Plant No. 0798001

SCANNED
786.

763

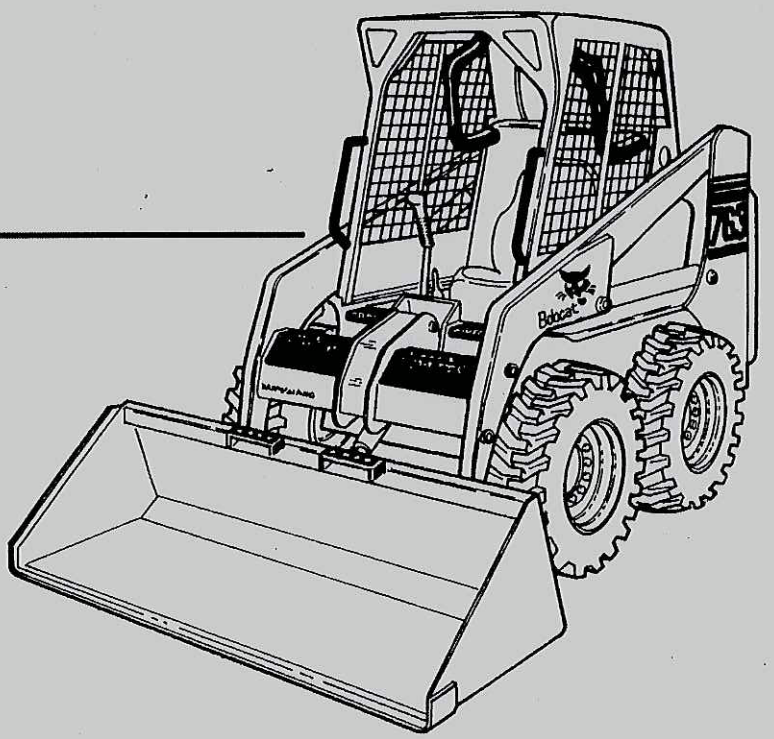
763

HIGH FLOW

Bobcat®

Operation & Maintenance Manual

S/N 512250001 & Above
S/N 512450001 & Above
S/N 512620001 – 512629999



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EQUIPPED WITH BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

6900971 (7–03) Revised (6-12)

An Ingersoll-Rand business

Printed in U.S.A.

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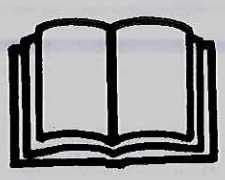
OPERATOR SAFETY WARNINGS

⚠ WARNING

Operator must have instructions before running the machine. Untrained operators can cause injury or death. W–2001–1285

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

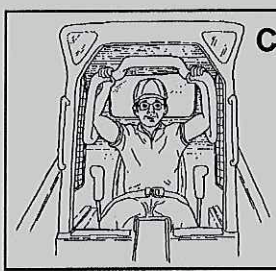
CORRECT



B–10731

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

CORRECT



B–15570

⚠ Always use the seat bar and fasten seat belt snugly.

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

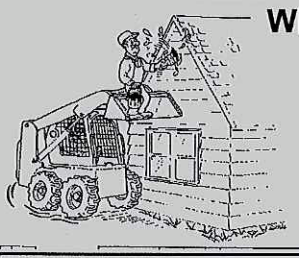
CORRECT



B–15572

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

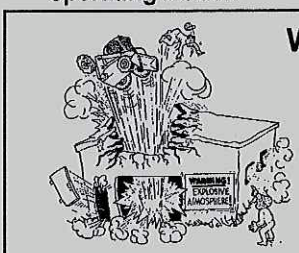
WRONG



B–15571

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

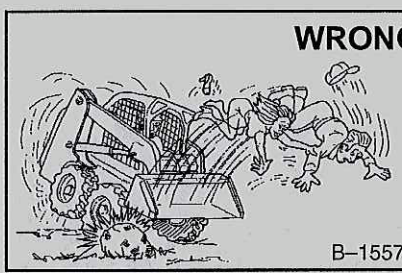
WRONG



B–15573

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

WRONG

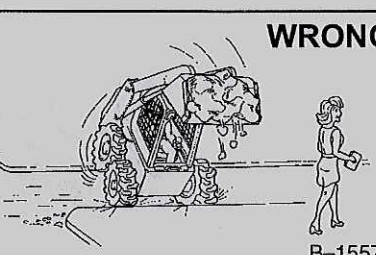


B–15574

⚠ Never carry riders.

⚠ Keep bystanders away from work area.

WRONG



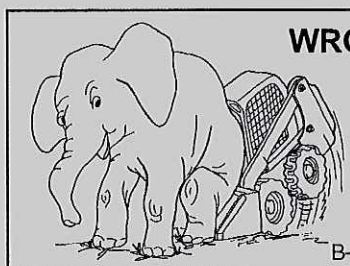
B–15575

⚠ Always carry bucket or attachments as low as possible.

⚠ Do not travel or turn with lift arms up.

⚠ Load, unload and turn on flat level ground.

WRONG



B–15576

⚠ Never exceed rated operating capacity.

WRONG

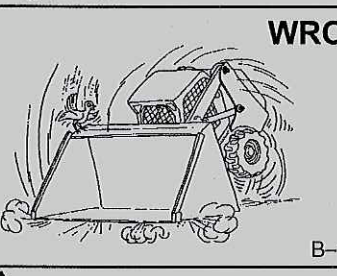


B–15577

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

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

WRONG



B–15578

⚠ Never modify equipment.

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

SAFETY EQUIPMENT

The Bobcat loader must be equipped with safety items necessary for each job. Ask your dealer for information on the safe use of attachments and accessories.

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

OSW09–0600

CONTENTS

FOREWORD iii
SAFETY ix
OPERATING INSTRUCTIONS 1
PREVENTIVE MAINTENANCE 35
SYSTEM SETUP & ANALYSIS 71
MACHINE SIGN TRANSLATIONS 83
SPECIFICATIONS 93

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.

REFERENCE INFORMATION

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

Loader Serial Number ..... _____
Engine Serial Number ..... _____
_____
_____
_____

NOTES: _____
_____
_____
_____
_____
_____

YOUR LOADER DEALER: _____
ADDRESS: _____
PHONE: _____

Bobcat Company
P.O. Box 128
Gwinner, ND 58040–0128

Bobcat Company Europe
J. Huysmanslaan 59
B–1651 LOT
BELGIUM

obcat Company is ISO 9001:2000 certified

O 9001:2000 is a set of international standards that control the processes and procedures which we use to design, evelop, manufacture, distribute, and service Bobcat products.

itish Standards Institute (**BSI**) is the Certified Registrar Bobcat chose to assess the Company's compliance with the ISO 01:2000 set of standards. The BSI registration certifies that the two Bobcat manufacturing plants and the Bobcat rporate offices (Gwinner, Bismarck & West Fargo) in North Dakota are in compliance with ISO 9001:2000. Only certified sessors, like BSI, can grant registrations.

O 9001:2000 means that as a company we say what we do and do what we say. In other words, we have established ocedures and policies, and we provide evidence that the procedures and policies are followed.

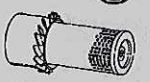
REGULAR MAINTENANCE ITEMS



6675517 ENGINE OIL FILTER



6667352 FUEL FILTER



6598492 AIR CLEANER, OUTER



6598362 AIR CLEANER, INNER

6646678 RADIATOR CAP



6661248 HYDROSTATIC FILTER



6674687 BATTERY



6724094 PROPYLENE GLYCOL ANTI–FREEZE, Premixed – [–34°F (–37°C)]

6724354 PROPYLENE GLYCOL ANTI–FREEZE, Concentrate

6563328 FLUID Hydraulic/Hydrostatic – 5 Gallons

12 Qts.	Gal.	2.5 Gal.	
6657299	6724558	6674204	MOTOR OIL 15W40 CE/SG
6657301	6724557	6674205	MOTOR OIL 10W30 CE/SG
6657303	6724559	6674206	MOTOR OIL 30 CE/SG

Page 6 - BOBM073077-03-B1001 - 11/29/2013 06:58:16 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

FOREWORD

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

SERIAL NUMBER LOCATIONS . . . . . v. .

DELIVERY REPORT . . . . . v. . .

BOBCAT LOADER IDENTIFICATION . . . . . vi .

FEATURES AND ACCESSORIES vii

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 loader frame as shown **[A]**.

Explanation of loader Serial Number:

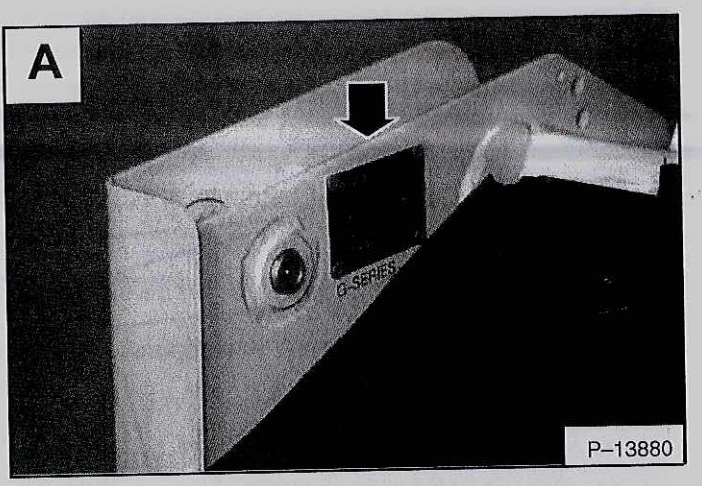
XXXX XXXXX

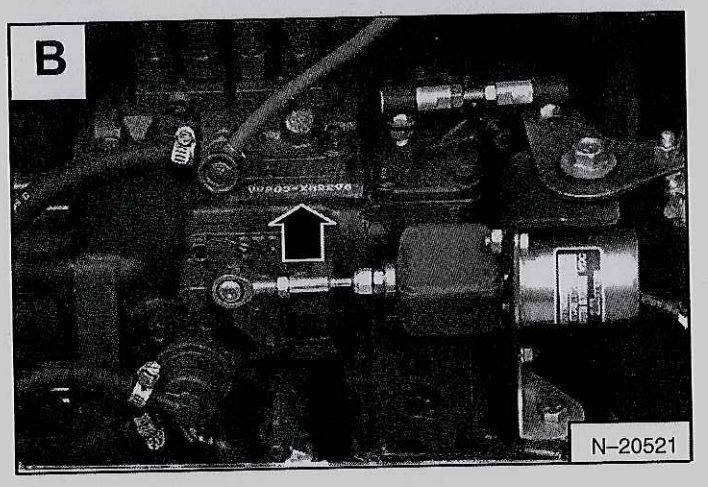
- XXXXX — Module 2. – Production Sequence (Series)
- XXXX — Module 1. – Model/Engine Combination

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

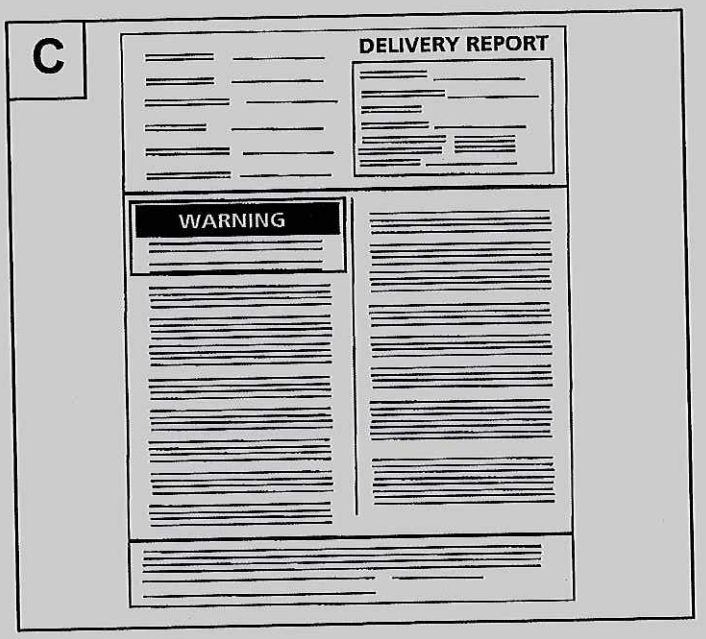
The engine serial number is in the location shown **[B]**.



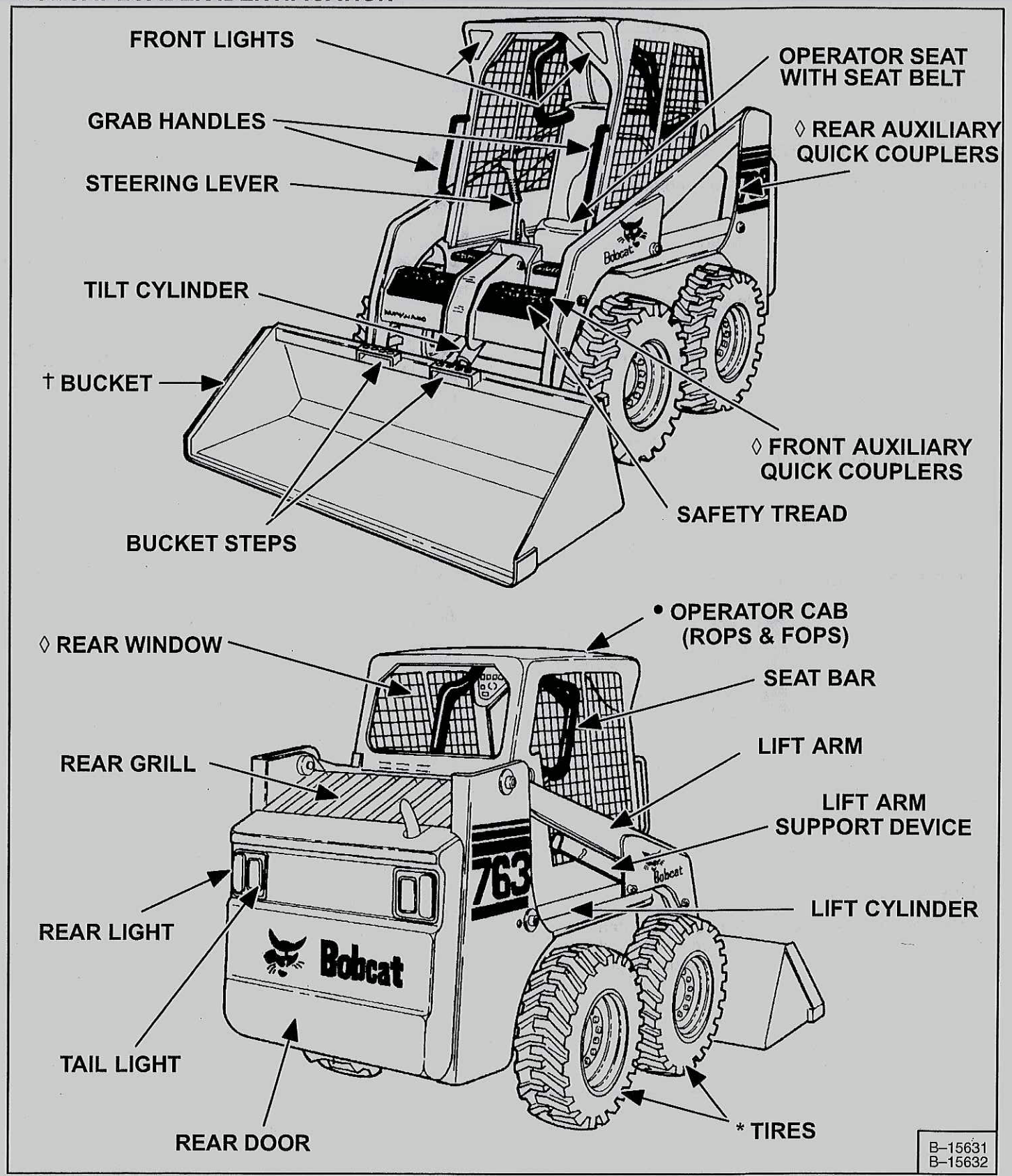


DELIVERY REPORT

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 LOADER IDENTIFICATION



◊ OPTIONAL OR FIELD ACCESSORY (Not Standard Equipment)
* 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).

FEATURES AND ACCESSORIES

Model 753, 763 Bobcat loaders are equipped with the following standard items:

Adjustable Cushion Seat
Automatically Activated Glow Plugs
Auxiliary Hydraulics: Variable Flow / Maximum Flow
Bob–Tach
Bobcat Interlock Control System (BICS™)
Dual Path Cooling System
Engine/Hydraulic System Shutdown
Instrumentation: Hourmeter Engine Temperature and Fuel Gauges and Warning Lights
Lift Arm Support Device
Lights, Front and Rear
Operator Cab (with ROPS & FOPS Approval)
Parking Brake
Seat Bar
Seat Belt
Spark Arrestor Exhaust System
Tires
- 753 – (7.00 – 15, 6 Ply Rating)
- 763 – (10–16.5, Bobcat Heavy Duty, 8 Ply Rating)

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

Accessory Wire Harness
Advanced Control System (ACS)
(Selectable Foot Pedal or Hand Control)
Advanced Hand Controls
Attachment Control Device (ACD)
Back–up Alarm
Catalytic Exhaust Purifier
Cab Enclosure Kit
Cab Enclosure (Vinyl)
Counterweight Kit
Cover Kit (Pedal / Footrest Area)
Deluxe Cab Kit (Standard on Later Models)
Deluxe Sound Cab
Deluxe Suspension Seat
Deluxe Instrumentation (With Keyless Start)
Dual Attachment Control Kit
Engine Heater
Fire Extinguisher
FOPS Kit (Level II)
Front Door Kit
Heater Kit
Horn
Hydraulic Bucket Positioning
(Includes On/Off Selection)
Lift Kit(s)
Locking Fuel Cap
Radiator Screen Kit
Rear Auxiliary Hydraulics
Rear Window Wiper
Side Window Kit
Seat Belt with 3–Point Restraint
Seat Belt – 3 inch Wide
Special Applications Kit
Tailgate Lock
Tires
- Ultra Grip Tread
- Flotation
- Solid

Top and Rear Cab Windows
Warning Lights
- Four–Way Flasher (Includes Direction Signals)
- Rotating Beacon
- Strobe Light

Weighlog Kit

Specifications subject to change without notice

SAFETY

SAFETY INSTRUCTIONS . . . . . xi,.xii

FIRE PREVENTION . . . . . xiii. .

MACHINE SIGNS (DECALS) . . . . . xiv, xv

SAFETY INSTRUCTIONS FOR BOBCAT SKID–STEER LOADERS AND ATTACHMENTS

SAFE OPERATION IS THE OPERATOR'S RESPONSIBILITY

Carefully follow the operating and maintenance instructions in this manual.

The Bobcat skid–steer loader is highly maneuverable and compact. It is rugged and useful under a wide variety of conditions. This presents an operator with hazards associated with off highway, rough terrain applications, common with Bobcat loader usage.

The Bobcat loader has an internal combustion engine with resultant heat and exhaust. All exhaust gases can kill or cause illness so use the loader with adequate ventilation. The loader has a spark arrestor exhaust system or muffler which is required for operation in certain areas.

The dealer explains the capabilities and restrictions of the Bobcat loader and attachments for each application. The dealer demonstrates the safe operation according to Bobcat instructional materials, which are also available to operators. The dealer can also identify unsafe modifications or use of unapproved attachments. The attachments and buckets are designed for a Rated Operating Capacity (some have restricted lift heights) and secure fastening to the Bobcat loader. The user must check with the dealer, or Bobcat literature, to determine safe loads of materials of specified densities for the loader–attachment combination.

The following publications and training materials provide information on the safe use and maintenance of the Bobcat loader and attachments:

- The Delivery Report is used to assure that complete instructions have been given to the new owner and that the Bobcat loader and attachment is in safe operating condition.
- The Operation & Maintenance Manual delivered with the Bobcat loader or attachment gives operating information as well as routine maintenance and service procedures. It is a part of the machine and can be stored in a container provided inside the cab of the loader. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat dealer.
- Machine signs (decals) instruct on the safe operation and care of your Bobcat loader or attachment. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat dealer.
- An Operator's Handbook is fastened to the operator cab of the loader. 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 Safety Manual delivered with the Bobcat loader gives general safety information.
- Operator Training Courses are available from your local Bobcat dealer . They provide information for safe and efficient operation of the Bobcat loader and some attachments. The courses are available in English and Spanish versions.
- Service Safety Training Courses are available from your Bobcat dealer . They provide information for safe and correct service procedures.
- See the *ADDITIONAL PUBLICATIONS* Page in this manual or your Bobcat dealer for Service and Parts Manuals, printed materials, videos, or training courses available. Also check the Bobcat web site **www.bobcat.com**

The dealer and owner/operator review the recommended uses of the product when delivered. If the owner/operator will be using the machine for a different application(s) he 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.)

SI01–0402

BEFORE OPERATING THE BOBCAT LOADER

Safety Alert Symbol

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

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

Check all of the items on the Bobcat Service Schedule Decal under the 8–10 hour column or as shown in this Manual.

WARNING

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

W–2001–0502

IMPORTANT

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

I–2019–0284

WARNING

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

W–2044–1285

SAFE OPERATION NEEDS A QUALIFIED OPERATOR *

A QUALIFIED OPERATOR MUST DO THE FOLLOWING:

- **UNDERSTAND THE WRITTEN INSTRUCTIONS, RULES AND REGULATIONS**
  - The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, Safety Manual and machine signs (decals).
  - Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.
- **HAVE TRAINING WITH ACTUAL OPERATION**
  - Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
  - The new operator must start in an area without bystanders and use all the controls until he can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.
  - Operator Training Courses are available from your Bobcat dealer in English and Spanish. They provide information for safe and efficient equipment operation. Safety videos are also available.
  - Service Safety Training Courses are available from your Bobcat dealer. They provide information for safe and correct service procedures.
- **KNOW THE WORK CONDITIONS**
  - Know the weight of the materials being handled. Avoid exceeding the Rated Operating Capacity of the machine. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of load if handling dense material.
  - The operator must know any prohibited uses or work areas, for example, he needs to know about excessive slopes.
  - Know the location of any underground lines. Call local utilities or the TOLL FREE phone number found in the *SAFETY INSTRUCTIONS* Section of this manual.
  - Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, hearing protection or special applications kit are required for some work. See your dealer about Bobcat Safety equipment.

* For an operator to be qualified, he must not use drugs or alcoholic drinks which impair his alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he can safely operate a machine.

SI02–0502

FIRE PREVENTION

The machines and some attachments have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

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

The spark arrestor exhaust system (if equipped) 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 hazards and overheating.
- Check all electrical wiring and connections for damage. Keep the battery terminals clean andtight. 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 electronic controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding. Have good ventilation when grinding or welding painted parts. Wear dust mask when grinding painted parts. Toxic dust or gas can be produced.
- 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).
- Know where fire extinguishers and first aid kits are located and how to use them. Fire extinguishers are available from your Bobcat dealer.

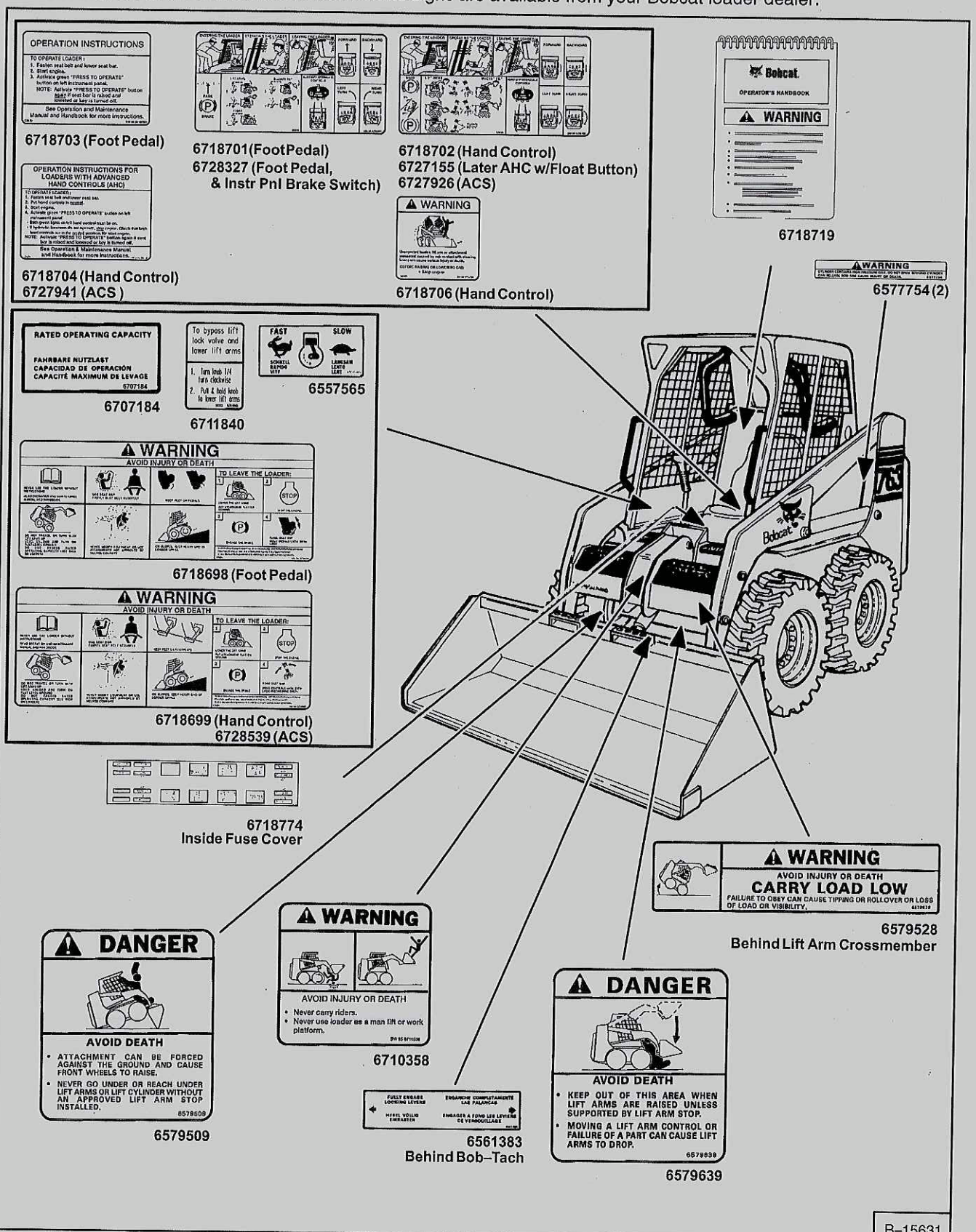


SI03–0301

Page 17 - BOBM0730077-03-B1001 - 11/29/2013 06:58:16 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

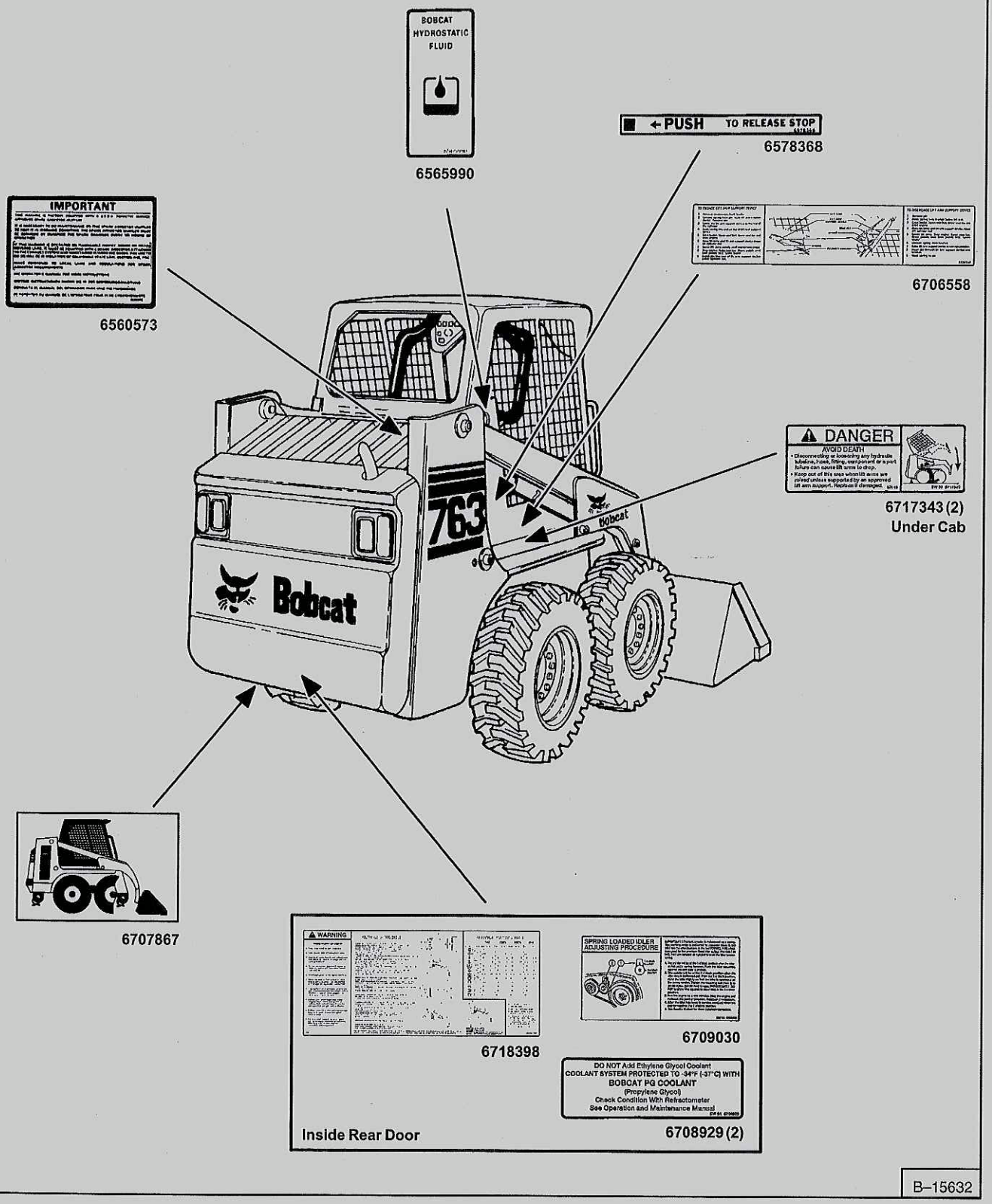
MACHINE SIGNS (DECALS)

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



Page 40 - 20000/3017/763-BLUU - 11/29/2013 06:58:17 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

MACHINE SIGNS (DECALS) (Cont'd)



Page 19 - BOBM073077-03-B1001 - 11/29/2013 06:58:17 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

OPERATING INSTRUCTIONS

ATTACHMENTS & BUCKETS 23
- Installing the Bucket or Attachment 24
- Removing the Bucket or Attachment 25

Power Bob–Tach 26
- Installing the Bucket or Attachment 26
- Removing the Bucket or Attachment 27

DAILY INSPECTION 16

ENGINE SPEED CONTROL 8

HYDRAULIC CONTROLS 11
- Attachment Auxiliary Hydraulics (If Equipped) 13
- Attachment Control Device (ACD) (If Equipped) 15
- Auxiliary Hydraulics Button 13
  - Disengage 13
  - Maximum Flow Only 13
  - Variable Flow 13
- Bucket Position Valve Operation (If Equipped) 15
- Front Auxiliary Hydraulics Operation 13
  - Variable Flow 13
  - Maximum Flow Only 13
- Foot Pedals 11
  - Lift Arm Float Position
  - Lift Arm Operation
  - Tilt Operation
- Hand Controls 11
  - Lift Arm Float Position
  - Lift Arm Operation
  - Tilt Operation
- Quick Couplers 12
- Rear Auxiliary Hydraulics Operation 13
- Releasing Hydraulic Pressure 12

INSTRUMENT PANEL IDENTIFICATION 3
- Cab Light 7
- Left Panel
  - Standard & Deluxe Instrument Panels 3
- Right Panel
  - Standard Instrument Panel (With Key Switch) 4
  - Deluxe Instrument Panel (With Keyless Start) 5
- Option & Field Accessory Panels
  - Side Console 6
  - Front–Center Panel 6

LIFT ARM BY–PASS CONTROL 7

LIFTING THE LOADER 34
- Single Point Lift 34

MONITORING THE DISPLAY PANEL 22

OPERATING INSTRUCTIONS (Cont'd)

OPERATING PROCEDURE 28
FOOT PEDALS
Filling The Bucket 29
Emptying The Bucket 30
Leveling The Ground (Using Lift Arms In Float Position) 30
Digging Into The Ground 31
Backfilling 31
HAND CONTROLS
Filling The Bucket 29
Emptying The Bucket 30
Leveling The Ground (Using Lift Arms In Float Position) 30
Digging Into The Ground 31
Backfilling 31

PARKING BRAKE (Early Models) 8

PARKING BRAKE (Later Models) 8

PARKING THE BOBCAT LOADER 32

PRE–STARTING PROCEDURE 17

SEAT BAR RESTRAINT SYSTEM 10

STARTING THE ENGINE 19
Standard Instrument Panel (With Key Switch) 19
Deluxe Instrument Panel (With Keyless Start) 20
Cold Temperature Starting 21
Warming The Hydraulic/Hydrostatic System 21

STEERING LEVERS 9
Forward, Reverse, Normal Turn, Fast Turn

STOPPING THE BOBCAT LOADER 9

STOPPING THE ENGINE 21

TOWING THE LOADER 33

TRACTION LOCK OVERRIDE 7

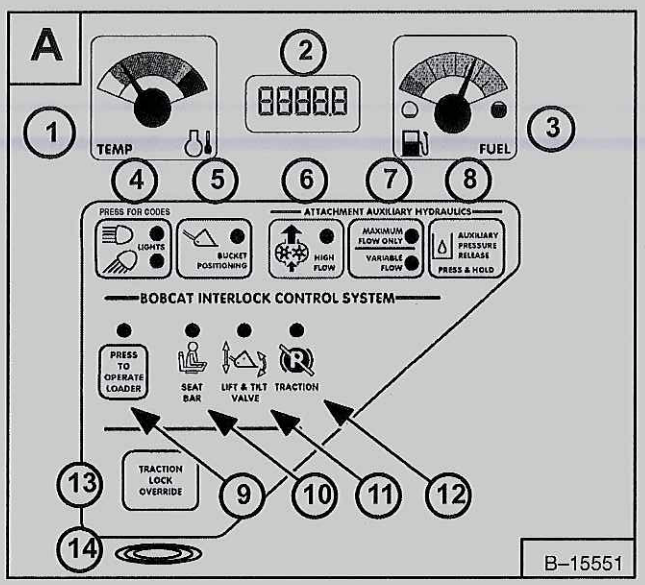
TRANSPORTING THE BOBCAT LOADER 33

INSTRUMENT PANEL IDENTIFICATION

Left Panel – Standard and Deluxe Instrument Panels [A]

The left instrument panel is the same for both *Standard* and the *Deluxe* Instrument *Panels* (Option).

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



Ref No	Description	Function / Operation
1	TEMPERATURE GAUGE	Shows the engine coolant temperature.
2	HOURMETER / CODE DISPLAY / GLOW PLUG COUNTDOWN	HOURMETER – Records operating hours of loader. CODE DISPLAY – Displays numeric SERVICE CODES* relating to the loader monitoring system. GLOW PLUG COUNTDOWN – Glow Plug time remaining.
3	FUEL GAUGE	Shows the amount of fuel in the tank.
4	LIGHTS / HOLD FOR CODES	LIGHTS – Press once for FRONT LIGHTS. Press a second time for FRONT AND REAR lights. Press a third time to turn all lights off. HOLD FOR CODES – Press and hold two seconds for display of SERVICE CODES* (Item 2). (CODES* show only when there is an error found by loader monitoring system.)
5	BUCKET POSITIONING (BP) (Option)	Press to engage BP function. Press again to disengage. Press & hold 2 seconds to view BASE *or* SHTDN (♦SHUTDOWN) feature in HOURMETER / CODE DSIPLAY. Also shows Operational Code Number.
	ATTACHMENT AUXILIARY HYDRAULICS	
6	HIGH FLOW (Option)	Press to engage the HIGH FLOW auxiliary hydraulics. Press again to disengage.
7	MAXIMUM FLOW / VARIABLE FLOW	Press once to engage the VARIABLE FLOW auxiliary hydraulics. Press a second time to engage MAXIMUM FLOW. Press a third time to disengage all auxiliary hydraulics. [VARIABLE FLOW allows for slow–to–fast movement of auxiliary functions (The farther you move the switch, the faster the movement of auxiliary functions.) MAXIMUM FLOW allows for only fast movement.]
8	AUXILIARY PRESSURE RELEASE	Press and hold for two seconds. The engine will stop. Auxiliary circuit hydraulic pressure will be released. Turn key OFF *(Standard Panel);* or press STOP Button *(Deluxe Panel).*
	BOBCAT INTERLOCK CONTROL SYSTEM (BICS™) (See *SYSTEM SETUP AND ANALYSIS,* Page 73 for troubleshooting BICS™)	
9	PRESS TO OPERATE LOADER	Press to activate BICS® System when the Seat Bar is down and operator is seated in operating position.
10	SEAT BAR	The light comes *ON* when the seat bar is down.
11	LIFT & TILT VALVE	The light comes *ON* when the seat bar is down and the PRESS TO OPERATE Button is pressed. The lift and tilt functions can be operated when the light is *ON.*
12	TRACTION	The light comes *ON* when the seat bar is down, engine is running, and parking brake is released. The loader can be moved forward or backward when the light is *ON.*
13	TRACTION LOCK OVERRIDE	*(Functions Only When Seat Bar Is Raised And The Engine Is Running)* Press to unlock the brakes. Allows you to use the steering levers to move the loader forward or backward when using the backhoe attachment or for loader service. (See *TRACTION LOCK OVERRIDE* Page 7). Press a second time to lock the brakes.
14	ALARM	The ALARM beeps when there is an Error, WARNING or ♦SHUTDOWN condition.

* See *SYSTEM SETUP & ANALYSIS*, Page 73 for further description of SERVICE CODES.
♦ SHUTDOWN feature only in *Deluxe Right Panel* or Factory Option with *Standard Panel (Early Models).*
SHUTDOWN feature standard (Later Models)

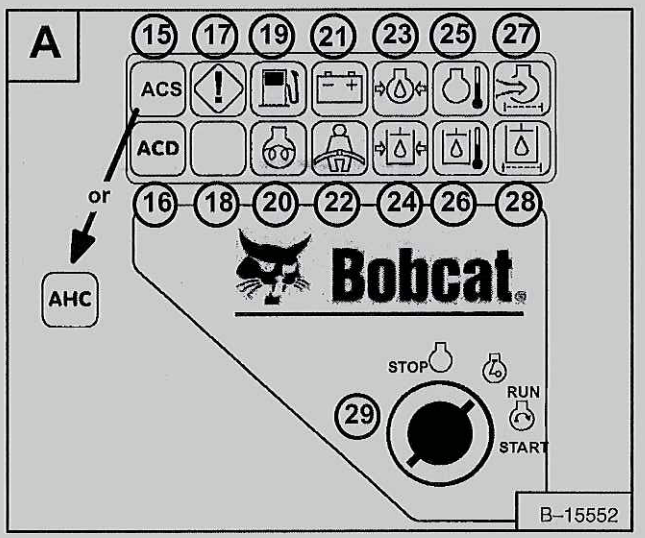
Page 23 - BOBM073077-03-B1001 - 11/29/2013 06:58:17 - Printed by Ken Cook Co. - eXprint.exe (V2.28.1 10/03/2012)

INSTRUMENT PANEL IDENTIFICATION (Cont'd)

Right Panel – Standard Instrument Panel (With Key Switch) [A]

The right instrument panel shown **[A]** is the *Standard Panel.*

The table below shows the Icons and other components of the Right *Standard Panel.*



Ref.	Function	Option or Std.	Icon / Light	Alarm	Code	Condition	Description
15 AHC or ACS	Advanced Hand Controls (AHC)	Opt.	ON	3 Beeps	◊	Error	Error with Advanced Hand Controls (AHC).
	Advanced Control System (ACS)	Opt.	ON	3 Beeps	◊	Error	Error with Advanced Control System (ACS).
16 ACD	Attachment Control Device (ACD)	Std. Std.	ON FLASHING	--- 3 Beeps	– ◊	--- Error	Electrical controlled attachment is present.• Error with Attachment Control Device (ACD).
17	General Warning	Std. Std. ♦Opt.	ON ON FLASHING	3 Beeps 3 Beeps Continuous	◊ ◊ ◊	Error WARNING SHUTDOWN	Error with one or more engine or hydraulic functions. Engine speed high or in shutdown. Engine speed very high. Engine will stop in 10 seconds.
18	NOT USED	---	---	---	–	---	---
19	Fuel Level	Std. Std.	ON ON	3 Beeps 3 Beeps	◊ ◊	Error WARNING	Fuel level sender system fault.. Fuel level low.
20	Glow Plugs	Std. Std.	ON FLASHING	--- 3 Beeps	– ◊	--- Error	Glow plugs are energized. Error with glow plugs.
21	System Voltage	Std.	ON	3 Beeps	◊	WARNING	Voltage low, high or very high.
22	Seat Belt	Std.	ON	---	–	---	Light stays on for 45 seconds to remind operator to fasten seat belt.
23	Engine Oil Pressure	Std. Std. ♦Opt.	ON ON FLASHING	3 Beeps 3 Beeps Continuous	◊ ◊ ◊	Error WARNING SHUTDOWN	Engine Oil Pressure sender out of range. Engine oil level low. Engine oil pressure very low. Engine will shutdown in 10 seconds.
24	Hydrostatic Charge Pressure	Std. Std. ♦Opt.	ON ON FLASHING	3 Beeps 3 Beeps Continuous	◊ ◊ ◊	Error WARNING SHUTDOWN	Hydraulic oil pressure sender out of range. Hydraulic oil pressure low. Hydraulic charge pressure very low. Engine will stop in 10 seconds.
25	Engine Coolant Temperature	Std. Std. ♦Opt.	ON ON FLASHING	3 Beeps 3 Beeps Continuous	◊ ◊ ◊	Error WARNING SHUTDOWN	Engine coolant sender out of range. Engine coolant temperature high. Engine coolant temperature very high. Engine will stop in 10 seconds.
26	Hydraulic Oil Temperature	Std. Std. ♦Opt.	ON ON FLASHING	3 Beeps 3 Beeps Continuous	◊ ◊ ◊	Error WARNING SHUTDOWN	Hydraulic oil temperature out of range. Hydraulic oil temperature high. Hydraulic oil temperature very high. Engine will stop in 10 seconds.
27	Engine Air Filter	Std. Std.	ON FLASHING	3 Beeps 3 Beeps	◊ ◊	Error WARNING	Air filter switch not connected. Air filter with high restriction.
28	Hydraulic Filter	Std. Std.	ON FLASHING	3 Beeps 3 Beeps	◊ ◊	Error WARNING	Hydraulic filter switch not connected. Hydraulic filter with high restriction.
29	Key Switch	–	–	–	–	–>	Used to start and stop the engine.

• ACD Icon will also be ON when the 7 pin / 14 pin Connector Harness (Opt./Acc.) is installed and the selector switch is in the 14 pin position.
♦ SHUTDOWN feature only in *Deluxe Right Panel* or Factory Option with *Standard Panel.* (Early Models)
SHUTDOWN feature standard (Later Models). (Engine can be restarted to move or relocate loader.)
(See also, *MONITORING THE DISPLAY PANEL* Page 22 for more details on SHUTDOWN.
◊ These functions are monitored and have SERVICE CODES associated with them. See *SYSTEM SETUP & ANALYSIS* Page 73 for descriptions of SERVICE CODES.

INSTRUMENT PANEL IDENTIFICATION (CONT'D)

Right Panel – Deluxe Instrument Panel (With Keyless Start) [A]

1. *Display Panel:* The Display Panel is where all system setup, monitoring, troubleshooting, and error conditions are displayed.

2. *Function Icons:* The lower left area of the *Deluxe Panel* has the same Icons as the *Standard Panel* (See Page 4). These Icons are only visible when the monitoring system has detected an error.

3. *Selection Buttons:* The four Selection Buttons allow you to select items from the Display*Panel* and scroll through screens.

4. *Keypad:* The numeric keypad (Item 4) **[A]** has two functions:

   (a) To enter a number code (password) to allowstarting the engine (Keyless Start).

   (b) To enter a number as directed for further use of the Display Panel.

The first screen you will see on your new loader will be as shown in **[B]**. When this screen is on the display you can enter the password and start the engine or change the Display Panel setup features.

NOTE: Loaders with *Deluxe Instrument Panel* have a permanent, randomly generated Master Password set at the factory. Your loader will be assigned an Owner Password. Your dealer will provide you with this password. Change the password to one that you will easily remember to prevent unauthorized use of your loader. (See *SYSTEM SETUP & ANALYSIS* Page 73.) Keep your password in a safe place for future needs.

Start Engine: Use the Keypad to enter the numbers (letters) of your password and press the RUN / ENTER key (Item 5) **[A]**.

Press and hold the ST ART Button (Item 6) **[A]** until the engine starts. (Always preform the *PRE–STARTING PROCEDURE*, Page 17 before starting the engine.)

Press the STOP Button (Item 7) **[A]** to stop the engine.

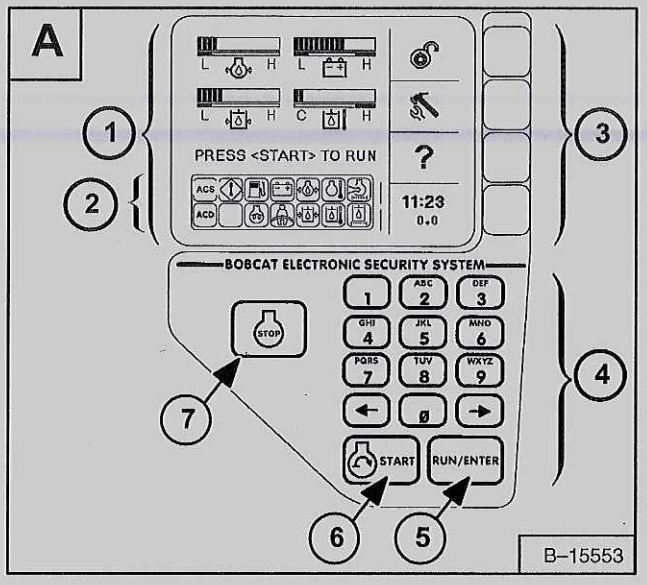
Change Language: Press the Selection Button at the end of the arrow **[B]** to go to the next screen.

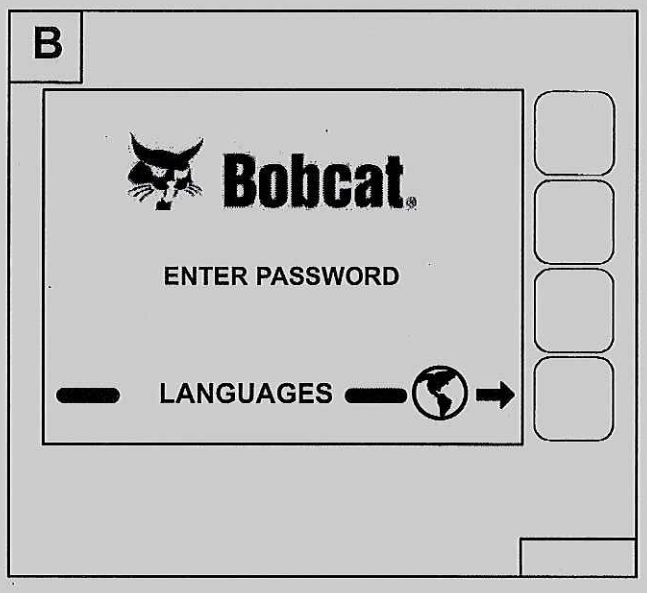
Use the Keypad to select the number of the language **[C]**.

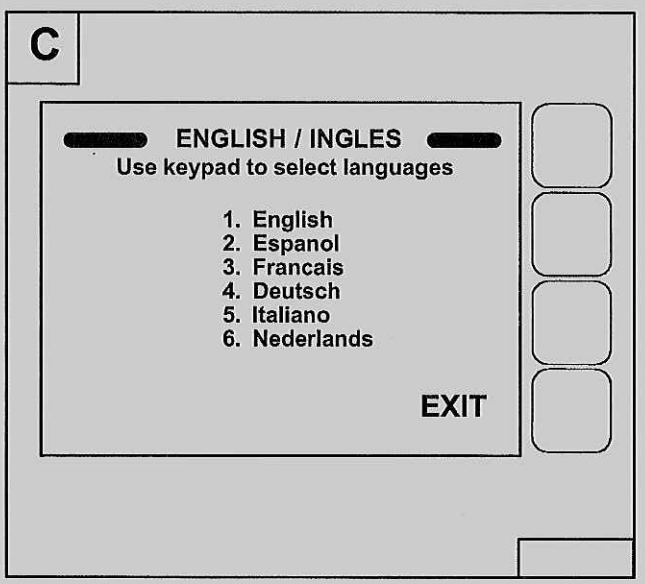
Press EXIT. The screen will return to **[B]**. You can then enter the password and start the engine.

See *SYSTEM SETUP & ANALYSIS* Section, Page 73, for further description of screens to setup the system for *your* use.

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







INSTRUMENT PANEL IDENTIFICATION (Cont'd)

Option and Field Accessory Panels (If Equipped)

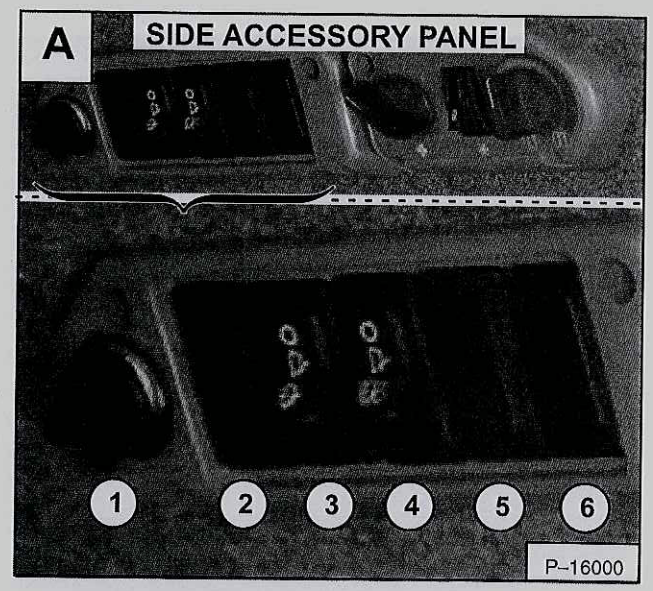
Side Accessory Panel [A] and [B]

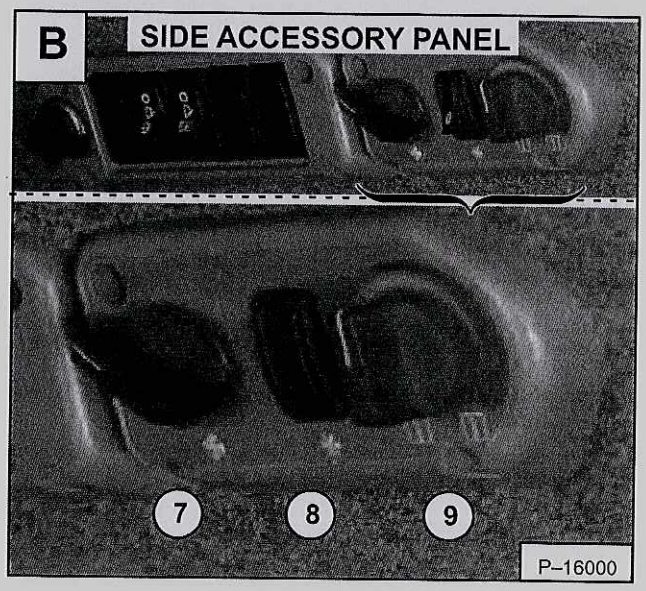
Ref. No.	Description	Function / Operation
1.	POWER PLUG	Provides a 12V receptacle for accessories.
2.	NOT USED	– – –
3.	FRONT WIPER	Press the top of the switch to start the front wiper (press andhold for washer fluid). Press the bottomof the switch to stop the wiper.
4.	REAR WIPER	Press the bottom of the switch to start the rear wiper. Press the top of the switch to provide washer fluid to clean the rear window.
5.	NOT USED	– – –
6.	NOT USED	– – –
7.	FAN MOTOR	Turn clockwise to increase fan speed; counterlockwise to decrease. There are four positions; OFF – 1 – 2 – 3.
8.	NOT USED	– – –
9.	TEMPERATURE CONTROL	Turn clockwise to increase the temperature; counterclockwise to decrease.

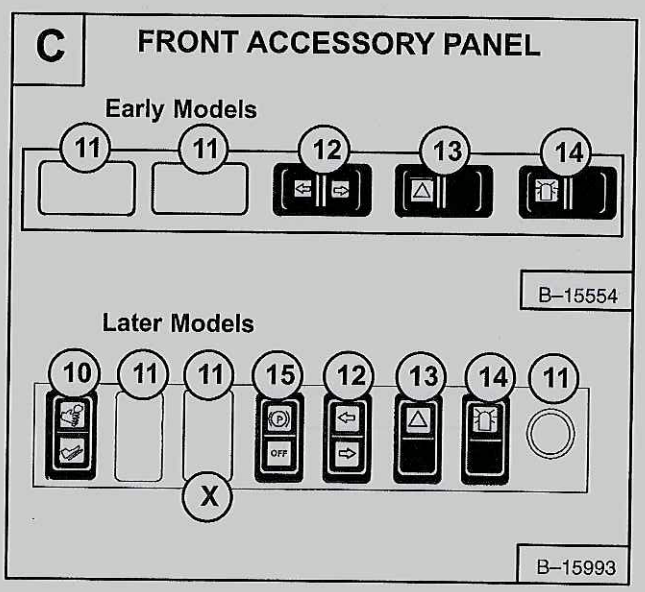
Front Accessory Panel [C]

Ref. No.	Description	Function / Operation
10.	ADVANCED CONTROL SYSTEM (ACS) (If Equipped)	Press the top to select Hand Controls; bottom to select Foot Controls.
11.	NOT USED	– – –
12.	TURN SIGNAL INDICATORS	Indicates left or right TURN SIGNALS are ON.
13.	HAZARD LIGHTS	Press the left side (or top) to turn the HAZARD LIGHTS ON; right side (or bottom) to turn OFF.
14.	ROTATING BEACON	Press the left side (or top) to turn the ROTATING BEACON ON; right side (or bottom) to turn OFF.
15.	PARKING BRAKE	Press the top to engage the PARKING BRAKE; bottom to disengage.

NOTE: Some Later Models, with vertical switch arrangement, may have Advanced Control System (ACS) switch (Item 10 above) in position "X" [C].





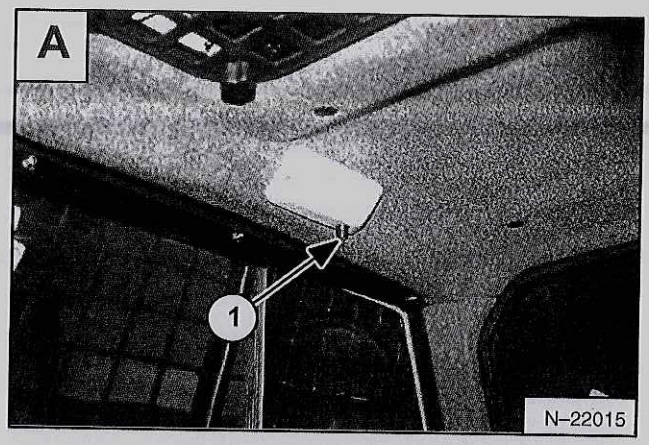


Page 26 - BOBM073077-03-B1001 - 11/29/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

INSTRUMENT PANEL IDENTIFICATION (Cont'd)

Cab Light

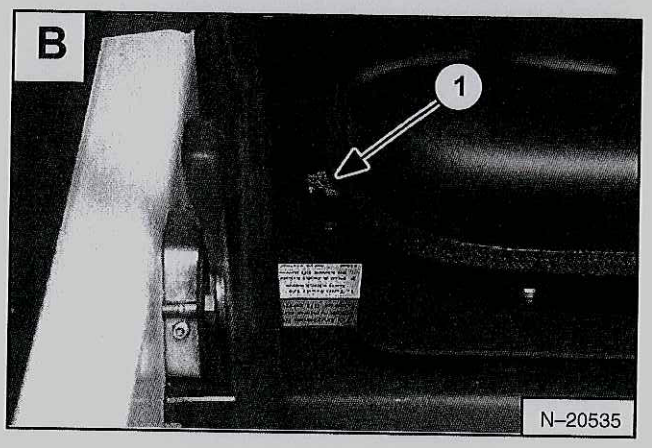
Push the button (Item 1) **[A]** to turn the light ON. Push the button again to turn OFF.



LIFT ARM BY–PASS CONTROL

The lift arm by–pass control (Item 1 **[B]** is used to lower the lift arms if the lift arms cannot be lowered during normal operations.

- Sit in the operator's seat.
- Fasten the seat belt and lower the seat bar.
- Turn the knob (Item 1) **[B]** clockwise 1/4 turn.
- *Early Models* Pull up and hold the knob until the lift arms slowly lower.



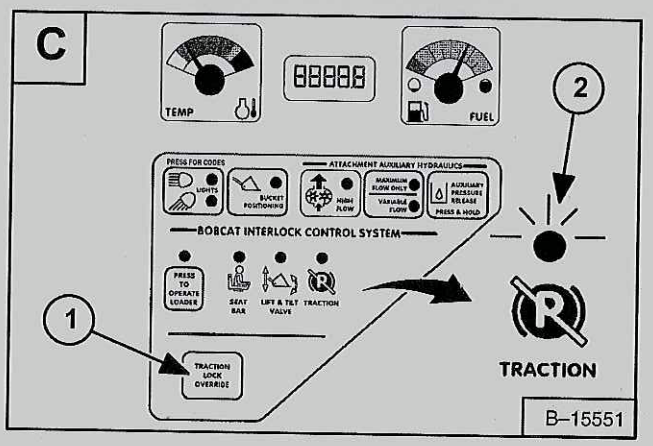
TRACTION LOCK OVERRIDE

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

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

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

The TRACTION LOCK OVERRIDE Button will function if brake pedal is in the engaged or disengaged position and the engine is running.



ENGINE SPEED CONTROL

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

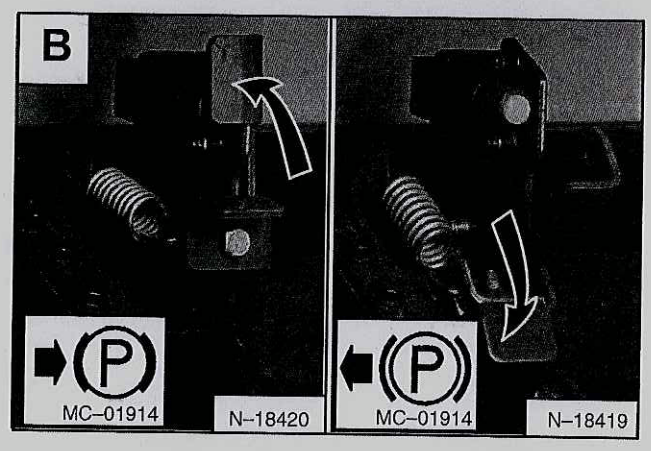
Move the lever forward to increase engine speed. Move backward to decrease engine speed.



PARKING BRAKE (Early Models)

Push on the top of the pedal **[B]** to engage the parking brake. The traction drive system will be locked.

Push on the bottom of the pedal **[B]** to release the parking brake. The traction drive system will be unlocked.*

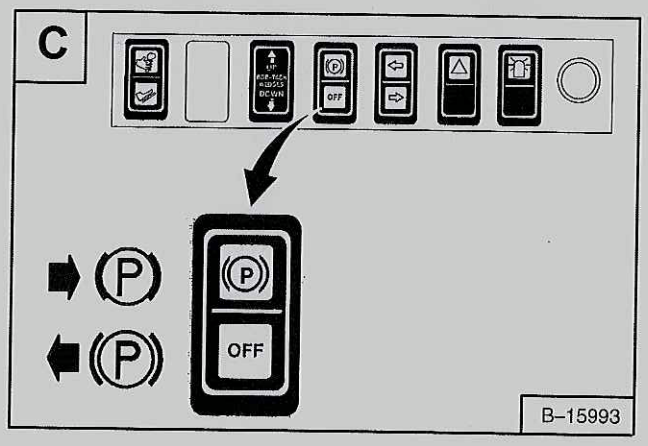


PARKING BRAKE (Later Models)

Press the top of the switch **[C]** to engage the parking brake. The traction drive system will be locked.

Press the bottom of the switch **[C]** to disengage the parking brake. The traction drive system will be unlocked.

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.



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STEERING LEVERS

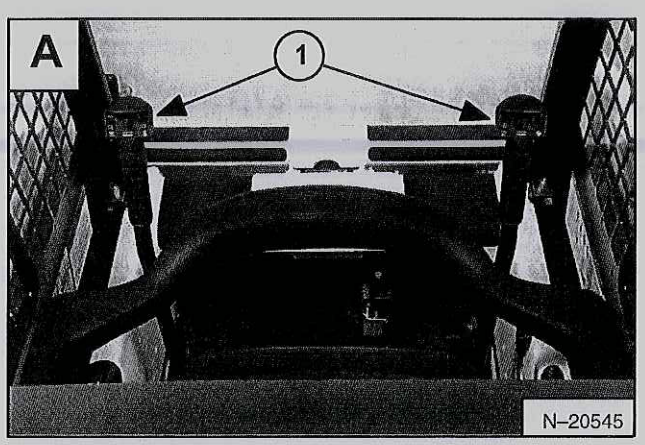
⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

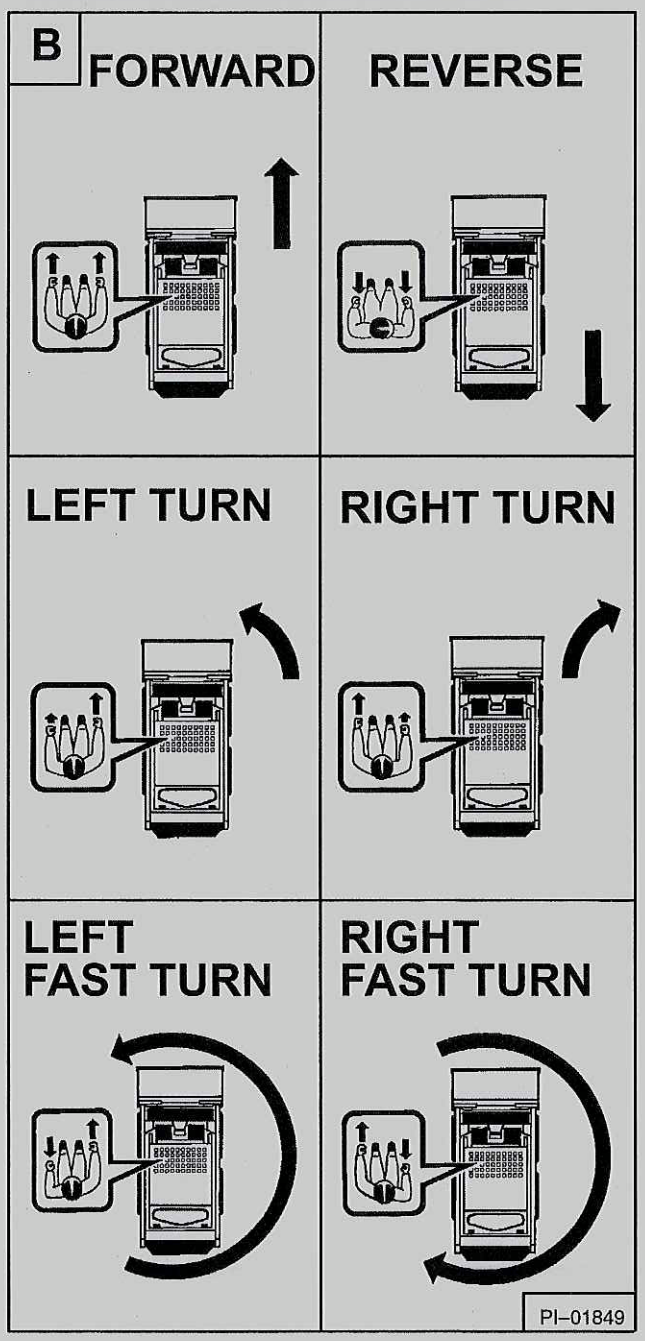
W–2261–0799



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

Move levers smoothly. Avoid sudden starting and stopping.

The steering levers control forward and reverse travel and turning the loader **[B]**.



Forward Travel – Push both levers forward.

Reverse Travel – Pull both levers backward.

Normal Turning – Move one lever farther forward than the other.

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

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

To increase travel speed, push both levers farther forward.

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

STOPPING THE BOBCAT LOADER

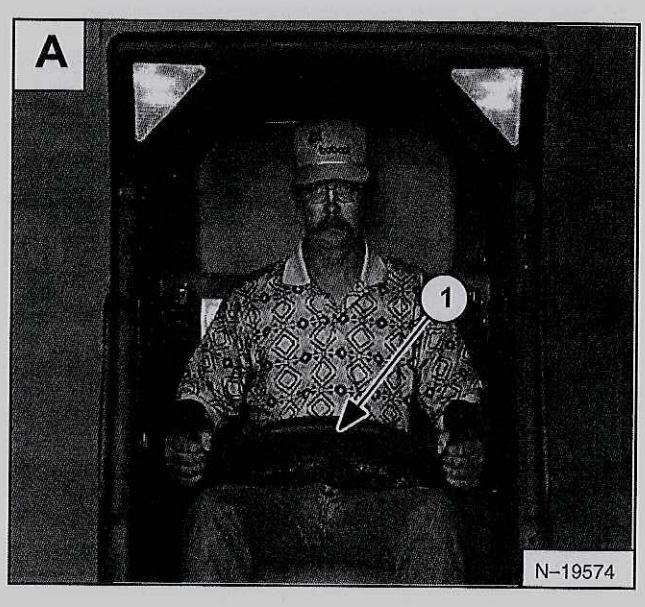
When the steering levers are moved tdhe neutral position, the hydrostatic transmission will act as a *service brake* to stop the loader.

Page 29 - BOBM07307-03-B1001 - 11/29/2013 08:58:18 - Printed by Ken Cook Co. - exprint.exe (V2.28.1 10/03/2012)

SEAT BAR RESTRAINT SYSTEM

The seat bar restraint system has a pivoting seat bar with arm rests (Item 1) **[A]**.

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



⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W–2261–0799

When the seat bar is down, PRESS T O OPERATE LOADER Button is activated, and the brake pedal is released, the lift, tilt, and traction drive functions can be operated. (Traction drive will operate only when the engine is running.)

When, the seat bar is up, the lift, tilt, and traction drive functions are deactivated and both foot pedals (if equipped) will be locked when returned to neutral position.

⚠ WARNING

Before you leave the operator's seat:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise seat bar.**
- ***(Foot Pedal Controls Only)* Move pedals until both lock.**
- ***Advanced Hand Controls (ACS) and Advanced Hand Controls (AHC)* Move the hydraulic controls to the NEUTRAL POSITION to make sure that both lift and tilt functions are deactivated.**

The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. Service the system if controls do not deactivate.

W–2398–0301

HYDRAULIC CONTROLS

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

Two foot pedals (or hand controls) (Item 1) **[A]** and **[B]** control the hydraulic cylinders for the lift and tilt functions.

Foot Pedals

Lift Arm Operation [A]
The left pedal controls the lift arms.

Push on the bottom (heel) (Item 2) **[A]** of the pedal to raise the lift arms.

Push on the top (toe) (Item 3) **[A]** of the pedal to lower the lift arms.

Lift Arm Float Position [A]
Push the top (toe) (Item 3) **[A]** of the pedal all the way forward until it locks into the *float* position.

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

Push the bottom of the left pedal to unlock from the *float* position.

Tilt Operation [B]
The right pedal controls the bucket.

Push the bottom (heel) (Item 2) **[B]** of the pedal to tilt the bucket backward.

Push the top (toe) (Item 3) **[B]** of the pedal to tilt the bucket forward.

Hand Controls (AHC or ACS) (If Equipped)

Lift Arm Operation [A]
The left hand lever controls the lift arms.

Move the left hand lever away from the operator (Item 4) **[A]** to raise the lift arms.

Move the left hand lever toward the operator (Item 5) **[A]** to lower the lift arms.

Lift Arm Float Position [A]
Move the left hand lever all the way toward the operator (Item 5) **[A]** until it locks into the *float* position.

Later ACS and AHC Models With Float Button
- **To Engage:** Press and hold the Float Button (Item 6) **[A]** while the lever is in neutral. Move the lever to the lift arm down position (Item 5) **[A]**, then release the button.
- **To Disengage:** Press Float Button again or move the lever to the lift arm up position (Item 4) **[A]**.

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

Move the left hand lever upward to unlock from the *float* position.

Tilt Operation [B]
The right hand lever controls the bucket.

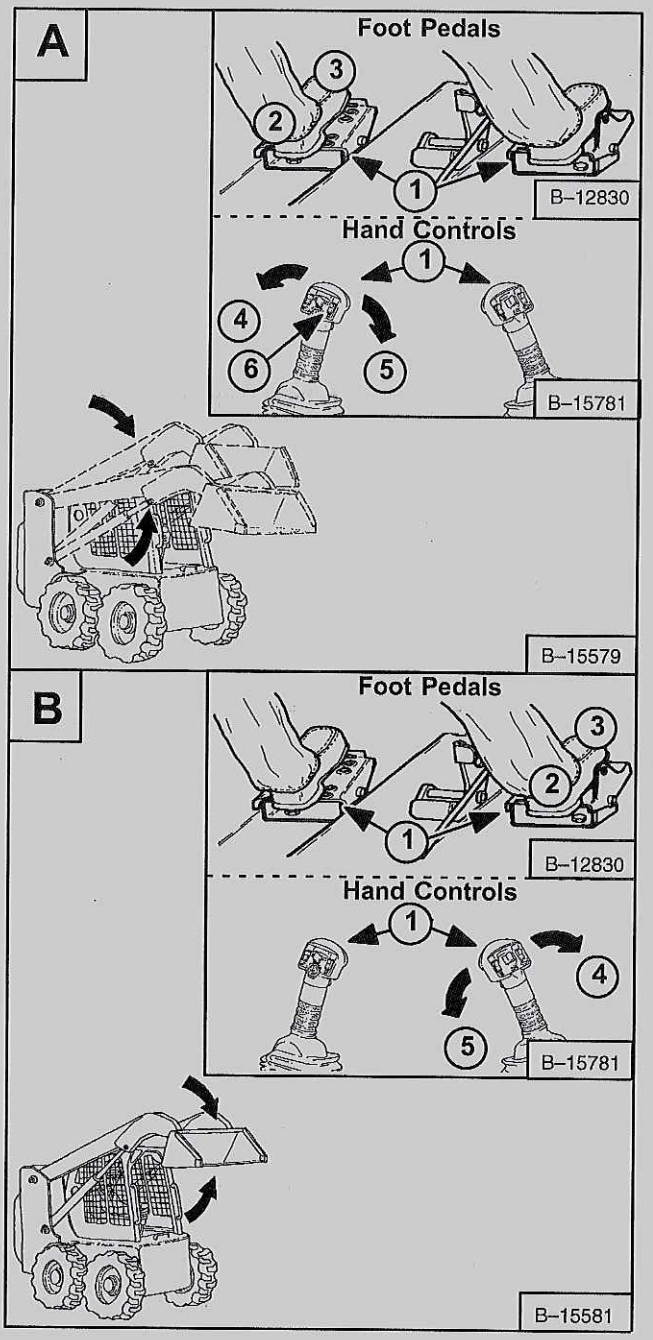
Move the right hand lever toward the operator (Item 5) **[B]** to tilt the bucket backward.

Move the right hand lever away from the operator (Item 4) **[B]** to tilt the bucket forward.

⚠ WARNING

Keep both feet on pedals or footrests while operating machine. Failure to do so can cause serious injury.

W–2359–1099



Page 31 - BOBM073077-03-B1001 - 11/29/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

HYDRAULIC CONTROLS (Cont'd)

Quick Couplers

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

Install the male coupler into the female coupler.

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

Releasing Hydraulic Pressure (Loader and Attachment)

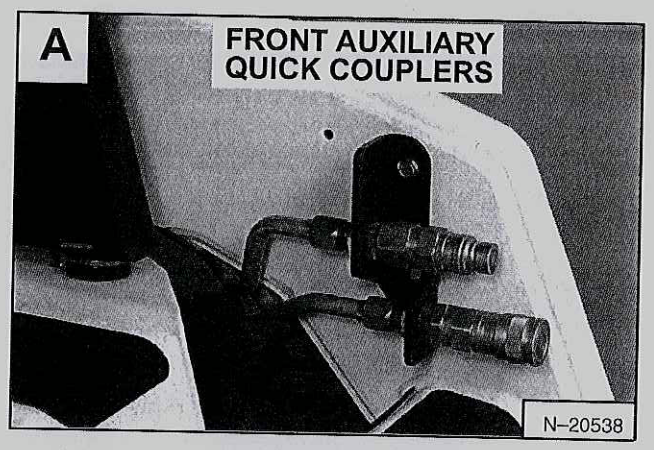
Loader:

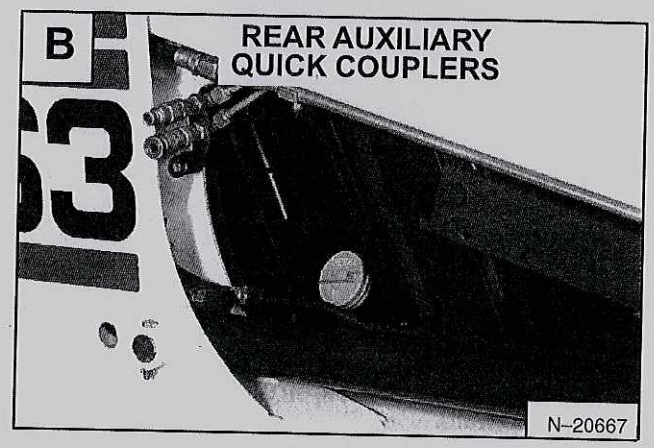
- Press the AUXILIARY PRESSURE RELEASE Button (Item 1) **[C]**. Hold it for two seconds. The engine will stop and release hydraulic pressure.
- Pressing the AUXILIARY HYDRAULIC RELEASE Button after pressing the RUN / ENTER Button, when the engine is stopped, will also release hydraulic pressure.

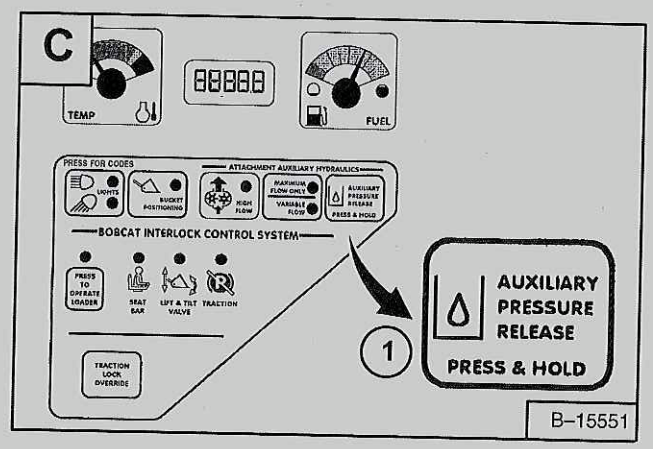
Attachments:

- Follow procedure above to release pressure in loader.
- Connect male coupler from attachment to female coupler of loader then repeat procedure above. This will release pressure in the attachment.
- Connect the female coupler from the attachment.

Hydraulic pressure in the auxiliary hydraulic system can make it difficult to engage quick couplers to an attachment.







Page 32 - BOBMAN/6077-03-B1001 - 11/29/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe [v2.28.1 10/03/2012]

HYDRAULIC CONTROLS (Cont'd.)

Attachment Auxiliary Hydraulic Controls (If Equipped)

Auxiliary Hydraulics Button

- ***Variable Flow***
  *Variable Flow allows for slow–to–fast movement of auxiliary functions. If you move the auxiliary switch (Items 1) **[B]** half way, the auxiliary functions move at approximately one–half speed.*

  Press the AUXILIARY HYDRAULICS Button (Item 1) **[A]** once.

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

- ***Maximum Flow Only***
  *Maximum Flow allows for fast movement only. If you move the auxiliary switch (Items 1 or 3) **[B]**, the auxiliary functions move at fast speed; release the switch to stop auxiliary functions.*

  Press the AUXILIARY HYDRAULICS Button (Item 1) **[A]** a second time.

  The light (Items 3) **[A]** will be ON.

- ***Disengage***
  Press the AUXILIARY HYDRAULICS Button (Item 1) **[A]** a third time.

  Both lights (Items 2 & 3) **[A]** will be OFF.

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

FRONT Auxiliary Hydraulics Operation
(RIGHT Steering Lever)

Variable Flow

- Press the AUXILIAR Y HYDRAULICS Button for Variable Flow (See above).
- Push the switch (Item 1) **[B]** to the right or left to change the fluid flow direction to the ***front*** quick couplers. (EXAMPLE: Open and close grapple teeth.)

Maximum Flow Only

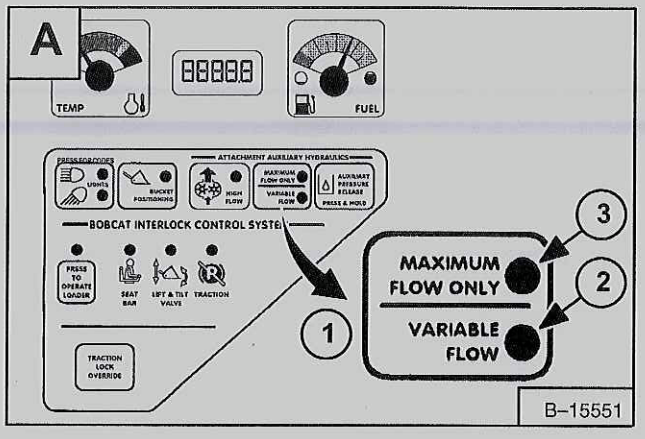
- Press the AUXILIAR Y HYDRAULICS Button for Maximum Flow (See above.)

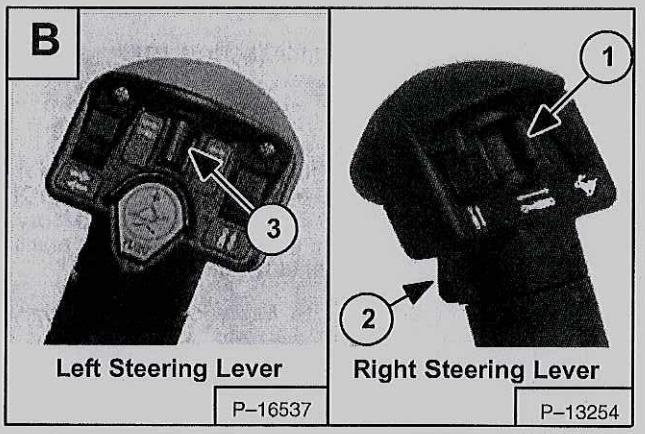
Continuous Flow

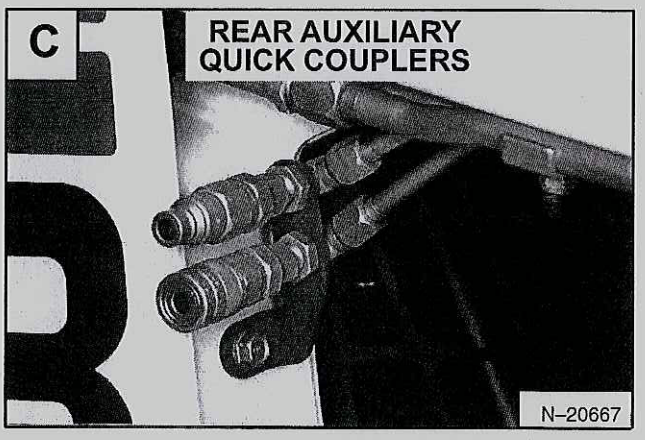
- After selecting *Variable* or *Maximum Flow*, press the front switch (Item 2) **[B]** to give the ***front*** quick couplers a constant flow of fluid with the female coupler being pressurized. (EXAMPLE: Operate a backhoe.) **To set <u>reverse</u> flow** (male coupler pressurized), hold the auxiliary switch (Item 1) **[B]** to the left, press *Variable* or *Maximum Flow* and then press the front switch (Item 2) **[B]**. *Reverse flow can be used only with augers, power rakes, sweepers, tillers, and vibratory rollers.*
- To release from continuous operation, press the front switch (Item 2) **[B]** a second time.

REAR Auxiliary Hydraulics Operation
(LEFT Steering Lever)

- Press the AUXILIAR Y HYDRAULICS Button for *Maximum Flow* (See above).
- Push the switch (Item 3) **[B]** to the right or left to change the fluid flow direction to the ***rear*** quick couplers **[C]**. (EXAMPLE: Raise and lower rear stabilizers.)







HYDRAULIC CONTROLS (Cont'd)

Attachment Auxiliary Hydraulics (Cont'd.)

High–Flow Hydraulics Operation (If Equipped)

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

- Connect the attachment to the quick couplers (Item 1) **[A]**.
- Some attachments may have a case drain which needs to be the connected to the small quick coupler (Item 2) **[A]**.
- Set the Auxiliary Hydraulics Button for *Variable Flow* or *Maximum Flow Only* (See Page 13).
- Press the HIGH FLOW Button (Item 1) **[B]**.

Secondary Front Auxiliary Hydraulics (If Equipped)

If your loader has the HIGH FLOW Option, the secondary front auxiliary quick couplers are included (Item 1) **[C]**. (Also available separately as a Field Installed Accessory.) These are used when there is a need for additional auxiliary hydraulics (EXAMPLE: Planer side shift).

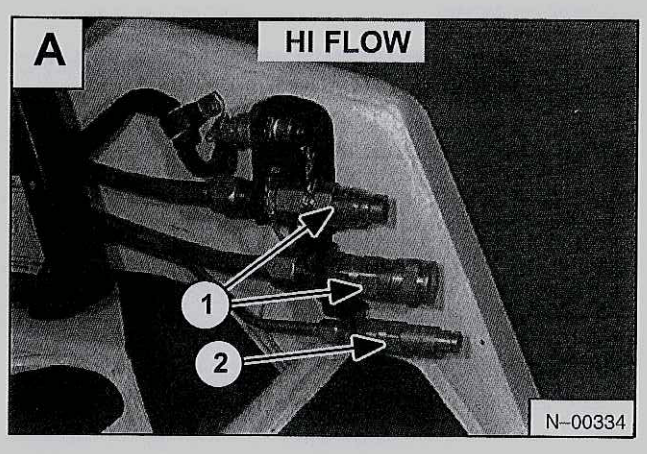
- Connect the attachment to the secondary auxiliary hydraulics (Item 1) **[C]**.
- Set the Auxiliary Hydraulic Button for *Variable Flow* or *Maximum Flow Only*. (See Page 13).
- Push switch (Item 1)**[D]** to the right or left to change fluid flow direction. (EXAMPLE: Side shift on the Planer)

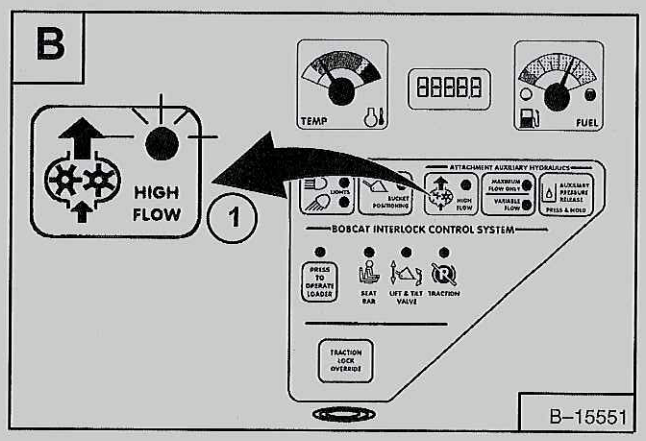
NOTE: The secondary front auxiliary hydraulics *and* the rear auxiliary hydraulics operate from the same auxiliary section of the control valve. To operate only one of these auxiliary functions, disconnect the other.

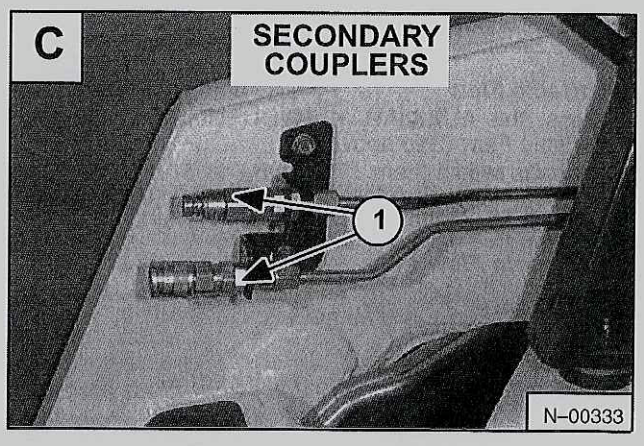
IMPORTANT

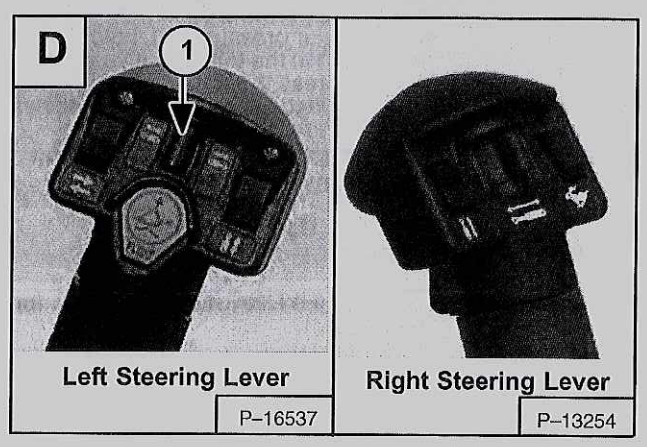
If the high–flow switch is in the ON position, High–Flow Hydraulics will flow through the front auxiliary quick couplers. Damage to unapproved attachments can result. Leave the switch OFF for backhoe operation.

I–2063–0295









Page 25 - D:\BOBV\307\US-BIUU1 - 11/27/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

HYDRAULIC CONTROLS (Cont'd.)

Attachment Control Device (ACD) (If Equipped)

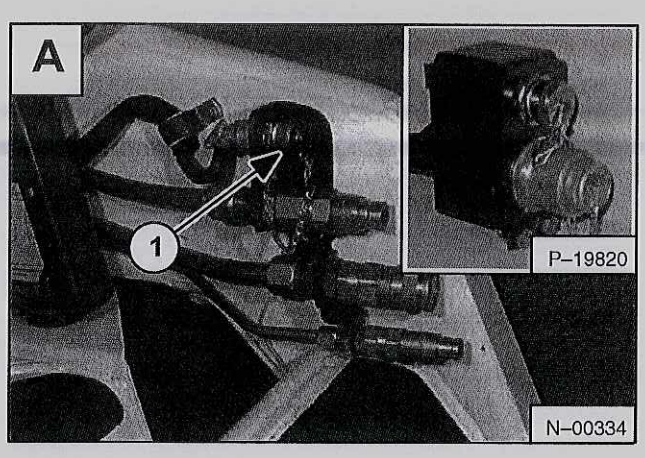
When this kit is installed (Item 1) **[A]**, the **ACD** Icon light **[B]** on the right instrument panel will be ON when a 7–pin electric controlled attachment is installed.

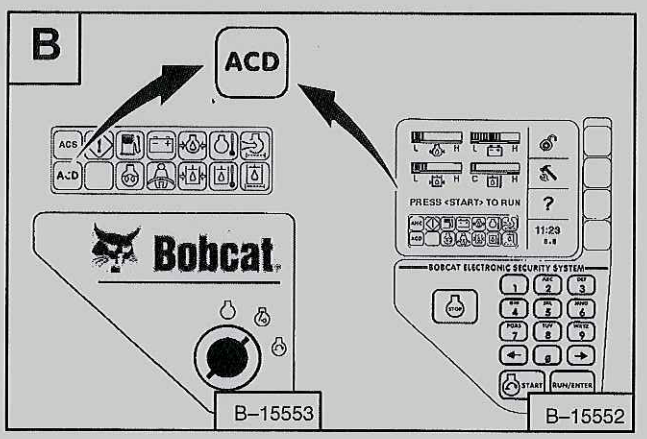
You will need the Dual–Connector (7–pin/14–pin) Kit (Inset) **[A]** to operate early model attachments. See your Bobcat loader dealer.

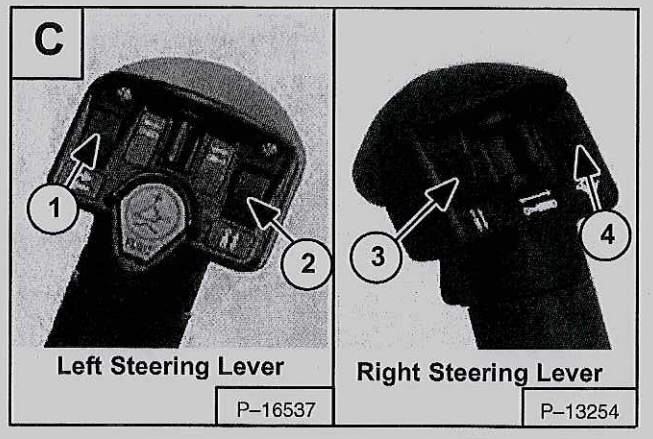
You can then use additional switches (Items 1 thru 4) **[C]** on the right and left control handles for functions which control some attachments.

NOTE: When the Dual–Connector Kit is installed, the ACD Icon light [B], in the right instrument panel, will always be ON.

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







⚠ WARNING

Diesel fuel or hydraulic fluid under pressure can penetrate skin or eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. Do not use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a physician familiar with this injury.

W–2072–0496

Bucket Position Valve Operation (If Equipped)

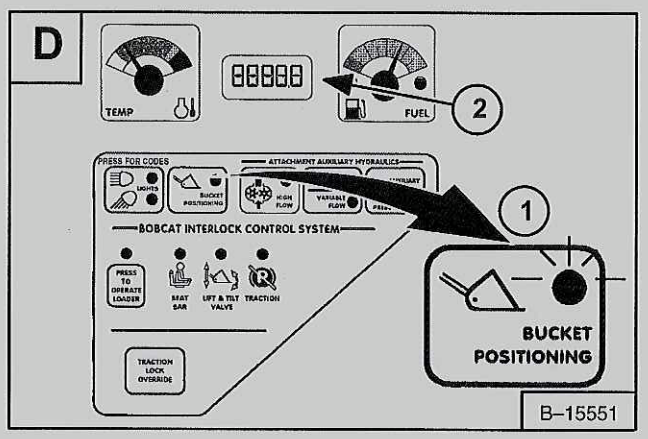
The function of the bucket position valve is to keep the bucket in the same approximate position it is in before you begin raising the lift arms.

Press BUCKET POSITIONING Button (Item 1) **[D]** to engage the bucket positioning function. (The light will be ON.) Press again to disengage.

Bucket Positioning functions only during the upward lift cycle.

Shutdown Features

Press and hold the BUCKET POSITIONING Button (Item 1) **[D]** for 2 seconds. If the SHUTDOWN feature is installed, Shtdn will appear in the HOURMETER/CODE DISPLAY (Item 2) **[D]**. If it is not installed, BASE will appear. (Operational Code will also appear).



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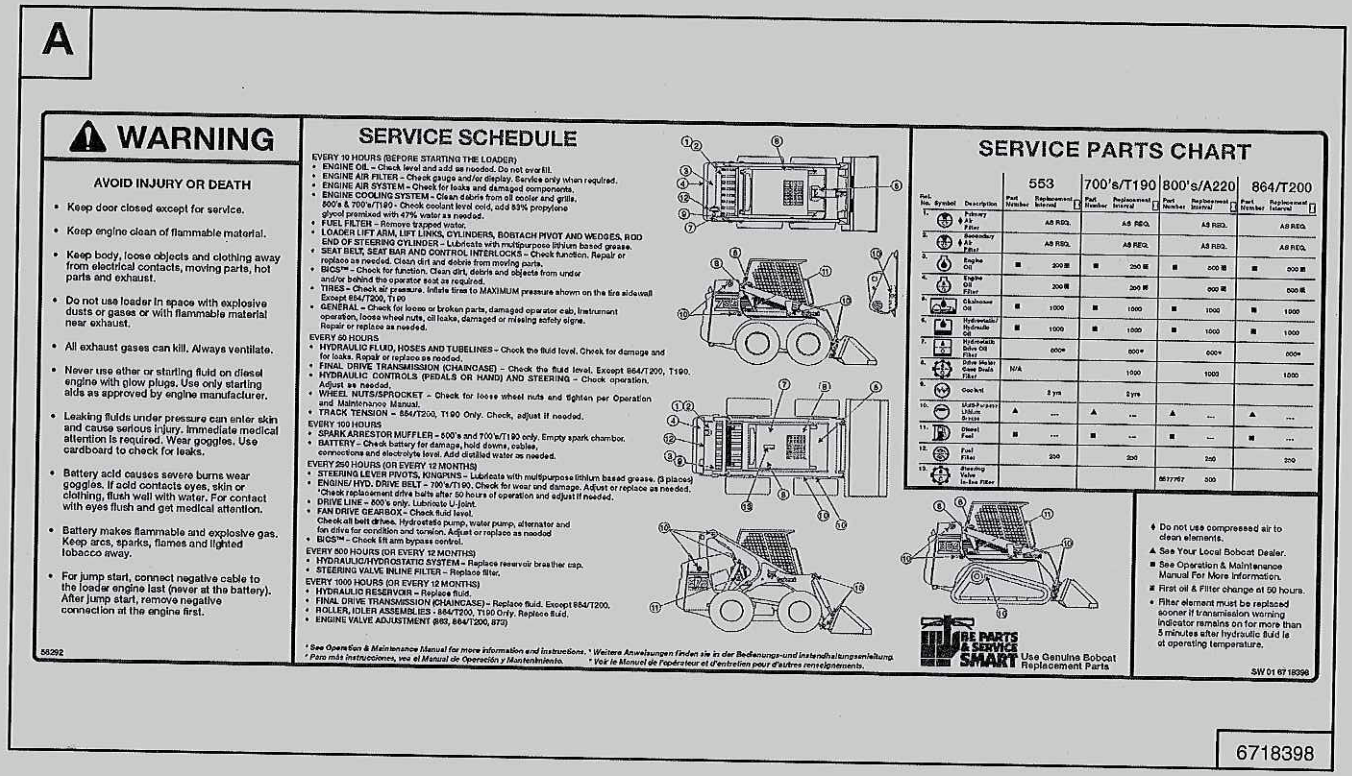


6718398

DAILY INSPECTION

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The Service Schedule **[A]** is a guide for correct maintenance of the Bobcat loader. It is located inside the rear door of the loader and also in the *MACHINE SIGN TRANSLATION* Section Page 83.

Daily Inspection and Maintenance:

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

WARNING

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

W–2001–0596

NOTE: Fluids such as engine oil, hydraulic fluid, coolant, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for correct disposal.

Page 36 - BOBM073077-03-B1001 - 11/29/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

PRE–STARTING PROCEDURE

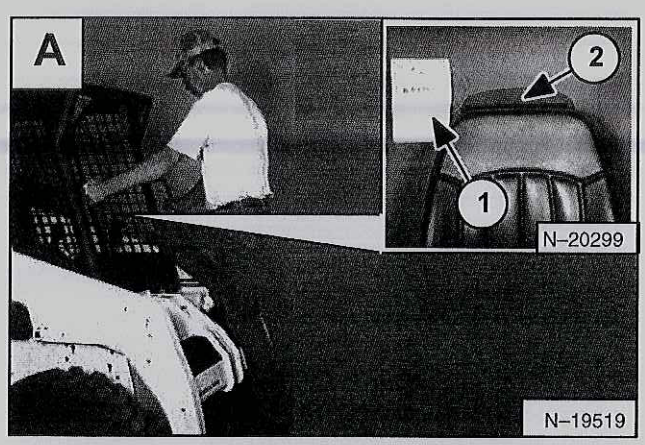
Use the bucket or attachment steps, grab handles and safety treads (on top of the loader lift arms and frame) to get on and off the loader **[A]**. Do not jump.

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

Keep safety treads clean and replace when damaged. Replacement treads are available from your Bobcatloader dealer.

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

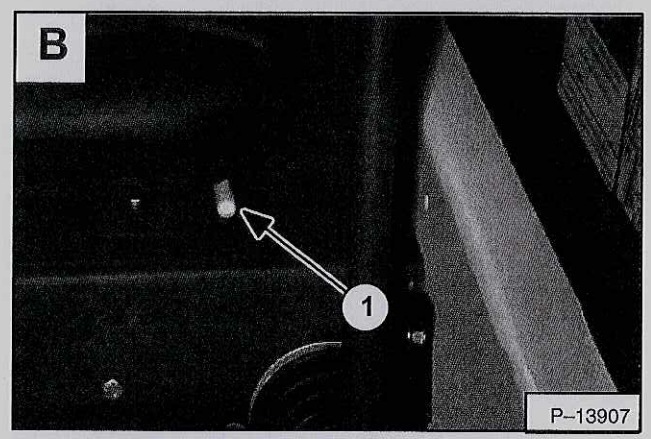
The Operation & Maintenance Manual and other manuals can be kept in a container (Item 2)**[A]** provided behind the operator seat.



⚠ WARNING

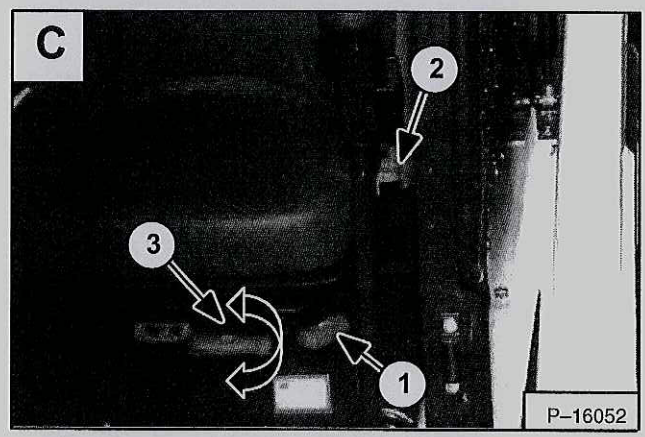
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments,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

W–2003–1298



Release the seat lever (Item 1) **[B]** and adjust the seat position for comfortable operation of the loader controls.

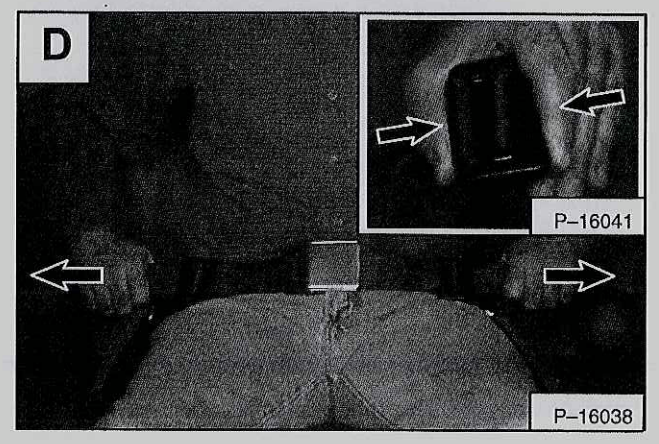
Suspension Seat – (Option or Field Accessory)
Release the lever (Item 1)**[C]** to adjust the seat distance from the steering levers and foot pedals (if equipped). Release the lever (Item 2) **[C]** to adjust the angle of the seat back. Turn the lever (Item 3) **[C]** to adjust the seat cushion for weight of the operator.



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

Fasten the seat belt.

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

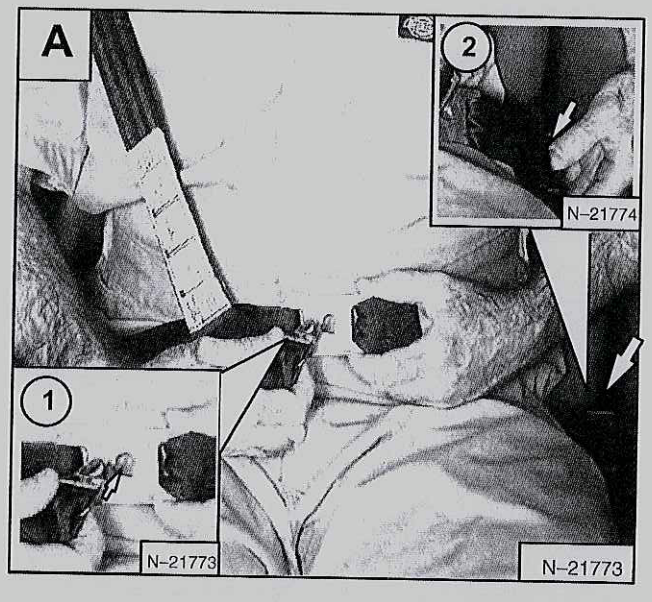


Page 37 - BOBM073077-03-B1001 - 11/29/2013 06:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

PRE–STARTING PROCEDURE (Cont'd)

3–Point Restraint – (Option or Field Accessory)
Connect the shoulder belt to the lap belt (Item 1) **[A]**. Pull the lap belt across to the left side of the seat (Item 2) **[A]** and fasten.

The shoulder belt must be positioned over your right shoulder and the lap belt must be snug over your lower hips **[A]**.



IMPORTANT

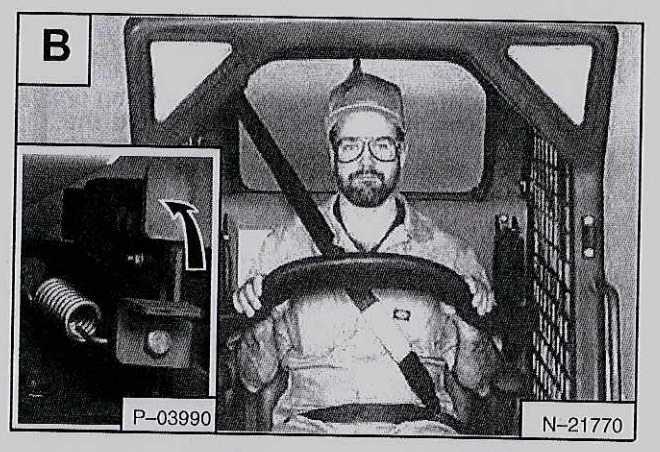
Check the seat belt and shoulder belt retractors for correct operation.

Keep retractors clean and replace as necessary.

W–2197–0200

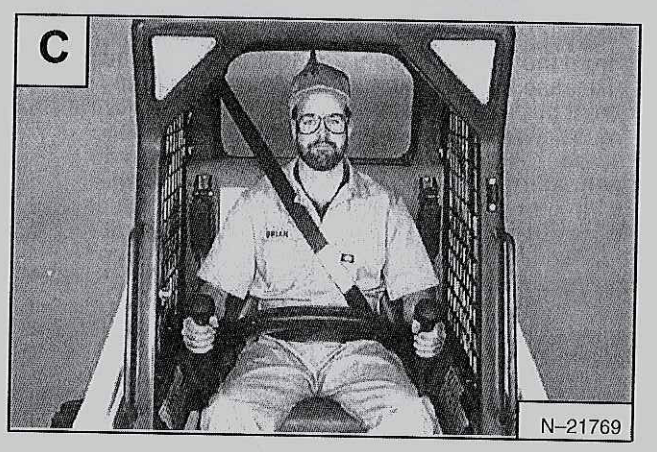
Lower the seat bar **[B]**.

Engage the parking brake **[B]**.



Put the foot pedals **[C]** (or hand controls) in neutral position.

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



⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W–2261–0799

STARTING THE ENGINE

Standard Instrument Panel (With Key Switch)

⚠ WARNING

AVOID INJURY OR DEATH

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

W–2051–1086

Perform the *PRE–STARTING PROCEDURE* Page 17.

Set the engine speed control to the 1/2 speed position **[A]**.

Turn the key switch to RUN **[B]**. The indicator lights on the right instrument panel **[B]** will come ON briefly and the Instrument Panel / monitoring system will do a self test.

If the temperature is cold, the glow plugs willautomatically cycle. The Glow Plug Icon light (Item 1) **[B]** will be ON and the cycle time remaining will show in the hourmeter.

When the Glow Plug Icon light goes OFF , turn the key switch to START **[B]**.

Advanced Control System (ACS) and Advanced Hand Controls (AHC): **Make sure hydraulic controls are in the neutral position before starting the engine. Do not move the hydraulic controls from the neutral position when turning the key to RUN or START [B].**

If hydraulic controls are moved:

a. The neutral position for the hydraulic valve spool and hydraulic controls may not be correctly calibrated. This can result in movement of the lift or tilt hydraulic cylinders when the hydraulic controls are returned to the neutral position after start–up.

OR

b. ACS (or AHC) (Item 2) [B] indicator light on right instrument panel will be ON.

If either condition occurs, return key to OFF. Put the controls in neutral position and re–start the engine.

Release the key when the engine starts. It will return to the RUN position.

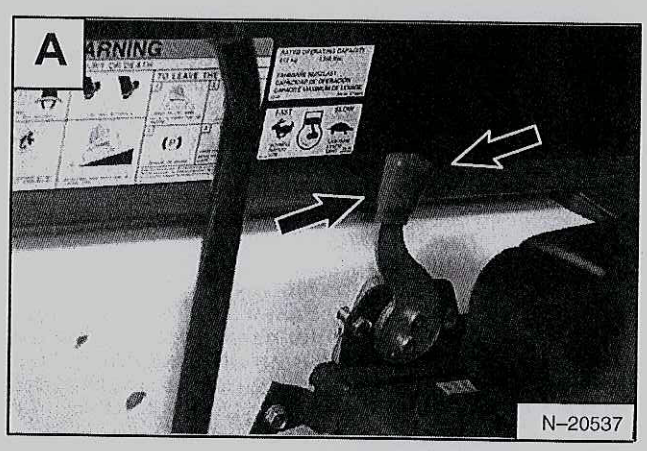
Press the PRESS TO OPERATE LOADER Button to activate the BICS system and to perform hydraulic and loader functions.

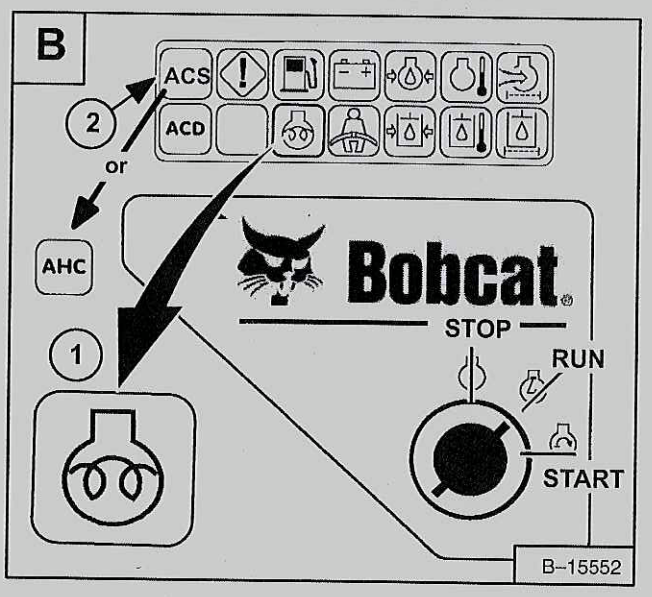
See *Cold Temperature Starting*, Page 21.

⚠ WARNING

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

W–2050–1285





IMPORTANT

Do not engage the starter for longer than 15 seconds at a time. Longer use can damage the starter by overheating. Cool the starter for one minute between uses.

I–2034–0284

STARTING THE ENGINE

Deluxe Instrument Panel (With Keyless Start)

⚠ WARNING

AVOID INJURY OR DEATH

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

W–2051–1086

Perform the *PRE–STARTING PROCEDURE*, Page 17.

Set the engine speed control to the 1/2 speed position **[A]**.

NOTE: Loaders with *Deluxe Instrument Panel* have a permanent, randomly generated Master Password set at the factory. Your loader will be assigned an Owner Password. Your dealer will provide you with this password. Change the password to one that you will easily remember to prevent unauthorized use of your loader. (See *SYSTEM SETUP & ANALYSIS* Page 73) Keep your password in a safe place for future needs.

Use the numeric keypad (Item 1) **[B]** to enter the password, then press the RUN / ENTER Button (Item 2) **[B]**.

If the temperature is cold, the glow plugs will automatically cycle and the Glow Plug Icon light (Item 3) **[B]** will be ON.

When the Glow Plug Icon light goes OFF, press the START Button (Item 4) **[B]**. Release the button when the engine starts.

***Advanced Control System (ACS) and Advanced Hand Controls (AHC):* Make sure hydraulic controls are in neutral before starting the engine. Do not move the hydraulic controls from the neutral position when pressing the RUN / ENTER Button (Item 2) [B].**

If either hand control is moved:

a. The neutral position for the hydraulic valve spool and hydraulic control may not be correctly calibrated. This can result in movement of the lift or tilt hydraulic cylinders when the hydraulic controls are returned to the neutral position after start–up.

OR

b. ACS (or AHC) indicator light (Item 5) [B] on right instrument panel will be ON.

If either condition occurs, press STOP. Put the controls in neutral position and re–start the engine.

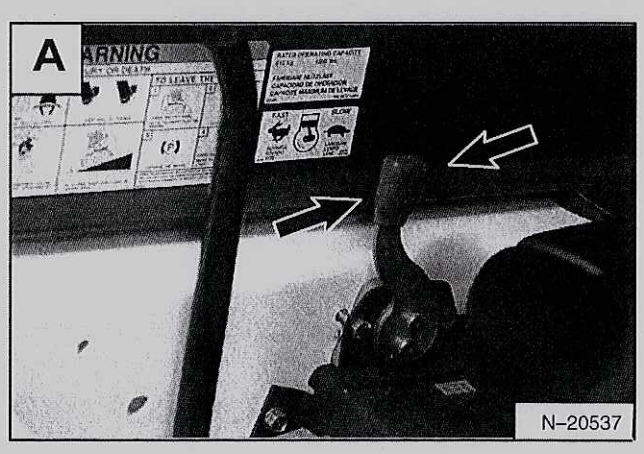
Press the PRESS TO OPERATE LOADER Button to activate the BICS system and to perform hydraulic and loader functions.

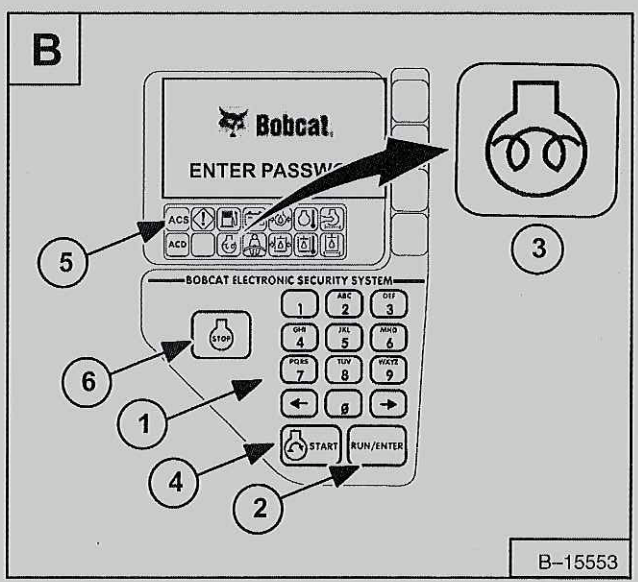
See *Cold Temperature Starting*, Page 21.

⚠ WARNING

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

W–2050–1285





IMPORTANT

Do not engage the starter for longer than 15 seconds at a time. Longer use can damage the starter by overheating. Cool the starter for one minute between uses.

I–2034–0284

Page 40 - 6900001507/7-01-EN01 - 11/29/2013 09:58:18 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

Cold Temperature Starting

⚠ WARNING

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

W–2071–1285

If the temperature is below freezing, perform the following to make starting the engine easier:

- Replace the engine oil with the correct type and viscosity for the anticipated starting temperature. (See *ENGINE LUBRICATION SYSTEM* Page 54.)
- Make sure the battery is fully charged.
- Install an engine heater, available from your Bobcat loader dealer.

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

Warming the Hydraulic/Hydrostatic System

IMPORTANT

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

I–2007–1285

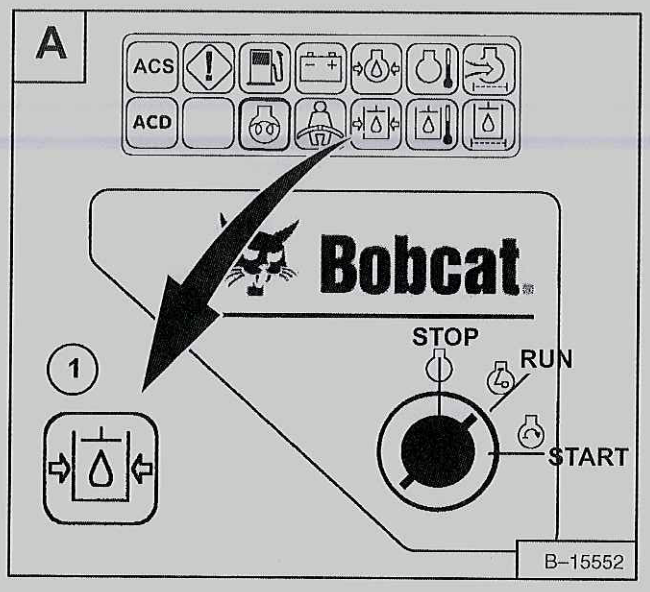
Let the engine run for a minimum of 5 minutes to warm the engine and hydrostatic transmission fluid before operating the loader.

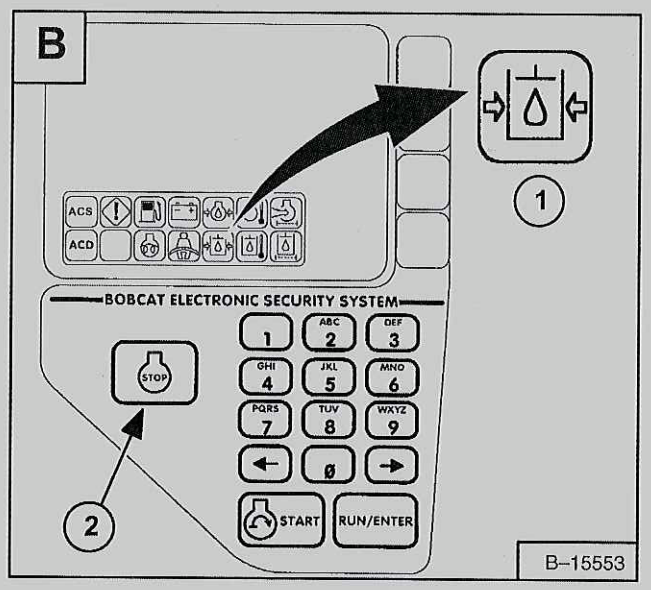
If the Fluid Pressure Icon light (Item 1) **[A]** (*Standard Panel*) *or* **[B]** (*Deluxe Panel*) comes ON when operating the loader (cold), more warm up time is needed.

STOPPING THE ENGINE

Pull the engine speed control fully backward **[C]** to decrease the engine speed.

Turn the key switch to the ST OP position **[A]** (*Standard Panel*) *or* press the ST OP Button (Item 2) **[B]** (*Deluxe Panel*).







MONITORING THE DISPLAY PANEL

After the engine is running, frequently monitor the right instrument panel **[A]** (*Standard Panel*) and **[B]** (*Deluxe Panel*) for error conditions.

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

EXAMPLE: Engine Coolant Temperature is High.

Standard Panel

The Engine Temperature Icon (Item 1) **[A]** will come ON.

Press and hold the LIGHTS Button for 2 seconds and one of the following SERVICE CODES will be displayed in the hourmeter / code display:

08–10 Engine Coolant Temperature High

or

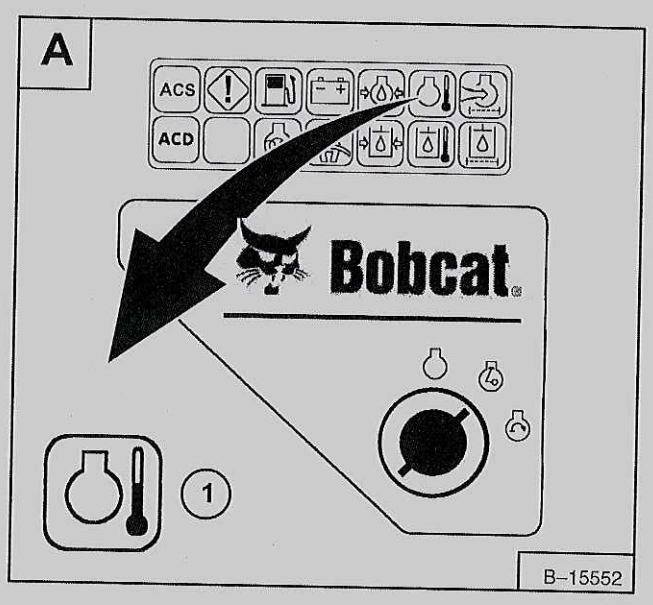
08–11 Engine Coolant Temperature Very High

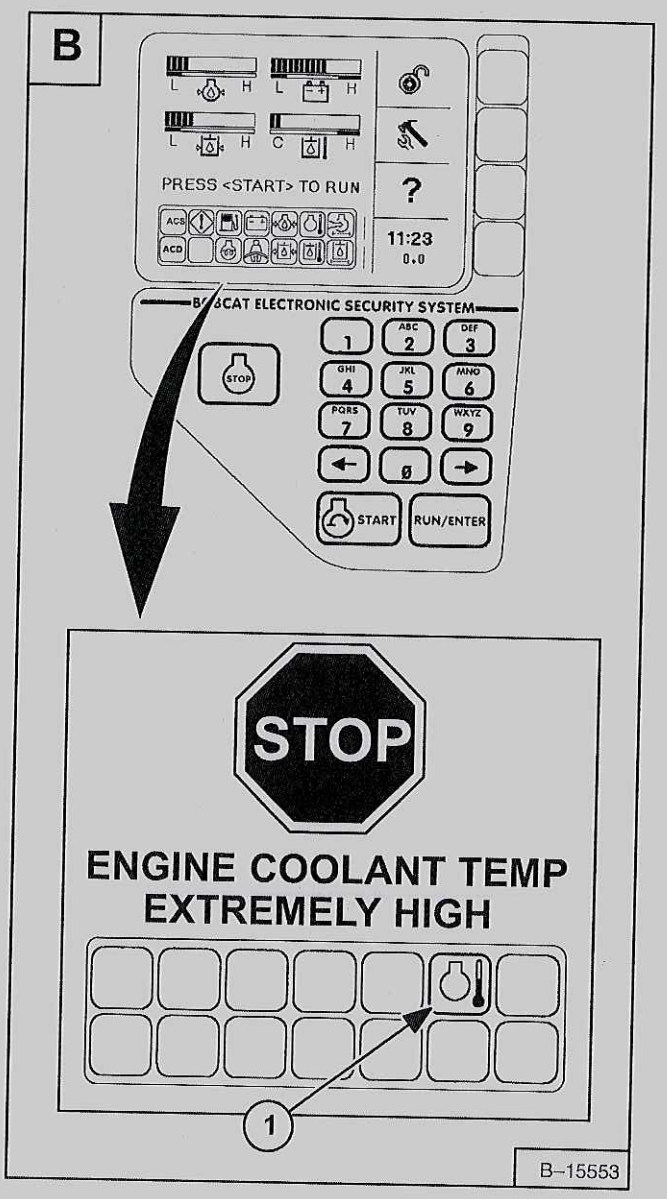
Deluxe Panel

The Engine Temperature Icon (Item 1) **[B]** will be ON.

The SERVICE CODE will be in the hourmeter / code display (see above).

In addition, the *Deluxe Panel* display screen will describe the extreme condition that can cause damage to the engine or loader systems **[B]**.





WARNING AND SHUTDOWN:

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

When a SHUTDOWN condition exists, the associated Icon light will come ON and there will be a continuous beep from the alarm and the monitoring system will automatically stop the engine in 10 seconds.

NOTE: The engine can be restarted to move or relocate the loader.

The SHUTDOWN feature is included with the Deluxe Right Panel or a Factory Option with the Standard Panel.

The SHUTDOWN feature is associated with the following Icons:

General Warning
Engine Oil Pressure
Engine Coolant Temperature
Hydraulic Oil Temperature
Hydrostatic Charge Pressure

Whenever **STOP** appears on the display screen, lower the lift arms all the way, put the attachment flat on the ground and stop the engine to prevent damage to the engine or loader systems.

Page 42 - BOBM073077-03-B1001 - 11/29/2013 06:58:19 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

ATTACHMENTS AND BUCKETS

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

⚠ WARNING

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

W–2052–1285

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

The Rated Operating Capacity for this loader is shown on a decal in the operator cab. (See also *SPECIFICATIONS* Page 93.)

The Rated Operating Capacity is determined by using a standard dirt bucket, and material of normal density, such as dirt or dry gravel. If longer buckets are used, the load center moves forward and reduces the Rated Operating Capacity. If very dense material is loaded, the volume must be reduced to prevent overloading.

Exceeding the Rated Operating Capacity **[A]** can cause the following problems:

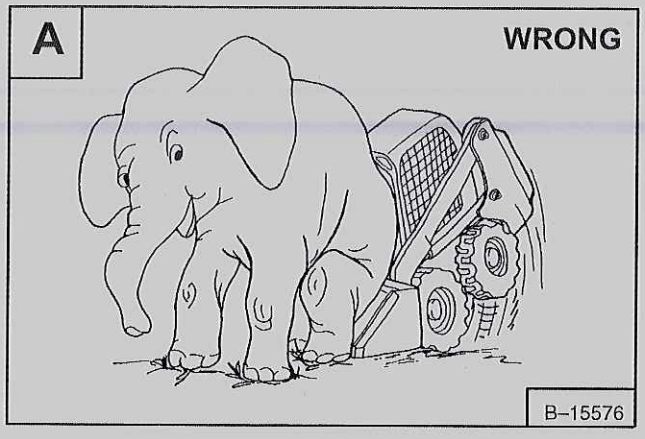
- Steering the loader may be difficult.
- Tires will wear faster.
- There will be a loss of stability.
- The life of the Bobcat loader will be reduced.

Use the correct size bucket for the type and density of material being handled. For safe handling of materials and avoiding machine damage, the attachment (or bucket) should handle a full load without going over the Rated Operating Capacity for the loader . Partial loads make steering more difficult.

If a pallet fork attachment is used, the load center moves forward and reduces the Rated Operating Capacity.

The maximum load to be carried when using a pallet fork is shown on a decal located on the pallet fork frame [B].

See your Bobcat Dealer for more information about pallet fork inspection, maintenance and replacement. See your Bobcat loader dealer for Rated Operating Capacity when using a pallet fork and for other available attachments.

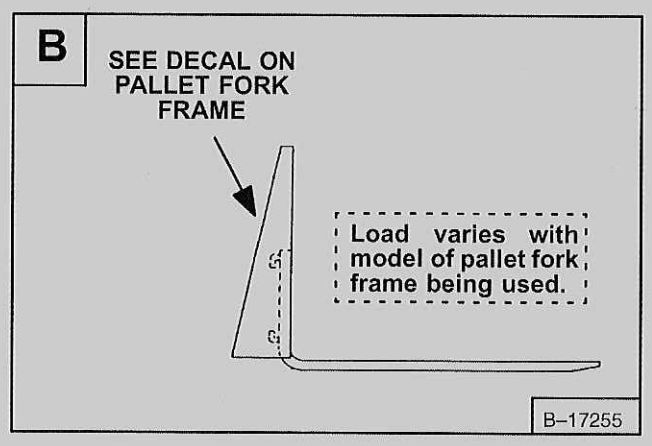


⚠ WARNING

AVOID INJURY OR DEATH

Do not exceed rated operating capacity. Excessive load can cause tipping or loss of control.

W–2053–0887



Page 43 - BOBM073077-03-B1001 - 11/29/2013 06:58:19 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

ATTACHMENTS AND BUCKETS (Cont'd)

Installing The Bucket Or Attachment

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

Pull the Bob–Tach levers all the way up (Item 1) **[A]**.

Enter the loader and perform the *PRE–STARTING PROCEDURE* page 17.

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

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

Tilt the Bob–Tach backward until the cutting edge of the bucket (or other attachment) is slightly off the ground **[B]**.

Stop the engine and exit the loader.

⚠ WARNING

Before you leave the operator's seat:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise seat bar.**
- ***(Foot Pedal Controls Only)* Move pedals until both lock.**
- ***Advanced Hand Controls (ACS) and Advanced Hand Controls (AHC)* Move the hydraulic controls to the NEUTRAL POSITION to make sure that both lift and tilt functions are deactivated.**

The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. Service the system if controls do not deactivate.

W–2398–0301

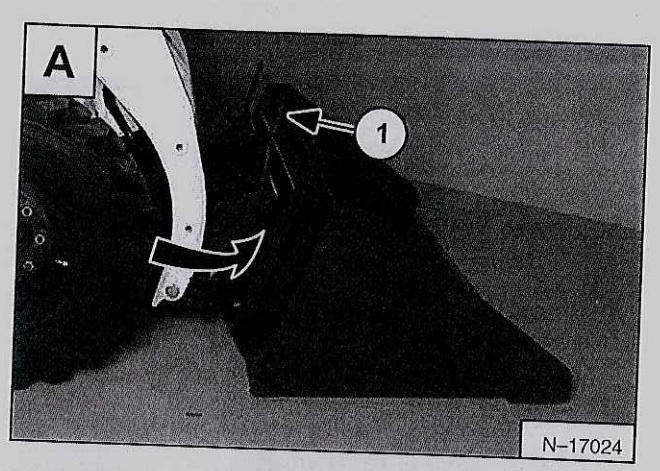
Push down on the Bob–Tach levers until they are fully engaged in the locked position (Item 1) **[C]** (wedges fully extended).

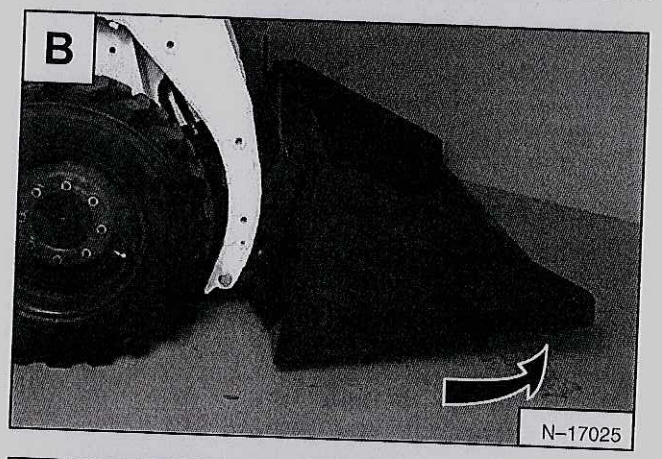
The wedges (Item 1) **[D]** must extend through the holes (Item 2) **[D]** in the mounting frame of the bucket (or attachment), securely fastening the bucket to the Bob–Tach.

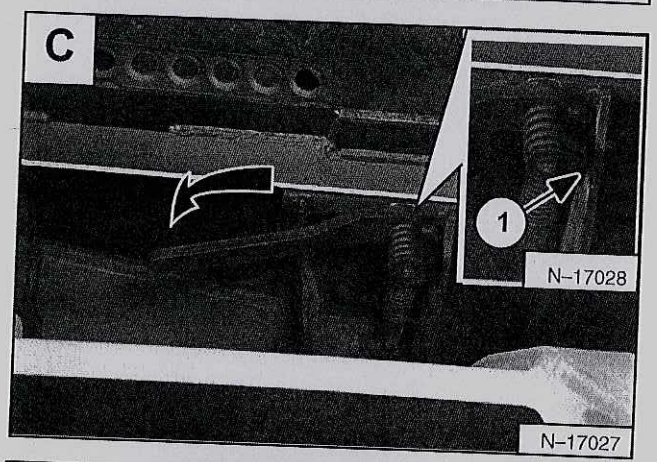
⚠ WARNING

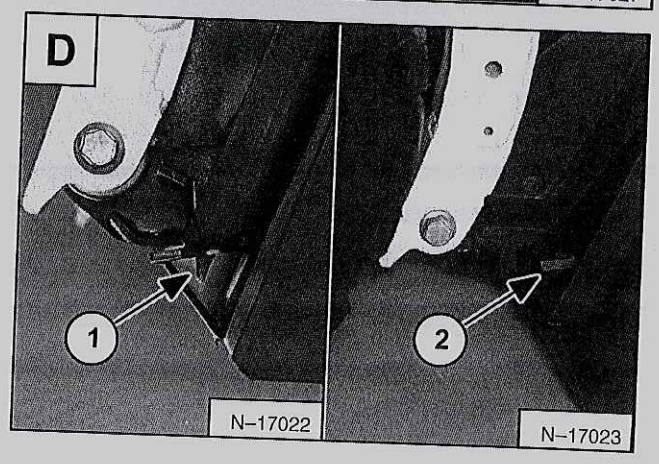
Bob–Tach wedges must extend through the holes in attachment. Lever(s) must be fully down and locked. Failure to secure wedges can allow attachment to come off and cause injury or death.

W–2102–0497









Page 24 - BOBM763077-03-B1001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

ATTACHMENTS AND BUCKETS (Cont'd)

Removing The Bucket Or Attatchment

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

- If the attachment is hydraulically controlled (combination bucket, backhoe, etc.), stop the engine and relieve hydraulic pressure in the auxiliary circuit (See *Releasing Hydraulic Pressure*, Page 12). Disconnect the auxiliary hydraulic hoses from the loader.

Raise the seat bar, unfasten the seat belt, set the parking brake and exit the loader.

⚠ WARNING

Before you leave the operator's seat:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise seat bar.**
- ***(Foot Pedal Controls Only)* Move pedals until both lock.**
- ***Advanced Hand Controls (ACS) and Advanced Hand Controls (AHC)* Move the hydraulic controls to the NEUTRAL POSITION to make sure that both lift and tilt functions are deactivated.**

The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. Service the system if controls do not deactivate.

W–2398–0301

Pull the Bob–Tach levers **[A]** all the way up.

Enter the loader.

Perform the *PRE–STARTING PROCEDURE* Page 17.

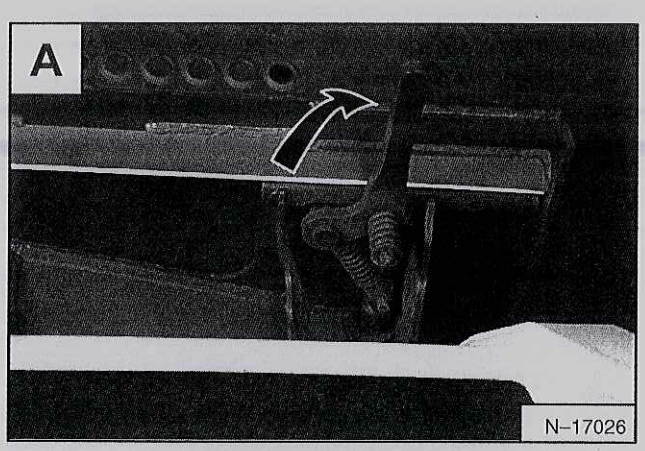
Start the engine.

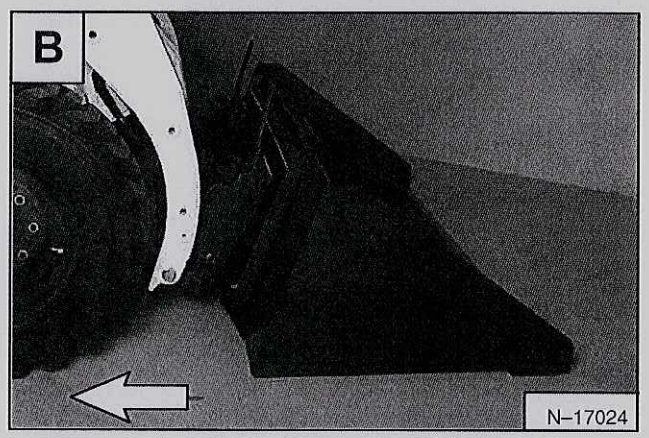
Release the parking brake.

Press the PRESS TO OPERATE LOADER Button.

Be sure the lift arms are all the way down. Tilt the Bob–Tach forward.

Move the loader backward, away from the bucket or attachment **[B]**.





⚠ WARNING

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

W–2054–1285

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ATTACHMENTS AND BUCKETS (Cont'd)

Power Bob–Tach

Installing The Bucket Or Attachment

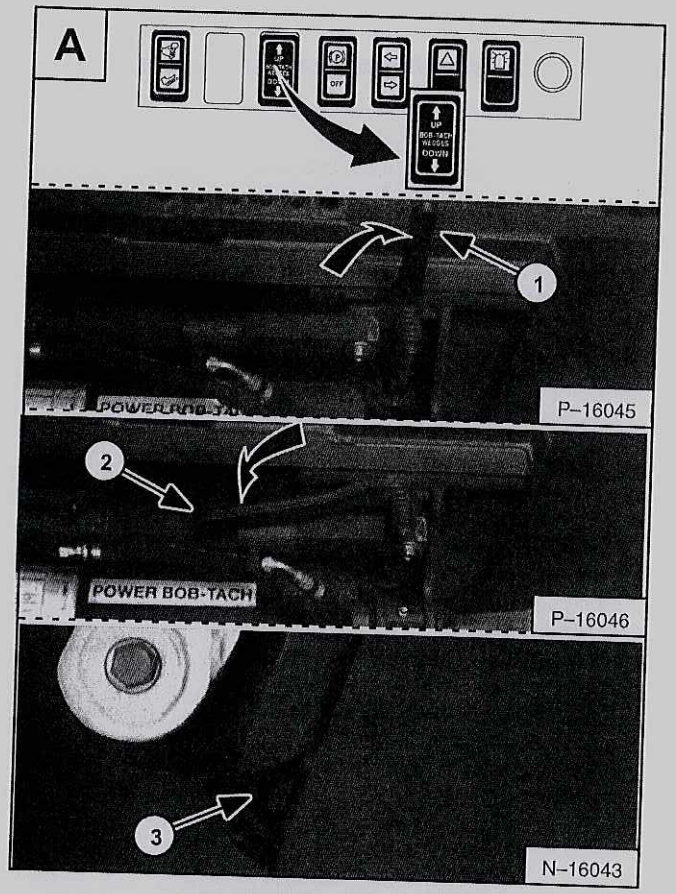
The Bob–Tach is used for fast changing of buckets and attachments. See the appropriate Attachment Operation & Maintenance Manual to install other attachments.

Enter the loader and perform the *PRE–STARTING PROCEDURE* page 17.

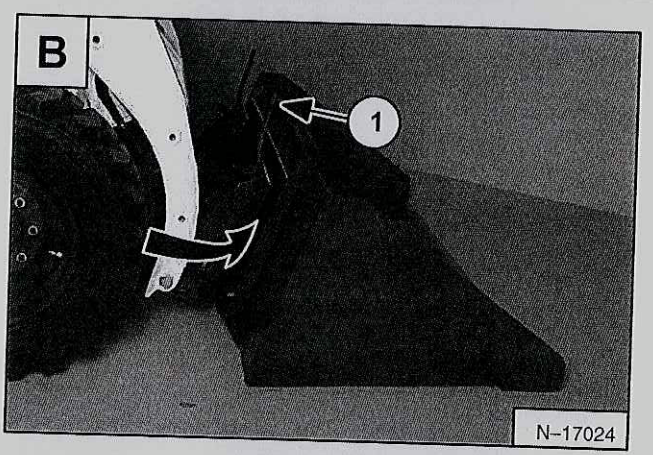
Lower the lift arms and tilt the Bob–Tach forward.

Push and hold BOB–TACH "WEDGES UP" switch (Front Accessory Panel) **[A]** until levers are in unlocked position (Item 1) **[A]** (wedges fully raised).

NOTE: The Power Bob–Tach system has continuous pressurized oil to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (WEDGES UP) before installing an attachment to be sure both wedges are fully raised before installing the attachment.



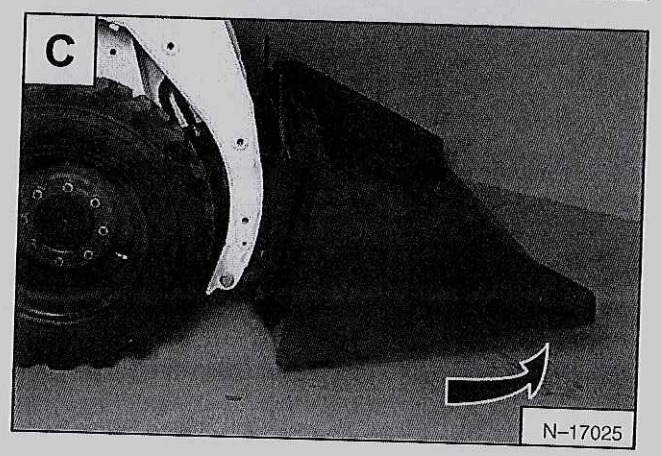
Drive the loader forward until the top edge of the Bob–Tach is completely under the top flange of the bucket **[B]** (or other attachment).



Tilt the Bob–Tach backward until the cutting edge of the bucket (or other attachment) is slightly off the ground **[C]**.

Push and hold BOB–T ACH "WEDGES DOWN" switch (Front Accessory Panel) **[A]** until levers are fully engaged in the locked position (Item 2)**[A]** (wedges fully extended).

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



⚠ WARNING

Bob–Tach wedges must extend through the holes in attachment. Lever(s) must be fully down and locked. Failure to secure wedges can allow attachment to come off and cause injury or death.

W–2102–0497

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ATTACHMENTS AND BUCKETS (Cont'd)

Power Bob–Tach (Cont'd)

Removing The Bucket Or Attachment

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

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

  Stop the engine and relieve hydraulic pressure in the auxiliary circuit (See *Releasing Hydraulic Pressure*, Page 12).

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

  Enter the loader.

  Perform the *PRE–STARTING PROCEDURE* Page Page 17.

  Start the engine.

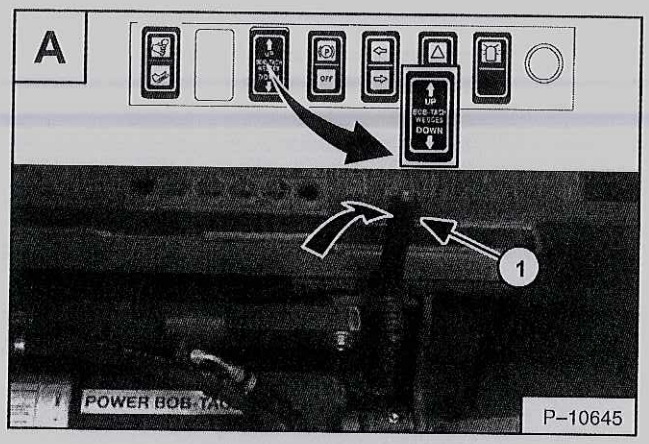
  Release the parking brake.

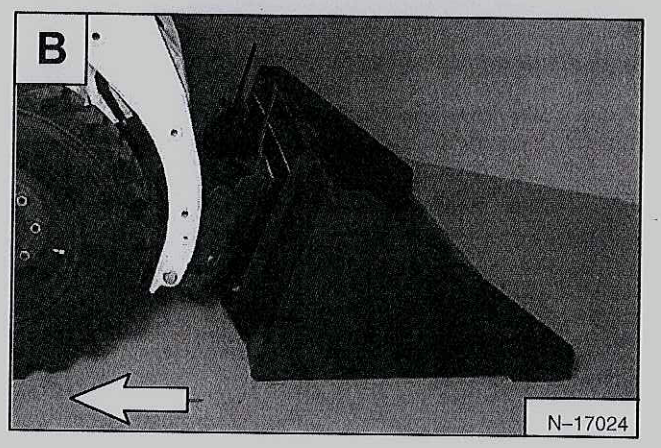
Push and hold the BOB–TACH "WEDGES UP" Switch (Front Accessory Panel) **[A]** until the wedges are fully raised.

Tilt the Bob–Tach forward.

Move the loader backward, away from the bucket or attachment **[B]**.

NOTE: The Power Bob–Tach system has continuous pressurized oil to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (WEDGES UP) before installing an attachment to be sure both wedges are fully raised before installing the attachment.





OPERATING PROCEDURE

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

Always warm the engine and hydrostatic system before operating the loader.

IMPORTANT

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

I–2015–0284

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

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

With a full bucket, go up or down the slope with the heavy end toward the top of the slope **[A]** & **[B]**.

With empty bucket, go down or up the slope with the heavy end toward the top of the slope **[C]** & **[D]**.

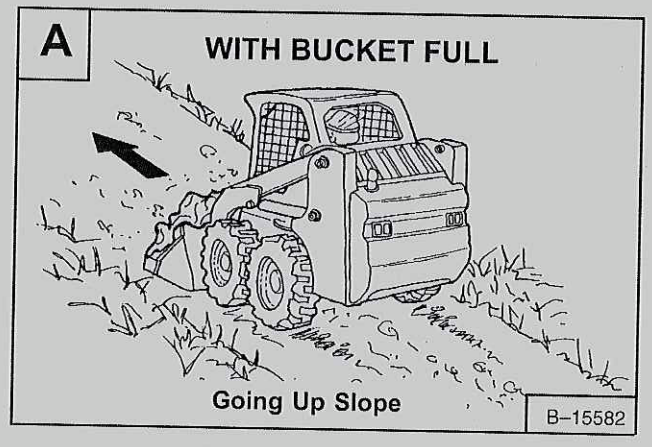
⚠ WARNING

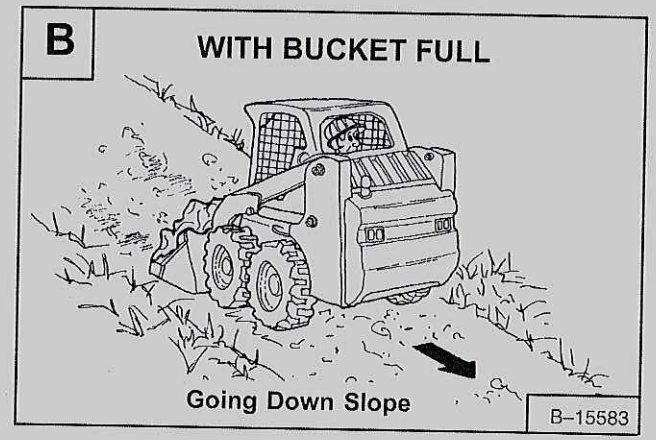
- **Keep the lift arms as low as possible.**
- **Do not travel or turn with the lift arms up.**
- **Turn on level ground.**
- **Go up and down slopes, not across them.**
- **Keep the heavy end of the machine uphill.**
- **Do not overload the machine.**

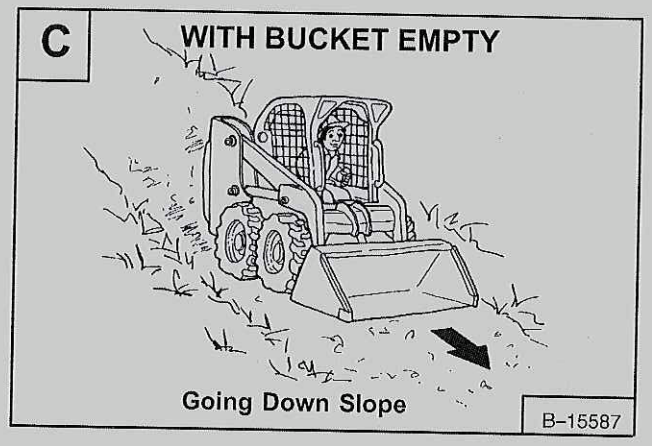
Failure to obey warnings can cause the machine to tip or roll over and cause injury or death.

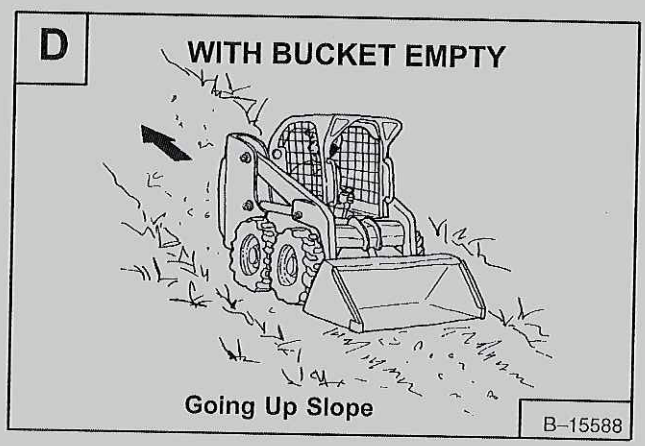
W–2018–1187

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









Page 48 - BOBMAN/1077-03-B1001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

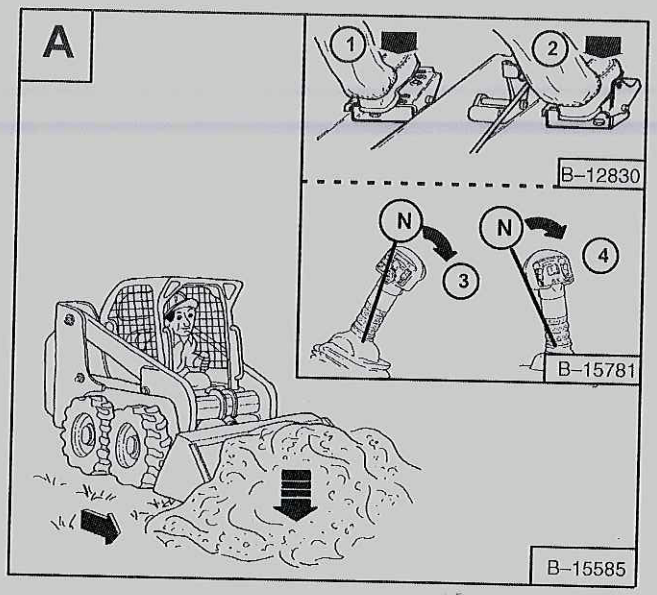
Filling the Bucket (Foot Pedals)

Push the top of the lift pedal (Item 1) **[A]** until the lift arms are all the way down.

Push the top of the tilt pedal (Item 2) **[A]** to put the cutting edge of the bucket on the ground.

Drive slowly forward into the material. Push thebottom of the tilt pedal (Item 1) **[B]** to raise the front of the bucket.

Drive backward away from the material.



⚠ WARNING

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

W-2056-1187

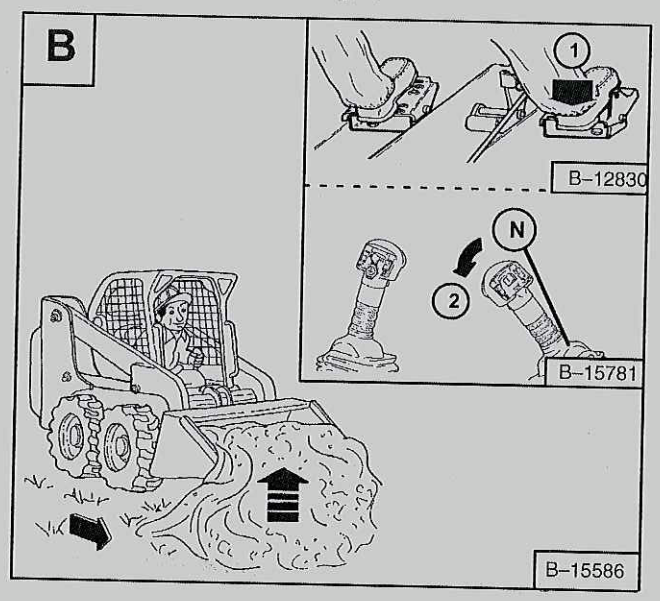
Filling the Bucket (Hand Controls)

Move the left hand lever, from neutral position (**N**), toward the operator until the lift arms are all the way down **[A]**.

Move the right hand lever, from neutral position (**N**) away from the operator to put the cutting edge of the bucket on the ground **[A]**.

Drive slowly forward into the material. Move the right hand lever, from neutral position (**N**), toward the operator to raise the front of the bucket **[B]**.

Drive backward away from the material.



OPERATING PROCEDURES (CONT'D)

Emptying the Bucket (Foot Pedals)

Push the bottom of the lift pedal (Item 1)**[A]** to raise the lift arms. Push the top of the tilt pedal while raising the lift arms to level the bucket or attachment and help prevent material from falling off the back of the bucket or attachment.

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

Push the top of the tilt pedal (Item 2**[A]** until the bucket is empty. If all the material is near the side of the truck or bin, push it to the other side with the bucket.

Emptying the Bucket (Hand Controls)

Move the left hand lever from neutral position (**N**), away from the operator to raise the lift arms **[A]**. Move the right hand lever, from neutral position (**N**), away from the operator to level the bucket or attachment andhelp prevent material from falling off the back of the bucket or attachment.

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

Move the right hand lever , from neutral position (**N**), away from the operator until the bucket is empty **[A]**. If all the material is near the side of the truck or bin, push it to the other side with the bucket.

Leveling the Ground (Using Lift Arms in Float Position) (Foot Pedals)

Push the top of the lift pedal (Item 1) **[B]** all the way forward until the pedal is in the locked position to put the lift arms in the *float* position.

Push the tilt pedal (Item 2)**[B]** to change the position of the cutting edge on the bucket.

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

Drive backward to level loose material.

Push the bottom of the lift pedal to unlock from the *float* position.

Leveling the Ground (Using Lift Arms in Float Position) (Hand Controls)

Move the left hand lever, from neutral position (**N**), all the way down and in until the hand lever is in the locked position to put the lift arms in the *float* position **[B]**.

Later AHC & ACS Models With Float Button

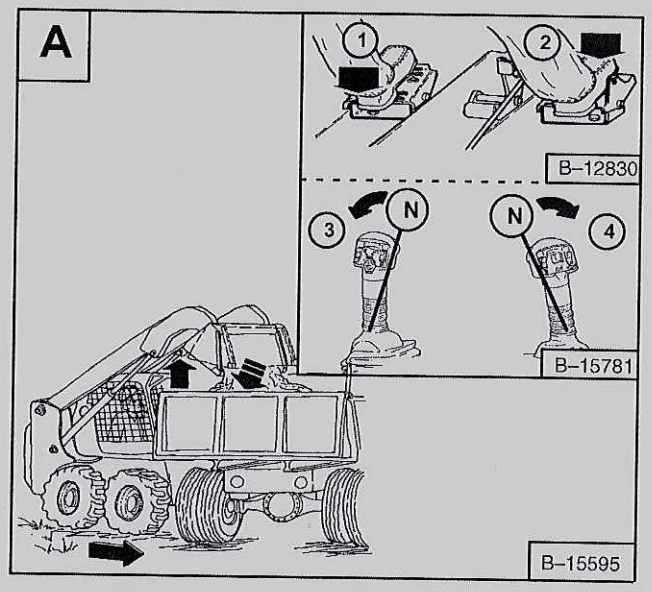
- **To Engage:** Press and hold the Float Button (Item 6) **[A]** while the lever is in neutral. Move the lever to the lift arm down position (Item 5) **[A]**, then release the button.
- **To Disengage:** Press Float Button again or move the lever to the lift arm up position (Item 4) **[A]**.

Move the right hand lever, from neutral position (**N**), to change the position of the cutting edge on the bucket **[B]**.

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

Drive backward to level loose material.

Move the left hand lever upward to unlock from the *float* position.



⚠ WARNING

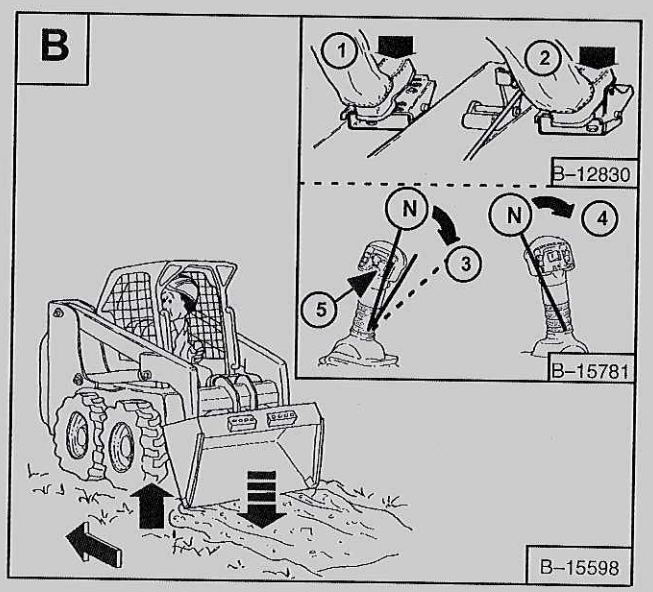
Never dump over an obstruction, such as a post, that can enter the operator cab. The machine could tip forward and cause injury or death.

W-2057-0694

IMPORTANT

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

I-2005-1285



Page 50 - BOBM073077-03-B1001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - exprint.exe (v2.28.1 10/03/2012)

OPERATING PROCEDURES (FOOT PEDALS) (Cont'd)

Digging Into the Ground (Foot Pedals)

Put the lift arms all the way down. Push the top of the tilt pedal (Item 1) **[A]** until the cutting edge of the bucket is on the ground.

Drive forward slowly and continue to tilt the bucket down (Item 1) **[A]** until it enters the ground.

Push the bottom of the tilt pedal a small amount to increase traction and keep an even digging depth. Continue to drive forward until the bucket is full. When the ground is hard, raise and lower the cutting edge of the bucket with the tilt pedal while driving forward slowly.

Push the bottom of the tilt pedal (Item 1) **[B]** to tilt the bucket backward as far as it will go when the bucket is full.

Digging Into the Ground (Hand Controls)

Put the lift arms all the way down. Move the right hand lever away from the operator until the cutting edge of the bucket is on the ground. Drive forward slowly and continue to tilt the bucket down until it enters the ground **[A]**.

Move the right hand lever toward the operator a small amount to increase traction and keep an even digging depth. Continue to drive forward until the bucket is full. When the ground is hard, raise and lower the cutting edge of the bucket with the hand lever while driving forward slowly.

Move the right hand lever toward the operatorto tilt the bucket backwards as far as it will go when the bucket is full **[B]**.

Backfilling (Foot Pedals)

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

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

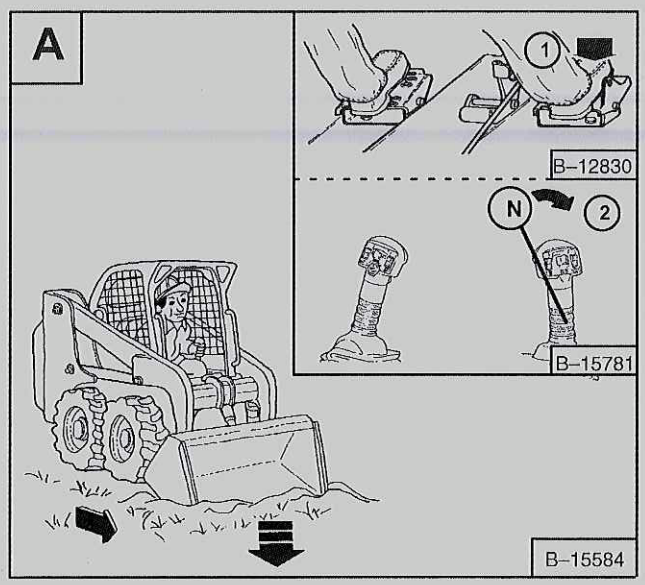
If necessary, raise the lift arms to empty the bucket.

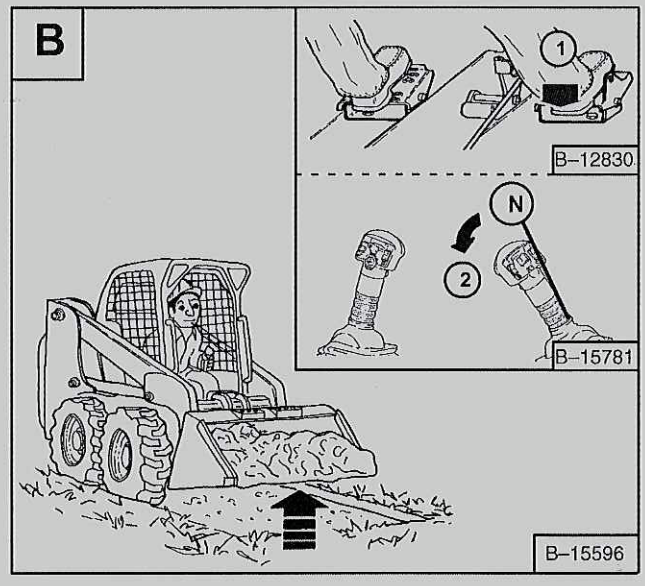
Backfilling (Hand Controls)

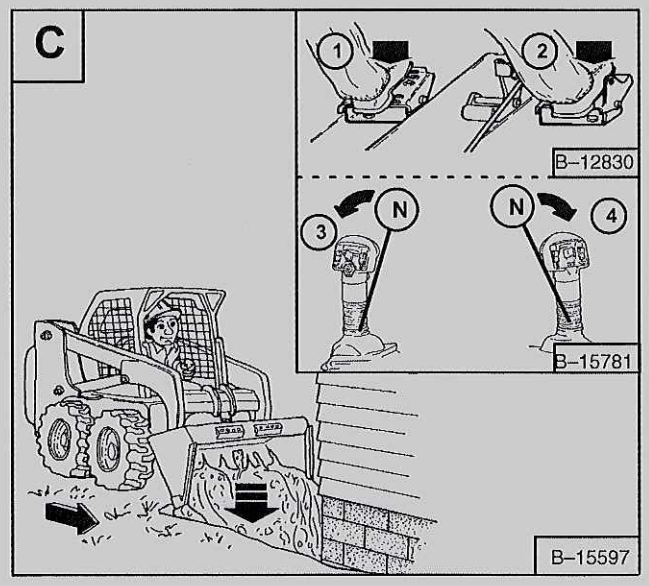
Lower the lift arms and put the cutting edge of the bucket on the ground. Drive forward to the edge of the hole to push the material into the hole **[C]**.

Tilt the bucket forward as soon as it is past the edge of the hole **[C]**.

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







Page 51 - BOBM073077-03-B1001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - eXprint.exe (V2.28.1 10/03/2012)

PARKING THE BOBCAT LOADER

Stop the Bobcat loader on level ground.

Lower the lift arms fully and put the attachment flat on the ground **[A]**.

Pull the engine speed control lever all the way backward. Turn the key switch to STOP (*Standard Panel*) *OR* press the STOP Button (*Deluxe Panel*).

⚠ WARNING

Before you leave the operator's seat:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise seat bar.**
- ***(Foot Pedal Controls Only)* Move pedals until both lock.**
- ***Advanced Hand Controls (ACS) and Advanced Hand Controls (AHC)* Move the hydraulic controls to the NEUTRAL POSITION to make sure that both lift and tilt functions are deactivated.**

The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. Service the system if controls do not deactivate.

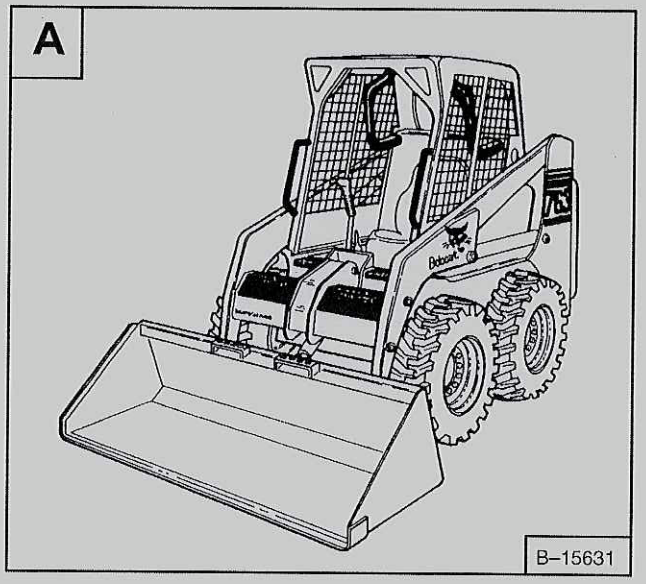
W–2398–0301

Engage the parking brake.

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

Unbuckle the seat belt.

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



TRANSPORTING THE BOBCAT LOADER

⚠ 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

Be sure the transport and towing vehicles are of adequate size and capacity (See *SPECIFICATIONS* Page 93, for weight of loader.).

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 loaderto the transport vehicle to prevent the loader from moving during sudden stops or when going up or 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 loader tie down positions (Inset) **[B]**.
- Fasten each end of the chain to the transport vehicle.

TOWING THE LOADER

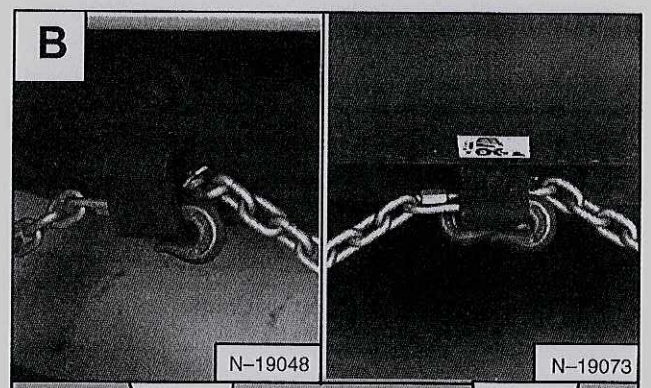
To prevent damage to the loaders hydrostatic system, the loader must be towed only a short distance at slow speed. (Example: Moving the loader onto a transport vehicle).

The towing chain (or cable) must be rated at 1 & 1/2 times the weight of the loader(See *SPECIFICATIONS* Page 93.)

- Turn the key switch to RUN (*Standard Panel*) *OR* press the RUN / ENTER Button (*Deluxe Panel*).
- 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.







Page 33 - BOBMAN7077-03-EN001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

LIFTING THE LOADER

Single Point Lift

⚠ WARNING

AVOID INJURY OR DEATH

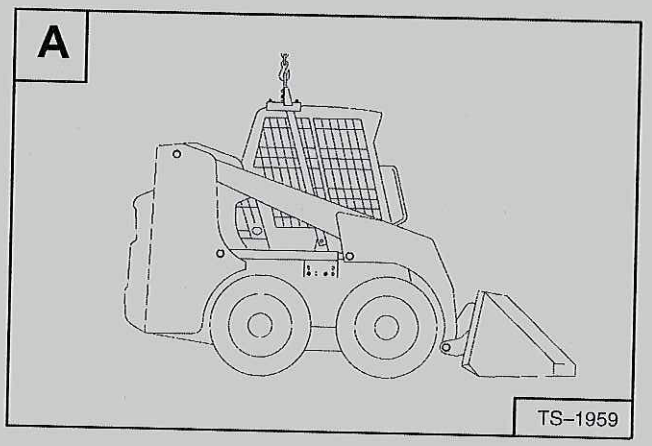
- **Before lifting, check fasteners on single point lift and operator cab.**
- **Assemble front cab fasteners as shown in manual.**
- **Never allow riders in the cab or bystanders within 15 feet (5 meters) while lifting the machine.**

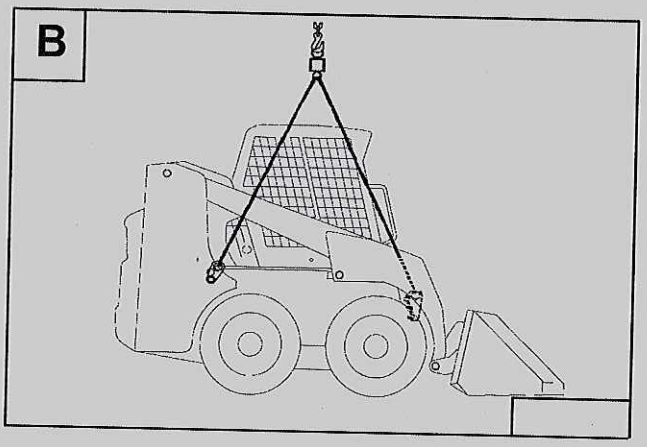
W–2007–0497

Lift the loader with the single point lift which is available as a kit from your Bobcat loader dealer.

Attach cables or chains to the single point lift as show**[A]**.

The single point lift, supplied by Bobcat is designed to lift and support the Bobcat loader without af fecting roll over and falling object protection features of the operator cab.





Four Point Lift

⚠ WARNING

AVOID INJURY OR DEATH

- **Before lifting, check fasteners on four point lift.**
- **Never allow riders in the cab or bystanders within 15 feet (5 meters) while lifting the machine.**

W–2160–0694

Lift the loader with the four point lift which is available as a kit from your Bobcat loader dealer.

Attach cables or chains of adequate strength to the four lift points as shown **[B]**.

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PREVENTIVE MAINTENANCE

AIR CLEANER SERVICE 50
Replacing Filter Element 50

ALTERNATOR BELT 58
Adjusting 58

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™) 47
Inspecting Deactivation Of The Auxiliary Hydraulics System 47
Inspecting Deactivation Of Lift and Tilt Functions 47
Inspecting The Lift Arm By–Pass Control 47
Inspecting The BICS™ Controller 47
Inspecting The Seat Bar Sensor 47
Inspecting The Traction Lock 47

BOB–TACH 71

DRIVE BELT 68
Adjusting The Drive Belt 68
Replacing The Drive Belt 68

ELECTRICAL SYSTEM 59
Cleaning Battery Terminals 59
Description 59
Removing And Installing The Battery 61
Fuse Location 59
Using A Booster Battery (Jump Starting) 60

ENGINE COOLING SYSTEM 56
Cleaning The Cooling System 56
Checking The Coolant Level 56
Replacing The Coolant 57

ENGINE LUBRICATION SYSTEM 54
Checking Engine Oil 54
Replacing Oil And Filter 54

FAN GEARBOX 67
Checking And Maintaining 67

FINAL DRIVE TRANSMISSION (CHAINCASE) 67
Checking And Adding Oil 67
Removing Oil From The Chaincase 67

FUEL SYSTEM 52
Filling The Fuel Tank 52
Fuel Filter 52
Fuel Specifications 52
Removing Air From The Fuel System 53

HYDRAULIC/HYDROSTATIC SYSTEM 62
Breather Cap 64
Checking And Adding Fluid 62
Replacing Hydraulic/Hydrostatic Filter 62
Replacing Hydraulic Fluid and Case Drain Filters 63

PREVENTIVE MAINTENANCE (Cont'd)

LIFT ARM SUPPORT DEVICE 40
Engaging The Lift Arm Support Device 40
Disengaging The Lift Arm Support Device 41

LUBRICATION OF THE BOBCAT LOADER 69

OPERATOR CAB 42
Cab Door Sensor 43
Emergency Exit 44
Raising The Operator Cab 42
Lowering The Operator Cab 43

PIVOT PINS 70

REAR DOOR 48
Adjusting the Rear Door 48
Opening and Closing the Rear Door 48

REAR GRILL 49

SEAT BAR RESTRAINT SYSTEM (ADVANCED HAND CONTROLS) 46
Inspecting The Seat Bar 46
Maintaining The Seat Bar 46

SEAT BAR RESTRAINT SYSTEM (FOOT PEDALS) 45
Inspecting The Seat Bar 45
Maintaining The Seat Bar 45

SERVICE SCHEDULE 39

SPARK ARRESTOR MUFFLER 65

TIRE MAINTENANCE 66
Mounting 66
Rotating 66
Wheel Nuts 66

Page 36 - BOBMO/30/7-03-81001 - 11/29/2013 06:58:20 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

MAINTENANCE SAFETY

⚠ 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

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

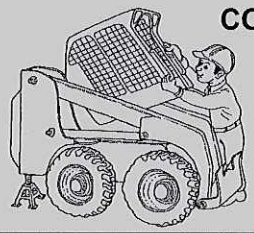
CORRECT



B–10731

⚠ Never service the Bobcat Skid Steer Loader without instructions.

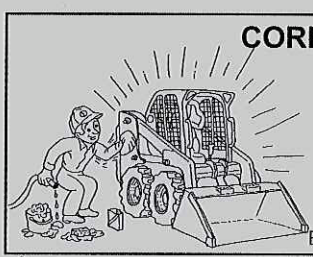
CORRECT



B–15590

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

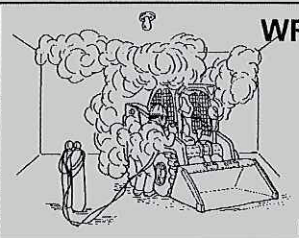
CORRECT



B–15591

⚠ Cleaning and maintenance are required daily.

WRONG



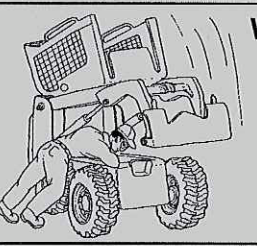
B–15592

⚠ 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.

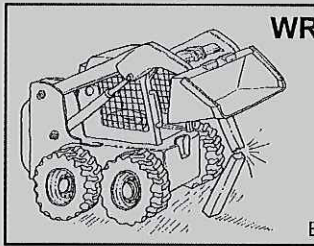
WRONG



B–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 if damaged.

WRONG

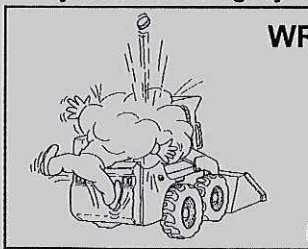


B–15599

⚠ 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–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–15601

⚠ Keep body, jewelry and clothing away from moving parts, electrical contacts, 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.

MSW08–0500

Page 57 - BOBMU/307-03-C1001 - 11/29/2013 06:58:26 - Printed by Ken Cook Co. - exprint.exe (V2.28.1 10/03/2012)

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. Untrained operators and failure to follow instructions can cause injury or death.

W–2003–0199

SERVICE SCHEDULE		HOURS					
ITEM	SERVICE REQUIRED	8-10	50	100	■ 250	■ 500	■ 1000
Engine Oil	Check the oil level and add oil as needed.						
Engine Air Filter and Air System	Check display panel for lighted Icon and/or SERVICE CODE. Service only when required. Check for leaks and damaged components.						
Engine Cooling System	Clean debris from oil cooler, radiator and grill. Check coolant level in recovery tank when engine is cold. Add 53% propylene glycol premixed with 47% water as needed.						
Tires	Check for damaged tires and correct air pressure. Inflate to MAXIMUM pressure shown on tire sidewall.						
Seat Belt, Seat Bar and Control Interlocks	Check the condition of seat belt. Check the seat bar and control interlocks. Clean dirt and 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.						
Indicators & Lights (Opt.)	Check for correct operation of all indicators & lights.						
Operator Cab	Check the fastening bolts, washers & nuts. Check the condition of cab.						
Lift Arms, Cylinders, Bob–Tach Pivot Pins and Wedges	Lubricate with multi–purpose lithium based grease.						
Fuel Filter	Remove trapped water.						
Bobcat Interlock Control System (BICS™)	Check that four (4) BICS™ indicator lights and functions are activated. See details in this Operation & Maintenance Manual.						
Hydraulic Fluid, Hoses and Tubelines	Check fluid level and add as needed. Check for damage and leaks. Repair or replace as needed.						
Final Drive Transmission (Chaincase)	Check fluid level. Check for correct operation. Repair or adjust as needed.						
Hydraulic Controls (Foot or Hand) and Steering Levers	Check for correct operation. Repair or adjust as needed.						
Wheel Nuts	□ Check for loose wheel nuts and tighten to 105–115 ft.–lbs. (142–156 Nm) torque.						
Parking Brake	Check operation.						
Spark Arrestor Muffler	Clean the spark chamber.						
Battery	Check cables, connections and electrolyte level. Add distilled water as needed.						
Steering Lever Pivots	Grease two fittings.						
Engine/Hydrostatic Drive Belt	* Check for wear or damage. Adjust or replace as needed.						
Fan Drive Gearbox	Check fluid level. Add as needed.						
Alternator Belt	Check belt tension and adjust as needed.						
Engine Oil and Filter	† Replace oil and filter. Use CD or better grade oil and Bobcat filter.						
Fuel Filter	Replace the filter element.						
Bobcat Interlock Control System (BICS™)	Check lift arm by–pass control.						
Hydraulic Reservoir Breather Cap	Replace the reservoir breather cap.						
Hydraulic/Hydrostatic Filter	• Replace the filter element.						
Hydraulic Reservoir	Replace the fluid.						
Final Drive Trans. (Chaincase)	Replace the fluid						
Case Drain Filters	■ Replace the filters.						

□ **Check wheel nut torque every 8 hours for the first 24 hours.**
• **Replace filter element after the first 50 hours and when the transmission warning light comes ON.**
■ **Or every 12 months.**
* **Inspect the new belt after first 50 hours.**
† **First oil and filter change must occur at 50 hours; 250 hours thereafter.**

LIFT ARM SUPPORT DEVICE

Maintenance and service work can be done with the lift arms lowered. If the lift arms are raised, use the following procedures to engage and disengage an approved 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

Install jackstands under the rear of the loader frame (Inset) **[A]**. Disconnect the spring from the lift arm support device retaining pin (Item 1) **[A]**. Support the lift arm support device (Item 2) **[A]** with your hand and remove the retaining pin.

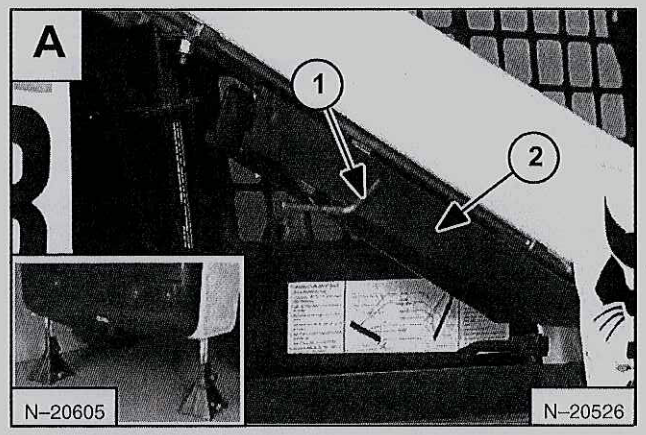
Lower the lift arm support device on top of the lift cylinder. Hook the free end of the spring (Item 1) **[B]** to the lift arm support device so there will be no interference with the support device engagement.

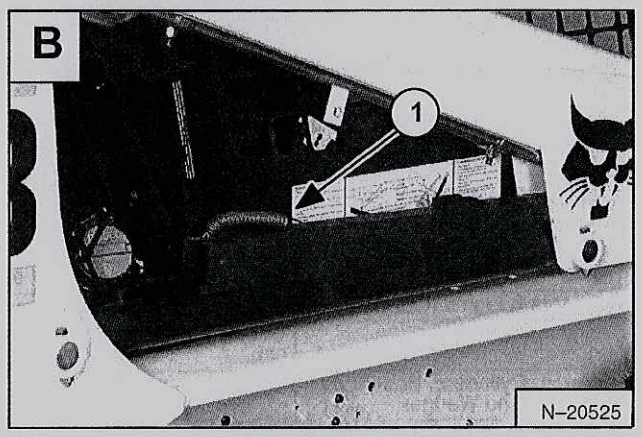
With the operator in the seat, seat belt fastened and seat bar lowered, start the engine.

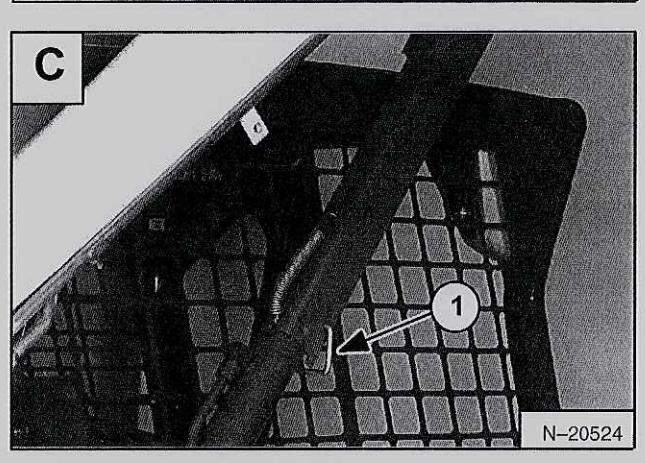
Raise the lift arms, until the lift arm support device drops onto the lift cylinder rod (Inset) **[C]**.

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 until both pedals lock.

Install pin (Item 1) **[C]** 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.

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.

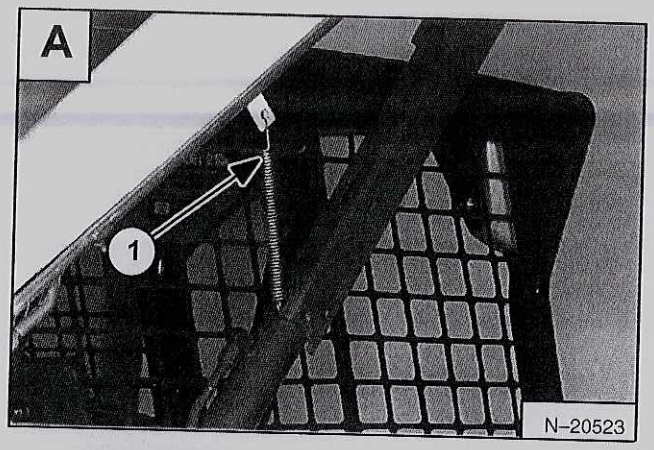
Raise the lift arms a small amount and the spring will lift the support device off the lift cylinder rod. Lower the lift arms. Stop the engine.

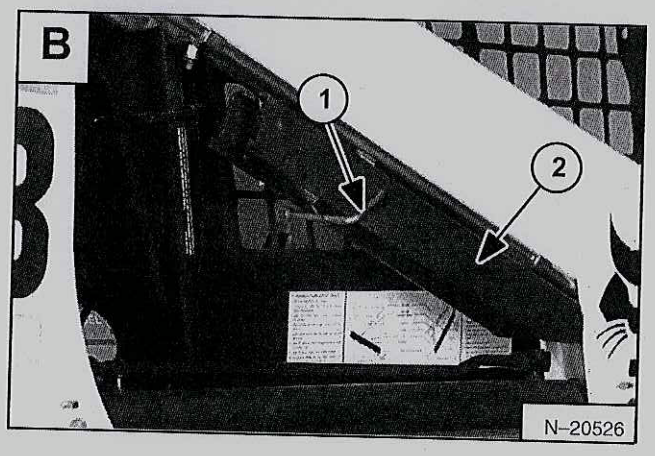
Raise the seat bar and move pedals until both pedals lock.

Disconnect the spring from the bracket.

Raise the support device into storage position and insert pin (Item 1) **[B]** through lift arm support device (Item 2) **[B]** and bracket. Connect spring to pin.

Remove jackstands.





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. The seat beltmust be worn for roll over protection.

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.

Raising The Operator Cab

Always stop the engine before raising or lowering the cab.

Stop the loader on a level surface. Lower the lift arms. If the lift arms must be up while raising the operator cab, install the lift arm support device. (See *LIFT ARM SUPPORT DEVICE* Page 40)

Install jackstands under the rear of the loader frame **[A]**.

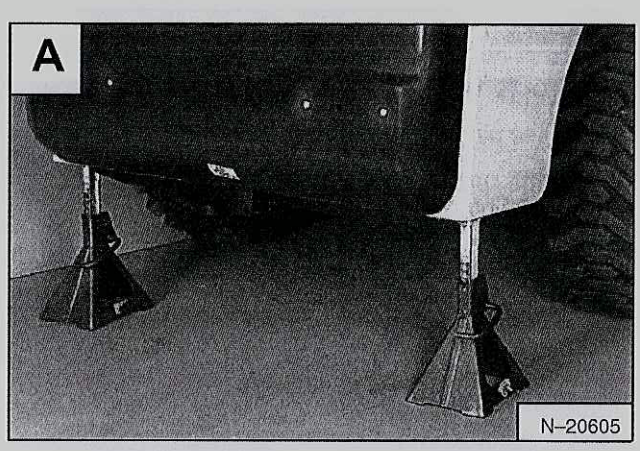
Loosen the nut (both sides) at the front corner of the operator cab **[B]**.

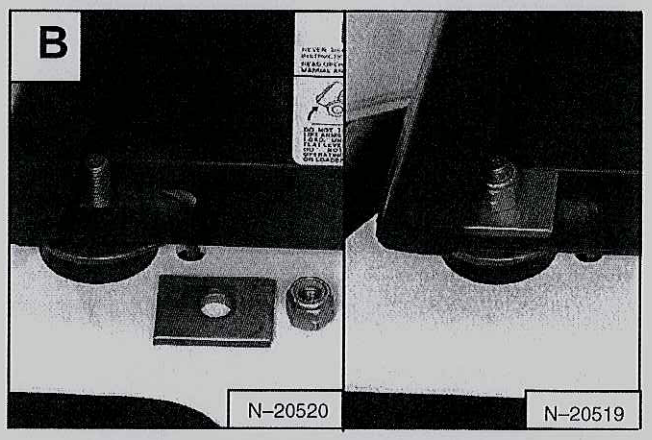
Remove the nuts and plates **[B]** (both sides).

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

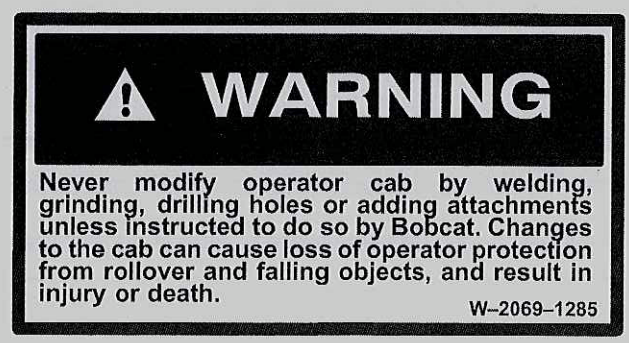
Advanced Control System (ACS) and Advanced Hand Control (AHC)











OPERATOR CAB (Cont'd)

Lowering The Operator Cab

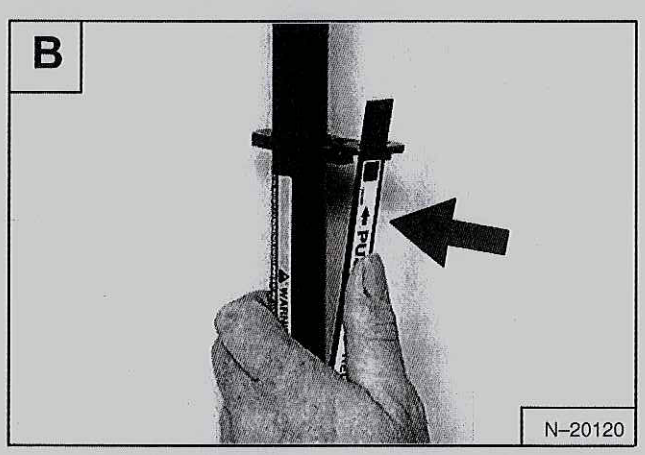
Always stop the engine before raising or lowering the cab.

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



Support the cab and release the latching mechanism **[B]**. Remove your hand from the latching mechanism when the cab is past the latch stop.

Use both hands to lower the cab all the way down.



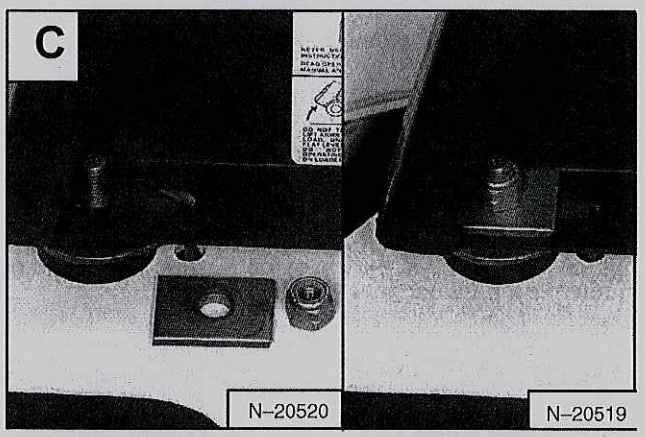
⚠ WARNING

PINCH POINT CAN CAUSE INJURY

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

W–2458–0103

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



Install the plates and nuts **[C]** (both sides).

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

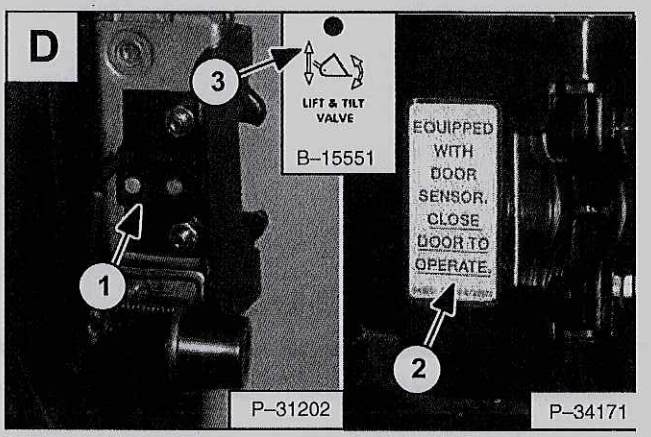
Cab Door Sensor (If Equipped)

Later model cab doors* have a sensor (Item 1) **[C]** installed which deactivates the lift and tilt valves when the door is open.

A decal is located on the latch mechanism (Item 2) **[C]**.

The LIFT AND TILT VALVE light (Item 3) **[C]** will be ON when the door is closed and the PRESS T O OPERATE LOADER button is pressed.

* The Cab Door Sensor Kit canbe installed on early model cab doors. See your Bobcat dealer.



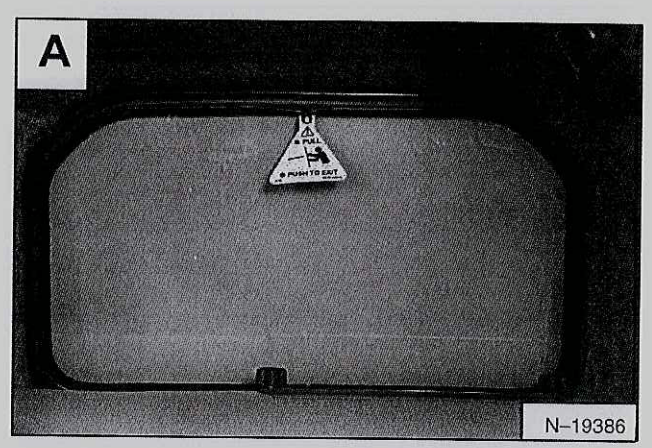
OPERATOR CAB (Cont'd)

Emergency Exit

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

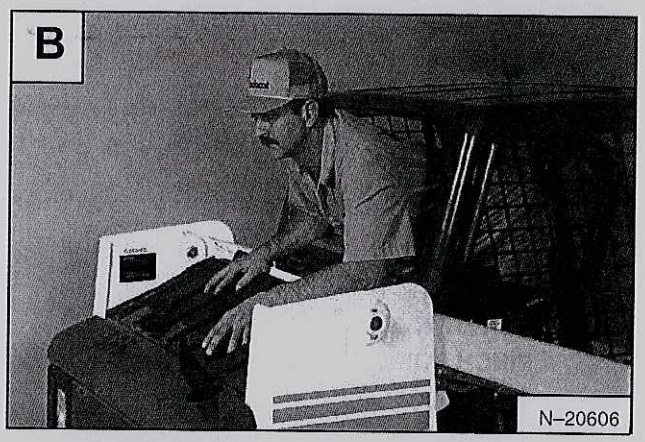
REAR WINDOW (If Equipped)

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.

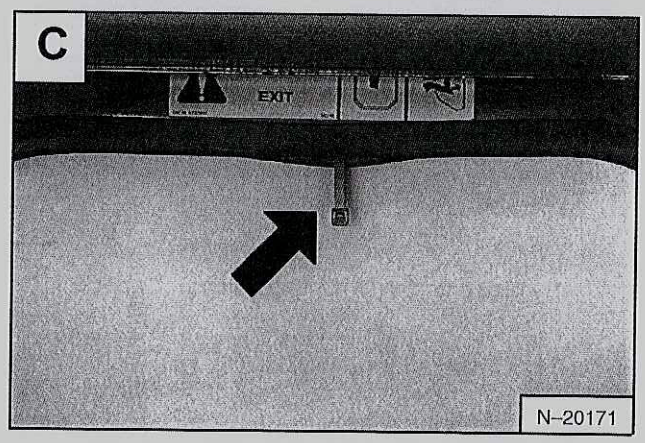
Exit through the rear of the operator cab **[B]**.



FRONT DOOR (If Equipped)

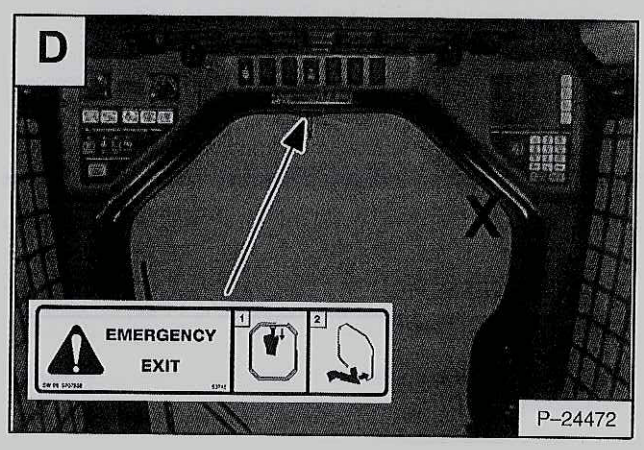
NOTE: When an Operator Cab Enclosure Kit is installed, the window of the front door can be used as an emergency exit. [C]

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



Push the window out with your foot **[D]** at any corner of the window.

Exit through the front door.



SEAT BAR RESTRAINT SYSTEM (FOOT PEDALS)

The seat bar restraint system has a pivoting seat bar with arm rests and hydraulic valve spool interlocks fdhe lift and tilt functions.

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 spool interlocks require the operator to lower the seat bar in order to operate the foot pedal controls (If equipped).

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

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

Inspecting the Seat Bar

Sit in the seat and fasten the seat belt. Engage the parking brake. Pull the seat bar all the way down. Start the engine. Press the PRESS T O OPERATE LOADER Button. Operate each foot pedal to check that both the lift and tilt functions operate correctly. Raise the lift arms until the attachment is about 2 feet (600 mm) off the ground.

Raise the seat bar. Try to move each foot pedal. Pedals must be firmly locked in the NEUTRAL position. There must be no motion of the liftarms or tilt (attachment) when the controls are moved.

Pull the seat bar down, press the PRESS T O OPERATE LOADER Button, lower the lift arms. Operate the lift control. While the lift arms are going up, raise the seat bar The lift arms must stop.

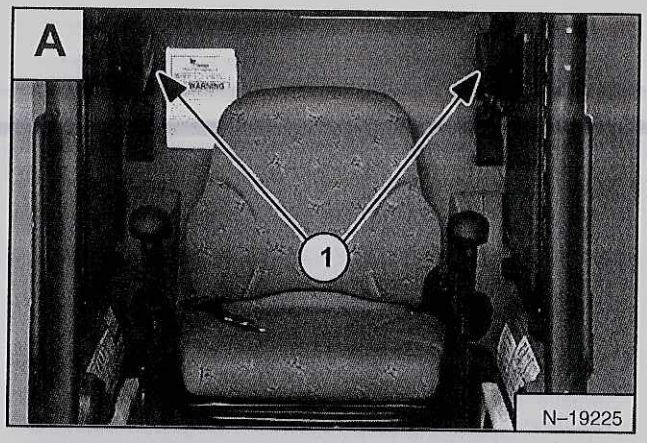
Lower the seat bar, press the PRESS T O OPERATE LOADER Button, lower the lift arms and put the attachment flat on the ground. Stop the engine. Raise the seat bar and operate the foot pedals to be sure that the pedals are firmly locked in the NEUTRAL position. Unfasten the seat belt.

Maintaining the Seat Bar

See the *SERVICE SCHEDULE,* Page 39, and on the loader for correct service interval.

Use compressed air to clean any debris or dirt from the pivot points (Item 1) **[A]**. Do not lubricate. Inspect all mounting hardware. The correct bolt torque is 26 ft.–lbs. (35 Nm).

If the seat bar system and hydraulic valve spool interlocks do not function correctly check all electrical wiring and connections. Replace parts that are worn or damaged. Use only genuine Bobcat replacement parts.



⚠ 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

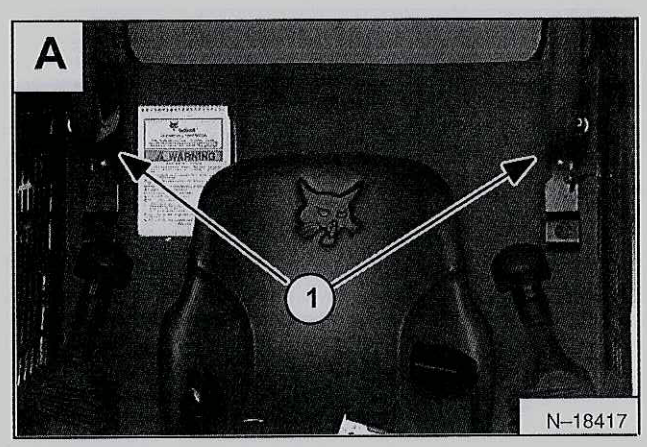
SEAT BAR RESTRAINT SYSTEM ADVANCED CONTROL SYSTEM (ACS) AND ADVANCED HAND CONTROL (AHC)

The seat bar restraint system **[A]** has a pivoting seat bar with arm rests .

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

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

When the seat bar is up, the lift, tilt and traction drive functions are deactivated.



Inspecting the Seat Bar

Sit in the seat. Turn the key ON (*Standard Panel*), press RUN /ENTER Button (Deluxe Panel), lower the seat bar and press the PRESS TO OPERATE LOADER Button.

Move each hand control back and forth. You should hear the zip–zip sound of the lift and tilt actuators moving the control valve spools (under the seat).

Raise the seat bar fully. Move each hand control back and forth. There must be no zip–zip sound of the lift or tilt actuators. If either actuator makes a sound while the seat bar is raised, contact your dealer for service.

Maintaining the Seat Bar

See the *SERVICE SCHEDULE,* Page 39, and on the loader for correct service interval.

Use compressed air to clean any debris or dirt from the pivot parts (Item 1) **[A]**. Do not lubricate. Inspect all mounting hardware. The correct bolt torque is 26 ft.–lbs. (35 Nm).

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

⚠ WARNING

The seat bar system must deactivate the lift and tilt control functions when the seat bar is up. Service the system if hand controls do not deactivate.

W–2355–0799

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

Inspecting The BICS™ Controller

(Engine STOPPED – Key ON)

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) **[A]** [PRESS TO OPERATE LOADER, SEAT BAR, and LIFT & TILT VALVE] on left instrument panel should be ON **[A]**.

2. Raise the Seat Bar fully. All four BICS lights (Items 1, 2, 3, & 4) **[A]** [PRESS TO OPERATE LOADER, SEAT BAR, LIFT & TILT VALVE and TRACTION*] on left instrument panel should be OFF **[A]**.

NOTE: Record what lights are blinking (if any) and the number of light flashes. See *SYSTEM SETUP & ANALYSIS*, page 73.

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 comeON. 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 barengage the parking brake pedal and fasten the seat belt.

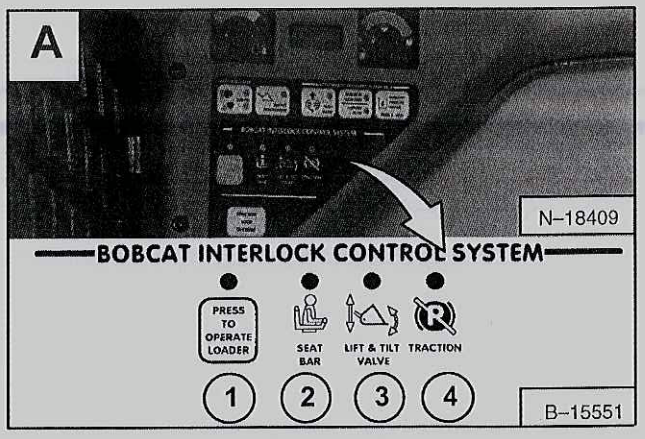
5. Start the engine and operate at low idle. Press the PRESS TO OPERATE LOADER Button. While raising the lift arms, raise the Seat Bar fully. The lift arms should stop. Repeat using the tilt function.

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 T O 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.



⚠ WARNING

AVOID INJURY OR DEATH

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

W–2151–0394

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.

Inspecting Deactivation of Lift and Tilt Functions

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 (or toe of left pedal forward). The lift arms should not lower.

13. Move the right hand control away from the operator (or toe of right pedal forward). The bucket (or attachment) should not tilt forward.

REAR DOOR

Opening And Closing The Rear Door

⚠ WARNING

AVOID INJURY OR DEATH

Never service or adjust the machine when the engine is running unless instructed to do so in the manual.

W-2012-0497

Reach into the slot in the rear door and pull the latch handle **[A]** & **[B]**.

Pull the rear door open.

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

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

Close the door.

⚠ WARNING

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

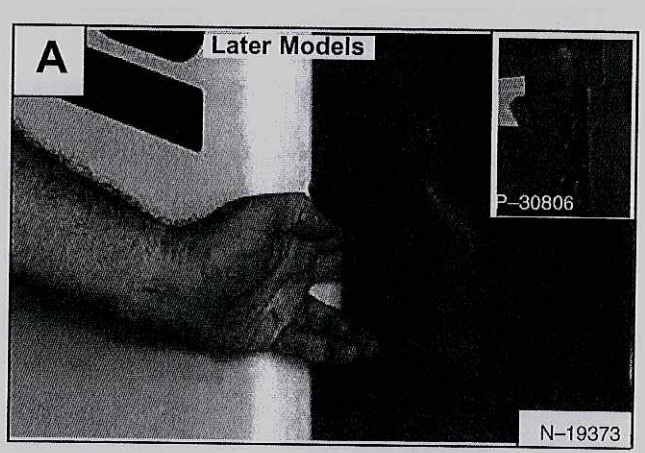
W-2020-1285

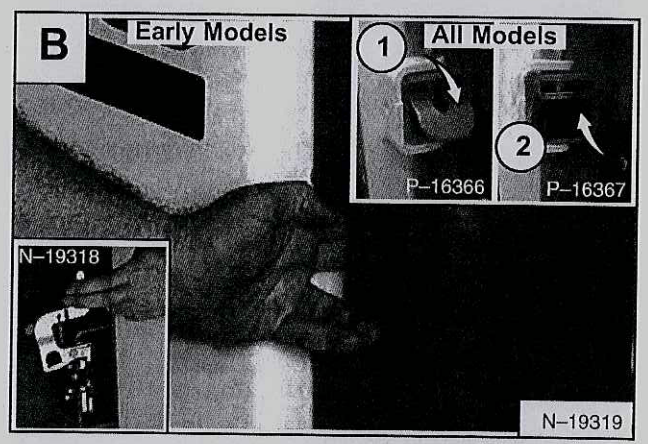
Adjusting The Rear Door

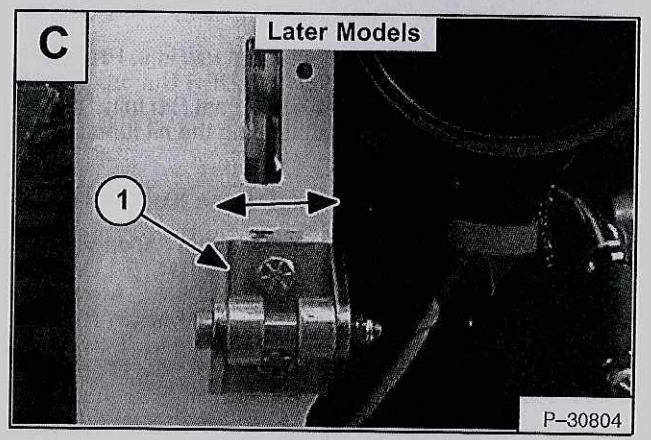
The door latch catch (Item 1) **[C]** & **[D]** can be adjusted side to side for alignment with the door latch mechanism.

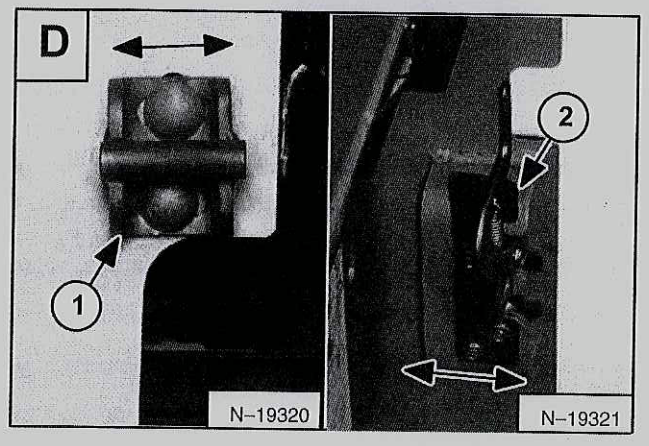
Early Models Only – The door latch mechanism (Item 2) **[D]** can be adjusted backward or forward for alignment with the door catch.

Close the rear door before operating the loader.









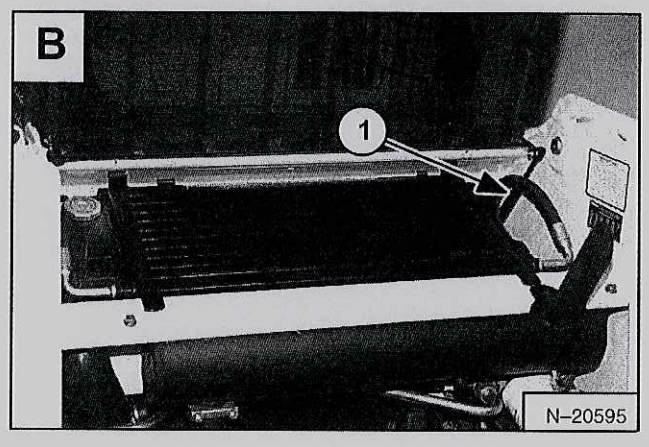
REAR GRILL

Open the rear door **[A]** .



Raise the rear grill **[B]**.

The rear grill is held open by a cylinder (Item 1) **[B]**.

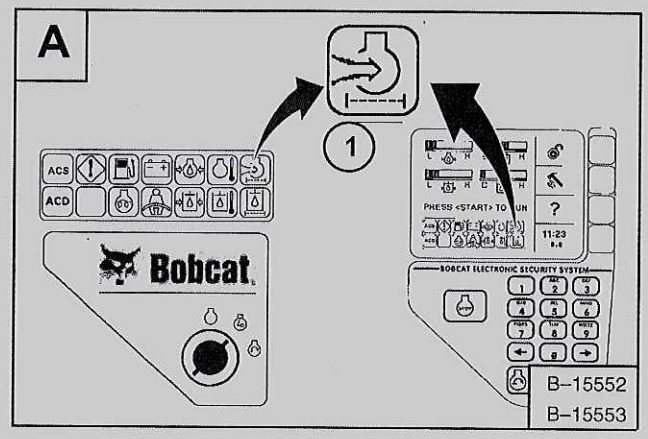


AIR CLEANER SERVICE

Replacing Filter Element

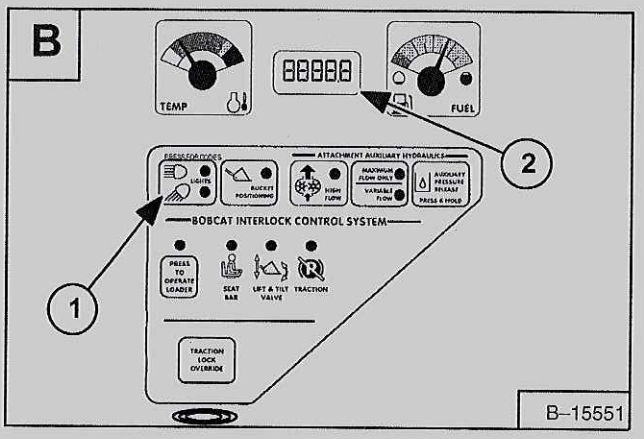
It is important to change the air filter element only when the Air Cleaner Icon in the right panel is ON (Item 1) **[A]** and you hear three beeps from the alarm.

Replace the inner filter every third time the outer filter is replaced or as indicated on page 51.



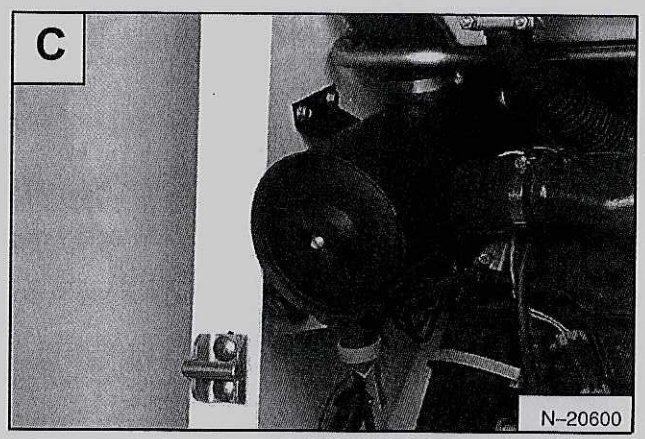
Press and hold the LIGHT Button (Item 1) **[B]** for two seconds.

If the filter element needs replacement, the CODE **[01–17] (Air Filter Plugged)** will show in the HOURMETER / CODE DISPLAY (Item 2) **[B]**.



Outer Filter

Remove the wing nut and remove the dust cover **[C]**.



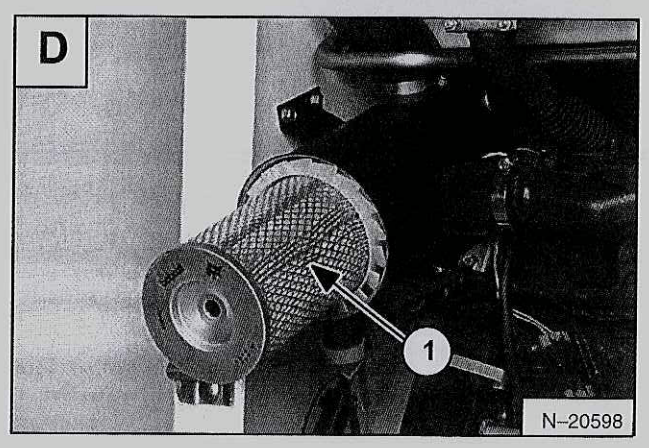
Remove the wing nut and remove the outer filter element (Item 1) **[D]**.

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

Install a new outer element.

Install the dust cover and the wing nut **[C]**.

Check the air intake hose and the air cleaner housing for damage. Make sure all connections are tight.



Page 70 - BOBM073077-03-B1001 - 11/29/2013 06:58:22 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

AIR CLEANER SERVICE (Cont'd)

Replacing Filter Element (Cont'd)

Inner Filter

Only replace the inner filter element under the following conditions:

- Replace the inner filter element every *third* time the outer filter is replaced.
- After the outer element has been replaced, start the engine and run at full RPM. If the HOURMETER / CODE DISPLAY shows [**01–17**] **(Air Filter Plugged)**, replace the inner filter element.

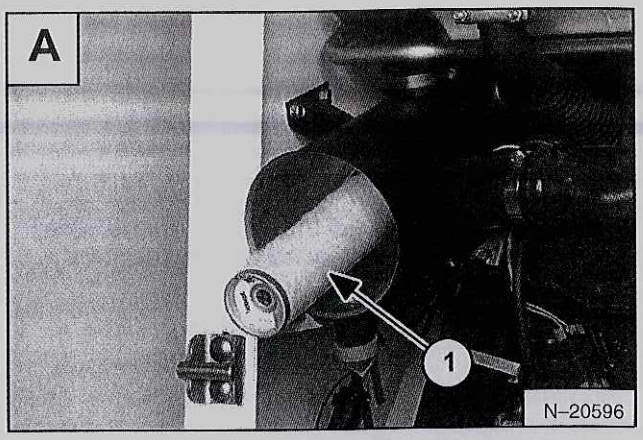
Remove the wing nut and remove the inner filter element **[A]**.

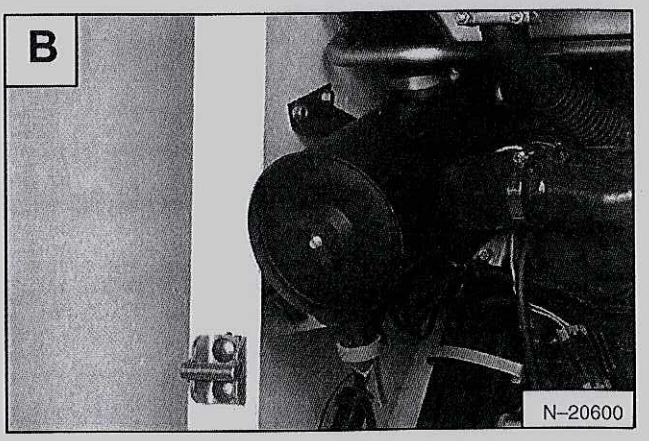
NOTE: Make sure all sealing surfaces are free of dirt and debris.

Install the new inner element.

Install the outer element.

Install the dust cover and the wing nut **[B]**.





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%

See your fuel supplier for local recommendations.

Filling The Fuel Tank

⚠ WARNING

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

W–2063–0887

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! [B]**.

Install and tighten the fuel fill cap **[A]**.

Fuel Filter

See the *SERVICE SCHEDULE* Page 39 for the service interval when to remove the water from the fuel filter.

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

See the *SERVICE SCHEDULE* Page 39 for the service interval when to replace the fuel filter.

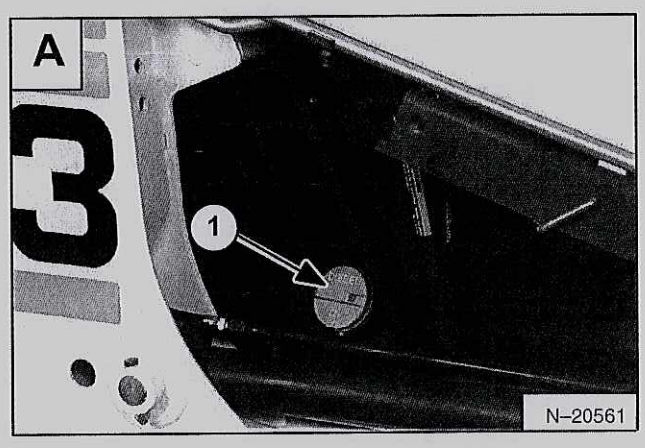
Remove the filter element (Item 2) **[C]**.

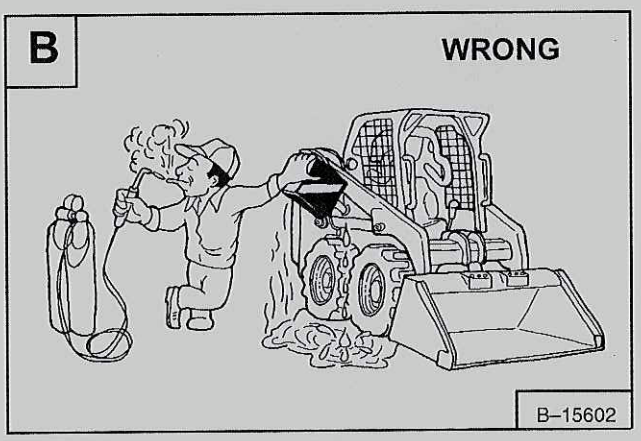
Clean the area around the filter housing.

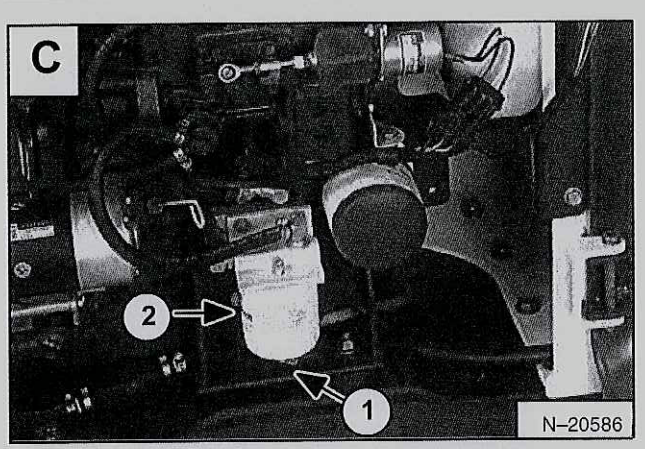
Put oil on the seal of the new filter element.

Install the fuel filter, and hand tighten.

Remove the air from the fuel system. (See *Removing Air From the Fuel System* Page 53.)







⚠ 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

FUEL SYSTEM (Cont'd)

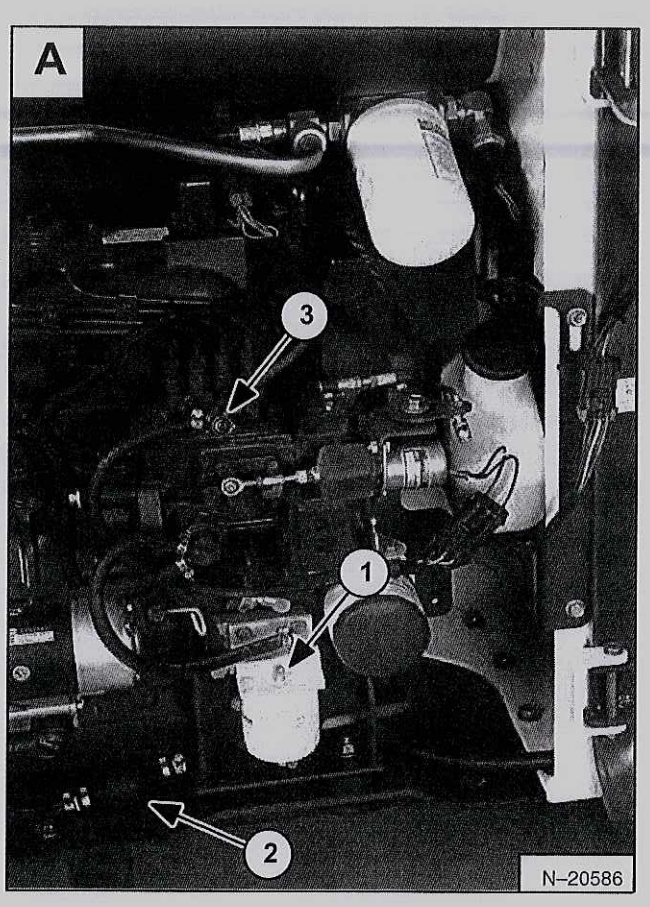
Removing Air From The Fuel System

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.

⚠ WARNING

Diesel fuel or hydraulic fluid under pressure can penetrate skin or eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. Do not use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a physician familiar with this injury.

W–2072–0496



Open the fuel filter vent (Item 1) **[A]**.

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

Close the fuel filter vent (Item 1) **[A]**.

Open the injection pump vent (Item 3) **[A]**.

Operate the hand pump (priming bulb) (Item 2**[A]** until the pump feels solid.

Tighten the injection pump vent (Item 3) **[A]**.

Start the engine. It may be necessary to open the vent plug (at the fuel injection pump) briefly until the engine runs smoothly.

ENGINE LUBRICATION SYSTEM

Checking Engine Oil

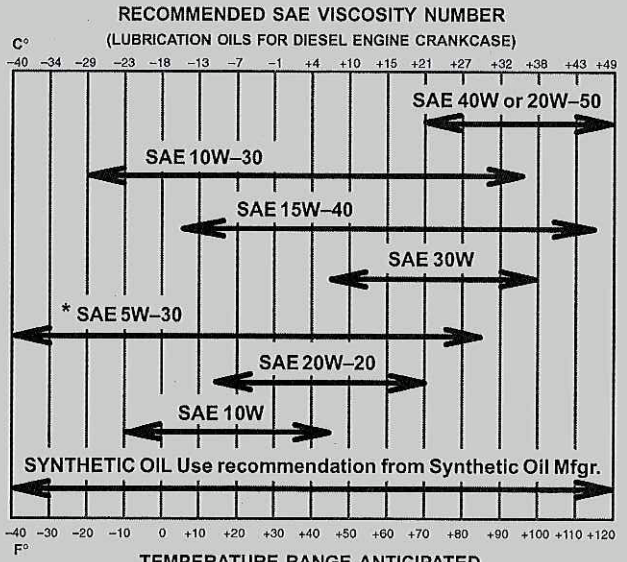
Check the engine oil level every day before starting the engine for the work shift.

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).

Oil Chart



TEMPERATURE RANGE ANTICIPATED BEFORE NEXT OIL CHANGE (DIESEL ENGINES MUST USE API CLASSIFICATION CD, CF4, CG4)

* Can be used **ONLY** when available with appropriate diesel rating.

Replacing Oil And Filter

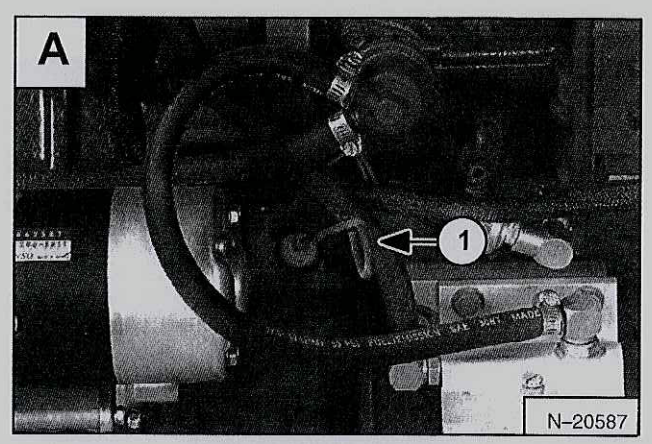
See the *SERVICE SCHEDULE* Page 39 for the service interval for replacing the engine oil and filter.

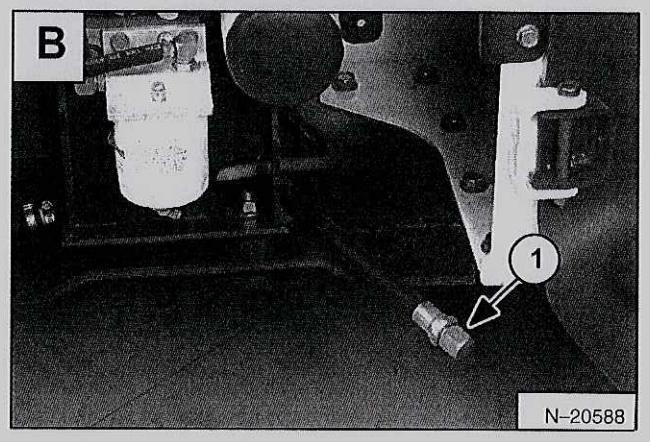
Run the engine until it is at operating temperature. Stop the engine.

Open the rear door.

Remove the drain plug (Item 1) **[B]**.

Drain the oil into a container and recycle or dispose of used oil in an environmentally safe manner.





ENGINE LUBRICATION SYSTEM (Cont'd)

Replacing Oil And Filter (Cont'd)

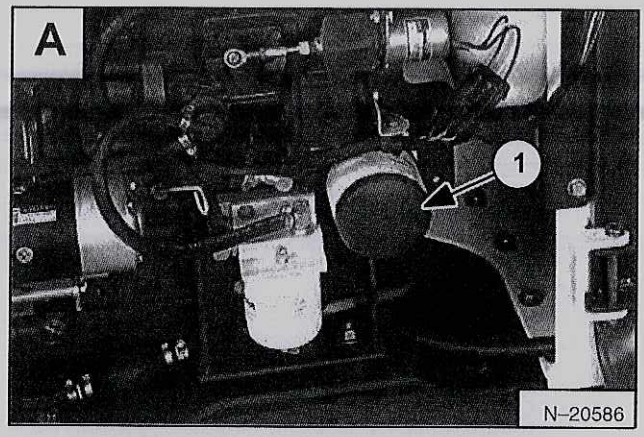
Remove the oil filter (Item 1) **[A]**.

Clean the filter housing surface.

Put clean oil on the new oil filter gasket.

Install the filter and hand tighten.

Install and tighten the drain plug.



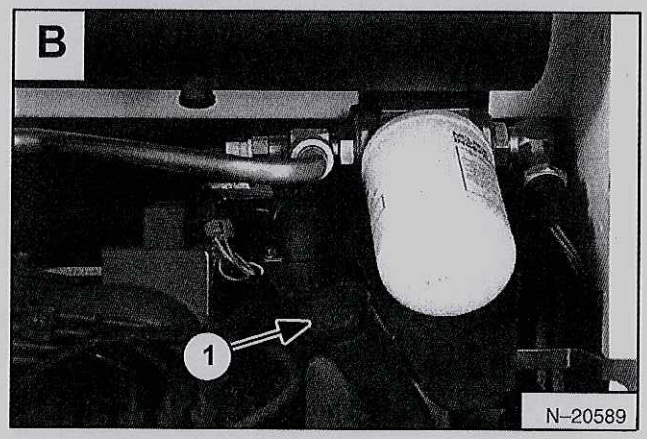
Remove the filler cap (Item 1) **[B]**.

Put oil in the engine. (See *SPECIFICATIONS* Page 93, for Capacity) **[B]**. (See *Oil Chart*, Page 54.

Start the engine and let it run for several minutes.

Stop the engine.

Check for leaks at the oil filter and check the oil level.

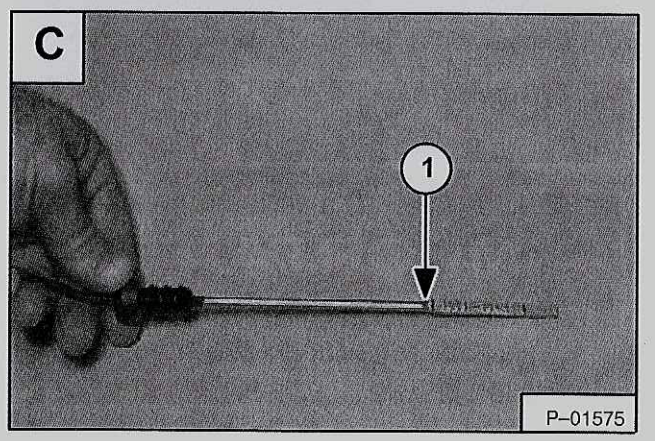


Add oil as needed if it is not at the top mark (Item1) **[C]** on the dipstick.

⚠ 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



ENGINE COOLING SYSTEM

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

⚠ WARNING

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- **When fluids are under pressure.**
- **Flying debris or loose material is present.**
- **Engine is running.**
- **Tools are being used.**

W–2019–1285

Cleaning The Cooling System

Raise the rear grill.

Use air pressure or water pressure to clean the top of the oil cooler **[A]**.

Raise the oil cooler and clean the top of the radiator **[B]**.

Check cooling system for leaks.

Checking The Coolant Level

Open the rear door.

Check the coolant level in the coolant recovery tank (Item 1) **[C]**.

The coolant level must be between the MIN and MAX marks on the coolant recovery tank when the engine is cold.

IMPORTANT

AVOID ENGINE DAMAGE

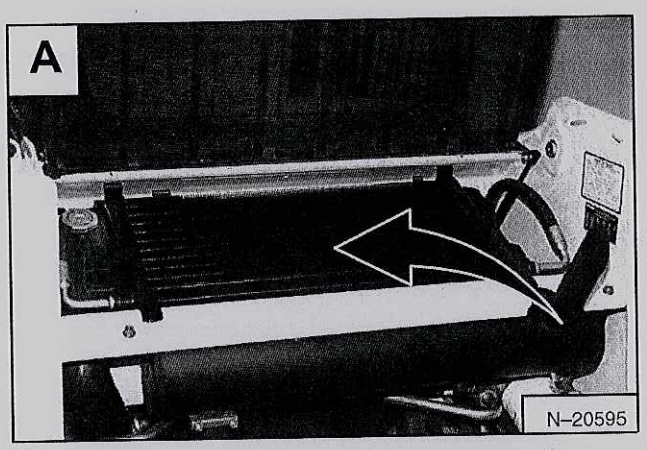
Always use the correct ratio of water to anti-freeze.

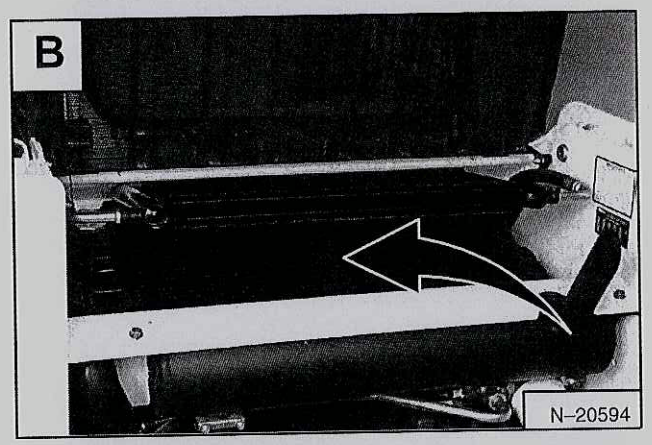
Too much antifreeze reduces cooling system efficiency and may cause serious premature engine damage.

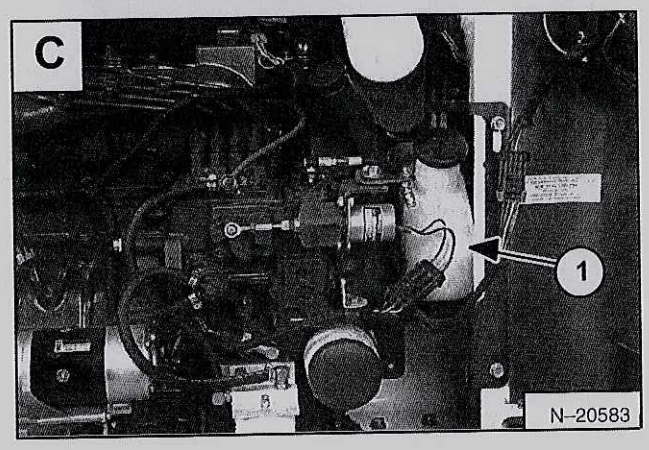
Too little antifreeze reduces the additives which protect the internal engine components; reduces the boiling point and freeze protection of the system.

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

I–2124–0497







Replacing The Coolant

⚠ WARNING

Do not remove radiator cap when the engine is hot. You can be seriously burned.

W–2070–1285

Open the rear door. Open the rear grill.

Remove the radiator cap (Item 1) **[A]**.

Connect a hose to the engine block drain valve (Item 1) **[B]**.

Open the drain valve and drain all of the coolant into a container.

Recycle or dispose of used coolant in an environmentally safe manner.

Close the drain valve.

Mix the coolant in a separate container. (See *SPECIFICATIONS* Page 93, for correct capacity.)

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

Add premixed coolant, 47% water and 53% propylene glycol to the recovery tank if the coolant level is low.

One gallon and one pint (4,3 L) of propylene glycol mixed with one gallon (3,8 L) of water is the correct mixture of coolant to provide a –34°F (–37°C) freeze protection. Use a refractometer to check the condition of propylene glycol in your cooling system.

Fill the radiator with the premixed coolant. Install the radiator cap.

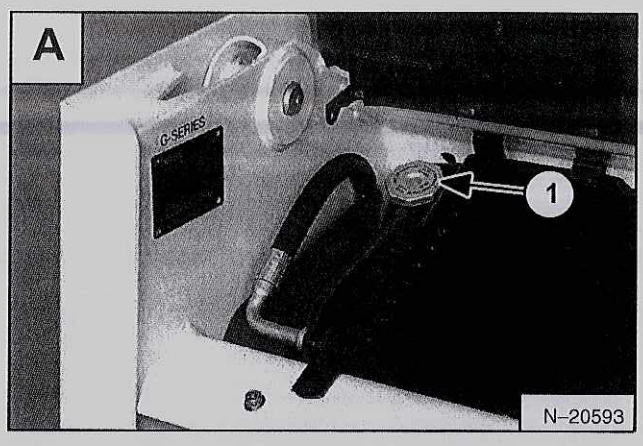
Add coolant to the recovery tank. The coolant level must be between the MIN and MAX marks on the coolant recovery tank.

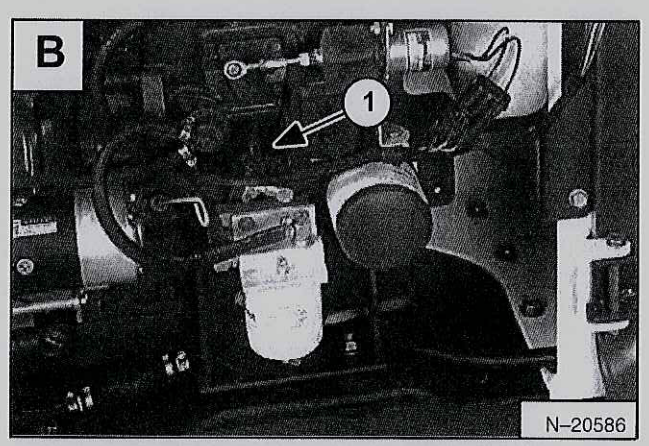
Run the engine until it is at operating temperature.

Stop the engine.

Check the coolant level in the recovery tank when cool.

Add coolant to the recovery tank as needed.





IMPORTANT

AVOID ENGINE DAMAGE

Always use the correct ratio of water to anti-freeze.

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

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

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

I–2124–0497

ALTERNATOR BELT

Adjusting

Stop the engine.

Raise the operator cab. (See *Raising The Operator Cab* Page 42.)

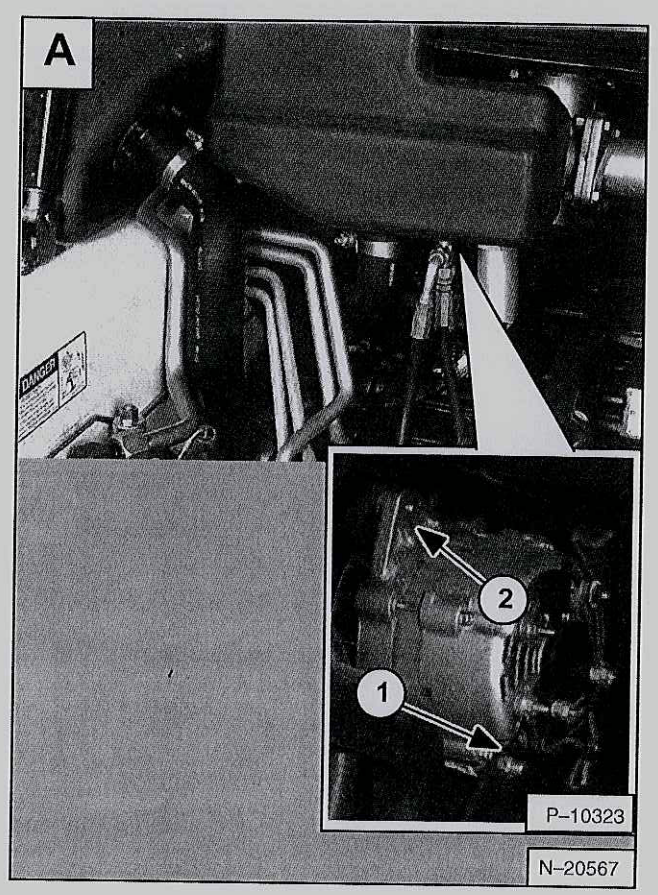
Loosen the alternator mounting bolt (Item 1) **[A]**.

Loosen the adjustment bolt (Item 2) **[A]**.

Move the alternator until the belt has 5/16 inch (8,0 mm) movement at the middle of the belt span with 15 lbs. (66 Nm) of force.

Tighten the adjustment bolt and mounting bolt.

Lower the operator cab.



ELECTRICAL SYSTEM

Description

The loader has a 12 volt, negative ground alternator charging system. The electrical system is protected by fuses located in the cab on the steering control panel, and a 100 amp. master fuse **[A]** in the engine compartment on the left side of the engine. The fuses will protect the electrical system when there is an electrical overload. The reason for the overload must be found before starting the engine again.

Cleaning Battery Terminals

The battery cables must be clean and tight. Check the electrolyte level in the battery . Add distilled water as needed. Remove acid or corrosion from the battery and cables with a sodium bicarbonate and water solution.

Put Battery Saver P/N 6664458 or grease on the battery terminals and cable ends to prevent corrosion.

⚠ WARNING

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

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

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

W-2065-1296

Fuse Location

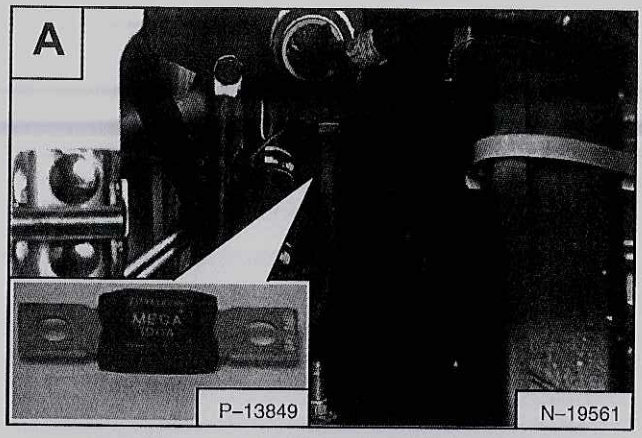
The electrical system is protected from overload by fuses and relays under the fuse panel cover (Item 1 **[B]**. A decal is inside the cover to show location and amp. ratings.

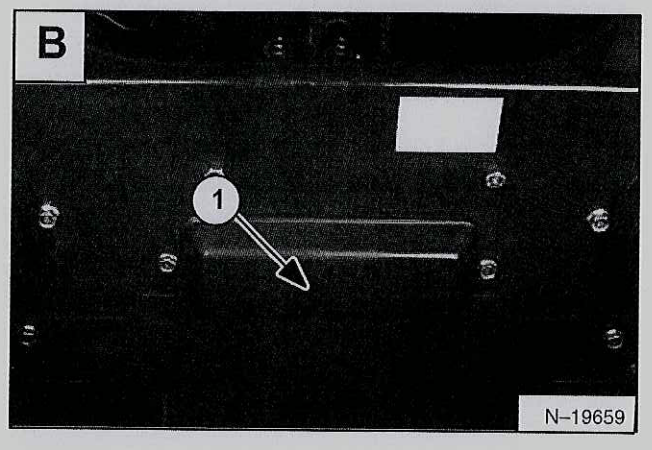
Remove the cover to check or replace the fuses.

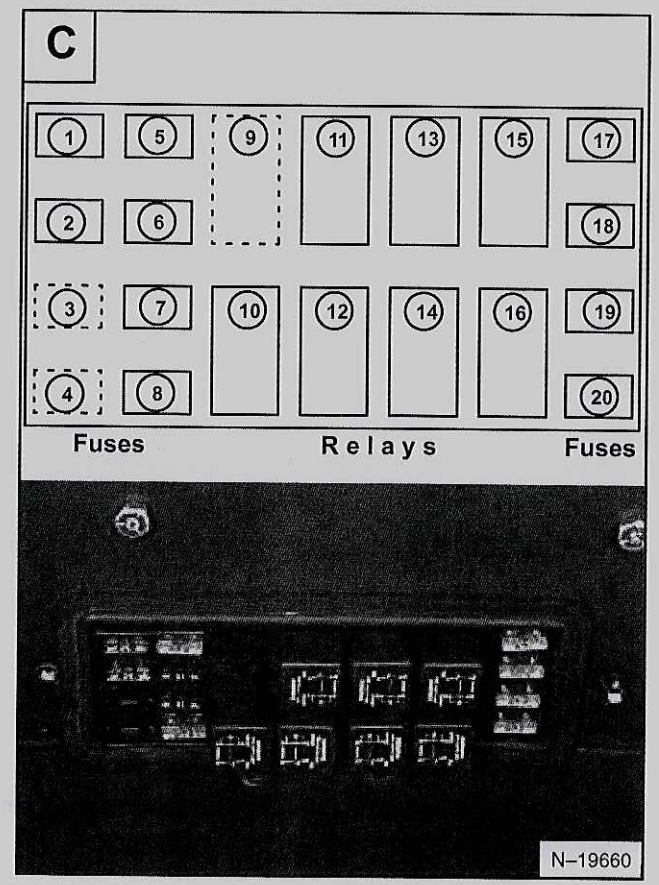
The location and sizes are shown below and **[C]**.

Ref	Description	Amp.	Ref	Description	Amp.
1	Traction	30	11	Front & Marker Lights	R
2	Fuel Shutoff	30	12	Fuel Shutoff	R
3	*Not Used*	--	13	Rear Lights	R
4	*Not Used*	--	14	Traction	R
5	Heater	25	15	Switch Power	R
6	Front & Marker Lights	15	16	Starter	R
7	Rear Lights	15	17	Unswitched Attach.	25
8	Bobcat Controller	25	18	Switched Attach.	25
9	*Not Used*	--	19	Alt. & Accessories	25
10	Glow Plugs	R	20	Accessory Plug	25

R – Relay







Using A Booster Battery (Jump Starting)

If it is necessary to use a booster battery to start the engine, BE CAREFUL! There must be one person in the operator's seat and one person to connect and disconnect the battery cables.

The key switch must be OFF *(Standard Panel)* OR the STOP Button must be pressed *(Deluxe Panel)*. The booster battery must be 12 volt.

⚠ WARNING

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

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

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

W-2065-1296

Keep arcs, sparks, flames and lighted tobacco away from batteries. When *jumping* from booster battery make final connection (negative) at engine frame.

Do not jump start or charge a frozen or damaged battery. Warm battery to 60°F. (16°C.) before connecting to a charger. Unplug charger before connecting or disconnecting cables to battery. Never lean over battery while boosting, testing or charging.

Battery gas can explode and cause serious injury.

W-2066-1296

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

Connect the end of the second cable (Item 3) **[A]** to the negative (–) terminal of the booster battery . Connect the other end of the same cable (Inset–Item 4) **[A]** to the engine.

Keep cables away from moving parts. Start the engine. (See *STARTING THE ENGINE*, Page 19.)

After the engine has started, remove the ground (–) cable (Item 4) **[A]** first.

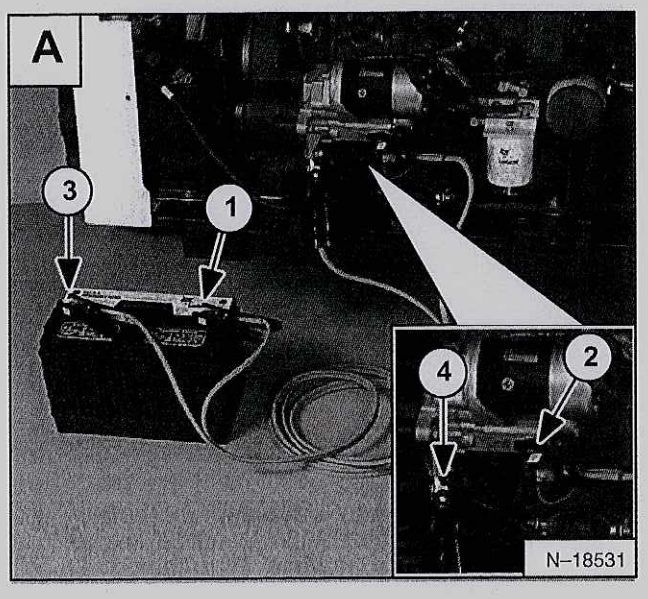
Remove the cable from the positive terminal (Item 2) **[A]**.

IMPORTANT

Damage to the alternator can occur if:

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

I-2023-1285



ELECTRICAL SYSTEM (Cont'd)

Removing And Installing The Battery

⚠ WARNING

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

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

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

W-2065-1296

Open the rear door.

Disconnect the negative (–) battery cable (Item 1) **[A]**.

Remove the battery hold down clamp (Item 2) **[A]**.

Disconnect the positive (+) battery cable (Item 1) **[B]**.

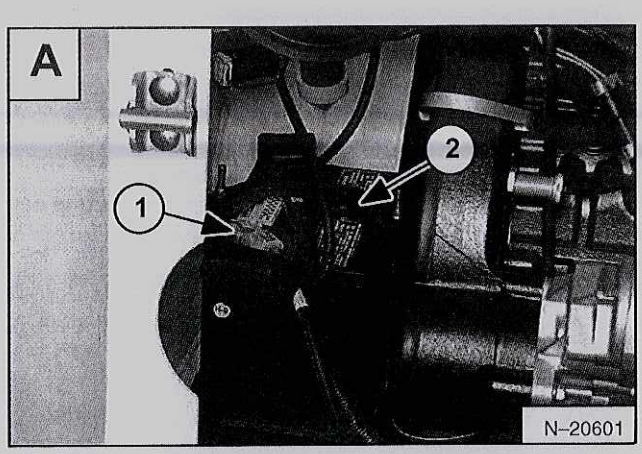
Remove the battery from the loader.

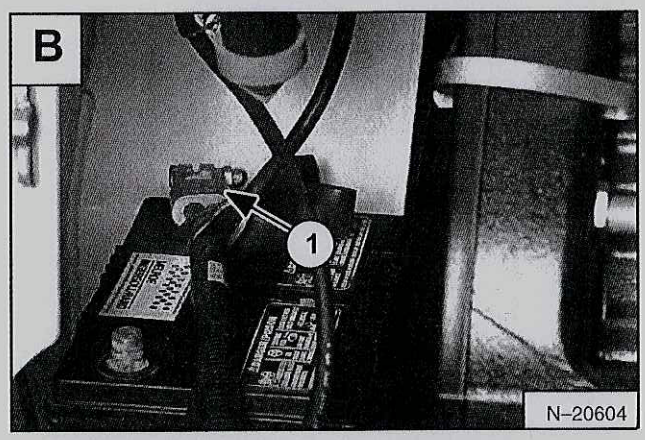
Always clean the battery terminals and cable ends when installing a new or used battery **[C]**.

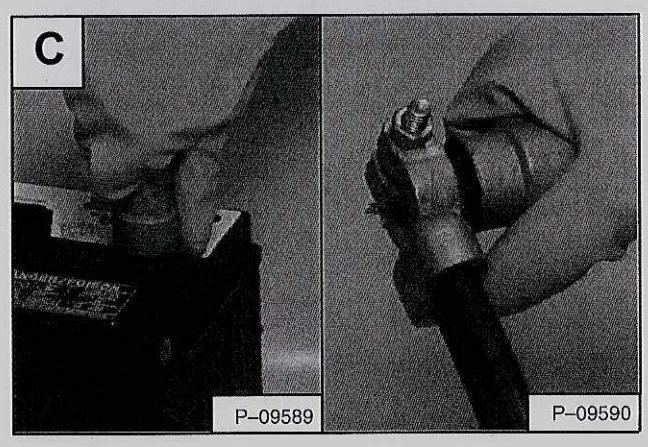
When installing the battery in the loader, do not touch any metal parts with the battery terminals.

Connect the negative (–) cable last to prevent sparks. Connect and tighten the battery cables.

Close the rear door before operating the loader.







HYDRAULIC/HYDROSTATIC SYSTEM

Checking And Adding Fluid

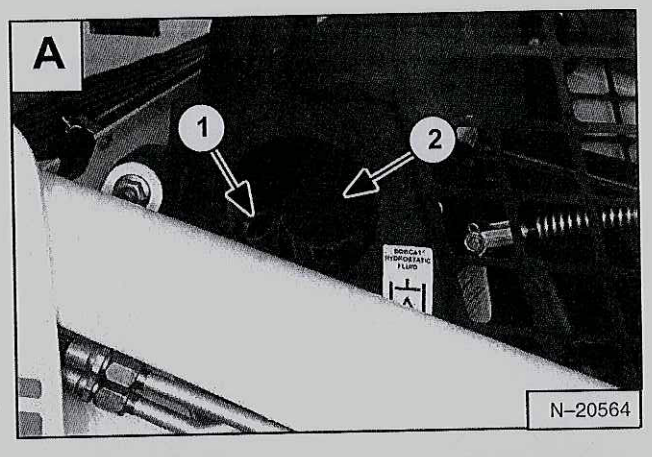
Use only recommended fluid in the hydraulic system. (See *SPECIFICATIONS* Page 93.)

Stop the loader on a level surface. Lower the lift arms and tilt the Bob–Tach fully back.

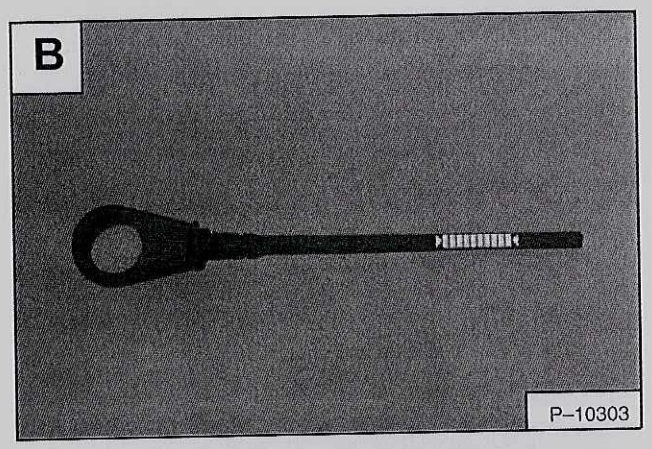
Stop the engine.

Remove the dipstick (Item 1) **[A]**. Check the fluid level.

Remove the fill cap (Item 2) **[A]**.

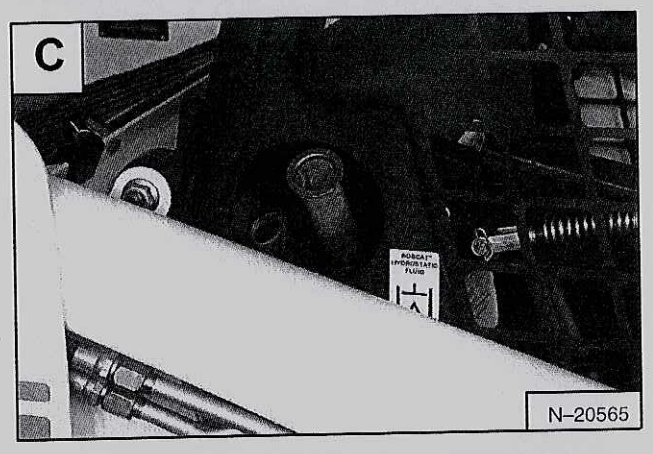


Add the fluid as needed to bring the level to the top mark on the dipstick **[B]**. Do not fill above the top mark.



Remove the screen **[C]** & clean with solvent as needed.

Install the fill cap.



Replacing Hydraulic/Hydrostatic Filter

See the *SERVICE SCHEDULE* Page 39 for the correct service intervals.

Open the rear door.

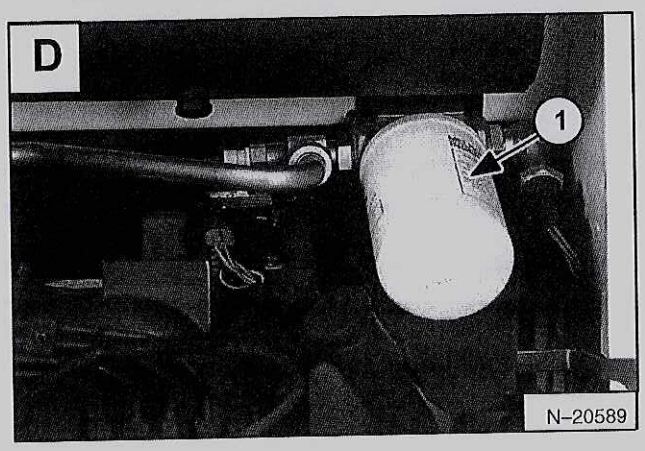
Remove the filter element (Item 1) **[D]**.

Clean the surface of the filter housing where the seal contacts the housing.

Put clean oil on the seal of the new filter element.

Install and hand tighten the filter element.

Close the rear door before operating the loader.



HYDRAULIC/HYDROSTATIC SYSTEM (Cont'd)

Replacing Hydraulic Fluid and Case Drain Filters

See the *SERVICE SCHEDULE* Page 39, for the service interval.

The fluid must be replaced if it becomes contaminated or after major repairs. If the fluid is replaced, the hydrostatic filter and both case drain filters must be replaced.

Remove the reservoir fill cap (Item 1) **[A]**

Raise the operator cab. (See *Raising The Operator Cab* Page 42.)

Disconnect the hoses (Item 1)**[B]** from the case drainfilter located on the reservoir. Use a cap and plug on the hoses to prevent leakage. Remove the case drain filter (Item 2) **[B]**.

Remove the cap from the reservoirhose and drain the fluid into a container.

Recycle or dispose of fluid in an environmentally safe manner.

Remove the left case drain filter (Item 1) **[C]**.

Replace the hydraulic/hydrostatic filter element. (See Page 62.)

Install new hydrostatic motor case drain filters (Item 2)**[B]** & (Item 1) **[C]** and reconnect the hoses.

Add the correct fluid to the reservoir until the fluid level is between the marks on the dipstick. DO NOT fill above the top mark on the dipstick.

⚠ WARNING

Hydraulic fluid escaping under pressure can have sufficient force to enter a person's body by penetrating the skin and cause serious injury and possibly death if proper medical treatment by a physician familiar with this injury is not received immediately.

W–2145–0290

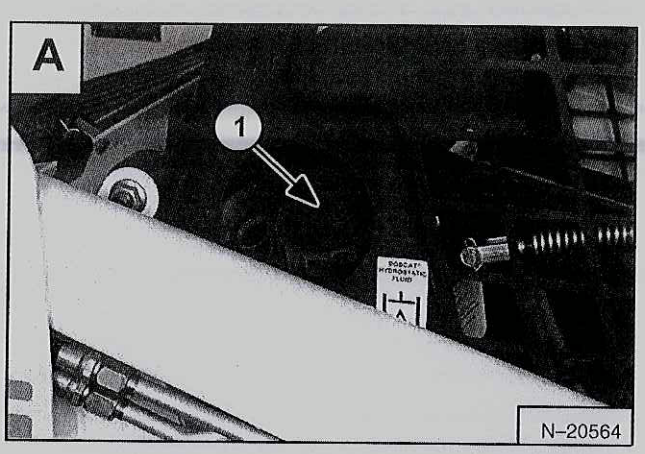
Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire which can result in injury or death.

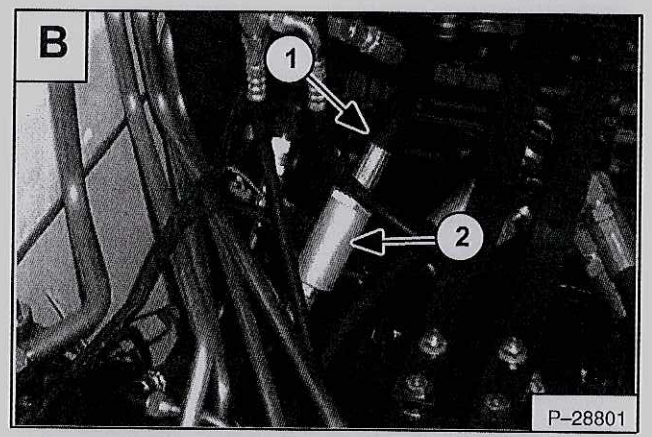
W–2103–1285

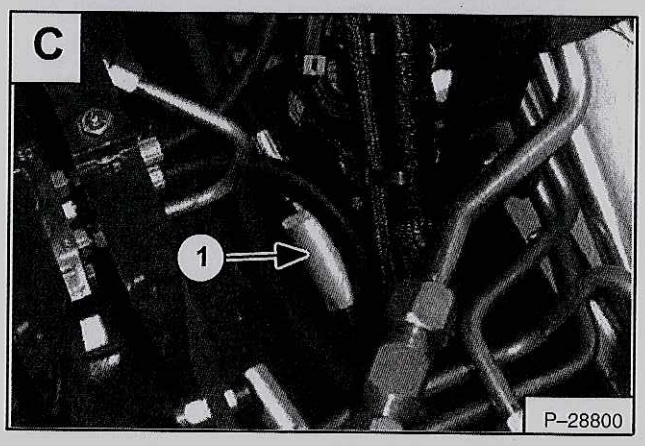
Lower the operator cab (See *Lowering the Operator Cab* Page 43.)

Start the engine and operate theloader hydraulic controls. Stop the engine and check for leaks.

Check the fluid level in the reservoir and add as needed.







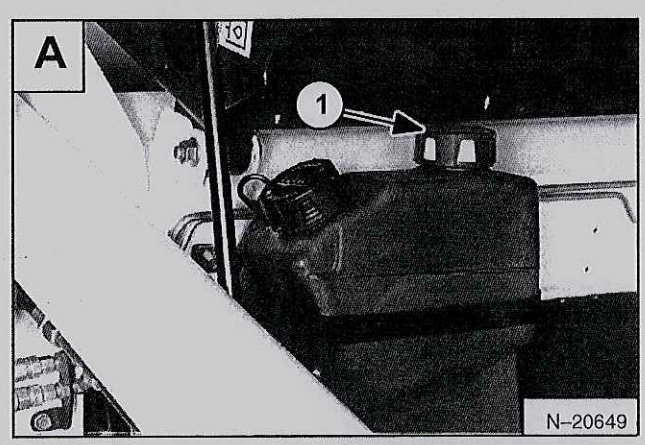
HYDRAULIC/HYDROSTATIC SYSTEM (Cont'd)

Breather Cap

See the *SERVICE SCHEDULE* Page 39, for the correct service interval.

Raise the cab (See *Raising The Operator Cab* Page 42.).

Remove the breather cap (Item 1) **[A]**.

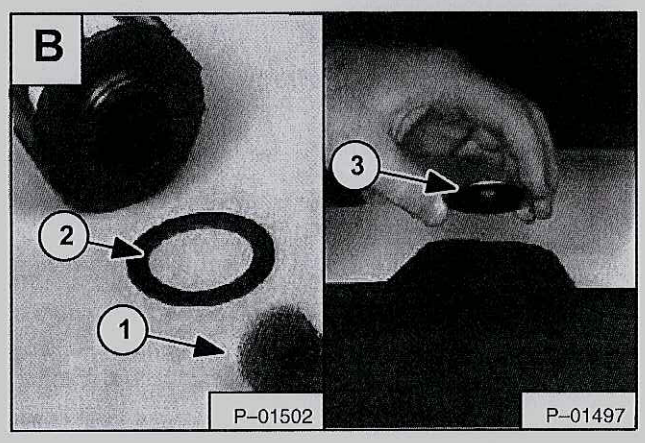


Clean the filter (Item 1) **[B]** in the breather cap.

NOTE: Be sure the rubber gasket (Item 2) is installed on the cap and the baffle washer (Item 3) [B] is installed over the opening of the hydraulic reservoir.

Install the breather cap.

Lower the cab (See *Lowering The Operator Cab* Page 43).



SPARK ARRESTOR MUFFLER

See the *SERVICE SCHEDULE,* Page 39, for service interval for cleaning the spark arrestor muffler.

Do not operate the loader with a defective exhaust system.

IMPORTANT

This loader is factory equipped with a U.S.D.A. Forestry Service approved spark arrestor muffler. It is necessary to do maintenance on this spark arrestor muffler to keep it in working condition. The spark arrestor muffler must be serviced by dumping the spark chamber every 100 hours of operation.

If this machine is operated on flammable forest, brush or grass covered land, it must be equipped with a spark arrestor attached to the exhaust system and maintained in working order. Failure to do so will be in violation of California State Law, Section 4442 PRC.

Make reference to local laws and regulations for spark arrestor requirements.

I–2022–0595

Stop the engine. Open the rear door and raise the rear grill.

Remove the plug (Item 1) **[A]** from the bottom of the muffler.

⚠ WARNING

When the engine is running during service, the steering levers must be in neutral and the parking brake engaged. Failure to do so can cause injury or death.

W–2006–0284

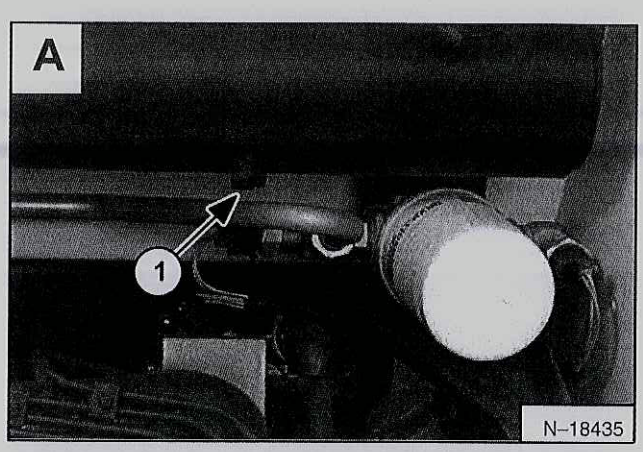
Start the engine and run for about 10 seconds while a second person, wearing safety glasses, holds a piece of wood over the outlet of the muffler.

This will force contaminants out through the cleanout hole.

Stop the engine.

Install and tighten the plug.

Lower the rear grill and close the rear door.



⚠ WARNING

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

W–2050–1285

Stop engine and allow the muffler to cool before cleaning the spark chamber. Wear safety glasses or goggles. Failure to obey can cause serious injury.

W–2011–1285

Never use machine in atmosphere with explosive dust or gases or where exhaust can contact flammable material. Failure to obey warnings can cause injury or death.

W–2068–1285

Page 85 - BOBM073077-03-B1001 - 11/29/2013 06:58:23 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

TIRE MAINTENANCE

Wheel Nuts

See the *SERVICE SCHEDULE* Page 39, for the service interval to check the wheel nuts. The correct torque is 105–115 ft.–lbs. (142–156 Nm) torque **[A]**.

Rotating

Check the tires regularly for wear, damage and pressure. Inflate tires to the maximum pressure shown on the sidewall of the tire.

Rear tires usually wear faster than front tires. To keep tire wear even, move the front tires to therear and rear tires to the front **[B]**.

It is important to keep the same size tires on each side of the loader. If different sizes are used, each tire will be turning at a different rate and cause excessive wear. The tread bars of all the tires must face the same direction.

Recommended tire pressure must be maintained to avoid excessive tire wear and loss of stability and handling capability. Check for the correct pressure before operating the loader.

Mounting

Tires are to be repaired only by an authorized person using the proper procedures and safety equipment.

Tires and rims must always be checked for correct size before mounting. Check rim and tire bead for damage.

The rim flange must be cleaned and free of rust.

The tire bead and rim flange must be lubricated with a rubber lubricant before mounting the tire.

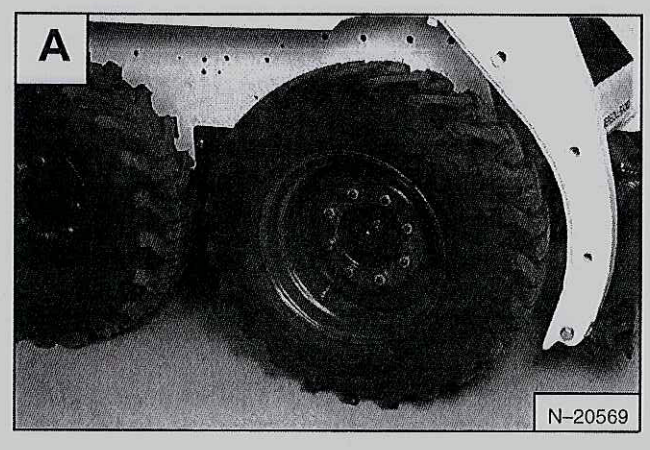
Avoid excessive pressure which can rupture the tire and cause serious injury or death.

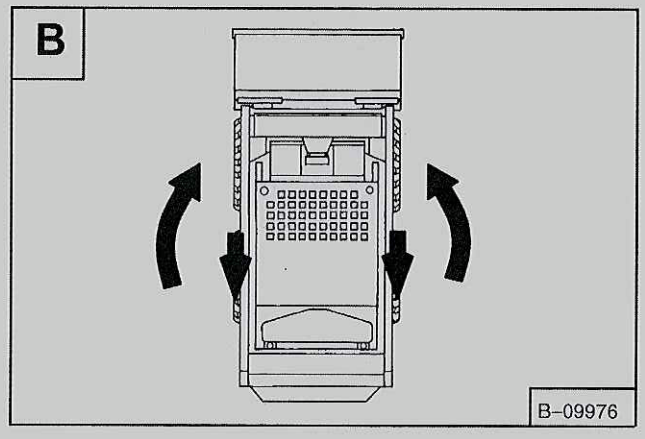
During inflation of the tire, check the tire pressure frequently to avoid over inflation.

⚠ WARNING

Do not inflate tires above specified pressure. Failure to use correct tire mounting procedure can cause an explosion which can result in injury or death.

W–2078–1285





IMPORTANT

Inflate tires to the MAXIMUM pressure shown on the sidewall of the tire. DO NOT mix brands of tires used on the same loader.

I–2057–0794

FINAL DRIVE TRANSMISSION (CHAINCASE)

Checking And Adding Oil

The chaincase contains the final drive sprockets and chains. Use the same type of oil as the hydraulic/hydrostatic system. (See *SPECIFICATIONS* Page 93.)

Stop the loader on a level surface.

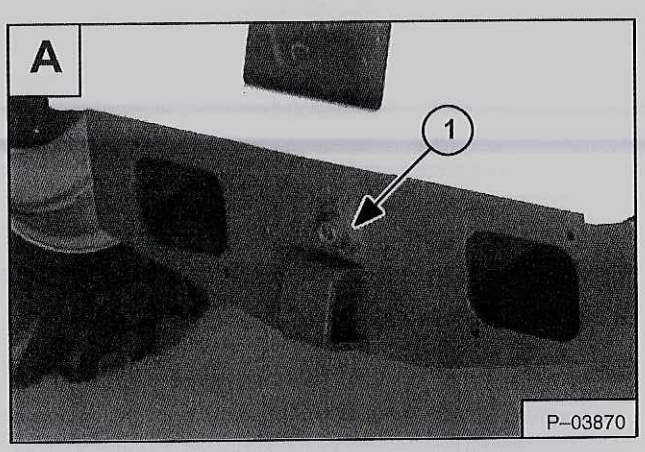
Stop the engine.

Remove the plug (Item 1) **[A]** from the front of the chaincase housing.

If oil can be reached with the tip of the your finger through the hole, the oil level is correct.

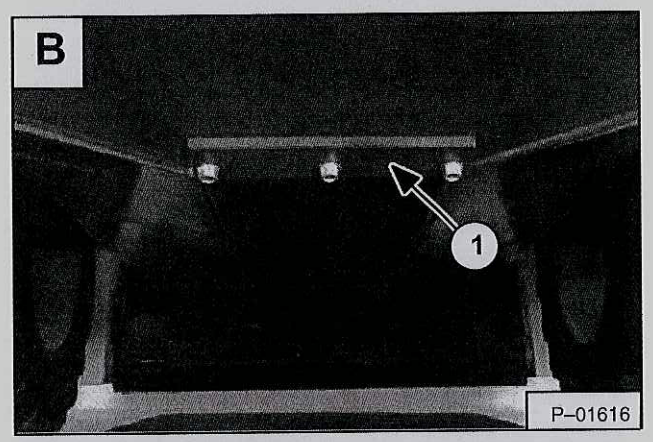
If the level is low, add oil through the check plug hole until the oil flows from the hole.

Install and tighten the plug.



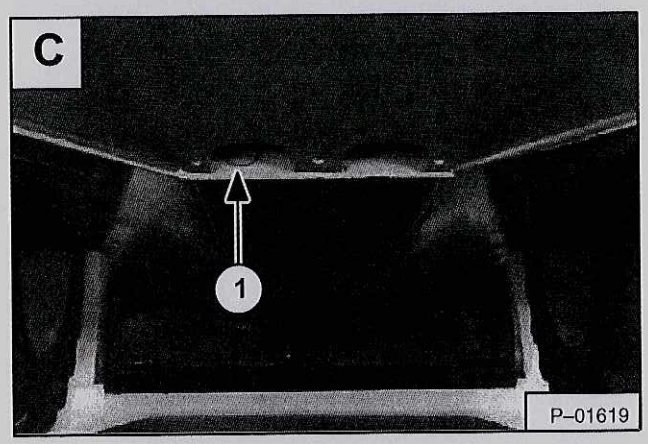
Removing Oil From The Chaincase

Remove the cover (Item 1) **[B]** which is installed over the drain plug at the bottom rear of the chaincase.



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

Check the drain plug and replace as necessary.



FAN GEARBOX

See the *SERVICE SCHEDULE* Page 39, for the correct service interval.

Checking And Maintaining

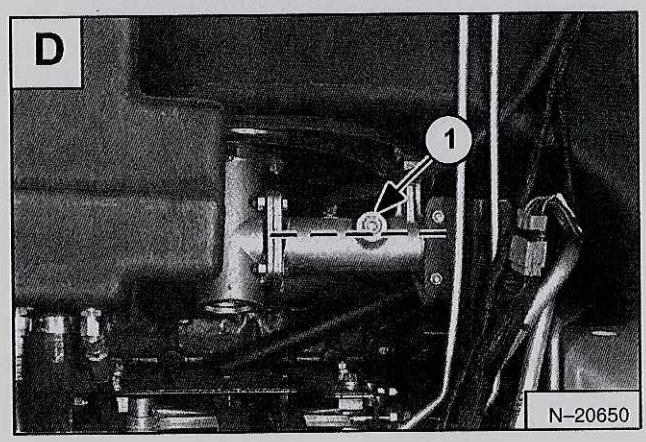
Raise the operator cab. (See *Raising The Operator Cab* Page 42).

Remove the plug (Item 1) **[D]** to check the lubricant level.

If the level is low, add SAE 90W gear lubricant throughthe check plug hole until lubricant flows from the hole.

Install and tighten the plug.

Lower the operator cab. (See *Lowering the Operator Cab* Page 43.)



Page 87 - BOBM073077-03-B1001 - 11/29/2013 06:58:23 - Printed by Ken Cook Co. - eXprint.exe (V2.28.1 10/03/2012)

DRIVE BELT

Adjusting The Drive Belt

Stop the engine.

Open the rear door and disconnect the negative (–) cable from the battery.

Remove three belt shield fasteners and remove the belt shield.

Loosen the bolt (Item 1)**[A]** on the spring loaded drive idler

NOTE: The pointer will be at the 1 o'clock position (Item 2) [A] when the belt tensioner is not under spring tension.

Push the idler pulley against the belt, using a pry bar **[B]**. The pointer will be at the 3 o'clock position (Item 1) **[B]** when the idler pulley is against the stop (maximum movement)

Raise the idler assembly slightly so that the pulley is operating on spring tension and not against the stop.

NOTE: Do not set the idler against the travel stop in the 3 o'clock position.

Tighten the mounting bolt (Item 1) **[A]** to 25–28 ft.lbs. (34–38 Nm) torque.

Run the engine for a few minutes. Stop the engine and recheck the pointer position.

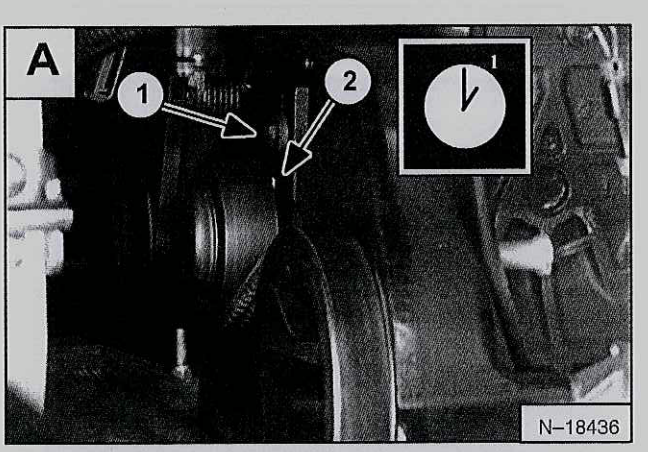
Readjust if necessary.

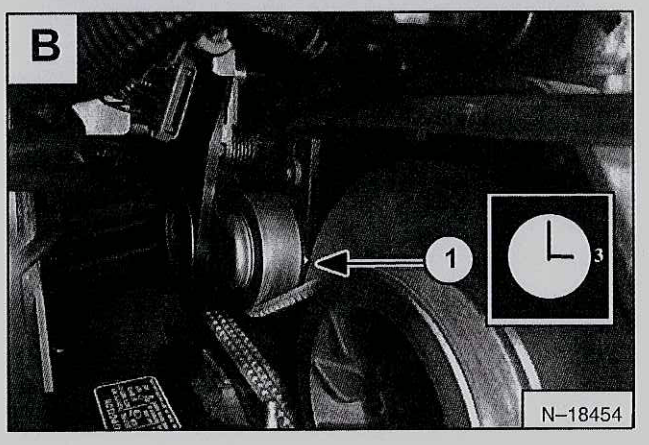
After the idler has been in service, readjust when the pointer reaches the 1 o'clock position.

Install the belt shield and fasteners.

Connect the negative (–) battery cable.

Close the rear door.





Replacing The Drive Belt

Follow the steps above to loosen the drive belt tensioner.

Remove the bolt (Item 1) **[A]** from the tensioner and remove the tensioner assembly.

Remove the fan drive belt.

Remove the drive belt from the pump pulley and flywheel and remove the belt from the loader.

Install the new drive belt. Install the belt tensioner assembly.

Install the fan drive belt.

Adjust the drive belt, reinstall previously removed components and continue procedure from *Adjusting The Drive Belt* above.

LUBRICATION OF THE BOBCAT LOADER

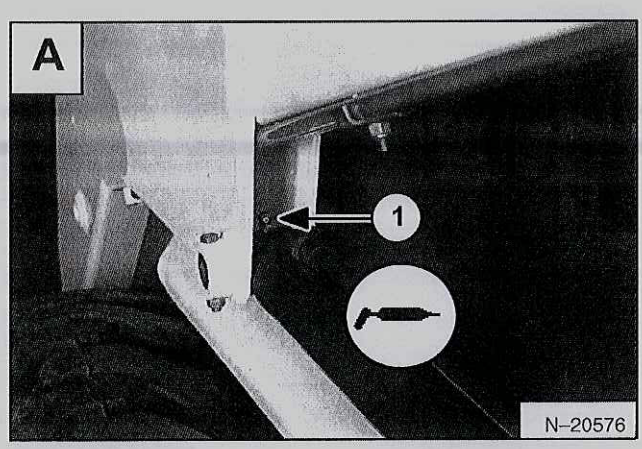
Lubricate the loader as specified in the *SERVICE SCHEDULE* Page 39 for the best performance of the loader.

Record the operating hours each time you lubricate the Bobcat loader.

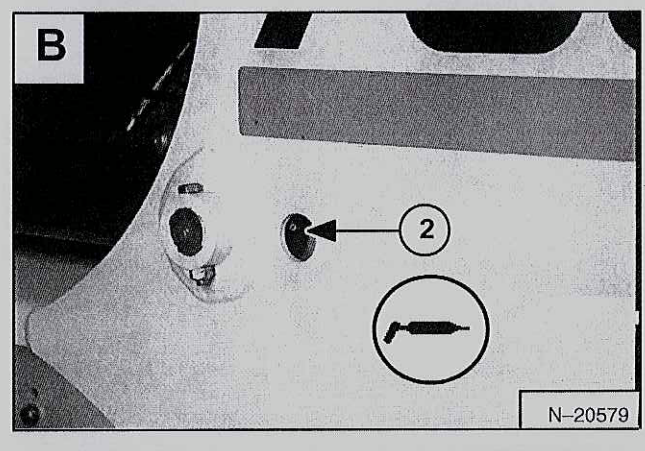
Always use a good quality lithium based multi–purpose grease. Apply lubricant until extra grease shows.

Lubricate the following locations on the loader:

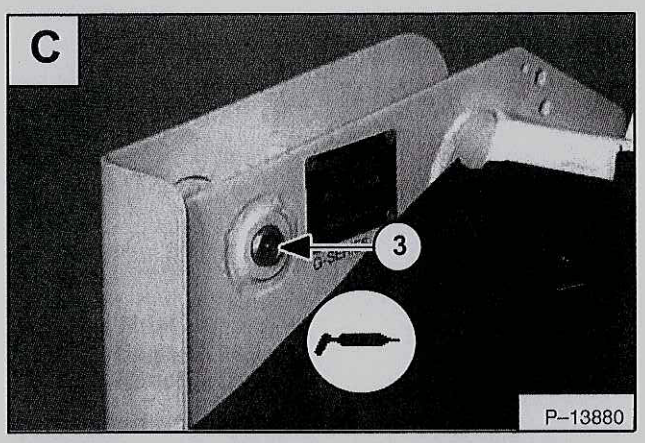
1. Rod End Lift Cylinder (Both Sides) **[A]**.



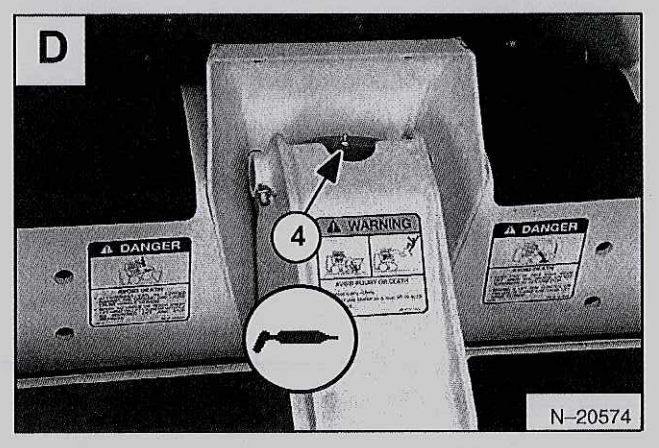
2. Base End Lift Cylinder (Both Sides) **[B]**.



3. Lift Arm Pivot Pin (Both Sides) **[C]**.



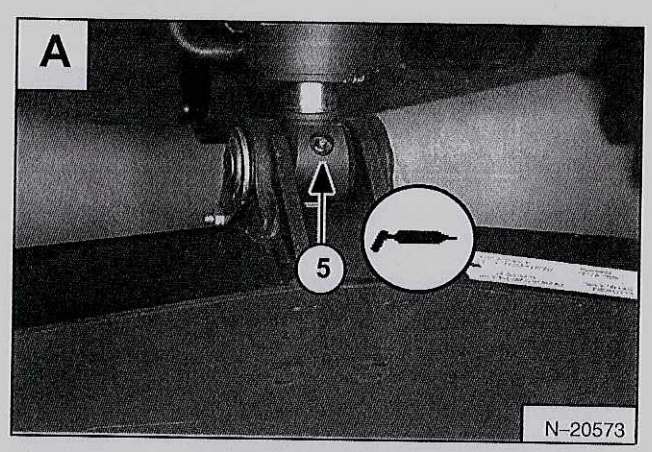
4. Base End Tilt Cylinder **[D]**.



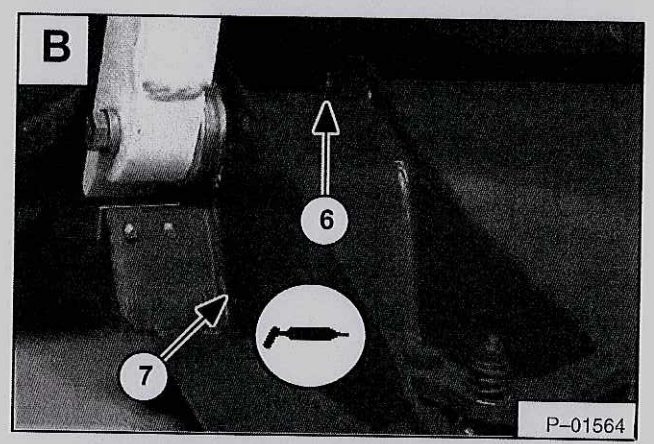
Page 89 - BOBM073077-03-B1001 - 11/29/2013 06:58:23 - Printed by Ken Cook Co. - exprint.exe (v2.28.1 10/03/2012)

LUBRICATION OF THE BOBCAT LOADER (Cont'd)

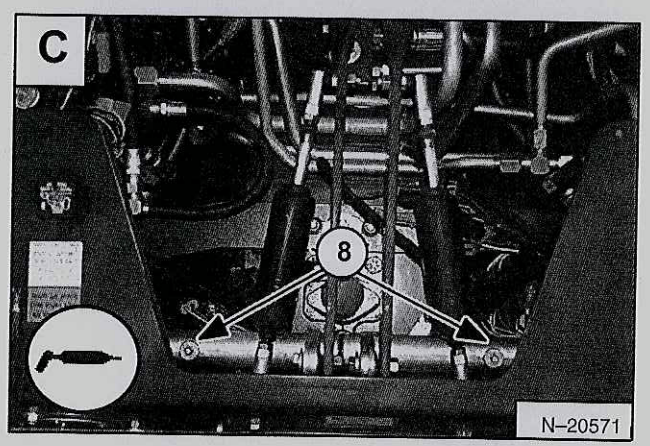
5. Rod End Tilt Cylinder **[A]**.



6. Bob–Tach Pivot Pin (Both Sides) **[B]**.
7. Bob–Tach Wedge (Both Sides) **[B]**.



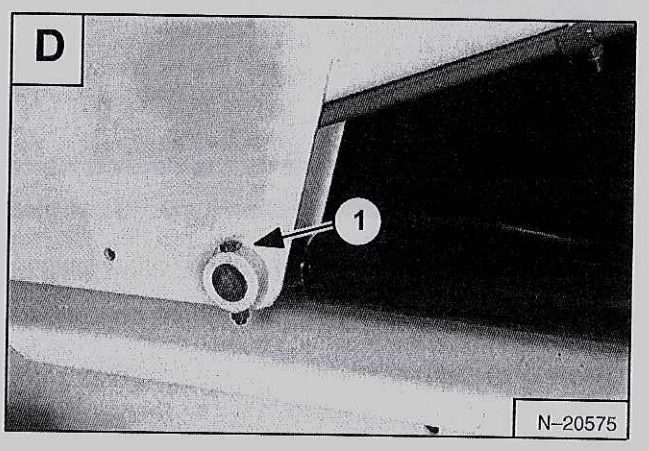
8. 250 Hours: Steering Lever Shaft (2) **[C]**.



PIVOT PINS

All lift arm and cylinder pivots have a large pin held in position with a retainer bolt and lock nut (Item 1) **[D]**.

Check that the lock nuts are tightened to 18–20 ft.–lbs. (24–27 Nm) torque.



BOB–TACH

Move the Bob–Tach levers to engage the wedges **[A]**. The levers and wedges must move freely.

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

⚠ 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

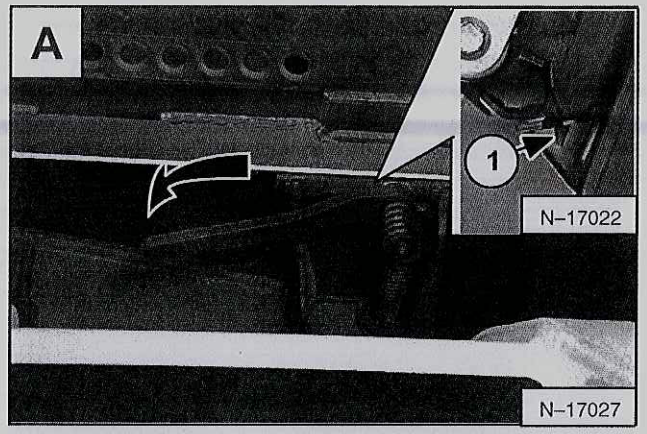
The spring loaded wedge (Item 1) **[A]** must contact the lower edge of the hole in the attachment (Item 1) **[B]** and **[C]**.

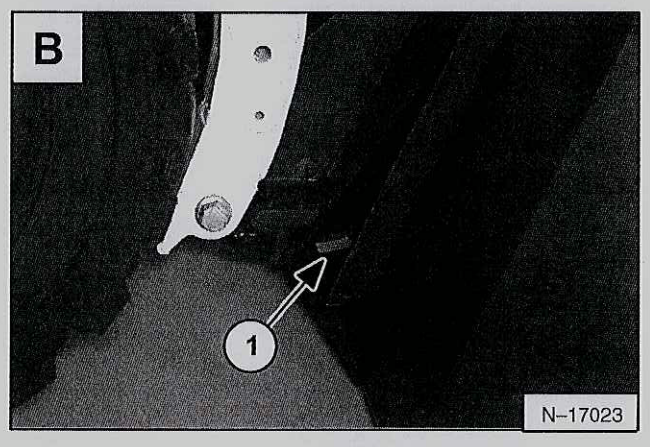
If the wedge does not contact the lower edge of the hole **[B]** and **[C]**, the attachment will be loose and can come off the Bob–Tach.

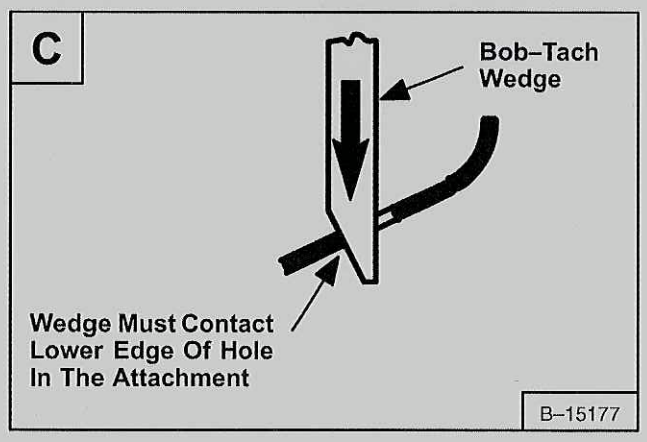
Inspect the mounting frame on the attachment and the Bob–Tach, linkages and wedges for excessive wear or damage **[D]**. Replace any parts that aredamaged, bent, or missing. Keep all fasteners tight.

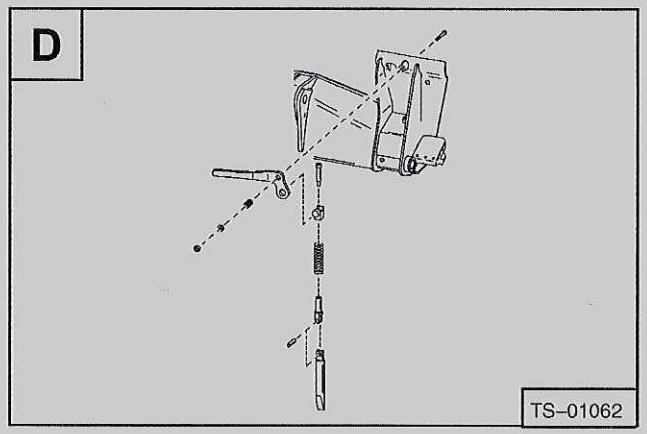
Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges (See *SERVICE SCHEDULE*, Page 39 and *LUBRICATION OF THE BOBCAT LOADER*, Page 69).









Page 71 - BOBM0730-03-B1U01 - 11/29/2013 06:58:23 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)
Troubleshooting Chart 75

DELUXE INSTRUMENTATION PANEL SETUP
Deluxe Panel Upgrade 80
Icon Identification 80
Deluxe Panel Setup 80
Passwords 81
Changing the Passwords 81

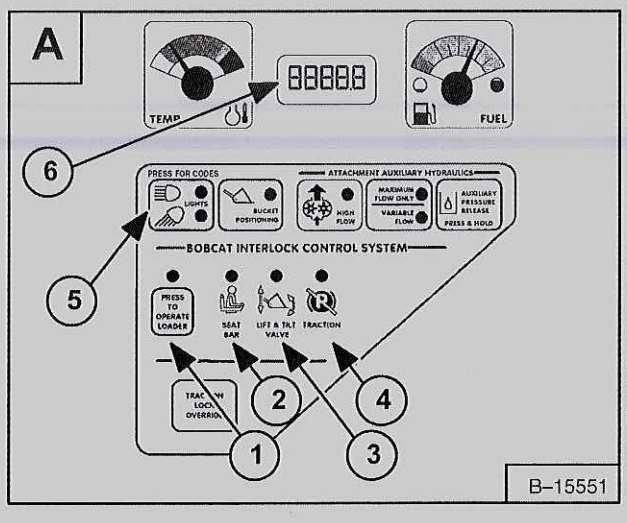
DELUXE INSTRUMENTATION SERVICE CODES 76

BOBCAT INTERLOCK CONTROL SYSTEM (BICS™)

Troubleshooting Chart

The following chart shows the efects which can happen to the loader, and the probable causes when the BICS Instrument Panel lights are of. See **[A]** for location of BICS lights and Icons. Have service procedures performed ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL.

Press and hold LIGHTS Button (Item 5**[A]** for twoseconds to view SERVICE CODES in the HOURMETER / CODE DISPLAY (Item 6) **[A]**. If more than one SERVICE CODE is present, the codes will scroll on the HOURMETER / CODE DISPLAY.



Indicator Light	Light ON	Light OFF	Effect on Operation of Loader When Light is OFF	SERVICE CODE Means System Error (See Your Bobcat Dealer for Service) No. of Flashes	Service Code	Causes
(1) PRESS TO OPERATE LOADER	PRESS TO OPERATE LOADER Button is pressed.	PRESS TO OPERATE LOADER Button is not pressed.	Lift, tilt and traction functions will not operate.			
(2) SEAT BAR	Seat Bar is down.	Seat Bar is up.	Lift and tilt functions will not operate.	2	11–05	Seat Bar sensor circuit shorted to battery voltage*
				3	11–06	Seat Bar sensor circuit shorted to ground
(3) LIFT & TILT VALVE	Control valve can be used.	Control valve cannot be used.	Lift, tilt and traction functions will not operate.	1	17–07	Valve output circuit is open.
				2	17–05	Valve output circuit shorted to battery voltage*
				3	17–06	Valve output circuit shorted to ground
				3	17–06	Controller not grounded or intermittent ground.
(4) TRACTION	Loader can be moved forward & backward.	Loader cannot be moved forward and backward.	Loader cannot be moved forward and backward.	1	16–07	Traction lock hold solenoid circuit is open.
				2	16–05	Traction lock hold solenoid circuit shorted to battery voltage*
				3	16–06	Traction lock hold solenoid circuit shorted to ground.
				5	15–02	Traction lock pull solenoid circuit is shorted to battery voltage* – ERROR ON (Should be OFF)
				6	15–03	Traction lock pull solenoid circuit ERROR OFF (Should be ON)
SEAT BAR (2) LIFT & TILT VALVE (3) TRACTION (4)				Continuous Flashing	03–09 03–10	System voltage low System voltage high

NOTES:
Multiple SERVICE CODES and/or Abnormal Symptoms can be caused by corroded or loose ground. Check grounds and both battery connections.

ERROR OFF = shorted to ground or bad fuse, faulty wiring, faulty open relay, no voltage from relay to controller.
ERROR ON = shorted to battery voltage, faulty wiring, faulty closed relay.

* Normal BICS operating voltage is less than the electrical system voltage.

Page 95 - BOBM073077-03-B1001 - 11/29/2013 06:58:24 - Printed by Ken Cook Co. - eXprint.exe (v2.28.1 10/03/2012)

DELUXE INSTRUMENTATION SERVICE CODES

The hourmeter display on the Left Instrument Panel can change from engine hours to SER VICE CODES (See at right.). These CODES help your dealership analyze monitored functions of your Bobcat loader. Some service procedures must be performed ONL Y BY QUALIFIED BOBCAT SERVICE PERSONNEL.

Press and hold LIGHTS Button (Item 5) **[A]** (Page 75) for two seconds to view SERVICE CODES in the display (Item 6) **[A]** (Page 75). If more than one SER VICE CODE is present, the codes will scroll on the HOURMETER / CODE DISPLAY.

The following word errors may also be displayed:

REPLY One or both instrument panel(s) not communicating with the controller.

INPUT The controller not communicating with the left instrument panel.

CODE The controller is asking for a password. (*Deluxe Panel* Only)

ERROR The wrong password was entered. (*Deluxe Panel* Only)

Number Codes List

CODE	DESCRIPTION	CODE	DESCRIPTION
01–16	Air filter not connected	09–09	Fuel level low
01–17	Air filter plugged	09–21	Fuel level out of range high
		09–22	Fuel level out of range low
02–16	Hydraulic charge filter not connected		
02–17	Hydraulic charge filter plugged	11–05	Seat bar sensor short to battery
		11–06	Seat bar sensor short to ground
03–09	Battery voltage low		
03–10	Battery voltage high	12–21	Front auxiliary PWM switch out of range high
03–11	Battery voltage extremely high	12–22	Front auxiliary PWM switch out of range low
03–14	Battery voltage extremely low	12–23	Front auxiliary PWM switch not calibrated
03–22	Battery voltage out of range low		
		13–05	Fuel shut–off solenoid secondary short to battery
04–09	Engine oil pressure low	13–06	Fuel shut–off solenoid secondary short to ground
04–14	Engine oil pressure extremely low	13–07	Fuel shut–off solenoid secondary open circuit
04–15	Engine oil pressure shutdown level		
04–21	Engine oil pressure out of range high	14–02	Fuel shut–off solenoid primary error ON
04–22	Engine oil pressure out of range low	14–03	Fuel shut–off solenoid primary error OFF
05–09	Hydraulic charge pressure low	15–02	Traction lock pull solenoid primary error ON
05–14	Hydraulic charge pressure extremely low	15–03	Traction lock pull solenoid primary error OFF
05–15	Hydraulic charge pressure shutdown level		
05–21	Hydraulic charge pressure out of range high	16–05	Traction lock hold solenoid secondary short to battery
05–22	Hydraulic charge pressure out of range low	16–06	Traction lock hold solenoid secondary short to ground.
		16–07	Tracktion lock hold solenoid secondary open circuit.
06–10	Engine speed high		
06–11	Engine speed extremely high	17–05	Hydraulic lock valve solenoid short to battery
06–13	Engine speed no signal	17–06	Hydraulic lock valve solenoid short to ground
06–15	Engine speed shutdown level	17–07	Hydraulic lock valve solenoid open circuit
06–18	Engine speed out of range		
		18–05	Spool lock solenoid short to battery
07–10	Hydraulic oil temperature high	18–06	Spool lock solenoid short to ground
07–11	Hydraulic oil temperature extremely high	18–07	Spool lock solenoid open circuit
07–15	Hydraulic oil temperature shutdown level		
07–21	Hydraulic oil temperature out of range high	19–02	Bucket position solenoid error ON
07–22	Hydraulic oil temperature out of range low	19–03	Bucket position solenoid error OFF
08–10	Engine coolant temperature high	20–02	Two–speed solenoid error ON
08–11	Engine coolant temperature extremely high	20–03	Two–speed solenoid error OFF
08–15	Engine coolant temperature shutdown level		
08–21	Engine coolant temperature out of range high	21–02	Glow plugs error ON
08–22	Engine coolant temperature out of range low	21–03	Glow plugs error OFF

DELUXE INSTRUMENTATION SERVICE CODES (Cont'd)

Number Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
22–02	Starter output error ON	32–58	Tilt actuator reduced performance
22–03	Starter output error OFF	32–59	Lift actuator wrong direction
		32–60	Tilt actuator wrong direction
23–02	Rear base solenoid error ON	32–61	Handle lock short to ground
23–03	Rear base solenoid error OFF	32–62	Handle lock short to battery
		32–63	Pedal lock short to ground
24–02	Rear rod solenoid error ON	32–64	Pedal lock short to battery
24–03	Rear rod solenoid error OFF	32–65	Sensor supply boltage out of range
		32–66	Battery out of range
25–02	Rear auxiliary relief solenoid error ON	32–67	Switch flipped while operating
25–03	Rear auxiliary relief solenoid error OFF	32–68	Lift handle CAN error
		32–69	Control pattern switch flipped while operating
26–02	Front base solenoid error ON	32–70	Right handle Y pattern short to ground
26–03	Front base solenoid error OFF	32–71	Right handle Y pattern short to battery
27–02	Front rod solenoid error ON	33–23	Main (Bobcat Controller not programmed)
27–03	Front rod solenoid error OFF		
		34–04	Deluxe panel no communication to Bobcat controller.
28–02	Diverter solenoid error ON		
28–03	Diverter solenoid error OFF	35–02	Two–speed fan error ON
		35–03	Two–speed fan error OFF
29–02	High flow solenoid error ON		
29–03	High flow solenoid error OFF	36–48	ACD multiple controllers present
30–28	Controller memory failure	37–02	Two–speed secondary error ON
		37–03	Two speed secondary error OFF
31–28	Interrupted power failure (internal)		
		38–04	Controller in error
32–04	ACS not communicating with Bobcat controller	38–05	Left joystick X axis not calibrated
32–23	Not calibrated	38–06	Right joystick X axis not calibrated
32–31	Tilt actuator fault	38–07	Left joystick Y axis not calibrated
32–32	Failure titl actuator wiring fault	38–08	Right joystick Y axis not calibrated
32–33	Failure tilt handle wiring fault	38–09	Control pattern switch short to battery or ground
32–34	Tilt actuator not calibrated	38–11	Lift actuator not calibrated
32–35	Tilt handle/pedal not calibrated	38–12	Tilt actuator not calibrated
32–36	Lift actuator fault	38–13	Lift actuator wiring fault
32–37	Failure lift actuator wiring fault	38–14	Tilt actuator wiring fault
32–38	Failure lift handle wiring fault	38–15	Right wheel speed wiring fault
32–39	Lift actuator not in neutral	38–16	Left wheel speed wiring fault
32–40	Lift handle/pedal not in neutral	38–17	Tilt actuator reduced performace
32–41	Invalid frequency	38–18	Lift actuator reduced performance
32–49	Lift actuator short to ground	38–19	Left joystick X axis out of range high
32–50	Tilt actuator short to ground	38–20	Right joystick X axis out of range high
32–51	Lift actuator short to battery	38–21	Left joystick Y axis out of range high
32–52	Tilt actuator short to battery	38–22	Right joystick Y axis out of range high
32–53	Lift handle/pedal short to ground	38–23	Front right steering sensor out of range high
32–54	Tilt handle/pedal short to ground	38–24	Front left steering sensor out of range high
32–55	Lift handle/pedal short to battery	38–25	Rear right steering sensor out of range high
32–56	Tilt handle/pedal short to battery	38–26	Rear left steering sensor out of range high
32–57	Lift actuator reduced performace	38–27	Lift actuator short to battery

DELUXE INSTRUMENTATION SERVICE CODES (Cont'd)

Number Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
38–28	Tilt actuator short to battery	38–77	Undercurrent–front right extend steer solenoid
38–29	Left joystick X axis out of range low	38–78	Undercurrent–front right retract steer solenoid
38–30	Right joystick X axis out of range low	38–79	Undercurrent–front left extend steer solenoid
38–31	Left joyustick Y axis out of range low	38–80	Undercurrent–front left retract steer solenoid
38–32	Right joystick Y axis out of range low	38–81	Undercurrent–rear right extend steer solenoid
38–33	Front right steering sensor out of range low	38–82	Undercurrent–rear right retract steer solenoid
38–34	Front left steering sensor out of range low	38–83	Undercurrent–rear left extend steer solenoid
38–35	Rear right steering sensor out of range low	38–84	Undercurrent–rear left retract steer solenoid
38–36	Rear left steering sensor out of range low	38–85	5 Volt sensor supply 1 out of range high
38–37	5 volt sensor supply 1 out of range low	38–86	5 Volt sensor supply 2 out of range high
38–38	5 volt sensor supply 2 out of range low	38–87	Front right wheel blocked (steering mechanical failure)
38–39	Lift actuator short to ground	38–88	Front left wheel blocked (steering mechanical failure)
38–40	Tilt actuator short to ground	38–89	Rear right wheel blocked (steering mechanical failure
38–41	Tilt actuator wrong direction	38–90	Rear left wheel blocked (steering mechanical failure
38–42	Lift actuator wrong direction	38–91	Right speed sensor missing pulses
38–43	Left forward drive solenoid error ON	38–92	Left speed sensor missing pulses
38–44	Left reverse drive solenoid error ON	38–93	Unresponsive right speed sensor
38–45	Right forward drive solenoid error ON	38–94	Unresponsive left speed sensor
38–46	Right reverse drive solenoid error ON	38–98	Controller in drive calibratino mode
38–47	Front right steering solenoid error ON	38–99	Controller in wheel position calibration mode
38–48	Front left steering solenoid error ON		
38–49	Rear right steering solenoid error	39–04	Left joystick switches no communication to Bobcat controller
38–50	Rear left steering solenoid error ON		
38–51	Steering pressure solenoid error ON	40–04	Right joystick switches no communication to Bobcat controller
38–52	Back–up alarm error ON		
38–53	Left forward drive solenoid error OFF	44–02	Horn error ON
38–54	Left reverse drive solenoid error OFF	44–03	Horn error OFF
38–55	Right forward drive solenoid error OFF		
38–56	Right reverse drive solenoid OFF	45–02	Right blinker error ON
38–57	Front right extend steering solenoid error OFF	45–03	Right blinker error OFF
38–58	Front right retract steering solenoid error OFF		
38–59	Front left extend steering solenoid error OFF	46–02	Left blinker error ON
38–60	Front left retract steering solenoid error OFF	46–03	Left blinker error OFF
38–61	Rear right extend steering solenoid error OFF		
38–62	Rear right retract steering solenoid error OFF	47–21	8 volt sensor supply out of range high
38–63	Rear left extend steering solenoid error OFF	47–22	8 volt sensor supply out of range low
38–64	Rear left retract steering solenoid error OFF		
38–65	Steering pressure solenoid error OFF	48–02	Front light relay error ON
38–66	Back–up alarm error OFF	48–03	Front light relay error OFF
38–67	CAN communication time out		
38–68	Wheel angles (alignment) not calibrated	49–02	Rear light realy error ON
38–69	Lift & tilt actuators calibration fault	49–03	Rear light relay error OFF
38–70	Recovery mode		
38–71	Battery out of range	60–21	Rear aux. control out of range hight
38–72	Drive pump not calibrated	60–22	Rear aux. control out of range low
38–73	Steering mode/drove mode switch flipped while operating	60–23	Rear aux. control not returning to neutral
38–74	Uncommanded right wheel speed error ON		
38–75	Uncommanded left wheel speed error ON	64–02	Switched power realy error ON
38–76	Undercurrent–steer pressure solenoid	64–03	Switched power relay error OFF

DELUXE INSTRUMENTATION SERVICE CODES (Cont'd)

Number Codes List (Cont'd)

CODE	DESCRIPTION	CODE	DESCRIPTION
74–72	Bob in boot code		
74–73	Left hand panel system RX error		
80–02	ACD output 'A' error ON		
80–03	ACD output 'A' error OFF		
81–02	ACD output 'B' error ON		
81–03	ACD output 'B' error OFF		
82–02	ACD output 'C' error ON		
82–03	ACD output 'C' error OFF		
83–02	ACD output 'D' error ON		
83–03	ACD output 'D' error OFF		
84–02	ACD output 'E' error ON		
84–03	ACD output 'E' error OFF		
85–02	ACD output 'F' error ON		
85–03	ACD output 'F' error OFF		
86–02	ACD output 'G' ON		
86–03	ACD output 'G' OFF		
87–02	ACD output 'H' error ON		
87–03	ACD output 'H' OFF		
90–02	Service tool output 'C' error ON		
90–03	Service tool output 'C' error OFF		
91–02	Service tool output 'D' error ON		
91–03	Service tool output 'D' error OFF		
92–02	Service tool output 'E' error ON		
92–03	Service tool output 'E' error OFF		
93–02	Service tool output 'F' error ON		
93–03	Service tool output 'F' error OFF		

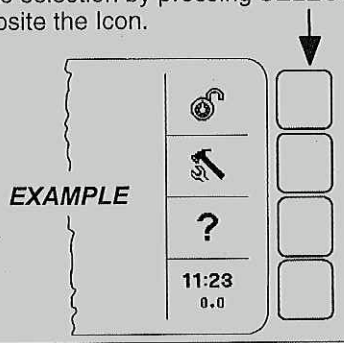
DELUXE INSTRUMENTATION PANEL SETUP

Deluxe Panel Upgrade

If you upgrade from a Standard Panel to a Deluxe Panel, press and hold the RUN / ENTER Button for at least 2 seconds to allow the system to recognize the upgrade. The home screen will then be displayed.

Icon Identification

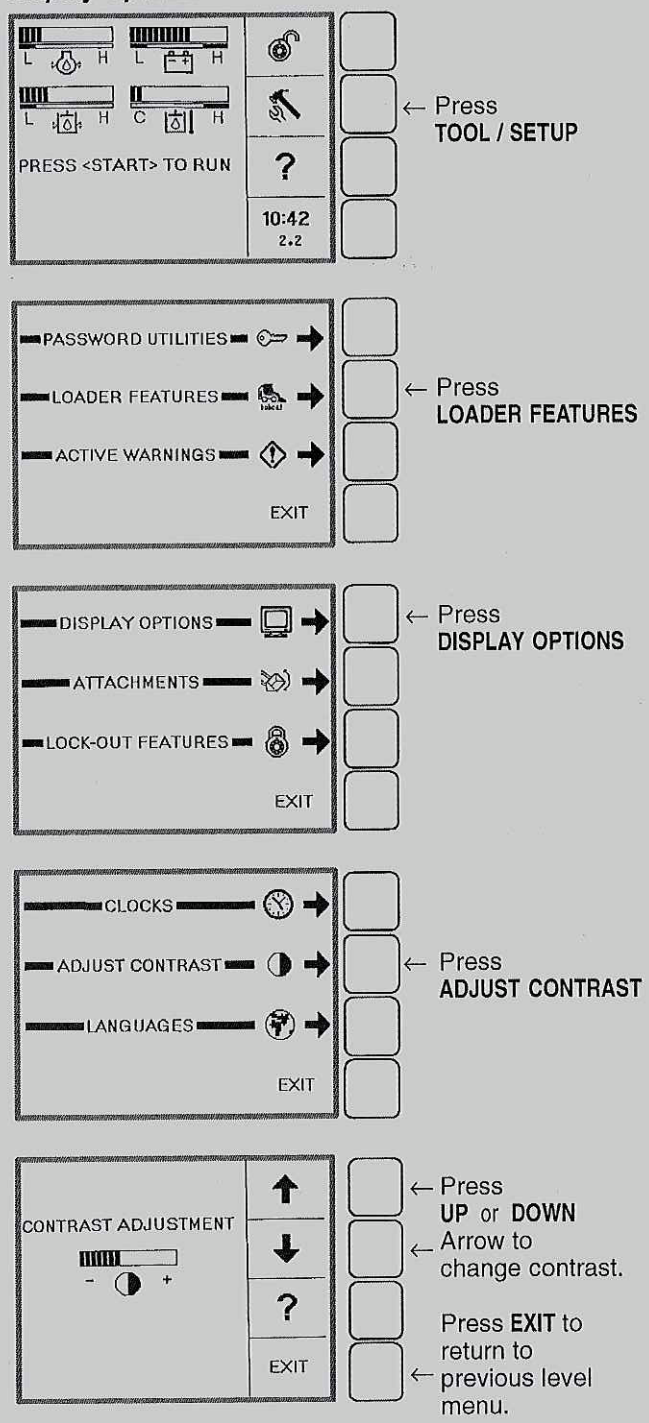
Make selection by pressing SELECTION BUTTON opposite the Icon.



Icon	Description
	LOCK / UNLOCK: Allows machine to be locked / unlocked. A valid password will need to be entered at startup to run a locked machine. You must lock machine to activate security system.
	TOOL / SETUP: Access system options. Use to set clock, check system warnings, select language, set passwords, etc.
?	**HELP:** Access help on current menu item.
EXIT	**EXIT** returns you to previous level menu.
11:23 0.0	**CLOCK / JOB CLOCK:** Press to clear or lock job clock; TOOL / SETUP to set time.
	UP ARROW: Goes backward one screen. **DOWN ARROW:** Goes forward one screen.
	OUTLINE ARROWS: No screen available (backward / forward).
	SELECTION ARROW: Use to select menu item.
NEXT	Goes to the NEXT screen in series. EXAMPLE: The next Active Warning screen.
INFO	Goes to more information about an attachment.
YES/NO	Answer yes / no to current setup question.
CLEAR	Removes previously installed password.
SET	Set accepts current installed password.

Deluxe Panel Setup

Display Options



***ADJUST CONTRAST SHORTCUT:* Press either the left or right arrow keys to adjust the contrast lighter or darker.**

DELUXE INSTRUMENTATION PANEL SETUP (CONT'D)

All new machines with Deluxe Instrumentation arrive at Bobcat Dealerships with the panel in locked mode. This means that a password must be used to start the engine.

Passwords

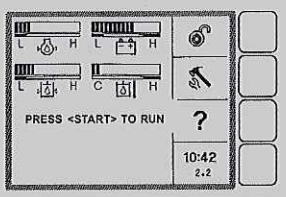
For security purposes, your dealer may change the password and also set it in the locked mode. Your dealer will provide you with the password.

Master Password:
A permanent, randomly selected password set at the factory. Allows full use of the loader and to setup the Deluxe Panel.

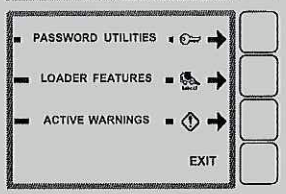
Owner Password:
Allows for full use of the loader and to setup the Deluxe Panel. Owner can select a password to allow starting & operating the loader and modify the setup of the Deluxe Panel. Owner should change the password as soon as possible for security of the loader.

User Password:
Allows starting and operating the loader; cannot change password or any of the other setup features.

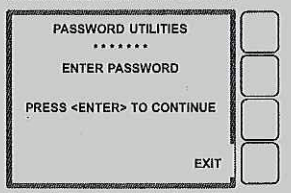
Changing the Password | **Right Instrument Panel Display Screen**



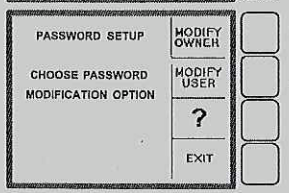
← Press **TOOL / SETUP**



← Press **PASSWORD UTILITIES**



Use the keypad to enter the OWNER PASSWORD. Press ENTER to continue.

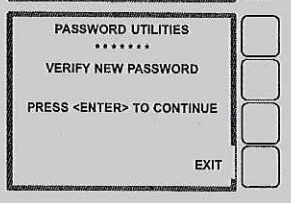


← Press **MODIFY OWNER** (See Below)
← or **MODIFY USER** (See at Right)

TO MODIFY OWNER



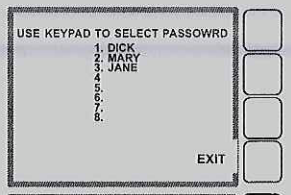
Use the keypad to enter the New OWNER PASSWORD. (One to ten digits) Press ENTER to continue.



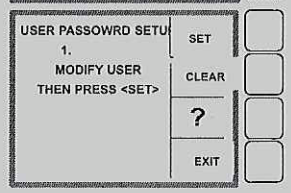
Enter the New OWNER PASSWORD again. Press ENTER to continue.

Changing The Password (Cont'd)

TO MODIFY USER



Select the number for the USER PASSWORD that you want to change.



Use the keypad to enter the new **Password.** (One to ten digits)

Press **Set** to Continue.

(To change an existing passoword, press CLEAR first.)

Keep pressing EXIT to return to beginning screen.

More EXAMPLES:

Clocks

TOOL / SETUP
LOADER FEATURES.
DISPLAY OPTIONS
CLOCKS
SET CLOCK
Use the keypad to set time.
Press **RUN / ENTER** to set clock.
Press **EXIT** to return to previous level menu.

RESET JOB CLOCK (Password required)
Press **CLEAR** to reset job clock to zero.
Press **LOCK / UNLOCK** to unlock.
Enter Password and press **RUN / ENTER**.

Languages

TOOL / SETUP
LOADER FEATURES.
DISPLAY OPTIONS
LANGUAGES
Select the language, press **RUN / ENTER**.
Press **EXIT** to return to previous level menu.

Vitals (Monitor engine, hydraulic / hydrostatic, electrical functions when engine is running.)

TOOL / SETUP
LOADER FEATURES.
VITALS
Press **SELECTION ARROW** to select METRIC or ENGLISH **(M/E)** readouts

You can monitor real–time readouts of:
Engine Oil Pressure
Engine Coolant Temperature
Hydraulic Charge Pressure
Hydraulic Oil Temperature
System Voltage
Engine Speed

The Display Panel is easy to use. Continue to set your own preferences for running / monitoring your Bobcat loader.

Enter **Password** on Keypad

81

763, 763H Bobcat Loader
Operation & Maintenance Manual

Page 101 - BOBMU/3077-03-B1001 - 11/29/2013 06:58:24 - Printed by Ken Cook Co. - exprint.exe (V2.28.1 10/03/2012)

MACHINE SIGN TRANSLATIONS

IMPORTANT (6560573) . . . . . 85. .
SERVICE SCHEDULE (6718398) . . . . . 87.
WARNING (6718698 Foot Pedals) . . . . . 88.
WARNING (6718699 Hand Controls) 89
WARNING/DANGER (6579528, 6577754, 6579639, 6579509) 90
DANGER (6717343) . . . . . 91. .
WARNING (6715944) . . . . . 91. .

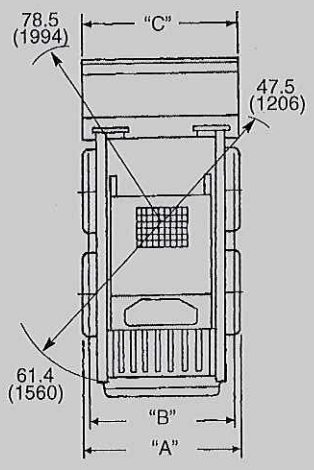
MACHINE SIGNS (DECALS)

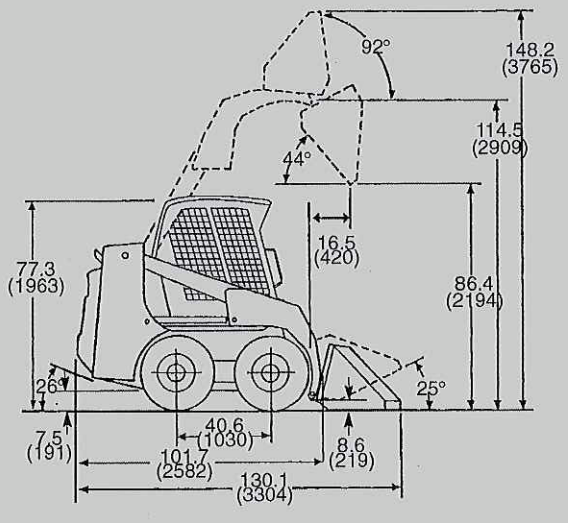
Machine signs (decals) are an esential part of the loader. (See Page xiv & xv.) This section provides French and Spanish translations of the machine signs that are in English.

SKID STEER LOADER SPECIFICATIONS

- Dimensions are given for loader equipped with standard dirt bucket and may vary with other bucket types. All dimensions are shown in inches. Respective metric dimensions are in millimeters enclosed by parentheses.
- Where applicable, specifications conform to SAE or ISO standards and are subject to change without notice.

Dimensional Specifications:





6707545

TIRE DESCRIPTION	"A"	"B"
10–16.5 Bobcat Heavy Duty	60.0" (1524mm)	48.5"(1232mm)
10–16.5 Bobcat Heavy Duty	66.0" (1676mm)	54.5"(1385mm)
31x15.5–15 Ultra Grip Lug Tread	66.0" (1676mm)	50.0"(1270mm)
6.5–16 Solid Tire	60.0" (1524mm)	60.0"(1524mm)
10–31 Bobcat Solid Tire	66.0" (1676mm)	61.0"(1549mm)
7.5–15 AirBoss Segmented	60.0" (1524mm)	56.25"(1429mm)
10–16.5 AirBoss Segmented	64.0" (1626mm)	59.0"(1499mm)

BUCKET WIDTH	"C"
62"	62.0" (1575mm)
68"	68.0" (1727mm)
74"	74.0" (1880mm)

Changes of structure or weight distribution of the loader can cause changes in control and steering response and can cause failure of the loader parts.

Performance Specifications:

Rated Operating Capacity (SAE) ..... 1500 lbs. (680 kg)
Tipping Load (SAE) ..... 3000 lbs. (1361 kg)
Operating Weight ..... 5368 lbs. (2435 kg) (w/ 68 in CI Bkt)
Travel Speed ..... 0–7.0 MPH (0–11,3 km/hr)

Engine:

Make/Model KUBOTA/V2203–EB
Fuel/Cooling ..... Diesel/Liquid
Horsepower (SAE Net) ... 46 HP (34 kW)
Number of Cylinders ..... Four
Lubrication ..... Pressure System W/Filter
Air Cleaner ..... Dry replaceable cartridge w/safety element

Loader Controls:

Steering ..... Two hand levers
Loader Hydraulics ..... Separate foot pedals (or hand controls – Option)
Auxiliary Hydraulics ..... Electric switches in steering levers
Parking Brake ..... Foot operated pedal

Drive System:

Main Drive ..... Hydrostatic 4 wheel drive
Transmission ..... Infinitely variable tandem hydrostatic piston pumps, driving 2 fully reversing hydrostatic motors
Final Drive ..... #80 HS endless roller chain and sprockets in sealed chaincase with oil lubrication.

Hydraulic System

Engine driven, gear type 15.6 GPM (59 L/m) @ 2850 RPM
w/ High Flow (Option) . 25.0 GPM (94 L/m) @ 2850 RPM
System relief @ quick couplers – 2900–3000 PSI (200–206 BAR)

Electrical System:

Alternator ..... 12–Volt, 55 or 90 amp, open, neg. ground
Battery ..... 12 Volt – 600 CCA @ 0°F (–18°C)

Standard Instrumentation Panel

Hourmeter, temperature and fuel gauges, audible alarm, and visual warning for engine and hydraulic / hydrostatic functions.

Deluxe Instrumentation Panel (Option)

Hourmeter, temperature and fuel gauges, audible alarm, and visual warning for engine and hydraulic / hydrostatic functions. Display panel for monitoring loader functions. Programmable setup for Owner / User preferences.

Capacities:		Type:
Fuel Tank	14 gals. (53 L)	Diesel #2 or #1
Eng. Cooling System ...	13 qts. (12,3 L) ..	53% Propylene Glycol / 47% Water mixture
Engine Oil Change w/Filter	7.5 qts (7,1 L)	See Chart Page 54
Hyd./Hydros. Res.	6 gals. (23,0 L)	
Hyd./Hydros. System ...	8.5 gals. (32,2 L)	
Chaincase Reservoir ...	9 gals. (34,0 L)	

– Above 0°F (–18°C) use Bobcat Fluid 6563328 or SAE 10W–30, or 10W–40 SE
– Bel. 0°F (–18°C) use 5W–30

BOBCAT APPROVED ATTACHMENTS & ACCESSORIES

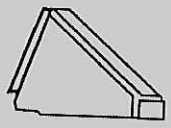
These and other attachments are approved for use on this model Bobcat loader . Do not use unapproved attachments. Attachments not manufactured by Bobcat may not be approved.

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

See your Bobcat dealer for more details on the these and other attachments and field accessories.

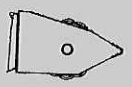
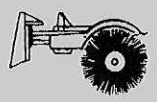
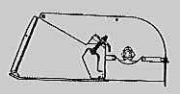
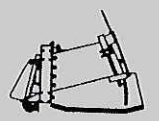
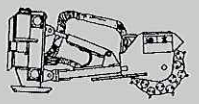
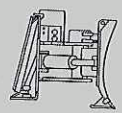
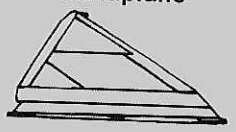
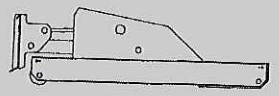
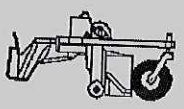
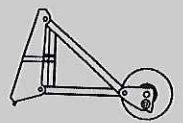
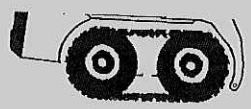
Increase the versatility of your Bobcat Loader with a variety of bucket styles and sizes.

BUCKETS AVAILABLE



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

ATTACHMENTS

Vibratory Roller  Pack and level ground. Surface preparation for concrete, asphalt or other.	**Angle Broom**  Use it to sweep driveways, sidewalks, parking lots, etc.	**Sweeper** (Gutter Brush Available)  Sweeps and collects debris with one attachment.	**Planer**  Removes asphalt surfaces for repair, replacement or utility work.
Scarifier  Prepares hard packed ground for digging or landscaping.	**Stump Grinder**  Remove stumps and roots. Ideal for landscapers.	**Pallet Fork And Hydraulic Pallet Fork**  For handling baled or palleted material.	**Tilt Tatch**  Make buckets and pallet forks more versitile with side tilt action.
Dozer Blade  Turn your loader into a mini–crawler with 6–way blade.	**Snow Blade**  Clean sidewalks, driveways, parking lots.	**IndustrialGrapple** (Bucket or Fork)  Ideal for handling scrap, waste, or pipe.	**Utility Fork** (Grapple Available)  Ideal for handling bundled material, loose straw, and manure.
Tiller  Great for breaking up clumps, mixing compost, tilling.	**3–Point Hitch**  Use for 3–point mounted attachments.	**Landplane**  Remove large clumps and rocks as you level and grade.	**Brushcat Rotary Cutter**  Great for clearing brush, saplings and grass.
Power Rake  Separate rocks & debris, grade, level, prepare for landscaping.	**Sod Layer** (With Optional Sod Roller)  Carry and lay a roll of sod. Cut to length from the operator's seat.	**Combination Bucket**  Heavy duty bucket for dozing, grappling, digging, leveling & loading.	**Tracks**  Better performance in sand, snow and mud.

exprint.exe (v2.28.1 10/03/2012)

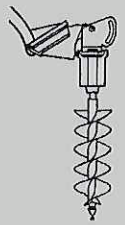
BOBCAT APPROVED ATTACHMENTS & ACCESSORIES (Cont'd)

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

See your Bobcat dealer for more details on the these and other attachments and field accessories.

ATTACHMENTS (Cont'd)

Auger



Dig 6"–36" holes with ease and accuracy.

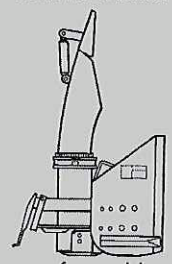
Rear Stabilizer

(Use with backhoe or Tree Spade)



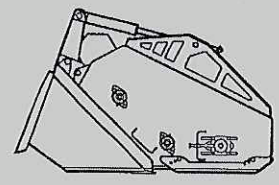
Increase your backhoe or tree spade performance and versatility.

Snow Blower



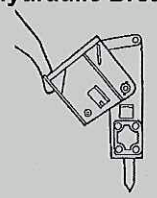
Clear snow from driveways, sidewalks, etc.

Landscape Rake



Break up lumpy soil, pick up rocks. Ground preparation for seeding, sodding, leveling.

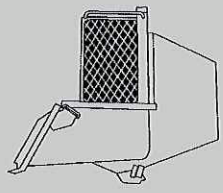
Hydraulic Breaker



Break up concrete quickly and easily.

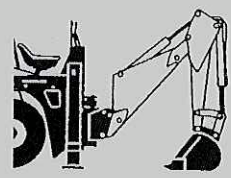
SPECIAL APPLICATIONS KIT WHICH INCLUDES A 1/2 INCH LEXAN FRONT DOOR WITH 1/4 INCH TOP AND REAR WINDOWS MUST BE USED WHEN OPERATING THE BOB–TACH MOUNTED HYDRAULIC BREAKER.

Concrete Mixer



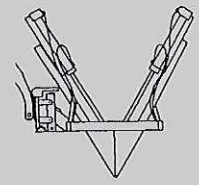
Mix, transport and dump concrete right where you need it.

Backhoe



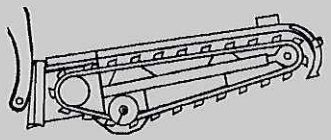
Designed for high production digging.

Tree Transplanter



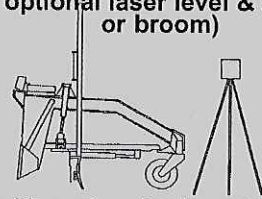
Dig and load trees for transplanting.

Trencher



Versatile trenching ability for utility lines, etc.

Grader (w/ optional laser level & scarifier or broom)



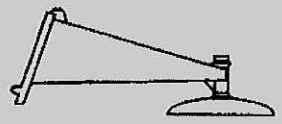
Use with grader attachment to increase preparation accuracy.

Ejector Bucket



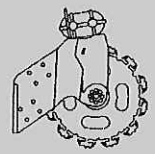
Pushes loads out of bucket to improve cycle times; loads material higher & fills to center of dump trucks.

Super Scraper



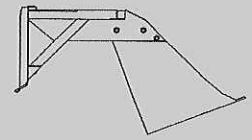
Remove stubborn, packed–on material such as mud, snow and ice from driveways, sidewalks, parking lots where build–up occurs.

Trench Compactor



Compress soil after lines have been installed in your yard.

Digger



Digs in both forward and reverse, trenches, removes rocks and stumps and more.

Dumping Hopper



Saves time by reducing trips to the dumpsite. Mounts like a bucket on your Bobcat loader.