

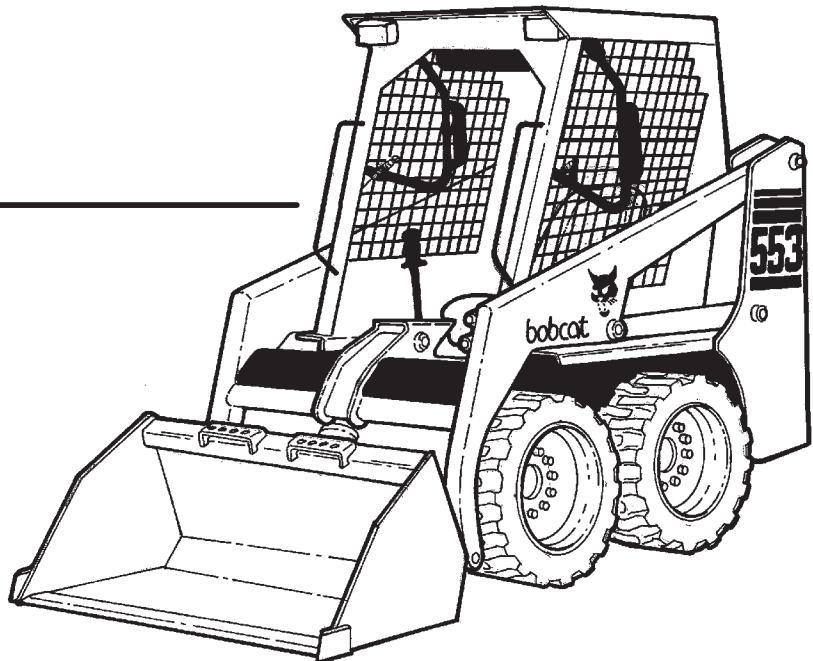
Product: Bobcat 553 Skid Steer Loader Service Repair Workshop Manual 516311001-516411001

Full Download: <https://www.arepairmanual.com/downloads/bobcat-553-skid-steer-loader-service-repair-workshop-manual-516311001-516411001/>



# Service Manual

**S/N 516311001 & Above  
S/N 516411001 & Above**



EQUIPPED WITH  
**BOBCAT INTERLOCK  
CONTROL SYSTEM (BICS™)**  
Sample of manual. Download All 366 pages at:  
<https://www.arepairmanual.com/downloads/bobcat-553-skid-steer-loader-service-repair-workshop-manual-516311001-516411001/>

6900450(1-98)



Printed in U.S.A.

© Bobcat Company 1998

Product: Bobcat 553 Skid Steer Loader Service Repair Workshop Manual 516311001-516411001

Full Download: <https://www.arepairmanual.com/downloads/bobcat-553-skid-steer-loader-service-repair-workshop-manual-516311001-516411001/>

Sample of manual. Download All 366 pages at:

<https://www.arepairmanual.com/downloads/bobcat-553-skid-steer-loader-service-repair-workshop-manual-516311001-516411001/>

# MAINTENANCE SAFETY



## WARNING

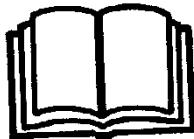
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after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



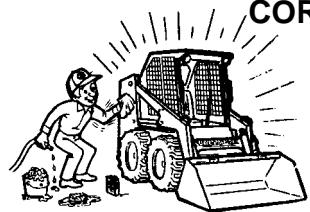
B-10731a

### CORRECT



B-12365

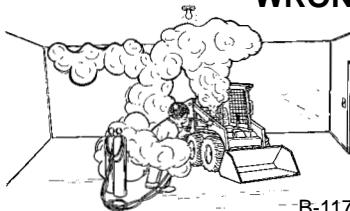
### CORRECT



B-7469

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

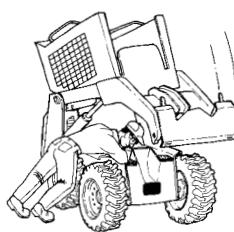
### WRONG



B-11799

⚠ 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.

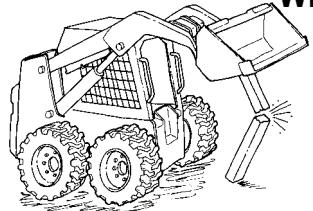
### WRONG



B-15231

⚠ 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.

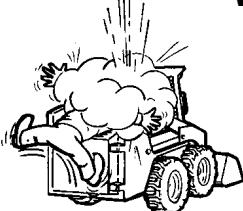
### WRONG



B-15280

⚠ 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.

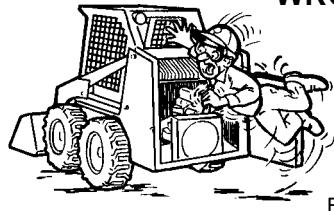
### WRONG



B-6590

⚠ 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-6580

⚠ 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.

### 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.

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.

MSW01-0805



**Bobcat**®

## ALPHABETICAL INDEX

|   |     |   |                    |
|---|-----|---|--------------------|
| AIR CLEANER .....                                   | 7-1 | HYDRAULIC/HYDROSTATIC SYSTEM .....                | 1-1                |
| AIR CLEANER SERVICE .....                           | 1-1 | HYDROSTATIC MOTOR .....                           | 3-1                |
| ALTERNATOR .....                                    | 6-1 | HYDROSTATIC PUMP .....                            | 3-1                |
| ALTERNATOR BELT .....                               | 1-1 | HYDROSTATIC SYSTEM INFORMATION .....              | 3-1                |
| AUXILIARY CONTROL LOCKBOLT .....                    | 1-1 |   |                    |
| AXLE SEAL .....                                     | 4-1 | INSTRUMENT PANEL .....                            | 6-1                |
| AXLE, BEARINGS, AND SPROCKET .....                  | 4-1 | IDLER GEAR .....                                  | 7-1                |
| BATTERY .....                                       | 6-1 |   |                    |
| BOBCAT INTERLOCK CONTROL<br>SYSTEM (BICS™) .....    | 8-1 | LIFT ARMS .....                                   | 5-1                |
| BICS™ SYSTEM CONTROLLER .....                       | 8-1 | LIFT ARM SUPPORT DEVICE .....                     | 1-1                |
| BLOWER FAN HOUSING .....                            | 7-1 | LIFT CYLINDER(S) .....                            | 2-1                |
| BOB-TACH .....                                      | 5-1 | LIFT LOCK BY-PASS VALVE .....                     | 2-1                |
| CAMSHAFT .....                                      | 7-1 | LOADER SPECIFICATIONS .....                       | 9-1                |
| CHAINCASE COVERS .....                              | 4-1 | LUBRICATING OF THE BOBCAT LOADER .....            | 1-1                |
| CHAINCASE FLUID .....                               | 4-1 |   |                    |
| CONTROL PANEL .....                                 | 3-1 | MAIN RELIEF VALVE .....                           | 2-1                |
| CONTROL PEDALS .....                                | 2-1 | METRIC TORQUE SPECIFICATIONS<br>FOR BOLTS .....   | 9-1                |
| CRANKSHAFT .....                                    | 7-1 |   |                    |
| CRANKSHAFT FRONT SEAL .....                         | 7-1 | OIL COOLER .....                                  | 3-1                |
| CROSSMEMBER LINKAGE .....                           | 2-1 | OIL PAN .....                                     | 7-1                |
| CYLINDER HEAD .....                                 | 7-1 | OIL PUMP .....                                    | 7-1                |
| DECIMAL & MILLIMETER EQUIVALENTS .....              | 9-1 | OPERATOR CAB .....                                | 1-1, 5-1           |
| DRIVE CHAIN .....                                   | 4-1 | OPERATOR CAB GAS CYLINDER .....                   | 5-1                |
| ELECTRICAL SYSTEM INFORMATION .....                 | 6-1 | OPERATOR SEAT .....                               | 5-1                |
| ENGINE .....  | 7-1 |   |                    |
| ENGINE COMPRESSION .....                            | 7-1 | PARKING BRAKE .....                               | 4-1                |
| ENGINE COOLING SYSTEM .....                         | 1-1 | PARKING BRAKE DISC .....                          | 4-1                |
| ENGINE LUBRICATION SYSTEM .....                     | 1-1 | PEDAL INTERLOCK LINKAGE .....                     | 2-1                |
| ENGINE MOUNTING BRACKET .....                       | 7-1 | PISTON .....                                      | 7-1                |
| ENGINE MUFFLER .....                                | 7-1 | PORT BLOCK .....                                  | 3-1                |
| ENGINE SPECIFICATIONS .....                         | 9-1 | PUSH ROD .....                                    | 7-1                |
| ENGINE SPEED CONTROL .....                          | 7-1 |   |                    |
| ENGINE SPEED CONTROL PLATE .....                    | 7-1 | RADIATOR .....                                    | 7-1                |
| ENGINE TIMING .....                                 | 7-1 | REAR DOOR .....                                   | 5-1                |
| EXHAUST MANIFOLD .....                              | 7-1 | REAR GRILL .....                                  | 5-1                |
| FINAL DRIVE TRANSMISSION (CHAINCASE) .....          | 1-1 | REMOTE START SWITCH .....                         | 1-1                |
| FLYWHEEL .....                                      | 7-1 | ROCKER ARM .....                                  | 7-1                |
| FLYWHEEL HOUSING .....                              | 7-1 | RUBBER DRIVE COUPLER .....                        | 7-1                |
| FRONT LIGHTS .....                                  | 6-1 |   |                    |
| FUEL CAMSHAFT .....                                 | 7-1 | SEAT BAR .....                                    | 5-1                |
| FUEL INJECTION NOZZLES .....                        | 7-1 | SEAT BAR RESTRAINT SYSTEM .....                   | 1-1                |
| FUEL INJECTION PUMP .....                           | 7-1 | SEAT BAR SENSOR .....                             | 8-1                |
| FUEL LIFT PUMP .....                                | 7-1 | SEAT SENSOR .....                                 | 8-1                |
| FUEL SHUT-OFF SOLENOID .....                        | 7-1 | SERVICE SCHEDULE .....                            | 1-1                |
| FUEL SYSTEM .....                                   | 1-1 | SPARK ARRESTOR MUFFLER .....                      | 1-1                |
| FUEL TANK .....                                     | 5-1 | STARTER .....                                     | 6-1                |
| GLOW PLUGS .....                                    | 7-1 |   |                    |
| GOVERNOR FORK LEVER .....                           | 7-1 | STANDARD TORQUE SPECIFICATIONS<br>FOR BOLTS ..... | 9-1                |
| GOVERNOR SHAFT .....                                | 7-1 |   |                    |
| HYDRAULIC CONNECTION SPEC .....                     | 9-1 | STEERING LEVERS .....                             | 3-1                |
| HYDRAULIC CONTROL VALVE .....                       | 2-1 | STEERING LINKAGE .....                            | 3-1                |
| HYDRAULIC CYLINDER .....                            | 2-1 | STOPPING THE BOBCAT LOADER .....                  | 1-1                |
| HYDRAULIC FILTER HOUSING .....                      | 2-1 |   |                    |
| HYDRAULIC FLUID RESERVOIR .....                     | 2-1 | TAPPET .....                                      | 7-1                |
| HYDRAULIC PUMP .....                                | 2-1 | THERMOSTAT .....                                  | 7-1                |
| HYDRAULIC SYSTEM INFORMATION .....                  | 2-1 | TIILT CYLINDER .....                              | 2-1                |
| HYDRAULIC/HYDROSTATIC FLUID<br>SPECIFICATIONS ..... | 9-1 | TIILT LOCK VALVE .....                            | 2-1                |
|   |     | TIMING GEAR BACKLASH .....                        | 7-1                |
|   |     | TIMING GEAR CASE COVER .....                      | 7-1                |
|   |     | TIRE MAINTENANCE .....                            | 1-1                |
|   |     | TORQUE SPECIFICATIONS FOR LOADER .....            | 9-1                |
|   |     | TOWING THE LOADER .....                           | 1-1                |
|   |     | TRACTION LOCK .....                               | 8-1                |
|   |     | TRANSPORTING THE LOADER .....                     | 1-1                |
|   |     | TROUBLESHOOTING .....                             | 2-1, 3-1, 6-1, 7-1 |
|   |     |   |                    |
|   |     | U.S. TO METRIC CONVERSION .....                   |                    |
|   |     | U-JOINT COUPLER .....                             | 7-1                |
|   |     | U-JOINT LUBRICATION .....                         | 1-1                |
|   |     | USING A BOOSTER BATTER (JUMP STARTING) .....      | 6-1                |
|   |     |   |                    |
|   |     | VALVE COVER .....                                 | 7-1                |
|   |     |   |                    |
|   |     | WATER FLANGE .....                                | 7-1                |
|   |     | WATER PUMP .....                                  | 7-1                |



## CONTENTS

|                                    |      |
|------------------------------------|------|
| FOREWORD .....                     | ii   |
| SAFETY INSTRUCTIONS .....          | v    |
| SERIAL NUMBER LOCATIONS .....      | vii  |
| DELIVERY REPORT .....              | vii  |
| BOBCAT LOADER IDENTIFICATION ..... | viii |
| PREVENTIVE MAINTENANCE .....       | 1-1  |
| HYDRAULIC SYSTEM .....             | 2-1  |
| HYDROSTATIC SYSTEM .....           | 3-1  |
| DRIVE SYSTEM .....                 | 4-1  |
| MAIN FRAME .....                   | 5-1  |
| ELECTRICAL SYSTEM .....            | 6-1  |
| ENGINE SERVICE .....               | 7-1  |
| SYSTEM ANALYSIS .....              | 8-1  |
| SPECIFICATIONS .....               | 9-1  |

### PREVENTIVE MAINTENANCE

### HYDRAULIC SYSTEM

### HYDROSTATIC SYSTEM

### DRIVE SYSTEM

### MAIN FRAME

### ELECTRICAL SYSTEM

### ENGINE SERVICE

### SYSTEM ANALYSIS

### SPECIFICATIONS

#### 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.

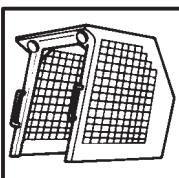


# FOREWORD

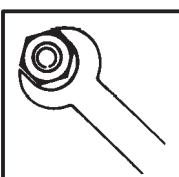
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

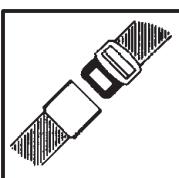
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.



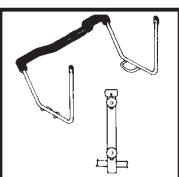
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



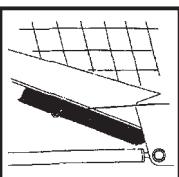
3. The seat belt must be correctly installed, functional and in good condition.



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



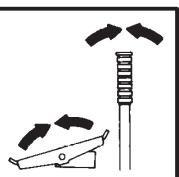
5. Check lift arm support device, replace if damaged.



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



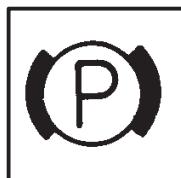
7. Steering levers and foot pedals must return to neutral.



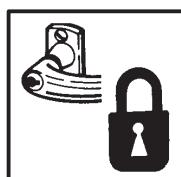
8. Check for correct function of the work lights.



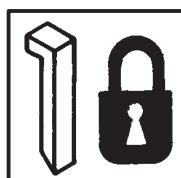
9. The parking brake must function correctly.



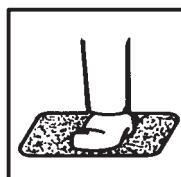
10. Enclosure door latches must open and close freely.



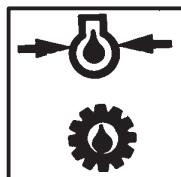
11. Bob-Tach wedges and linkages must function correctly and be in good condition.



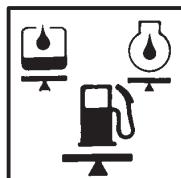
12. Safety treads must be in good condition.



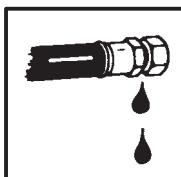
13. Check for correct function of indicator lamps (Optional on some models).



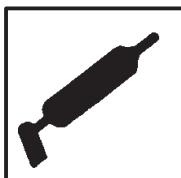
14. Check hydraulic fluid level, engine oil level and fuel supply.



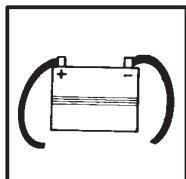
15. Inspect for fuel, oil or hydraulic fluid leaks.



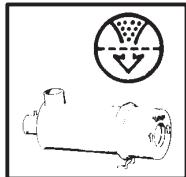
16. Lubricate the loader.



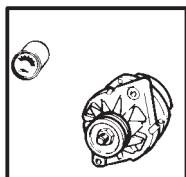
17. Check the condition of the battery and cables.



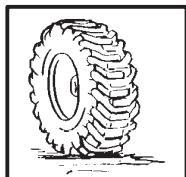
18. Inspect the air cleaner for damage or leaks. Check the condition of the element.



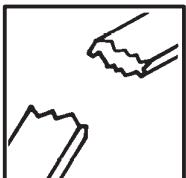
19. Check the electrical charging system.



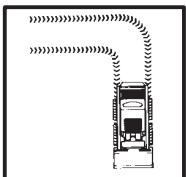
20. Check tires for wear and pressure.



21. Inspect for loose or broken parts or connections.



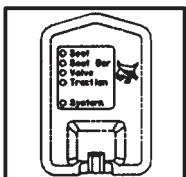
22. Operate the loader and check all functions.



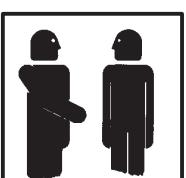
23. Check for any field modification not completed.



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.



## SAFETY INSTRUCTIONS

# ⚠ 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-2003-0299

The following publications provide information on the safe use and maintenance of the loader 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 loader gives operating information as well as routine maintenance and service procedures. It is a part of the loader and must stay with the machine when it is sold. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat loader dealer.
- The loader has machine signs (decals) which instruct on the safe operation and care. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat loader dealer.
- The loader has a plastic Operator's Handbook fastened to the operator cab. Its 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 EMI Safety Manual (available in Spanish) delivered with the loader 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. This course is intended to provide rules and practices for correct operation of the Bobcat loader. The course is available in English and Spanish version.
- The Service Safety Training Course is available from your Bobcat dealer. This course provides information for safe and correct service procedures for Bobcat Skid-Steer loaders.
- The Bobcat Skid-Steer Loader Safety Video is available from your Bobcat Dealer.

# ⚠ 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



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

SI05-0299

## SAFETY INSTRUCTIONS (Cont'd)

- Wear tight fitting clothing. Always wear safety glasses when maintaining or servicing loader. Safety glasses, hearing protection or loader special applications kit are required for some work. See your dealer for Melroe Safety equipment.
- Know where fire extinguisher and first aid kit are located and how to use them.
- Do not use the Bobcat loader where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.
- The 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.
- Follow any environmental safety regulations when disposing of used fluids such as engine oil, grease or anti-freeze.
- Do not use ether or starting fluids on engines which have glow plugs. These starting aids can cause explosion and injure you or bystanders.
- Always clean the loader and disconnect the battery before doing any welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the loader 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.
- Stop the engine and let it cool before adding fuel. No smoking!
- Use the procedure in the Operation & Maintenance or Service Manuals for connecting the battery.

A fire extinguisher is available from your local dealer. The fire extinguisher can be installed in the location shown [A].



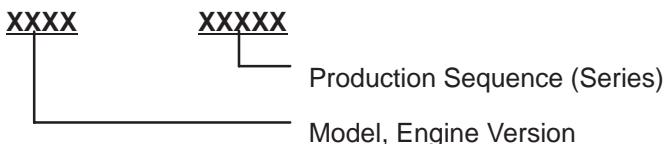
## SERIAL NUMBER LOCATIONS

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

The loader serial number plate is located on the inside of the operator cab, near the right steering lever.

Explanation of loader Serial Number:

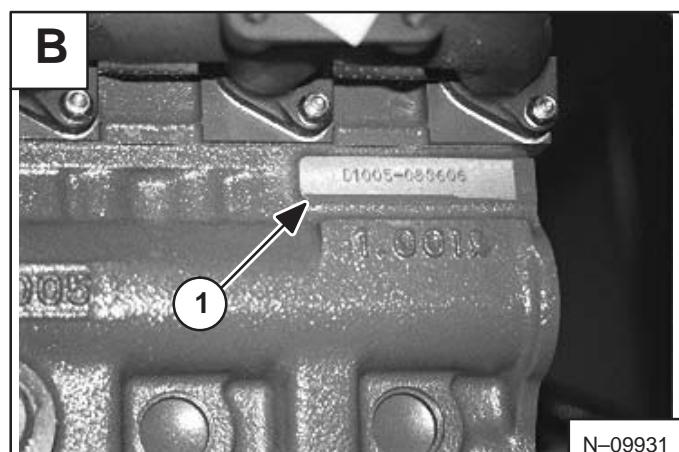


### ENGINE SERIAL NUMBER

The serial number (Item 1) [B] is located below the exhaust manifold near the front of the engine.



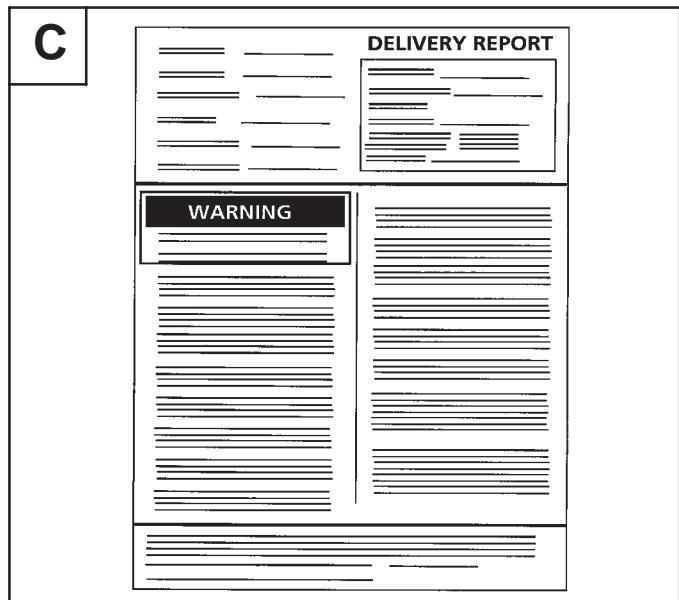
P-10725



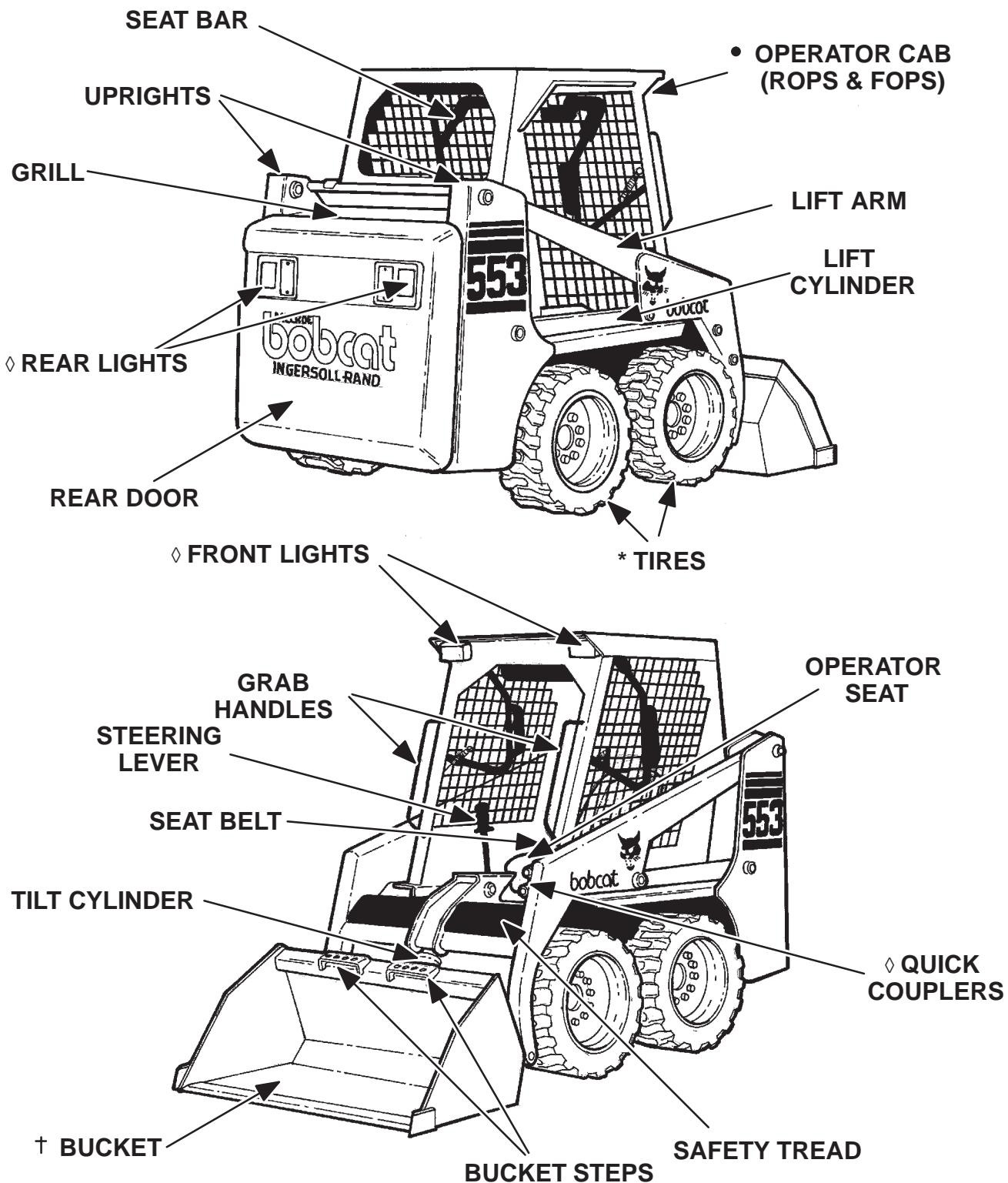
N-09931

### DELIVERY REPORT

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 [C].



## BOBCAT SKID STEER LOADER IDENTIFICATION



B-15064  
B-15065

◊ OPTIONAL OR FIELD ACCESSORY (Not Standard Equipment)

\* TIRES – The 553 Bobcat loader is base-equipped with flotation tires as shown.

† 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).

## PREVENTIVE MAINTENANCE

## PREVENTIVE MAINTENANCE

|  | Page<br>Number |
|--|----------------|
| AIR CLEANER SERVICE<br>Replacing Filter Element .....                    | 1-12           |
| ALTERNATOR BELT<br>Adjusting The Alternator Belt .....                   | 1-19           |
| AUXILIARY CONTROL LOCKBOLT<br>Removal .....                              | 1-28           |
| BOB-TACH<br>Inspection And Maintenance .....                             | 1-27           |
| ENGINE COOLING SYSTEM<br>Cleaning The Cooling System .....               | 1-17           |
| Checking The Coolant Level .....   | 1-17           |
| Replacing The Coolant .....  | 1-10           |
| ENGINE LUBRICATION SYSTEM<br>Chart .....                                 | 1-15           |
| Checking Engine Oil .....  | 1-15           |
| Replacing Oil And Filter .....   | 1-15           |
| FINAL DRIVE TRANSMISSION (CHAINCASE)<br>Checking And Adding Oil .....    | 1-24           |
| FUEL SYSTEM<br>Filling the Fuel Tank .....                               | 1-13           |
| Fuel Filter .....  | 1-13           |
| Fuel Specifications .....  | 1-13           |
| Removing Air From The Fuel System .....                                  | 1-14           |
| HYDRAULIC/HYDROSTATIC SYSTEM<br>Checking And Adding Fluid .....          | 1-20           |
| Description .....  | 1-20           |
| Replacing Hydraulic/Hydrostatic Filter .....                             | 1-21           |
| Replacing Hydraulic Fluid .....  | 1-21           |
| LIFT ARM SUPPORT DEVICE<br>Disengaging The Lift Arm Support Device ..... | 1-8            |
| Engaging The Lift Arm Support Device .....                               | 1-7            |
| LIFTING AND BLOCKING THE LOADER<br>Procedure .....                       | 1-4            |
| LUBRICATING OF THE BOBCAT LOADER<br>Procedure .....                      | 1-25           |
| OPERATOR CAB<br>Description .....  | 1-9            |
| Emergency Exit .....   | 1-10           |
| Lowering The Operator Cab .....  | 1-9            |
| Raising The Operator Cab .....   | 1-9            |

Continued On Next Page

## PREVENTIVE MAINTENANCE (Cont'd)

|                            | Page<br>Number |
|----------------------------|----------------|
| PIVOT PINS .....           | 1-26           |
| REMOTE START SWITCH        |                |
| Procedure .....            | 1-29           |
| SERVICE SCHEDULE           |                |
| Chart .....                | 1-3            |
| SEAT BAR RESTRAINT SYSTEM  |                |
| Description .....          | 1-11           |
| Seat Bar Inspection .....  | 1-11           |
| Seat Bar Maintenance ..... | 1-11           |
| SPARK ARRESTOR MUFFLER     |                |
| Cleaning Procedure .....   | 1-22           |
| STOPPING THE BOBCAT LOADER |                |
| Procedure .....            | 1-6            |
| TIRE MAINTENANCE           |                |
| Tire Mounting .....        | 1-23           |
| Tire Rotation .....        | 1-23           |
| Wheel Nuts .....           | 1-23           |
| TOWING THE LOADER          |                |
| Procedure .....            | 1-5            |
| TRANSPORTING THE LOADER    |                |
| Procedure .....            | 1-6            |
| U-JOINT LUBRICATION        |                |
| Procedure .....            | 1-28           |

## SERVICE SCHEDULE

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.

### ! 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. Failure to follow instructions can cause injury or death.

W-2003-1298

| ITEM  | SERVICE REQUIRED  | HOURS |    |     |     |     |        |
|---|---|-------|----|-----|-----|-----|--------|
|   |   | 8-10  | 50 | 100 | 200 | 250 | ■ 1000 |
| Engine Oil                                    | Check the oil level and add oil as needed.  |       |    |     |     |     |        |
| Engine Air Filter and Air System              | Replace the outer filter element only when the red ring shows in the indicator window. Check for leaks and damaged components.        |       |    |     |     |     |        |
| Engine Cooling System                         | Clean debris from oil cooler, radiator & grill. Check coolant level in recovery tank and add as needed.                               |       |    |     |     |     |        |
| Tires   | Check for damaged tires and correct air pressure.   |       |    |     |     |     |        |
| Seat Belt and Seat Bar and Control Interlocks | Check the condition of seat belt. Check the seat bar & pedal interlocks for correct operation. Clean dirt & debris from moving parts. |       |    |     |     |     |        |
| Safety Signs and Safety Tread                 | Check for damaged signs (decals) and safety treads. Replace any signs or safety treads that are damaged or worn.                      |       |    |     |     |     |        |
| Indicator & Lights (Opt.)                     | Check for correct operation of all indicators & lights.   |       |    |     |     |     |        |
| Operator Cab                                  | Check the fastening bolts, washers & nuts. Check the condition of cab.  |       |    |     |     |     |        |
| Lift Arm and Bob-Tach Pivot Pin and Wedges    | Lubricate with multi-purpose lithium based grease.  |       |    |     |     |     |        |
| Engine Fuel Filter                            | Remove the trapped water.   |       |    |     |     |     |        |
| Bobcat Interlock Control System (BICS™)       | Check BICS™ System Controller functions. Clean dirt, debris or objects from under or behind seat as required.                         |       |    |     |     |     |        |
| Hyd. Fluid, Hoses & Tubelines                 | Check fluid level & add as needed. Check for damage & leaks. Repair & replace as needed.  |       |    |     |     |     |        |
| Control Pedals & Steering                     | Check for correct operation. Repair or adjust as needed.  |       |    |     |     |     |        |
| Wheel Nuts                                    | <input type="checkbox"/> Check for loose wheel nuts & tighten to 105–115 ft.-lbs. (142–156Nm) torque.                                 |       |    |     |     |     |        |
| Parking Brake                                 | Check operation of the brake.   |       |    |     |     |     |        |
| Alternator Belt                               | Check tension & adjust as needed.   |       |    |     |     |     |        |
| Final Drive Trans. (Chaincase)                | Check fluid level and add as needed.  |       |    |     |     |     |        |
| Spark Arrestor Muffler                        | Clean the spark chamber.  |       |    |     |     |     |        |
| Battery                                       | Check cables, connections & electrolyte level. Add distilled water as needed.   |       |    |     |     |     |        |
| Engine Oil & Filter                           | Replace oil & filter. Use CD or better grade oil and Melroe filter.   |       |    |     |     |     |        |
| Fuel Filter                                   | Replace filter element.   |       |    |     |     |     |        |
| Steering Lever Pivots                         | Grease two fittings. Add oil to steering shaft.   |       |    |     |     |     |        |
| U Joint                                       | Grease three (3) fittings with correct grease.  |       |    |     |     |     |        |
| Hyd./Hydros Filter                            | • Replace the filter element.   |       |    |     |     |     |        |
| Hyd Reservoir Breather Cap                    | Replace the reservoir breather cap.   |       |    |     |     |     |        |
| Engine Valves                                 | Check and adjust the engine valve clearance.  |       |    |     |     |     |        |
| Hyd./Hydros. Reservoir                        | Replace the hydraulic/hydrostatic fluid.  |       |    |     |     |     |        |
| Chaincase                                     | Replace the fluid.  |       |    |     |     |     |        |
| Bobcat Interlock Control System (BICS™)       | Check the lift arm by-pass control  |       |    |     |     |     |        |

Check wheel nut torque every 8 hours for the first 24 hours.

• Also replace hydraulic/hydrostatic filter element when the transmission warning light stays on for five minutes after the fluid is at operating temperature.

■ Or every 12 months.



# 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. Failure to follow instructions can cause injury or death.

W-2003-1298

## LIFTING AND BLOCKING THE LOADER

### Procedure

Always park the loader on a level surface.

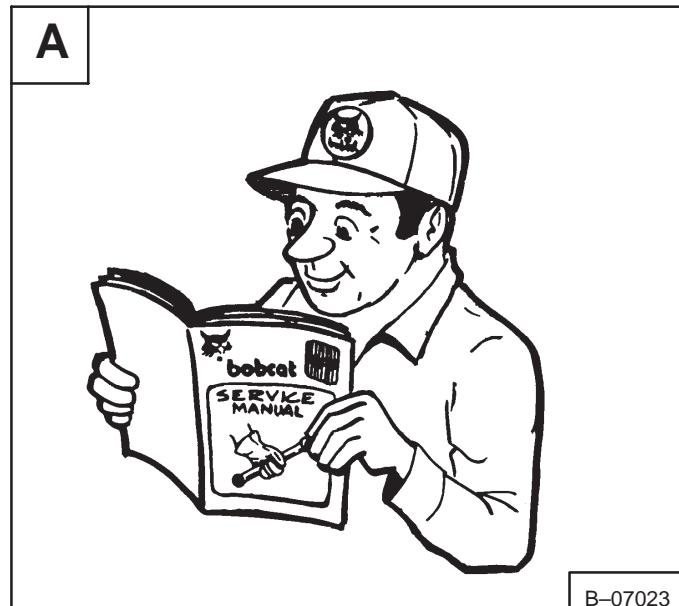


# WARNING

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.

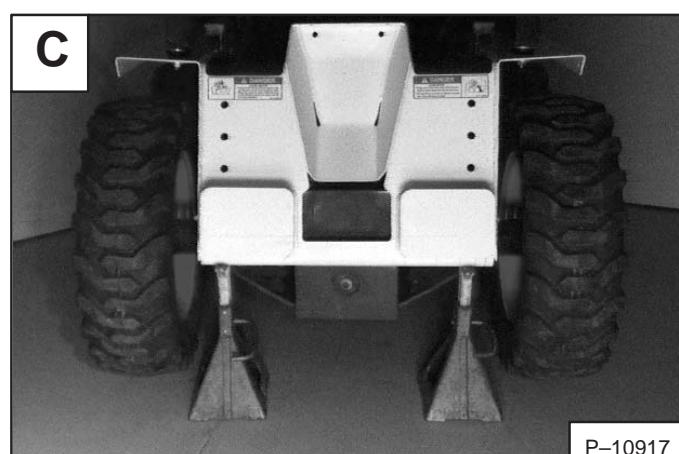
W-2017-0286

Lift the rear of the loader and install jackstands [B].



Lift the front of the loader and put jackstands under the loader frame [C].

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



## TOWING THE LOADER

### Procedure

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

Relief valve release tool set MEL1220 is available from your dealer. Tool must be installed before towing.

Raise the operator cab. (See *Raising The Operator Cab* Page 1-9 for the correct procedure.)

Clean the area around the hydrostatic pumps.

Remove the high pressure relief valve from one side of each hydrostatic pump **[A]** and install the relief valve tubes. Install the plugs and tighten.

Lower the operator cab. (See *Lowering The Operator Cab* Page 1-9.)

The towing chain (or cable) must be rated at 1 and 1/2 times the weight of the loader. (See *SPECIFICATIONS* Page 9-1.)

- Turn the key switch to ON and press the traction lock override button.
- Tow the Bobcat at 2 MPH (3,2 km/hr) or less for not more than 25 feet (7,6 meters).

If the electrical system is not functioning, contact your Bobcat loader dealer. (Part of the brake system must be disassembled to move the loader.)

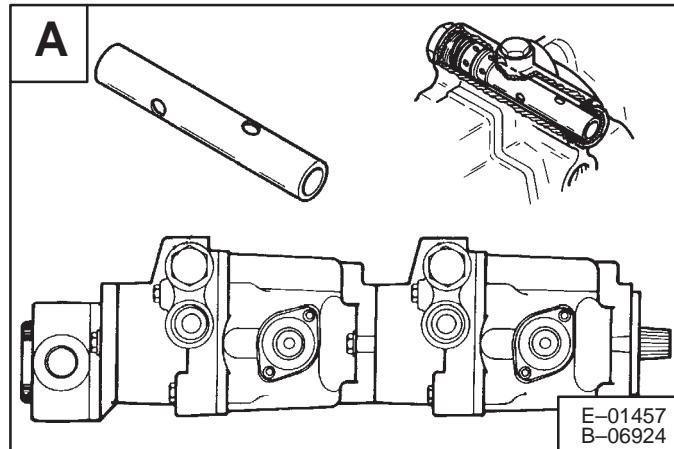
## IMPORTANT

Never attempt to start the engine by pushing or pulling. Hydrostatic pumps and motors will be damaged.

I-2001-1285

Do not push or pull the machine at more than 2 MPH (3,2 km/h) or for a distance of more than 25 feet (7,6 meters) with the towing tool in place.

I-2017-0389



## TOWING 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

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

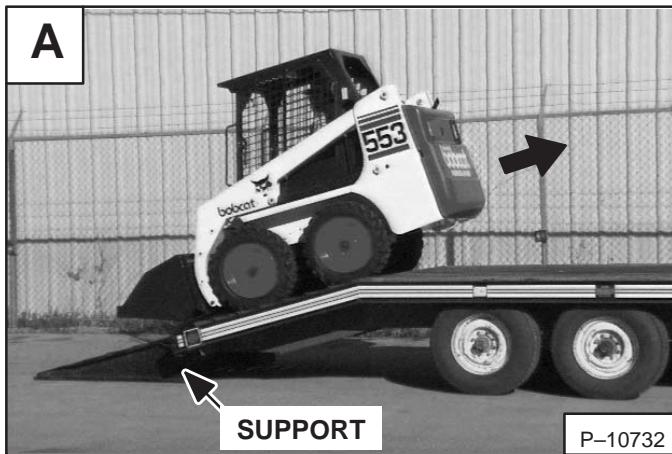
The rear of the trailer must be blocked or supported [A] when loading or unloading the loader to prevent the front end of the trailer from raising up.

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 and down slopes [B].

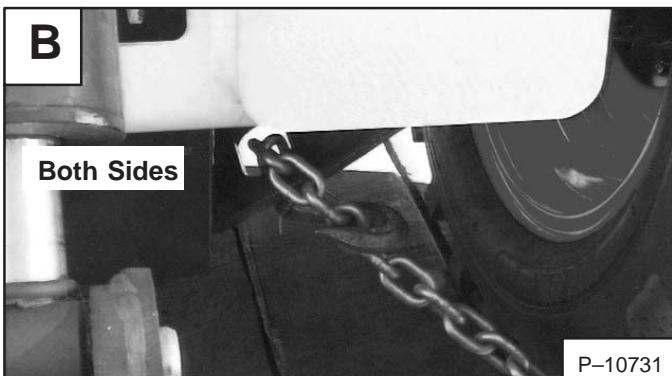
- Lower the bucket or attachment to the floor.
- Stop the engine.
- Engage the parking brake.
- Install chains at the front and rear of the loader as shown [B].

## STOPPING THE BOBCAT LOADER

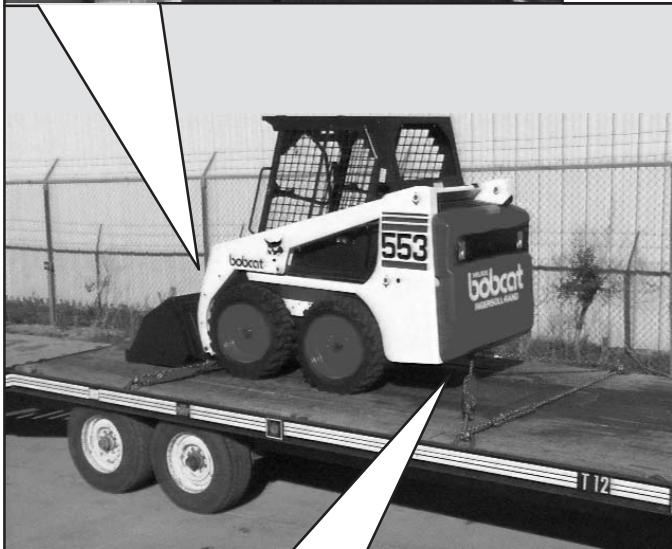
When the steering levers are moved to the neutral position, the hydrostatic transmission will act as a service brake and stop the loader.



P-10732



P-10731



P-10730



P-10726

P-10728

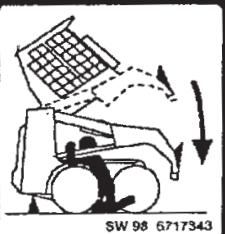
## LIFT ARM SUPPORT DEVICE



### DANGER

#### AVOID DEATH

- Disconnecting or loosening any hydraulic tubing, 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. 53145



### 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

#### Engaging The Lift Arm Support Device

Maintenance and service work can be done with the lift arms lowered. If the lift arms are raised for service, use the following procedure:

Put jackstands under the rear corners of the loader frame.

Remove any attachment before raising the lift arms.

Disconnect the spring from the approved lift arm support device retaining pin (Item 1) [A]. Hold onto the lift arm support device (Item 2) [A] and remove the retaining pin.

Lower the lift arm support device on top of the lift cylinder. Hook the free end of the spring (Item 1) [B] 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. Loaders without seat sensors Press the green *PRESS TO OPERATE* Button.

Raise the lift arms, until the lift arm support (Item 1) [C] device drops onto the lift cylinder rod.

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 foot pedals (or hand controls) until both lock.

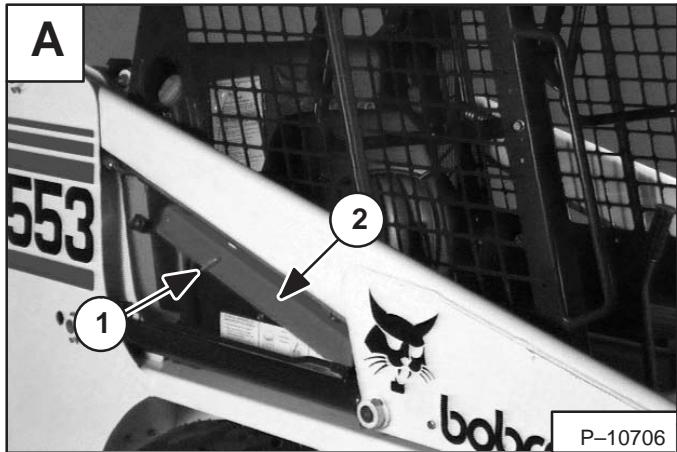
Install pin (Item 1) [D] into the rear of the lift arm support device below the cylinder rod.



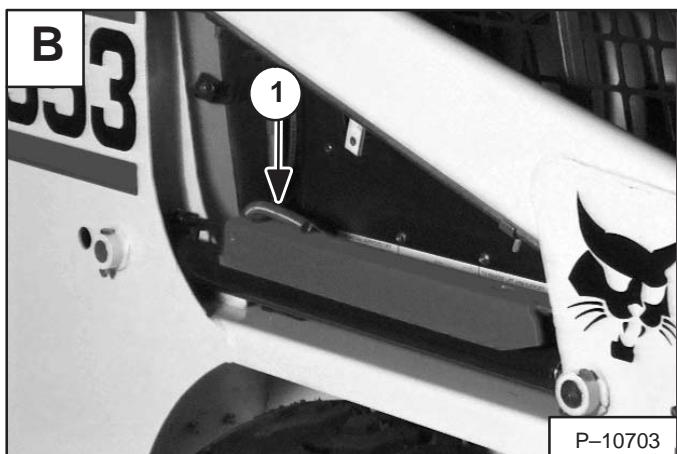
### WARNING

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.

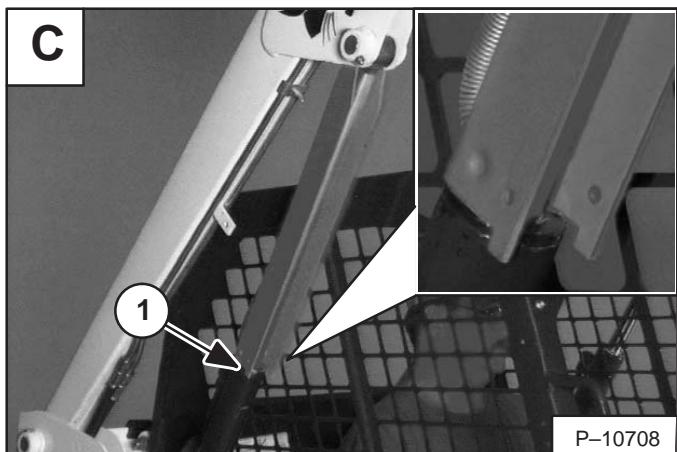
W-2271-1197



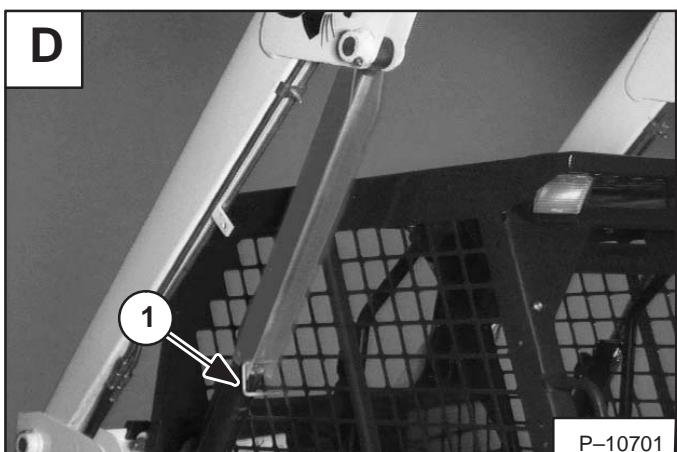
P-10706



P-10703



P-10708



P-10701

## LIFT ARM SUPPORT DEVICE (Cont'd)

### Disengaging The Lift Arm Support Device

Remove the pin from the lift arm support device.

Connect the spring (Item 1) [A] 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.

Loaders without seat sensors press the green *PRESS TO OPERATE* Button.

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

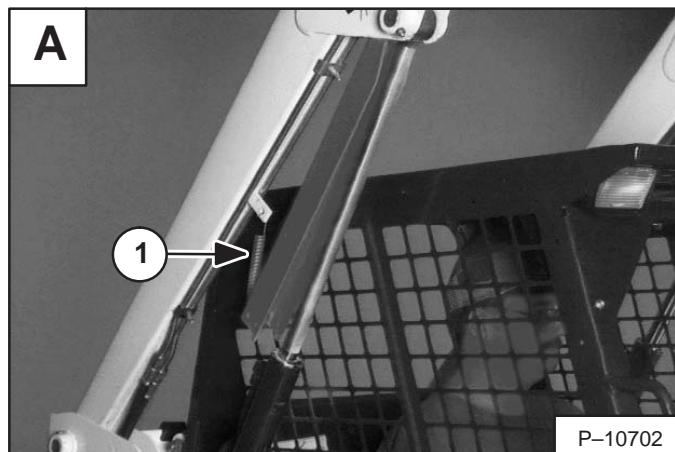
Lower the lift arms and stop the engine.

Raise the seat bar and move pedals until both lock.

Disconnect the spring from the bracket.

Raise the support device into storage position and insert pin (Item 1) [B] through lift arm support device and bracket.

Connect spring to pin.



P-10702



P-10706

## OPERATOR CAB

The Bobcat loader has an operator cab (ROPS and FOPS) as standard equipment to protect the operator from rollover and falling objects. Check with your dealer if the operator cab has been damaged.

**ROPS/FOPS** – Roll Over 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.

**Level I** – Protection from falling bricks, small concrete blocks and hand tools encountered in operations such as highway maintenance, landscaping, and other construction site services.

**Level II** – Protection from falling trees, rocks; for machines involved in site clearing, overhead demolition or forestry.



## WARNING

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

W-2069-1285

### Raising The Operator Cab

Stop the loader on a level surface. Lower the lift arms. Stop the engine. If the lift arms must be up while raising the operator cab, install the lift arm support device. (See *LIFT ARM SUPPORT DEVICE* Page 1-7.)

Put jackstands under the rear corners of loader (Inset) [B].

Loosen the nut (both sides) at the corner of the operator cab [A].

Remove the nut and plate (both sides) [A].

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

### Lowering The Operator Cab

Pull down on the bottom of the operator cab until it stops at the latching mechanism. Release the latching mechanism [C] and pull the cab all the way down.

Install the plate and nut (both sides) [A].

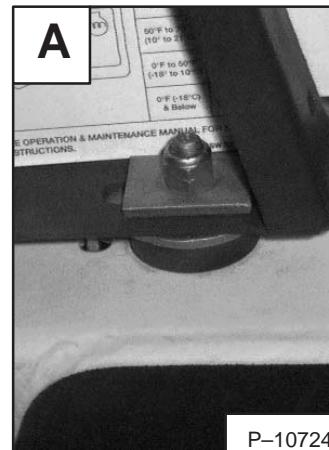
Tighten the nuts [A] to 40–50 ft.–lbs. (54–68 Nm) torque.



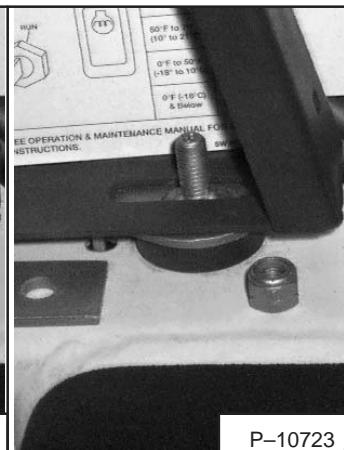
## WARNING

Both sets of fasteners at the front of the operator cab (ROPS) must be assembled as shown in this Operation & Maintenance Manual. Failure to secure ROPS correctly can cause injury or death.

W-2005-1089



P-10724

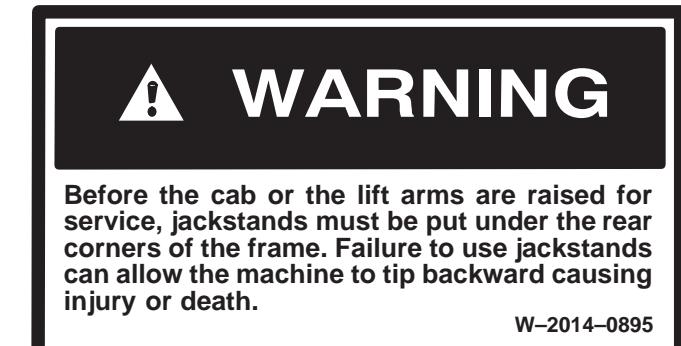


P-10723



P-09773

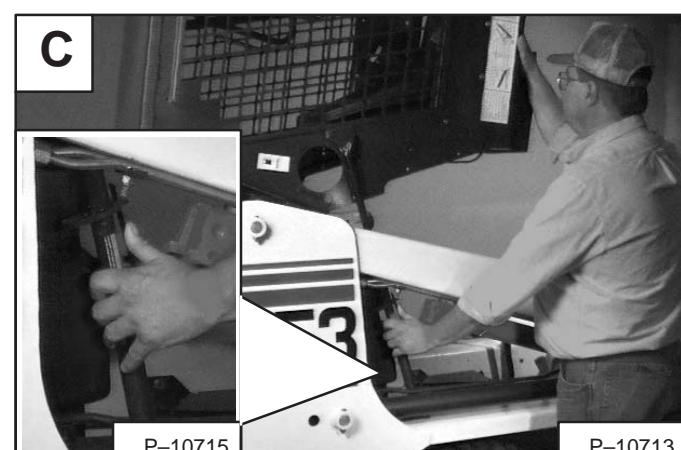
P-10719



## WARNING

Before the cab or the lift arms are raised for service, jackstands must be put under the rear corners of the frame. Failure to use jackstands can allow the machine to tip backward causing injury or death.

W-2014-0895



P-10715

P-10713

## OPERATOR CAB (Cont'd)

### Emergency Exit

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

Rear Window (If Equipped):

- Pull on the tag on the top of the rear window to remove the rubber cord [A].
- Push the rear window out of the rear of the operator cab.



P-00660

Exit through the rear of the operator cab [B].



P-10722

Front Door: (if equipped)

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

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



P-09216

Push the window out with your foot [D].

Exit through the front door.



P-09217

## SEAT BAR RESTRAINT SYSTEM

### Description

The seat bar restraint system has a pivoting seat bar with arm rests and has spring loaded interlocks for the lift and tilt control pedals.

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

The interlocks require the operator to lower the seat bar in order to operate the foot pedal controls.

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



## WARNING

### AVOID INJURY OR DEATH

**The seat bar system must lock the lift and tilt control pedals in neutral when the seat bar is up. Service the system if pedals do not lock correctly.**

W-2105-1285

### Seat Bar Inspection

Sit in the seat and fasten the seat belt. Engage the parking brake. Pull the seat bar all the way down. Start the engine. Loaders without seat sensors press the green **PRESS TO OPERATE** Button.

Operate each foot pedal to check both the lift and tilt functions.

Raise the lift arms until the bucket is about 2 feet (600 mm) off the ground.

Raise the seat bar. Try to move each foot pedal. The pedals must be firmly locked in neutral position. There must be no motion of the tilt (bucket) or the lift arms when the pedals are pushed.

Pull the seat bar down. Loaders without seat sensors press the green **PRESS TO OPERATE** Button. Lower the lift arms. Operate the lift pedals. While the lift arms are going up, raise the seat bar and the lift arms should stop.

Lower the seat bar, lower the lift arms and place the bucket flat on the ground. Stop the engine. Raise the seat bar and operate the foot pedals to be sure that the pedals are firmly locked in the neutral position. Unbuckle the seat belt.

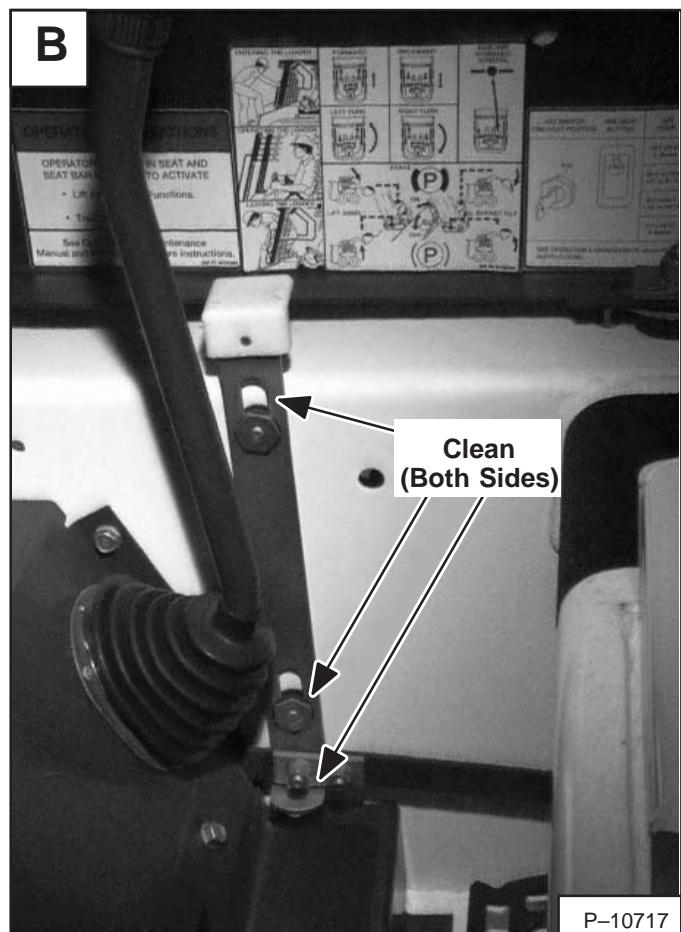
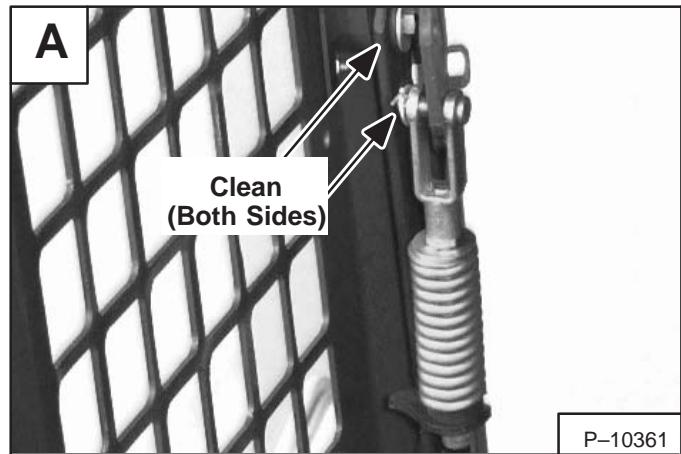
### Seat Bar Maintenance

See the **SERVICE SCHEDULE** Page 1-3 and on the loader for correct service interval.

Clean any debris or dirt from the moving parts **[A]** & **[B]**.

Inspect the linkage bolts and nuts for tightness. The correct torque is 25-28 ft.-lbs. (34-38 Nm).

If the seat bar system does not function correctly, check for free movement of each linkage part. Check for excessive wear. Adjust pedal control linkage. Replace parts that are worn or damaged. Use only genuine Melroe replacement parts.



## AIR CLEANER SERVICE

### Replacing Filter Element

See the *SERVICE SCHEDULE* Page 1-3 for the interval to service the air cleaner system.

Check the air intake hose for damage. Check the air cleaner housing for damage. Check to make sure all connections are tight.

Replace the large (outer) filter element only when the red ring shows in the window (Item 1) [A] of the condition indicator.

**NOTE: Push the button on the condition indicator (See Inset) and start the engine. If the red ring does not show, do not replace the filter element [A].**

Disengage the clamps (Item 1) and remove the dust cover (Item 2) [B].

#### Outer Element:

Pull the outer filter element from the air cleaner housing [C].

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

Install a new outer element.

Install the dust cover and fasten the clamps.

#### Inner Element:

Only replace the inner filter element under the following conditions [D]:

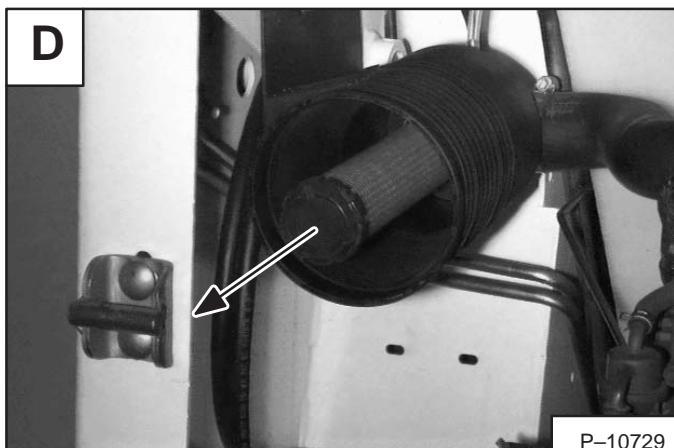
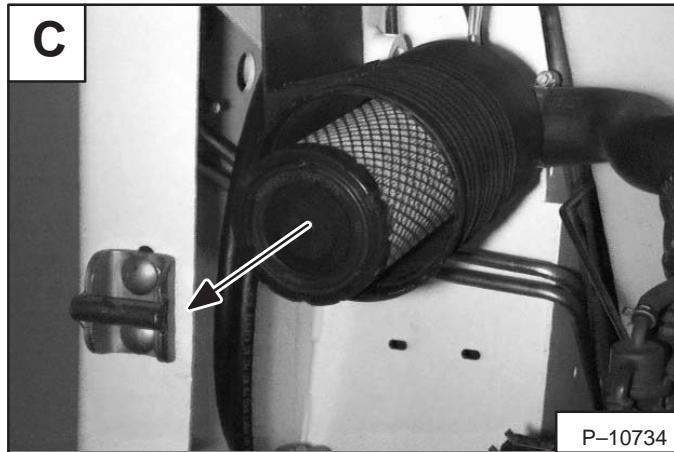
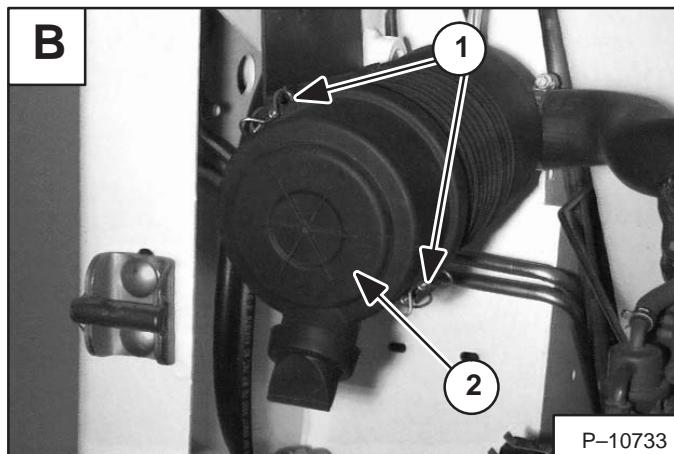
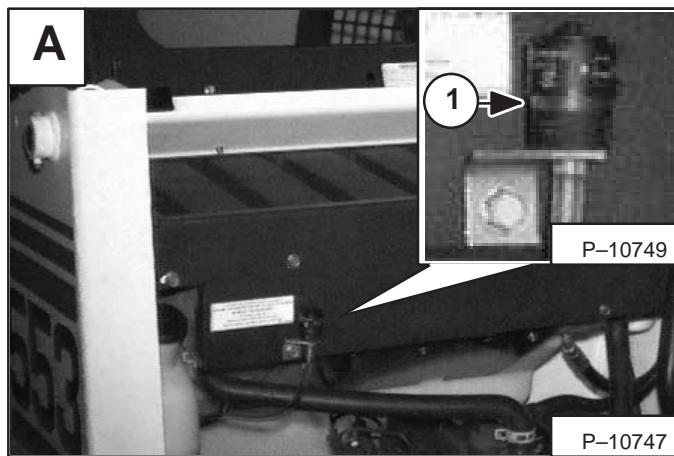
- Replace the inner filter element every third time the outer filter is replaced.
- Replace the inner filter element when the red ring still shows in the condition indicator window after the outer filter is replaced.

Pull the inner filter element from the air cleaner housing.

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

Install the new inner element.

Record the operating hours of the loader on the decal inside the rear door.



## 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 problems:

| Temp. F°/C°       | No. 2 | No. 1 |
|-------------------|-------|-------|
| +15°(-9°)         | 100%  | 0%    |
| Down to -20°/-29° | 50%   | 50%   |
| Below -20°/-29°   | 0%    | 100%  |

We recommend an operator contact their 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



## 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

Remove the fuel fill cap (Item 1) [A].

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 !**

Install and tighten the fuel fill cap [A].

### Fuel Filter

See the *SERVICE SCHEDULE* Page 1-3 for the service interval when to remove the water from the fuel filter and to replace the fuel filter.

#### Remove Water:

Shut-off the fuel supply (Item 1) [B] (turn clockwise).

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

Open the shut-off valve [B].

#### Replacing Filter:

Clean the area around the fuel filter.

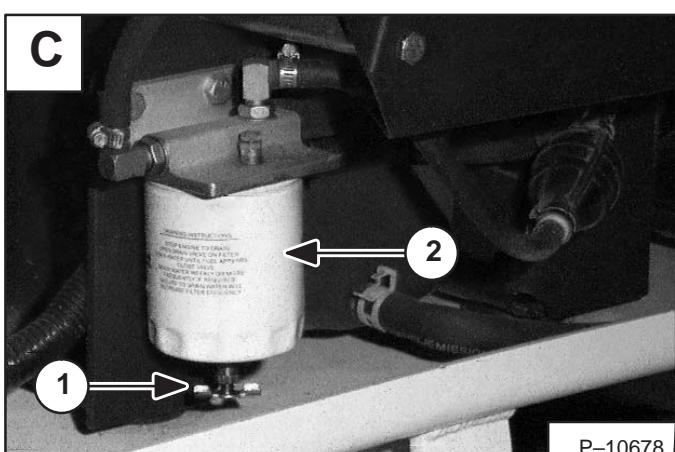
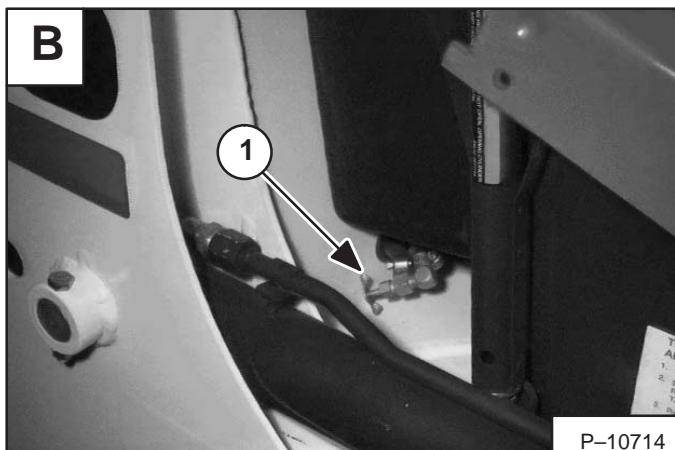
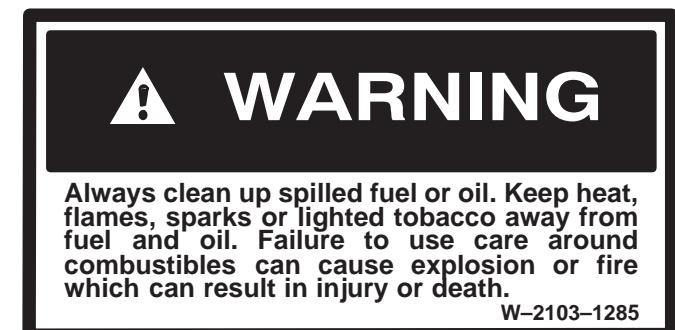
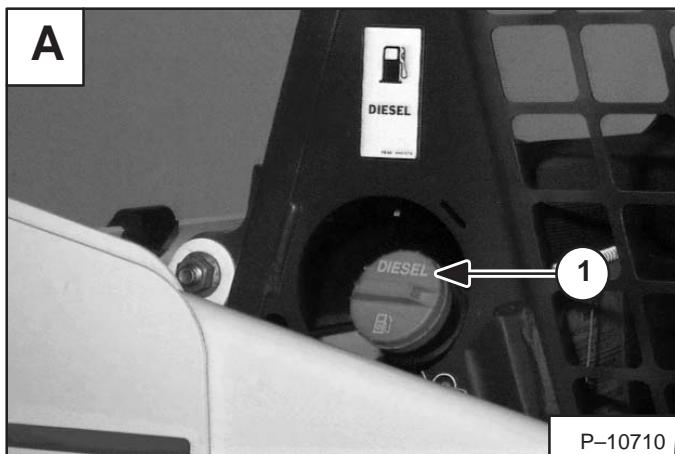
Close the shut-off valve (Item 1) [B].

Remove the fuel filter element (Item 2) [C].

Install the new filter element.

Tighten the fuel filter.

Open the shut-off valve [B].



## FUEL SYSTEM (Cont'd)

### Removing Air From The Fuel System

After replacing the fuel 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.

Open the rear door.

Open the vent plug (Item 1) [A] on top of the fuel filter head.

Operate the hand pump (Item 2) [A] until fuel flows from the vent plug with no air bubbles.

Tighten the vent plug.

Operate the hand pump (Item 1) [A] until it feels solid.

Move the engine speed control to minimum RPM. Open the valve (Item 3) [A] and squeeze the hand pump several times.

Start the engine.

When the engine runs smoothly, close the valve (Item 3) [A].

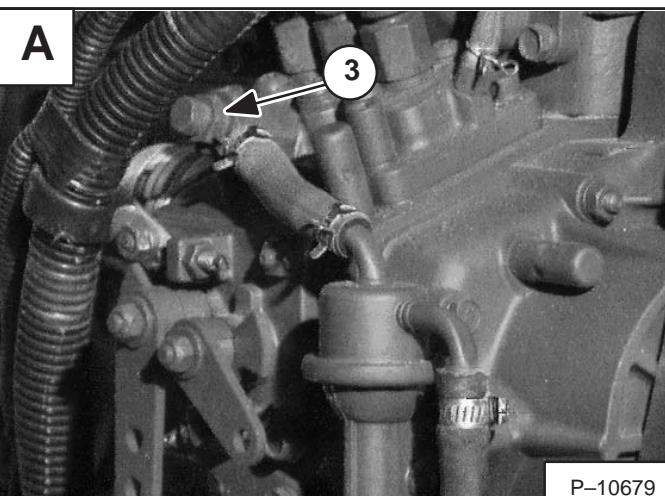


## WARNING

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

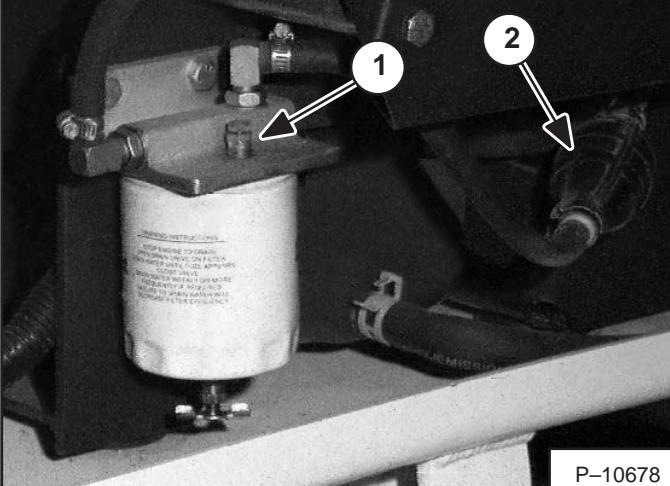
Close the rear door.



P-10679



P-10675



P-10678

## ENGINE LUBRICATION SYSTEM

### Checking Engine Oil

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

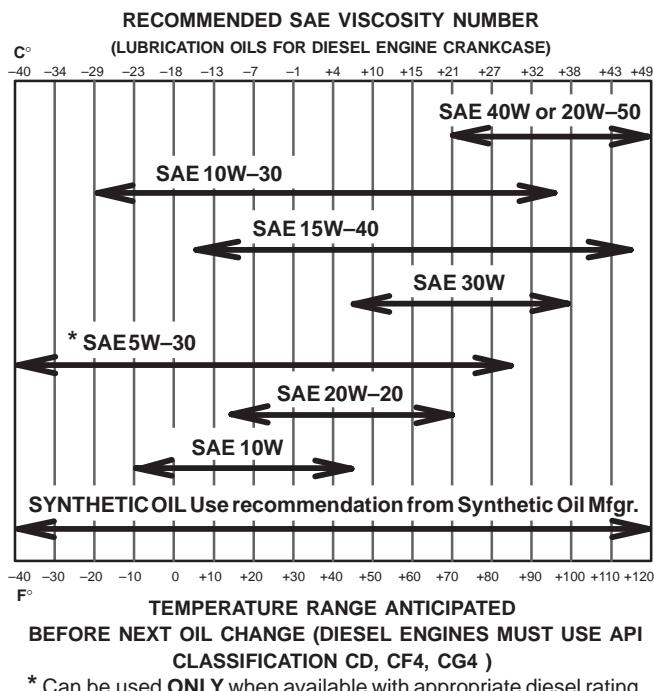
Open the rear door and remove the dipstick (Item 1) [A].

Keep the oil level between the marks on the dipstick.

Use a good quality motor oil that meets API Service Classification of CD or better (See *Oil Chart* below).

Install the dipstick and close the rear door.

### Oil Chart



### Replacing Oil And Filter

See the *SERVICE SCHEDULE* Page 1-3 for the service interval for replacing the engine oil and filter.

Run the engine until it is at operating temperature.

Stop the engine.

Open the rear door.

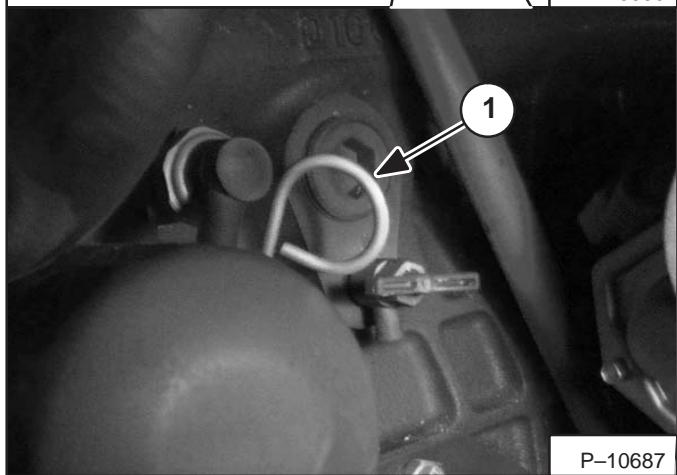
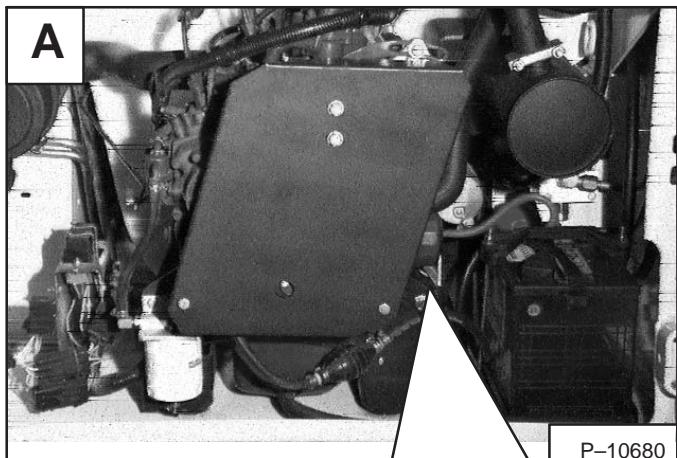
Remove the cap (Item 1) [B] from the end of the hose and drain the oil into a container. Dispose of used oil in an environmentally safe manner.

Remove the filter (Item 2) [B].

Clean the filter housing surface.

Put clean oil on the gasket of the new filter. Install the filter and hand tighten.

Install the cap on the drain hose and tighten.



**Replacing Oil And Filter (Cont'd)**

Remove the oil fill cap (Item 1) [A].

Use a good quality motor oil that meets API Service Classification of CD or better. (See *Oil Chart* Page 1-15.)

Fill to capacity. (See **SPECIFICATIONS** Page 9-1.)

Start the engine and let it run for about 5 minutes. Check for leaks at the filter. Check the oil level. Add oil until the level is at the FULL mark on the dipstick.

Install the oil fill cap (Item 1) [A].

**NOTE: DO NOT overfill the crankcase.**

Record the operating hours of the loader on the decal inside the rear door.

Close the rear door before operating the loader.



P-10677



P-10689

Sample of manual. Download All 366 pages at:

<https://www.arepairmanual.com/downloads/bobcat-553-skid-steer-loader-service-repair-workshop-manual-516311001-516411001/>