

Product: Bobcat 963 Skid Steer Loader Service Repair Workshop Manual 562215001-516515001

Full Download: <https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001/>



Bobcat®

963

Service Manual

(S/N 562215001 & Above)

(S/N 516515001 & Above)



**EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)**

Sample of manual. Download All 640 pages at:

<https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001/>

6900988 (3-06)



Printed in U.S.A.

© Bobcat Company 2006

Product: Bobcat 963 Skid Steer Loader Service Repair Workshop Manual 562215001-516515001

Full Download: <https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001/>

Sample of manual. Download All 640 pages at:

<https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001/>

MAINTENANCE SAFETY



WARNING

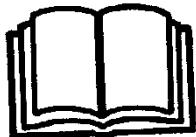
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after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

W-2003-0903



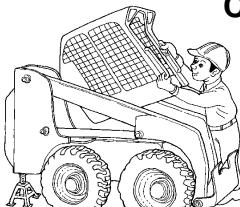
Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

CORRECT



B-10731a

CORRECT



B-15590

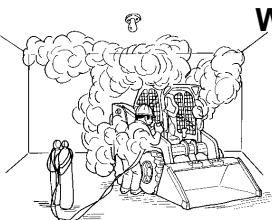
CORRECT



B-15591

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

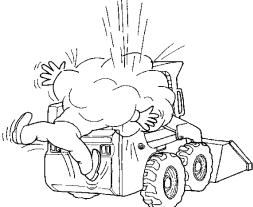
WRONG



B-15592

⚠ 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.

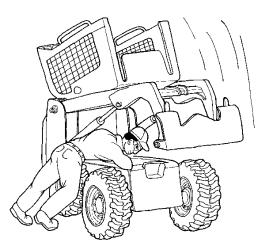
WRONG



B-15600

⚠ 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.

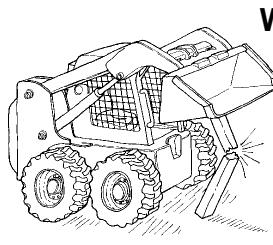
WRONG



B-15593

⚠ 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.

WRONG



B-15599

⚠ 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.

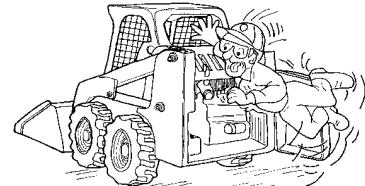
WRONG



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.

WRONG



B-15601

⚠ 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.

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.

MSW08-0805



Bobcat®

ALPHABETICAL INDEX

AHC SYSTEM.....	60-01	HYDROSTATIC MOTOR.....	30-01
AIR CLEANER.....	70-01	HYDROSTATIC PUMP.....	30-01
AIR CLEANER SERVICE	10-01	HYDROSTATIC SYSTEM INFORMATION	30-01
AIR CONDITIONING SERVICE.....	80-01		
AIR CONDITIONING SYSTEM FLOW	60-01	INSTRUMENT PANEL	50-01
BASIC TROUBLESHOOTING	80-01	LIFT ARMS	50-01
BATTERY.....	60-01	LIFT ARM BY-PASS CONTROL VALVE	20-01
BICS™	10-01	LIFT ARM SUPPORT DEVICE	10-01
BICS™ SYSTEM	60-01	LIFTING AND BLOCKING THE LOADER	10-01
BOBCAT CONTROLLER.....	60-01	LIGHTS	60-01
BOB-TACH.....	50-01	LOADER SPECIFICATIONS.....	SPEC-01
BRAKE.....	40-01	LUBRICATION THE LOADER	10-01
BUCKET POSITION VALVE	20-01		
CHAINCASE	40-01	MAIN RELIEF VALVE.....	20-01
CHARGE PRESSURE.....	30-01	MUFFLER	70-01
COMPONENTS	80-01		
COMPRESSOR.....	80-01	OIL COOLER	30-01
CONDENSER	80-01	OPERATOR CAB	10-01, 50-01
CONTROL PANEL.....	30-01	OPERATOR SEAT	50-01
CONTROLS	20-01		
CONVERSIONS	SPEC-01	POWER BOB-TACH (OPTION)	10-01, 50-01
COOLING FAN	70-01	PRESSURE RELIEF VALVE	80-01
COOLING FAN FILTER	20-01	PRESSURE SWITCH	80-01
CYLINDER(S)	20-01	PWM CONTROL.....	60-01
DIAGNOSTICS SERVICE CODES.....	60-01	RADIATOR	60-01
DRIVE BELT	30-01	REAR AUXILIARY DIVERTER	20-01
DRIVE COMPONENTS	40-01	REAR DOOR	50-01
		REAR GRILL	50-01
ELECTRICAL/HYDRAULIC CONTROL REF.....	60-01	RECEIVER/DRIER.....	80-01
ELECTRICAL SYSTEM INFORMATION	60-01	RECONDITIONING THE ENGINE.....	70-01
ENGINE AND ENGINE MOUNTS	70-01	REGULAR MAINTENANCE.....	80-01
ENGINE COMPONENTS AND TESTING	70-01	REMOTE START	10-01
ENGINE COOLING SYSTEM.....	10-01		
ENGINE LUBRICATION SYSTEM	10-01	SAFETY	80-01
ENGINE SPEED CONTROL	70-01	SEAT BAR.....	50-01
ENGINE SPECIFICATIONS	SPEC-01	SEAT BAR RESTRAINT SYSTEM.....	10-01
EVAPORATOR	80-01	SEAT BAR SENSOR.....	60-01
EVAPORATOR/HEATER UNIT	80-01	SERVICE SCHEDULE	10-01
EXPANSION VALVE	80-01	STARTER.....	60-01
		STEERING	30-01
FLYWHEEL AND HOUSING	70-01	SYSTEM CHARGING AND RECLAMATION	80-01
FUEL SYSTEM.....	10-01	SYSTEM TROUBLEHOOTING CHART	80-01
FUEL TANK	50-01		
		TEMPERATURE/PRESSURE.....	80-01
GENERAL AIR CONDITIONING SERVICE		THERMOSTAT	80-01
GUIDLINES	80-01	TIILT JUNCTION BLOCK.....	20-01
		TIRE MAINTENANCE	10-01
HAND-LEVER BOB-TACH	10-01	TOWING THE LOADER.....	10-01
HEATER COIL	80-01	TORQUE SPECIFICATIONS FOR BOLTS	SPEC-01
HEATER/AC FAN.....	80-01	TRACTION LOCK	60-01
HEATER VALVE	80-01	TRANSPORTING THE LOADER	10-01
HYDRAULIC CONTROL VALVE	20-01	TROUBLESHOOTING	70-01
HYDRAULIC CONNECTION SPEC	SPEC-01		
HYDRAULIC/HYDROSTATIC FILTER	20-01		
HYDRAULIC/HYDROSTATIC FLUID SPEC.....	SPEC-01		
HYDRAULIC FLUID RESERVOIR.....	20-01		
HYDRAULIC PUMP	10-01		
HYDRAULIC SYSTEM INFORMATION	20-01		
HYDRAULIC/HYDROSTATIC SYSTEM	10-01		



Bobcat®

CONTENTS

FOREWORD.....	II
SAFETY INSTRUCTIONS	V
SERIAL NUMBER LOCATIONS	IX
DELIVERY REPORT.....	IX
BOBCAT LOADER IDENTIFICATION	X
SAFETY & MAINTENANCE	10-01
HYDRAULIC SYSTEM	20-01
HYDROSTATIC SYSTEM.....	30-01
DRIVE SYSTEM	40-01
MAIN FRAME	50-01
ELECTRICAL SYSTEM & ANALYSIS.....	60-01
ENGINE SERVICE	70-01
HEATING, VENTILATION, AIR CONDITIONING	80-01
SPECIFICATIONS.....	SPEC-01

**SAFETY &
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**HYDROSTATIC
SYSTEM**

**DRIVE
SYSTEM**

MAIN FRAME

**ELECTRICAL
SYSTEM &
ANALYSIS**

**ENGINE
SERVICE**

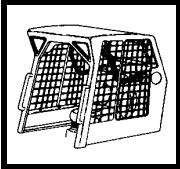
HVAC

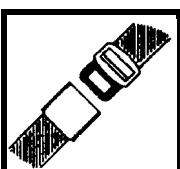
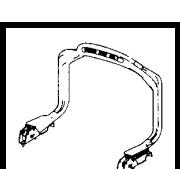
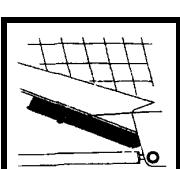
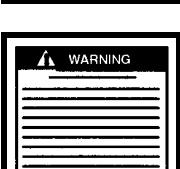
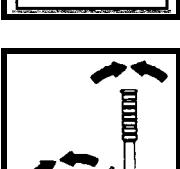
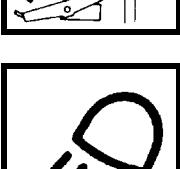
SPECIFICATIONS

FOREWORD

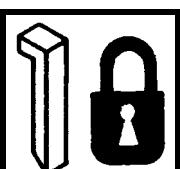
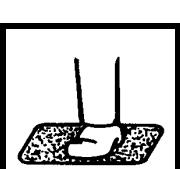
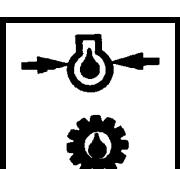
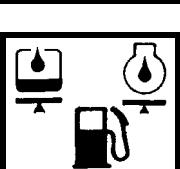
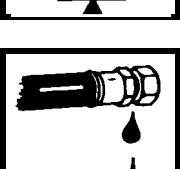
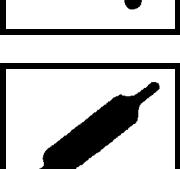
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

A general inspection of the following items must be made after the loader has had service or repair:

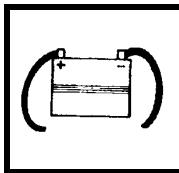
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.

2. Check that ROPS mounting hardware is tightened and is Bobcat approved.

3. The seat belt must be correctly installed, functional and in good condition.

4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.

5. Check lift arm support device; replace if damaged.

6. Machine signs must be legible and in the correct location.

7. Steering levers and foot pedals must return to neutral.

8. Check for correct function of the work lights.

9. The parking brake must function correctly.

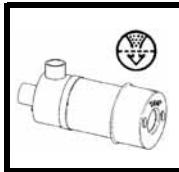
10. Enclosure door latches must open and close freely.

11. Bob-Tach wedges and linkages must function correctly and be in good condition.

12. Safety treads must be in good condition.

13. Check for correct function of indicator lamps (Optional on some models).

14. Check hydraulic fluid level, engine oil level and fuel supply.

15. Inspect for fuel, oil or hydraulic fluid leaks.

16. Lubricate the loader.


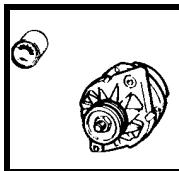
17. Check the condition of the battery and cables.



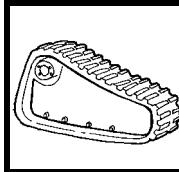
18. Inspect the air cleaner for damage or leaks. Check the condition of the element.



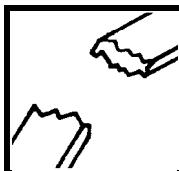
19. Check the electrical charging system.



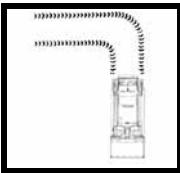
20. Check tracks for wear.



21. Inspect for loose or broken parts or connections.



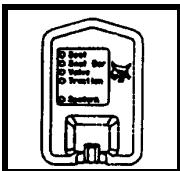
22. Operate the loader and check all functions.



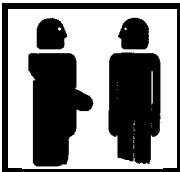
23. Check for any field modification not completed.



24. Check for correct function of the Bobcat Interlock Control System (BICS™) before the machine is returned to the customer.



Recommend to the owner that all necessary corrections be made before the machine is returned to service.



**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.



Bobcat®

SAFETY INSTRUCTIONS



Safety Alert Symbol

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



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-2003-0903



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

IMPORTANT

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

I-2019-0284

The following publications 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 is in safe operating condition.
- The Operation & Maintenance Manual delivered with the machine or attachment contains 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 fastened to the operator cab. 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 Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.
- The Skid-Steer Loader Operator Training Course is available through your local dealer or at www.training.bobcat.com or www.bobcat.com. This course is intended to provide rules and practices of correct operation of the Skid-Steer Loader. The course is available in English and Spanish versions.
- Service Safety Training Courses are available from your Bobcat dealer or at www.training.bobcat.com or www.bobcat.com. They provide information for safe and correct service procedures.
- The Skid-Steer Loader Safety Video is available from your Bobcat dealer or at www.training.bobcat.com or www.bobcat.com.

SI SSL-0206 SM

SAFETY INSTRUCTIONS (CONT'D)

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

1-888-258-0808

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

SAFETY INSTRUCTIONS (CONT'D)

Fire Prevention

The machine and attachments have components that are at high temperature 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.

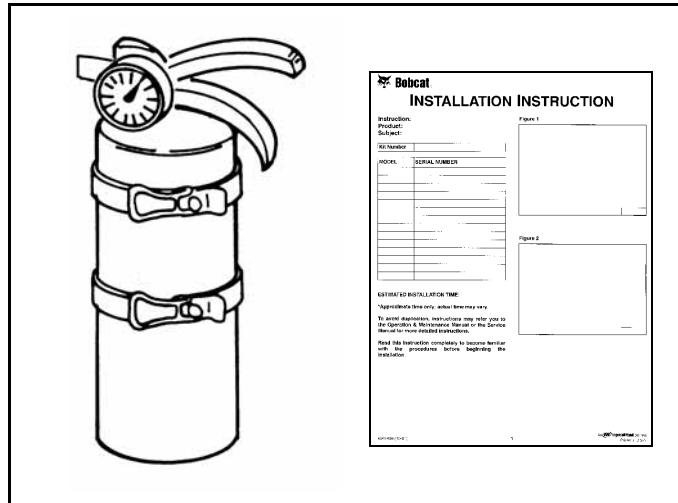
Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it will increase fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential hazard.

The spark arrestor muffler 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.

- Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.
- The operator cab, engine compartment, and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazard and overheating.
- Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part.
- Check fuel and hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. 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.
- Do not use ether or starting fluids on any engine which has glow plugs. These starting aids can cause explosion and injure you or bystanders.
- Always clean the machine, disconnect the battery, and disconnect the wiring from the controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding. Have good ventilation when grinding or welding painted parts. Wear a dust mask when grinding painted parts. Toxic dust or gas can be produced.
- Stop the engine and let it cool before adding fuel. NO SMOKING!

- Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting.
- Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrestor muffler (if equipped).

Figure 1



- Know where fire extinguishers and first aid kits are located and how to use them. Fire extinguishers are available from your Bobcat dealer [Figure 1].



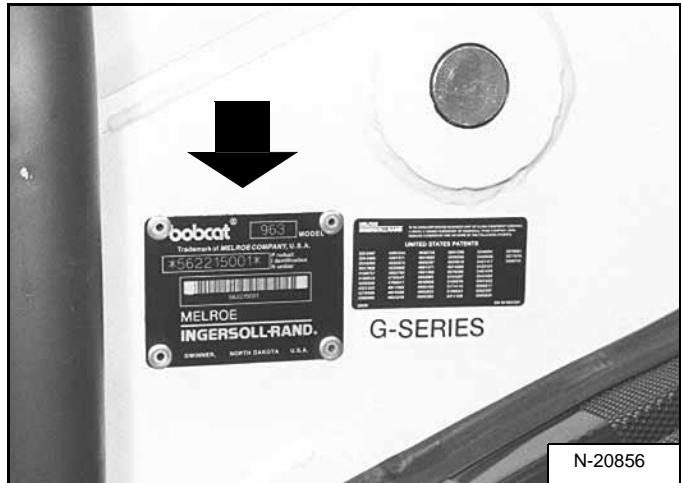
Bobcat®

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.

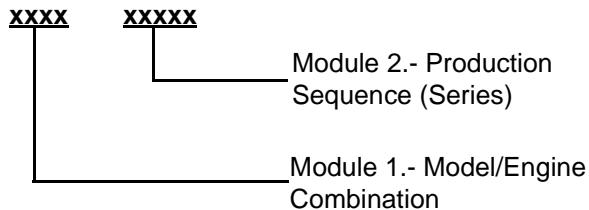
Loader Serial Number

Figure 2



The loader serial number plate is located on the inside of the left upright, above the grill [Figure 2].

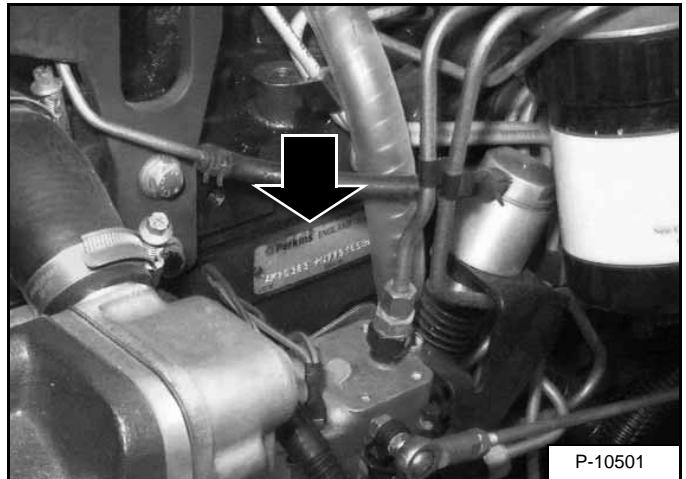
Explanation of loader Serial Number:



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

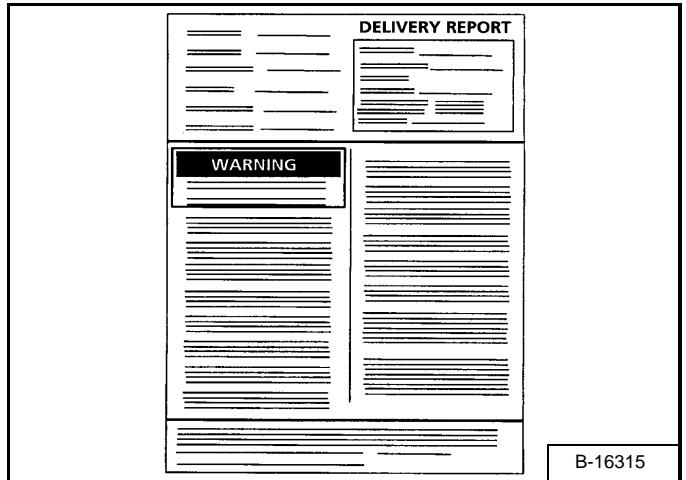
Figure 3



The serial number is on the engine block just above the fuel injection pump [Figure 3].

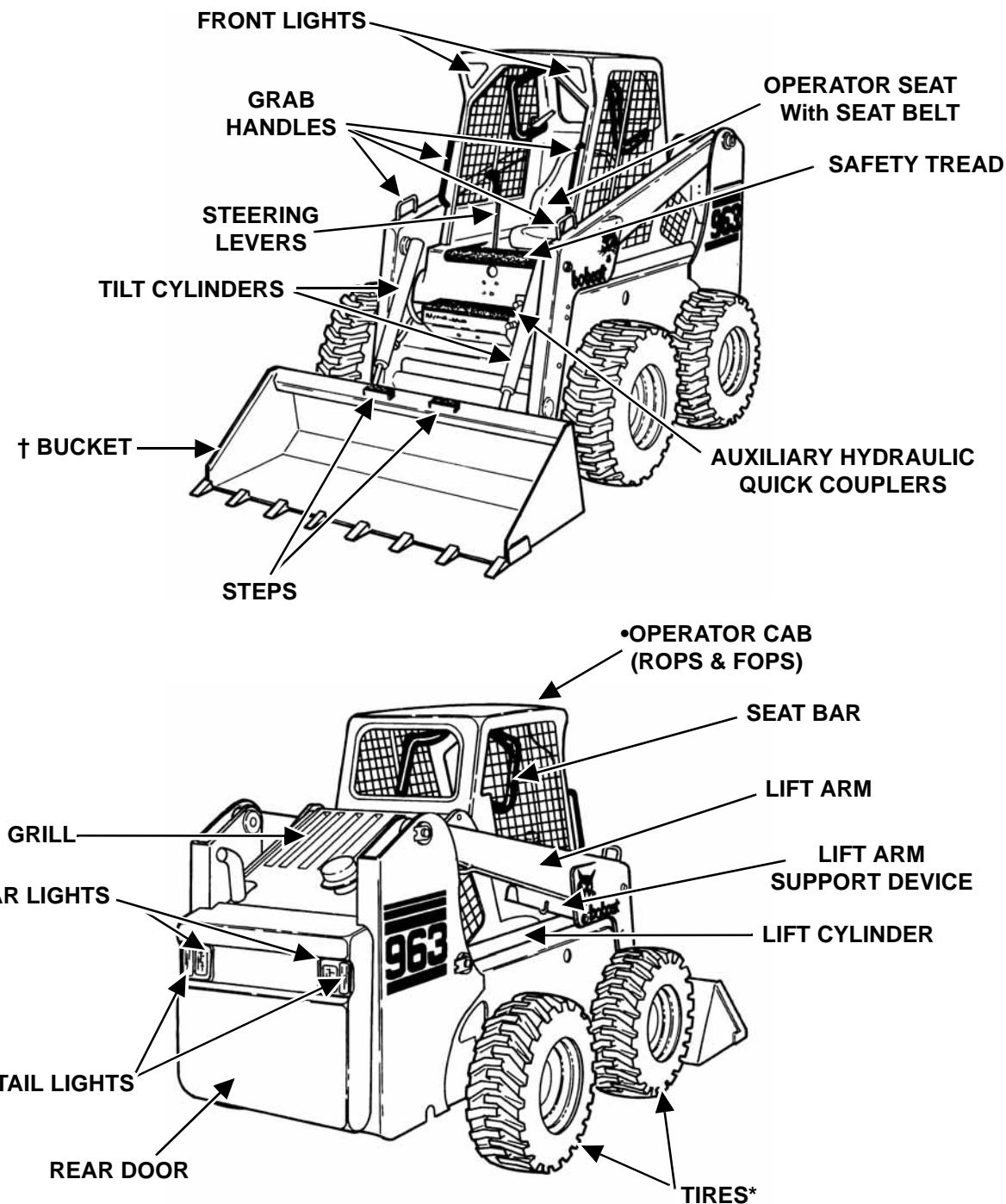
DELIVERY REPORT

Figure 4



The Delivery Report must be filled out 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. Make sure it is filled out completely [Figure 4].

BOBCAT LOADER IDENTIFICATION



* **TIRES** - Flotation tires (optional) are shown. The Bobcat loader is factory equipped with standard tires.

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

• **ROPS, FOPS** - Roll Over Protective Structure, Falling Object Protective Structure, per SAE J1040 and ISO 3471, and Falling Object Protective Structure per SAE J1043 and ISO 3449, Level I. Level II is available. The Bobcat loader is base-equipped with a standard operator cab as shown. Extra insulated cab is available as an option (Reduced noise level).

B-15641
B-15642

AIR CLEANER SERVICE	10-120-1
Replacing Filter Element	10-120-1
BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)	10-10-1
Additional Inspection For Loaders With Advanced Hand Controls (AHC)	10-10-2
Inspecting Deactivation Of The Auxiliary Hydraulics System (Engine STOPPED - Key ON)	10-10-1
Inspecting The BICS™ Controller (Engine STOPPED - Key ON)	10-10-1
Inspecting The Lift Arm By-Pass Control	10-10-1
Inspecting The Seat Bar Sensor (Engine RUNNING)	10-10-1
Inspecting The Traction Lock (Engine RUNNING)	10-10-1
ENGINE COOLING SYSTEM	10-140-1
Checking The Coolant Level	10-140-2
Cleaning The Cooling System	10-140-1
Replacing The Coolant	10-140-2
ENGINE LUBRICATION SYSTEM	10-130-1
Checking Engine Oil	10-130-1
Replacing Oil and Filter	10-130-2
FUEL SYSTEM	10-110-1
Filling the Fuel Tank	10-110-1
Fuel Filters	10-110-2
Fuel Specifications	10-110-1
Removing Air From The Fuel System	10-110-3
HAND-LEVER BOB-TACH	10-60-1
Inspection And Maintenance	10-60-1
HYDRAULIC/HYDROSTATIC SYSTEM	10-150-1
Breather Cap	10-150-3
Checking And Adding Fluid	10-150-1
Replacing The Hydraulic Fluid	10-150-2
Replacing The Hydraulic/Hydrostatic Filters	10-150-1
LIFT ARM SUPPORT DEVICE	10-50-1
Disengaging The Lift Arm support Device	10-50-2
Engaging The Lift Arm Support Device	10-50-1
LIFTING AND BLOCKING THE LOADER	10-20-1
Procedure	10-20-1
LUBRICATING THE BOBCAT LOADER	10-170-1
Procedure	10-170-1

Continued On Next Page

SAFETY & MAINTENANCE (CONT'D)

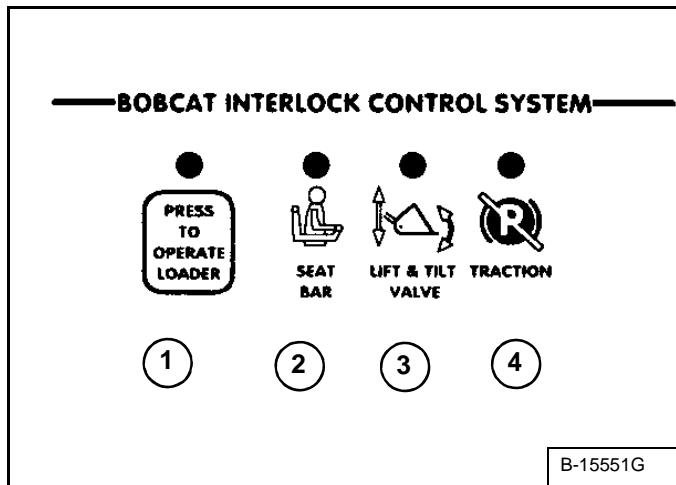
OPERATOR CAB	10-70-1
Description	10-70-1
Emergency Exit	10-70-3
Lowering The Operator Cab	10-70-2
Raising The Operator Cab	10-70-1
POWER BOB-TACH (OPTION)	10-61-1
Inspection and Maintenance	10-61-1
REMOTE START.....	10-90-1
Procedure	10-90-3
Procedure for Loader With Attachments Control Harness.....	10-90-2
Procedure for Loader Without, Attachments Control Harness.....	10-90-1
SEAT BAR RESTRAINT SYSTEM (ADVANCED HAND CONTROLS) 10-81-1	
Description.....	10-81-1
Inspecting The Seat Bar	10-81-1
Maintaining The Seat Bar	10-81-1
SEAT BAR RESTRAINT SYSTEM (FOOT PEDALS).....	10-80-1
Description.....	10-80-1
Inspecting The Seat Bar	10-80-1
Maintaining The Seat Bar	10-80-1
SERVICE SCHEDULE	10-100-1
TIRE MAINTENANCE.....	10-160-1
Tire Mounting	10-160-1
Tire Rotation.....	10-160-1
Wheel Nuts	10-160-1
TOWING THE LOADER	10-40-1
Procedure	10-40-1
TRANSPORTING THE LOADER	10-30-1
Procedure	10-30-1

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

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



Figure 10-10-1



1. Sit in the operator's seat. Turn key ON (*Standard Panel*), press RUN / ENTER Button (*Deluxe Panel*), lower the Seat Bar and disengage the parking brake pedal. Press the PRESS TO OPERATE LOADER Button. Three BICS lights (Items 1, 2, & 3) [Figure 10-10-1] [PRESS TO OPERATE LOADER, SEAT BAR, and LIFT & TILT VALVE] on left instrument panel should be ON [Figure 10-10-1].
2. Raise the Seat Bar fully. All four BICS lights (Items 1, 2, 3, & 4) [Figure 10-10-1] [PRESS TO OPERATE LOADER, SEAT BAR, LIFT & TILT VALVE and TRACTION*] on left instrument panel should be OFF [Figure 10-10-1].

NOTE: Record what lights are blinking (if any) and the number of light flashes. (See Troubleshooting Guide on Page 60-90-4.).

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

3. Sit in the operator's seat, lower the 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 the operator's seat, lower the seat bar, engage the parking brake pedal and fasten the seat belt.
5. Start the 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 the seat belt, disengage the parking brake pedal, press the PRESS TO OPERATE LOADER Button and raise the Seat Bar fully. Move the 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 the parking brake pedal and move the 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 6 feet (2 meters) off the ground. Stop the engine.

Turn the lift arm by-pass control knob clockwise 1/4 turn. Pull up and hold the lift arm by-pass control knob until the lift arms slowly lower.

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™) (CONT'D)

Additional Inspection For Loaders With Advanced Hand Controls (AHC)

9. Sit in the operator's seat and fasten the Seat Belt. Lower the Seat Bar, start the engine and press the PRESS TO OPERATE LOADER Button.
10. Raise the lift arms about 6 feet (2 meters) off the ground.
11. Turn key OFF (*Standard Panel*), press the STOP Button (*Deluxe Panel*), and wait for the engine to come to a complete stop.
12. Turn key ON (*Standard Panel*), press RUN/ENTER Button (*Deluxe Panel*). Press the PRESS TO OPERATE LOADER Button, move the left hand control toward the operator. The lift arms should not lower.
13. Move the right hand control away from the operator. The bucket (or attachment) should not tilt forward.

LIFTING AND BLOCKING THE LOADER

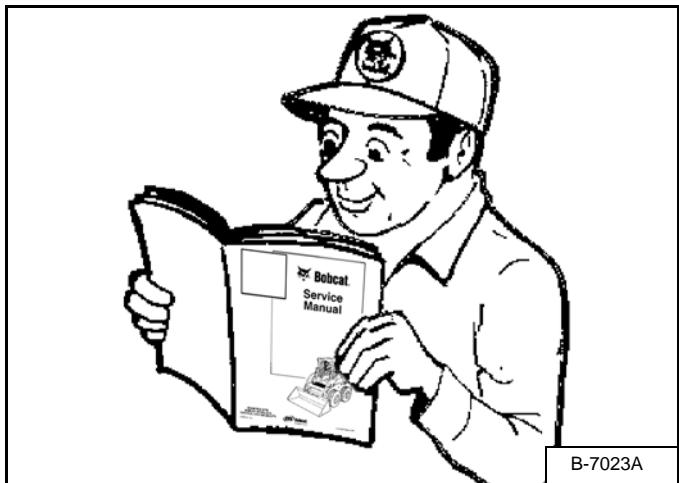
Procedure

! WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, 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-2003-0199

Figure 10-20-1



B-7023A

Always park the loader on a level surface.

! WARNING

Put jackstands under the front axles and rear corners of the frame before running the engine for service. Failure to use jackstands can allow the machine to fall or move and cause injury or death.

W-2017-0286

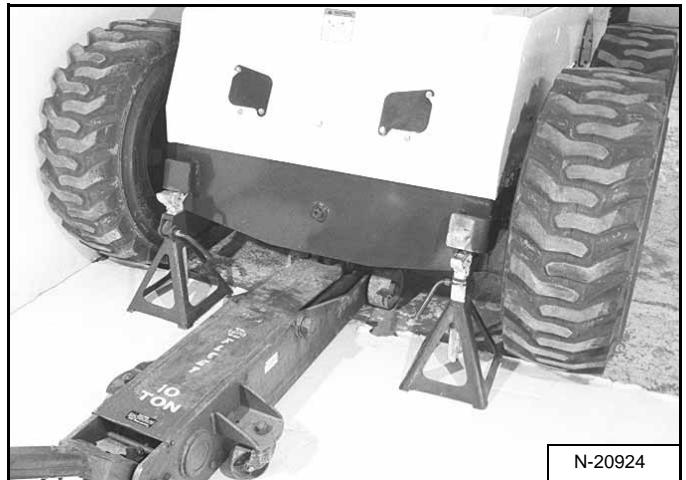
Figure 10-20-2



N-20922

Stop the engine. Put the floor jack under the rear of the loader. Lift the rear of the loader and install jackstands [Figure 10-20-2].

Figure 10-20-3



N-20924

Put the floor jack under the front of the loader. Lift the front of the loader and install jackstands under the boom stops [Figure 10-20-3].

NOTE: Make sure the jackstands do not touch the tires.



Bobcat®

TRANSPORTING THE LOADER

Procedure

! WARNING

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-2058-0494

Figure 10-30-1

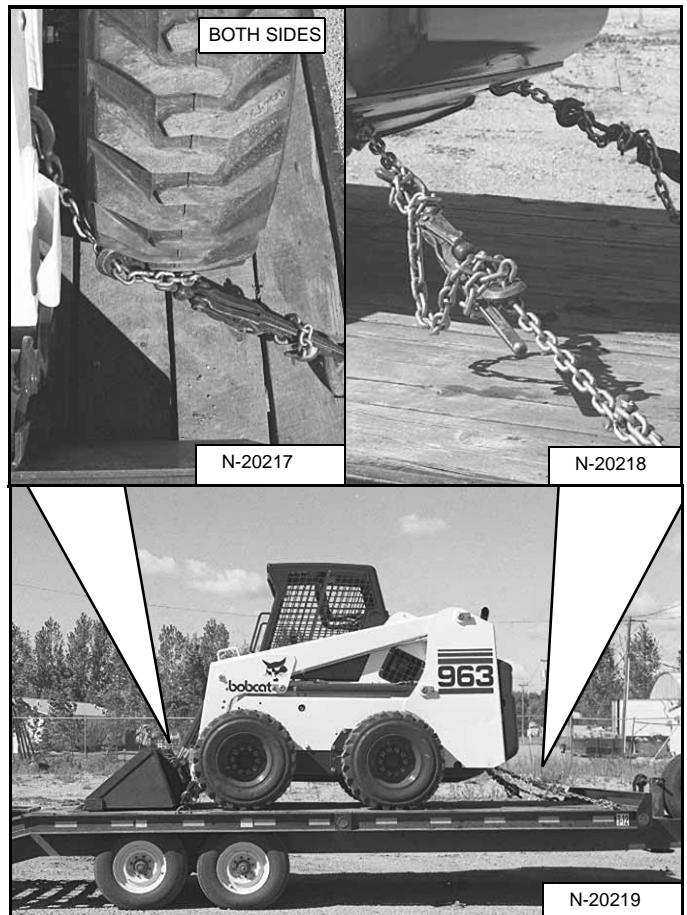


Be sure the transport vehicle is of adequate size and capacity.

A loader with an empty bucket or no attachment must be loaded backward onto the transport vehicle [Figure 10-30-1].

The rear of the trailer must be blocked or supported (Item 1) [Figure 10-30-1] when loading or unloading the loader to prevent the front end of the trailer from raising up. Some ramps have a wedge shape (Item 1) [Figure 10-30-1] to support the trailer.

Figure 10-30-2



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 10-30-2]:

- 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 (Inset) [Figure 10-30-2].
- Fasten each end of the chain to the transport vehicle.

Cover the exhaust pipe of the loader before transporting. Air entering the exhaust pipe can turn the turbocharger and cause damage due to lack of lubrication.



Bobcat®

TOWING THE LOADER

Procedure

To prevent damage to the loaders hydrostatic system the loader must be towed only a short distance at a slow speed. (Example: Moving the loader onto a transport vehicle.)

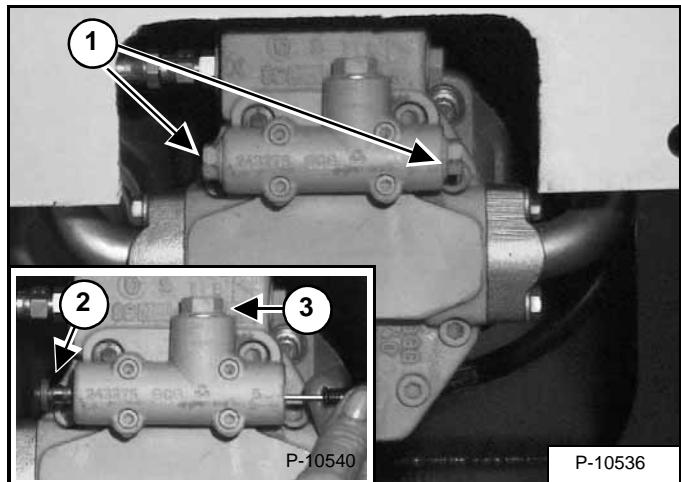
The towing chain (or cable) must be rated 1 and 1/2 times the weight of the loader. (See Loader Dimensions on Page SPEC-10-1.)

Lift and block the rear of the loader. (See LIFTING AND BLOCKING THE LOADER on Page 10-20-1.)

Remove the rear wheels. (See TIRE MAINTENANCE on Page 10-160-1.)

Remove the hydrostatic motor access cover (both sides). (See Cover Removal And Installation on Page 30-40-15.)

Figure 10-40-1



Remove the plugs (Item 1) [Figure 10-40-1] from the motor (both sides).

Remove the shuttle valve (Item 2) [Figure 10-40-1] using a small screwdriver (both sides).

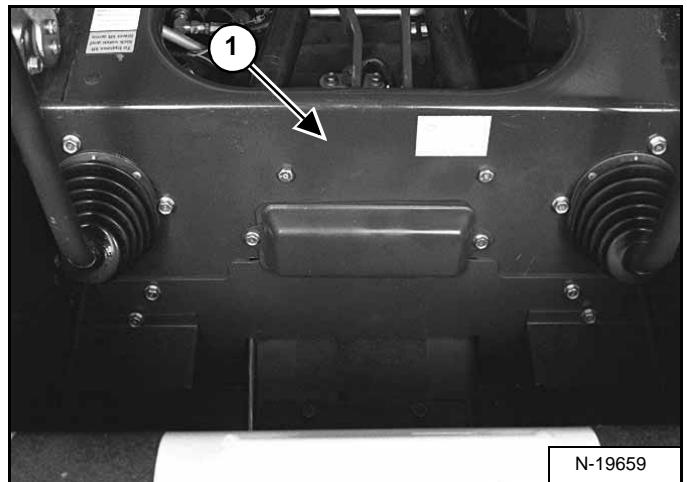
NOTE: The plug (Item 3) [Figure 10-40-1] and relief valve may need to be removed so that the shuttle spool can be removed from the housing bore.

Install and tighten the plugs (Item 1) [Figure 10-40-1].

Install the rear wheels. Lower the loader to the ground.

Raise the operator cab. (See Raising The Operator Cab on Page 10-70-1.)

Figure 10-40-2

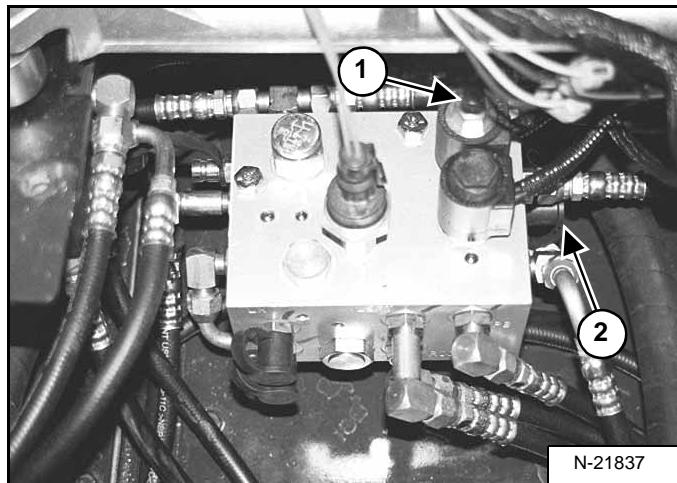


NOTE: The steering panel assembly (Item 1) [Figure 10-40-2] has been removed in [Figure 10-40-3] to show the brake block more clearly. The panel does not need to be removed for this procedure.

TOWING THE LOADER (CONT'D)

Procedure (Cont'd)

Figure 10-40-3



WARNING

Unexpected loader movement.
Can cause serious injury or death.

Push in and turn red traction lock bypass knob clockwise to the engaged position before operating loader. Read Operation and Maintenance Manual for more instructions.

6803932

Disengage the parking brake solenoid valve by pushing **IN** on the red Traction Lock By-Pass Knob (Item 1) [Figure 10-40-3] and turning it **1/4 TURN** counterclockwise. The knob will come out to release the solenoid valve.

Connect a Port-a-Power to the coupler (Item 2) [Figure 10-40-3] at the brake/two speed block.

Operate the Port-a-Power to approximately 350 PSI (24134 kPa) to release the parking brake.

Lower the operator cab.

Remove the blocks from front wheels.

Move the loader to the desired location.

Park the loader on level ground and block the rear wheels to prevent the loader from rolling.

NOTE: Before using the loader again, disconnect the Port-a-Power, push in and turn the red Traction Lock By-Pass Knob (Item 1) [Figure 10-40-3] 1/4 turn clockwise to engage the brake solenoid valve. Install the shuttle valve (Item 2) [Figure 10-40-1] and plugs (Item 1) [Figure 10-40-1] into the hydrostatic motors.

LIFT ARM SUPPORT DEVICE



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.

W-2059-0598



WARNING

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-2271-1197

Engaging The Lift Arm Support Device



DANGER

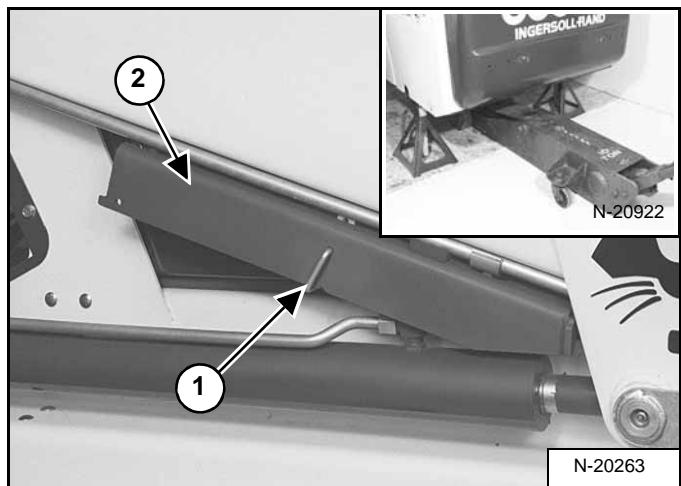
AVOID DEATH

- 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. 57051



SW 02 6717343

Figure 1

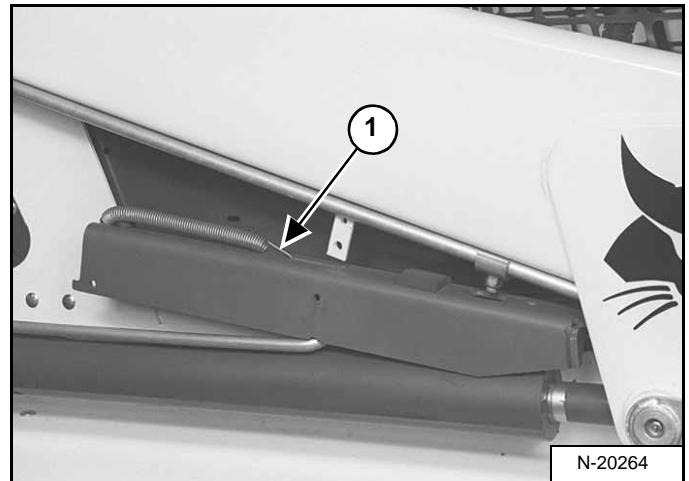


Install jackstands under the rear of the loader frame (Inset) [Figure 1].

Disconnect the spring from the lift arm support device retaining pin (Item 1) [Figure 1]. Support the lift arm

support device (Item 2) [Figure 1] with your hand and remove the retaining pin.

Figure 10-50-2



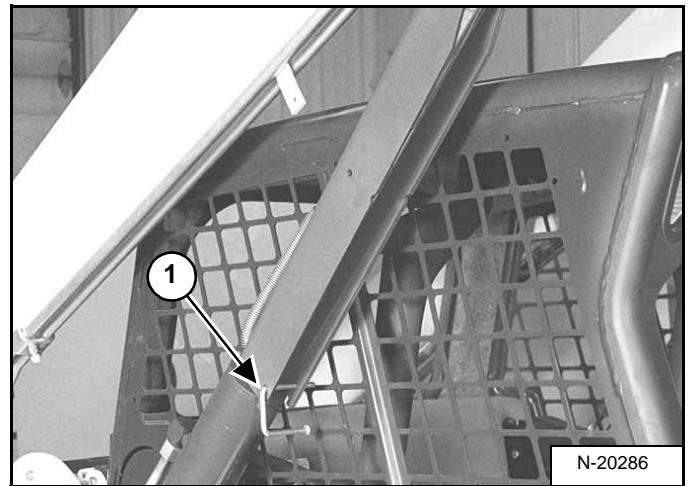
N-20264

Lower the lift arm support device on top of the lift cylinder. Hook the free end of the spring (Item 1) [Figure 10-50-2] to the lift arm support device so there will be no interference with the support device engagement.

With the operator in the seat, seat belt fastened and seat bar lowered, start the engine.

Press the PRESS TO OPERATE LOADER button.

Figure 10-50-3



N-20286

Raise the lift arms, until the lift arm support device drops onto the lift cylinder rod [Figure 10-50-3].

Lower the lift arms slowly until the support device is held between the lift arm and the lift cylinder. Stop the engine. Raise the seat bar and move pedals or the hand controls until both pedals lock.

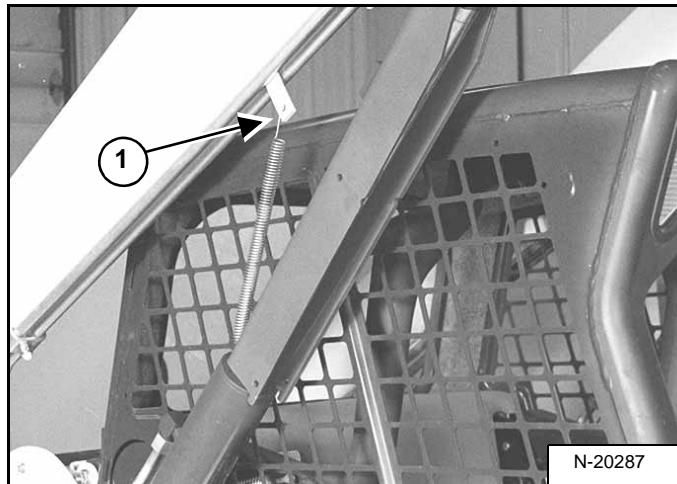
Install pin (Item 1) [Figure 10-50-3] into the rear of the lift arm support device below the cylinder rod.

LIFT ARM SUPPORT DEVICE (CONT'D)

Disengaging The Lift Arm support Device

Remove the pin from the lift arm support device.

Figure 10-50-4



Connect the spring (Item 1) [Figure 10-50-4] from the lift arm support device to the bracket below the lift arms.

With the operator in the seat, seat belt fastened and seat bar lowered, start the engine.

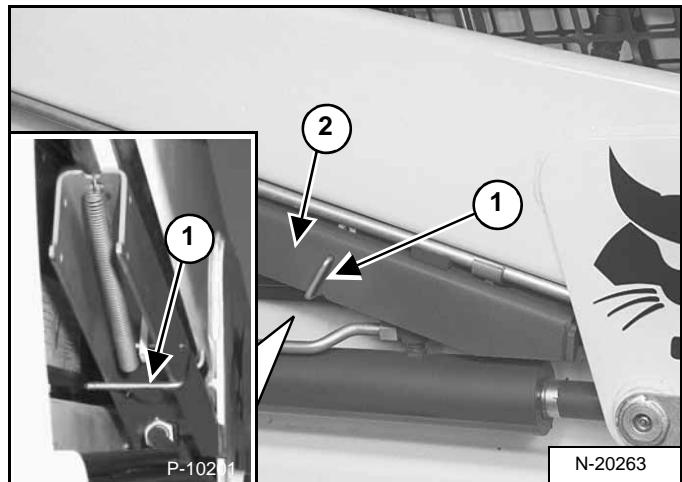
Press the PRESS TO OPERATE LOADER button.

Raise the lift arms a small amount and the spring will lift the support device off the lift cylinder rod. Lower the lift arms. Stop the engine.

Raise the seat bar and move pedals (or hand controls) until both pedals lock.

Disconnect the spring from the bracket.

Figure 10-50-5



Raise the support device into storage position and insert pin (Item 1) [Figure 10-50-5] through lift arm support device (Item 2) [Figure 10-50-5] and bracket. Connect spring to pin (Inset) [Figure 10-50-5].

Remove jackstands.

HAND-LEVER BOB-TACH

Inspection And Maintenance

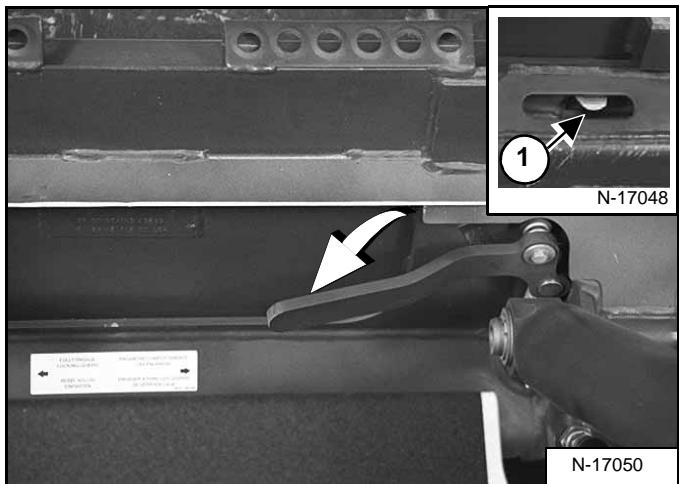


WARNING

Bob-Tach wedges must extend through the holes in attachment. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off and cause injury or death.

W-2102-0588

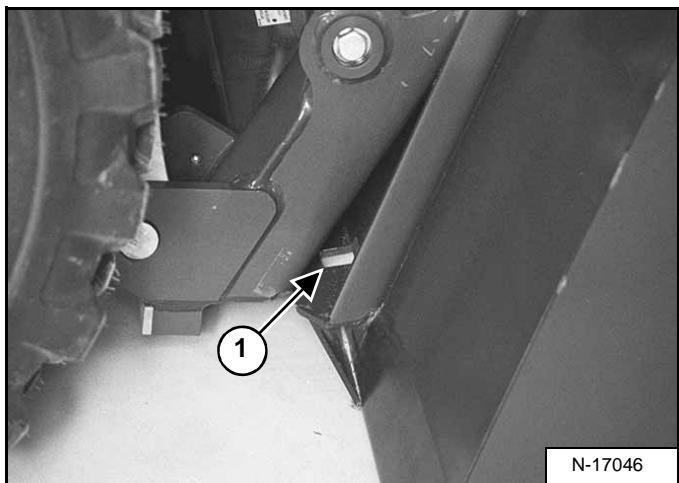
Figure 1



Move the Bob-Tach levers to engage the wedges [Figure 1]. The levers and wedges must move freely.

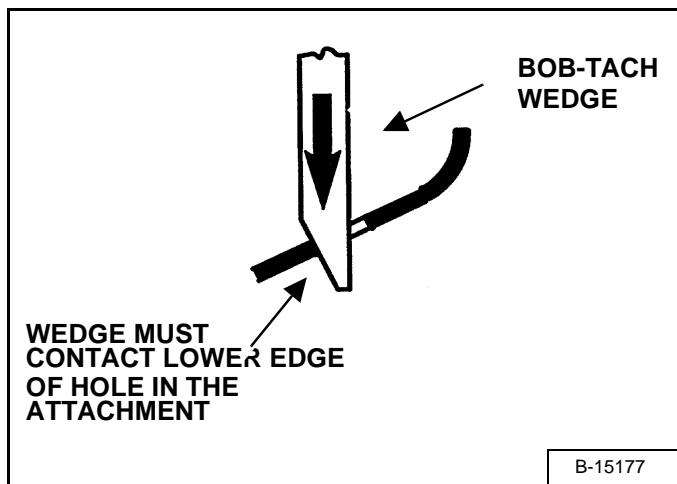
The wedges must extend through the holes in the attachment mounting frame (Item 1) [Figure 1].

Figure 10-60-2



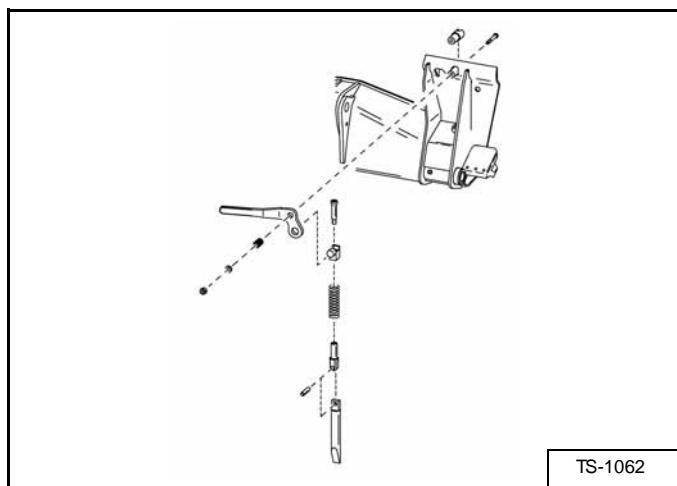
The spring loaded wedge (Item 1) [Figure 1] must contact the lower edge of the hole in the attachment (Item 1) [Figure 10-60-2] and [Figure 10-60-3].

Figure 10-60-3



If the wedge does not contact the lower edge of the hole [Figure 10-60-2] and [Figure 10-60-3], the attachment will be loose and can come off the Bob-Tach.

Figure 10-60-4



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage [Figure 10-60-4]. 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 10-100-1 and See LUBRICATING THE BOBCAT LOADER on Page 10-170-1).

Product: Bobcat 963 Skid Steer Loader Service Repair Workshop Manual 562215001-516515001

Full Download: <https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001/>

Sample of manual. Download All 640 pages at:

<https://www.arepairmanual.com/downloads/bobcat-963-skid-steer-loader-service-repair-workshop-manual-562215001-516515001>

963 Bobcat Loader
Service Manual