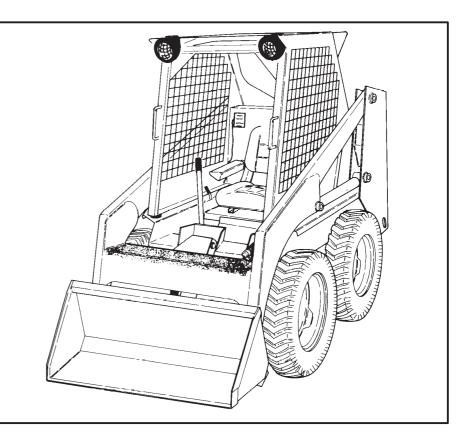




# Service Manual





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PREVENTIVE MAINTENANCE	
HYDRAULIC SYSTEM	
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#### PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM

HYDROSTATIC SYSTEM

DRIVE SYSTEM

MAIN FRAME

ELECTRICAL SYSTEM

ENGINE SERVICE

TECHNICAL DATA

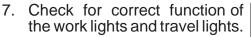
ALPHABETICAL INDEX

### FOREWORD

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

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

- Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.
- 2. Check that ROPS mounting hardware is tightened and is Melroe approved.
- 3. The seat belt must be correctly installed, functional and in good condition.
- 4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.
- 5. Machine signs must be legible and in the correct location.
- 6. Steering levers and foot pedals must return to neutral.



A WARNING

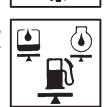
8. The parking brake must function correctly.



- 9. Enclosure door latches must open and close freely.
- 10. Bob–Tach wedges and linkages must function correctly and be in good condition.
- 11. Safety treads must in good condition.



- 12. Check for correct function of indicator lamps (Optional on some models).
- 13. Check hydraulic fluid level, engine oil level and fuel supply.



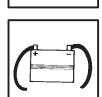
14. Inspect for fuel, oil or hydraulic fluid leaks.



15. Lubricate the loader.



16. Check the condition of the battery and cables.



#### 730, 731, 732 Loader Service Manual

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



18. Check the electrical charging system.



19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



21. Operate the loader and check all functions.



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



#### **PREVENTIVE MAINTENANCE**

	Paragraph Number	Page Number
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#### **1 PREVENTIVE MAINTENANCE**

**1–1 INTRODUCTION** 

1–1.1 Symbols

### IMPORTANT

WARNING

This notice identifies important procedures which must be followed to prevent damage to the loader.

This safety alert symbol indicates important safety messages in this manual. Be alert to the possibility of personal injury and carefully read the message that follows this symbol.

#### 1–1.2 Serial Number Identification

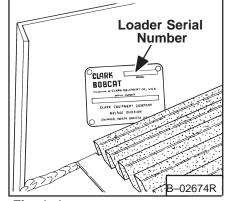
It is important to make correct reference to the serial number of the loader when making repairs or ordering parts. It is possible that the present machines do not use all the same parts as earlier machines; or it is possible that different procedures are used for service or repair.

#### 1–1.3 Loader Serial Number

The loader serial number plate location is on the inside of the left upright, above the grill (Fig. 1-1).

Explanation of serial number:







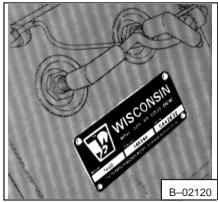


Fig. 1–2 Engine Serial Number (730)

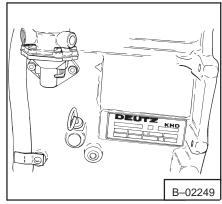


Fig. 1–3 Engine Serial Number (731)

#### 1–1.4 Engine Serial Number

**730 Wisconsin:** (Fig. 1–2) The engine serial number location is on the engine shroud on the left side of engine. Use all numbers when ordering parts for this engine.

**731 Deutz:** (Fig. 1–3) The engine serial number location is on the right side of cylinder block. Use all numbers when ordering parts for this engine.

**732 Ford:** (Fig. 1–4) The engine serial number location is on the right side of the valve cover. Use all numbers when ordering parts for this engine.

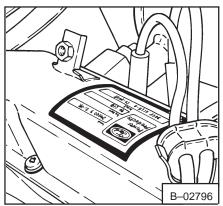


Fig. 1-4 Engine Serial Number (732)

#### **1–2 SERVICE SCHEDULE**

Maintenance work must be done at regular intervals. Failure to do so will result in damage to the Bobcat loader or the engine. The service schedule is a guide for correct maintenance of the Bobcat loader. DO NOT change this service schedule unless the frequency of service is increased when the Bobcat loader is operated in very hot, cold, dusty or corrosive conditions.

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DO NOT work on the loader with the lift arms in a raised position without support. Use the lift arm stops or other methods.

Tot   TTEM   SERVICE REQUIRED   #**0   so   tot   so   <	МО	MODEL SERVICE SCHEDULE			HOURS						
Engine Cooling System   Condition Indicator.   Check coolant when level is low.     Remove debris from the radiator grill area.   Tires   Check air pressure & check for damage.     Wheel Nuts   Tighten nuts 15 ft-lbs, (155 km) torque.   Engine Oil     Engine Cooling Inlet   Check and add oil as needed.   Engine Cooling Inlet     Indicators, etc.   Check rear door grill & blower inlets for restriction of air flow. Clean cooling fins & blower housing when necessary.     Indicators, etc.   Check condition of strap, buckle & replace if damaged.     Phydraulic Fluid   Check condition of strap, buckle & replace if damaged.     Hydraulic Fluid   Check for damaged decals or decals that are gone.     Replace as needed.   Engine Oil & Filter     Check for damaged decals or decals that are gone.   Replace as needed.     Engine Oil & Filter   Check for damage or leaks. Replace as needed.     Chartol Pedals & Steering   Add grease to fittings until extra grease shows.     Battery   Check for damage or leaks. Replace as needed.     V-Belts   Check for damage or leaks. Replace as needed.     Charkose Breather   Cleach for damage or leaks. Replace as needed.     Charkose Breather   Check tor damage or leaks. Replace as needed.     Parking Brake   Check koper	730 73	31 732	ITEM	SERVICE REQUIRED	8–10	50	100	250	300	500	1000
Remove debris from the radiator grill area.       Tires     Check air pressure & check for damage.       Wheel Nuts     Tighten nuts 115 ftlbs. (155 Nm) torque.       Engine Oil     Check and add oil as needed.       All Pivot Points     Add lubricant to all fittings.       Engine Cooling Inlet     Check rear door grill & blower inlets for restriction of air flow. Clean cooling fins & blower housing when necessary.       Indicators, etc.     Check for correct operation of all.     Operator Cab       Operator Cab     Check condition of strap, buckle & replace if damaged.     Hydraulic Fluid       Hydraulic Fluid     Check & add recommended fluid as needed.     Engine Oil & Filter       Control Pocka & Add recommended fluid as needed.     Check water of a resource operator Cab     Check ket of as the filter.       Control Pocka & Add resset to filtings until extra grease shows.     Check water level & cables.     Professor       Hydraulic Fluid     Check ket for damage or levels & solution as needed.     Professor     Professor       Battery     Change the oil & the filter.     Control & make adjustments.     Professor       Crankcase Breather     Cleak ther dalus ments.     Professor     Professor       Bob-Tach     Check king levers & wedges for condition			Engine Air Cleaner								
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Crankcase Breather   Clean breather cap every oil change.     Bob-Tach   Check locking levers & wedges for condition & operation.     Parking Brake   Check operation & adjust as needed.     Chaincase Fluid   Check fluid level & add as needed.     Hydraulic Filter   Make replacement of filter element.     Engine Cylinder Head Bolts   Tighten to correct torque after first 100 hours & adjust the valves as needed.     Engine Air Cleaner   Check system for leaks. Replace element when condition indicator shows red.     Crankcase Breather   Remove breather & clean.     Governor   Check the torque of the bolts that hold the transmission assembly to the upright.     Steering Lever Pivots   Grease pivot points.     Spark Arrestor Muffler   Remove the alter element.     Starting Motor   Remove, clean & service as needed.     Engine Fuel Filter (Inline)   Replace the element.     Main Frame Upright   Check the torque of the bolts that hold the transmission assembly to the upright.     Starting Motor   Remove, clean & service as needed.     Engine Fuel Filter   Replace the element.     Main Frame Upright   Remove the plug & clean the spark chamber.     Spark Arrestor Muffler   Remove, clean & service as needed.     Engine Fuel Filter											
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Chaincase Make replacement of fluid.				The minimum compression reading must be at least							
			Chaincase					$\square$			
			Hydraulic System	Make replacement of fluid & filter. Replace cap.				$\square$			

#### 1-3 ENGINE SERVICE (General)

1–3.1 Engine Oil and Filter (Fig. 1–7 thru Fig. 1–10)

**Oil Specification:** 

730 and 732: Use a good quality oil which has API Service Classification SE.

731: Use a good quality oil which has API Service Classification CC or CD.

Use oil of correct SAE viscosity for temperature conditions at the time of starting; not for the highest temperature expected during the working day.

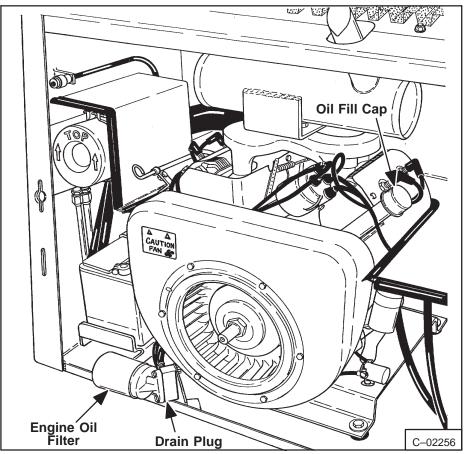


Fig. 1–7 Engine Servicing (730)

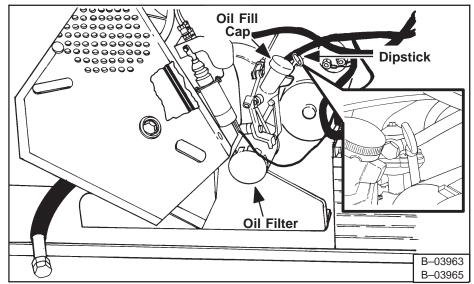
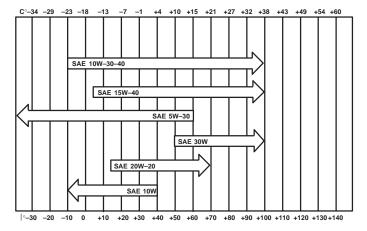
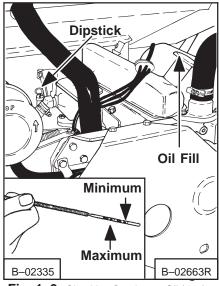


Fig. 1-8 Engine Servicing (731)

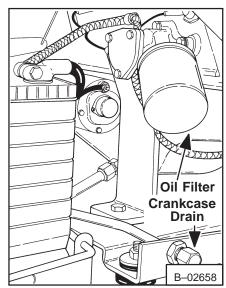
#### RECOMMENDED SAE VISCOSITY NUMBER (LUBRICATION OILS FOR ENGINE CRANKCASE)



TEMPERATURE RANGE ANTICIPATED BEFORE NEXT OIL CHANGE (GASOLINE: USE API CLASSIFICATION SE) (DIESEL: USE API CLASSIFICATION CD)







#### **Checking Oil:**

Engine must be stopped to check oil level. Check oil level every 4 hours for the first 50 hours of operation. After the first 50 hours of operation, check oil level every day (8–10 hours). Oil level must be kept between the "MIN" and "MAX" marks on the dipstick.

#### Adding Oil:

Remove oil fill cap and add enough oil of the correct specification and viscosity to make oil level near the "MAX" on the dipstick.

#### **Replacement Oil and Filter:**

- 1. Stop the engine.
- 2. Remove the drain plug when engine is hot.
- 3. Let oil flow for several minutes.
- 4. Remove filter.
- 5. Install drain plug.
- 6. Clean area around filter base.
- 7. Put clean oil on gasket of new filter and install new filter. Tighten filter by hand only.
- 8. Fill with 4 quarts (3,79 l) of oil of the correct specification and viscosity.

Fig. 1–10 Engine Oil Filter Location (732)

#### 1–3.2 Crankcase Breather

730 Wisconsin: The crankcase breather is a closed system. The breather system must be cleaned every 500 hours.

732 Ford: (Fig. 1–12) The crankcase breather is also the oil fill cap. Clean the breather cap with solvent every time you replace engine oil.

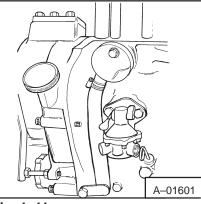
731 Deutz: (Fig. 1–11) The crankcase breather is located on the right side of cylinder block. Clean the breather assembly every 500 hours.

#### 1–3.3 Air Cleaner System

The air cleaner system must be kept clean and free from defects for good engine performance and long service life.

Service air cleaner as follows:

- 1. Remove and clean dust cup every day (Fig. 1–13).
- 2. Do not remove element unless replacement is necessary. (When condition indicator shows red.)
- NOTE: Be sure (1) gasket surfaces are clean before installing new element and (2) be sure gasket is in correct place.
  - 3. Inspect complete air cleaner system and make replacement of any parts with defects. Be sure hose connections are tight.
  - 4. Check running operation of air cleaner system as follows:
    - a. Start engine and run at idle.





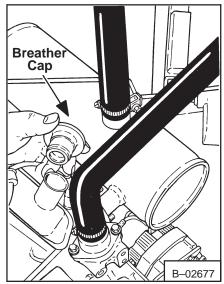


Fig. 1–12 Crankcase Breather (732)

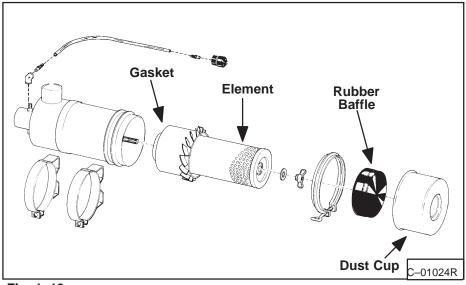


Fig. 1–13 Air Cleaner Assembly

b. Close air inlet on air cleaner. The engine speed must become slower then stop.

c. If the engine does not stop, the system has a leak. Inspect, and make repairs as necessary.

#### 1-3.4 Fuel System (730, 732)

Use only "regular" gasoline with an octane rating of 90–94. DO NOT USE UNLEADED GASOLINE.

- 1. Engine must be stopped, ignition off and engine cool before putting fuel in tank.
- 2. Remove fuel cap (Fig. 1–14) and fill tank with clean fuel using an approved safety container.
- 3. Put fuel in the tank ONLY when the machine is in a large open area (outside or a large building).



DO NOT put fuel in tank while near open flames or sparks. DO NOT SMOKE while putting fuel in tank.

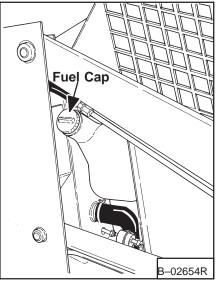


Fig. 1–14 Fuel Filling Location

- 4. Use only clean fuel.
- 5. Install fuel cap after filling. Be sure cap is tight.

#### **Fuel Filter (Inline)**

A fuel filter is located on the right side of the machine near the fuel tank outlet (Fig. 1-10).

The fuel filter must be checked every 300 hours.

To check or make replacement of fuel filter:

- 1. Turn fuel valve off (Fig. 1-15).
- 2. Loosen hose clamp and remove hose from inlet end of fuel filter.
- 3. Connect a short piece of hose to the outlet end of fuel filter and turn fuel valve on.
- 4. If fuel goes through the filter, it does not need replacement. If fuel does not go through filter, make replacement.
- 5. When installing new fuel filter, loosen both hose clamps to remove filter.
- 6. Install fuel filter with arrow toward carburetor (Fig. 1–15) and be sure fittings are tight.

#### 1-3.4a Fuel System (731)

See Section 7 for 731 fuel system maintenance.

#### **Fuel Pump**

730: The fuel pump is located on top of the cylinder block and under the intake manifold. Repair parts are not available for the fuel pump. If the fuel pump does not operate correctly, replacement must be made.

732: The fuel pump is located on the left side of the engine above the starter. Repair parts are not available for the fuel pump. If the fuel pump does not operate correctly, replacement must be made.

#### Carburetor

730: The carburetor is located in the center of the engine on top of the intake manifold.

732: The carburetor is located on the left side of the engine, above and behind the fuel pump. Repair kits are available for the carburetor.

730: Carburetor Adjustment (Fig. 1–16).

Adjust the idle screw for the best low speed operation.

The engine must idle at 1125 to 1150 RPM.

Repair kits are available for this carburetor.

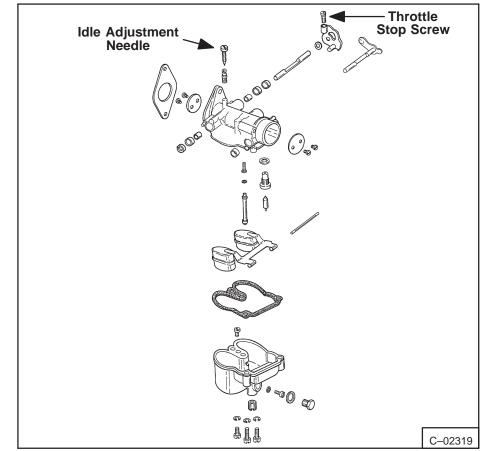


Fig. 1–16 Carburetor Adjustment (730)

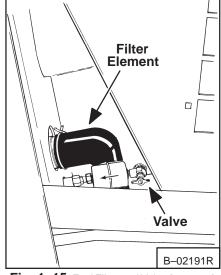


Fig. 1–15 Fuel Filter and Valve (730, 731)



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