* or *Maximum Flow Only*. (See Auxiliary Hydraulics Operation (VARIABLE FLOW) on Page 21) (See also Auxiliary Hydraulics Operation (MAXIMUM FLOW ONLY) on Page 21).

Figure 49



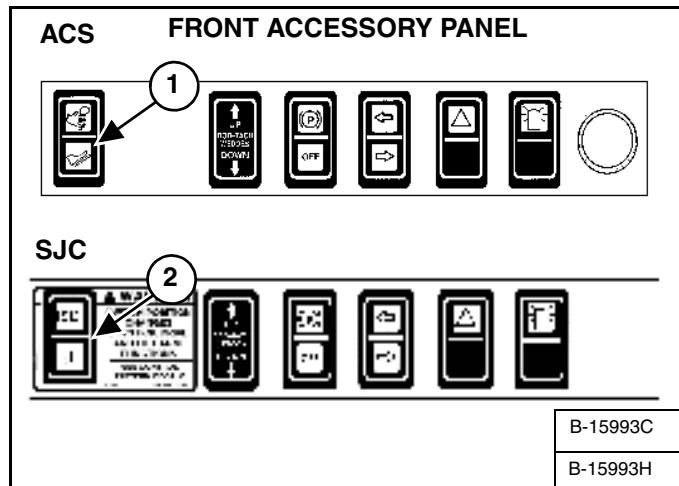
Push switch (1) [Figure 49] to the right or left to change fluid flow direction. (EXAMPLE: Side shift on the Planer.)

NOTE: The secondary front auxiliary hydraulics and the rear auxiliary hydraulics operate from the same auxiliary section of the control valve. To operate only one of these auxiliary functions, disconnect the other.

STARTING THE ENGINE (CONT'D)

Keyless (Cont'd)

Figure 63

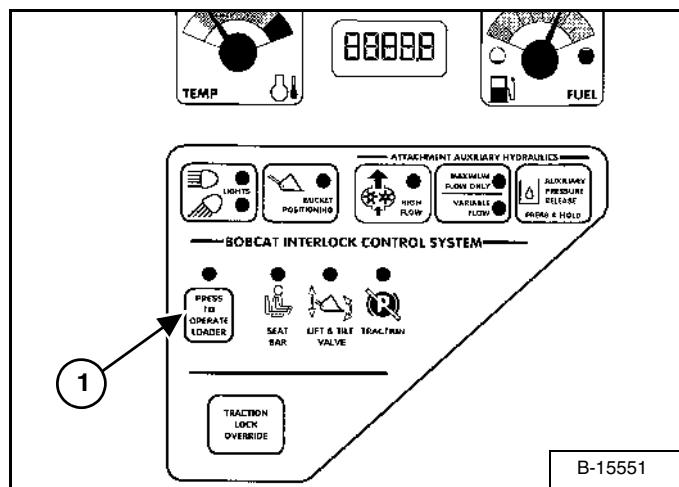


(ACS) Select hand control or foot pedal operation (1) [Figure 63].

OR

(SJC) Select 'ISO' or 'H' Control Pattern (2) [Figure 63].

Figure 64



Press the PRESS TO OPERATE LOADER Button (1) [Figure 64] to activate the BICS system and to perform hydraulic and loader functions. (See Cold Temperature Starting on Page 32.)

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

WARNING

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-2050-1285

Cold Temperature Starting

WARNING

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

W-2071-0903

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.
- Make sure the battery is fully charged.
- Install an engine heater, available from your Bobcat Loader dealer.

NOTE: The LCD of the Keyless 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 Panel to warm up. All systems remain monitored even when the display is off.

ATTACHMENTS (CONT'D)

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

Removing

Lower the lift arms and put the attachment flat on the ground and lower or close the hydraulic equipment.

- If the attachment is hydraulically controlled (combination bucket, backhoe, etc.):

Stop the engine and relieve hydraulic pressure in the auxiliary circuit. (See Relieve Hydraulic Pressure (Loader and Attachment) on Page 23.)

Exit the loader and disconnect the hydraulic hoses from the attachment.

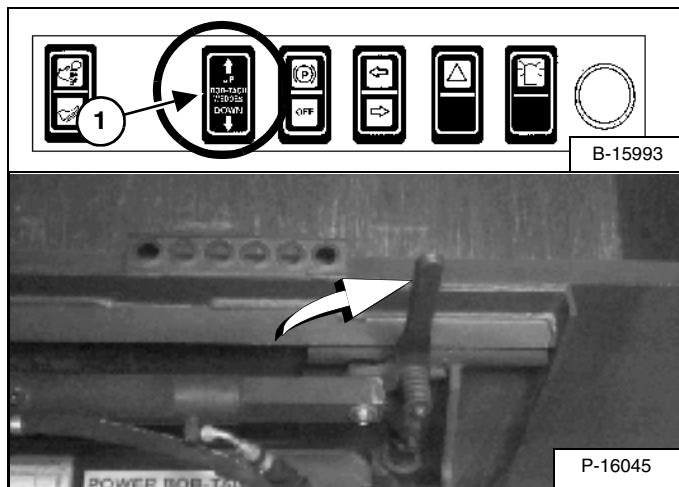
Enter the loader.

Perform the PRE-STARTING PROCEDURE. (See PRE-STARTING PROCEDURE on Page 27.)

Start the engine.

Release the parking brake.

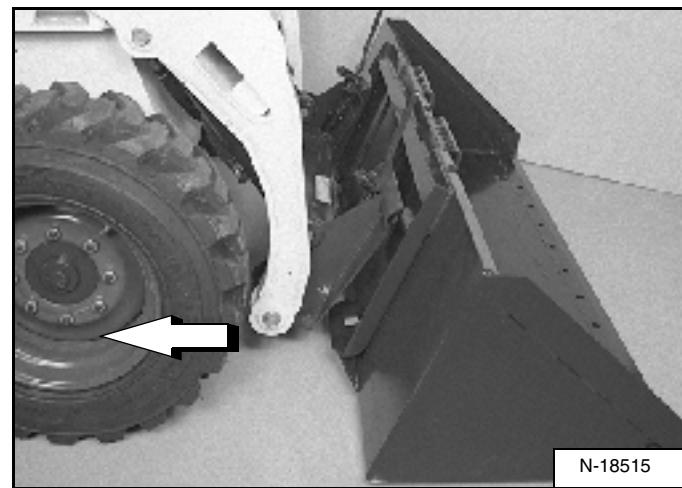
Figure 87



Push and hold the BOB-TACH "WEDGES UP" Switch (Front Accessory Panel) (1) [Figure 87] until the wedges are fully raised.

Tilt the Bob-Tach forward.

Figure 88



Move the loader backward, away from the bucket or attachment [Figure 88].

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) before installing an attachment to be sure both wedges are fully raised before installing the attachment.

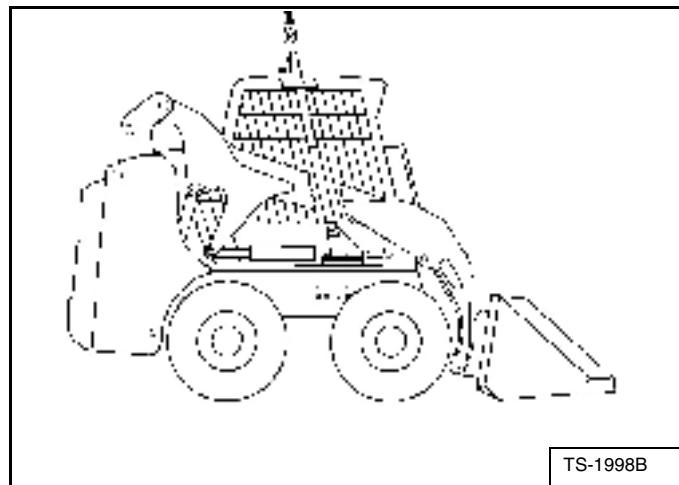
Single Point Lift


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 meters while lifting the machine.

W-2007-0497

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

Figure 113

Install the kit as explained in the Instructions with the kit and attach lift as shown [Figure 113].

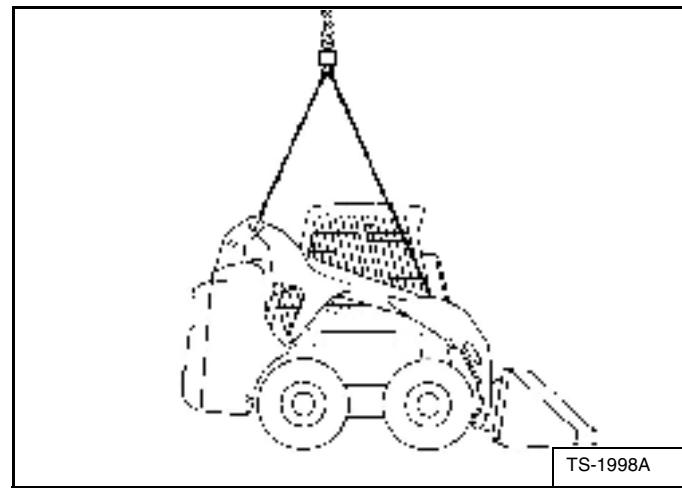
The Single Point Lift, supplied by Bobcat, is designed to lift and support the Bobcat Loader without affecting roll over and falling object protection features of the operator cab.


WARNING
AVOID INJURY OR DEATH

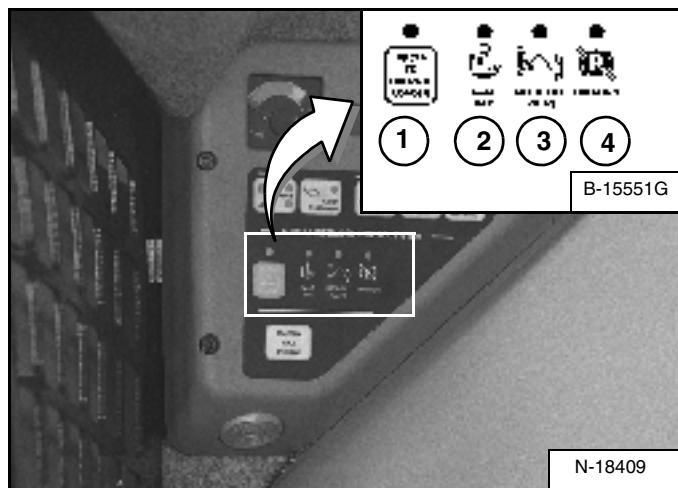
- Before lifting, check fasteners on four point lift.
- Never allow riders in the cab or bystanders within 5 meters while lifting the machine.

W-2160-0694

The loader can be lifted with the Four Point Lift which is available as a kit from your Bobcat Loader dealer. The backhoe mounting kit must also be installed to provide lift points at the front of the loader.

Figure 114

Attach cables or chains to lift eyes [Figure 114].

Inspecting The BICS Controller (Engine STOPPED - Key ON)**Figure 117**

1. Sit in operator's seat. Turn key ON (*Key Switch Panel*), press RUN / ENTER Button (*Keyless Panel*), lower seat bar and disengage parking brake. Press the PRESS TO OPERATE LOADER Button. Three BICS lights (1, 2 and 3) [PRESS TO OPERATE LOADER, SEAT BAR, AND LIFT & TILT VALVE] on left instrument panel should be ON [Figure 117].
2. Raise seat bar fully. All four BICS lights (1, 2, 3 and 4) [PRESS TO OPERATE LOADER, SEAT BAR, LIFT & TILT VALVE AND TRACTION*] on left instrument panel should be OFF [Figure 117].

NOTE: Record what lights are blinking (if any) and the number of light flashes. (See BOBCAT INTERLOCK CONTROL SYSTEM (BICS) on Page 105.)

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. Press the auxiliary hydraulics FLOW Button. The auxiliary FLOW Button light will come ON. Raise the seat bar. The light should 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 should 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 slowly forward and backward. The TRACTION lock should be engaged. Lower the seat bar. Press the PRESS TO OPERATE LOADER Button.

7. Engage parking brake and move steering levers slowly forward and backward. The TRACTION lock should be engaged.

NOTE: *The TRACTION light on the left instrument panel will remain OFF until the engine is started, the PRESS TO OPERATE LOADER Button is pressed and the parking brake is disengaged.

Inspecting The Lift Arm By-Pass Control

8. Raise the lift arms 2 meters off the ground. Stop engine. Turn lift arm by-pass control knob clockwise 1/4 turn. Pull up and hold lift arm by-pass 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 meters off the ground.
11. Turn key to OFF (*Key Switch Panel*), press STOP Button (*Keyless Panel*), and wait for the engine to come to a complete stop.
12. Turn key to ON (*Key Switch Panel*), press RUN / ENTER Button (*Keyless Panel*). Press the PRESS TO OPERATE LOADER Button, move hand control or joystick to lower the lift arms. Lift arms should not lower.
13. Move the control (foot pedal, hand control or joystick) to tilt the bucket (or attachment) forward. The bucket (or attachment) should 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-2151-0394

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%

Contact your fuel supplier for local recommendations.

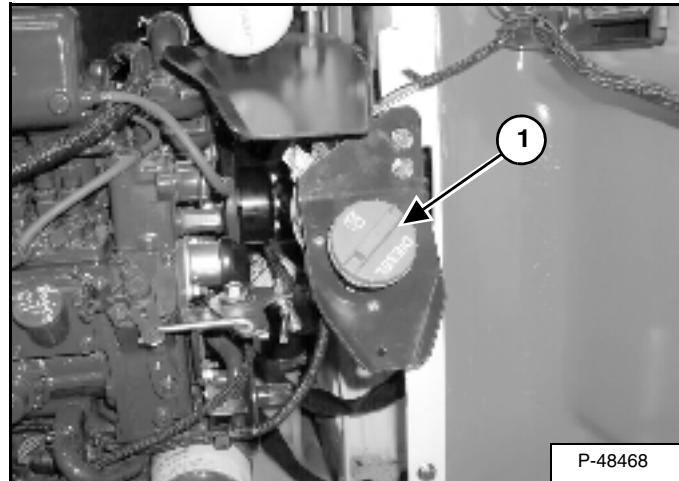
Filling the Fuel Tank

⚠ WARNING

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

W-2063-0887

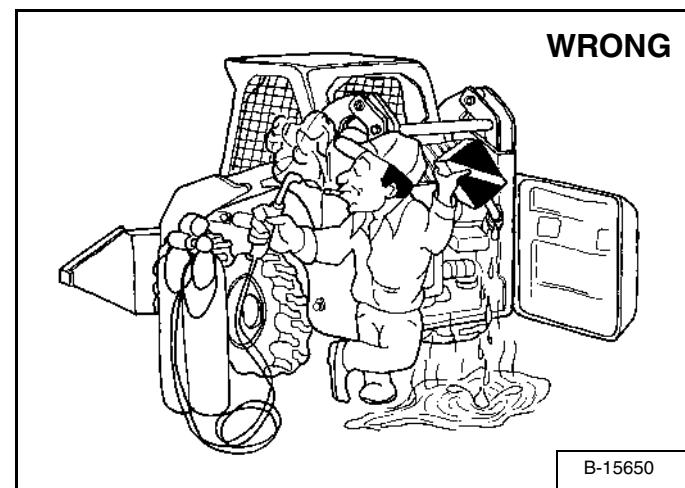
Figure 141



Open the rear door.

Remove the fuel fill cap (1) [Figure 141].

Figure 142



Use a clean, approved safety container to add fuel of the correct specifications. Add fuel only in an area that has free movement of air and no open flames or sparks. NO SMOKING! [Figure 142].

Install and tighten the fuel fill cap (1) [Figure 142].

⚠ WARNING

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 which can result in injury or death.

W-2103-1285

Removing And Installing Battery

WARNING

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

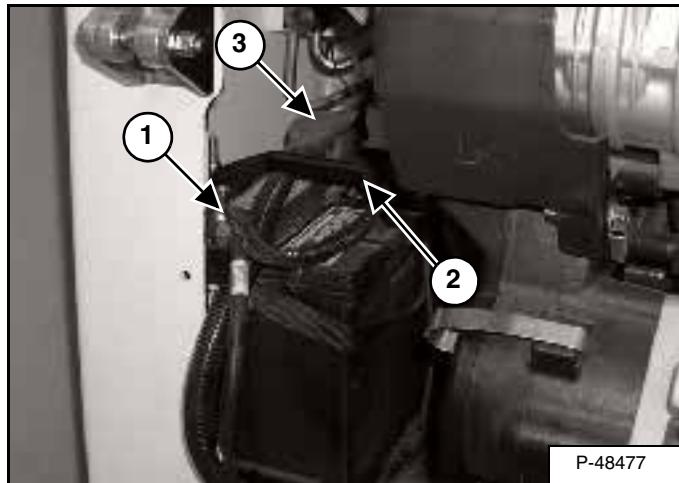
In case of acid contact, wash immediately with water. In case of eye contact get prompt medical attention and wash eye with clean, cool water for at least 15 minutes.

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

W-2065-1296

Open the rear door.

Figure 155



P-48477

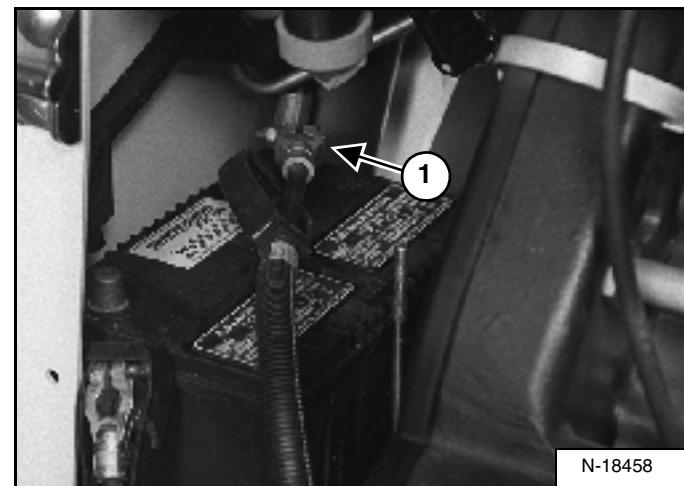
Disconnect the negative (-) battery cable (1) [Figure 155].

Remove the battery hold down clamp (2) [Figure 155].

Disconnect the positive (+) battery cable (3) [Figure 155].

Remove the battery from the loader.

Figure 156

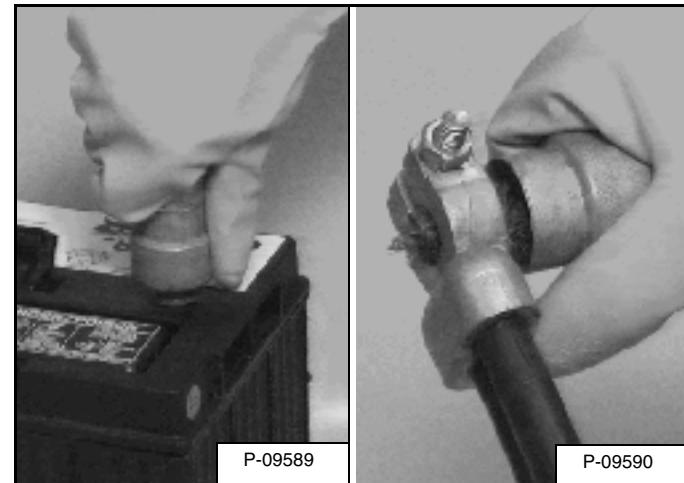


N-18458

Disconnect the positive (+) battery cable (1) [Figure 156].

Remove the battery from the loader.

Figure 157



Always clean the battery terminals and cable ends when installing a new or used battery [Figure 157].

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.

Close the rear door before operating the loader.

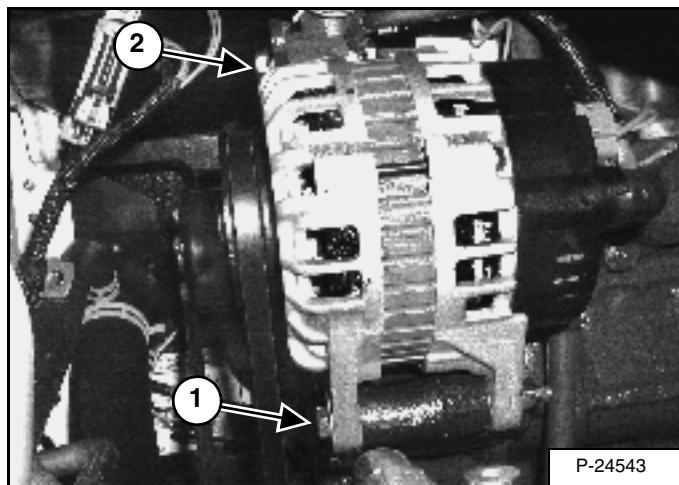
ALTERNATOR BELT

Belt Adjustment

Stop the engine.

Raise the operator cab. (See Raising on Page 71.)

Figure 172



P-24543

Loosen the alternator mounting bolt (1) [Figure 172].

Loosen the adjustment bolt (2) [Figure 172].

Move the alternator until the belt has 8,0 mm movement at the middle of the belt span with 66 N of force.

Tighten the adjustment bolt and mounting bolt.

Lower the operator cab. (See Lowering on Page 72.)

Belt Replacement

Loosen the alternator mounting and adjustment bolts (1 and 2) [Figure 172] and loosen the belt all the way.

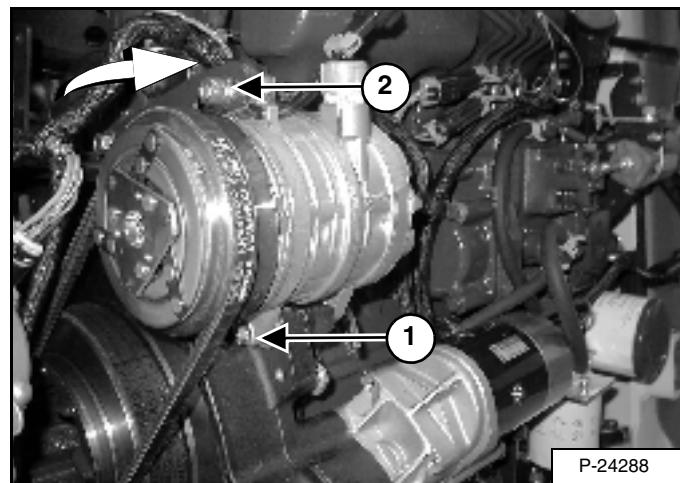
Remove the belt and install a new belt.

Adjust the belt as shown above.

AIR CONDITIONING BELT

Belt Adjustment

Figure 173



P-24288

Inspect the drive belt regularly for wear. (See SERVICE SCHEDULE on Page 65.)

Open the rear door. Remove the drive belt cover. Remove the compressor belt cover.

Loosen the mounting bolt (1) and the adjustment bolt (2) [Figure 173].

Move the compressor to the rear until the belt has 8,0 mm movement at the middle of the belt span with 66 N of force.

Tighten the adjustment bolt and the mounting bolt.

Install the covers and close the rear door.

Belt Replacement

Open the rear door. Remove the drive belt cover and the compressor belt cover.

Loosen the mounting bolt (1) and the adjustment bolt (2) [Figure 173] and move the compressor all the way forward.

Remove the belt and install a new belt.

Adjust the belt as shown above.

Storage

Sometimes it may be necessary to store your Bobcat Loader for an extend 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.
- Drain and flush the cooling system. Refill with premixed coolant.
- Replace all fluids and filters (engine, hyd. / hydro.).
- 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.