

EN



Bobcat®

Operation & Maintenance Manual



B900 Backhoe Loader

S/N B4UB11001 & Above



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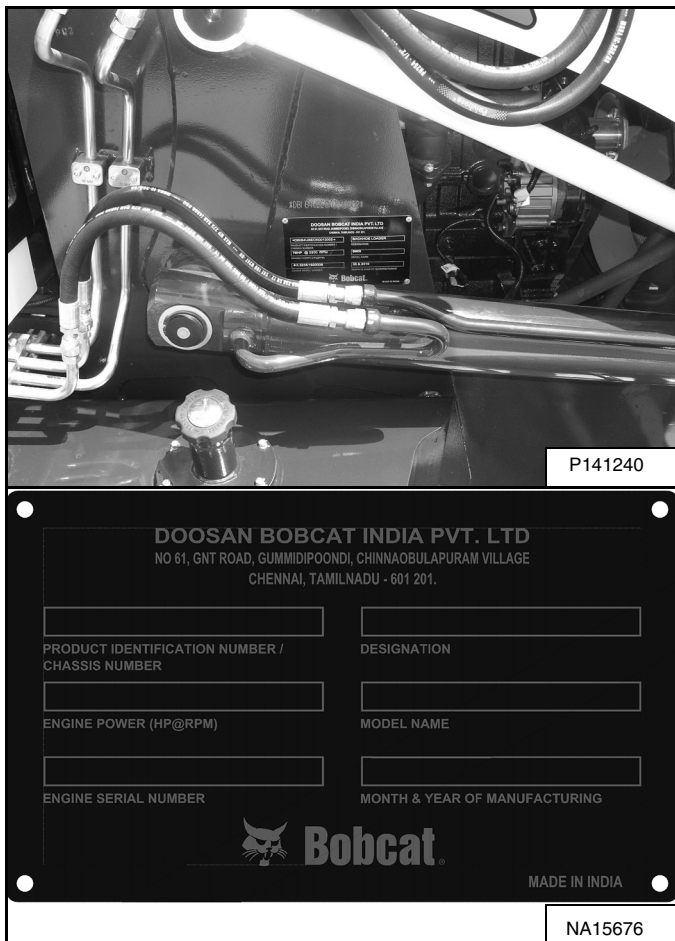
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SERIAL NUMBER LOCATION

Always use the serial number of the backhoe 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

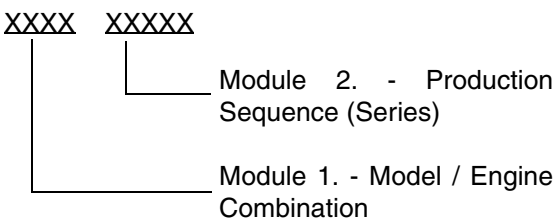
Backhoe Loader Serial Number

Figure 1



The backhoe loader serial number plate is located under the loader lift arm on the right-hand side.

Explanation of the backhoe loader Serial Number:

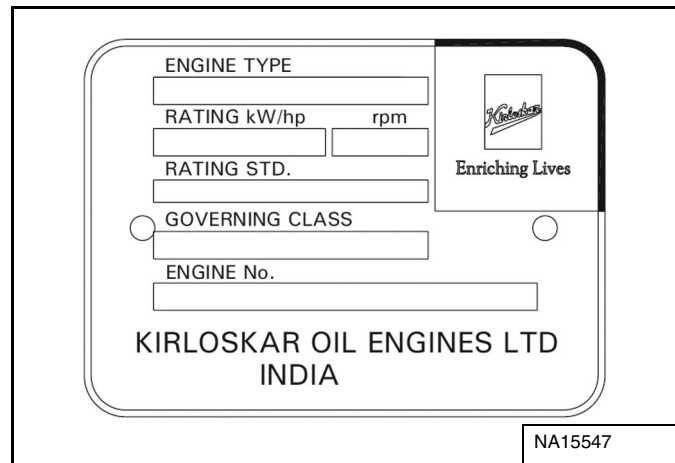


1. The four digit Model / Engine Combination Module number identifies the model number and engine combination.

2. The five digit Production Sequence Number identifies the order in which the telescopic handler is produced.

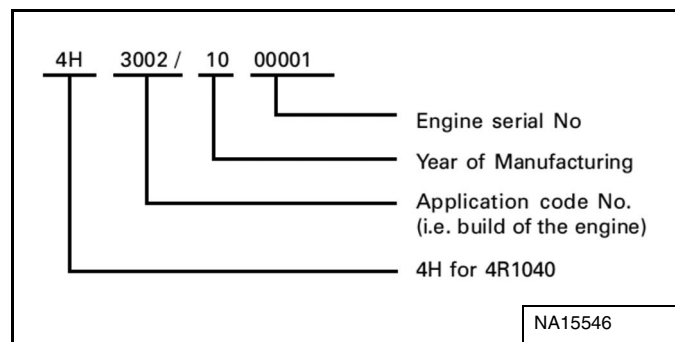
Engine Serial Number

Figure 2



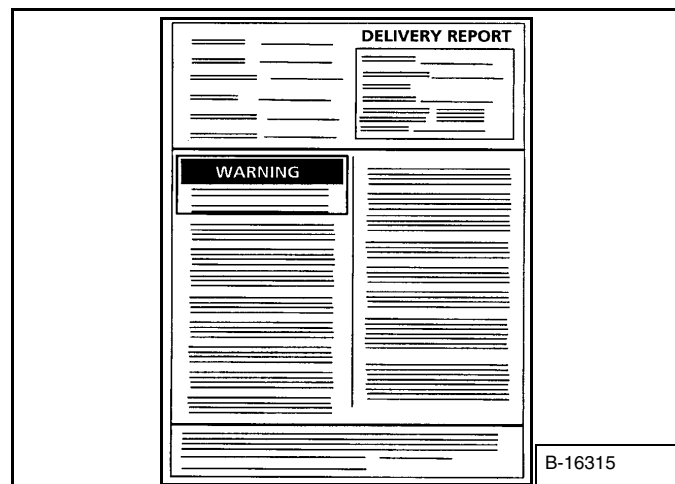
The engine serial number plate is located on the engine crankcase.

Explanation of the engine Serial Number:



DELIVERY REPORT

Figure 3

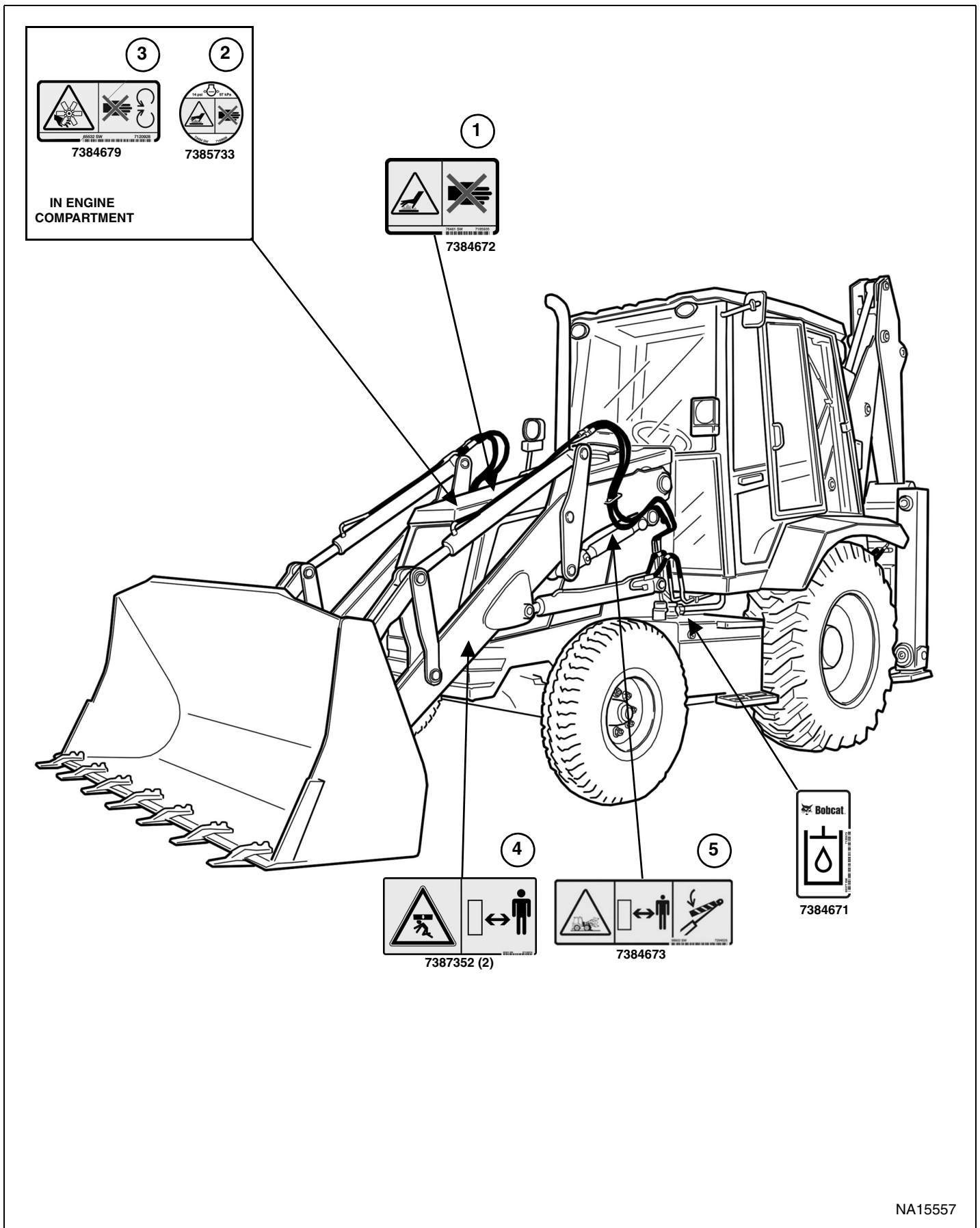


The delivery report [Figure 3] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat backhoe loader is delivered.

The delivery report must be reviewed and signed by the owner or operator and the dealer.

MACHINE SIGNS (DECALS)

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



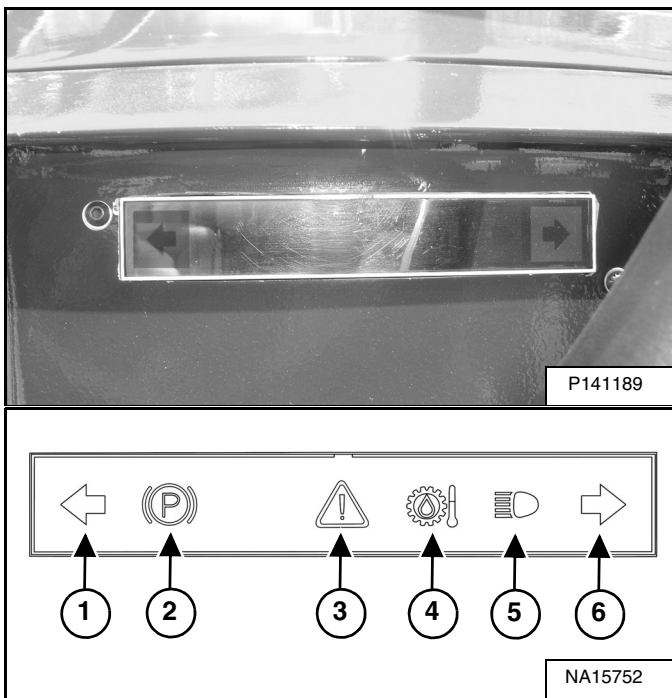
NA15557

OPERATOR CONTROLS IDENTIFICATION

Front Instrument Panel

Indicator Panel

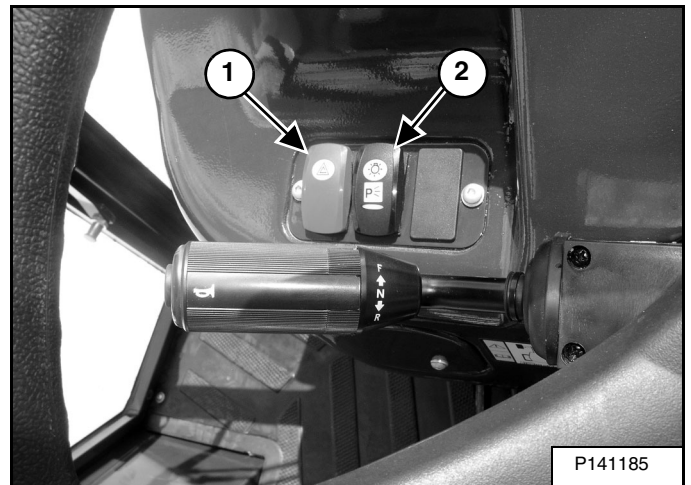
Figure OI-1



REF. NO	DESCRIPTION	FUNCTION / OPERATION
1	Left Turn Indicator Light (Green)	Lights up when the left turn light is activated.
2	Parking Brake Indicator Light (Red)	Lights up when the parking brake is activated.
3	Generic Alarm (Red)	Lights up when there is a problem with the backhoe loader. If the light turns on, stop working, turn the engine off. Find and solve the problem.
4	Transmission Oil Temperature (Red)	Lights up when the transmission oil temperature is too high. If the lights turns on, stop working, turn the engine off. Find and solve the problem.
5	High Beam (Blue)	Lights up when the high beam is activated.
6	Right Turn Light (Green)	Lights up when the right turn light is activated.

Controls

Figure 2



REF. NO	DESCRIPTION	FUNCTION / OPERATION
1	Hazard Warning Switch	Press the switch to activate the hazard lights. When activating the Hazard Warning switch, the direction indicator lights light up and the switch lights up.
2	Master Light Switch	Press the switch once to activate the parking lights. Press the switch twice to activate the low/high beams. When activating the Master Light switch, the switch lights up. If the high beams are activated, the warning light on the side instrument panel lights up.

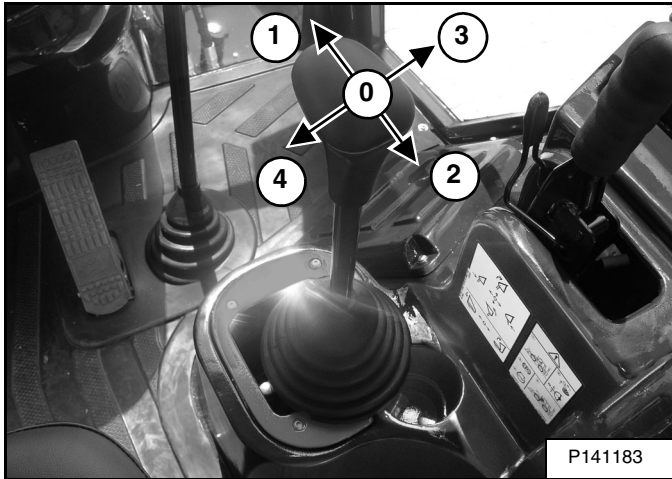
HYDRAULIC CONTROLS

Loader Controls

The loader control lever is locked when the start key is in the OFF position. When the start key is turned to the ON position, the lever is unlocked and fully functional. Lower the loader arms fully before turning the key to the OFF position.

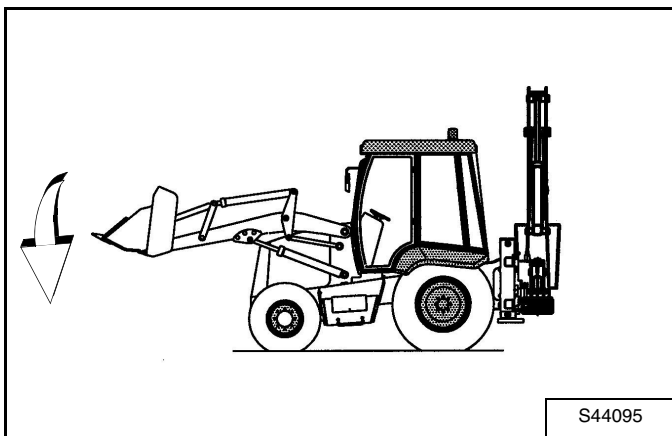
The loader control lever is also equipped with a dump button at the front of the handle, to instantly empty the contents of the loader bucket.

Figure 25



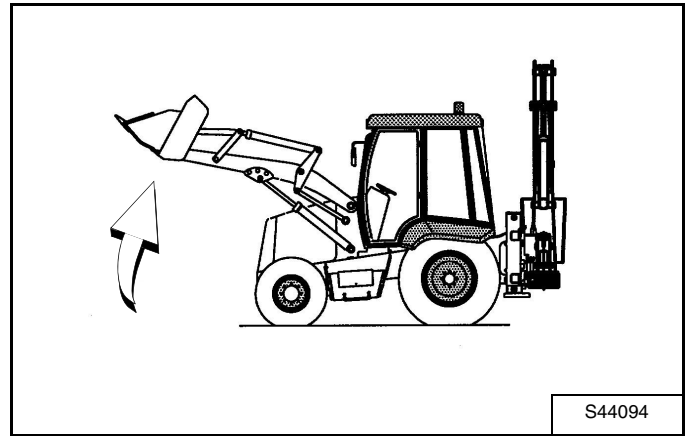
- Position 0 (Item 0): When the lever is released, it automatically returns to the NEUTRAL position and the movement of the loader lift arm stops. [Figure 25]

Figure 26



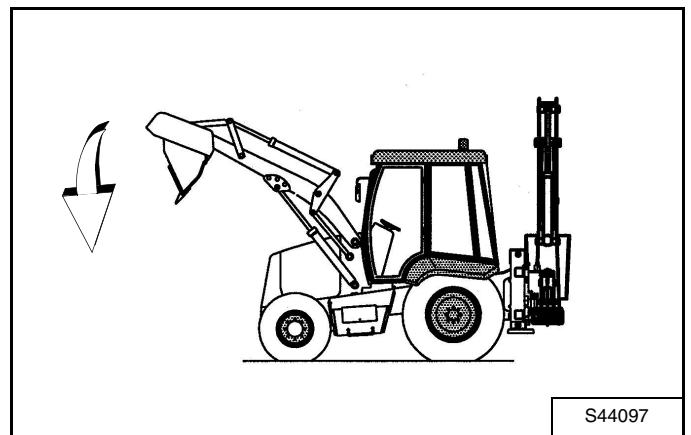
- Position 1 (Item 1) [Figure 25]: When the lever is pushed forward, the loader lift arm lowers. [Figure 26]

Figure 27



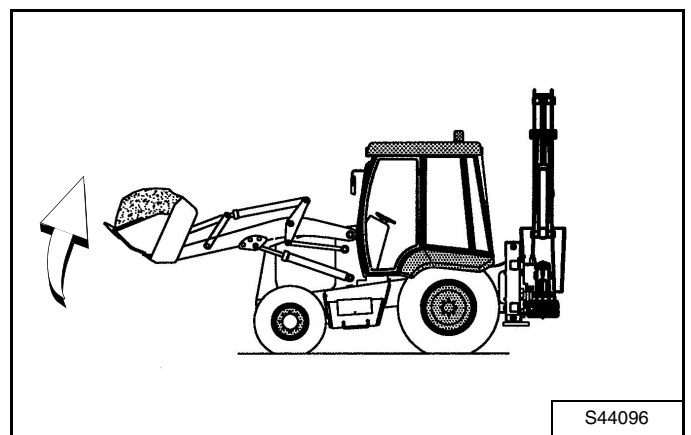
- Position 2 (Item 2) [Figure 25]: When the lever is pulled backward, the loader lift arm rises. [Figure 27]

Figure 28



- Position 3 (Item 3) [Figure 25]: When the lever is pushed to the right, the loader attachment rolls forward. [Figure 28]

Figure 29



- Position 4 (Item 4) [Figure 25]: When the lever is pushed to the left, the loader attachment rolls back. [Figure 29]

ATTACHMENTS (CONT'D)

Installing And Removing The Loader Attachment

Installation

! WARNING

AVOID INJURY OR DEATH

Stop the machine on a firm flat surface. When removing or installing attachments (such as a bucket), always have a second person in the operator's seat, give clear signals and work carefully.

W-2140-0189

! WARNING

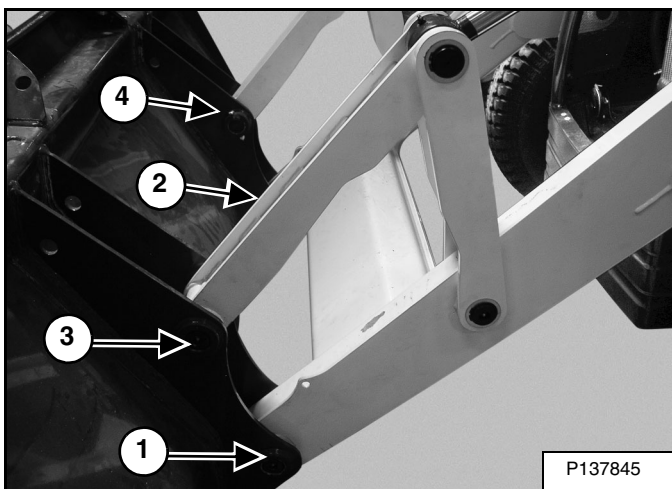
AVOID INJURY OR DEATH

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

W-2052-0907

1. Position the backhoe loader against the bucket.

Figure 48



2. Position the loader arm against the bucket. Align the mounting holes on the bucket and the loader arm. [Figure 48] (See Loader Controls on Page 39.)
3. Have a second person install the pin, seals and shims (Item 1), both sides. [Figure 48]
4. Install the bolt and nut (Item 2), both sides. Leave one thread free on the bolts. [Figure 48]

5. Extend or retract the bucket cylinder as needed to align the cylinder rod end to the bucket.
6. Have a second person install the pin and the seal (Item 3) on both sides. [Figure 48]
7. Install the bolt and nut (Item 4). Leave one thread free on the bolt. [Figure 48]

Removal

1. Park the backhoe loader on a firm and level surface and lower the bucket fully. (See Loader Controls on Page 39.)
2. Stop the engine, remove the key and exit the backhoe loader.
3. Remove the bolts and nuts (Items 2 and 4), both sides. [Figure 48]
4. Remove the pins, seals and shims (Items 1 and 3) and lower the cylinder rod end. Retract the cylinder and secure the cylinder. [Figure 48]
5. Enter the backhoe loader, fasten the seat belt, and start the engine. (See Entering And Exiting The Backhoe Loader on Page 44.) (See Engine Start Up Procedure on Page 46.)
6. Slowly back away from the attachment.
7. Store the bucket in a clean and dry area.

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OPERATING PROCEDURE (CONT'D)

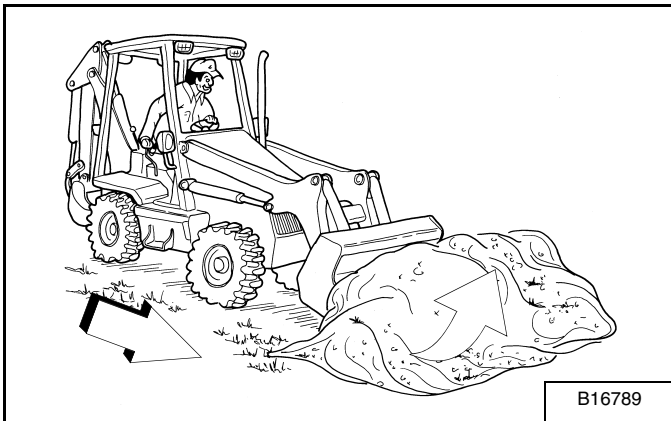
Filling The Loader Bucket

! WARNING

Load, unload and turn on flat level ground. Do not exceed Rated Operating Capacity (ROC) shown on sign (decal) in cab. Failure to obey warnings can cause the machine to tip or rollover and cause injury or death.

W-2056-1112

Figure 68



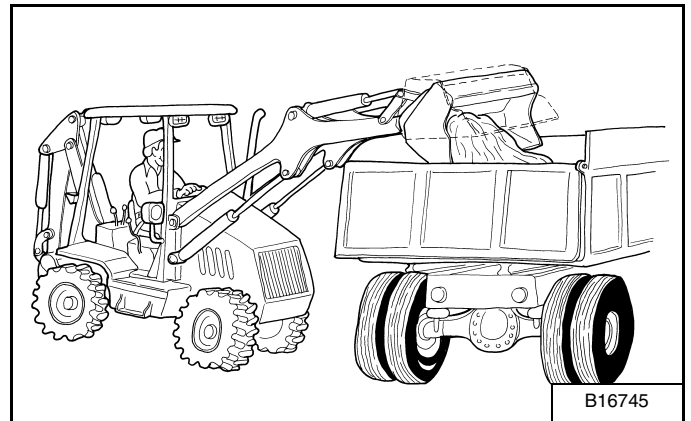
1. Lower the lift arms until the bucket is on the ground. **[Figure 68]**
2. Tilt the bucket forward to put the cutting edge of the bucket on the ground. **[Figure 68]**

NOTE: The flat top on the bucket can be used as a bucket level indicator.

3. Drive forward slowly into the material. When the bucket is full, tilt the bucket backward. **[Figure 68]**
4. Drive away from the material in reverse.

Emptying The Loader Bucket

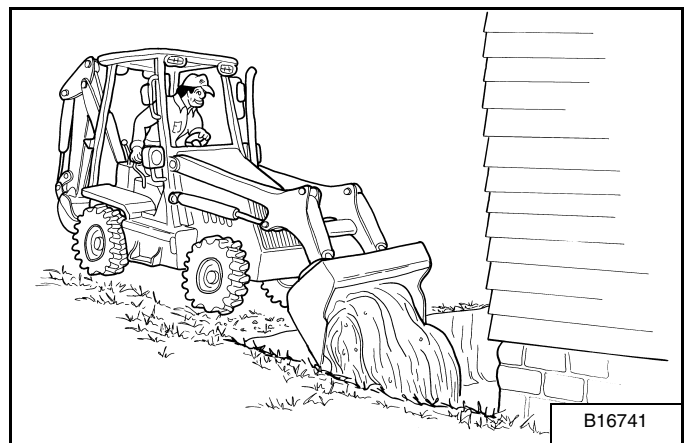
Figure 69



1. Keep the bucket low when travelling with material in the bucket.
2. Raise the lift arms. Keep the bucket level as the lift arms are raised to help prevent material from falling out of the bucket. **[Figure 69]**
3. Drive forward slowly until the bucket hangs over the dump location completely.
4. Tilt the bucket forward to empty the bucket. **[Figure 69]**
5. If all the material has gathered on one side, push it to the other side with the bucket.

Backfilling

Figure 70



1. 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. **[Figure 69]**
2. Tilt the bucket forward as soon as it is past the edge of the hole. **[Figure 69]**
3. If necessary, raise the lift arms to empty the bucket.

SERVICE SCHEDULE (CONT'D)

Maintenance Intervals (Cont'd)

SERVICE SCHEDULE (CONT'D)		HOURS						
ITEM	SERVICE REQUIRED	10	50	100	250	500	1000	1500
Safety Decals, Treads and Mirrors	Check for damaged decals, treads or mirrors. Replace as needed.	e						
Seat Belt	Check the seat belt for wear. Replace as needed. (See SEAT BELT on Page 72.)	e						
Service Brake	Test the parking brake system. Replace as needed. Contact your Bobcat dealer.	e						
Service brake fluid	Check the oil level and add as needed. (See SERVICE BRAKE on Page 76.)	e						
Transmission Oil	Check the oil level and add as needed. (See TRANSMISSION on Page 99.)	e						
Tyres	Check the tyre Pressure. Adjust as needed. (See TYRE MAINTENANCE on Page 73.)	e						
Wheel Nuts	Check the torque of the wheel nuts and adjust as needed. (See TYRE MAINTENANCE on Page 73.)	e						
Fuel Tank	Drain water and sediment from the fuel tank. (See FUEL SYSTEM on Page 79.)		e					
Parking brake	Test the service brake system. Adjust or replace as needed. Contact your Bobcat dealer.		e					
Transmission Filter	Drain and replace the transmission filter. (See TRANSMISSION on Page 99.)			f				
Battery	Inspect the battery. Replace as needed. (See ELECTRICAL SYSTEM on Page 87.)				e			
Fan Belt	Inspect the fan belt. Adjust or replace as needed. (See ALTERNATOR AND FAN BELT on Page 101.)				e			
Fuel Pre-Filter	Inspect the fuel pre-filter. Clean or replace as needed. (See FUEL SYSTEM on Page 79.)				e			
Radiator Fins	Clean the radiator fins. (See ENGINE COOLING SYSTEM on Page 85.)				e			
Engine Oil and Filter	Drain and replace the engine oil and filter. (See ENGINE LUBRICATION SYSTEM on Page 82.)		f			e		
Fuel Filter	Replace the fuel filter. (See FUEL SYSTEM on Page 79.)					e		
Hydraulic Return Filter	Replace the hydraulic return filter. (See HYDRAULIC SYSTEM on Page 94.)					e		
Couplings And Tightening Torques	Inspect the couplings and tightening torques. Adjust as needed. Contact your Bobcat dealer.				f		e	
Electrical Parts	Inspect the electrical parts. Adjust or replace as needed. Contact your Bobcat dealer.				f		e	
Hydraulic Parts	Inspect the hydraulic parts. Adjust or replace as needed. Contact your Bobcat dealer.				f		e	
Engine Air Filter	Replace the engine air filters. (See ENGINE AIR CLEANER on Page 77.)						e	
Transmission	Inspect the couplings, tightening torques, electrical connectors and oil cooler ports. Adjust or replace as needed. Contact your Bobcat dealer.						e	
Transmission Oil And Filter	Drain and replace the oil and filter. (See TRANSMISSION on Page 99.)						e	
Rear Axle Oil	Drain and replace the differential and reduction gear oil. (See REAR DRIVE AXLE on Page 97.)		f				f	e
Rear Axle Breather and Magnetic Oil Plug	Inspect the rear axle breather and magnetic oil plug. Clean or replace as needed. (See REAR DRIVE AXLE on Page 97.)				f			e

FUEL SYSTEM

See Fluids, Lubricant and Fuel for fuel specifications and see the service schedule for the correct service intervals. (See Fluids, Lubricants And Fuel on Page 8.)(See Maintenance Intervals on Page 68.)

WARNING

AVOID INJURY OR DEATH

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.

W-2103-0508

WARNING

AVOID INJURY OR DEATH

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

W-2063-0807

Fuel Specifications

India Standard (IS 1460:2005)

Use only clean, high quality diesel fuel that meets the IS 1460:2005 specifications listed below:

- Diesel fuel containing 350 mg/kg (350 ppm) sulfur maximum.
- Diesel fuel with cetane number of 51.0 and above.

U.S. Standard (ASTM D975)

Use only clean, high quality diesel fuel, Grade Number 2-D or Grade Number 1-D.

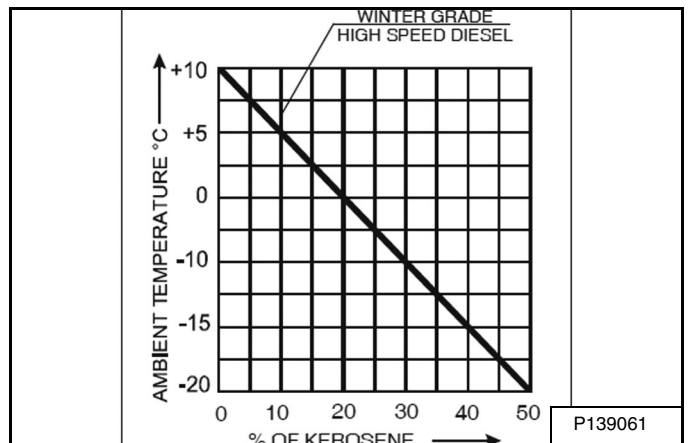
Ultra low sulfur diesel fuel must be used in this machine. Ultra low sulfur is defined as 15 mg/kg (15 ppm) sulfur maximum.

The following is one suggested blending guideline that should prevent fuel gelling during cold temperatures:

TEMPERATURE	GRADE 2-D	GRADE 1-D
Above -9°C (+15°F)	100%	0%
Down to -21°C (-5°F)	50%	50%
Below -21°C (-5°F)	0%	100%

Winter Grade Fuel

Figure 94



Kerosene percentage in 'winter grade' diesel - kerosene mixture. [Figure 94]

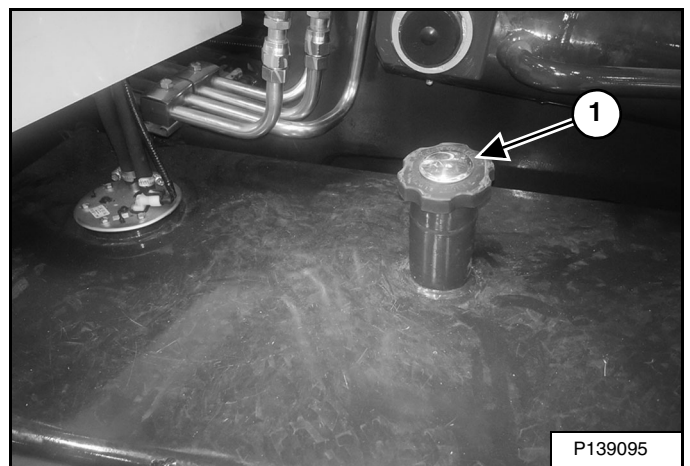
In case of temperatures below 10°C (50°F), use 'Winter Grade' diesel fuel, mixed with Kerosene. The percentage of Kerosene depends on the ambient temperature of the site where the backhoe loader operates. [Figure 94]

Prepare the mixture in the fuel tank. First add the necessary amount of Kerosene, then add the 'Winter Grade' diesel fuel.

Fuel Tank

Filling The Fuel Tank

Figure 95



1. Remove the fuel fill cap (Item 1). [Figure 95]
2. Use a clean, approved safety container to add fuel. Add fuel only in an area that has free movement of air and no flames or sparks. **NO SMOKING!**
3. Install and tighten the fuel fill cap.
4. Clean up any spilled fuel.

ELECTRICAL SYSTEM (CONT'D)

Battery Maintenance

WARNING

AVOID INJURY OR DEATH

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

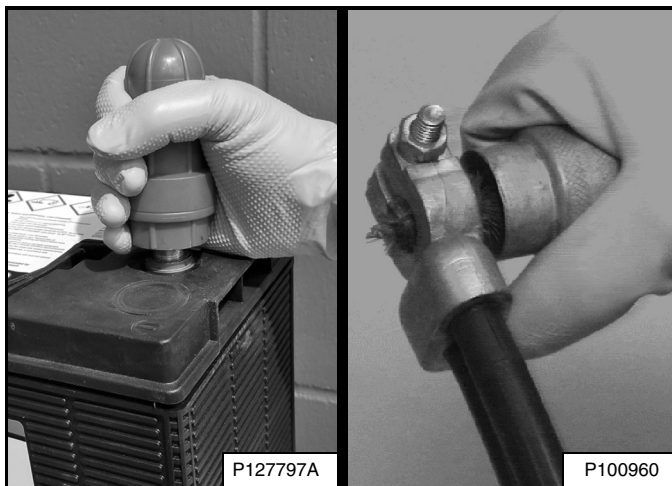
In case of acid contact, wash immediately with water. In case of eye contact get prompt medical attention and wash eye with clean, cool water for at least 15 minutes.

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

W-2065-0807

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

Figure 113



Simple steps for reliability and long battery life:

- Keep battery posts and terminals clean. [Figure 113]
- Keep terminals tight.
- Remove corrosion from battery and terminals with sodium bicarbonate (baking soda) and water solution.
- Put Bobcat Battery Saver or grease on the battery terminals and cable ends to prevent corrosion.
- Operate the machine for at least 15 minutes to recover from the battery drain caused by engine start up whenever practical.

- Maintain the battery charge level. This is a key factor for long battery life.
- Charge a severely discharged battery with a battery charger instead of relying on the machine charging system. (See Battery Charging on Page 90.)
- Check the battery state of charge every 30 days on machines that are not frequently used. (See Battery Testing on Page 90.)

Maintaining Battery Charge Level

All batteries will self-discharge over time. This machine has features that require battery power even when the machine is not being used. Use of a quality battery maintainer is highly recommended to ensure that your machine is ready to start when you need it and avoid costly battery replacement.

Battery Maintainers

Use a good quality battery maintainer to keep the battery above 12.4 volts for machines that are not frequently used. Batteries below 12.4 volts must first be charged using a battery charger. Solar maintainers should have a minimum capacity of 10 watts to be effective.

Battery Service During Machine Storage

Remove the battery if storing the machine for an extended period of time.

Fully charge the battery.

Store the battery in a cool dry place above freezing and boost charge periodically.

If battery removal is not desired, a good quality battery maintainer must be used to compensate for battery self-discharge and parasitic loads from machine controllers, accessories, and features such as connected machine intelligence.

TRANSMISSION

See Fluids, Lubricant and Fuel for oil specifications and see the service schedule for the correct service intervals. (See Fluids, Lubricants And Fuel on Page 8.) (See Maintenance Intervals on Page 68.)

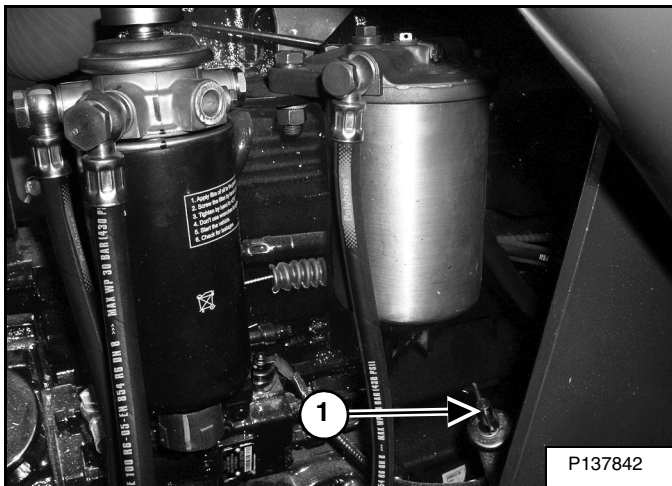
When checking or replacing the transmission oil, first follow the following procedure:

1. Park the backhoe loader on a firm and level surface.
2. Lift the loader arms, install the approved lift arm support device. (See APPROVED LIFT ARM SUPPORT DEVICE on Page 71.)
3. Put the travel direction control lever in the NEUTRAL position.
4. Use the engine speed control to put the engine idling speed at 1000 rpm.
5. Engage the parking brake.
6. Allow the oil to heat up for a while until it is at operating temperature.

NOTE: The transmission oil can be hot. Avoid contact to avoid getting burned.

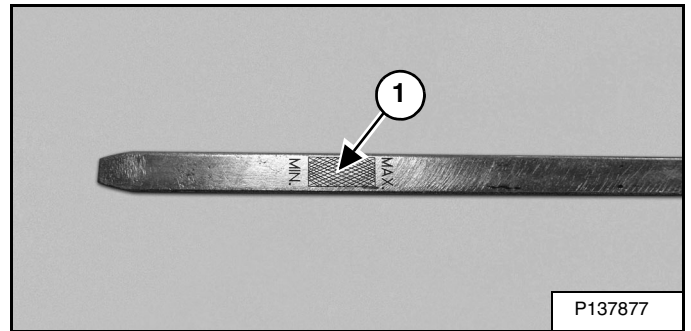
Checking And Adding Oil

Figure 131



1. Remove and clean the dipstick (Item 1). [Figure 131]
2. Reinsert the dipstick completely and pull it back out.

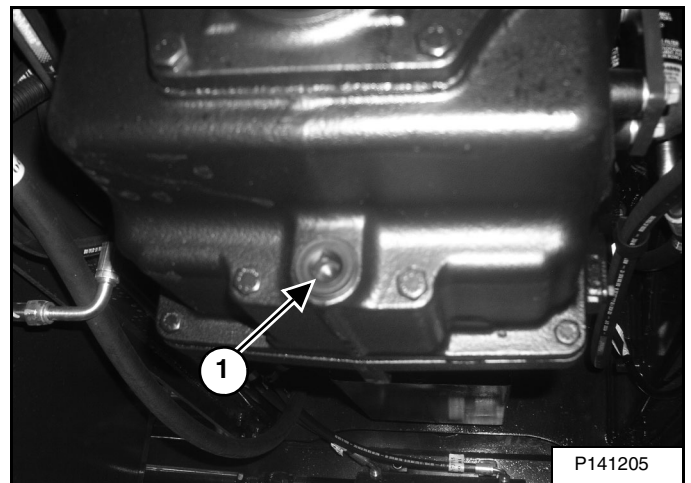
Figure 132



3. Remove the dipstick. The oil level should be between the lower and upper mark on the dipstick (Item 1). [Figure 132]
4. If necessary, add oil through the opening of the dipstick until the oil level is between the lower and upper mark on the dipstick.
5. Reinsert the dipstick.

Removing And Replacing Oil

Figure 133



1. Place an appropriate container under the drain plug (Item 1). [Figure 133]
2. Remove the drain plug and filler cap and drain the oil into the container.
3. Reinstall the drain plug and refill the transmission with oil. Reinstall the fill cap.

SPECIFICATIONS

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Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operating conditions, and other factors.

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