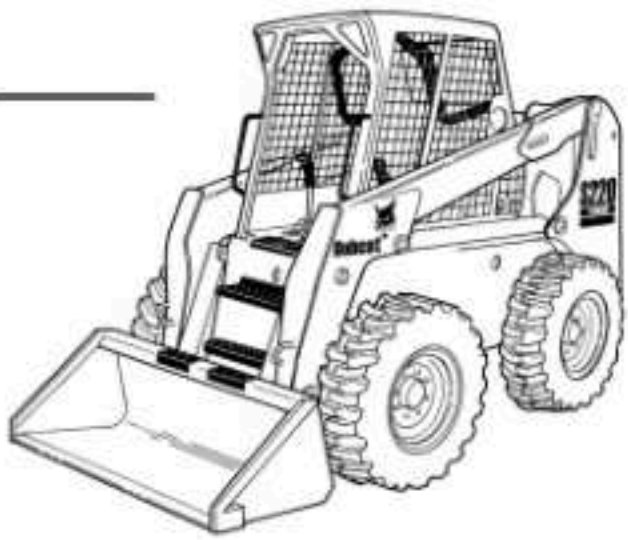
S220
TURBO

S220
TURBO
HIGH FLOW

Bobcat®

Operation & Maintenance Manual

S/N 526214400 & Above
S/N 526312100 & Above



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS)

6904176 (2-06) Revised (12-06) (2)

Ingersoll Rand
Compact Vehicle Technologies

Printed in U.S.A.

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REFERENCE INFORMATION

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

Loader Serial Number

Engine Serial Number

NOTES:

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:

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

Bobcat Company Europe
Dréve Richelle 167
B-1410 WATERLOO
Belgium

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FOREWORD

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

BOBCAT COMPANY IS ISO9001:2000 CERTIFIED V

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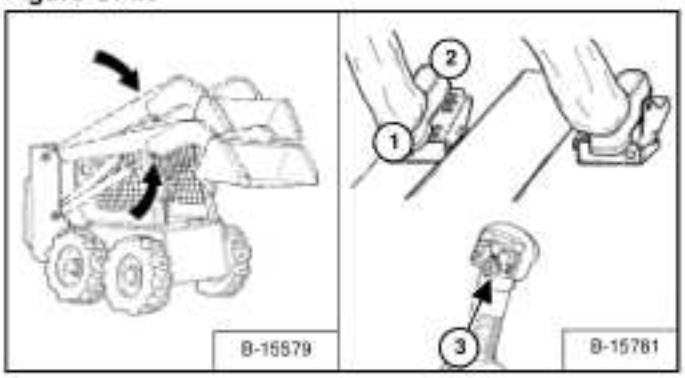
HYDRAULIC CONTROLS

Standard Controls (Also ACS in Foot Pedal Mode)

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

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

Figure OI-23



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

Push the heel (Item 1) **[Figure OI-23]** of the pedal to raise the lift arms.

Push the toe (Item 2) **[Figure OI-23]** of the pedal to lower the lift arms.

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

Push the toe (Item 2) **[Figure OI-23]** of the pedal all the way forward until it locks into the float position.

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

Raise the lift arms to disengage the float position.

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

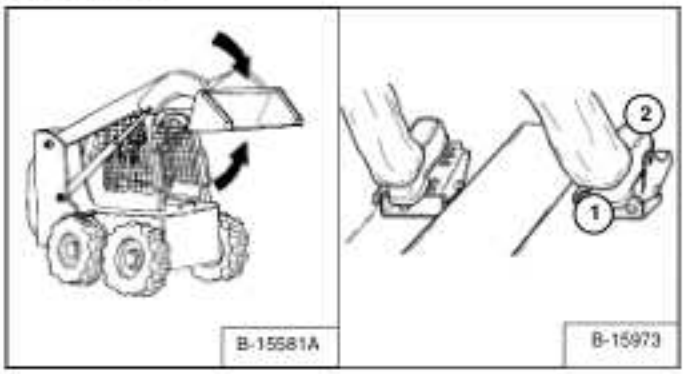
Press and hold the Float button (Item 3) **[Figure OI-23]**.

Push the toe (Item 2) **[Figure OI-23]** of the pedal forward to lower the lift arms. Then release the float button.

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

Raise the lift arms to disengage the float position.

Figure OI-24



Tilt Operation - **(Right Pedal)**

Push the heel (Item 1) **[Figure OI-24]** of the pedal to tilt the bucket backward.

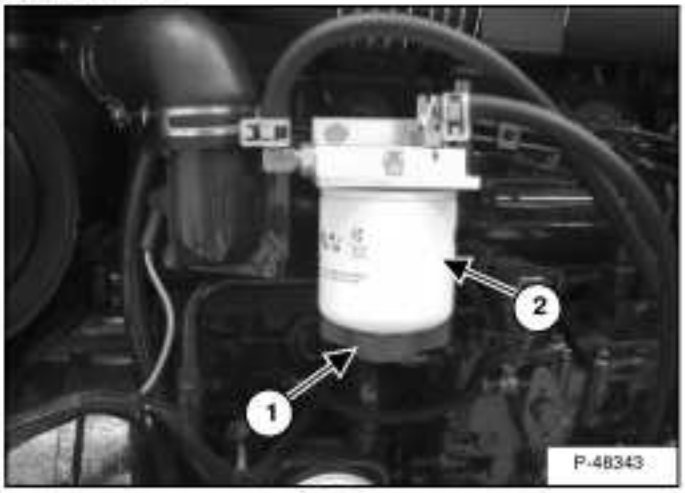
Push the toe (Item 2) **[Figure OI-24]** of the pedal to tilt the bucket forward.

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Fuel Filter

For the service interval for removing water from, or replacing the fuel filter (See SERVICE SCHEDULE on Page PM-5.)

Figure PM-30



Loosen the drain (Item 1) **[Figure PM-30]** at the bottom of the filter element to remove water from the filter.

Remove the filter element (Item 2) **[Figure PM-30]**.

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

Remove air from the fuel system. (See Removing Air From The Fuel System on Page PM-18.)

⚠ WARNING

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

W-2103-1285

Removing Air From The Fuel System

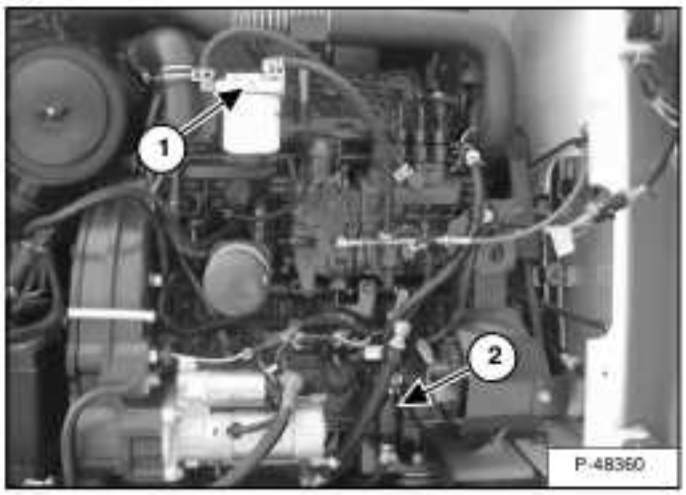
After replacing the filter element or when the fuel tank has run out of fuel, the air must be removed from the fuel system before starting the engine.

⚠ WARNING

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

Figure PM-31



Open the vent (Item 1) **[Figure PM-31]** on the fuel filter housing.

Squeeze the hand pump (priming bulb) (Item 2) **[Figure PM-31]** until fuel flows from the vent with no air bubbles.

Close the vent (Item 1) **[Figure PM-31]**.

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LOADER SPECIFICATIONS (S220) (CONT'D)

Performance

Rated Operating Capacity (SAE)	2200 lb. (998 kg)
Rated Operating Capacity (SAE) With Counterweight	2300 lb. (1043 kg)
Tipping Load (SAE Rating)	4400 lb. (1996 kg)
Operating Weight	7370 lb. (3343 kg)
SAE Breakout Force - Lift	5500 lbf. (24465 N)
SAE Breakout Force - Tilt	6550 lbf. (29136 N)
Axle Torque	5957 ft.-lb. (264987 N)
Travel Speed - Single Speed Loader - Two-Speed Loader (Opt.) Low/High	 6.9 mph (11,1 km/hr.) 6.9 mph (11,1 km/hr.) / 12.0 (19,3 km/hr.)

Controls

Vehicle Steering	Direction and speed controlled by two hand levers *or* optional joysticks
Loader Hydraulics - Lift and Tilt - Front Auxiliary (Std.) - Rear Auxiliary (Option)	 Controlled by separate foot pedals *or* optional Advanced Control System (ACS) *or* Selectable Joystick Control (SJC) Controlled by electrical switch on Right Hand steering lever Controlled by electrical switch on Left Hand steering lever
Auxiliary Pressure Release	Pressure relieved through quick couplers. Push couplers in, hold for 5 seconds.
Engine	Hand lever speed control; key-type starter switch (*or* optional keyless start) and shutdown
Starting Aid	Intake Air Heater automatically activated as needed by Instrument Panel
Service Brake	Two independent hydrostatic systems controlled by two hand operated steering levers
Secondary Brake	One of the hydrostatic transmissions
Parking Brake (Std.)	Mechanical disc, hand operated rocker switch on instrument panel
Parking Brake (Two-Speed Option)	Spring applied pressure release multi-disk brake activated by rocker switch in instrument panel

Engine

Make/Model	Kubota V3300-DI-T Turbo-Charged
Fuel/Cooling	Diesel/Liquid
Horsepower, Maximum	74.9 HP (55.9 kW) @ 2400 RPM
Maximum Governed RPM	2600 RPM
Torque, Maximum	200.6 lbf.-ft. (272,0 Nm) @ 1400 RPM
Number of Cylinders	4
Displacement	202.5 cu. in. (3,138 L)
Bore/Stroke	3.86/4.33 (98mm/110mm)
Lubrication	Pressure System with Filter
Crankcase Ventilation	Open
Air Cleaner	Dry replaceable paper cartridge with safety element
Ignition	Diesel-Compression
Engine Coolant	Propylene Glycol / Water Mixture
Starting Aid	Intake Air Heater

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Safe Operation Is The Operator's Responsibility

Safety Alert Symbol

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

WARNING

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

W-2001-1285

IMPORTANT

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

I-2019-0284

WARNING

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

W-2044-1285

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

Check all of the items on the Bobcat Service Schedule Decal under the 8-10 hour column or as shown in the Operation & Maintenance Manual.

Safe Operation Needs A Qualified Operator

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

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, Safety Manual and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.
- Operator Training Courses are available from your Bobcat dealer in English and Spanish. They provide information for safe and efficient equipment operation. Safety videos are also available.
- Service Safety Training Courses are available from your Bobcat dealer. They provide information for safe and correct service procedures.

Know the Work Conditions

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

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