# 580D Construction King Loader Backhoe

## Operators Manual

9-6621

Reprinted

CASE

*THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.*

M171B

If Safety Decals on this machine use the words **Danger, Warning or Caution,** which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates an potentially hazardous situation which if not avoided, will result in serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates an potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

If Safety Decals on this machine are ISO two panel Pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as  and 

if used, are RED.

# WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH. BEFORE USING THIS MACHINE, MAKE CERTAIN THAT EVERY OPERATOR:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practices safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow Case Corporation instructions on machine operation and maintenance.



Bur 0-00000
March, 1995 (Revised October, 1997)

# TABLE OF CONTENTS

# INTRODUCTION
## TO THE OWNER

This manual is your guide to safe, efficient operation. Before you operate this machine, read this manual.


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If you need more information, call us.

*Your Case Dealer*

The CASE CORPORATION can make changes in design or specifications of the machine at any time with no obligation for these changes.

## DELIVERY OF THE NEW MACHINE

When you get your new machine from your Case dealer, you will be instructed about correct operation and maintenance as shown in the Owner Warranty Registration form. When your Case dealer has given you these instructions, write your name on the report. Then he will give you a copy for your records.

## AFTER DELIVERY CHECK

Three copies of the After Delivery Check are in the back of this manual. One copy is for you, one copy is for the dealer and one copy is for the Construction Equipment Service Department. Make sure that your Case dealer does the After Delivery Check after the first 20 hours of machine operation.

**NOTE:** Your cost for this inspection will be for filters, oil or other accessories. If the dealer travels to your machine, there can also be a cost for the time and distance that he must travel.

## RIGHT AND LEFT SIDES OF THE MACHINE

"Right Hand" and "Left Hand", when used in this manual, represent the right and left sides of the machine as seen from the operator's seat.

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Put the seat in this position when you operate the machine and the loader.

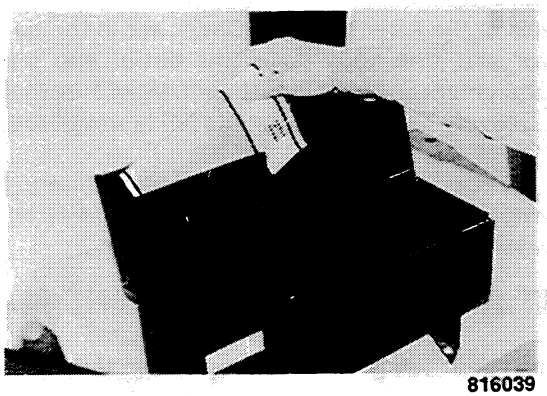
805854

Put the seat in this position when you operate the backhoe.

# SAFETY

## SAFETY RULES

Your safety and the safety of other persons in the work area are the result of your correct operation of this machine. Know the location, positions and functions of all the controls. MAKE SURE YOU CHECK ALL CONTROLS IN A SAFE, CLEAR AREA BEFORE YOU OPERATE THE MACHINE.



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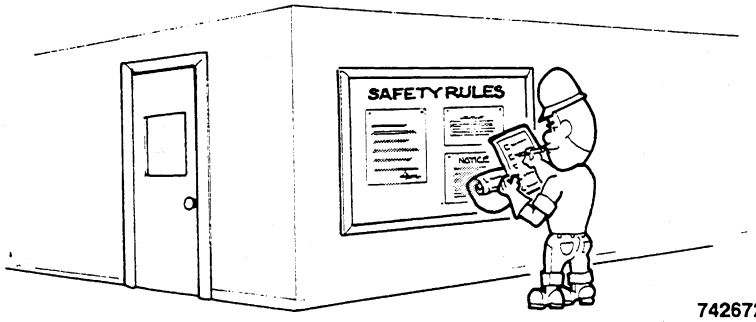
Manual Storage Box

READ THIS MANUAL COMPLETELY and make sure you understand the contents. Make sure you understand, for example, the characteristics of speed, stability, brakes and steering, of this machine. If you have any questions, see your Case dealer.

The safety information in this manual does not replace any other rules or laws for safety that are used in your area. Learn the rules or laws for safety that are used in your area. Make sure that your machine has the correct equipment according to these rules or laws.

It is recommended that you make copies of the safety rules in this manual and put the copies in the work area.

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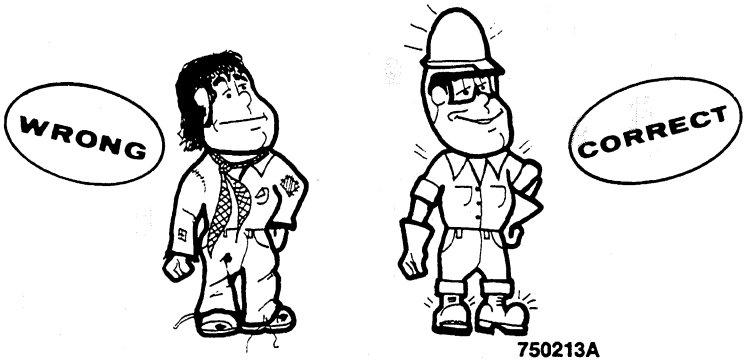
## Before You Start the Engine

**WARNING:** *Before starting engine, study operator's manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.*

*It is your responsibility to understand and follow manufacturer's instructions on machine operation, service, and to observe pertinent laws and regulations. Operator and service manuals may be obtained from your equipment dealer.* D-34-2-A

**WARNING:** *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.* 1-3-B



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**WARNING:** *You can have an accident if a part or a system on the machine does not operate correctly. Before you operate the machine, make sure that you check all oil and fluid levels according to the maintenance chart in this manual. Tighten all caps, dipsticks and plugs. Check for oil or fluid leaks. Replace or adjust all parts that do not operate correctly.* 25-10-B

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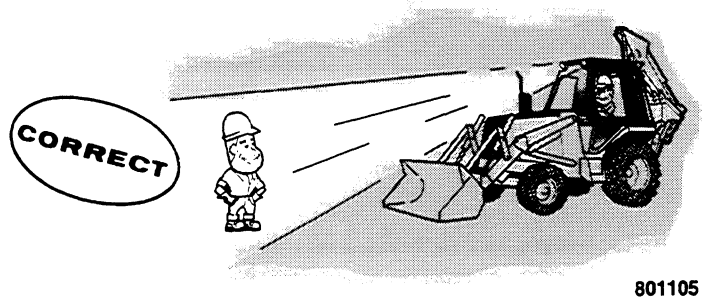
**IMPORTANT:** Always install new decals if the old decals cannot be read. When parts that have decals are replaced, make sure to install new decals with the new part. You can get new decals from your Case dealer. 46-48-A

**WARNING:** *BE VERY CAREFUL IF THIS IS NOT THE MACHINE YOU NORMALLY OPERATE.* *2-2-B*

**CAUTION:** *Before you operate at night, check that all lights (if the machine is so equipped) are working correctly.* *25-7-A*

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**WARNING:** *Make sure the operator's area, steps and grab rails are clear of oil, foreign material or ice. Remove or fasten all maintenance or personal items. Failure to keep these areas clean can cause a bad accident.* *25-8-A*

**WARNING:** *Before you operate this machine on a road, check the local laws. Know the correct safety equipment that must be used. Lights, flashing lights, backup alarm, rotating beacon, Slow Moving Vehicle emblem (SMV), etc., are available from your Case dealer.* *29-9-A*

**WARNING:** *Keep a good fire extinguisher and a first aid kit with you at all times. Know how to use both of these items.* *25-9-A*


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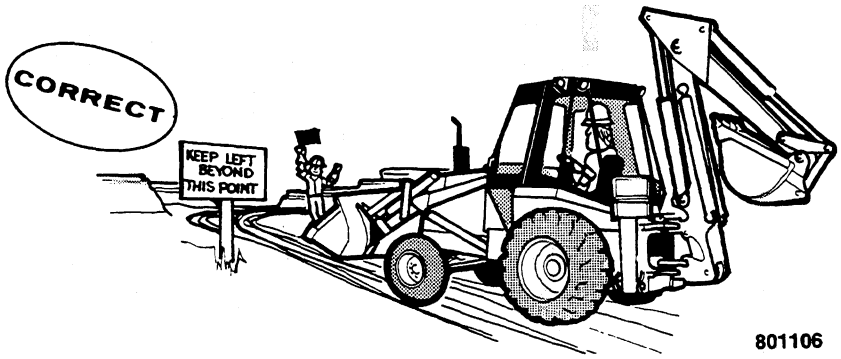
**CAUTION:** *Know and understand the arrangements for movement of trucks, machines, persons, etc., on your job. Understand and follow the instructions of the flagman, road signs, or signals. Failure to follow these instructions can cause an accident.* *29-3-A*

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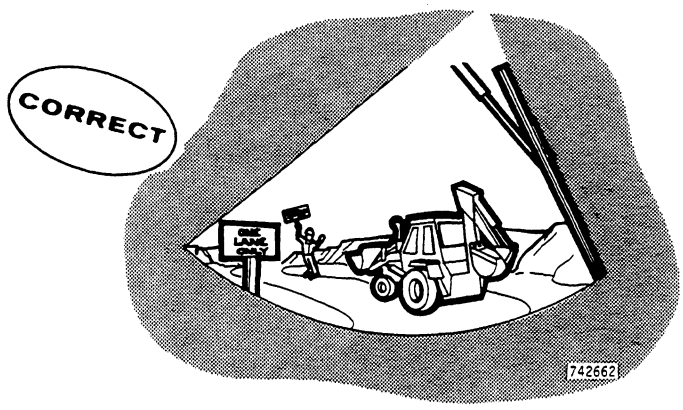
**WARNING:** *An explosion can result if sparks or flame contact the ether in the starting fluid container, or if you keep the container in an area with the temperatures above 120° F (49° C). Read the following.*

1. *Know the correct method for starting your engine with ether.*
2. *If you weld, grind, or use a cutting torch on the machine, always remove the starting fluid container from the machine. Use compressed air to remove any ether fumes from the area.*
3. *Do not breathe the ether vapor or let the ether touch your skin.*
4. *Keep the starting fluid container above the reach of children.*
5. *Never make a hole in the starting fluid container.*
6. *Do not put the starting fluid container in a fire.*
7. *When the temperature is above 35° to 40° F (0° to 5° C) remove the starting fluid container from the machine.*

*Failure to follow the above procedure can cause a severe injury.* *48-12-C*

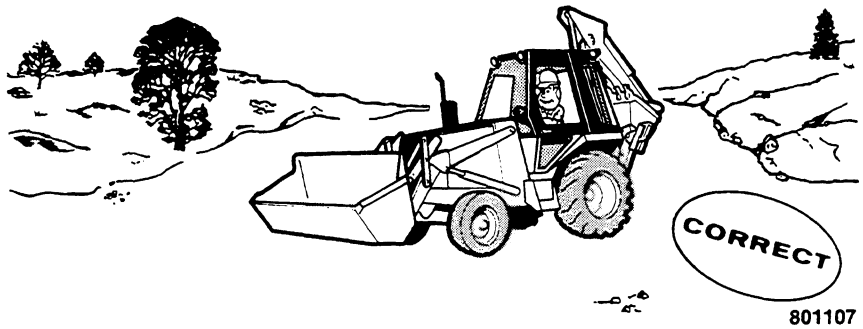
**WARNING:** *Make sure the windows of your cab are clean. Make sure the windshield wipers are operating correctly. Dirty windows can cause an accident.* *24-1-A*




**CAUTION:** *Make sure all persons are away from the machine before you start the engine.* *47-63*

**WARNING:** *Do the required maintenance and safety checks to the machine before you start each day. A machine that has not been given correct maintenance can cause an accident.* *47-54*

**WARNING:** *Before each period of operation, check the machine for correct operation of the steering, brakes, hydraulic controls, instruments, and safety equipment. Check the Neutral position of the transmission control levers. A machine that runs correctly can prevent accidents. Make all necessary repairs or adjustments before you operate the machine.* *48-32*




Safe Open Area - Check Machine Controls

**WARNING:** *Before you start to work in a new area, walk around and look for holes or obstructions. Failure to find hidden holes or obstructions can cause an accident and injury.* *26-5-A*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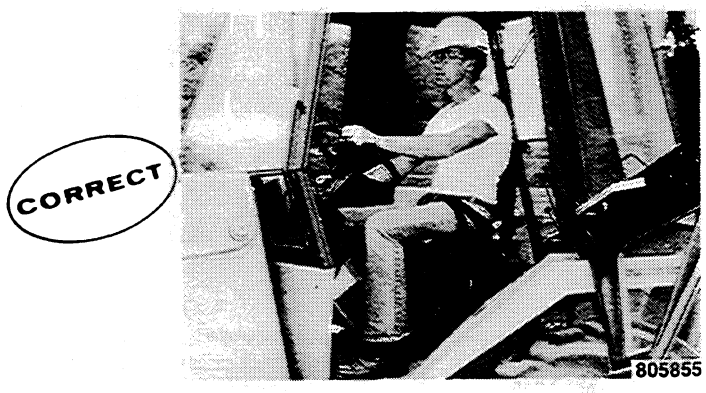
**WARNING:** *Understand the limits of the machine. Keep the machine under control at all times. DO NOT TRY TO DO TOO MUCH TOO FAST.* *3-7-B*

## Operation

**CAUTION:** *Always fasten seat belt securely before starting engine.* *D-17-6*

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**CAUTION:** *Operate tractor and equipment controls from seat position only. Any other method could result in a serious injury.* *D-45-7*

**CAUTION:** *Warn all personnel who may be servicing or in path of machine before starting.* *D-28-10-A*

**WARNING:** *Put the parking brake in the Engaged position and put the control for the shuttle transmission in the Neutral position before you start the engine.* *4-1-A*

**CAUTION:** *Always use the hand rails and steps when you get on or off the machine. Do not use the steering wheel or the controls as a hand rail. Any other method can cause an injury.* 12-9-B

**CAUTION:** *Do not permit riders on machine. This is a one man machine.* D-28-9

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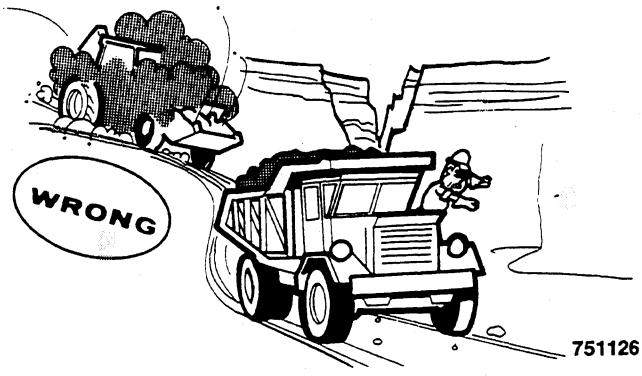
**CAUTION:** *Lock brake pedals together for road travel or high speeds. There is danger of tipping the machine if either brake pedal is used alone when traveling over 5 mph (8 km/h).* D-45-8

**CAUTION:** *Always operate slowly on hillsides, rough ground or ramps. Be extremely careful when working around trenches or banks. Failure to follow the above recommendations could cause the machine to roll over. Personal injury could result.* D-26-10-A

**WARNING:** *Be careful when you operate the machine in dust, smoke or fog. If you can not see clearly, you can have an accident.* 34-7-A



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**WARNING:** *If the engine stops or if the steering system does not work correctly, stop the machine as fast as possible.* 32-1-B

**WARNING:** *If you know there is a malfunction, a missing part or a part that needs adjustment, stop the machine immediately and correct the problem. Continued operation under these conditions can cause an accident or injury.* *37-8-A*

**DANGER:** *Do not permit any part of the machine to come in contact with electric cables. If work must be done near electric cables, first make sure the Utility Company disconnects the power. It is not necessary for the machine to be in contact with the electric cable for the electricity to go through the machine. If the machine does come in contact with a power line, stay in the seat. Do not try to get off the machine. KEEP AWAY FROM THE METAL PARTS OF THE MACHINE.See the chart that follows.* *4-4-B*

| Voltage of Electric Cables | Minimum Amount of Clearance from the Electric Cables When the Machine is Working | Minimum Amount of Clearance from the Electric Cables When You Drive the Machine Between Jobs |
|---|---|---|
| 50,000 volts or less | 10 feet (3 m) | 4 feet (1.2 m) |
| Over 50,000 volts | 10 feet (3 m) plus 1/2 inch (10 mm) for every 1,000 volts over 50,000 volts | 10 feet (3 m) |
| 345,000 - 750,000 volts | | 16 feet (5 m) |

**NOTE:** If the clearances in the specifications above are less than the clearances given in the rules and laws of your area, you must follow the rules and laws of that area. **781171**

**801110**

**DANGER:** *Sparks can come from the exhaust pipe or sparks can come from the electrical system. Do not operate in closed areas where there are flammable materials, dust or vapor that can cause an explosion or fire. Severe injury or death can be the result if you do not follow these instructions.* *47-99-B*

**WARNING:** *Hillside operation can be dangerous. Rain, snow, loose gravel, soft ground, etc., change the ground conditions. You must make a judgement if your machine can be safely operated on any hillside or ramp.*

*Before you operate on any hillside or ramp, always select low gear and never coast down the hill with the transmission in the Neutral position. The machine can go out of control and roll over if you do not follow these instructions.* D-45-10-A

## Loader Operation

**CAUTION:** *Never operate the loader when the seat is in the position for operation of the backhoe.* 8-1-A

**WARNING:** *When you operate the machine, keep the loader bucket as low as possible. This low position gives better balance and permits you to see more clearly. If you move the machine with a full loader bucket over ground that is rough or surfaces that can cause the machine to slide, always operate at a slow speed. If you do not use this procedure, the machine can go out of control and cause a roll-over.* 18-6-C


**WARNING:** *Do not work next to a bank where there is a danger that material can fall on the machine. Do not work where there is a danger of a landslide. You can be injured if you operate in these areas.* 41-10-B

**CAUTION:** *Self-leveling is in effect only when raising; not in effect when lowering. Spillage of material could result if the bucket is not leveled by the operator as loader is lowered.* D-45-16

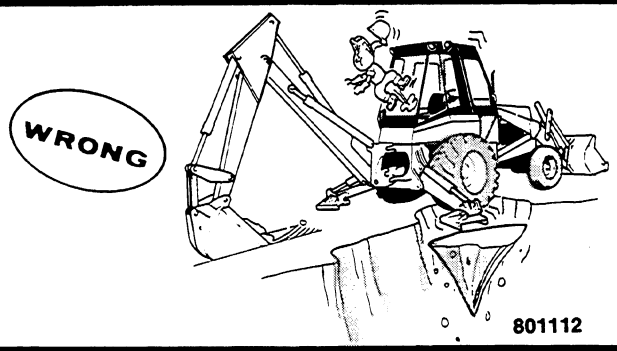
# Backhoe Operation

**WARNING:** *Before each period of operation, check the backhoe for correct function of each control. A backhoe that operates correctly can prevent accidents. Make all necessary repairs or adjustments before you operate the backhoe.* 47-67

**WARNING:** *Before you dig with the backhoe, always shift the transmission to the Neutral position and put the parking brake in the engaged position. If you do not follow this procedure the machine can move out of control and you or others in the area can be injured.* 48-63

**WARNING:** *Know the location of all underground electrical cables, water pipes, gas pipes, etc. A broken gas pipe or cut electrical cable can cause injury.* 26-8-A

**WARNING:** *Do not dig the ground under the backhoe stabilizers. The machine can fall into the excavation if the bank falls in.* 41-8-A



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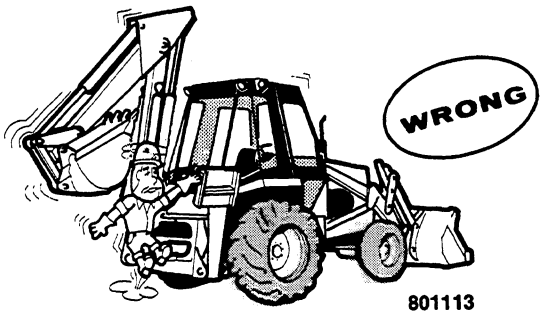
**WARNING:** *Put the stabilizers in the Operating position before you lower the boom and extend the dipper. The front of the machine can raise above the ground and cause an accident if the stabilizers are not down in the Operating position.*

*Before you raise the stabilizers from the Operating position, put the backhoe bucket on the ground or raise the boom and retract the dipper.* 41-1-A

**WARNING:** *When you operate the backhoe or when you do service, use the hand throttle to control the engine speed. You can have an accident if you use the hand throttle for any other operation.* 46-23-A

**CAUTION:** *Operate backhoe from seat position only. For transport, use overcenter position with bucket straight to rear. Install swing lock pin to prevent backhoe from swinging.* D-46-99

**WARNING:** *Keep clear of this area, swinging boom can crush. Operate backhoe from operator's seat only. Any other method could result in injury to operator or bystanders.* *D-47-56*

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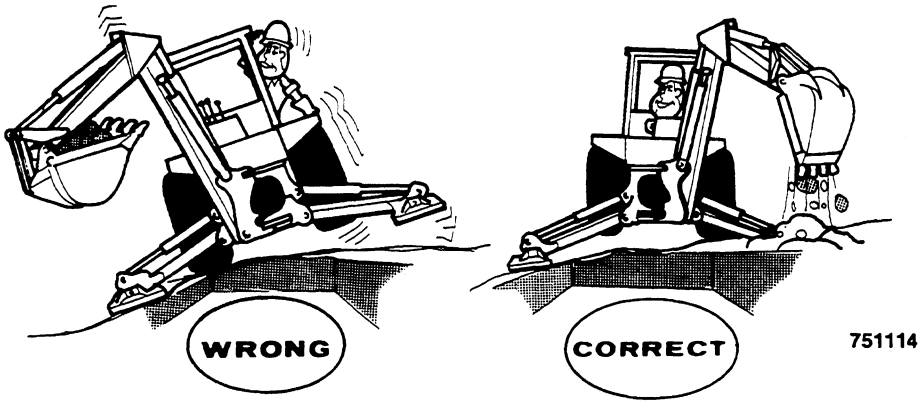
**WARNING:** *Be careful when you dig on the side of a hill. When you move the machine forward, the machine can go out of control and turn over. You must be in the seat (seat in the loader position) when you move the machine forward. Always engage the parking brake before you operate the backhoe.* *46-28-B*

**WARNING:** *When you operate the backhoe on the side of a hill, (1) make the machine level with the stabilizers and (2) put the earth from the trench on the highest side of the trench. Failure to follow these instructions can cause injury.* *22-8-B*

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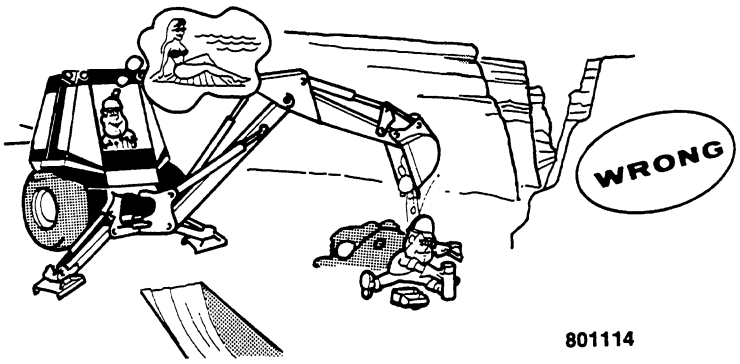
**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions severe injury can occur to you or other persons in the area* *D-48-30*

**WARNING:** *Before you move the backhoe boom to either side, make sure that all persons are out of the way. Make sure that the area is clear of obstructions.* 7-10-A

**CAUTION:** *Be careful at all times. Keep the area clear of persons who are not authorized to be there. Know the location of authorized persons in the area.* 2-3-A

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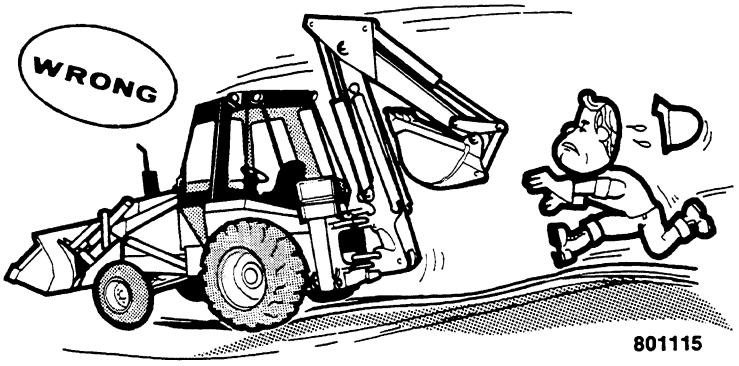
## Stopping the Machine

**WARNING:** *Make sure you are on level ground before you stop the engine and leave the machine. If you must stop on the side of a hill, put the side of the machine toward the bottom of the hill. Engage the parking brake and lower the loader bucket to the ground. Put the backhoe in the Transport position. Stop the engine and remove the key. Failure to follow these instructions can cause an accident.* 24-2-B

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**CAUTION:** *Be careful when you leave the machine. Use the hand rails and steps on the machine. Any other method can cause injury.* 27-2-B

# Service

**CAUTION:** *Do not try to do repairs that you do not understand. Get a service manual or call your Case dealer.* *6-1-A*

**WARNING:** *Servicing the unit with lift arms raised, always install the lift arm support strut.*

1. *Empty loader bucket.*
2. *Raise loader arms to sufficient height to insert strut.*
3. *Remove pin and place support strut over cylinder rod.*
4. *Place pin in lower hole to lock strut.*
5. *Slowly lower lift arms onto strut.*

*Failure to follow this procedure could result in injury or death if lift arms are lowered.* *D-47-60-B*


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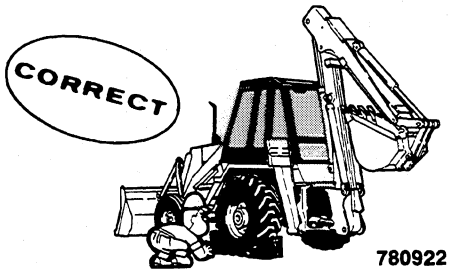
Support Strut Installed on Cylinder Rod

**WARNING:** *Never perform service procedures (including service of air cleaner) with the loader arms raised. unless the support strut has been installed. Failure to observe this precaution can result in injury or death if the loader arms are lowered.* **Important:** *Raise loader arms to full height to service air cleaner.* *D-48-29*

**WARNING:** *When you adjust or service the machine, always follow the instructions in the operator's or service manual. If the engine must be running, always have an extra person help you. Do not leave the operator's seat while the engine is running. Failure to follow these instructions can cause injury.* *47-51-A*

**WARNING:** *Before you do service under the machine, put the machine on a level surface, engage the parking brake and stop the engine. Put blocks at the front and rear of the tires. Failure to follow these instructions can cause injury.* *41-6-A*



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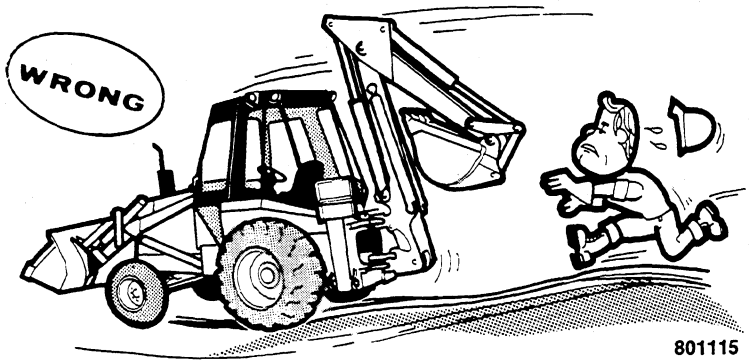
**WARNING:** *Before you put the machine on a trailer, remove all ice, oil or grease from the trailer and ramp.* *46-76-A*

**WARNING:** *If you connect jumper cables wrong to the starter motor solenoid, the engine can be started with the transmission in gear. To prevent personal injury or damage to the machine, use the following procedure:*

1. *Two persons are required for jump starting.*
2. *Connect the positive jumper cable to the Battery terminal of the starter motor solenoid.*
3. *Connect the negative jumper cable to a good frame ground. See the operator's manual for this machine. Sit in the operator's seat and then start the engine.*
4. *Have the other person disconnect the jumper cables.*

*If you do not use the above procedure, the machine can move out of control and you or other persons can be seriously injured*
*D-48-11*



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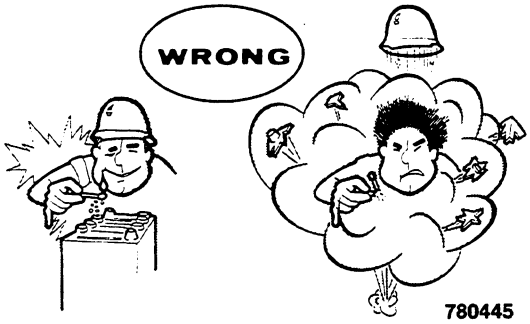
**POISON/DANGER:** *Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL flush with water; INTERNAL, drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately; EYES, flush with water for 15 minutes and get prompt medical attention. Keep out of reach of children.* D-19-2-A

**DANGER:** *Batteries produce explosive gases. Keep sparks, flame and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.* D-38-14



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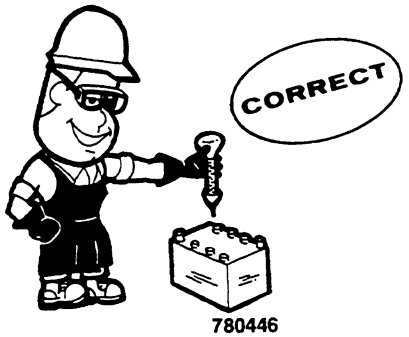
**CAUTION:** *When you remove a battery, always disconnect the (-) negative ground cable first. When you install a battery, always connect the (-) negative ground cable last. This procedure can prevent an explosion that is caused by a spark.* 47-38

**WARNING:** *When you check the charge of the battery, never put a metal object across the battery posts. The sparks can cause an explosion. Use a voltmeter or a hydrometer to check the battery.* 5-7-A



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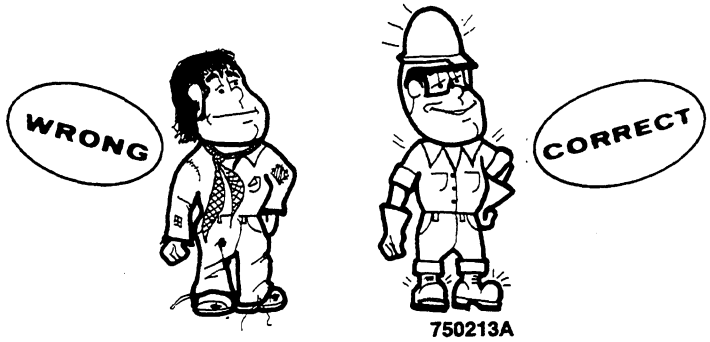
**CAUTION:** *Never wear metal rings or metal watch bands. You can make a ground for the electrical circuit and get a burn on your hand or arm.* *46-55-A*

**CAUTION:** *Know the electrical circuit before you connect or disconnect an electrical component. A wrong connection can cause injury or damage.* *5-4-A*

**CAUTION:** *Wear eye or face protection when you service the machine. Use a hammer with a soft face, such as plastic, wood, brass or leather, when you hit hardened tools or hardened metal surfaces. Any other procedure can cause injury from flying chips.* *46-14-C*



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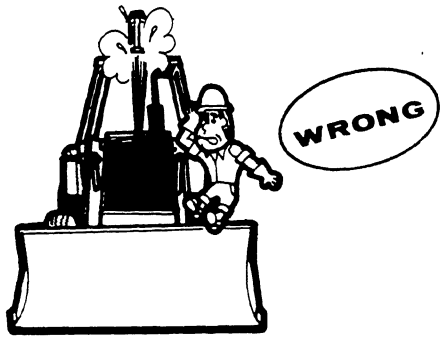
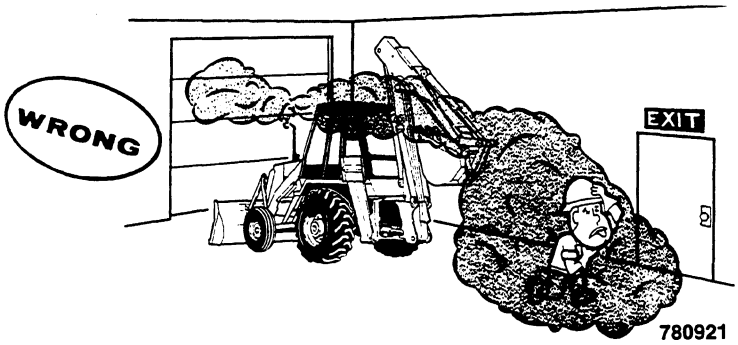
**WARNING:** *When the battery electrolyte is frozen, the battery can explode if, (1) you try to charge the battery, or (2) you try to jump start and run the engine. To prevent the battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.* *48-35*

**WARNING:** *Hot coolant can spray out if cap is removed suddenly. Remove cap by turning to first notch. Wait until pressure is released, then continue removal. Scalding can result from fast cap removal.* *D-47-28-A*



751122

**DANGER:** *Engine exhaust fumes can cause death. If it is necessary to start an engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. If you do not have an exhaust pipe extension, make sure you open the doors and get outside air into the area.* *27-4-A*



780921

**WARNING:** *Rotating fan and belts: Contact can injure. Keep clear.* *D-39-13*

751123

**WARNING:** *Do not put fuel into the machine if (1) the engine is running, (2) you are near an open flame or (3) you have a burning cigarette, cigar, etc. You can cause a fire and a serious injury.* *6-6-A*

**WARNING:** *The hydraulic system operates at a very high pressure. The hydraulic oil, even from a very small leak, can go through your skin and cause serious injury. When you check for leaks, do not use your hands. Use a piece of wood or paper. Before you disconnect any hydraulic lines or components, make sure there is no pressure in the circuit. When you connect the hydraulic lines or components, make sure the connections are tight. If the hydraulic oil goes through your skin, get a doctor immediately.* *43-7-A*

**WARNING:** *If you move this machine while the engine is stopped, do not permit persons in or on the machine.* *46-75-B*

**CAUTION:** *Do maintenance for the seat belt according to the instructions in the operator's manual. Failure of the seat belt can cause injury if an accident occurs.* *36-5-A*


805855

**WARNING:** *Do not remove engine side panels except for servicing. To insure proper engine cooling and/or prevent injury resulting from contact with rotating parts. Reinstall before starting engine.* *D-48-28*

## Brake Master Cylinder Fluid

**CAUTION:** *Do not use DOT 3 brake fluid. Use only J I Case TCH oil or Dexron II. Use of incorrect fluid will cause damage to cylinder seals and potential brake failure.* *D-48-26*

## Air Conditioning Refrigerant

**WARNING:** *Liquid refrigerant can cause severe and painful frostbite to your skin. Do not attempt to service the air conditioning system on this machine unless you are completely familiarized with air conditioning and the safety precautions which must be followed. Serious injury can result if you do not follow these instructions.* *48-33*

## SPARK ARRESTER
## (If Equipped)

Rules or laws of some areas can make it necessary for this machine to have a spark arrester or spark arrester muffler. Check the rules or laws in your area. Make sure that you do the correct maintenance to the spark arrester. See page 186 in the manual.

**WARNING:** *The optional spark arrester is not intended to be used in closed areas where there is dust or vapor that can cause an explosion.* *48-4*

# ROLL-OVER PROTECTIVE STRUCTURE

Your machine has a roll-over protective structure (ROPS). A ROPS label is fastened to the structure. The ROPS label has important information about ROPS. See page 29 for the location of the ROPS label.

The ROPS label shows the serial number of the ROPS, gross weight, approval and regulation numbers and model number of the machine.

Before you operate this machine, always make sure that the ROPS, and operator's seat belts are correctly installed.

Read the following important information.

## Seat Belt for the ROPS

The seat belt is an important part of your ROPS. You must wear the seat belt at all times when you operate the machine.

## Possible Damage to the ROPS

If the machine has rolled over or the ROPS has been in some other type of accident (such as hitting an overhead object during transport), you must replace the damaged ROPS components to get as much protection as you had originally. See pages 24 and 25. Also see your parts catalog for components that are replaceable.

After an accident, check for damage to (1) the ROPS cab or ROPS canopy, (2) the ROPS frame, (3) operator's seat, (4) the seat belt and the seat belt mountings, and (5) all accessories, wiring, etc., in the ROPS. Before you operate the machine, replace all ROPS components that are damaged.

DO NOT TRY TO WELD THE ROPS OR TO MAKE THE ROPS STRAIGHT.

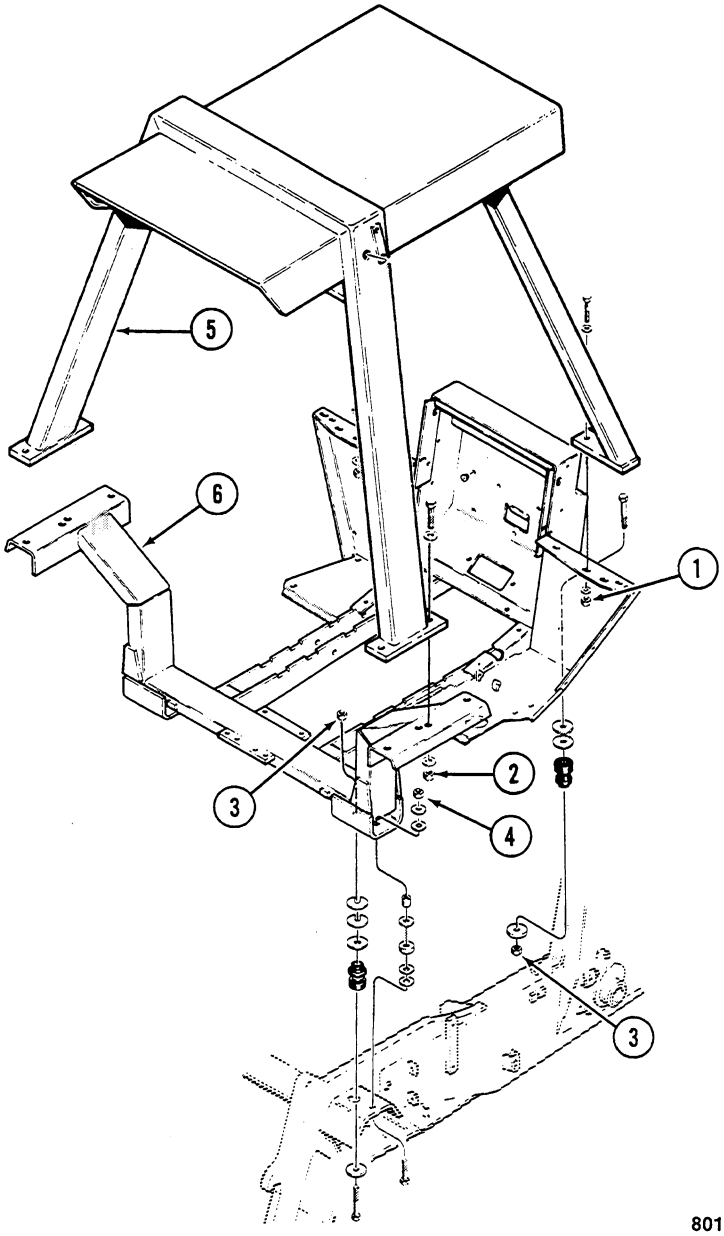
## Maintenance and Inspection of the ROPS

After the first 20 hours of operation and after every 500 hours of operation or six months, whichever comes first, do the following:

1. Check the torque of the ROPS mounting bolts. If necessary, tighten the bolts to the correct torque.

2. Check the operator's seat and the mounting parts for the seat belt. Tighten the bolts to the correct torque. Replace parts that have wear or damage.

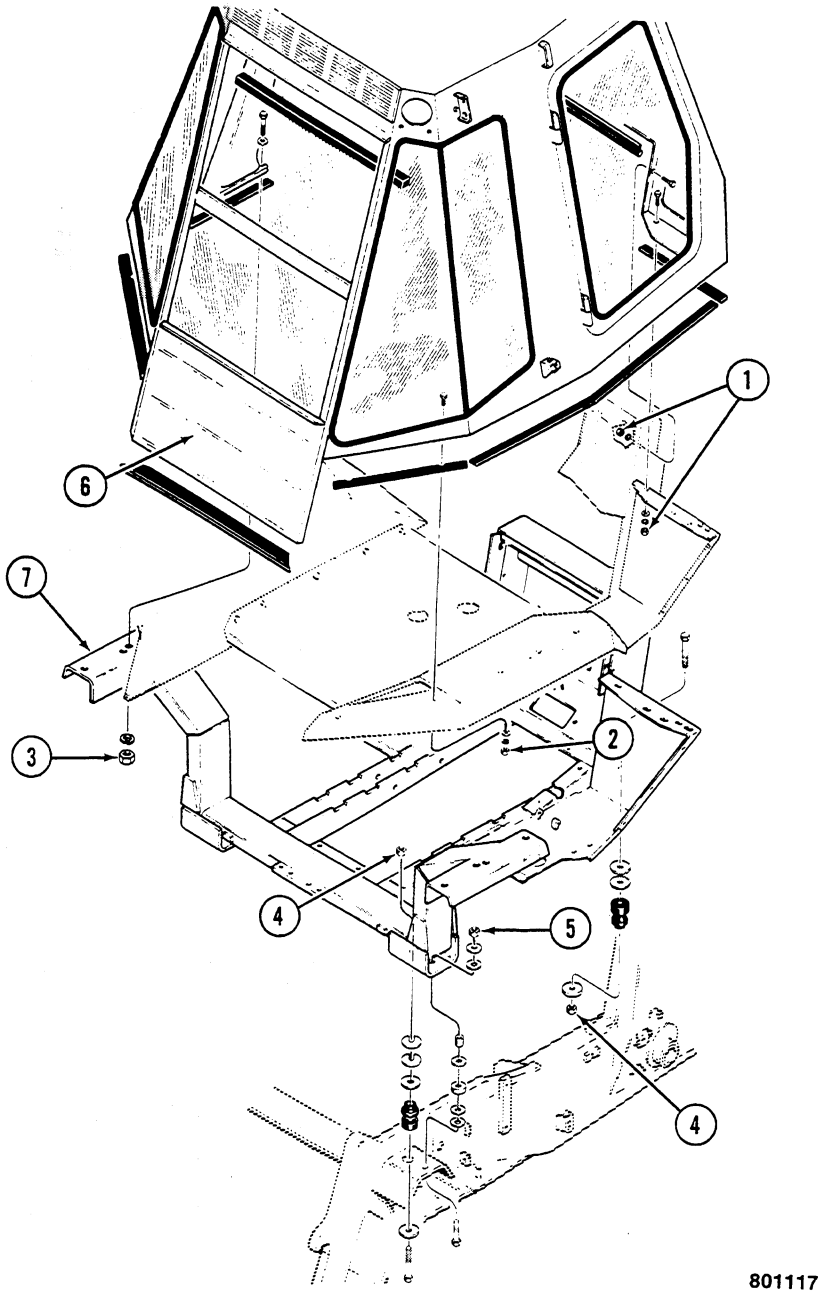
## Mounting Bolts for ROPS Canopy and ROPS Frame




801116

1. 100 - 120 Pound-Feet (136 - 162 N m)
2. 340 - 420 Pound-Feet (461 - 569 N m)
3. 200 - 240 Pound-Feet (271 - 324 N m)
4. 135 - 165 Pound-Feet (183 - 224 N m)
5. ROPS Canopy
6. ROPS Frame

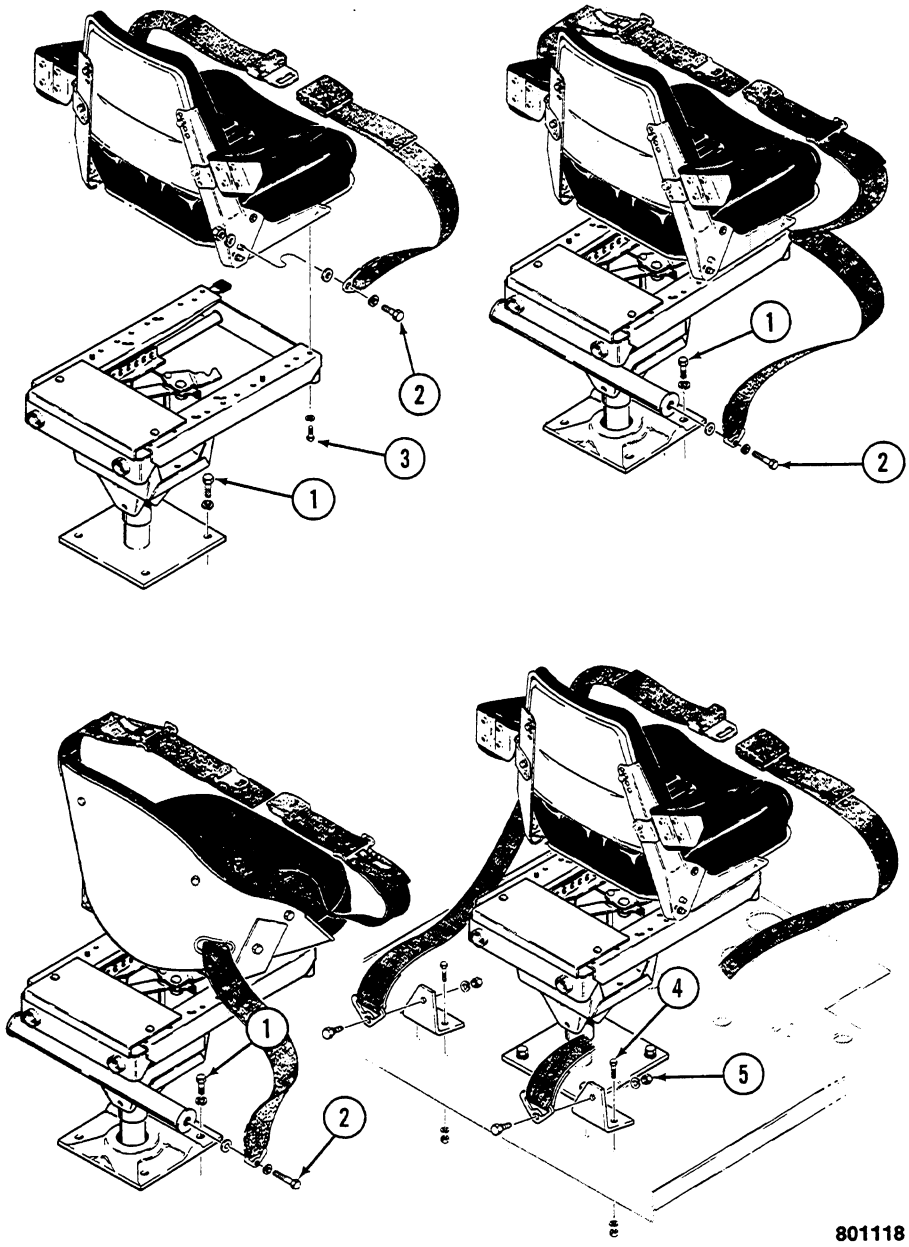
## Mounting Bolts for ROPS Cab and ROPS Frame




801117

1. 25 - 35 Pound-Feet (34 - 47 N m)
2. 15 - 20 Pound-Feet (20 - 27 N m)
3. 340 - 420 Pound-Feet (461 - 569 N m)
4. 200 - 240 Pound-Feet (271 - 325 N m)
5. 135 - 165 Pound-Feet (183 - 224 N m)
6. ROPS Cab
7. ROPS Frame

## Mounting Bolts for Seat and Seat Belts

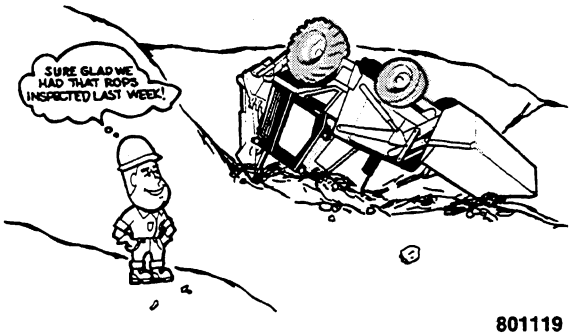



801118

1. 65 - 85 Pound-Feet (88 - 115 N m)
2. 50 - 60 Pound-Feet (68 - 81 N m)
3. 15 - 20 Pound-Feet (20 - 27 N m)
4. 25 - 35 Pound-Feet (34 - 47 N m)
5. 35 - 40 Pound-Feet (45 - 55 N m)

## Safety Rules for the ROPS

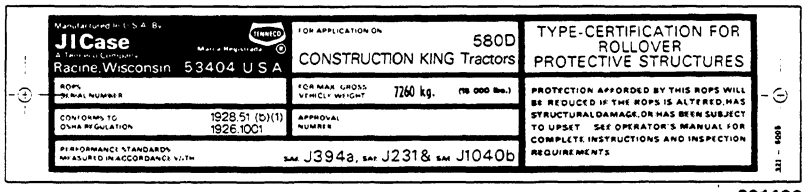
**WARNING:** *Do not remove the ROPS except for service. Install the ROPS correctly before you operate the machine again.* 3-10-A




801119

**WARNING:** *Do not modify ROPS in any manner. Unauthorized modifications such as welding, drilling, cutting or adding attachments could weaken the structure and reduce your protection. Replace ROPS if subjected to rollover or damage. Do not attempt to repair. See operator's manual for complete instructions and inspection requirements.* D-46-91

**WARNING:** *Do not install attachments that will cause the total gross weight of the machine to exceed the weight shown in the "FOR MAXIMUM GROSS MACHINE WEIGHT" space on the ROPS label.* D-46-56-A




801120

**WARNING:** *Special hardware is used to fasten the ROPS to the machine. You must use only the replacement parts shown in the Case parts catalog for this machine.* 4-9-A

**WARNING:** *Always fasten the seat belt before you start the engine. Make sure the buckle for the seat belt is fastened correctly.* 8-5-A

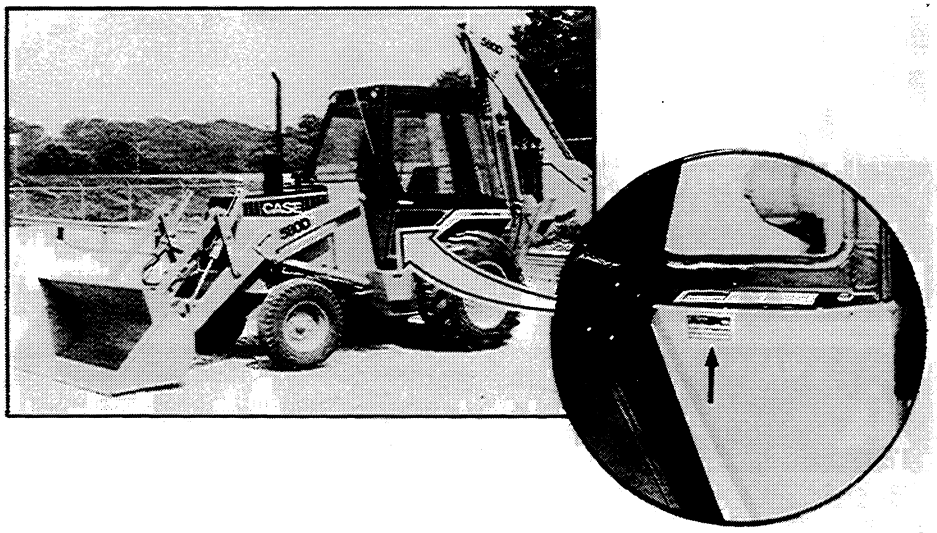
**NOTE:** *Do not remove any safety equipment, such as rollover protective structure or side screens (or side windows) except for servicing. Properly reinstall before using machine.* D-48-64

# LOCATION OF PRODUCT IDENTIFICATION NUMBER (P.I.N.) AND SERIAL NUMBERS

When you get parts or need information from your Case dealer, you must give the model number and the Product Identification Number (PIN). Also give the serial number of major components such as the engine, transmission, etc.

## Product Identification Number

BASIC MACHINE - The Product Identification Number (PIN) is located left of the operator's manual box.




805927

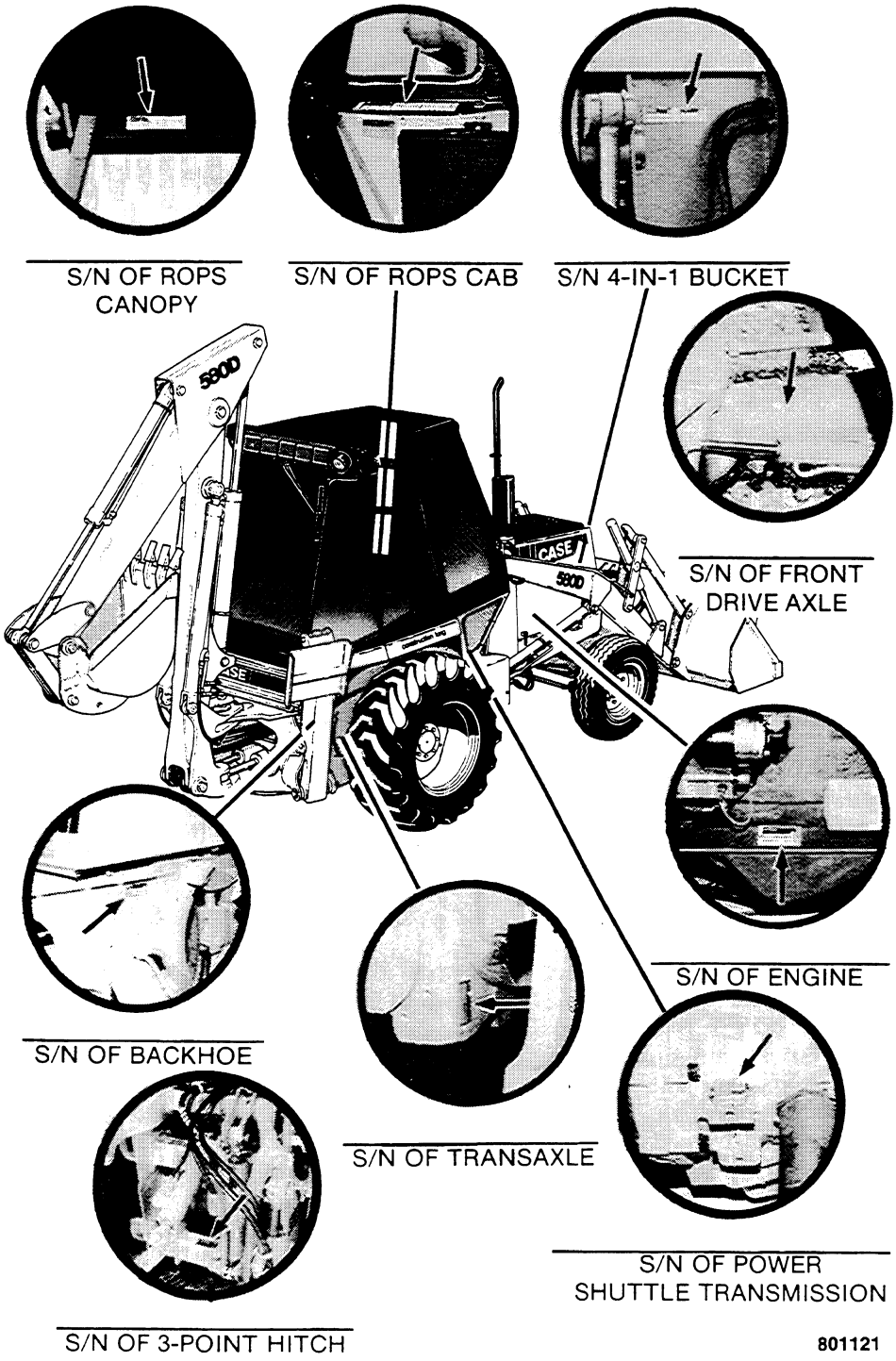
WRITE THE PRODUCT IDENTIFICATION NUMBER HERE

WRITE THE MODEL NUMBER HERE

Write the PIN number and the model number on the two lines above. Also make a record of the serial numbers shown on the next page.

Make an additional list of the same numbers and keep these records and the Manufacturer's Statement of Origin in a safe place. If this machine is stolen, report the PIN, model number and other serial numbers to your local law enforcement agency.

## Serial Numbers of Attachments and Components




801121

# SPECIFICATIONS

**NOTE:** All specifications are given according to ICED or SAE standards or Recommended Practices where the specification applies.

## 580D ENGINE

Make and model ..... Case G207D, diesel
Firing order ..... 1-3-4-2
Bore and stroke ..... 4 in x 4.125 in (102 x 105 mm)
Displacement ..... 207 cu in (3392 $cm^3$)
Compression ratio ..... 17 to 1
Fuel ..... See page 122
Horsepower
- SAE gross .....60 hp at 2100 rpm (44.7 kW at 2100 r/min)
- SAE net .....55 hp at 2100 rpm (41 kW at 2100 r/min)

Engine speeds: RPM (r/min)
- Full throttle, no load ..... 2230 to 2270 rpm
- Hydraulic stall ..... 2140 rpm
- Converter stall ..... 1900 rpm
- Idle speed ..... 700 to 750 rpm

Air cleaner ..... Dry type with dust cup
Valve clearance - engine cold
- Intake valves ..... .012 in (0.31 mm)
- Exhaust valves ..... .014 in (0.35 mm)

## 580 SUPER D ENGINE

Make and model ..... Case G207DT, diesel
Firing order ..... 1-3-4-2
Bore and stroke ..... 4 in x 4.125 in (102 x 105 mm)
Displacement ..... 207 cu in (3392 $cm^3$)
Compression ratio ..... 16.5 to 1
Fuel ..... See page 122
Horsepower
- SAE gross .....66 hp at 2200 rpm (49.2 kW at 2200 r/min)
- SAE net .....60 hp at 2200 rpm (44.7 kW at 2200 r/min)

Engine speeds: RPM (r/min)
- Full throttle, no load ..... 2330 to 2370 rpm
- Hydraulic stall ..... 2250 rpm
- Converter stall ..... 2050 rpm
- Idle speed ..... 700 to 750 rpm

Air cleaner ..... Two elements, dry type with dust valve
Valve clearance - engine cold
- Intake valves ..... .012 in (0.31 mm)
- Exhaust valves ..... .014 in (0.35 mm)

## COOLING SYSTEM

| | |
|---|---|
| Radiator cap | 7 psi (48 kPa) |
| Thermostat (A57641) | 180° F (82° C) |
| Opening range | 175° to 182° F (80° to 85° C) |
| Fully open | 202° F (94° C) |

## ELECTRICAL SYSTEM

| | |
|---|---|
| Type of system | 12 volt, negative ground |
| Battery | (1) 12 volt |
| Alternator | 12 volt, 42 ampere |

| Replacement bulbs | Bulb Replacement Number |
|---|---|
| Front driving lamp | 4411 |
| Rear flood lamp | 4406 |
| Stop and tail lamp | 1157 |
| Flasher lamp | 1156 |
| Rear flood (models without ROPS) | 4411 |
| Stop and tail lamp (models without ROPS) | 1157 |
| Tail lamp (models with ROPS without stop lamps) | 97 |
| Instrument panel cluster | |
| Instrument lamps (lower) | 194 |
| Warning lamps (upper) | 168 |
| Backhoe dipper lamp | 4406 |
| Rotating beacon | 4416 |

## HYDRAULIC SYSTEM

| | |
|---|---|
| Main relief valve pressure settings | |
| Loader and backhoe | 2450 ± 50 psi (16 890 ± 345 kPa) |
| Three-point hitch | 1800 ± 50 psi (12 410 ± 345 kPa) |
| Steering dual stage main relief | |
| High setting | 3000 ± 150 psi (20 680 ± 1 035 kPa) |
| Low setting | 2100 ± 50 psi (14 475 ± 345 kPa) |

# CAPACITIES

| | US | (Metric) |
|---|---|---|
| Fuel tank | 22 gallons | (83 litres) |
| Cooling system | | |
| Models with heater | 14 quarts | (13.2 litres) |
| Models without heater | 13 quarts | (12.3 litres) |
| Engine oil: | | |
| 580 Super D | | |
| With filter change | 9 quarts | (8.5 litres) |
| Without filter change | 8 quarts | (7.6 litres) |
| 580D | | |
| (Before engine S/N 4313432) | | |
| With filter change | 7 quarts | (6.6 litres) |
| Without filter change | 6 quarts | (5.7 litres) |
| 580D | | |
| (Engines S/N 4313432 and after) | | |
| With filter change | 9 quarts | (8.5 litres) |
| Without filter change | 8 quarts | (7.6 litres) |
| Hydraulic reservoir refill capacity | | |
| With filter change | 12.5 gallons | (47.3 litres) |
| Without filter change | 12 gallons | (45.4 litres) |
| Four speed transaxle | 20 quarts | (19 litres) |
| Power shuttle transmission | 8 quarts | (7.6 litres) |
| Front drive axle (4 wheel drive) | | |
| Center bowl | 6.9 quarts | (6.5 litres) |
| Planetary ends (each) | 1.5 quarts | (1.4 litres) |
| Transfer case (4 wheel drive) | 1 pint | (0.5 litres) |

# TIRE AIR PRESSURES

| Size | Ply Rating | Type Tread | Air Pressure psi (kPa) |
|---|---|---|---|
| Front | | | |
| 7.50 x 16 | 10 | I1 Rib | 56 (386) |
| 8.00 x 16 | 10 | F3 Truck Tread | 56 (386) |
| 11L x 16 | 10 | F3 Truck Tread | 48 (331) |
| 12 x 16.5 | 6 | NHS | 45 (310) |
| 12 x 16.5 | 8 | NHS | 60 (414) |
| Rear | | | |
| 14.9 x 24 | 6 | R1 Agricultural | 18 (124) |
| 14.9 x 24 | 6 | R3 Utility Traction | 18 (124) |
| 14.9 x 24 | 6 | R4 Utility Traction | 20 (138) |
| 14.9 x 24 | 8 | R4 Utility Traction | 24 (165) |
| 16.9 x 24 | 6 | R3 Non-Directional | 18 (124) |
| 16.9 x 24 | 6 | R4 Utility Traction | 18 (124) |
| *16.9 x 24 | 8 | R4 Utility traction | 24 (165) |
| 17.5L x 24 | 6 | R4 Ind. Sure Grip | 16 (110) |
| *17.5 x 24 | 8 | R4 Ind. Sure Grip | 22 (152) |

*Extendahoe Machines

## OPERATING WEIGHTS

| | Pounds | (kg) |
|---|---|---|
| Operating weight for standard machine | 11758 | (5333) |
| Add for 4-In-1 bucket | 1130 | (513) |
| Add for Extendahoe and front counterweight | 1255 | (569) |
| Add for cab with air conditioning | 660 | (299) |
| Add for cab without air conditioning | 630 | (286) |
| *Four wheel drive machines | | |
| Operating weight for standard machine | 12453 | (5649) |
| Operating weight for extendahoe machine | 13604 | (6171) |

**NOTE:** Operating weight for standard loader backhoe machine taken with 74 in (1880 mm) short lip loader bucket, 24 in (610 mm) backhoe trenching bucket, 11L x 16 - 10 PR front tires, 17.5L x 24 - 8 PR rear tires, ROPS canopy, full fuel, 175 lbs., (79 kg) operator, and standard equipment.

*Specifications for the four wheel drive machine were measured with 12x16.5 (8PR) front tires, 17.5Lx24 (8PR) rear tires, 82 inch (2083 mm) long lip loader bucket, 24 inch (610 mm) HD backhoe bucket, ROPS canopy, full fuel tank, and 175 pound (79 kg) operator.

## BOLT TORQUES

| | Pound-Feet | (N m) |
|---|---|---|
| Drive shaft mounting bolts | 35 to 40 | (47 to 54) |
| Transaxle to frame mounting bolts | 250 to 300 | (339 to 407) |
| Wheel bolts | 115 to 130 | (156 to 176) |
| Backhoe tension rods | 200 to 250 | (270 to 340) |
| Lower swing pivot pin nut on backhoe | 800 to 1000 | (1085 to 1356) |

**NOTE:** See page 24 and 25 for ROPS bolt torques.

## TRAVEL SPEEDS

### 580D

Travel speeds taken with 17.5L x 24 rear tires.

| | 1st | | 2nd | | 3rd | | 4th | |
|---|---|---|---|---|---|---|---|---|
| | mph | (km/h) | mph | (km/h) | mph | (km/h) | mph | (km/h) |
| Forward | 3.4 | (5.49) | 6.4 | (10.30) | 11.9 | (19.15) | 21.0 | (33.80) |
| Reverse | 3.0 | (4.83) | 5.8 | (9.33) | 10.7 | (17.22) | 18.9 | (30.42) |

### 580 Super D

| | 1st | | 2nd | | 3rd | | 4th | |
|---|---|---|---|---|---|---|---|---|
| | mph | (km/h) | mph | (km/h) | mph | (km/h) | mph | (km/h) |
| Forward | 3.5 | (5.63) | 6.5 | (10.47) | 12.2 | (19.63) | 21.8 | (35.08) |
| Reverse | 3.1 | (4.99) | 6.0 | (9.66) | 11.1 | (17.86) | 19.6 | (31.54) |

# BUCKETS

## Loader

Capacities

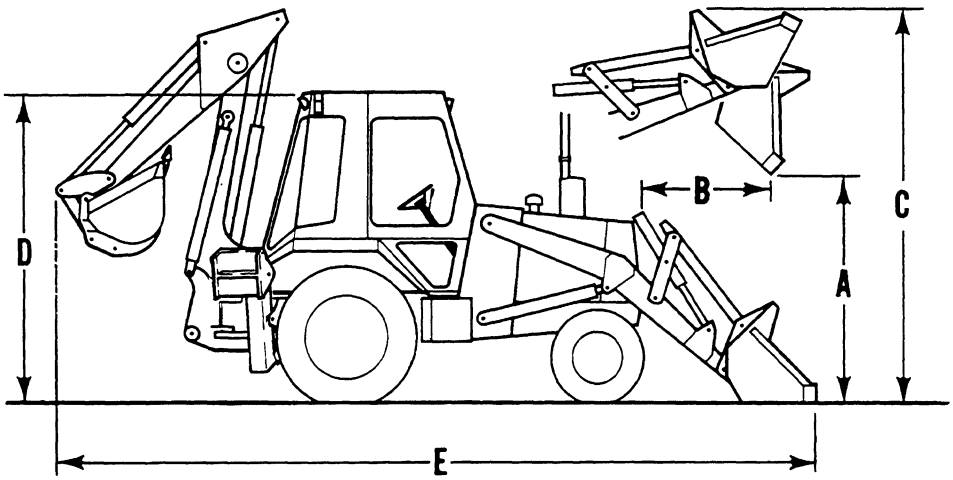
| Width inch (mm) | Type | SAE Heaped cu yd ($m^3$) | Struck cu yd ($m^3$) | Weight lbs (kg) |
|---|---|---|---|---|
| 74 (1880) | Short Lip | .75 (0.60) | .70 (0.50) | 600 (272) |
| 82 (2083) | Long Lip | 1.00 (0.78) | .87 (0.67) | 760 (345) |
| 82 (2083) | 4-in-1® | 1.00 (0.76) | .81 (0.62) | 1130 (513) |

## Backhoe

| Width inch (mm) | Type | Weight lbs. (kg) |
|---|---|---|
| 12 (305) | Trenching | 217 (98) |
| 18 (457) | Trenching | 258 (117) |
| 24 (610) | Trenching | 295 (134) |
| 30 (762) | Trenching | 330 (150) |
| 36 (914) | Trenching | 378 (171) |
| 18 (457) | HD Trenching | 326 (148) |
| 24 (610) | HD Trenching | 380 (172) |
| 30 (762) | HD Trenching | 446 (202) |
| 36 (914) | HD Trenching | 475 (215) |
| 12 (305) | Bellhole | 128 (58) |
| 16 (406) | Bellhole | 156 (71) |
| 30 (762) | Bellhole | 218 (99) |
| 36 (914) | Bellhole | 266 (121) |
| *24 (610) | High Capacity Trenching | 405 (184) |

*Super D backhoe only

# LOADER




801122

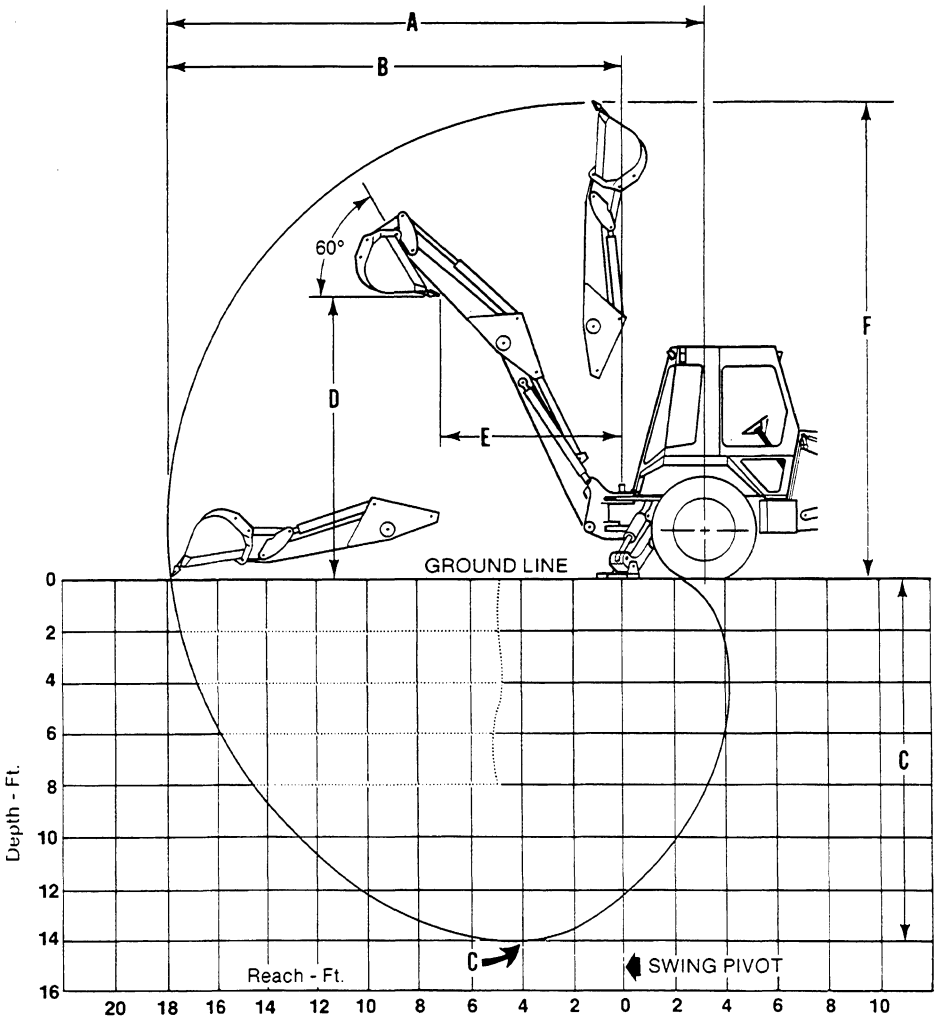
**NOTE:** Loader specifications taken with loader buckets shown below. 14.9 x 24 - 6 PR rear tires and 7.50 x 16 - 10 PR front tires.

## Operating Data and Dimensions

| | | 3/4 cu yd short lip Bucket | 4-in-1 Bucket |
|---|---|---|---|
| | Maximum lift capacity to full height .. | 5155 pounds (2338 kg) | 4390 pounds (1991 kg) |
| A | Dump clearance at maximum height, | | |
| | 45° dump ..... | 8 ft 7-3/4 in. (2635 mm) | *8 ft 6-3/4 in. (2610 mm) |
| | Using clam ..... | | 10 ft 1/4 in. (3056 mm) |
| B | Dump reach at maximum height, | | |
| | 45° dump ..... | 25-1/2 in. (648 mm) | *24 in. (610 mm) |
| | 42° dump clam closed ..... | | 27 in. (686 mm) |
| | Height to bucket hinge pin ..... | 10 ft 9-1/2 in. (3287 mm) | 10 ft 8-1/2 in. (3264 mm) |
| C | Overall operating height ..... | 13 ft 3-1/4 in. (4045 mm) | 15 ft 1/2 in. (4585 mm) |
| D | Overall height to top of ROPS ..... | 8 ft 7 in. (2616 mm) | 8 ft 7 in. (2616 mm) |
| | Overall width at bucket ..... | 6 ft 2 in. (1880 mm) | 6 ft 9-1/2 in. (2070 mm) |
| E | Overall length, loader bucket on ground and rear attachment in transport position | | |
| | With standard backhoe ..... | 21 ft 10-1/2 in. (6668 mm) | 22 ft 1-1/2 in. (6444 mm) |
| | With extendahoe ..... | 22 ft 2 in. (6756 mm) | 22 ft 4-3/4 in. (6829 mm) |

*52° dump angle

# 580D BACKHOES
## Standard Backhoes




801123

A The reach, from rear axle of machine ..... 21 ft 1-1/2 in. (6439 m.

B The dig radius, from swing pivot .....17 ft 8 in. (5385 mm)

C The dig depth SAE .....14 ft 2 in. (4320 mm)

D Loading height .....11 ft 1-1/2 in. (3393 mm)

E The reach when you load .....6 ft 7 in. (2002 mm)

Swing arc of the backhoe .....180°

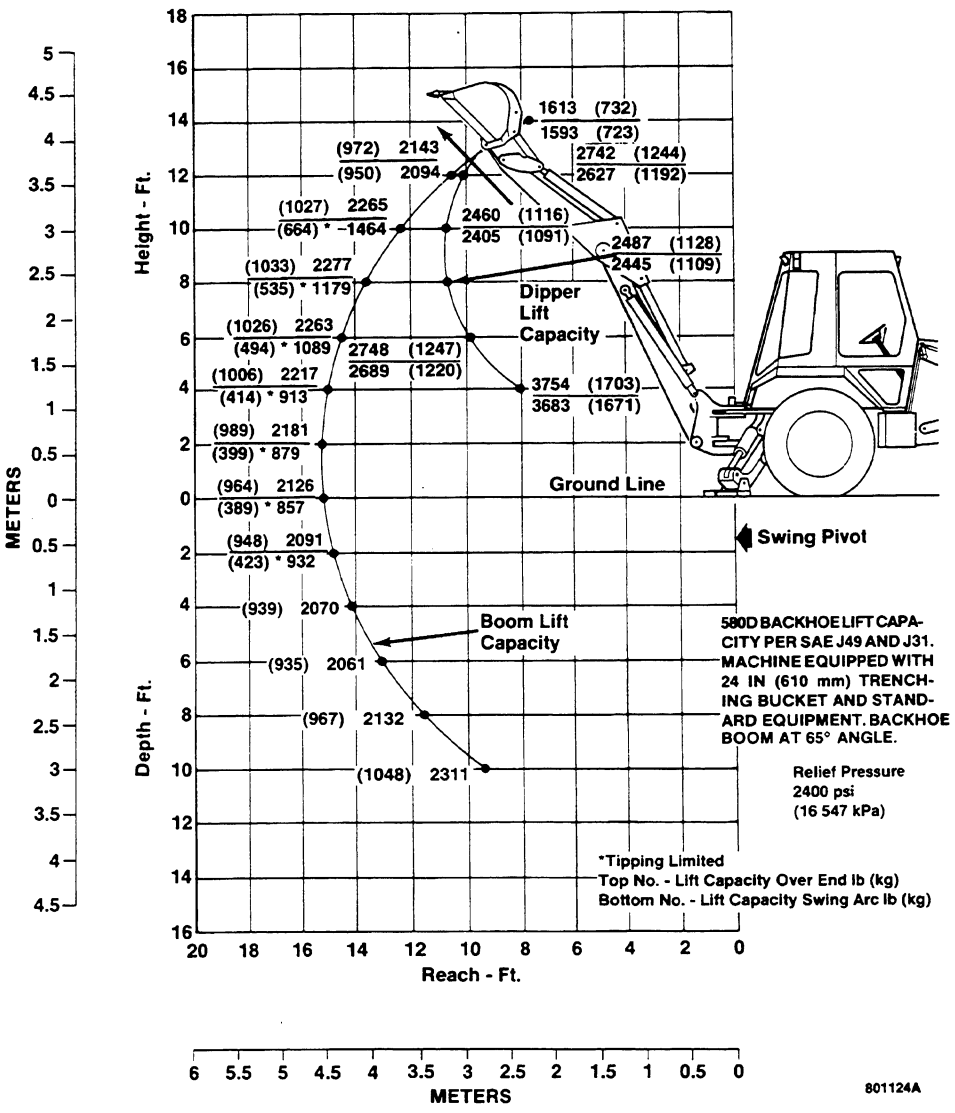
Distance between outer edges of stabilizers
Operating position .....9 ft 1/4 in. (2750 mm)
Transport position .....6 ft 8-1/2 in. (2047 mm)

The machine leveling angle (maximum angle of
hill the backhoe will make a vertical cut) .....12°

F Maximum height ..... 18 ft 8 in. (5690 mm)

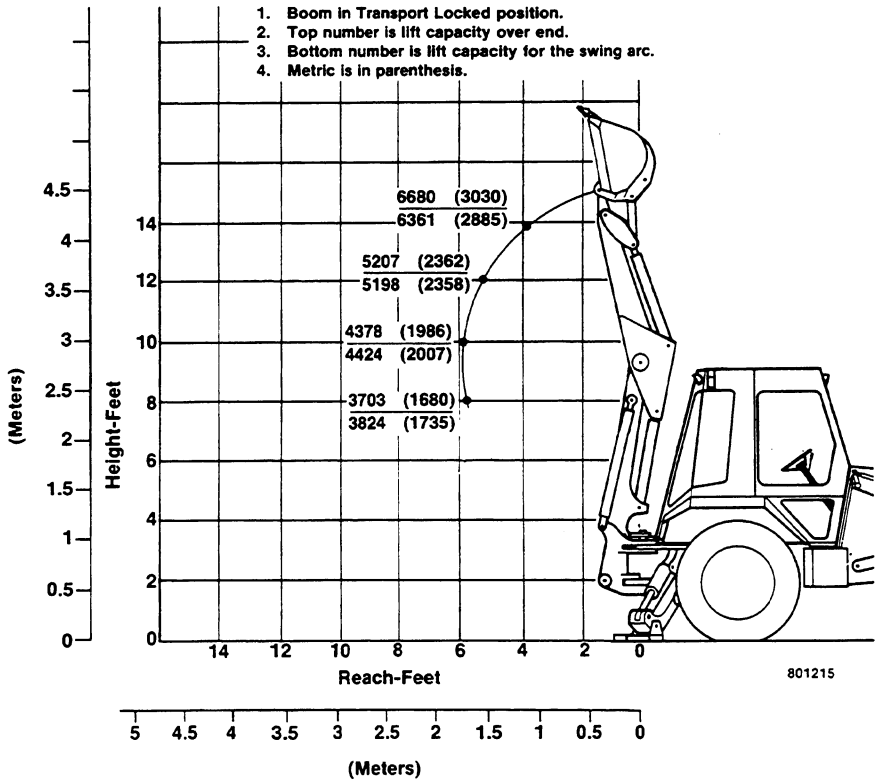
Total height with backhoe in transport position ..... 11 ft 3 in. (3432 mm)

# Standard Backhoe Lift Capacity




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* D-48-30

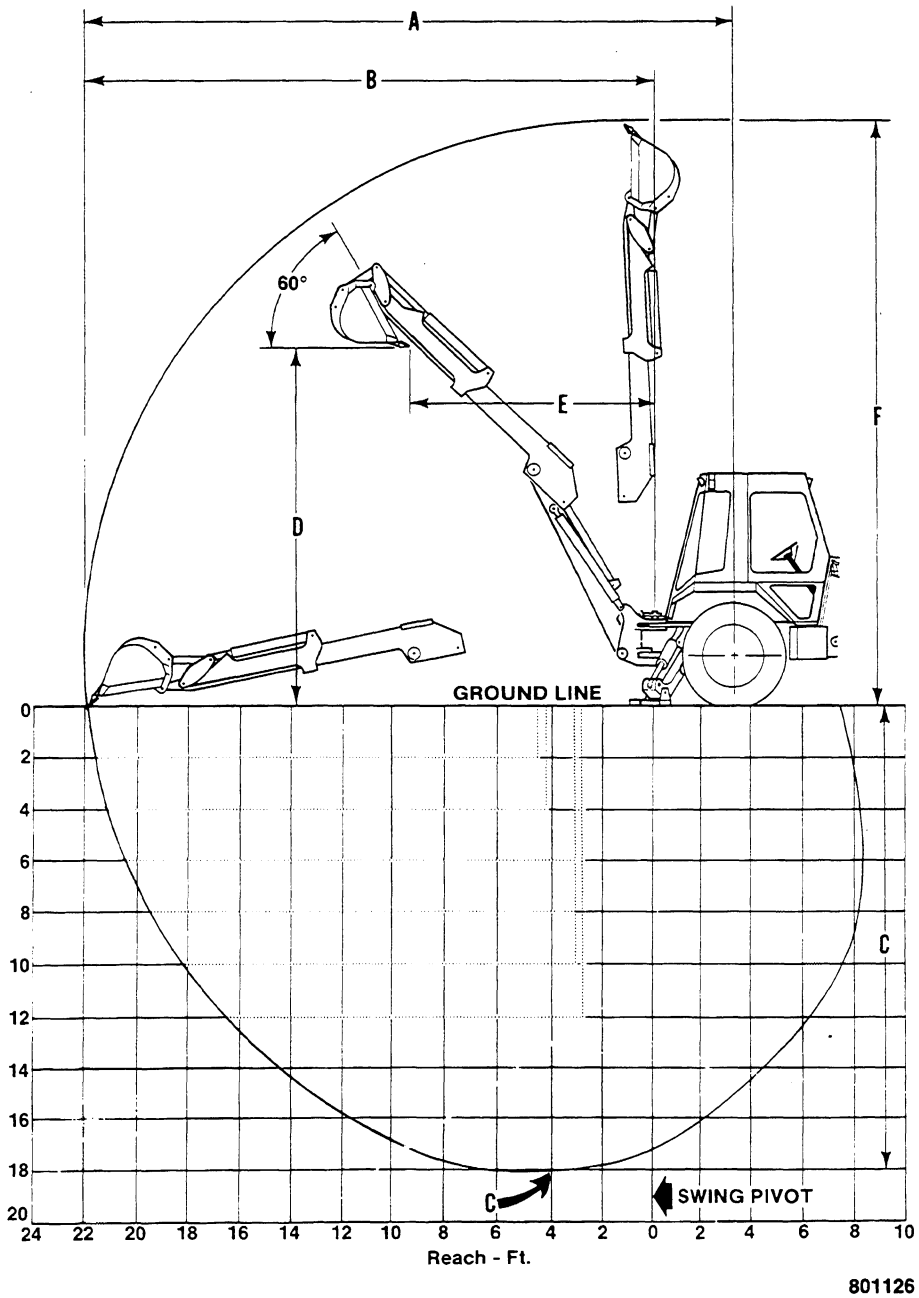
# Standard Backhoe Lift Capacity (Boom in Transport Locked Position)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*

*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

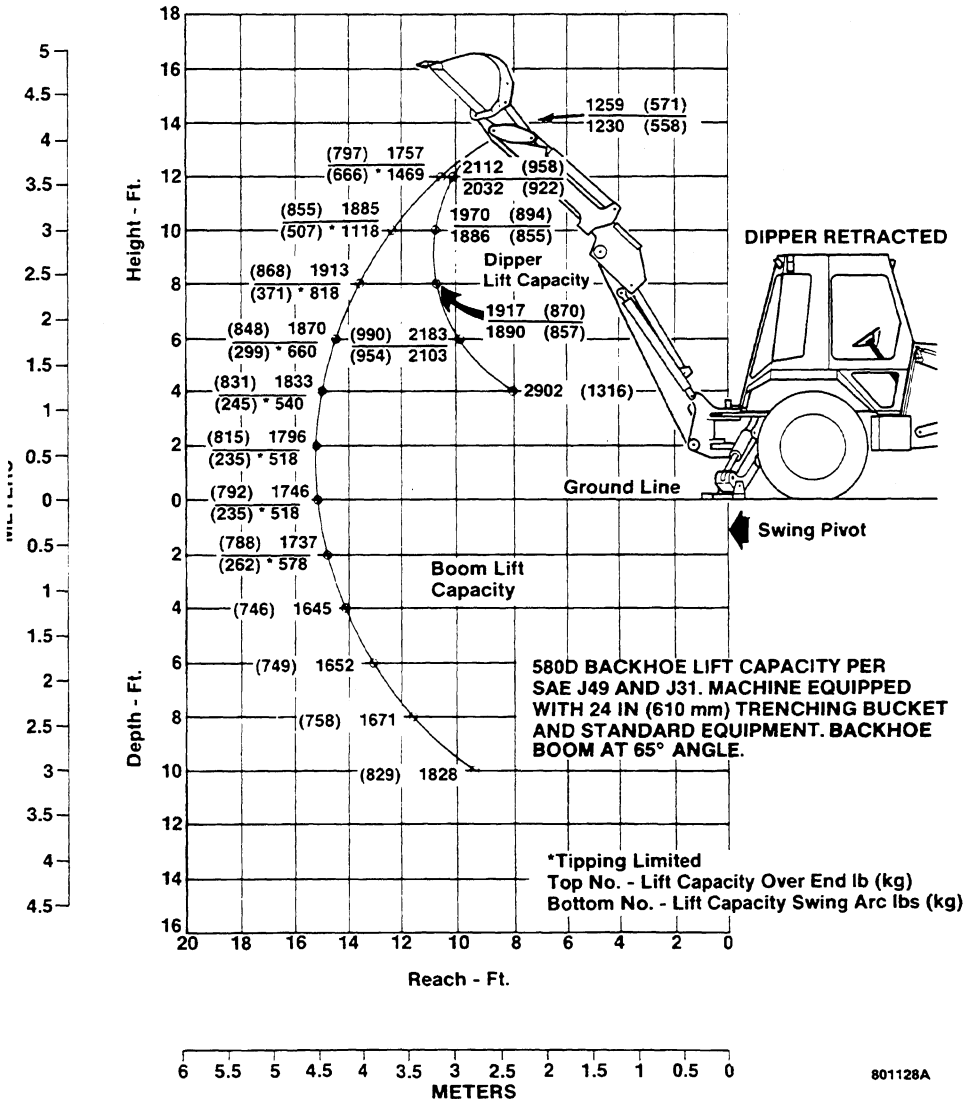
# Extendahoe®




801126

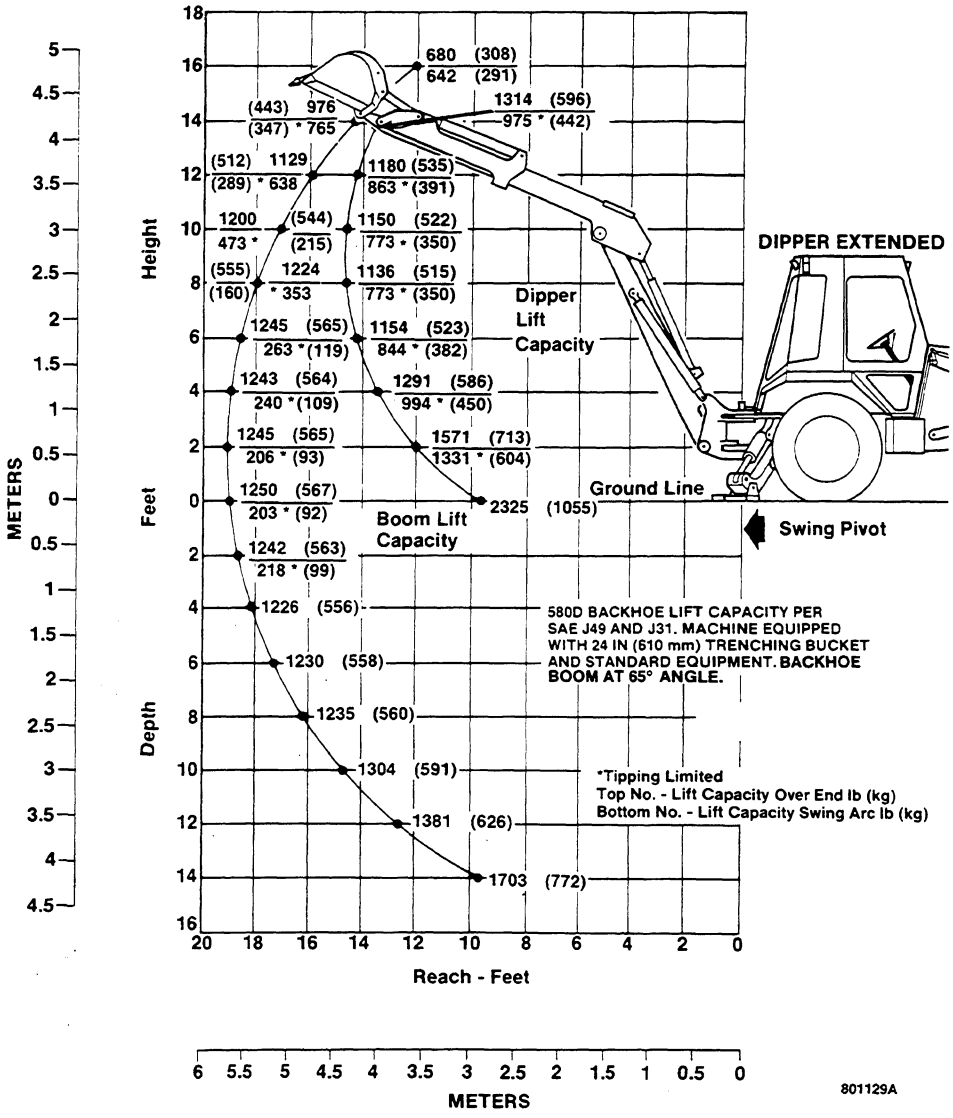
| | | Retracted | Extend |
|---|---|---|---|
| A | The reach, from rear axle of machine | 21 ft 2 in. (6457 mm) | 25 ft (7620 mm) |
| B | The dig radius, from swing pivot | 17 ft 8-1/2 in. (5398 mm) | 21 ft 6-1/2 in. (6566 mm) |
| C | The dig depth SAE | 14 ft 4 in. (4369 mm) | 18 ft 3 in. (5563 mm) |
| D | Loading height | 11 ft 11 in. (3632 mm) | 14 ft 3-1/4 in. (4348 mm) |
| E | The reach when you load | 5 ft 8-1/2 in. (1742 mm) | 9 ft (2743 mm) |
| | Swing arc of the backhoe | 180° | 180° |
| | Distance between outer edges of stabilizers | | |
| | Operating position | 9 ft 1/4 in. (2750 mm) | 9 ft 1/4 in. (2750 mm) |
| | Transport position | 6 ft 8-1/2 in. (2047 mm) | 6 ft 8-1/2 in. (2047 mm) |
| | The machine leveling angle (maximum angle of hill the backhoe will make a vertical cut) | 12° | 12° |
| F | Maximum height | 18 ft 8 in. (5690 mm) | 22 ft 3 in. (6782 mm) |
| | Total height with backhoe in transport position | 11 ft 5-1/2 in. (3493 mm) | ----- |

# Standard Extendahoe Lift Capacity (Dipper Retracted)



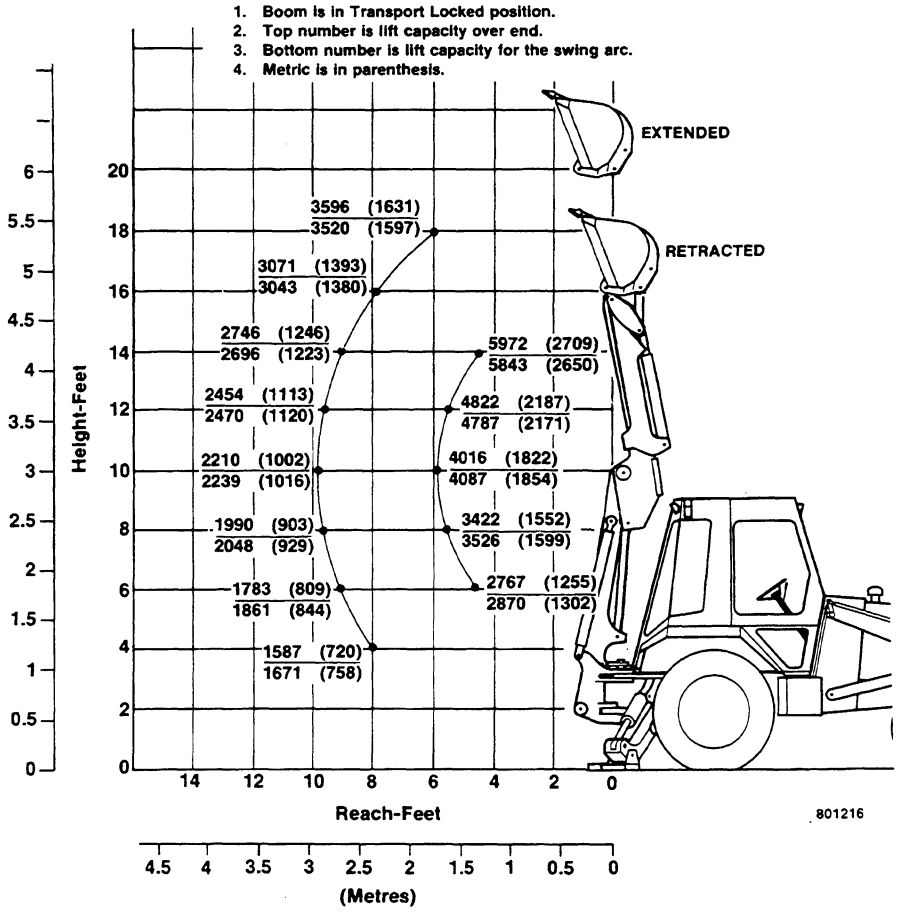

**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

# Standard Extendahoe Lift Capacity (Dipper Extended)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

# Standard Extendahoe Lift Capacity (Boom in Transport Locked Position)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

# 580 SUPER D BACKHOES

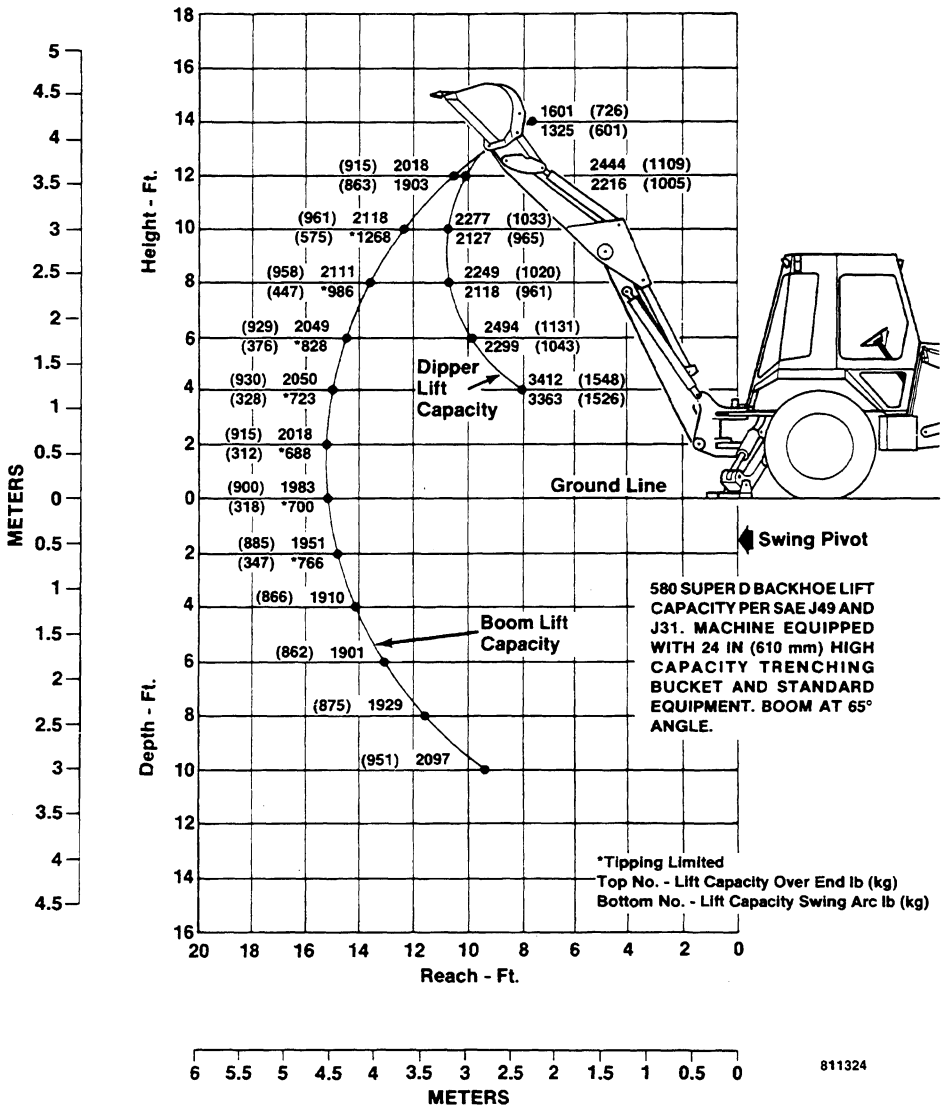

816065

| | Standard Backhoe | Extendahoe |
|---|---|---|
| *Operating Weight | 12,860 pounds (5833 kg) | 13,475 pounds (6112 kg) |
| Weight of 24 in (610 mm) high capacity backhoe bucket | 405 pounds (184 kg) | |
| Backhoe digging depth SAE | 14 ft 7 in 4.45 m) | 18 ft 9 in (5.72 m) |
| Overall height with backhoe in the Transport position | 11 ft 1 in (3.33 m) | 11 ft 4 in (3.4 m) |
| Overall length with backhoe in the Transport position | 22 ft 7-3/4 in (6.90 m) | 22 ft 9 in (6.93 m) |

*The operating weights were measured with full fuel tank, 175 pound (79 kg) operator, 82 inch (2083 mm) long lip loader bucket, 24 inch (610 mm) high capacity backhoe bucket, ROPS canopy, and standard equipment.

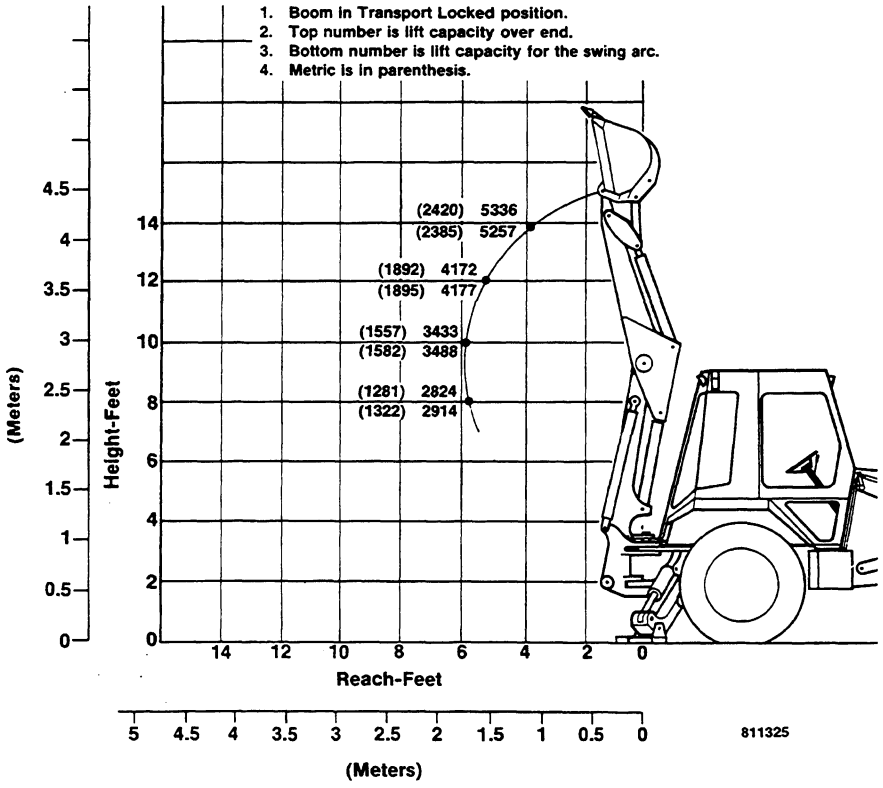
Engine speeds
- Full throttle, no load ..... 2350 ± 20 rpm
- Rated engine speed ..... 2200 rpm

# Super D Backhoe Lift Capacity



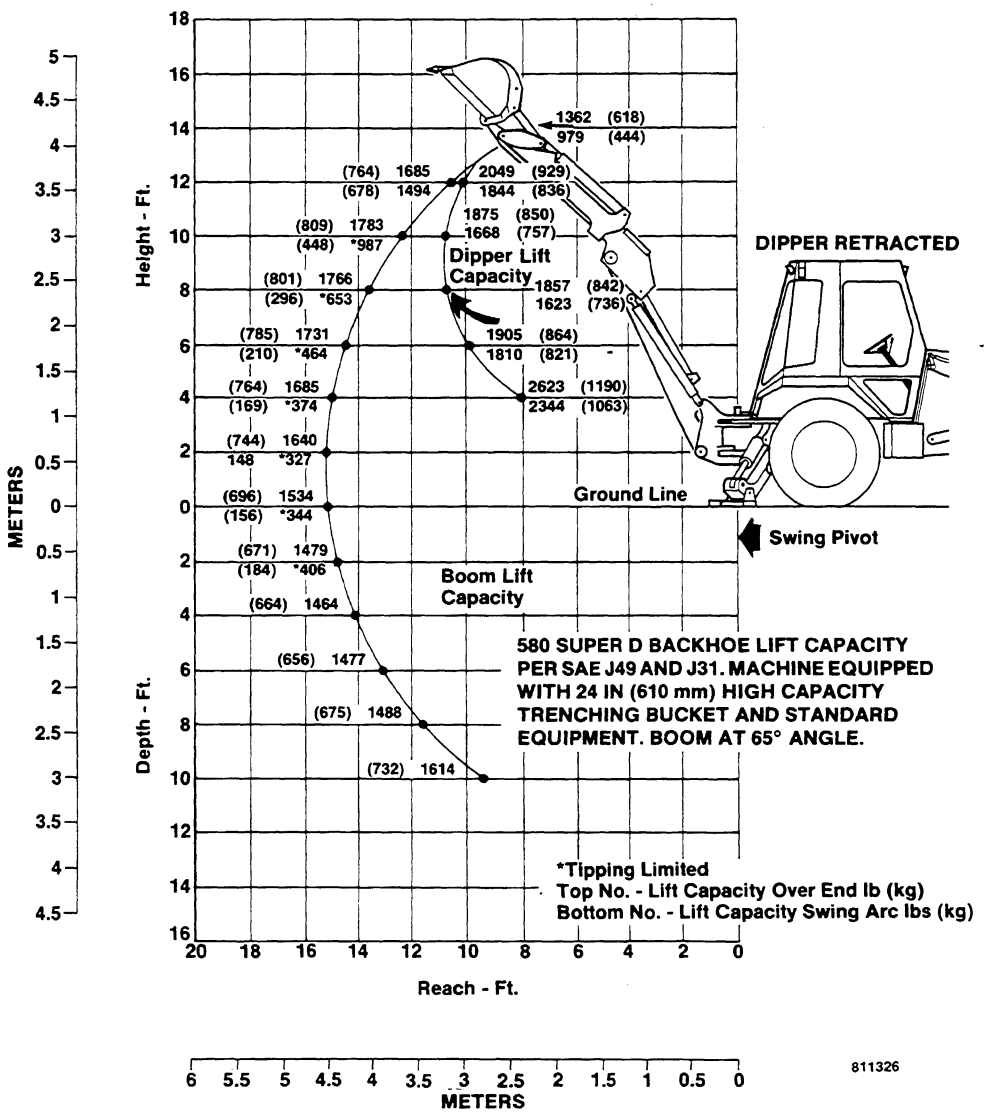

**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

# Super D Backhoe Lift Capacity
# (Boom in Transport Locked Position)



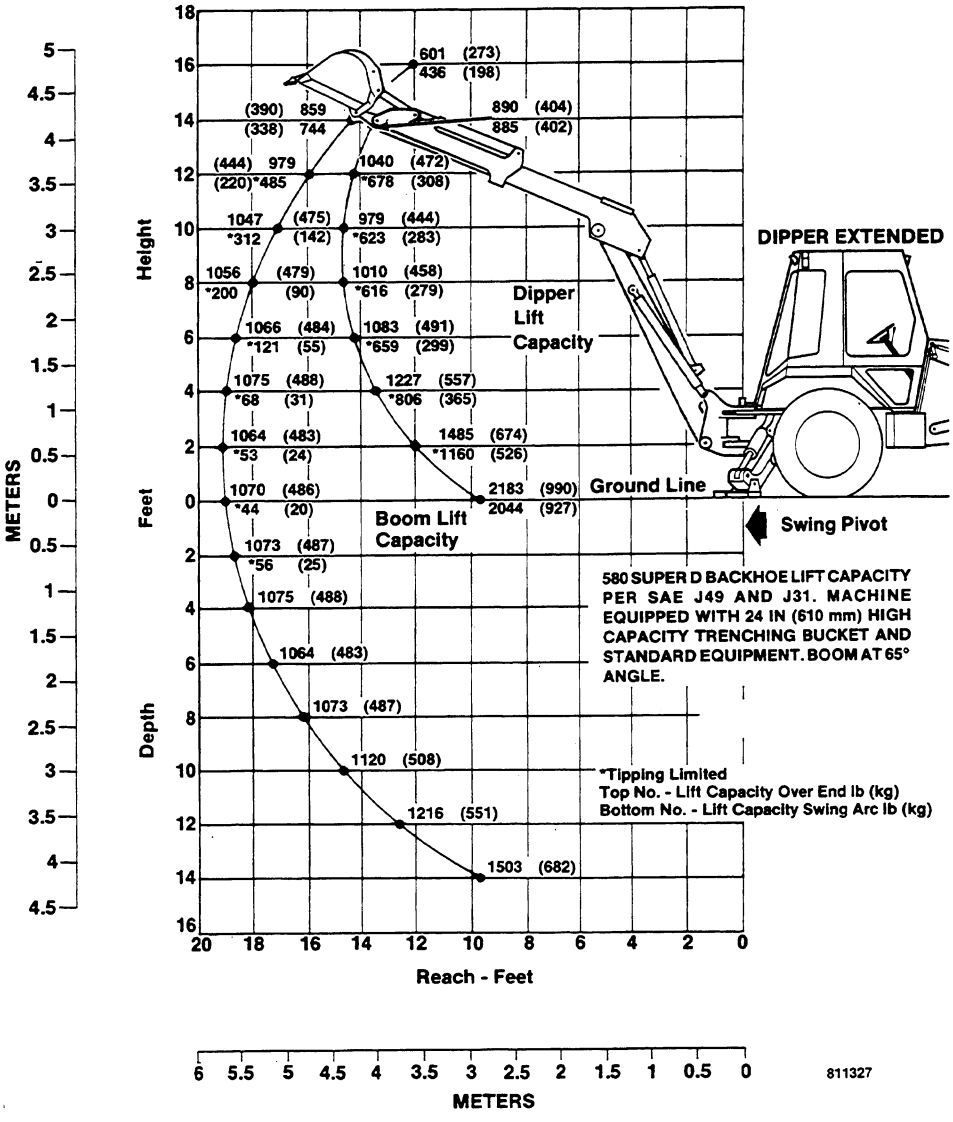

**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

# Super D Extendahoe Lift Capacity (Dipper Retracted)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* D-48-30

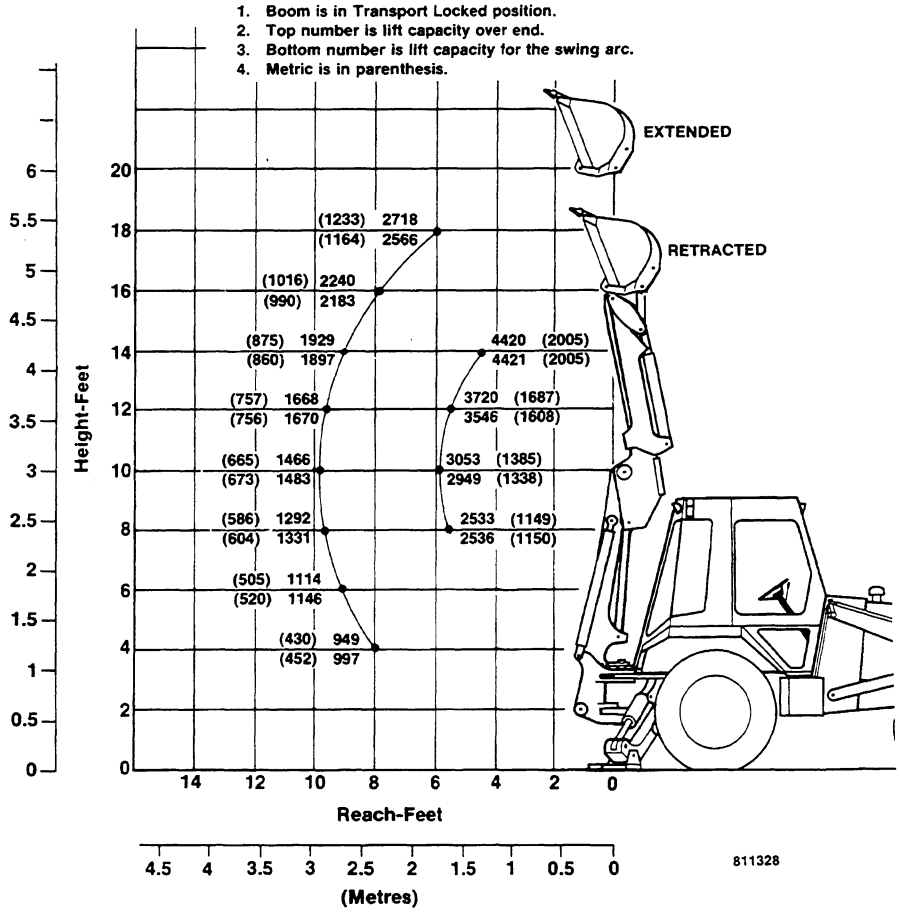
# Super D Extendahoe Lift Capacity (Dipper Extended)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*

*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* D-48-30

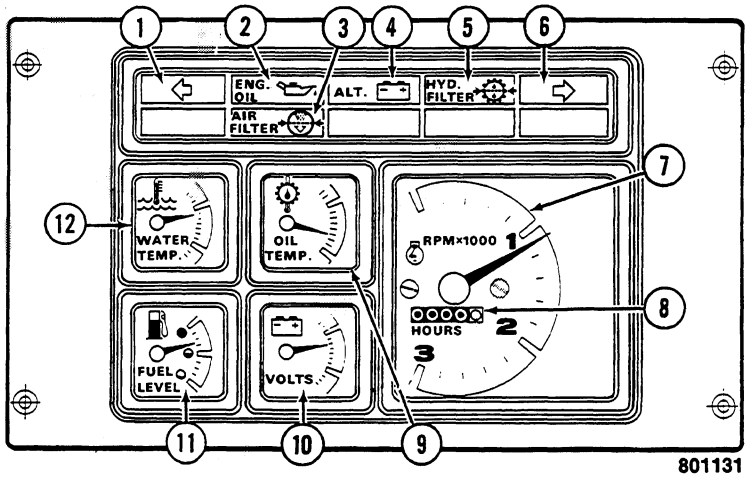
# Super D Extendahoe Lift Capacity (Boom in Transport Locked Position)




**WARNING:** *If you use the backhoe to lift a load that is too heavy, the machine can turn over or the load can fall out of control. Before you lift objects with the backhoe, see the operator's manual topic, "Lifting with the Backhoe".*
*If you do not follow these instructions, severe injury can occur to you or other persons in the area.* *D-48-30*

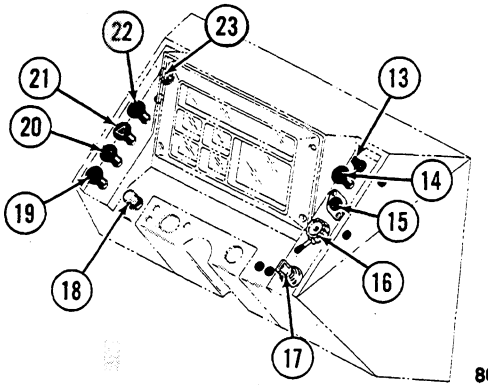
# OPERATING INSTRUCTIONS

## FAST REFERENCE FOR INSTRUMENTS AND CONTROLS



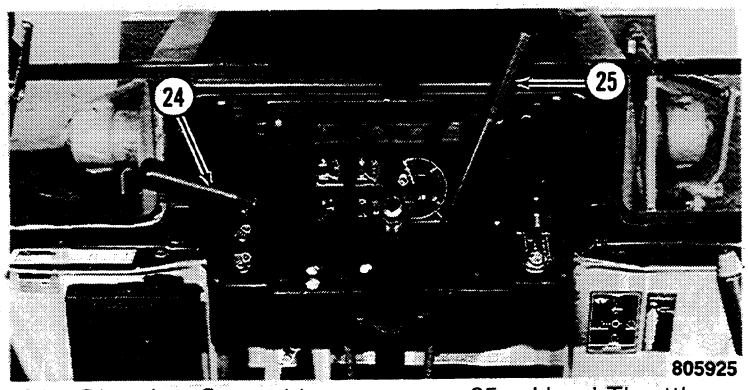

801131

1. Indicator Lamp for Left Turn
2. Warning Lamp for Engine Oil Pressure
3. Warning Lamp for Air Cleaner Restriction
4. Warning Lamp for Alternator
5. Warning Lamp for Hydraulic Filter
6. Indicator Lamp for Right Turn
7. Tachometer
8. Engine Hourmeter
9. Transmission Oil Temperature Gauge
10. Voltmeter Gauge
11. Fuel Level Gauge
12. Water Temperature Gauge

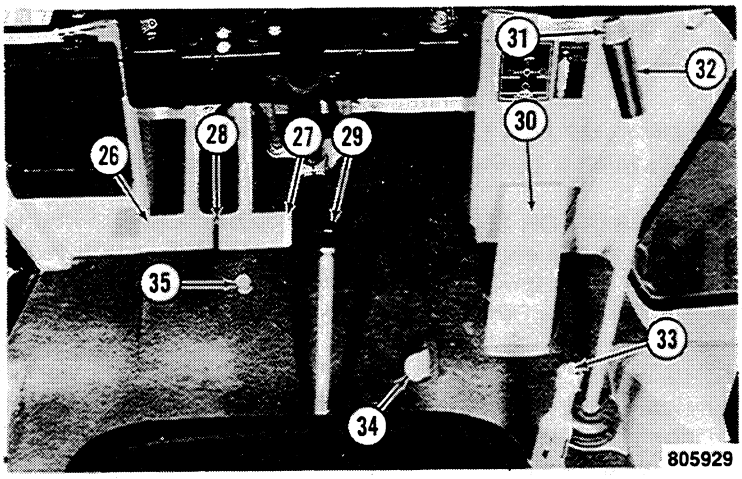



801130

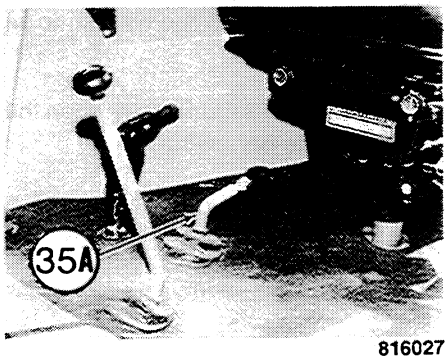
~~13. Turbo Prelube Switch (580 Super D Only)~~
14. Dipper Lamp Switch
15. Horn
16. Turn Signal Switch
17. Key Switch
18. Button for Ether Starting Aid
19. Switch for Transport Lamps
20. Switch for Rear Working Lamps
21. Switch for Flasher Lamps
22. Switch for Rotating Beacon
23. Switch for Warning Lamps (Air Filter and Hydraulic Filter)




24. Direction Control Lever
25. Hand Throttle

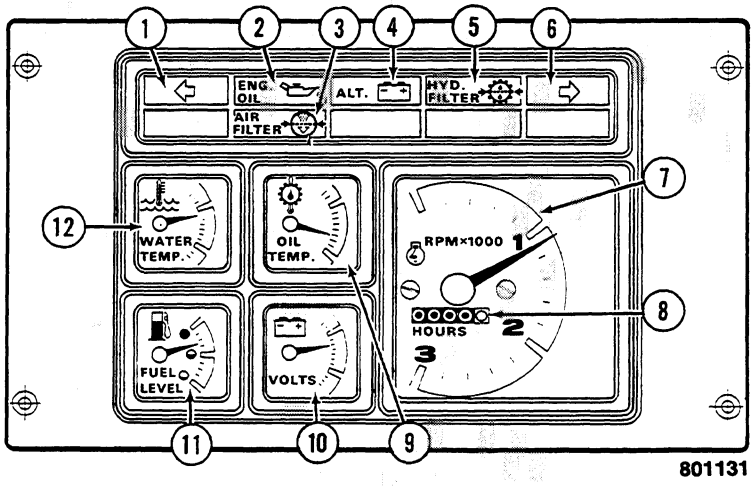



26. Left Brake Pedal
27. Right Brake Pedal
28. Brake Pedal Lock
29. Transaxle Control Lever (Four Speed)
30. Foot Throttle
31. Fast Cycle Switch
32. Control Lever for Loader Arm and Bucket
33. Parking Brake
34. Pedal for Differential Lock
35. Pedal for Clutch Cutout




35A. Control for Front Drive Axle (Four Wheel Drive)

# INSTRUMENT CLUSTER




1. INDICATOR LAMP FOR LEFT TURN: This lamp will illuminate when the turn signal switch is pushed to the left with the key switch On.

2. WARNING LAMP FOR ENGINE OIL PRESSURE: This warning lamp will illuminate if, (1) the engine is stopped and the key switch is in the On position, or (2) there is no or low oil pressure in the engine. Do not run the engine if the warning lamp is illuminated.

3. WARNING LAMP FOR AIR CLEANER RESTRICTION: This warning lamp will illuminate when, (1) the engine is stopped and the key switch is in the On position and the warning lamp switch is pushed to the right or (2) the air cleaner element requires service.

4. WARNING LAMP FOR THE ALTERNATOR: This lamp will illuminate if (1) the engine is stopped and the key switch is On or, (2) the alternator is not charging the battery.

5. WARNING LAMP FOR THE HYDRAULIC OIL FILTER: This warning lamp will illuminate when, (1) the engine is stopped and the key switch is On and the warning lamp switch is pushed to the right or (2) the hydraulic oil filter requires service.

6. INDICATOR LAMP FOR RIGHT TURN: This lamp will illuminate when the turn signal switch is pushed to the right with the key switch On.

7. TACHOMETER: The tachometer shows the engine speed. The speed is measured in revolutions per minute (rpm). Each number on the gauge is equal to 1000 rpm. Each space on the gauge is equal to 200 rpm. To help get a longer engine life, it is recommended that the engine be run in the green area of the gauge.

8. ENGINE HOURMETER: The hourmeter is located in the center of the tachometer. This gauge shows the hours and tenths of an hour the engine has run.

9. TRANSMISSION OIL TEMPERATURE GAUGE (POWER SHUTTLE TRANSMISSION): The normal operating temperature of the transmission oil is in the green area of the gauge. If the gauge needle goes into the red area, select a lower transmission gear. If the needle remains in the red area, stop the machine, move the direction control lever to Neutral and run the engine at full throttle. If this procedure does not reduce the temperature of the oil, stop the engine and check the oil level and check for obstructions on the radiator.

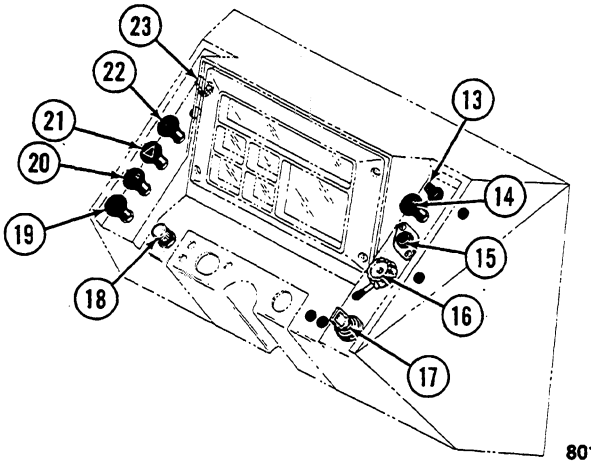
10. VOLTMETER GAUGE: This gauge shows the condition of the battery. The battery condition is normal when the gauge needle is in the green area of the gauge when the key switch is in the On position. If the gauge needle is in the lower red area, the charge of the battery is too low or the alternator is not charging. If the gauge needle moves into the upper red area, the alternator is charging too much. Damage to the battery can result if this condition continues.

    **NOTE:** When the battery is in good condition and you turn the key switch to the On position, the gauge needle will move up to the bottom part of the green area. When the engine starts, the needle will move up to the upper part of the green area and stay there. If the gauge needle does not move up after the engine starts, check the condition of the battery.

11. FUEL LEVEL GAUGE: This gauge shows the amount of fuel that is in the fuel tank.

12. WATER TEMPERATURE GAUGE: This gauge shows the temperature of the coolant in the engine cooling system. The temperature of the coolant is normal when the gauge needle is in the green area of the gauge. If the gauge needle goes into the red area, stop the engine and check the level of the coolant, debris on the radiator, or thermostat that does not operate correctly.

## MACHINE CONTROLS




13. TURBO PRELUBE SWITCH (580 SUPER D): Push the switch to the right to stop the flow of fuel to the engine. This switch will prevent the engine from starting when you are priming the turbocharger lines with oil after the engine oil filter is changed or when the machine has been in storage for two or three weeks. See page 87, Starting the Turbocharged Engine.

14. DIPPER LAMP SWITCH: Pull out the switch for the On position and push in the switch for the Off position.

15. HORN BUTTON: Push the button to actuate the horn.

16. TURN SIGNAL SWITCH: Move the switch control lever to the right to signal a right turn. Move the switch control lever to the left to signal a left turn. Move the control lever to the center to stop the signal.

    **NOTE:** The key switch must be in the On position before the turn signals will operate.

17. KEY SWITCH: The key switch has four positions:

    (1) ACC - Turn the key counterclockwise to ACC to give power to the accessories.

    (2) ON - Turn the key clockwise to the On position. Before you start the engine, check the condition of the warning lamps for engine oil pressure and alternator. Use the voltmeter to check the condition of the battery.

    (3) START - Turn the key completely clockwise to the Start position to actuate the starter motor. The key switch must be in this position before you can actuate the ether starting aid option. After the engine starts, release the key. The key will return automatically to the On position.

(4) OFF - To stop the engine, turn the key to the Off position. After the engine has stopped, remove the key.

18. BUTTON FOR ETHER STARTING AID (If Equipped): The ether starting aid puts a measured amount of ether into the engine during cold temperature starting. Actuate the starter motor for three seconds and push the button for the ether starting aid. Do not operate the starter motor for more than 30 seconds at a time. See page 90 for ether starting aid information.

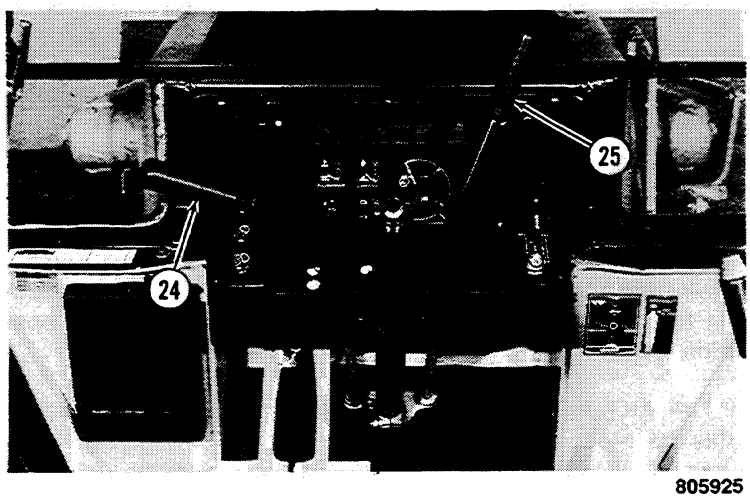
19. SWITCH FOR TRANSPORT LAMPS: Pull out the switch for the On position and push in the switch for the Off position.

20. SWITCH FOR REAR WORKING LAMPS: Pull out the switch for the On position and push in the switch for the Off position.

21. SWITCH FOR FLASHER LAMPS: Pull out the switch for the On position and push in the switch for the Off position.

22. SWITCH FOR ROTATING BEACON: Pull out the switch for the On position and push in the switch for the Off position.

23. SWITCH FOR WARNING LAMPS (AIR FILTER AND HYDRAULIC FILTER): Before you start the engine, turn the key switch to the On position and push the warning lamp switch to the right. The air filter and hydraulic filter warning lamps will illuminate. If the warning lamps do not illuminate, see page 158 and replace the bulbs. Release the switch and the switch will return to the Off position.



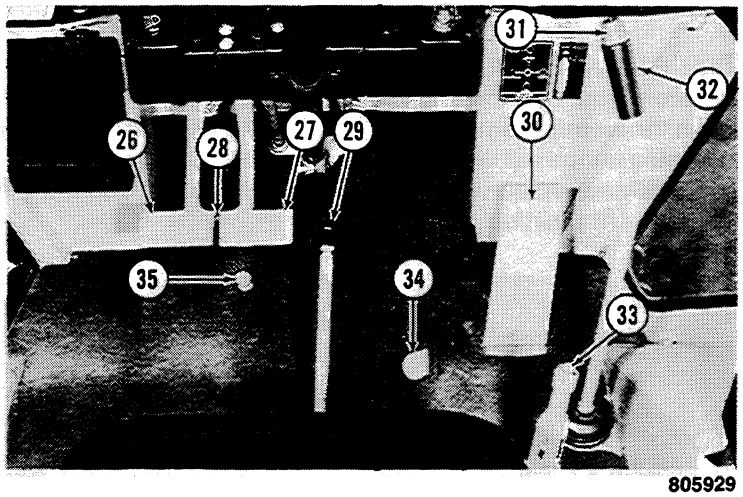
805925

24. DIRECTION CONTROL LEVER: This lever controls the travel direction of the machine. The center position is Neutral. To travel forward, lift up the lever and push completely forward. To travel in reverse, lift up the lever and pull completely rearward. The direction control lever must be in the Neutral position before you can start the engine.

25. HAND THROTTLE: Push the hand throttle forward to decrease engine speed and pull rearward to increase engine speed.

**WARNING:** *When you operate the backhoe or when you do service, use the hand throttle to control the engine speed. You can have an accident if you use the hand throttle for any other operation.*
*46-23-A*

## FOOT PEDALS

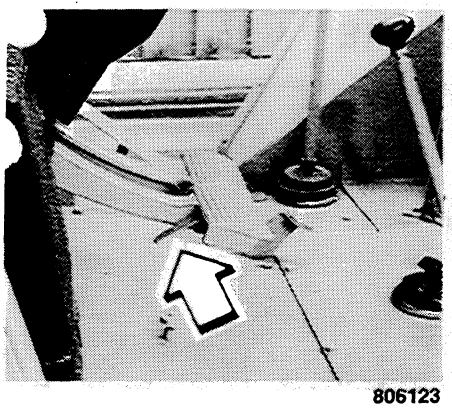


805929

26. LEFT BRAKE PEDAL: When the brake pedal lock is released, you can use this brake pedal to help turn the machine to the left. Always lock the brake pedals together before you travel on roads or when you operate the machine faster than 5 mph (8 km/h).

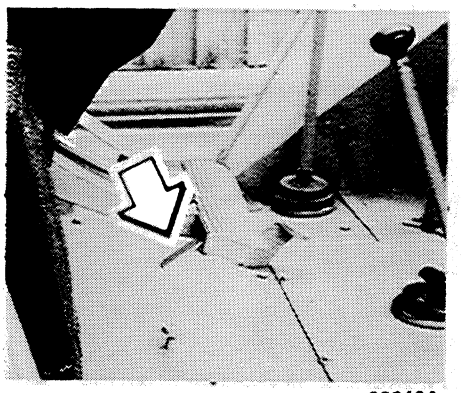
27. RIGHT BRAKE PEDAL: When the brake pedal lock is released, you can use this brake pedal to help turn the machine to the right. Always lock the brake pedals together before you travel on roads or when you operate the machine faster than 5 mph (8 km/h).

**CAUTION:** *Lock brake pedals together for road travel or high speeds. There is danger of tipping the machine if either brake pedal is used alone when traveling over 5 mph (8 km/h).*
*D-45-8*



806123

Pedals Locked Together - Lift up Tab and Push to the Right.



806124

Pedals Not Locked Together - Lift up Tab and Push to the Left.

28. BRAKE PEDAL LOCK: Use this lock to lock both brake pedals together when you travel on a road or when you operate the machine faster than 5 mph (8 km/h).

29. TRANSAXLE CONTROL LEVER: The transaxle has four speeds and is synchronized in 3rd and 4th gears. You can shift gears into 3rd and 4th, when the machine is moving. You must stop the machine when selecting 1st or 2nd gears. Push the clutch cutout pedal before you shift.

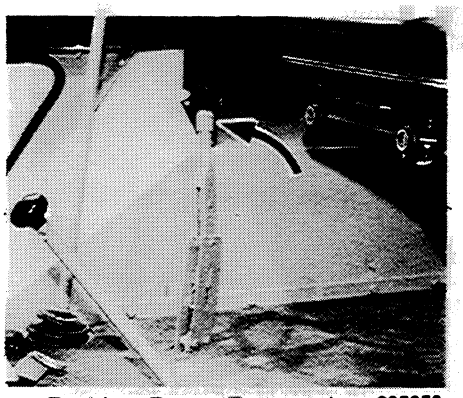
30. FOOT THROTTLE: Push down the foot throttle to increase the engine speed. Release the foot throttle to decrease the engine speed.

31. FAST CYCLE SWITCH: The red button on top of the loader control lever disengages the clutch of the machine when the button is pushed. As the bucket is filled with material, the engine will run slower. Push the brake pedals and red button at the same time. Maximum engine power is now available for the loader hydraulic system. After the bucket is full, move the direction control lever to reverse, release the brakes and the clutch cutout button.

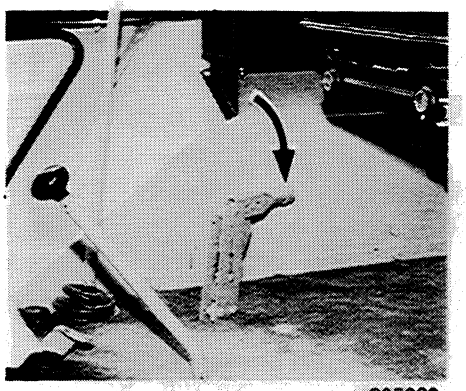
    **NOTE:** For smooth operation, always reduce the engine speed before you release the clutch cutout button.

32. CONTROLS FOR LOADER, BACKHOE AND THREE-POINT HITCH: See page 75 for loader, page 79 for backhoe and page 84 for three-point hitch.

## PARKING BRAKE



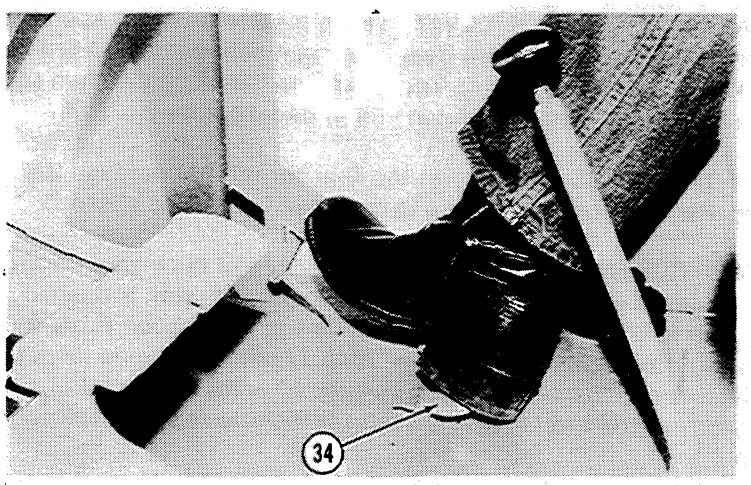
Parking Brake Engaged 805859



Parking Brake Released 805860

33. PARKING BRAKE: Pull the control lever up to engage the parking brake and push down to release. See page 187 for parking brake adjustment.

## DIFFERENTIAL LOCK




806577

34. FOOT PEDAL FOR DIFFERENTIAL LOCK: The differential lock gives traction to both rear wheels. Refer to the two following conditions before you actuate the differential lock.

### When the Machine is Stuck

a. Stop the wheels from rotating.

b. Push down the clutch cutout pedal.

c. Push down the differential lock pedal.

d. Release the clutch cutout pedal.

e. Increase the engine speed and release the differential lock pedal.

**NOTE:** The differential lock will release automatically when the load is removed or when the clutch cutout pedal is pushed down.

## Before You Operate Through a Soft or Muddy Area

**NOTE:** You can engage the differential lock when the machine is moving.

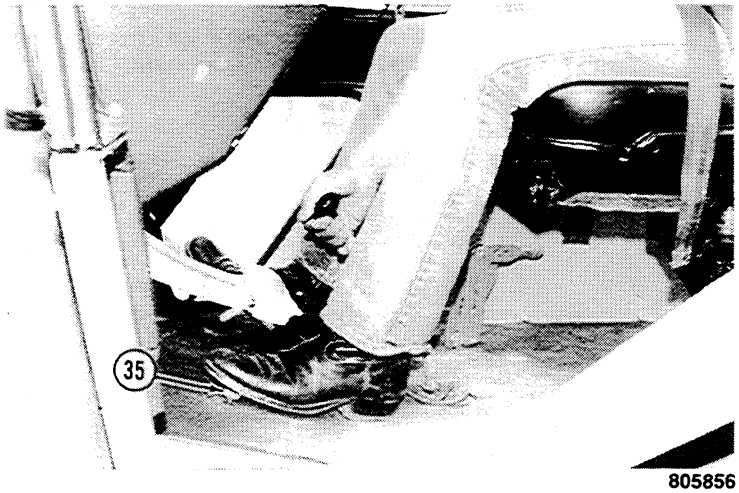
**IMPORTANT:** You can cause damage to the transmission if you try to engage the differential lock when the machine is turning or if one rear wheel is rotating faster than the other rear wheel.

a. Before you move the machine through an area that is soft or muddy, make sure that one of the rear wheels is not rotating faster than the other rear wheel.

b. Push down the differential lock pedal with your foot. Keep this pedal pushed down while you move the machine through the soft or muddy area.

c. After you have moved through the area, release the differential lock pedal.

**Clutch Cutout**



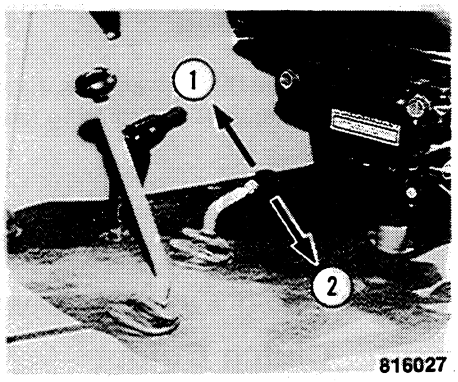

35. CLUTCH CUTOUT PEDAL: This pedal is used to disengage the clutch when you shift the transaxle gears. Push the pedal to disengage the clutch and let up the pedal to engage the clutch.

## Control Lever for Front Drive Axle

35A. FRONT DRIVE AXLE CONTROL: The front drive axle is engaged and disengaged by a control lever. See the following photograph. To engage the front drive axle, stop the machine and pull up the control lever. To disengage the front drive axle, stop the machine and push down the control lever.

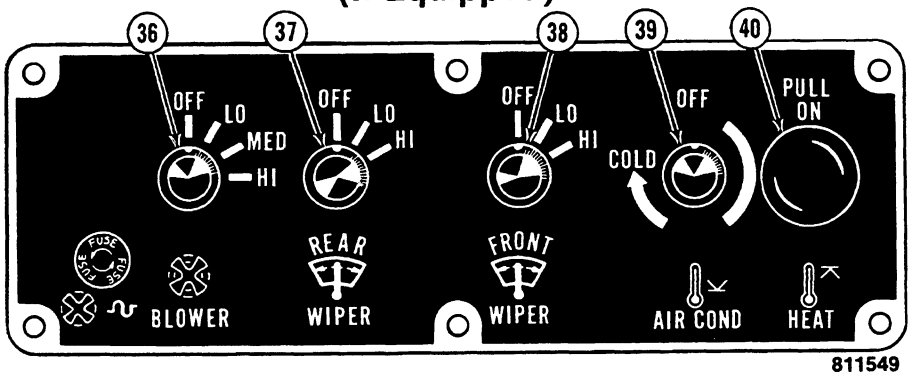
**NOTE:** If the control lever does not engage the front drive axle, move the machine forward a small amount and push the control down again.

**IMPORTANT:** When the front drive axle is engaged, operate the machine only in first or second gear. It is recommended that you disengage the front drive axle before you operate on a hard surface or in third or fourth gear.




1. To Engage Front Drive Axle
2. To Disengage Front Drive Axle

## CAB CONTROLS
## (If Equipped)




811549

36. BLOWER SWITCH: The blower switch has four positions (1) Off, (2) Low, (3) Medium, and (4) High. Turn the switch clockwise to increase the air flow in the cab. Turn the switch counterclockwise to the Off position to stop the flow of air.

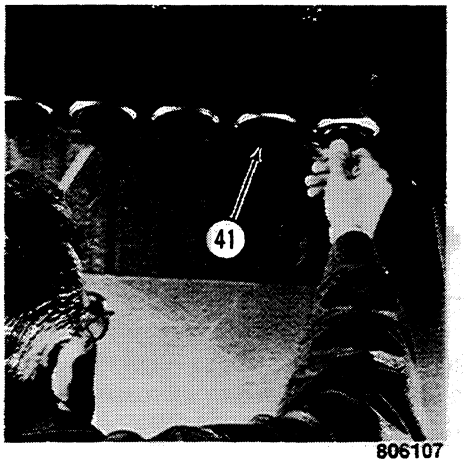
37. REAR WIPER SWITCH: The rear wiper switch has three positions, (1) Off, (2) Low, and (3) High. Turn the switch clockwise to increase the wiper speed and turn the switch counterclockwise to stop the wiper.

    **NOTE:** Make sure you move the wiper position control to the left position before you operate the rear wiper.

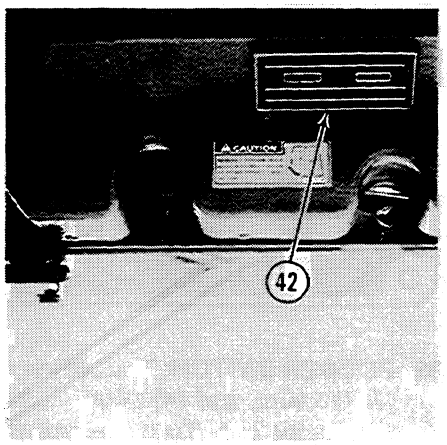
38. FRONT WIPER SWITCH: The front wiper switch has three positions, (1) Off, (2) Low, and (3) High. Turn the switch clockwise to increase the wiper speed and turn the switch counterclockwise to stop the wiper.

39. TEMPERATURE CONTROL FOR THE AIR CONDITIONER: (If equipped) Turn the temperature control clockwise to decrease the temperature of the cab. Turn the control completely clockwise for the coldest setting. Turn the control completely counterclockwise for the Off position.

40. TEMPERATURE CONTROL FOR THE HEATER: Pull the temperatu. control out to increase the temperature of the cab. Push the control completely in for the Off position.




806107




825034

41. FRONT AIR LOUVERS: The six air louvers in the front of the cab can be adjusted by hand to direct the flow of air in the cab. Air flows into the cab through these louvers.

42. REAR AIR LOUVER: The air louver in the rear of the cab can be opened or closed. This louver controls the air pressure and air flow in the cab. The louver has two sliding bars in the center. To close each louver, move each sliding bar to the right or left. To open the rear air louver , move each sliding bar to the center.

## CAB CONTROL SETTINGS AND AIR FLOW

| Type Of Condition Required In Cab | Control Settings (Windows and Door Closed) | | | | |
|---|---|---|---|---|---|
| | Blower | Air Conditioner | Heater | Front Louvers | Rear Louver |
| Maximum Pressure | High | On or Off | On or Off | Open | Closed |
| Maximum Recirculation of Air in Cab | High | On or Off | On or Off | Open | Open |
| Maximum Cool | High | Completely Clockwise | Off | Open | Open |
| Cool | Medium | Adjust as Required | Off | Open | Open |
| Maximum Heat | High | Off | Pull Out Control Completely | Open Two Outer Louvers and Direct Down. Close Center Four Louvers | Open |
| Heat | Medium or Low | Off | Pull Out Control as Required | Open | Open |
| Defrost Front Window | High | Off | Pull Out Control Completely | Open Center Two Louvers and Direct at Windshield - Close Other Louvers | Open |
| *Removal of Moisture from Inside Cab Glass | High | On 1/2 of Maximum | Pull Out Control Completely | Open | Open |

## Air Flow and Pressure in the Cab

When the blower is running, new air is being put into the cab even if the rear louver is closed. It is recommended that you do not completely close the front louvers. Make sure that you check the cab air filter at shorter intervals when you operate the machine during extreme dust conditions.

To keep the air inside the cab as clean as possible during extreme dust conditions, adjust the cab controls for maximum pressure. See Maximum Pressure in the above chart.

**NOTE:** See page 196 to service the cab air filter.

## Maximum Air Flow and Maximum Cool

1. Open the rear louver, select High blower and adjust for maximum cool.

2. After the cab temperature is at the correct level for comfort, adjust the blower speed and temperature control as required.

3. To lower the temperature at your leg level, open the rear louver and adjust the front louvers so that the air flow is directed down.

   **NOTE:** During some conditions, it is possible to have ice on the air conditioning core. This can be caused by operating at Low blower speed and Maximum cold setting of the temperature control. It is best to operate at Medium or High speed setting of the blower and center range of the temperature control. If ice does block the core, you will feel a reduction of air flow in the cab. Close the rear louver, turn the temperature control to Off and run the blower in High. Other causes of ice can be a restricted air filter in the cab or loss of refrigerant in the cooling system.

## Maximum Heat

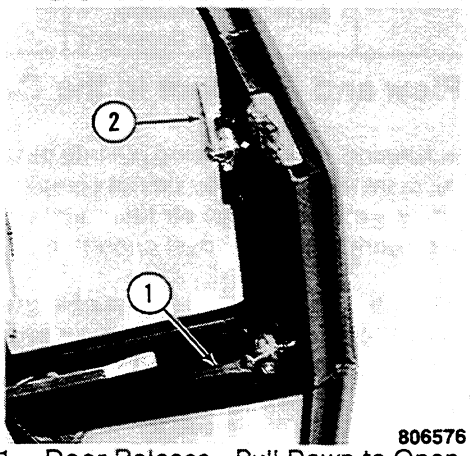
1. Run the engine until the gauge needle of the temperature gauge is in the green area.

2. Open the rear louver.

3. Open the two outer front louvers and direct each louver down. Close the remaining four front louvers.

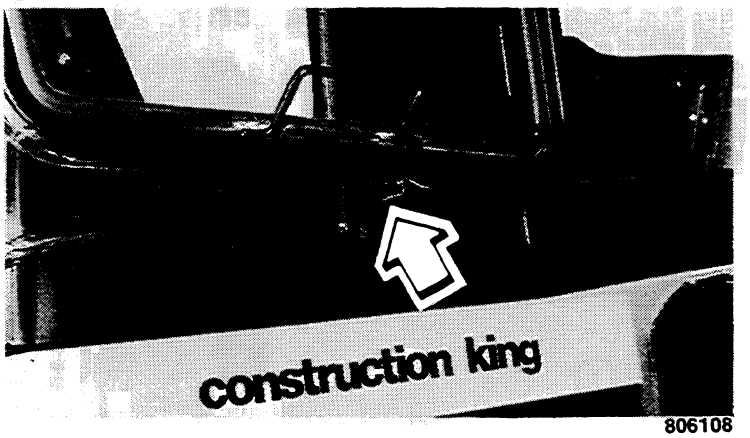
4. Turn the blower switch to High. As the cab temperature increases, adjust the blower speed and temperature control as required.

## CAB DOOR AND DOOR WINDOWS




806576

1. Door Release - Pull Down to Open
2. Window Release - Pull Back to Open



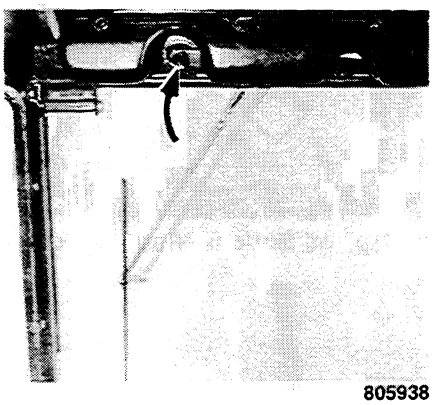

Window Latch

This latch holds the window in the Open Position. Pull down to release window.

## REAR CAB WINDOWS

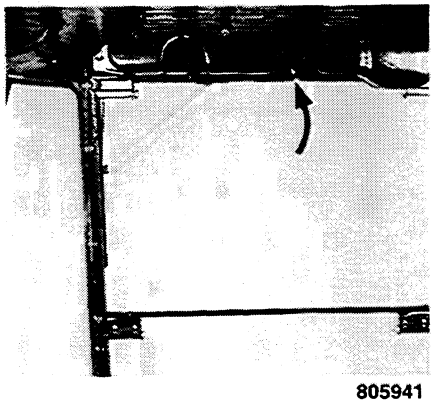
Before you open the top rear window, make sure to move the rear wiper to the Storage position. See the two following photographs.

### Wiper Position Control




Wiper Operating Position

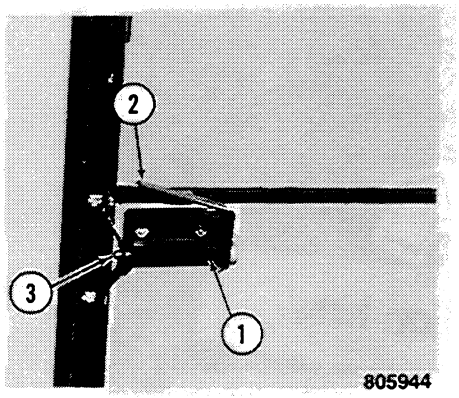
Move the wiper position control to the left before you operate the rear wipers.



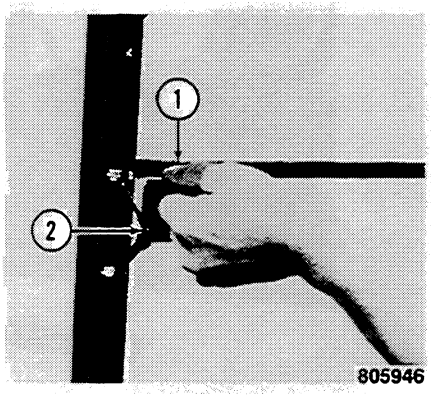

Wiper Storage Position

Move the wiper position control to the right before you open the top rear window.

## Rear Window Latch

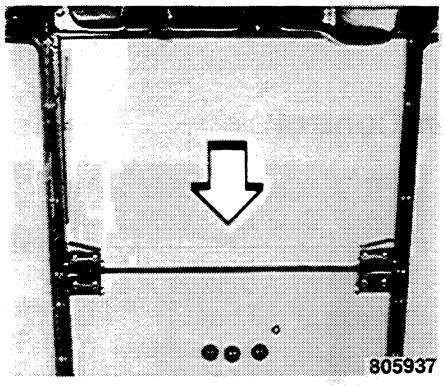



1. Rear Window Latch
2. Release Lever
3. Locking Pin

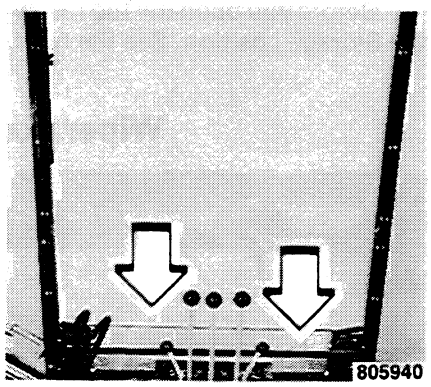



1. Push Down to Release
2. Locking Pin Released

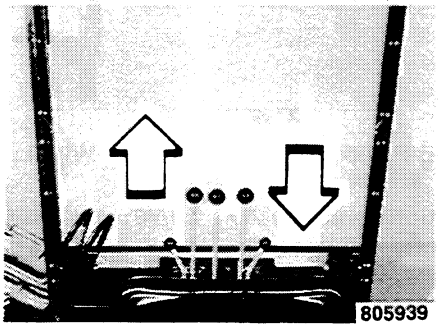
Refer to the following photographs for three window positions. When the windows are closed, make sure that the window latch on each side is completely engaged.




Top Window 1/2 Down

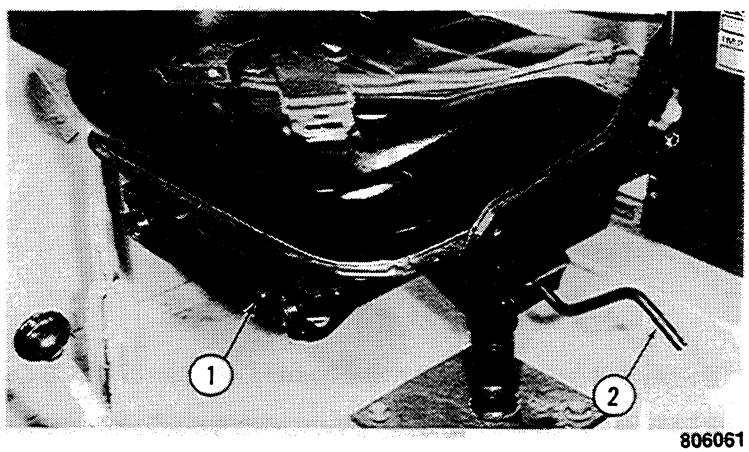



Top and Bottom Windows Down




Bottom Window Down and
Top Window Up

# OPERATOR'S SEAT




806061

1. Control for Forward, Rearward and Turning
2. Control for Seat Height

The operator's seat can be moved up and down, forward and rearward, and can be turned backward to operate the backhoe or turned forward to operate the loader.

## Adjusting the Seat Height

1. Pull up the seat height control and raise or lower the seat.

2. Release the control and make sure the seat locks into position.

## Adjusting the Seat Forward or Rearward

1. Pull the front seat control to the right to release the seat lock.

2. Adjust the seat for the correct position. Release the seat lock.

**NOTE:** Before you operate the machine, make sure the seat is adjusted so that you can operate the controls correctly.

## Procedure to Turn the Seat Around

1. Sit in the seat and push the front seat control to the right.
2. With the seat control held in this position, move the seat completely back. This will release the rotational lock.
3. Turn the seat toward the door until the seat is turned around.
4. Adjust the seat to the correct position for you.

# OPERATOR'S SEAT BELT

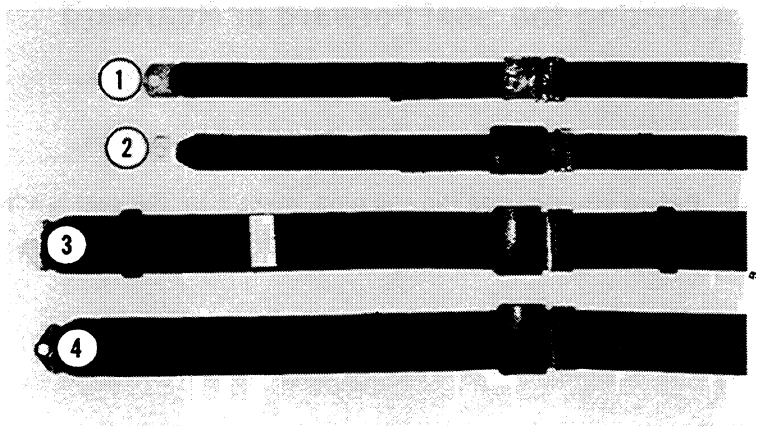
(Use the Seat Belt Only if your Machine has a ROPS Cab or ROPS Canopy)

**CAUTION:** *Always fasten seat belt securely before starting engine.*
*D-17-6*

If your machine is equipped with a ROPS cab or ROPS canopy, always fasten the seat belt before you start the engine. Fasten the seat belt as shown in the following photographs. Tighten the seat belt and make sure the belt is over the strong bone structure of your hips and not across your soft abdominal area.

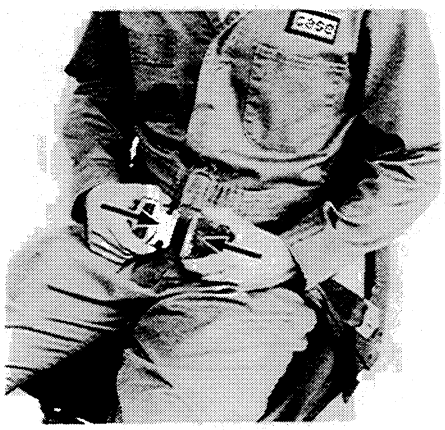
## Identification of Your Seat Belt

See the following photograph and find the seat belt that is on your machine. The photographs on the four following pages will show how to fasten, release, tighten and loosen your seat belt.



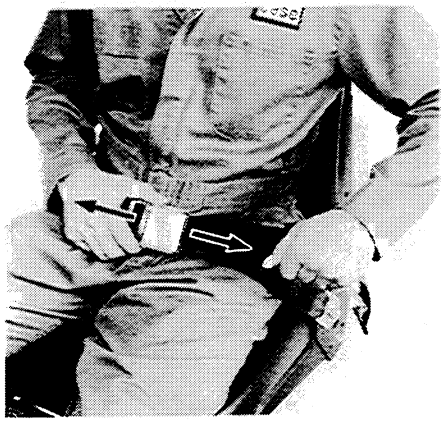

805977

## Belt Number One

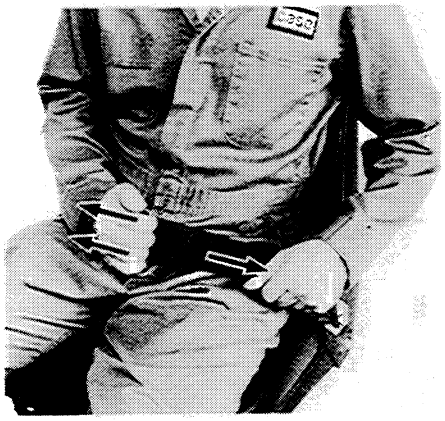


Fasten

Release



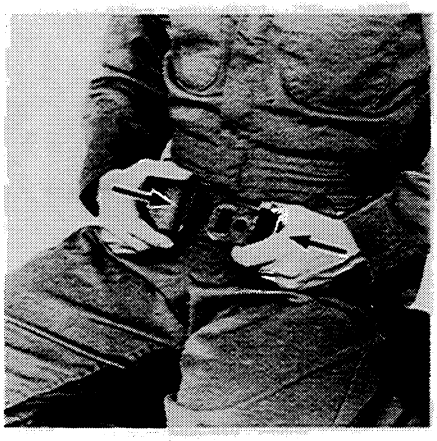
Tighten



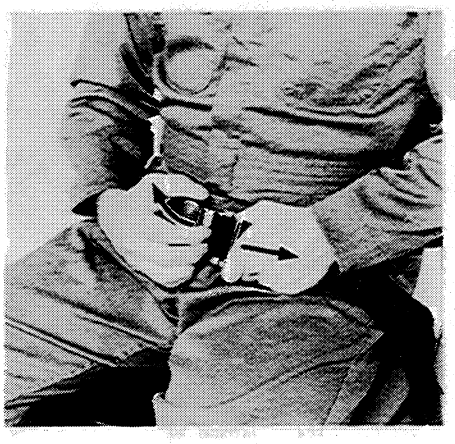
801132

Loosen

## Belt Number Two



Fasten



Release

Tighten

790523

Loosen

## Belt Number Three

Fasten

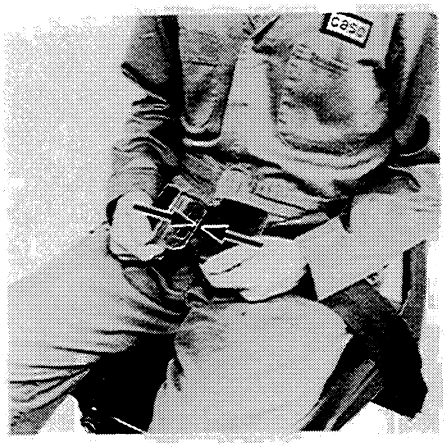
Release

Tighten

Loosen

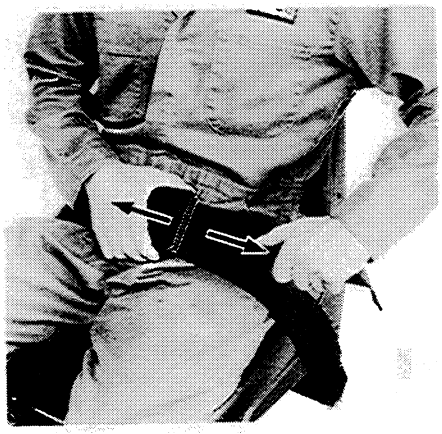
790522

## Belt Number Four



Fasten

Release

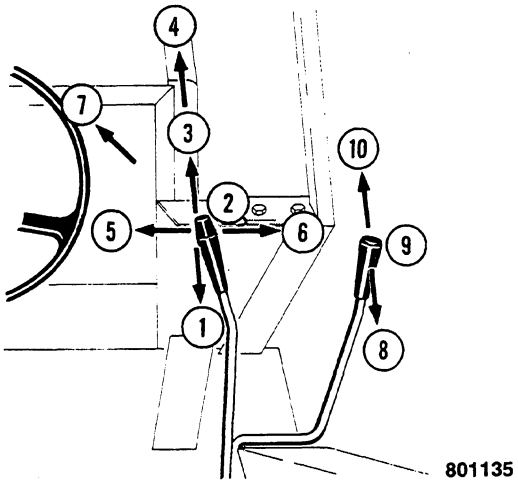


Tighten

801133

Loosen

## LOADER CONTROLS




1. Raise
2. Neutral (Hold)
3. Lower
4. Float
5. Rollback
6. Dump
7. Return-To-Dig
*8. Clam Close
*9. Neutral (Hold)
*10. Clam Open

*If Equipped with 4-in-1 Bucket

### Raising and Lowering the Bucket

Pull the control lever back to raise the bucket and push the control lever forward to lower the bucket. When the control lever is released, the control lever will return to the Hold position.

Push the control lever all the way forward for the Float position. The control lever will stay in the Float position until manually moved. The bucket will follow the ground when the control lever is in the Float position.

**NOTE:** Do not use the Float position to lower a full bucket.

### Rolling Back or Dumping the Bucket

Move the control lever to the right to dump the bucket.

Move the control lever to the left to roll back the bucket. When released, the control lever will return to the Hold position.

## 4-In-1 Bucket Clam Control (If Equipped)

The right control lever for the 4-in-1 bucket is used to open and close the clam.

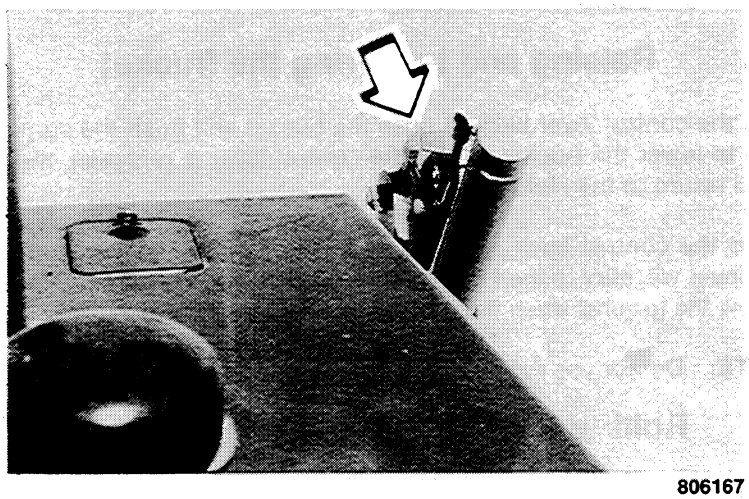
The control lever positions are Open, Hold and Close. Push the control lever forward to open the clam and pull the control lever back to close. When released, the control lever will return to the Hold position.

## Return-To-Dig

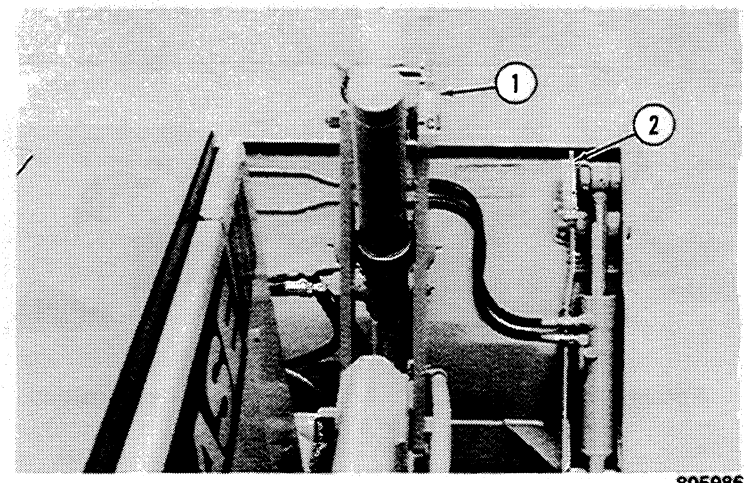
After you dump the load, you can use the Return-To-Dig system to put the bucket in position for another dig cycle automatically. To operate, put the loader control lever in the Return-To-Dig position. The bucket will roll backward until level and then stop. The loader arms will continue to lower until the bucket reaches the ground or until you manually pull the loader control lever back to the Neutral position. See page 189 to adjust the Return-To-Dig.

## Bucket Level Indicator

The bucket level indicator has two pointers on the right side of the loader arms. The bucket is level on the ground when the two pointers are opposite each other. See the following photograph.



806167




805986

1. Bucket Position Indicator
2. Clam Indicator

## Bucket Position Indicator for the 4-In-1 Bucket

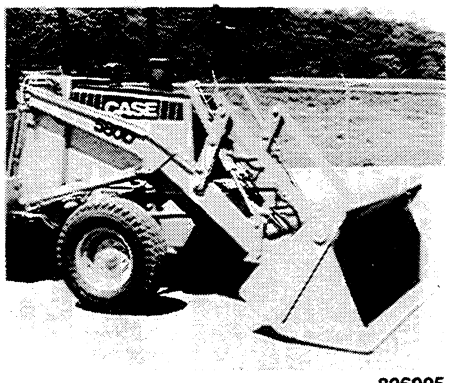
The bucket position indicator is located on the right side of the loader lift arms. This shows you the correct bucket angle when you use the bucket as a scraper, loader, dozer, or clam.

Put the loader bucket one foot (0.3 m) above the ground and tilt the bucket to the desired position.

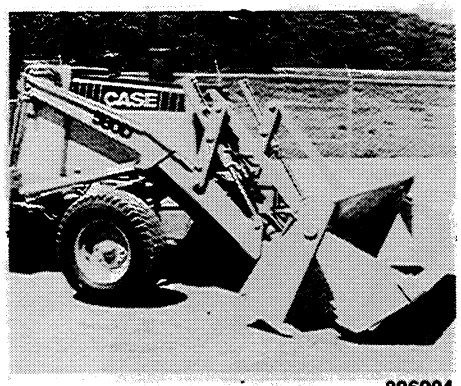
## Clam Indicator for the 4-In-1 Bucket

The clam indicator is located on the right side of the bucket. This indicator is used when the bucket is in the Scraper position. The bucket opening or "depth of cut" is shown on this indicator. The 4-in-1 bucket can make a cut up to four inches (102 mm) in depth.


Dozer Position 806003




Bucket Position 806005



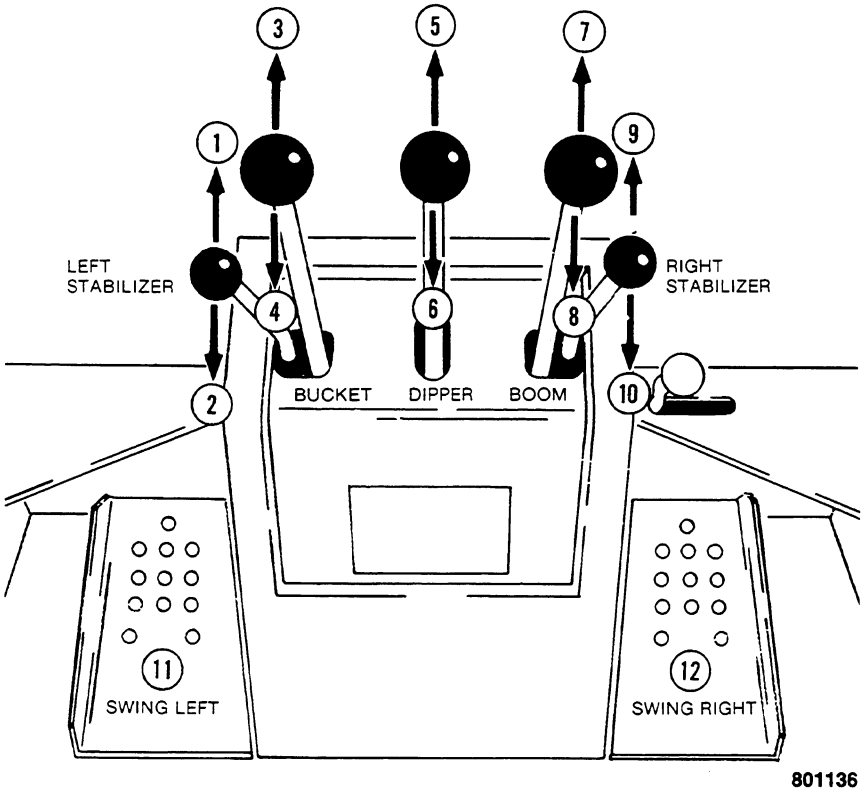

806004

Scraper Position


806002

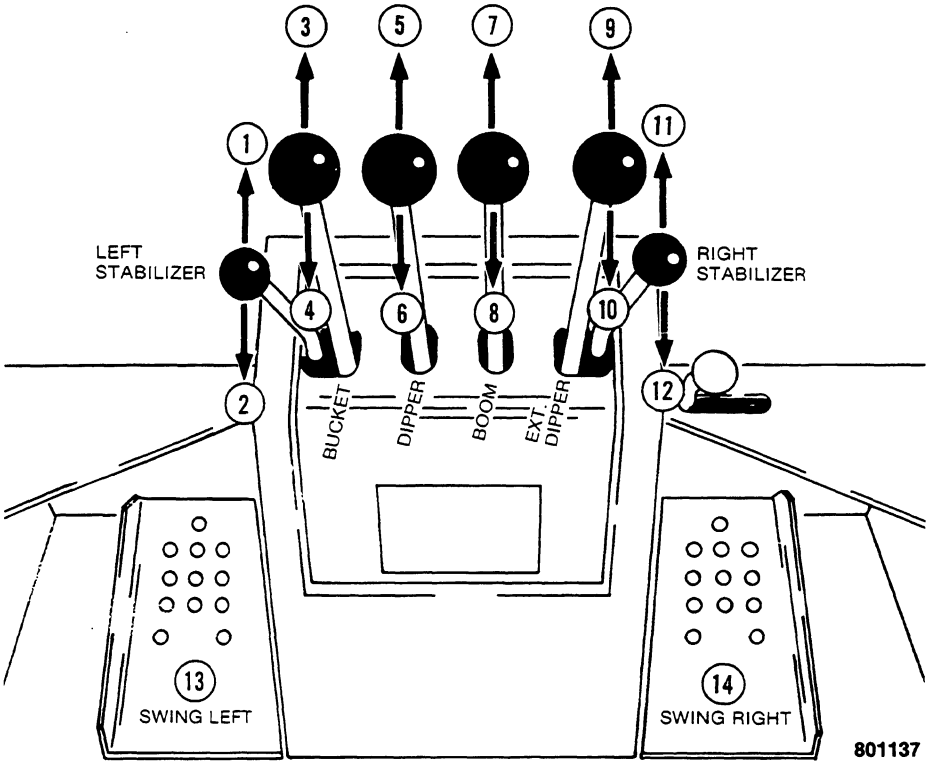
Clamshell Position

# CONTROLS FOR BACKHOE WITH FOOT SWING



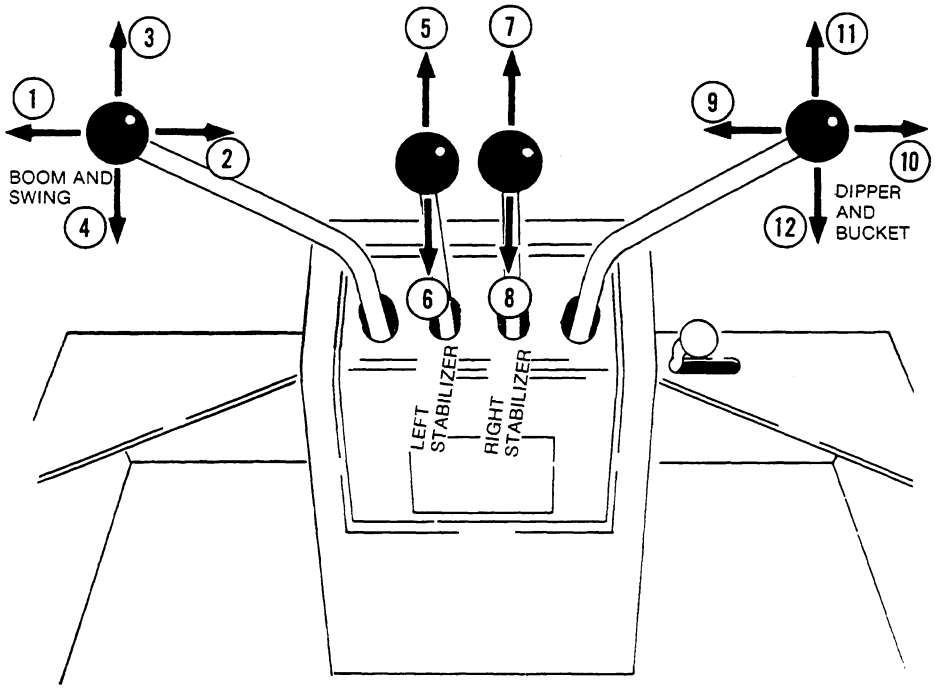

1. Left Stabilizer Lower
2. Left Stabilizer Raise
3. Bucket Dump
4. Bucket Load
5. Dipper Out
6. Dipper In
7. Boom Lower
8. Boom Raise
9. Right Stabilizer Lower
10. Right Stabilizer Raise
11. Push Down to Swing Left
12. Push Down to Swing Right

# CONTROLS FOR EXTENDAHOE WITH FOOT SWING



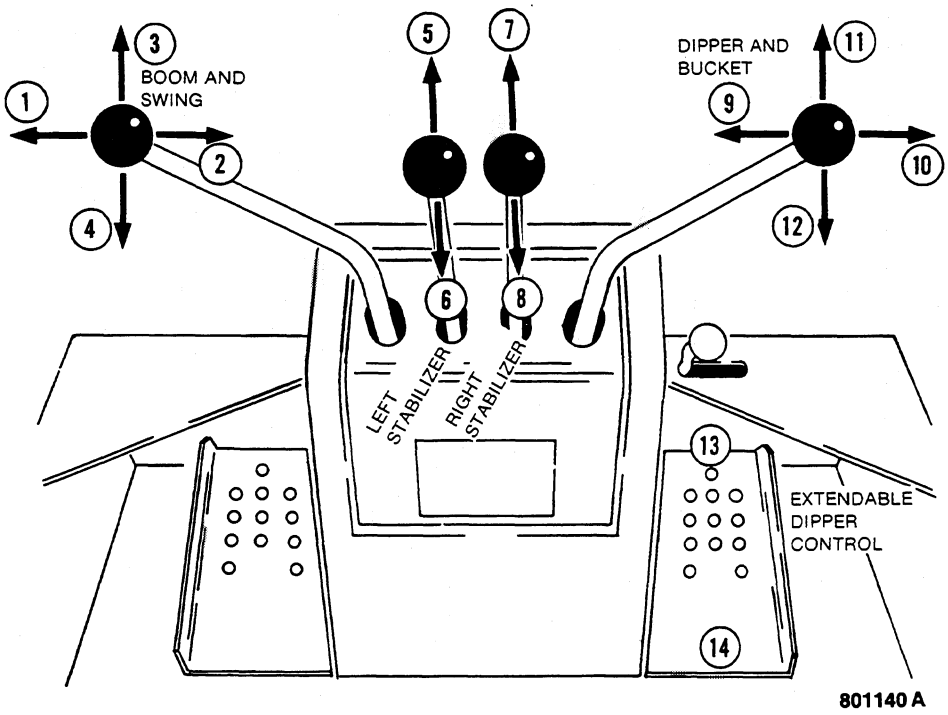

1. Left Stabilizer Lower
2. Left Stabilizer Raise
3. Bucket Dump
4. Bucket Load
5. Dipper Out
6. Dipper In
7. Boom Lower
8. Boom Raise
9. Dipper Extend
10. Dipper Retract
11. Right Stabilizer Lower
12. Right Stabilizer Raise
13. Push Down to Swing Left
14. Push Down to Swing Right

## CONTROLS FOR BACKHOE WITH HAND SWING



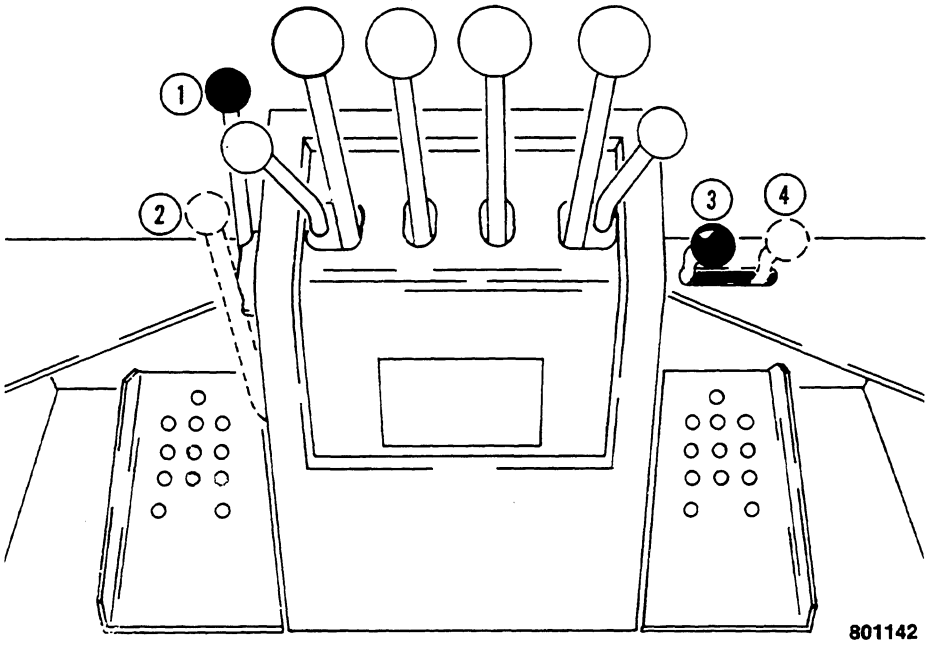

1. Swing Left
2. Swing Right
3. Boom Lower
4. Boom Raise
5. Left Stabilizer Lower
6. Left Stabilizer Raise
7. Right Stabilizer Lower
8. Right Stabilizer Raise
9. Bucket Load
10. Bucket Dump
11. Dipper Out
12. Dipper In

# CONTROLS FOR EXTENDAHOE WITH HAND SWING




1. Swing Left
2. Swing Right
3. Boom Lower
4. Boom Raise
5. Left Stabilizer Lower
6. Left Stabilizer Raise
7. Right Stabilizer Lower
8. Right Stabilizer Raise
9. Bucket Load
10. Bucket Dump
11. Dipper Out
12. Dipper In
13. Push Down the Top of the Pedal to Extend Dipper
14. Push Down the Bottom of the Pedal to Retract Dipper

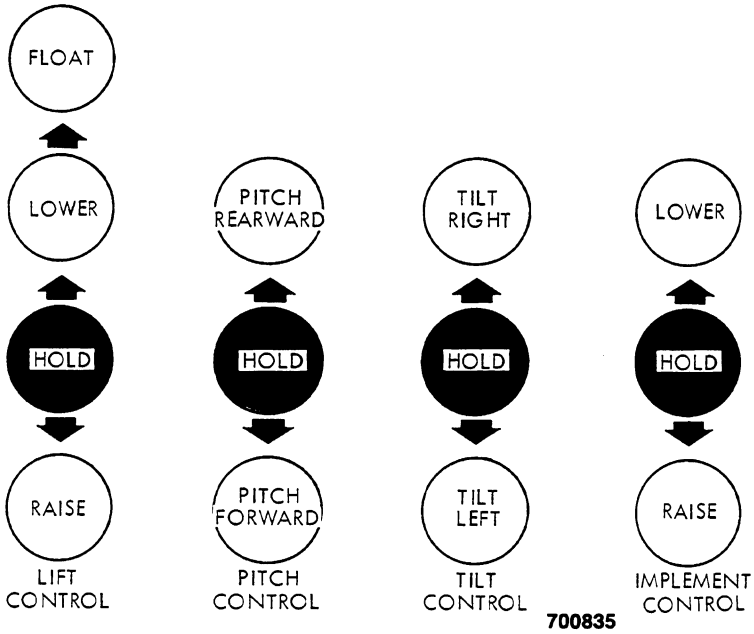
# CONTROL FOR HYDRAULIC BOOM LOCK (IF EQUIPPED) AND CONTROL FOR BOOM TRANSPORT LATCH




1. Boom Lock Released
2. Boom Lock Engaged
3. Transport Latch Engaged
4. Transport Latch Released

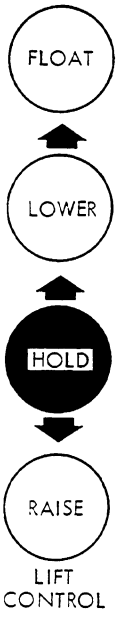
# CONTROLS FOR THREE-POINT HITCH

## Hydraulic Three-Point Hitch




Lever Movements

## Mechanical Three-Point Hitch




Lever Movements

# ENGINE OPERATION

## First Period of Operation with a New Engine

During the first period of operation of a new engine you must do the following:

1. LOAD - For the first 8 hours, operate with a normal load. Do not permit a transmission or hydraulic stall longer than 10 seconds.

2. ENGINE SPEED - During the first period of operation, operate the engine at maximum speed when safe.

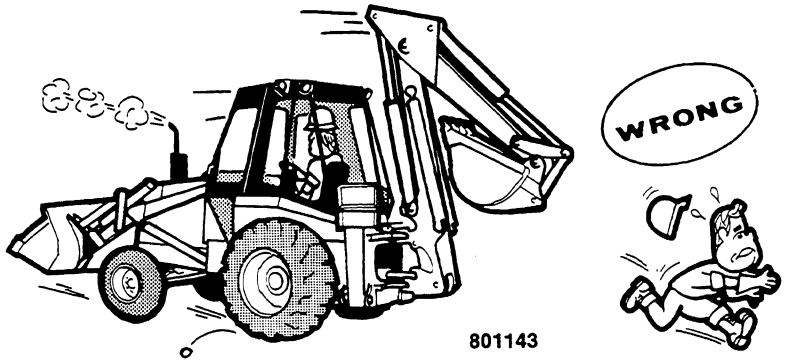
3. OPERATING TEMPERATURE - Keep the operating temperature of the engine at the normal level. Low operating temperature can cause acids and deposits in the engine.

4. ENGINE OIL - Change the engine oil and oil filter after the first 20 hours of engine operation.

5. COOLING SYSTEM - If the machine has been operating with a load, run the engine at idle speed for several minutes before you stop the engine. This permits the engine parts to become cool evenly.

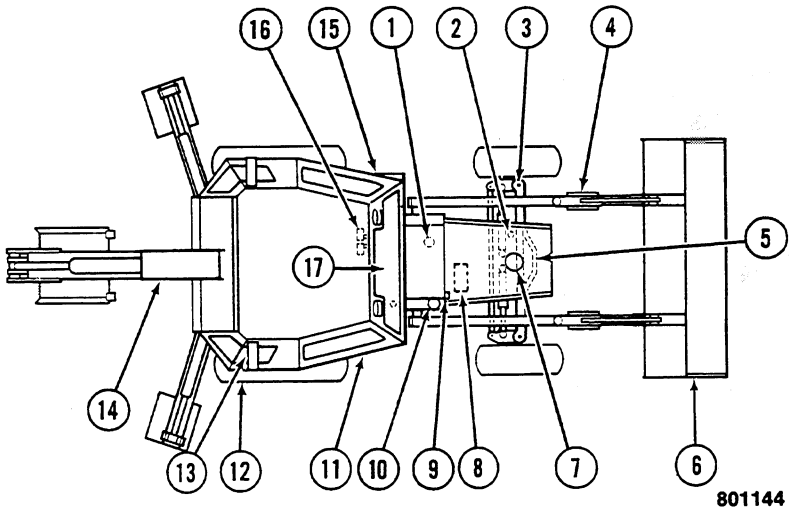
Before starting the engine for the first time and before each operating period, carefully follow the information in this manual.

**CAUTION:** *Make sure all persons are away from the machine before you start the engine.* *47-63*



## Service and Checks Before You Start

Check the machine each day before you start the engine. See the following illustration and do the checks below. Make sure to check for loose, broken or missing parts.



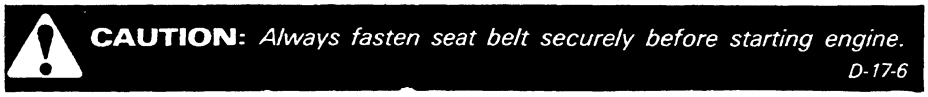

SAFETY DECALS: You must clean or replace all safety or instruction decals that you cannot read. See page 130.

1. FUEL SYSTEM: Check the fuel sediment bowl for water. If water is found, service the fuel system.
2. ENGINE: Check the engine oil level.
3. FRONT AXLE KING PINS: Lubricate both king pins (4 grease fittings).
4. LOADER: Lubricate the 15 grease fittings on the loader. (Add 4 grease fittings if you have a 4-in-1 bucket).
5. FRONT AXLE PIVOT: Lubricate the front axle pivot.
6. LOADER BUCKET: Check for broken or missing parts.
7. RADIATOR: Check the coolant level.
8. AIR CLEANER: Clean the dust cup (machines without turbocharger).
9. POWER SHUTTLE TRANSMISION: Check the oil level.
10. HYDRAULIC SYSTEM: Check the oil level.
11. UNDER MACHINE: Check for leaks.
12. TIRES: Check air pressure and check for damage.
13. LAMPS: Make sure that all lamps will illuminate.
14. BACKHOE: Lubricate 23 grease fittings. If equipped with an Extendahoe, lubricate 12 holes in the dipper slide.
15. STEPS, HAND RAILS AND OPERATORS AREA: Clean and remove all loose items.
16. BRAKE PEDALS AND PARKING BRAKE: Check that the brakes work correctly.
17. INSTRUMENT PANEL: Make sure that the instruments and warning lamps work correctly.

**NOTE:** The checks above include all items in the 10 Hour Interval of the Maintenance Chart. See page 125. For more information, see the Maintenance/Lubrication section of this manual.

## Procedure to Start the Engine

### 580 D




1. Make sure the parking brake is engaged and that the direction control for the power shuttle transmission and the transaxle control lever is in the Neutral position.

2. Turn the seat forward and fasten the seat belt.

3. Turn the key switch to the On position and check the engine oil pressure and alternator warning lamps. These two lamps must illuminate. Push the warning lamp switch to the right and check the two filter warning lamps. These two lamps must also illuminate.

4. Push the foot throttle 1/4 down and turn the key switch to the Start position to engage the starter motor.

5. If the engine starts and stops, do not engage the starter motor again until the starter motor stops turning.

   **NOTE:** Do not operate the starter motor more than 30 seconds at one time. Let the starter motor cool for three minutes before you engage the starter motor again. While the starter motor is engaged, white or black smoke must be seen at the exhaust pipe. If no smoke is seen, check the fuel supply.

6. After the engine starts, check the instruments to make sure the gauge indications are correct. Run the engine at 1000 rpm until the coolant temperature is warm.

### 580D Super D


1. Make sure the parking brake is engaged and that the direction control for the power shuttle transmission and the transaxle control lever is in the Neutral position.

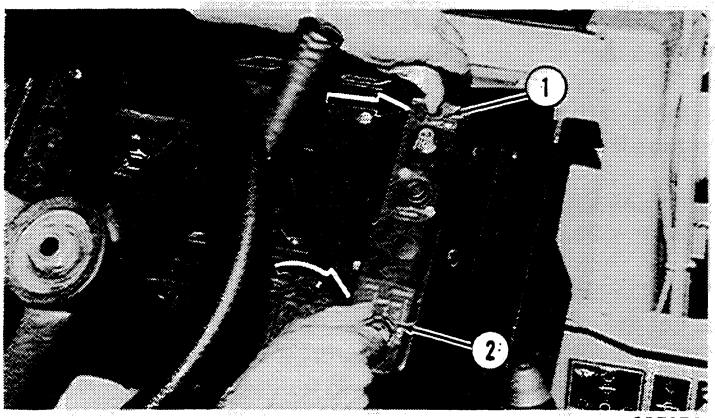
2. Turn the seat forward and fasten the seat belt.

3. Turn the key switch to the On position and check the engine oil pressu and alternator warning lamps. These two lamps must illuminate. Push the warning lamp switch to the right and check the two filter warning lamps. These two lamps must also illuminate.

   **IMPORTANT:** The turbocharger on your engine must be primed with oil if (1) the temperature is cold, (2) the engine has not been run for two or three weeks, or (3) you have just replaced the engine oil filter. To prime the turbocharger with oil:

   a. Hold the fuel switch (1) in the Turbo Prelube position.

   b. Turn the key switch (2) to the Start position and operate the starter motor a maximum of 30 seconds. Engine oil will prime the turbocharger before the engine starts.




805974

1. Fuel Switch in Turbo Position
2. Operate Starter Motor

   c. Release the fuel switch and release the key switch.

4. Push the foot throttle 1/4 down and turn the key switch to the Start position to engage the starter motor.

5. If the engine starts and stops, do not engage the starter motor until the starter motor stops turning.

   **NOTE:** Do not operate the starter motor more than 30 seconds at one time. Let the starter motor cool for three minutes before you engage the starter motor again. While the starter motor is engaged, white or black smoke must be seen at the exhaust pipe. If no smoke is seen, check the fuel supply.

6. After the engine starts, check the instruments to make sure the gauge indications are correct. Run the engine at 1000 rpm until the coolant temperature gauge needle is in the green area.

## Engine Speed

Do not run the engine at idle speed for long periods. This can cause a low operating temperature. Low operating temperature can cause acids and deposits in the engine.

## Procedure to Stop the Engine

**WARNING:** *Make sure you are on level ground before you stop the engine and leave the machine. If you must stop on the side of a hill, put the side of the machine toward the bottom of the hill. Engage the parking brake and lower the loader bucket to the ground. Put the backhoe in the Transport position. Stop the engine and remove the key. Failure to follow these instructions can cause an accident.*

*24-2-B*

1. Stop the machine and lower the loader bucket and three-point hitch attachment (if equipped) to the ground. Put the backhoe in the transport position or lower the bucket to the ground.

2. Put the transmission direction control in Neutral.

3. Engage the parking brake.

4. Run the engine at idle speed for two minutes. (Engine with turbocharger: It is possible to damage the turbocharger if you do not follow the procedure in this step.)

5. Turn the key switch to the Off position to stop the engine. Remove the key.

**NOTE:** If the machine is parked outside at night, put a cover on the exhaust pipe to keep moisture out of the engine.

## Methods to Help Start the Engine During Cold Weath.

### Ether Starting Aid (If Equipped)

**WARNING:** *An explosion can result if sparks or flame contact the ether in the starting fluid container, or if you keep the container in an area with the temperatures above 120° F (49° C). Read the following:*

1. *Know the correct method for starting your engine with ether.*
2. *If you weld, grind, or use a cutting torch on the machine, always remove the starting fluid container from the machine. Use compressed air to remove any ether fumes from the area.*
3. *Do not breathe the ether vapor or let the ether touch your skin.*
4. *Keep the starting fluid container above the reach of children.*
5. *Never make a hole in the starting fluid container.*
6. *Do not put the starting fluid container in a fire.*

*Failure to follow the above procedure can cause a severe injury.*

*48-12-B*

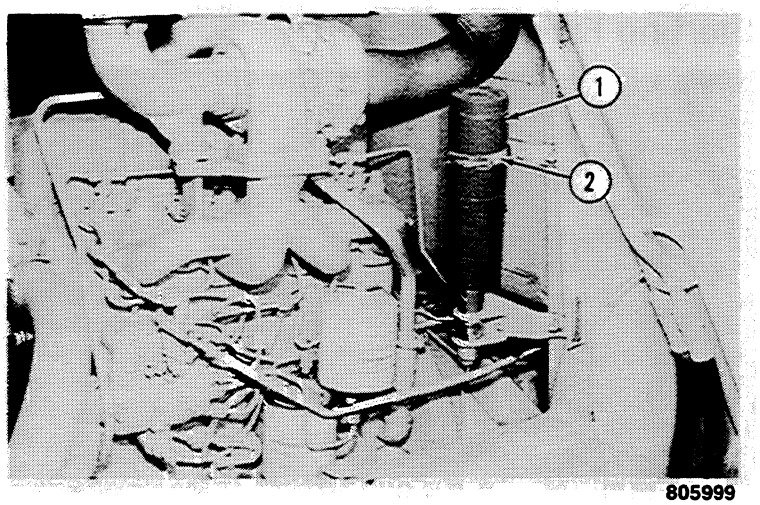
The ether starting aid puts ether into the engine intake manifold each time you push the button for the ether starting aid.

1. Push down the foot throttle 1/4 open.

2. Turn the key switch to the Start position for three or four seconds and push the button for the ether starting aid. A measured amount of ether will go into the engine intake manifold each time the button is pushed.

   **NOTE:** If the engine does not start, repeat the procedure. Make sure the starting fluid container is not empty. Do not operate the starter motor more than 30 seconds at one time. You must let the starter motor cool for three minutes.

3. Ether can only be injected into the engine when the starter motor is engaged and the engine is cold.




1. Starting Fluid Container 2. Clamp

## To Replace the Starting Fluid Container

1. Completely clean the container and base.

2. Loosen the clamp and turn the container counterclockwise. Remove the container.

3. Inspect the cork seal in the base. If the seal is damaged, replace the seal. Order Case part number D74422 from your Case Dealer.

4. Install the new starting fluid container, Case part number D55767. Turn the container clockwise and tighten with your hand. Do not use a strap wrench.

   **NOTE:** During warm weather it is recommended that you remove the container from the machine and install a cap on the base.

## Case Starting Fluid (15 oz. Can)

**WARNING:** *An explosion can result if sparks or flame contact the ether in the starting fluid container, or if you keep the container in an area with the temperatures above 120° F (49° C). Read the following:*

1. *Know the correct method for starting your engine with ether.*
2. *If you weld, grind, or use a cutting torch on the machine, always remove the starting fluid container from the machine. Use compressed air to remove any ether fumes from the area.*
3. *Do not breathe the ether vapor or let the ether touch your skin.*
4. *Keep the starting fluid container above the reach of children.*
5. *Never make a hole in the starting fluid container.*
6. *Do not put the starting fluid container in a fire.*

*Failure to follow the above procedure can cause a severe injury.*

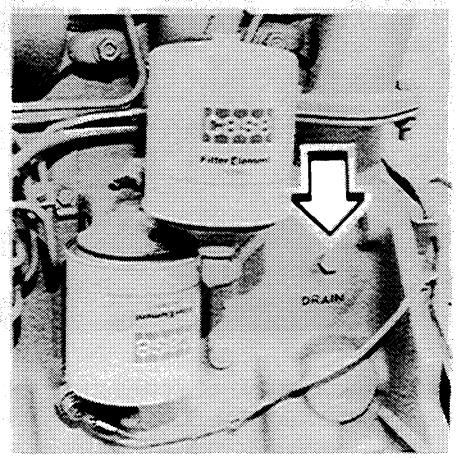
*48-12-B*

Cans of Starting Fluid (Case part number B17072) are available from your Case dealer. Before you use the Starting Fluid, read the instructions on the can. You will need another person when using Starting Fluid to help start your machine.

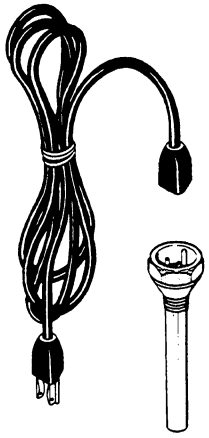
1. See "Procedure to Start the Engine" on page 87.
2. Push the starter button.
3. After the starter motor is engaged, have the other person put an ether spray into the intake cap of the air cleaner.

## Coolant Heater

The coolant heater for the engine block will help start the engine during cold temperatures. The coolant heater is available from your Case dealer.




Pipe Plug 797329



Coolant Heater 750188

The engine block has a pipe plug. This pipe plug must be removed to install the coolant heater. The pipe plug is in the left side of the engine block.

Install the coolant heater as follows:

1. Drain the coolant from the engine block and radiator to a level below the pipe plug.
2. Remove the pipe plug.
3. Read the instructions and install the coolant heater.
4. Fill the radiator and engine block with coolant.

## Booster Battery

**WARNING:** *When the battery electrolyte is frozen, the battery can explode if, (1) you try to charge the battery, or (2) you try to jump start and run the engine. To prevent the battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.* 48-35

**WARNING:** *If you connect jumper cables wrong to the starter motor solenoid. the engine can be started with the transmission in gear. To prevent personal injury or damage to the machine. use the following procedure:*

1. *Two persons are required for jump starting.*
2. *Connect the positive jumper cable to the Battery terminal of the starter motor solenoid.*
3. *Connect the negative jumper cable to a good frame ground. See the operator's manual for this machine. Sit in the operator's seat and then start the engine.*
4. *Have the other person disconnect the jumper cables.*

*If you do not use the above procedure. the machine can move out of control and you or other persons can be seriously injured.*

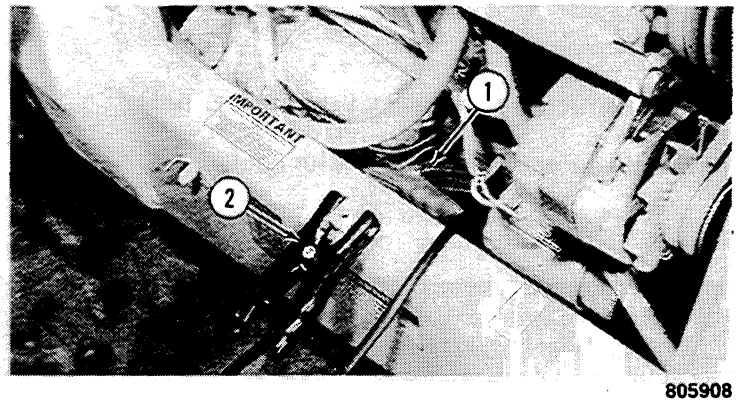
*D-48-11*

The following instructions give the correct method of connecting the booster battery to the starter motor solenoid of the machine. Two persons are required for this procedure.

1. The booster battery must have a total of 12 volts.

2. When you are seated in the operator's seat with the seat belt fastened, have the other person connect the jumper cables. See the following photograph.

3. Connect the positive (+) jumper cable of the booster battery to the Battery terminal of the starter motor solenoid.




805908

1. Positive Jumper Cable To Battery Terminal on Starter Motor
2. Negative Jumper Cable To Good Frame Ground

4. Connect the negative (-) jumper cable of the booster battery to a good frame ground. This ground must be free of paint or dirt.

   Sit in the operator's seat and then start the engine. See "Procedure to Start the Engine" on page 87.

5. Have the other person disconnect the jumper cables.

# MACHINE OPERATION

## Adjusting the Seat

Before starting each day, adjust the position of the seat for the most comfort.

**WARNING:** *Operate controls only from seat with seat belt fastened*

*Lock transmission control(s) in neutral and apply parking brake before starting engine and before leaving operator's seat.*

*Lower or block elevated components before servicing and when leaving the machine.* *D-47-8-A*

805855

Adjust Seat and Fasten Seat Belt

**WARNING:** *Before each period of operation, check the machine for correct operation of the steering, brakes, hydraulic controls, instruments, and safety equipment. Check the Neutral position of the transmission control levers. A machine that runs correctly can prevent accidents. Make all necessary repairs or adjustments before you operate the machine.* *48-32*

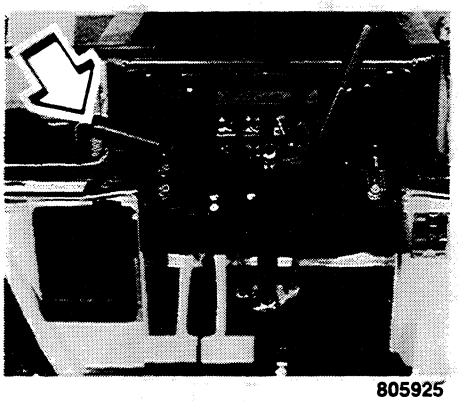
## Starting

When the engine is warm, decrease the engine speed to idle and do the following:

1. Check the instrument panel.
2. Make sure the backhoe is in the transport position and the stabilizers are raised.
3. Raise the loader about two feet (600 mm) above the ground.
4. Test the parking brake:
   a. Put the control lever for the transaxle in 3rd gear.
   b. Engage the parking brake and put the direction control lever in Forward.
   c. Increase the engine speed to 1500 rpm. The machine must not move.

   **NOTE:** If the machine moves, adjust the parking brake. See page 187.
5. Release the parking brake.

## Selecting Transaxle Gears and Machine Direction



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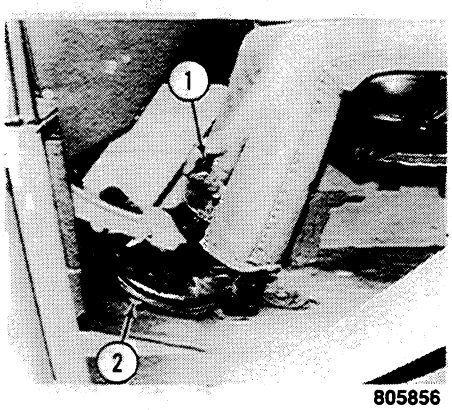
Direction Control Lever




805856

1. Four Speed Transaxle Control
2. Clutch Cutout Pedal

## our Speed Transaxle

The four speed transaxle is synchronized in 3rd and 4th gears. You can shift gears from 1st or 2nd to 3rd to 4th and back again to 3rd without stopping the machine. Before you shift gears, push the clutch cutout pedal. When you shift gears, always make sure the engine speed remains in the green area of the tachometer.

When shifting the transaxle to 1st or 2nd gear, stop the machine and push down the clutch cutout pedal, before you shift.

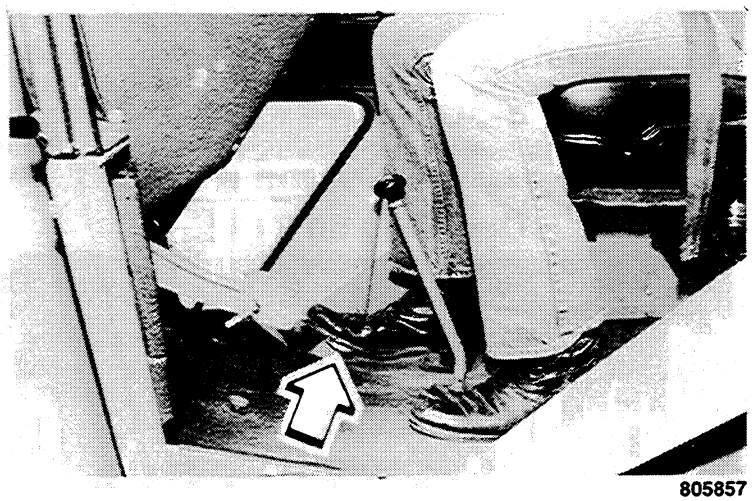
## Machine Direction

For forward travel, lift up the direction control lever and push completely forward. To travel in reverse, lift up the lever and pull completely rearward. The center position is Neutral. The direction control lever must be in the Neutral position before you can start the engine.

**NOTE:** For smooth operations before you change directions, reduce the engine speed.

## Differential Lock

The differential lock gives equal power to both rear wheels. Refer to the two following conditions before you actuate the differential lock.



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## When the Machine is Stuck

a. Stop the wheels from rotating and put the directional control lever in Forward or Reverse.

b. Push down the clutch cutout pedal.

c. Push down the differential lock pedal.

d. Release the clutch cutout pedal.

e. Increase the engine speed and release the differential lock pedal.

**NOTE:** The differential lock will release automatically when the load is removed or when the clutch cutout pedal is pushed down.

## Before You Operate Through a Soft or Muddy Area

**NOTE:** You can engage the differential lock when the machine is moving.

a. Before you move the machine through an area that is soft or muddy, make sure that the machine is moving in a straight direction and that one of the rear wheels is not rotating faster than the other rear wheel.

b. Push down the differential lock pedal with your foot. Keep this pedal pushed down while you move the machine through the soft or muddy area.

c. After you have moved through the area, release the differential lock pedal.

**IMPORTANT:** You can cause damage to the transmission if you try to engage the differential lock when the machine is turning or if one rear wheel is rotating faster than the other rear wheel.

## Operating on a Hill

**WARNING:** *Hillside operation can be dangerous. Rain, snow, loose gravel, soft ground, etc., change the ground conditions. You must make a judgement if your machine can be safely operated on any hillside or ramp.*

*Before you operate on any hillside or ramp, always select low gear and never coast down the hill with the transmission in the Neutral position. The machine can go out of control and roll over if you do not follow these instructions.* *D-45-10-A*

Before you operate the machine on a hill, always put the transaxle in a lower gear and test your brakes. DO NOT let the machine move down the hill with the transmission in Neutral. Use caution if you must use the clutch cutout when you are digging with the loader on a hill.

## Four Wheel Drive Operation

The front drive axle is engaged and disengaged by a control lever. To engage the front drive axle, stop the machine and pull up the control lever. To disengage the front drive axle, stop the machine and push down the control lever.

**NOTE:** If the control lever does not engage the front drive axle, move the machine forward a short distance and push the control lever down again.

## Procedure to Move a Disabled Machine

Towing the machine is not recommended for long distances. If possible, transport the disabled machine on a trailer or truck.

If the machine must be towed, do the following:

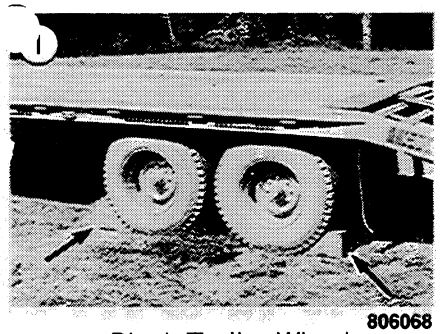
1. Use a rigid type coupler.
2. Put the transaxle in Neutral.
3. Put the backhoe in the transport position and raise the loader as required.
4. Do not tow the machine faster than 20 mph (32 km/hr) on a smooth road. Reduce the tow speed as the road conditions change.

## Procedure to Transport the Machine

**WARNING:** *Before you put the machine on a trailer, remove all ice, oil or grease from the trailer and ramp.* *46-76-A*

You must know the rules or laws for safety that are used in each area that you will be in. Make sure that your truck and machine are equipped with the correct safety equipment.

1. See the four following photographs. Put a block at the front and rear of each trailer wheel.
2. Be careful, move the machine slowly onto the trailer.
3. Lower the loader bucket onto the trailer.
4. Put the backhoe in the Transport position or lower the backhoe bucket to the floor of the trailer.
5. Stop the engine and engage the parking brake.
6. Put the four speed transaxle control in the Neutral position.
7. Put blocks at the front and rear of each tire on the machine.
8. Use chains to fasten the machine to the trailer.
9. Put a cover over the exhaust pipe.
10. Measure from the ground to the highest point of the machine. You must know the clearance height of the machine.

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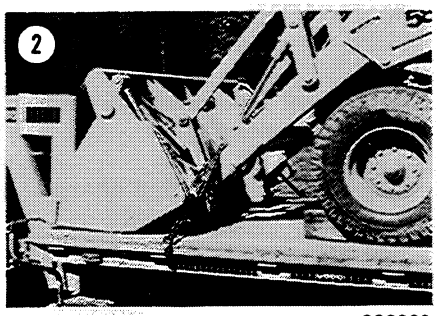
Block Trailer Wheels

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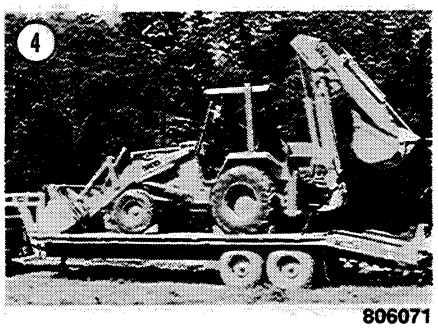
Put Chains at Front


806070

Put Chains at Rear




806071

Machine Ready for Transport

## Operating in Cold Temperatures

To prevent damage to the machine and for easy starting in cold temperatures, do the following:

1. Keep the battery at full charge.
2. Use the correct viscosity oil in the engine and transmission.
3. Use the correct mixture of ethylene glycol coolant and water to prevent the coolant from freezing.
4. When not operating, put the machine in a building or cover the machine with a tarpaulin.
5. If there is snow on the machine, make sure you remove the snow from the hood. This will prevent snow from going into the air cleaner.
6. Fill the fuel tank at the end of each operating period.
7. See your Case dealer for the following options; dipstick heaters, ether injector, battery heaters, etc.
8. Run the engine at 1/2 or full throttle to keep the temperature of the engine at the correct level.

## Operating in Hot Temperatures

To prevent damage to the machine, do the following:

1. Keep the coolant at the correct level.
2. Keep the correct pressure in the cooling system. If the radiator cap is damaged, replace the cap.
3. Clean all dirt and debris from the radiator.
4. Check the tension of the drive belts each day.
5. Use lubricants of the correct viscosity.
6. Use the correct solution of ethylene glycol and water in the cooling system.
7. Clean the dust cup of the air cleaner more frequently during extreme dust conditions.

# LOADER OPERATION

This information for loader operation does not include all possible conditions. This is basic information that you need to operate the machine.

When a new operator is learning about this machine, always operate in a clear area at decreased engine speed.

## Safety When You Work

Be a careful operator; you can prevent accidents. Read the following information. It will help you to operate safely.

**CAUTION:** *Always fasten seat belt securely before starting engine.* D-17-6

805855

Operators Seat in Correct Position
for Loader Operation

**WARNING:** *Before each period of operation, check the machine for correct operation of the steering, brakes, hydraulic controls, instruments, and safety equipment. Check the Neutral position of the transmission control levers. A machine that runs correctly can prevent accidents. Make all necessary repairs or adjustments before you operate the machine.* 48-32

## Fast Cycle Switch

The fast cycle switch is used to disengage the transmission when you need maximum power for the loader. The red button on top of the loader control lever controls this feature.

1. Move the machine into the stockpile with the transmission in first or second gear and the engine speed at full throttle.

2. When the engine speed lowers, push the red button on the loader control lever and engage the brakes. Maximum engine power will be given to the loader.

3. When the bucket is full, reduce the engine speed, move the direction control to Reverse, release the red button, and move the machine to the dump area.

## Return-to-Dig

After you dump the load, use the Return-To-Dig system to put the bucket in position for another dig cycle.

The Return-To-Dig uses both the Float and the Roll Back positions. To operate, put the lift arm control in the Roll Back position and the Float position. The bucket will roll backward until the bottom of the bucket is level. Then, the bucket will stop automatically.

The loader arms will continue to lower until (1) the bucket reaches the ground or (2) you manually pull the lift arm control back to the Hold (Neutral) position. See page 189 to adjust the Return-To-Dig.

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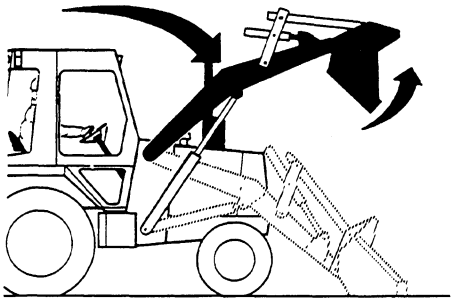


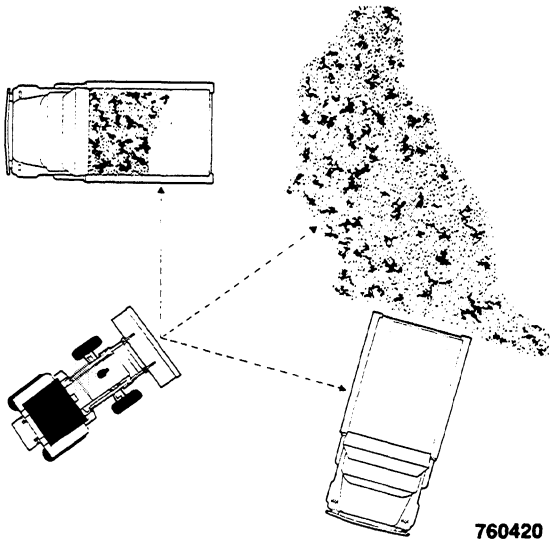
801145

Move the Control Lever to the Return-To-Dig Position

## Job Layout

Set up the work cycle as short as possible. Proper spotting of the truck is very important for efficient operation.

Spend a few minutes leveling off the work area, if necessary. Smooth runways for the machine and a level parking area for trucks will speed up the job.

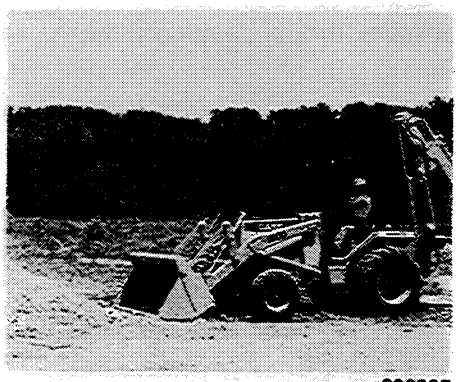



## Loose Material

Use the bucket level indicator to make sure the bottom of the bucket is level. Put the lift arm control in the Float position and move the machine forward into the material. When the speed of the machine starts to decrease, raise the loader and roll back the bucket.

**NOTE:** Use the fast cycle switch to get maximum power for the loader.

## Filling the Bucket



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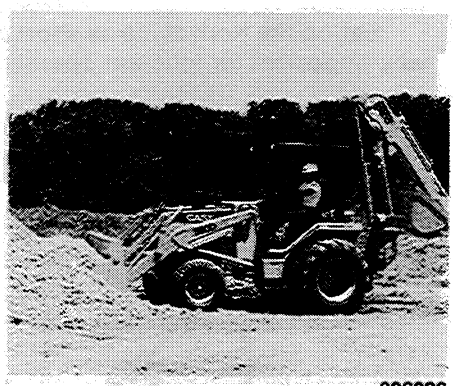
Bucket Level on Ground



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Move Forward

806027

Rollback and Lift

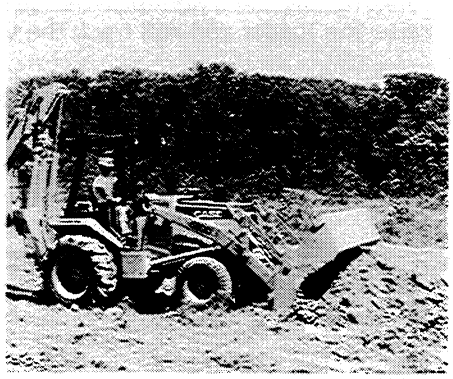
806024

Dump

## Dumping and Leveling

806029

Dump with Clam



806049

Backfill with
4-in-1 Bucket

# BACKHOE OPERATION
## Safety When You Work

Be a careful operator; you can prevent accidents. Read the following information.

**WARNING:** *Before you start to work in a new area, walk around and look for holes or obstructions. Failure to find hidden holes or obstructions can cause an accident and injury.* *26-5-A*

**CAUTION:** *Operate backhoe from seat position only. Any other method could result in serious injury.* *D-28-3*

**WARNING:** *Before you dig with the backhoe, always shift the transmission to the Neutral position and put the parking brake in the engaged position. If you do not follow this procedure the machine can move out of control and you or others in the area can be injured.* *48-63*

805854

Operator in Correct Position to Operate Backhoe

## General

The backhoe will dig more material in less time when a smooth, short dig cycle is used. A good operator is not just a fast operator. Keep each dig cycle smooth.

When you force the bucket to dig a load that is too large, you will cause a "hydraulic stall" (dipper control lever pulled back and the bucket is not moving). The main relief valve of the hydraulic system will make a noise when "hydraulic stall" occurs. This will cause cycle times to be longer and will also cause the temperature of the hydraulic oil to increase.

## Stabilizer Pads

If you dig next to a building, wall etc., change the position of the stabilizer pads. See the two following photographs. Do the following steps:

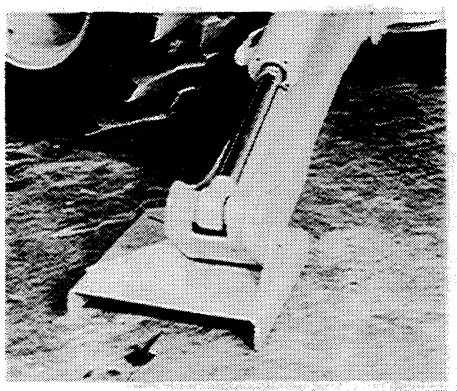
1. Remove a retaining ring from the pin on each stabilizer pad.

2. Use a hammer and punch. Remove each pin.

3. Put the stabilizer pads in the position shown. Install the pins and retaining rings.

**IMPORTANT:** Always position the stabilizer pads for maximum stability when you are not operating the backhoe next to a wall, building, etc.

**IMPORTANT:** Be careful when you swing the backhoe completely to the side. In some positions, the backhoe can contact the stabilizers and can cause damage.



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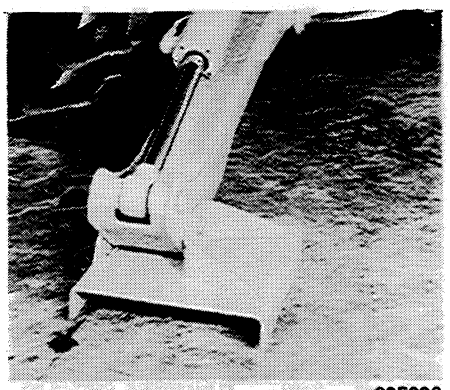
Position to Work Close to Walls, Buildings, etc.



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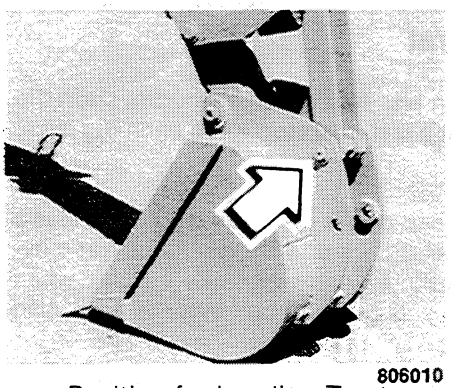
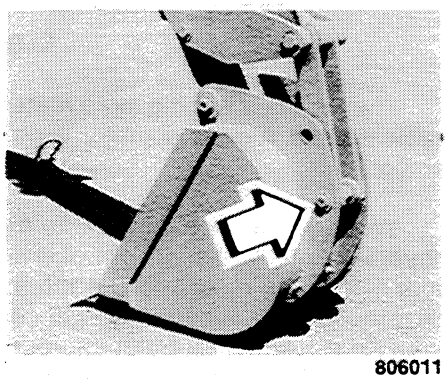
Position for Maximum Stability

## Backhoe Bucket Digging Positions



806010

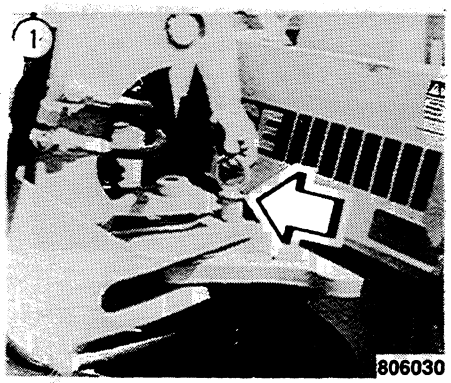
Position for Loading Trucks



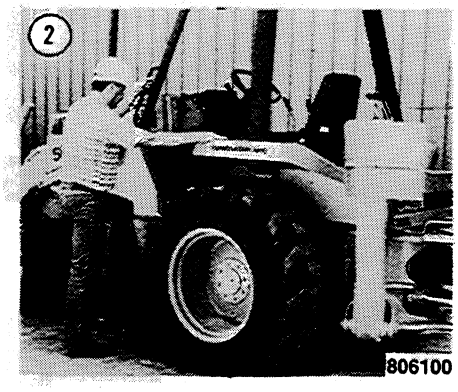
806011

Position for Deep Vertical Holes

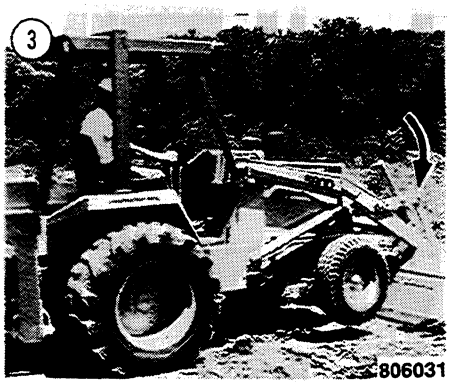
## Before You Dig with the Backhoe



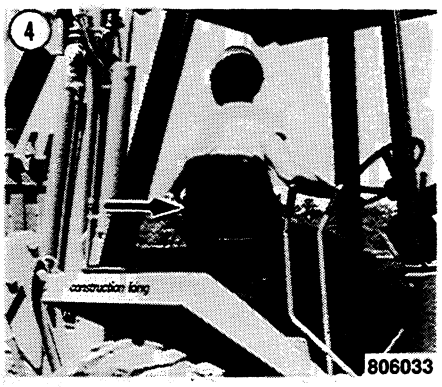

Remove the Swing Lock Pin



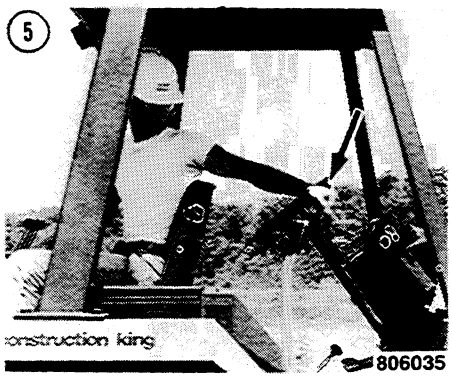

Use Hand Rails and Steps



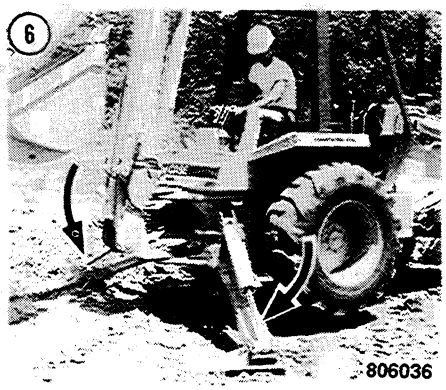

Dump Loader Bucket and Lower to the ground. Raise the Front wheels a few inches above the ground.




Turn Seat Around for Backhoe Operation.




Increase Engine Speed to Full Throttle.

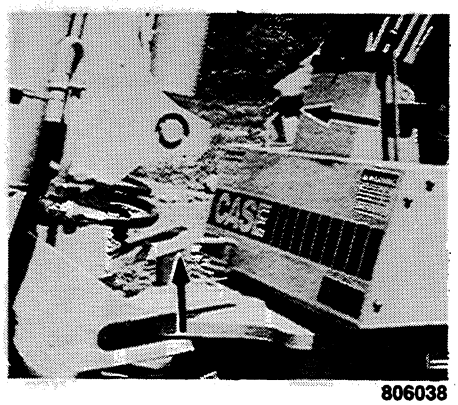



Lower the Stabilizers.
Raise and Level the Machine.

## Moving Backhoe Out of Transport Position

**WARNING:** *Put the stabilizers in the Operating position before you lower the boom and extend the dipper. The front of the machine can raise above the ground and cause an accident if the stabilizers are not down in the Operating position.*

*Before you raise the stabilizers from the Operating position, put the backhoe bucket on the ground or raise the boom and retract the dipper.* *41-1-A*



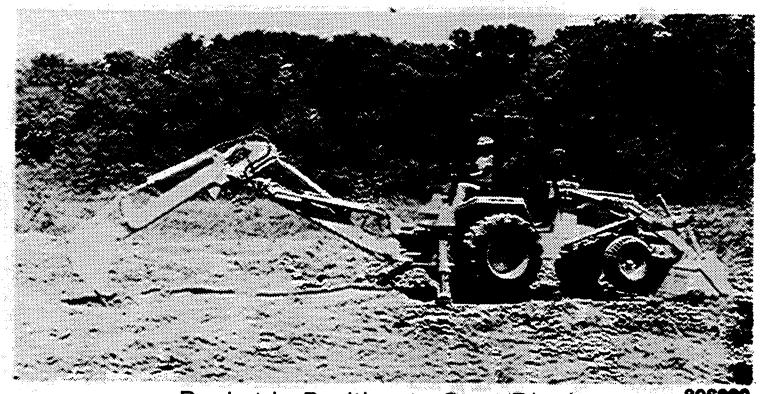
806038

Push Boom Control Forward and Push Boom Latch Control Out to Release Boom Latch.

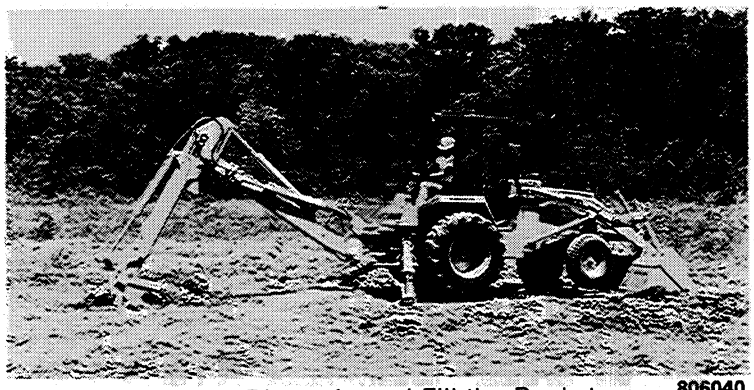
806037

Hold Boom Latch in Released Position and Pull Boom Control Back.

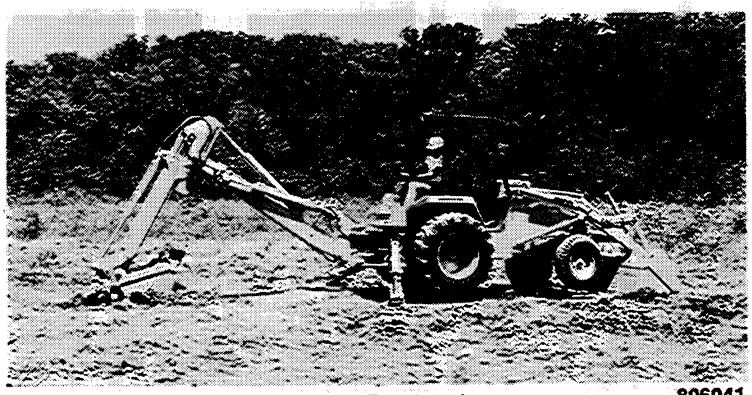
## Digging with the Backhoe



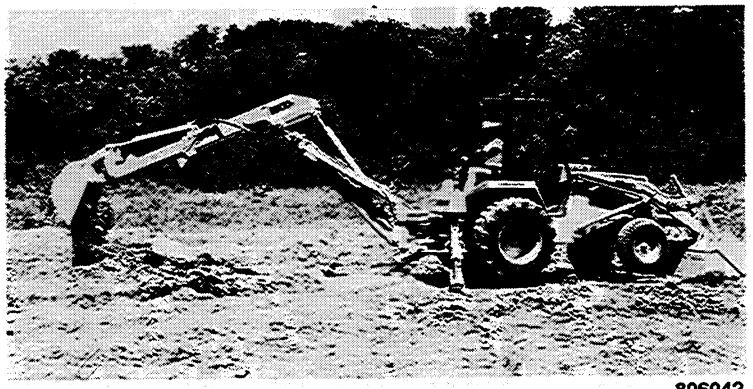
Bucket in Position to Start Digging 806039



Move Dipper in and Fill the Bucket 806040



Rotate Bucket In 806041



Dump the Bucket 806042


Return to the Trench and Lower Bucket

## Procedure to Move the Machine Foward When You Are Digging

### Level Ground

You can use the backhoe to move the machine forward.

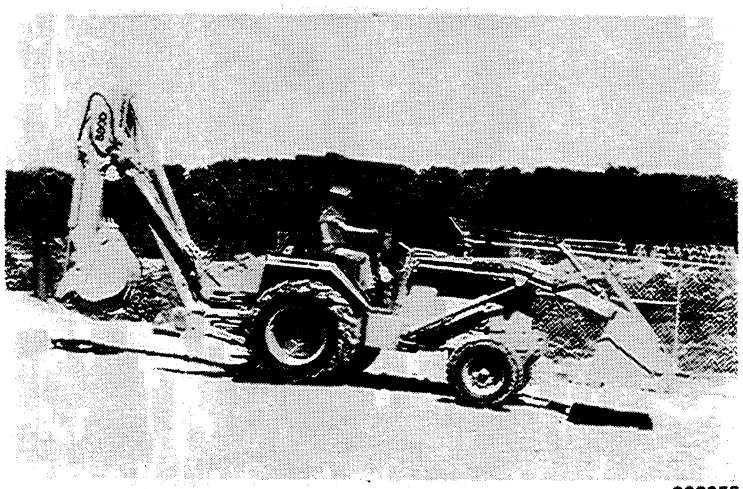
1. Make sure the front wheels of the machine are straight forward.
2. Decrease the engine speed to 1000 rpm.
3. Raise the boom and retract the dipper. Move the boom as required to put the bucket teeth on ground that is firm. Lower the backhoe bucket to the ground.
4. Raise the stabilizers and loader bucket about one foot (300 mm) above the ground.
5. Use the boom and dipper to move the machine. Slowly move the dipper out. At the same time, lower the boom. See the following photograph.
6. At the new position, lower the stabilizers and loader bucket to the ground.

806044

Moving the Machine Forward On Level Ground

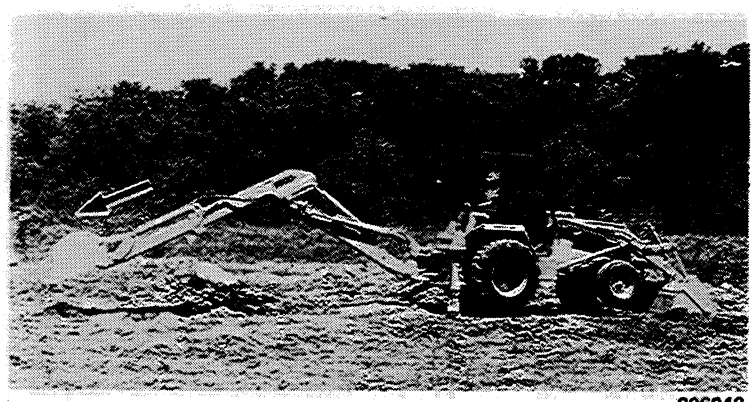
## On a Hill

**WARNING:** *Be careful when you dig on the side of a hill. When you move the machine forward, the machine can go out of control and turn over. You must be in the seat (seat in the loader position) when you move the machine forward. Always engage the parking brake before you operate the backhoe.* *46-28-B*



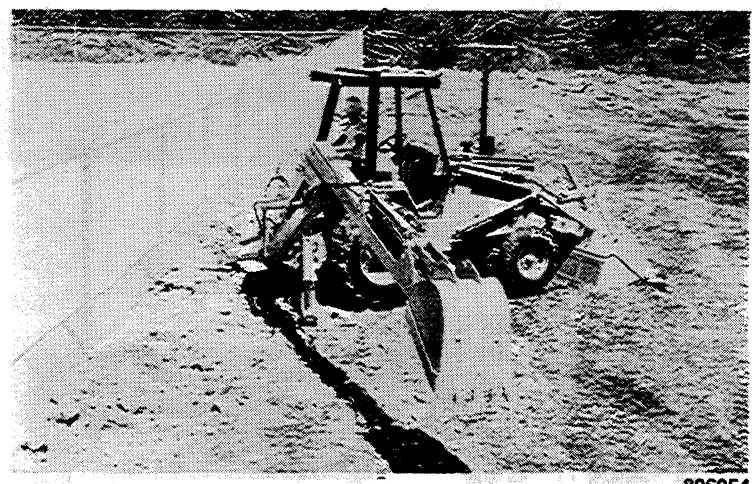
Moving the Machine Forward On a Hill 806055

## Extendahoe

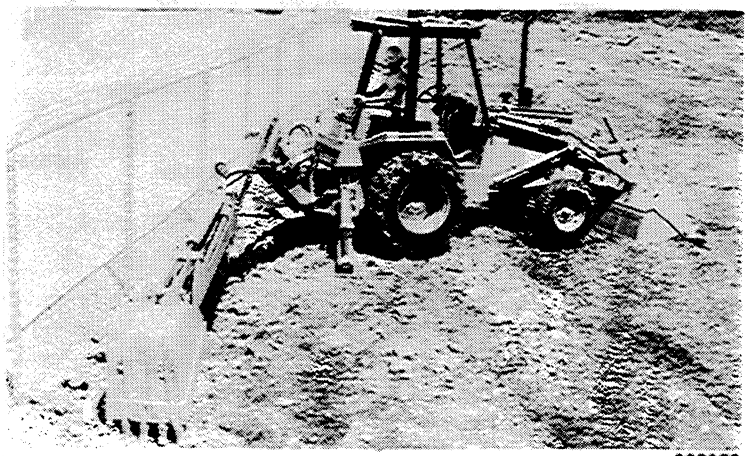


Dipper Extended 806043

## Digging Next to a Fence or Building



Make Sure You Have Space To Dump the Material 806054



806053

## Lifting With the Backhoe

The backhoe is not a crane. For this reason, always be very careful when you lift a load with the backhoe. Use the backhoe lifting charts in the specifications section of this manual and read the instructions below before you lift a load with the backhoe.

1. Know and understand each signal from the signalman before you start.

2. Always know the location of all persons in your working area.

3. Lower both stabilizers and raise the machine so that both rear tires are about one to two inches (25 to 50 mm) above the ground. Make sure the machine is level.

   **NOTE:** If the ground is soft, put a wide pad (wood boards) under both stabilizer pads.

4. Connect a hand line to the load before you start. Make sure the person holding the hand line is away from the load.

5. Test the load before you start your job:

   a. Put the machine close to the load.

   b. Use a cable or sling to fasten the load to the end of the dipper at the bucket pivot pin.

   c. Lift the load with the backhoe so the load is one or two inches (25 to 50 mm) above the ground.

   d. Swing the load all the way to one side.

   e. Move the load away from the machine. Make sure you keep the load one to two inches (25 to 50 mm) above the ground.

   f. Lower the load to the ground if (1) one of the stabilizers is raised above the ground or (2) there is any indication that the stability of the machine is reduced.

6. Always move the load slowly. Do not move the load over the top of persons. Keep all persons away from the load.

7. When the load is raised, keep all persons away until the load is placed on blocks of wood or is placed on the ground.

8. Remember, lower the load to the ground if (1) one of the stabilizers is raised above the ground or (2) there is any indication that the stability of the machine is reduced.

## Frost Point

The frost point is used to break frozen ground. Use the following procedure:

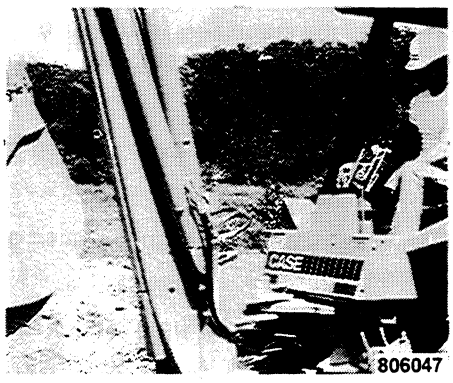
1. Start as close to the machine as possible.
2. Put the frost point in a vertical position.
3. Lower the boom to push the frost point into the ground.
4. Pull the dipper control lever to the In position and the bucket control lever to the Load position. This procedure is almost the same as filling the backhoe bucket.
5. After the frost is loose, move about one foot (0.3 m) to the side. Do the same procedure again.

   **NOTE:** Break only as much frost as you can dig in one day. Freezing can occur and you will have to break the frost again in the same area.

## Procedure to Put the Backhoe in the Transport Position

If you are using the loader or will operate the machine on a road or highway, put the backhoe in the Transport position. Do the following:

1. Use the swing controls and put the bucket straight behind the machine.
2. Make sure the stabilizers are down and the rear wheels are above the ground.
3. Use the hand throttle and run the engine at 1000 rpm. Do not run the engine faster than 1000 rpm.
4. Rotate the backhoe bucket completely in and retract the dipper.



Pull Boom Control Back

Push Boom Control Forward

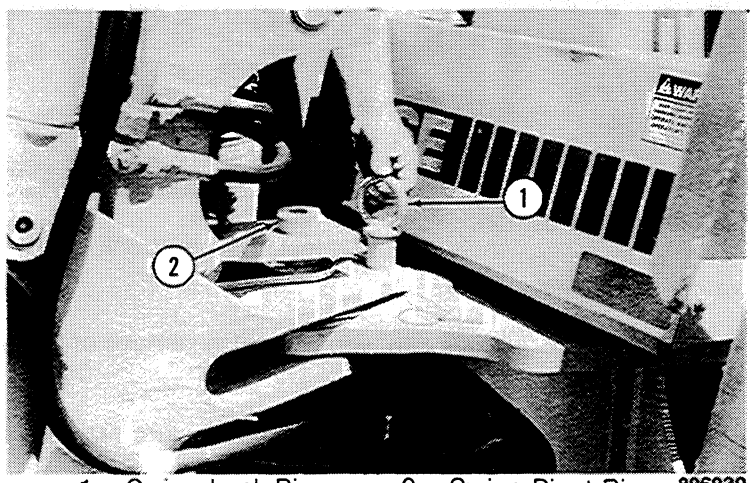
During this procedure, the backhoe boom will be moving toward you (past the vertical position).

a. Pull the boom control lever back to the Raise position.

b. When the boom reaches the vertical position, rapidly move the boom control lever to the Lower position. The boom will continue to move toward you until the boom stop is reached.

**NOTE:** The locking ring on the boom will automatically engage the swing pivot pin. The boom, dipper and bucket is now in the Transport Locked position.

6. Install the swing lock pin. See the following photograph.

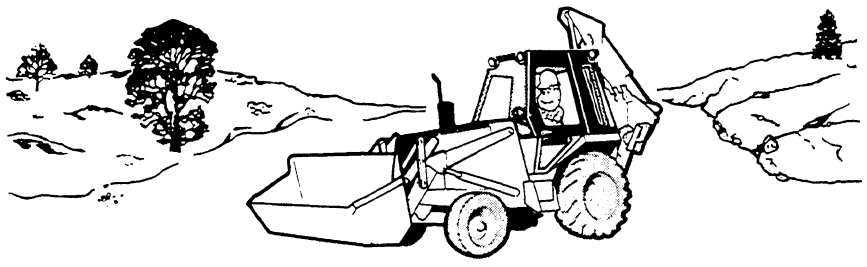



1. Swing Lock Pin 2. Swing Pivot Pin 806030

7. Raise the stabilizers completely. Decrease the engine speed to idle.

8. Turn the operator's seat to the Loader operating position.

9. Raise the loader bucket above the ground.

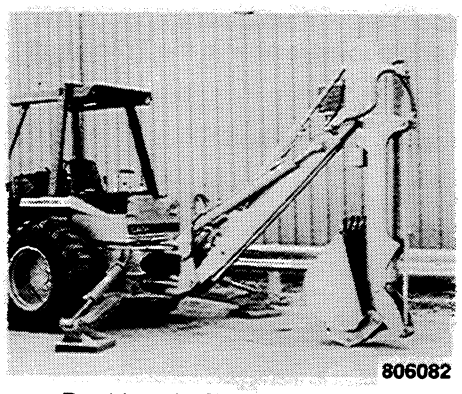


801107

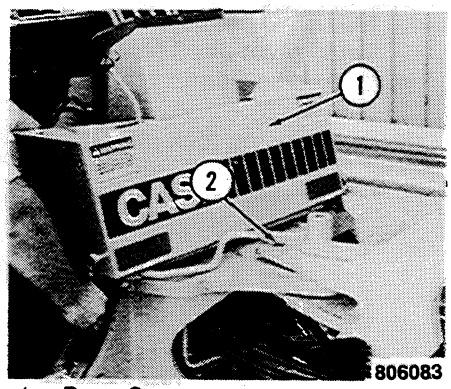
Loader and Backhoe in the Transport Position

## Backhoe Removal

1. Stop the machine on a level surface and lower the loader to the ground.
2. Put the operator's seat in the Backhoe position.
3. Put the backhoe in the position shown in the following photograph. Stop the engine and install the backhoe swing lock pin.




Backhoe in Tripod Position

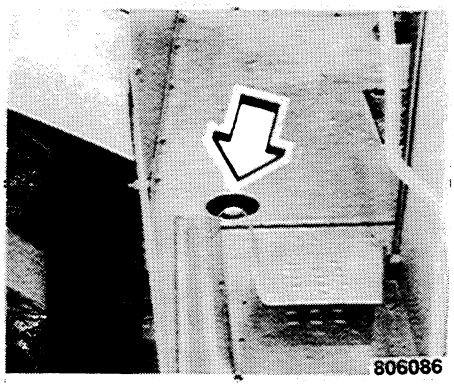



1. Rear Cover
2. Install Swing Lock Pin Here

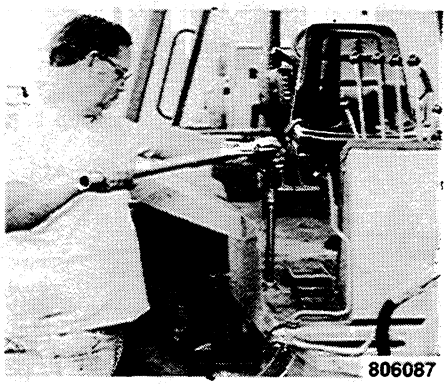
4. Remove the rear cover.

   **NOTE:** If your machine has a cab, you must also remove or tilt out the rear windows.

5. Remove the two small covers that are above the backhoe tension rods.
6. Loosen the two tension rod nuts two turns.

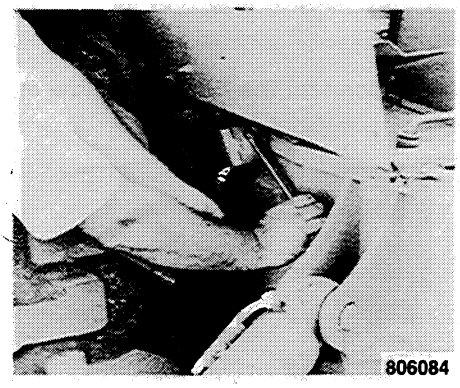



Remove Two Covers




Loosen the Two Tension Rod Nuts

7. Remove the two bolts that retain the two upper mounting pins and remove the two pins. If the pins cannot be removed, start the engine and operate the boom control to loosen the pin.

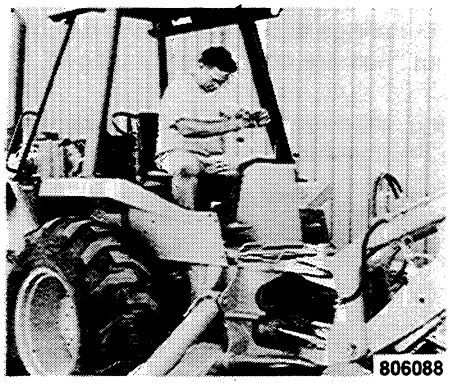


Remove Bolts

Remove the Upper Mounting Pins

8. Start the engine and use the stabilizers to raise the backhoe above the lower mounting arms.

9. Carefully move the machine foward until the backhoe is clear of the lower mounting arms. Stop the machine, put the direction control in the Neutral position, and engage the parking brake.



Level and Raise the Backhoe

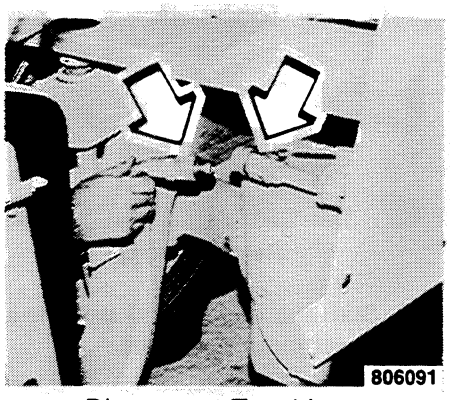
Move the Machine Forward

10. Lower the backhoe to the ground. Use the boom control to keep the main frame and control tower vertical as you lower the backhoe.

11. Stop the engine and move each backhoe control lever several times to remove pressure from the lines.

12. Disconnect the two hydraulic lines that connect the backhoe to the machine.

Lower the Backhoe

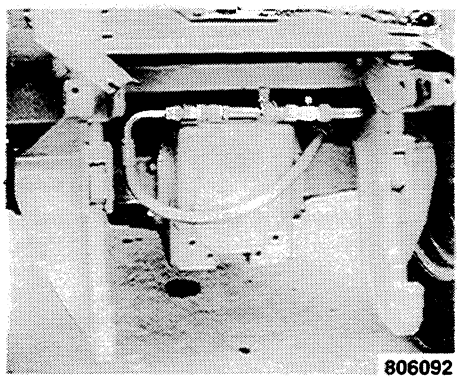


Disconnect Two Lines

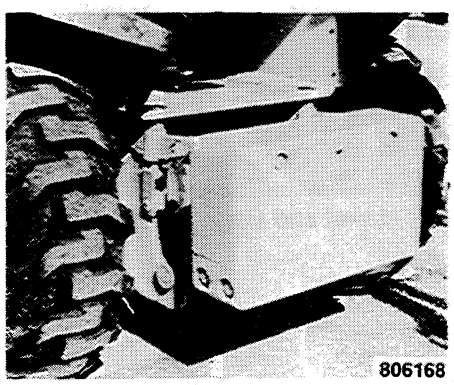
**IMPORTANT:** Do not start the engine until the next step is completed.

13. Connect the two quick disconnect couplings at the rear of the machine. Make sure the quick disconnect couplings are completely engaged.

14. You must install a 1400 pound (635 kg) rear counterweight on the backhoe mounting arms before you operate this machine.



Hydraulics Lines Connected at Rear of Machine



Rear 1400 Pound (635 kg) Counterweight Installed

## Backhoe Installation

1. Carefully align the machine to the backhoe. Stop the engine.

2. Connect the two hydraulic lines. Make sure the quick disconnect couplings are completely engaged.

3. Start the engine and increase the engine speed to 1000 rpm.

4. Carefully use the stabilizers to raise the backhoe. Use the boom control lever to make the backhoe main frame level. Make sure the two lower mounting pins on the backhoe main frame are one inch (25 mm) above the lower mounting arms of the machine.

5. Carefully move the machine into the backhoe. Use the stabilizers to lower the backhoe onto the lower mounting arms. Raise the stabilizers above the ground.

6. Use the boom control lever and align the upper mounting holes.

7. Install the two upper mounting pins and retaining bolts.

8. Tighten the tension rod nuts 300 to 350 pound-feet (405 to 475 Nm). Loosen both nuts and tighten again from 200 to 250 pound-feet (270 to 340 Nm).

   **NOTE:** Check the two nuts every 200 hours of operation to make sure the backhoe mounting parts remain tight.

9. Install the two covers over the tension rod nuts and install the rear cover.

10. Put the backhoe in the transport position and install the swing lock pin.

# FUELS AND LUBRICANTS

## DIESEL ENGINE

In temperatures above 32° F (0° C), use number 2 diesel fuel in your Case diesel engine. See NOTE. When you operate in temperatures below 32° F (0° C), use number 1 diesel fuel.

**NOTE:** If the temperature lowers to the "Cloud Point" of the diesel fuel, wax particles will be in the fuel. These wax particles will cause a restriction of the fuel filters. Then, the engine power will decrease. See your fuel dealer for more information.

### Diesel Fuel Specifications

Different manufacturers can have diesel fuels of different specifications. All diesel fuel used in Case diesel engines must be the same quality as specification D975 of the American Society for Testing Materials. See the following chart.

Diesel Fuel Specification Chart

| | |
|---|---|
| Cloud point, maximum (No. 2 diesel fuel) | -10° F (-23° C) |
| Pour point, maximum | 10 Fahrenheit degrees (6 Celsius degrees) below lowest atmospheric temperature at which engine must start and operate. |
| Cetane number, minimum | 40 (45-55 for winter or high altitudes) |
| Sulphur, by weight, maximum | .50 of 1% |
| Water and sediment, by volume, maximum | .05 of 1% |
| Ash, by weight, maximum | .01 of 1 % |
| Carbon residue on 10%, maximum | .20 of 1% |
| Distillation, 90% point | 540°-625° F (282°-329° C) |
| End point | 675° F (357° C) |
| Flash point, minimum | 125° F (51° C) or legal |
| Viscosity, centistokes at 100° F (38° C) | 2.0-4.3 |
| Saybolt Universal Seconds at 100° F (38° C) | 32-40 |
| Corrosion, copper strip, 3 hours at 212° F (100° C) | No. 3 ASTM |
| API gravity, minimum | 30 |

781008

**WARNING:** *Do not put fuel into the machine if (1) the engine is running, (2) you are near an open flame or (3) you have a burning cigarette, cigar, etc. You can cause a fire and a serious injury.*

*6-6-A*

### Fuel Storage

If you keep fuel in storage for a period of time, you can get foreign material or water in the fuel storage tank. Many engine problems are caused by water in the fuel.

Keep the fuel storage tank outside and keep the fuel as cool as possible. Remove water from the storage container at regular periods of time.

# Fuel, Fluids and Lubricants Chart

| ITEM | CAPACITIES U.S. | Metric | RECOMMENDATIONS |
|---|---|---|---|
| Fuel tank | 22 gallons | 83 litres | Diesel fuel, see page 122. |
| Engine oil:<br>580 Super D Engines<br>With filter change<br>Without filter change | <br><br>9 quarts<br>8 quarts | <br><br>8.5 litres<br>7.6 litres | |
| 580D Engines<br>(Before engine S/N 4313432)<br>With Filter change<br>Without filter change | <br><br>7 quarts<br>6 quarts | <br><br>6.6 litres<br>5.7 litres | Engine Oil Use Case HDM<br>(API CD-Commercial Class D)<br>Above 32° F (0° C) . . . . . SAE 30<br>10° to 50° F (-12° to 10° C) . . . SAE 20W20<br>Below 32° F (0° C) . . . . . SAE 10W |
| 580D Engines<br>(Engine S/N 4313432 and after)<br>With Filter Change<br>Without filter change | <br><br>9 quarts<br>8 quarts | <br><br>8.5 litres<br>7.6 litres | |
| Hydraulic reservoir refill capacity<br>With filter change<br>Without filter change | <br><br>12.5 gallons<br>12 gallons | <br><br>47.3 litres<br>45.4 litres | Case TCH Fluid<br>Alternate oil:<br>Automatic transmission fluid (ATF) such as Dexron II. |
| Power shuttle transmission | 8 quarts | 7.6 litres | Case TCH Fluid. |
| 4-Speed transaxle | 20 quarts | 18.9 litres | Case FDL or Multipurpose Gear Lubricant (API-GL-4)<br>0° F (-18° C) and above . . . . . SAE 90<br>0° F (-18° C) and below . . . . . SAE 80 |
| Engine cooling system<br>With heater<br>Without heater | <br>14 quarts<br>13 quarts | <br>13.2 litres<br>12.3 litres | Ethylene glycol type antifreeze and water should be mixed 50% ethylene glycol and 50% water. See page 151. |
| Battery | As required | | Add drinking water or distilled water. |
| Grease fittings | As required | | Case molydisulfide multipurpose grease. |
| Wheel bearings | As required | | Number 2 wheel bearing grease. |
| Brake master Cylinders<br>SEE WARNING ON PAGE 187. | As required | | Case TCH Fluid<br>Alternate Oil:<br>Automatic transmission fluid (ATF) such as Dexron II. |
| Parking brake cable. | As required to fill cable | | Lubriplate 105 grease. |
| Front drive axle<br>Center Bowl<br>Planetary ends (each) | 6.9 quarts<br><br>1.6 quarts | 6.5 litres<br><br>1.5 litres | Case FDL oil. |
| Transfer case<br>(Four wheel drive) | 1 pint | 0.5 litres | Case FDL oil. |

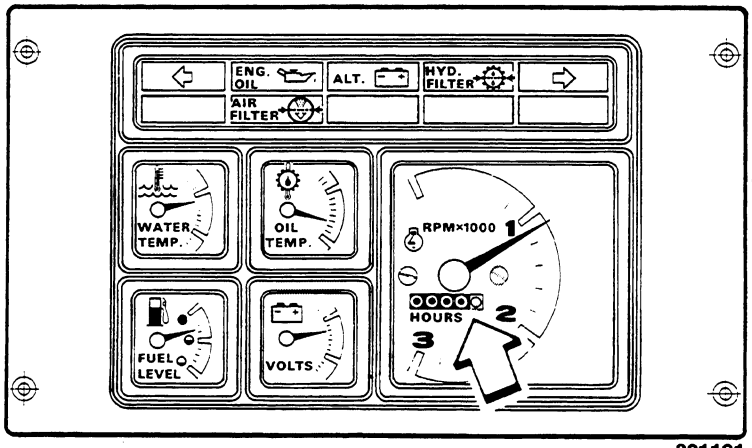
# MAINTENANCE AND LUBRICATION

## INTRODUCTION

Scheduled maintenance and lubrication are the normal operations required to provide safe and efficient operation. Follow the maintenance chart carefully to insure that all points have been serviced properly and on time.

Hourly intervals have been established for servicing your machine. They are based on the number of hours the engine has run. The hourmeter, which operates whenever the engine is running, indicates the accumulated hours of operation.

A service manual is available for this machine at a nominal fee. Contact your Case dealer for further information.




801131

## RUN-IN PERIOD

The items listed in the run-in section are performed during the run-in period only.

## SCHEDULED MAINTENANCE

The items listed in this section are separated into maximum hourly intervals. These intervals are based on "average" operating conditions. When operating under "severe" conditions, such as excessive heat, cold, dust, mud or water, shorten the interval.

The chart on the following two pages lists all components to be serviced, the interval of servicing and the page on which each is found.

**IMPORTANT:** The following charts, except for Run-In Period, are based on maximum intervals. If the machine operates in severe conditions, service more often.

**NOTE:** See page 123 for a listing of fluids and lubricants.

# MAINTENANCE CHART FOR THE FIRST PERIOD OF OPERATION WITH A NEW MACHINE

| INTERVAL | SERVICE | INSTRUCTIONS |
|---|---|---|
| After First Two Hours of Operation And Every Two Hours Until Bolts Remain Tight. | Check the tightness of the wheel bolts 115 to 130 pound-feet (157 to 176 Nm). | ---- |
| After First 10, 20, 50, 100, and 200 Hours of Operation or if Nut is Removed. | Tighten the two tension rod nuts of the backhoe mounting parts 200 to 250 pound-feet (270 to 340 N m).<br>Check the tightness of the lower swing pivot pin nut of the backhoe 800 to 1000 pound-feet (1085 to 1356 N m) | ----<br>---- |
| After the First 20 Hours of Operation | Have your Case dealer perform the checks and services listed in the After Delivery Checkup. | See page 203. |

# MAINTENANCE CHART FOR REGULAR INTERVALS

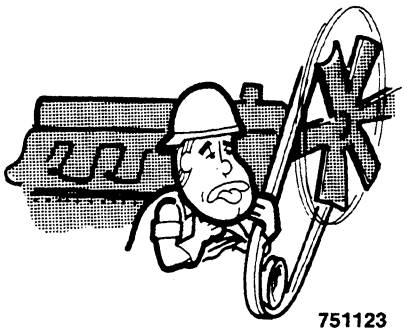
| INTERVAL | SERVICE | INSTRUCTIONS |
|---|---|---|
| Every 10 Hours or Each Day Whichever Occurs First | Lubricate the loader and backhoe pivot points. | See pages 132. |
| | Lubricate the Extendahoe dipper slide (if equipped). | See page 134. |
| | Lubricate the three-point hitch pivot points (if equipped). | See page 138. |
| | Lubricate the front axle pivot. | See page 136. |
| | Lubricate the front axle king pins. | See page 136. |
| | Check the engine oil level. | See page 141. |
| | Check the radiator coolant level. | See page 151. |
| | Check the hydraulic oil level. | See page 170. |
| | Clean the air cleaner dust cup (if equipped). | See page 145. |
| | Check air cleaner dust valve (if equipped). | See page 147. |
| | Check the fuel sediment bowl. | See page 154. |
| | Check the power shuttle transmission oil level. | See page 175. |
| | Clean or replace all safety and instruction decals that cannot be read. | See page 130. |
| | Fill the fuel tank. | See page 157. |
| | Check the foot brakes and parking brake for correct operation. | See page 96. |

| INTERVAL | SERVICE | INSTRUCTIONS |
|---|---|---|
| Every 10 Hours of Operation, cont. | Visually check the machine for broken, missing or loose parts, Check for leaks under the machine. | ---- |
| | Check the tires for deep cuts, rocks in the tires, air pressure, etc. | See page 33. |
| Every 100 Hours of Operation | Lubricate the tie rod pivots. | See page 136. |
| | Lubricate the rear axle bearings. | See page 136. |
| | Lubricate the brake lever pivots. | See page 136. |
| | Lubricate the parking brake cross shaft. | See page 136. |
| | Lubricate the brake pedal pivots. | See page 137. |
| | Lubricate the parking brake cable. | See page 137. |
| | Lubricate the seat post. | See page 137. |
| | Lubricate the loader control pivots. | See page 133. |
| | Change the engine oil. | See page 141. |
| | Check oil level of the four-speed transaxle. | See page 178. |
| | Check the oil level of the brake master cylinder. | See page 187. |
| | Check the air conditioning of the cab. | See page 199. |
| | Clean the spark arrester muffler (if equipped). | See page 186. |
| | Check the oil level of the transfer case (four wheel drive). If equipped. | See page 182. |
| | Clean the three breathers for front drive axle (if equipped) | See page 181. |
| Every 200 Hours of Operation | Replace the engine oil filter. | See page 142. |
| | Check the drive belt(s) tension. | See page 193. |
| | Clean the battery. | See page 166. |
| | Check the tightness of the backhoe tension rod nuts. | See page 121. |
| | Check the oil level of the front drive axle center bowl and planetary ends (if equipped). | See page 180. |
| | Clean the breather of the transfer case (four wheel drive). If equipped. | See page 182. |

| INTERVAL | SERVICE | INSTRUCTIONS |
|---|---|---|
| Every 500 Hours of Operation | Lubricate the universal joints and slip spline of the drive shafts. | See page 137 and 182. |
| | Lubricate the drive shaft of the hydraulic pump. | See page 137. |
| | Replace the fuel filters. | See page 155. |
| | Lubricate the front wheel bearings. | See page 183. |
| | Inspect the ROPS cab or ROPS canopy. | See page 23. |
| | Replace the hydraulic oil filter. | See page 171. |
| | Clean the hydraulic reservoir relief valve and breather. | See page 174. |
| | Check the engine valve adjustment. | See Service Manual. |
| | Lubricate the loader control pivots. | See pages 134 135. |
| | Lubricate the king pin bearings of front drive axle (if equipped). | See page 139. |
| | Lubricate the control lever pivot of front drive axle (if equipped). | See page 140. |
| Every 1000 Hours of Operation | Change the hydraulic oil. | See page 173. |
| | Change the oil for the power shuttle transmission. | See page 176. |
| | Clean the screen for the power shuttle transmission. | See page 176. |
| | Change the oil for the four-speed transaxle. | See page 179. |
| | Check the battery fluid level. | See page 164. |
| | Drain water and sediment from fuel tank. | See page 157. |
| | Clean the cab air filter (if equipped) | See page 196. |
| | Change the oil for the front drive axle (if equipped). | See page 181. |
| | Change the oil for the transfer Case (four wheel drive) if equipped. | See page 182. |

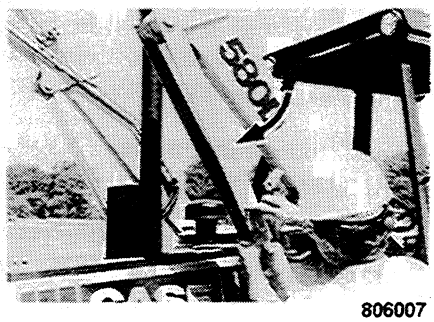
| INTERVAL | SERVICE | INSTRUCTION |
|---|---|---|
| Every 2000 Hours of Operation or Each Year, Whichever Comes First | Change the engine coolant and clean the cooling system. | See page 152. |
| As Required | Service the air cleaner elements if the warning lamp for the air cleaner is illuminated during operation. | See page 146. |
| | Replace the hydraulic oil filter if the warning lamp for the hydraulic filter is illuminated during operation | See page 171. |
| | After a wheel has been removed and installed, check the tightness of the wheel bolts every two hours until bolts remain tight. | See page 185. |
| | If the backhoe has been removed and installed or new backhoe mounting parts have been installed, check the tightness of the tension rod nuts every two hours until bolts remain tight. | See page 121. |
| | Adjust the parking brake. | See page 187. |
| | Replace or recharge the fire extinguisher (if equipped) | ---- |

# SAFETY BEFORE SERVICING



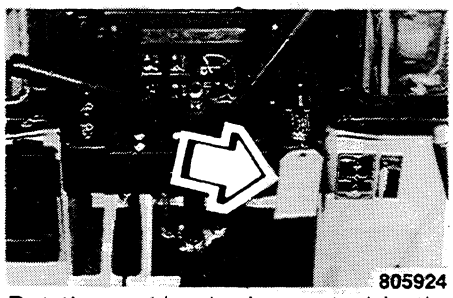
751123

Keep clear of rotating fan and belts. Contact can cause injury.




806007

Lower the loader bucket to the ground or hold in place with the support strut.

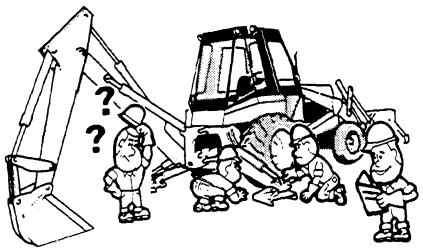


805924

Put the parking brake control in the Engaged position. Put a Do Not Operate tag on the instrument panel.

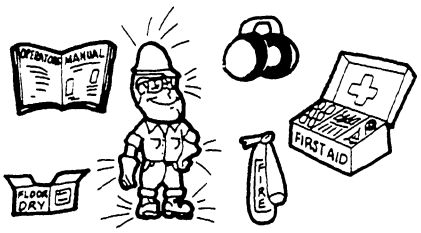
801147

Read the safety decals and instruction decals on the machine. Understand the operation of the machine before you operate the machine.



801148

Do only the repairs you understand. Get help if you do not understand what you are doing.




770996

Use the correct safety clothing and safety equipment. Understand how to use the fire extinguisher and first aid kit.

## Safety Decals on the Machine

Make sure that you can read all safety decals and all instruction decals Check these decals every 10 hours of operation. Clean or replace these decals if you cannot read the words or see the pictures.

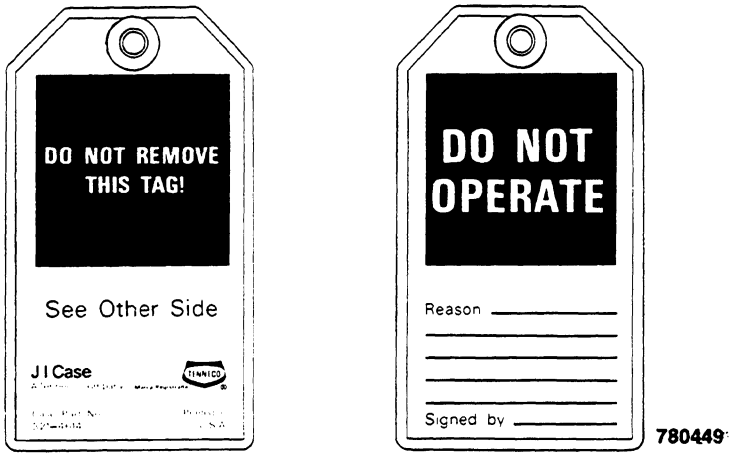
When you clean the decals, use only a cloth, water and soap. Do not use solvent, gasoline, etc.

You must replace a decal if (1) the decal is damaged, (2) the decal is missing or (3) the decal cannot be read.

If a decal is on a part that is replaced, make sure you install a new decal on the new part. See your Case dealer for new decals.

## Do Not Operate Tag

When you service, put a Do Not Operate tag on the instrument panel. A Do Not Operate tag, Case part number 321-4614, is included with each new machine. You can get extra tags from your Case dealer.

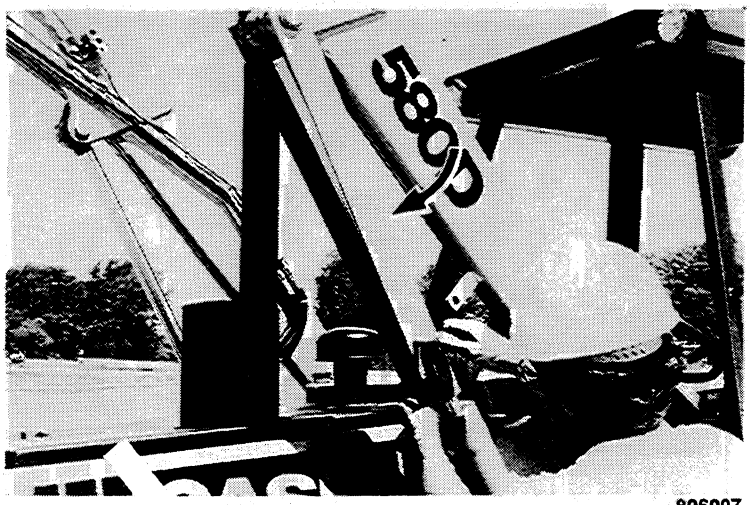


## Lift Arm Support Strut

**WARNING:** *Servicing the unit with lift arms raised, always install the lift arm support strut.*

1. *Empty loader bucket.*
2. *Raise loader arms to sufficient height to insert strut.*
3. *Remove pin and place support strut over cylinder rod.*
4. *Place pin in lower hole to lock strut.*
5. *Slowly lower lift arms onto strut.*

*Failure to follow this procedure could result in injury or death if lift arms are lowered.* D-47-60-B




806007

Support Strut in Locked Position


806006

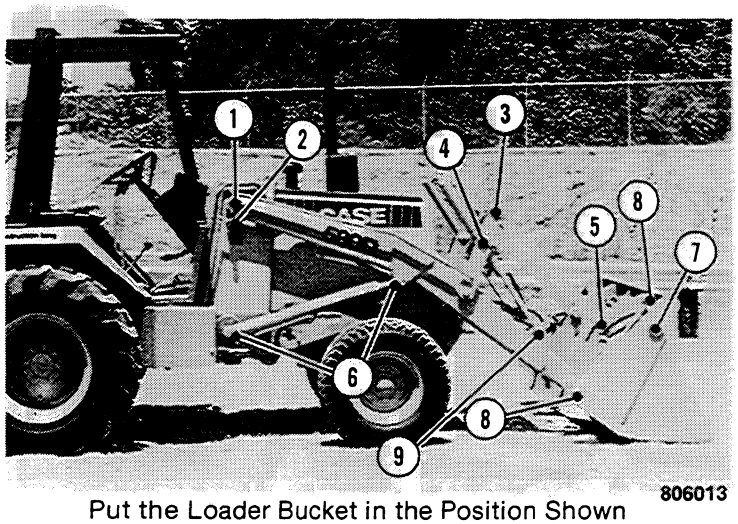
Support Strut in Storage Position

# GREASE FITTINGS

**CAUTION:** *Never grease, oil or perform any maintenance with the engine running unless so instructed in the operator's manual or service manual. If the attachment must be raised in order to perform the operation, block up the attachment securely.* 18-8

Lubricate the machine according to the intervals given in the maintenance chart unless you operate the machine in severe conditions. If you operate the machine in severe conditions, lubricate the machine more frequently. Remove all dirt from the grease fittings before you lubricate.

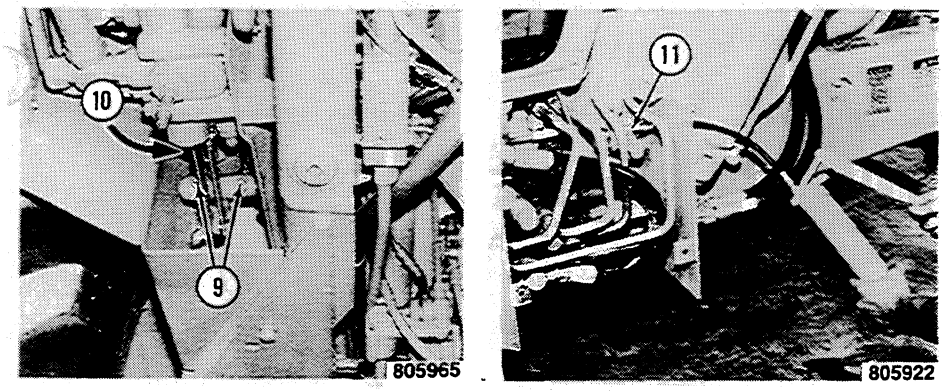
## Loader




Put the Loader Bucket in the Position Shown Before You Lubricate the Loader (17 - 23 Grease Fittings)

1. Lift arm pivots .....(2) one each side
2. Loader anti-rollback linkage .....(1) right side
3. Bucket tilt linkage .....(2) one each side
4. Bucket cylinder trunnion .....(4) two each side
5. Upper bucket pivot .....(2) one each side
6. Lift cylinders .....(4) two each cylinder
7. Clam pivot (4-in-1 bucket) .....(2) one each side
8. Clam cylinder (4-in-1 bucket) .....(4) two each cylinder
9. Bucket cylinder, rod end .....(2) one each cylinder

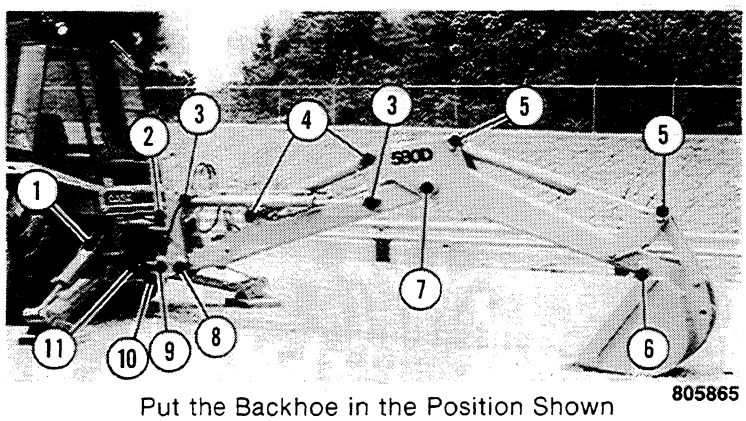
## Loader Controls




(4 Grease Fittings)

*9. Lift arm and bucket control pivots .....(2)
10. 4-in-1 bucket control pivot (if equipped) .....(1)
11. Anti-rollback linkage pivot .....(1)
*Can be greased through hole in floor plate.

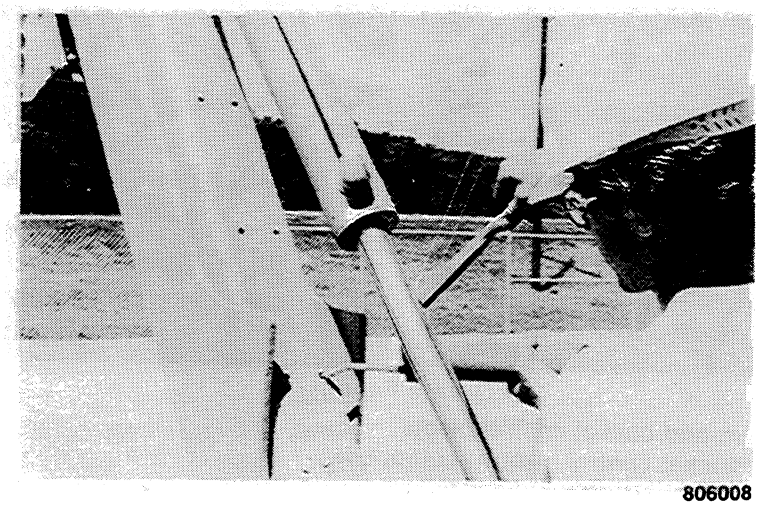
## Backhoe




Put the Backhoe in the Position Shown
(23 Grease Fittings)

1. Stabilizer cylinder, closed end .....(2) one each cylinder
2. Upper swing pivot pin .....(1)
3. Boom cylinders .....(4) two each cylinder
4. Dipper cylinder .....(2) one each end
5. Bucket cylinder .....(2) one each end
6. Bucket pivot pin .....(2) one each side
7. Boom to dipper pivot pin .....(1)
8. Boom to swing tower pivot pin .....(2) one each side
9. Swing cylinders, rod end .....(2) one each cylinder
10. Lower swing pivot pin .....(1)
11. Swing cylinder trunnion .....(4) two each cylinder

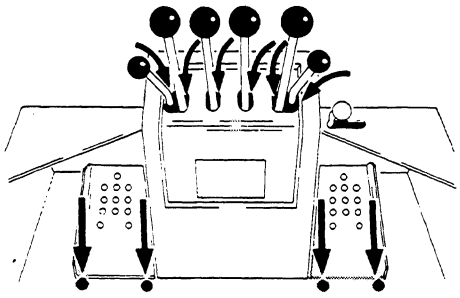
## Extendahoe Dipper



806008

The extendable dipper has 12 holes drilled in the outer shell, six on the top and six on the bottom. Attach the special adapter, included with each Extendahoe, to the grease gun and give two strokes of grease to each hole.

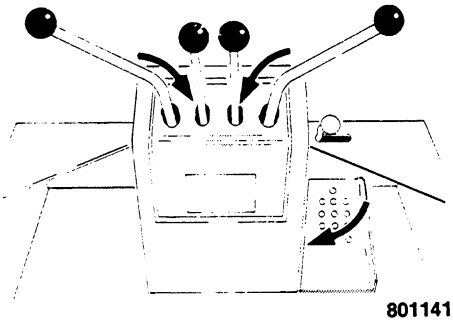
## Backhoe Controls with Foot Swing And Extendahoe



801138

Standard Backhoe - 9 Grease Fittings
Extendahoe - 10 Grease Fittings

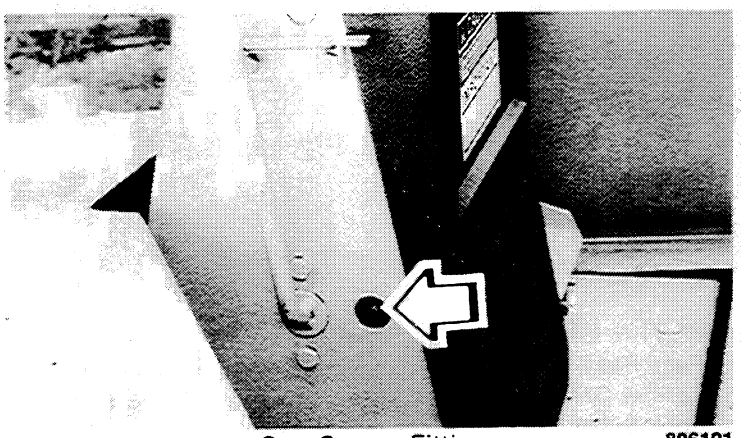
## Backhoe Controls with Hand Swing, and Extendahoe Foot Pedal



801141

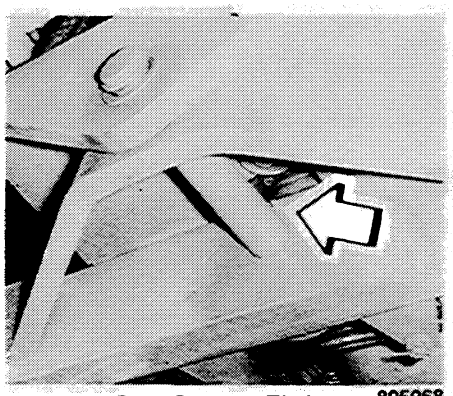
Standard Backhoe - 2 Grease Fittings
Extendahoe - 3 Grease Fittings

## Backhoe Hydraulic Boom Lock



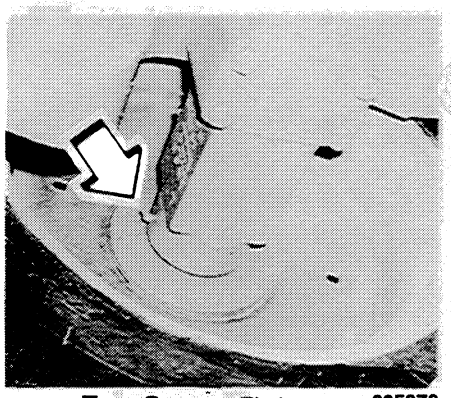
One Grease Fitting 806101

## Front Axle Pivot



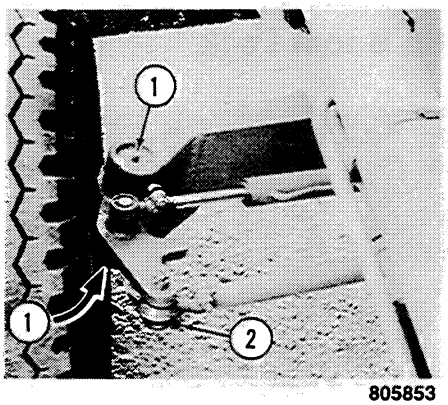
One Grease Fitting 805968

## Rear Axle Bearings



Two Grease Fittings (One Each Side) 805970

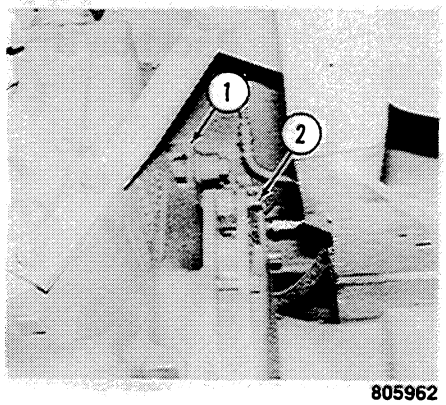
## Front Axle King Pins And Tie Rod Pivots




805853

1. Four King Pin Grease Fittings (Two Each Side)
2. Two Tie Rod Grease Fittings (One Each Side)

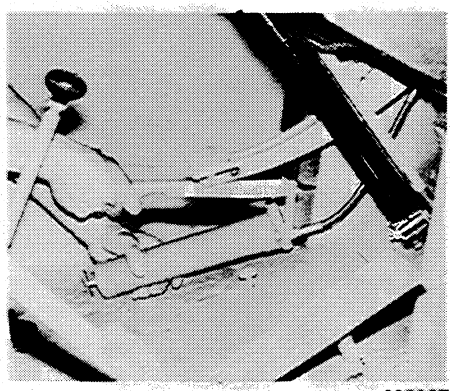
## Parking Brake Cross Shaft and Brake Lever Pivots




805962

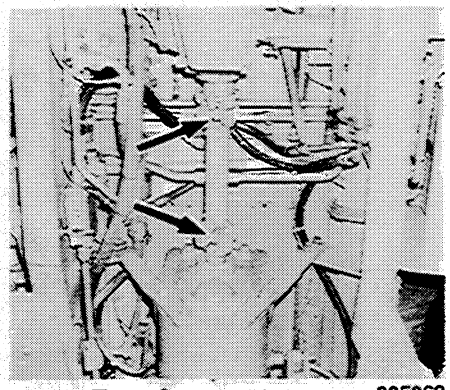
1. Two Parking Brake Cross Shaft Grease Fittings (One Each Side). Put grease gun hose through holes in floor plate to grease the two pivots.
2. Two Brake Lever Pivot Grease Fittings (One Each Side).

## Brake Pedal Pivots



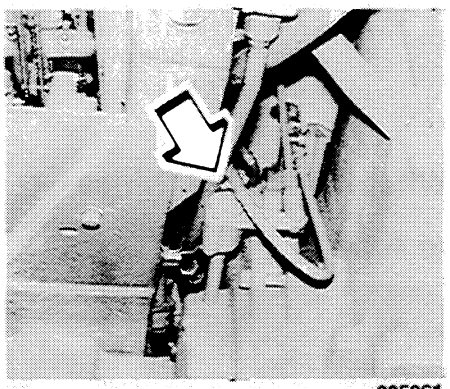
Two Grease Fittings 805967

## Drive Shaft Universals



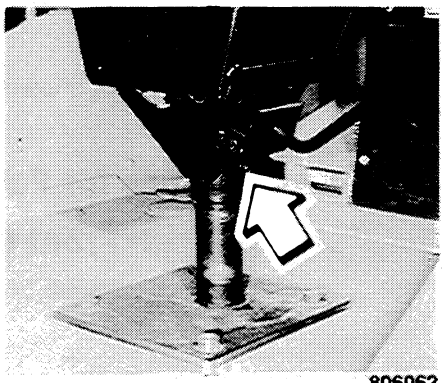
Two Grease Fittings 805963

## Parking Brake Cable



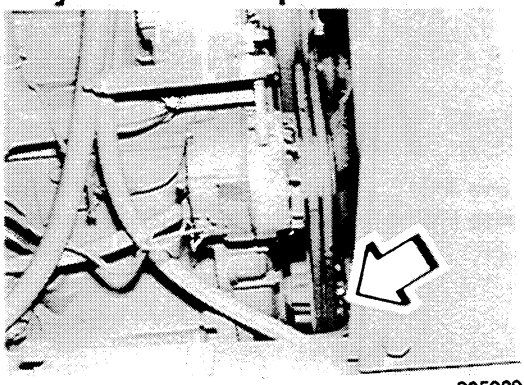
One Grease Fitting 805961
Use Lubriplate 105 Grease

## Seat Post



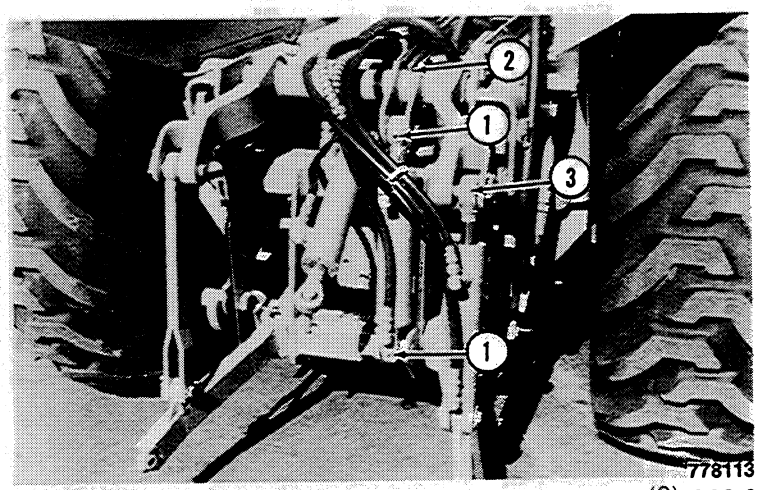
One Grease Fitting 806062

## Hydraulic Pump Drive Shaft



One Grease Fitting 805909

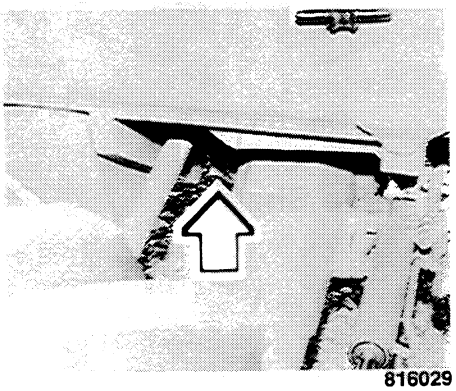
## Three-Point Hitch Grease Fittings



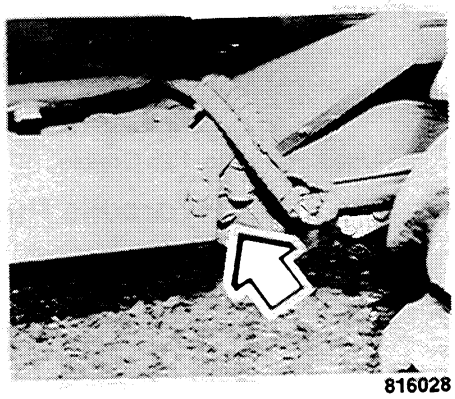

1. Lift cylinder .....(2) one each end
2. Lift arm pivot .....(1)
3. Tilt cylinder .....(1) one on rod end
4. Control lever pivots (not shown) .....(4-1) one on each control lever

## Grease Fittings for Four Wheel Drive Machines

### Front Drive Axle

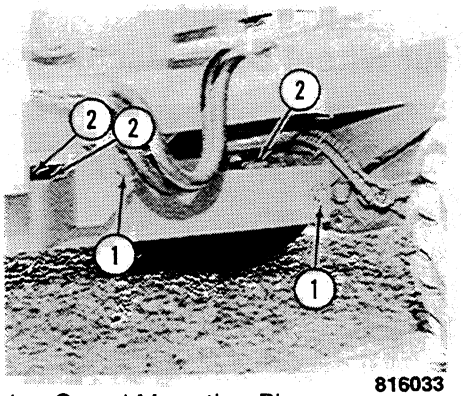



Front Drive Axle
(Front Grease Fitting)




Front Drive Axle
(Rear Grease Fitting)

## Front Driveshaft (Four Wheel Drive Machines)

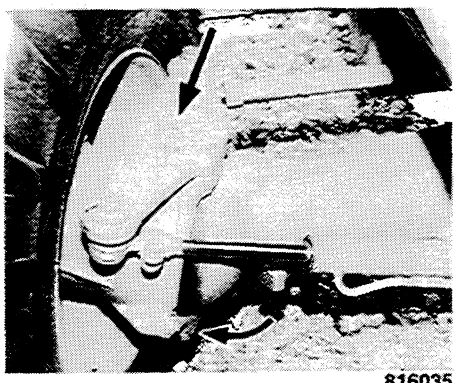



816033

1. Guard Mounting Pins
2. Three Driveshaft Grease Fittings

Before you lubricate, remove the drive shaft guard (if equipped).

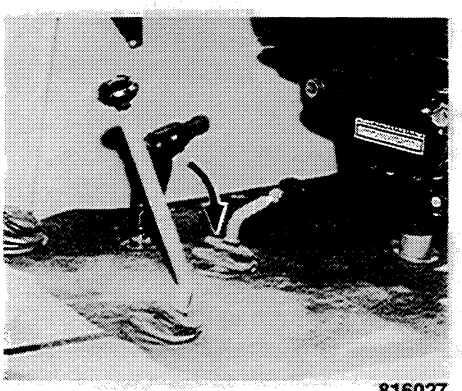
## King Pin Bearings (Four Wheel Drive Machines)



816035

Four Grease Fitting
(Two Each Side)

## Control Lever Pivot and Parking Brake Cross Shaft (Right Side) (Four Wheel Drive Machines)



816027

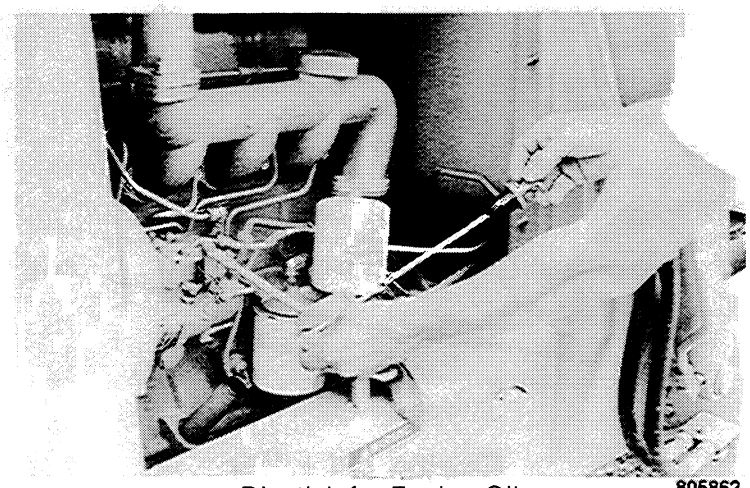
One Grease Fitting

To lubricate, loosen the rubber boot and put the grease gun hose through the hole in the floor plate.

# ENGINE LUBRICATION SYSTEM

## Oil Level

After every 10 hours of operation or before you start the engine each day, check the oil level in the engine. Turn the handle on the dipstick counter-clockwise several turns, and pull up the dipstick.



Dipstick for Engine Oil 805862

Keep the oil level at the Full mark on the dipstick. If the oil level is low, add enough oil to raise the oil level up to the Full mark. Do not raise the oil level above the Full mark.

Install the dipstick. Turn the handle of the dipstick clockwise to tighten the dipstick.

Always check the oil level when the engine is stopped.

## Oil Change

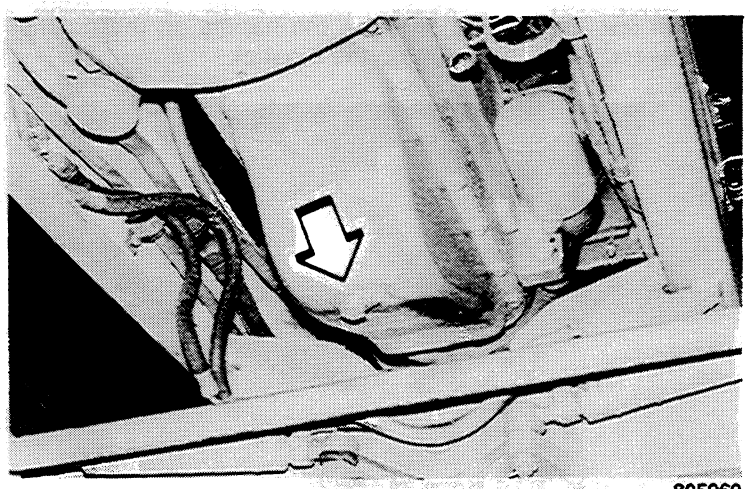
If the engine is new, change the engine oil after the first 20 hours of operation. Then, change the engine oil after every 100 hours of operation.

If engine operating conditions are severe, with frequent stopping and starting and high or low engine temperatures, change the engine oil more frequently.

**NOTE:** For most complete removal of foreign material, change the engine oil while the engine is still warm from operation.

The drain plug for the engine oil is in the bottom center of the engine. Have a container that has the capacity of three gallons (11.3 litres) to hold the oil that is drained. Remove the drain plug. Let the oil drain completely.

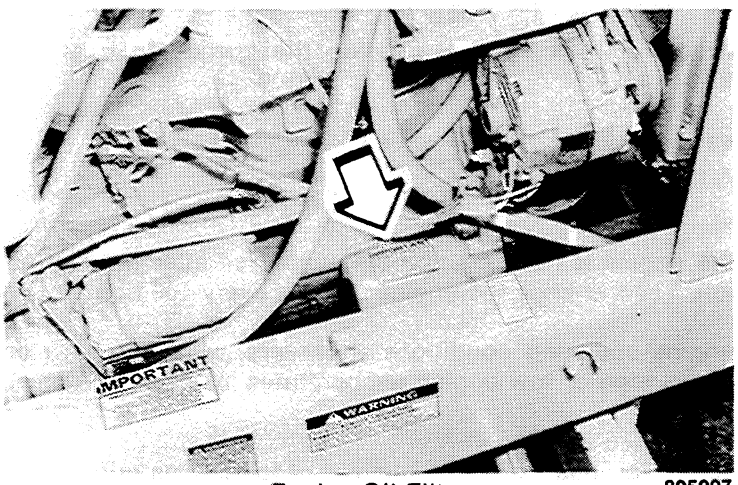
Install the drain plug. See page 123 for the correct grade, type and quantity of oil. After you put the oil into the engine, start the engine and run at 1000 rpm for two minutes. Check the filter for oil leaks. Stop the engine and check the oil level.



Engine Oil Drain Plug 805969

## Engine Oil Filter

If the engine is new, replace the oil filter after the first 20 hours of operation. Then, replace the oil filter after every 200 hours of operation (every second time you change the engine oil).




Engine Oil Filter 805907

The oil filter is on the right side of the engine. To replace the oil filter, do the following steps:

1. Drain the engine oil.

2. Turn the oil filter counterclockwise to remove. Discard the oil filter.

3. Apply a thin layer of clean grease or oil to the gasket of the new oil filter.

4. Turn the new oil filter onto the base until the gasket makes contact with the base. Continue to tighten the filter for 3/4 of a turn with your hand.

   **IMPORTANT:** Do not use a filter wrench to install the oil filter. An oil leak can occur if the filter is dented by the filter wrench.

5. Install the drain plug for the engine oil and put new oil into the engine.

6. Hold the fuel switch in the Turbo Prelube position.

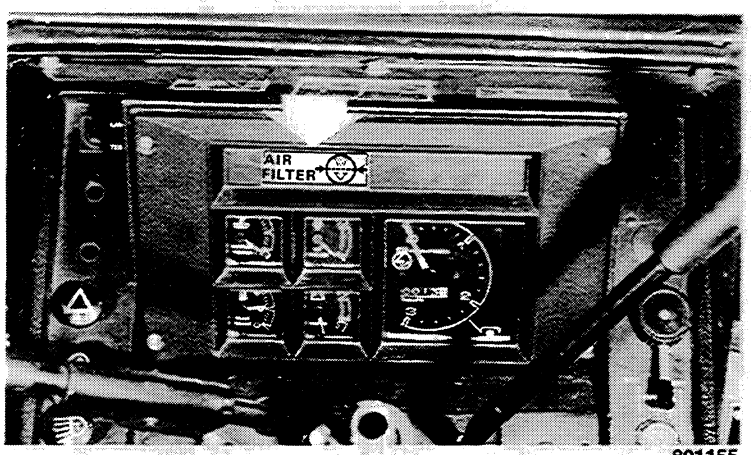
7. Turn the key switch to the Start position and operate the starter motor for a maximum of 30 seconds. Engine oil will prime the turbocharger before the engine starts. Release the fuel switch.

8. Start the engine and run the engine at 1000 rpm (r/min) for two minutes. Check for oil leakage at the oil filter. After two minutes, stop the engine and check the oil level.

# AIR CLEANING SYSTEM

## Air Cleaner Restriction Indicator

You must service the air cleaner if the warning lamp for air cleaner restriction illuminates when the engine is running. It is recommended that you do not run the engine until after you service the air cleaner. Make sure you check the condition of the warning lamp bulb each day before you operate the machine.

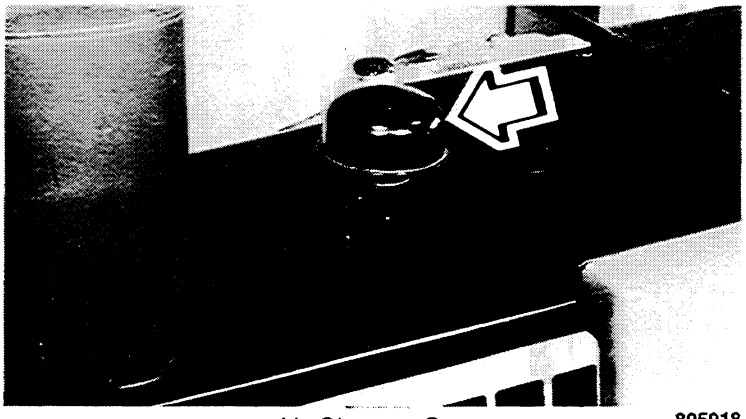



Air Cleaner Restriction Indicator 801155

## Cap for the Air Cleaner

This cap removes coarse particles from the air entering the intake pipe.

Check the cap daily and clean as required. Clean the dust and dirt from the cap with compressed air. To clean oil and grease from the cap, wash the cap in clean, hot water with a small amount of detergent.

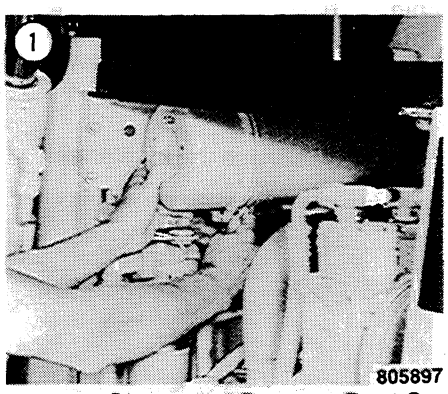


Air Cleaner Cap 805918

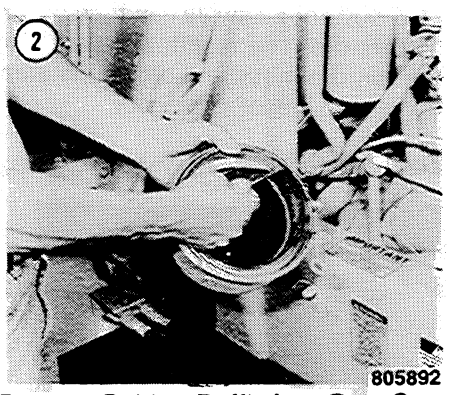
## 580D Machines

# Dust Cup

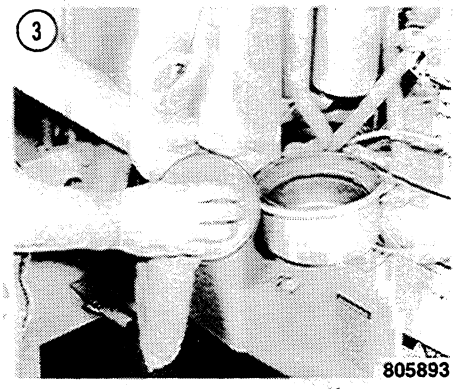
You must clean the dust cup for the air cleaner every 10 hours of operation or each day, whichever occurs first. See the four following steps.



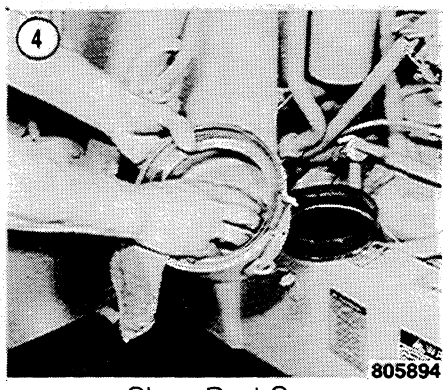
Loosen Clamp and Remove Dust Cup



Remove Rubber Baffle from Dust Cup



Clean Rubber Baffle



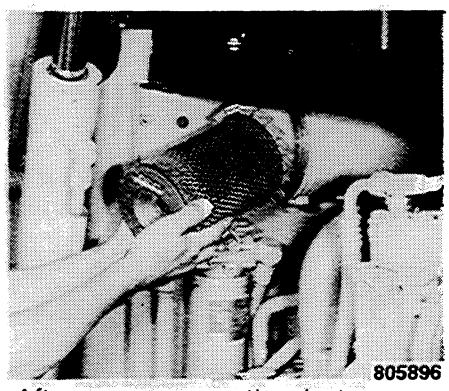
Clean Dust Cup

## Removal and Installation of Air Cleaner Element

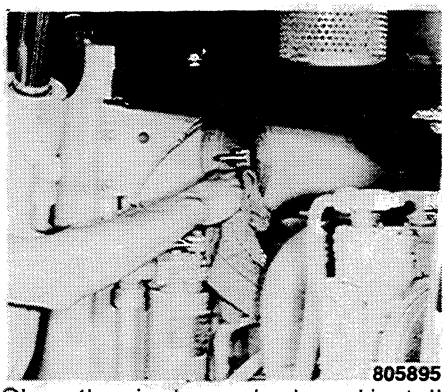
You must clean or replace the air cleaner element when the warning lamp for air cleaner restriction is illuminated.

Do not put a new element into your machine if that element is more than two years old. The month and year during which the element was made are shown on the metal end cap of the element. When the element becomes old, cracks in the paper can occur.

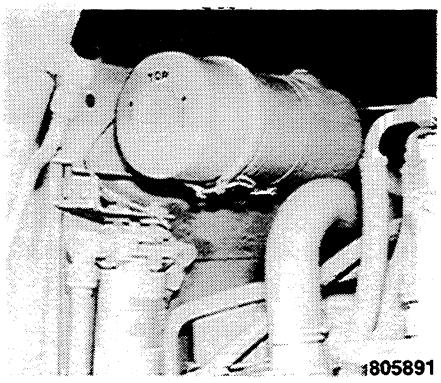
**IMPORTANT:** Always stop the engine before you service the air cleaner.




After you remove the dust cup, remove the wing nut and remove the filter.




Clean the air cleaner body and install a new or clean air cleaner element.

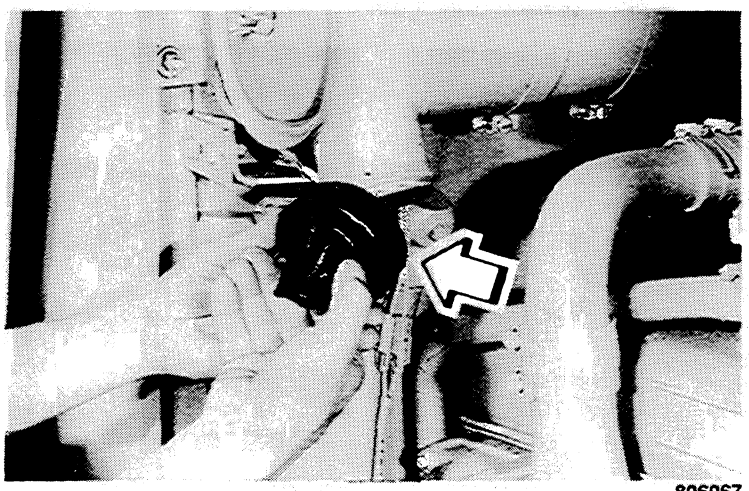



Install the dust cup with arrows in position shown. Tighten clamp.

**WARNING:** *Never perform service procedures (including service of air cleaner) with the loader arms raised, unless the support strut has been installed. Failure to observe this precaution can result in injury or death if the loader arms are lowered.* **Important:** *Raise loader arms to full height to service air cleaner.* *D-48-29*

## Dust Valve

Check the dust valve every 10 hours of operation or each day. Make sure there is no obstruction inside.



Dust Valve 806067

## Removal and Installation of Air Cleaner Elements

You must clean or replace the air cleaner element(s) when the warning lamp for the air cleaner restricton is illuminated.

Do not put a new element into your machine if that element is more than two years old. The month and year during which the element was made are shown on the metal end cap of the element. When the element becomes old, cracks in the paper element can occur.

**IMPORTANT:** You must always stop the engine and raise the loader to full height before you service the air cleaner. Use the loader strut to hold the lift arms in place.

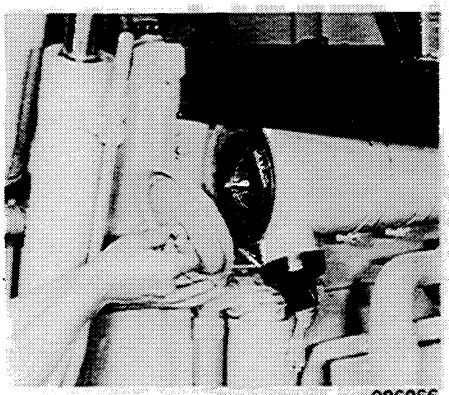
## Primary Element

You can clean or replace the primary element. Always inspect the element before you install in the machine. See the following photographs and the topic Servicing the Air Cleaner Element.

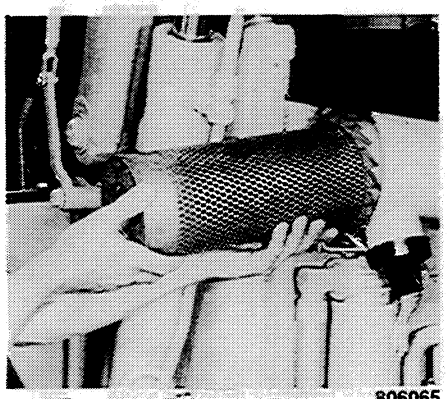
**WARNING:** *Never perform service procedures (including service of air cleaner) with the loader arms raised. unless the support strut has been installed. Failure to observe this precaution can result in injury or death if the loader arms are lowered.* **Important:** *Raise loader arms to full height to service air cleaner.* *D-48-29*

## Secondary Element

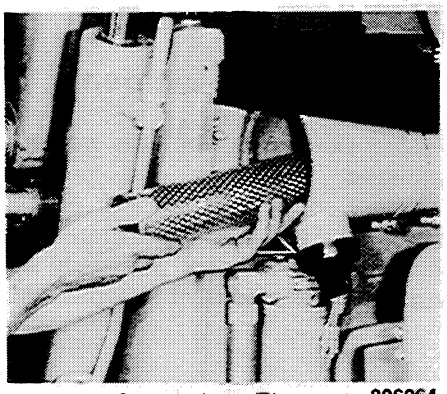
Replace the secondary element when (1) you are replacing the primary element for the third time, (2) the date on the secondary element shows that the secondary element is two years old, (3) the warning lamp for the air cleaner restriction is illuminated after the primary element has been serviced or (4) the secondary element has been damaged.



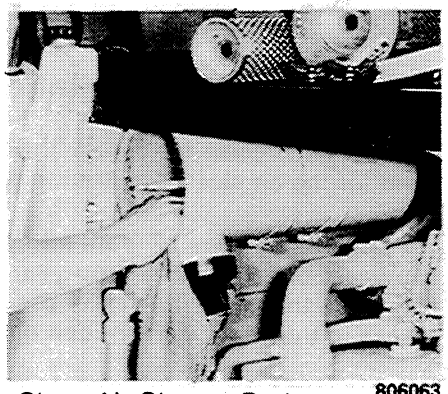
Remove Cover 806066



Remove Primary Element 806065



Remove Secondary Element 806064



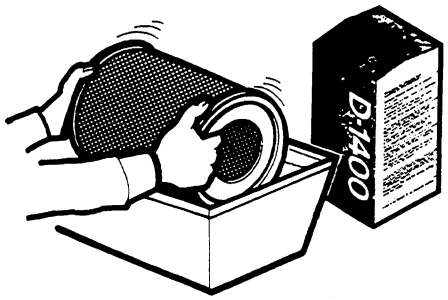
Clean Air Cleaner Body 806063

## Servicing the Air Cleaner Element

### Washing

To wash the element, use Case Washing Compound (part number A40910) and water. Read the instructions on the container. After you wash the element, use clean water to remove the washing compound. Do not use water pressure higher than 40 psi (275 kPa) at the nozzle. Let the element become completely dry before you install the element in the machine. Do not use compressed air to dry the element.

**NOTE:** Keep extra elements in your shop. You will decrease the service time.




760437 A

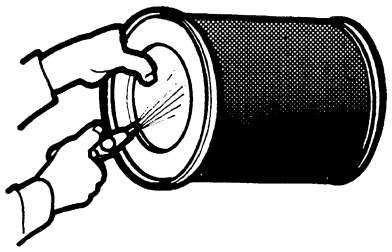
Wash

760437 A

Remove Washing Compound With Water

### Cleaning with Compressed Air

You can use compressed air to clean the element, but this method is not the best method. Compressed air will not remove carbon and soot. When you use compressed air, use no more than 30 psi (206 kPa) at the nozzle. Hold the nozzle one inch (25 mm) or more away from the element. Apply air to the inside only.



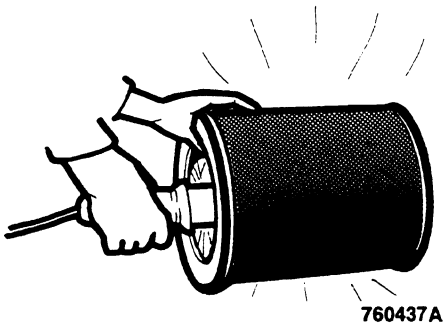
760437A

Compressed Air

## Inspecting the Element

After the element is clean and dry, inspect the element. Put a lamp inside the element and look for holes, wear, or other damage. Inspect the metal cover. If the metal cover is bent, look for holes or wear in that area. If you find holes or wear, discard that element and install a new element. Make sure the rubber seal is not damaged.

**NOTE:** Use the same method to inspect a new element. Never use an element that has defects.




Inspect the Element

# ENGINE COOLING SYSTEM

## Coolant Level

**WARNING:** *Hot coolant can spray out if cap is removed suddenly. Remove cap by turning to first notch. Wait until pressure is released, then continue removal. Scalding can result from fast cap removal.*
*D-47-28-A*

Check the coolant level every 10 hours of operation or daily. When the coolant is cold, the coolant level must be two inches (50 mm) below the level of the radiator opening. Add coolant if necessary. Do not add coolant above this level.


Radiator Cap 805917

## Ethylene Glycol Coolant

A mixture of 50% ethylene glycol and 50% water must be used in this machine. This mixture is used if the lowest ambient temperature is above -34° F (-37° C). If the ambient temperature is lower, adjust the mixture. It is recommended that ethylene glycol and water be used in your machine all year.

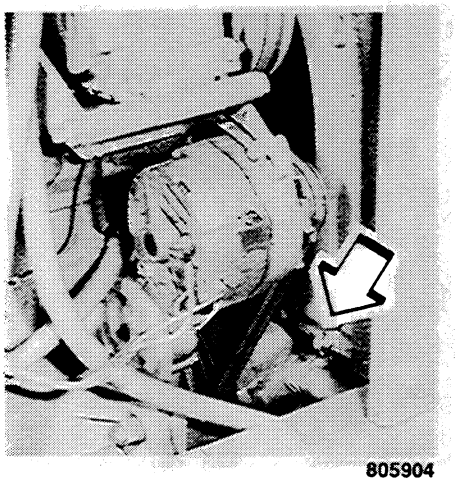
**IMPORTANT:** Mix the ethylene glycol and water completely by running the engine at operating temperature for approximately five minutes. This procedure must be done before the machine is put outside in temperatures below 32° F(0° C).

## Procedure to Clean the Cooling System

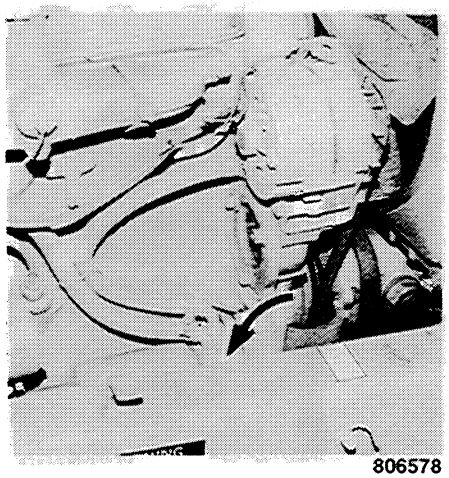
Flush the cooling system and install new coolant after every 2000 hours of operation or once a year, whichever comes first. If the coolant becomes dirty or the color of rust, flush the cooling system and install new coolant.

1. While the coolant is warm, open the drain valve for the radiator and open the drain valve for the engine block. Remove the drain plug from the oil cooler. Drain all coolant and close the drain valves. Install the drain plug in the oil cooler.

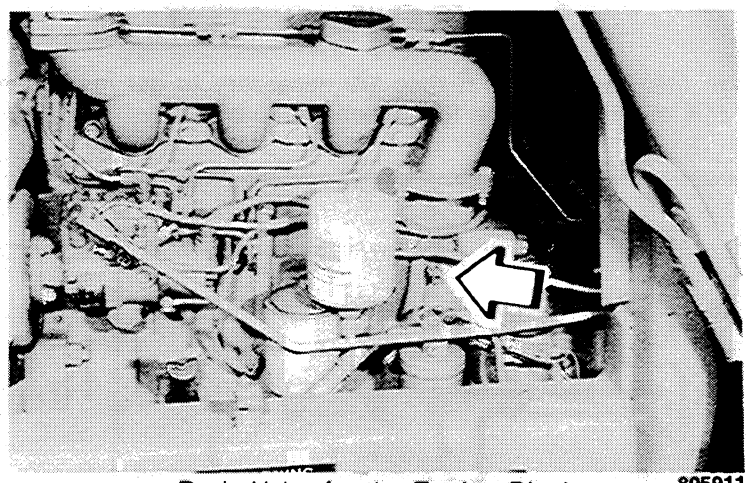
   **NOTE:** Some early production machines do not have a drain plug on the oil cooler. You must remove the oil cooler to drain the coolant.




Drain Valve for the Radiator




Drain Valve for Oil Cooler



Drain Valve for the Engine Block 805911

2. Add a cleaning solution to the cooling system and fill the cooling system with clean water. Follow the directions included with the cleaning solution.

3. After you remove the cleaning solution, flush the system with clean water.

4. Check the hoses, elbows, and water pump for leaks.

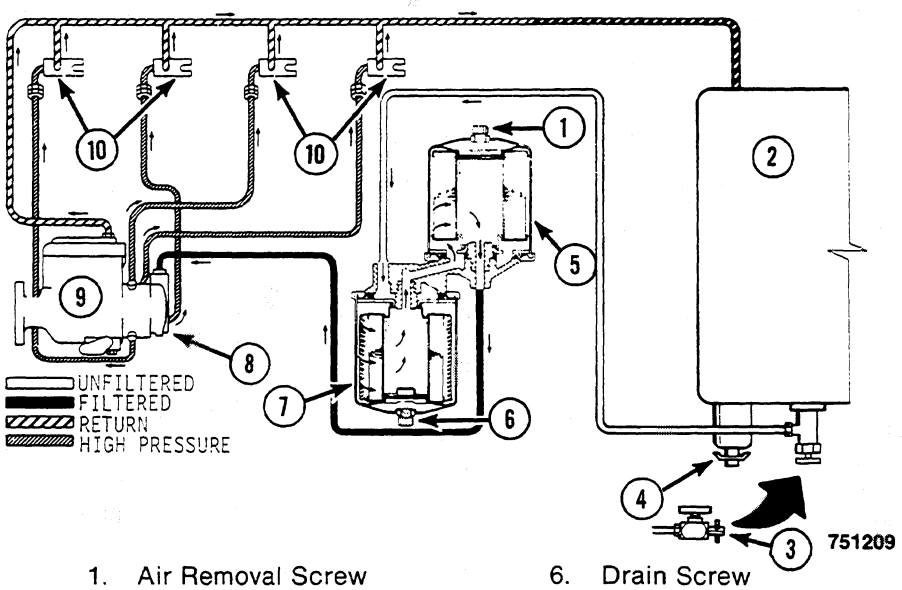
5. Make sure that the outside of the engine and radiator are clean. Use compressed air or water to remove foreign material from the radiator.

6. Fill the cooling system until the coolant level is two inches (50 mm) from the top of the radiator opening.

7. Run the engine for five minutes to remove all air from the cooling system. Check the coolant level again and add water if necessary.

# DIESEL FUEL SYSTEM

Clean fuel and regular service are necessary to get maximum performance and long life from the fuel injection equipment.




1. Air Removal Screw
2. Fuel Tank
3. Fuel Shutoff Valve
4. Drain Valve
5. Second Stage Filter
6. Drain Screw
7. First Stage Filter
8. Fuel Transfer Pump
9. Fuel Injection Pump
10. Fuel Injectors

## Checking for Water or Sediment

Check the fuel system for water or sediment every 10 hours of operation or each day. If the check shows no water or sediment, extend the interval. Use the following procedure:

**NOTE:** Problems caused by water in the fuel system occur more frequently in cold temperatures.

1. Hold a small container under the first stage filter. Loosen the drain screw on the bottom of the first stage filter. Do not remove the plug.

2. Remove a small amount of fuel and tighten the drain screw. Check the container for water or sediment. If you do not find water or sediment, no other action is necessary.

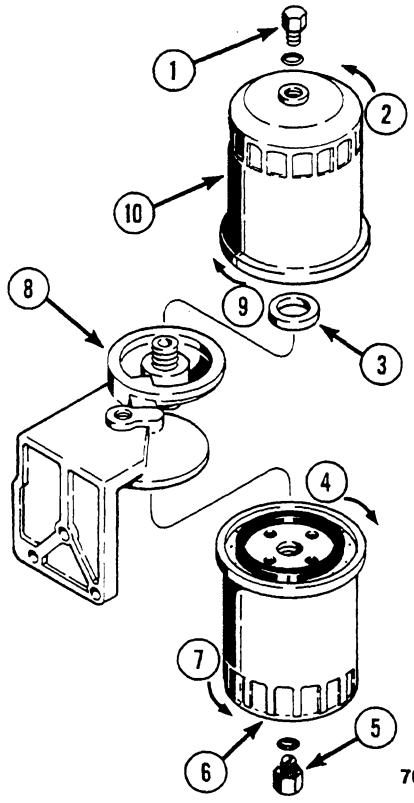
3. If you find water or sediment, open the drain valve on the bottom of the fuel tank. After the water and sediment are removed from the fuel tank, close the drain valve.

## Fuel Filter Replacement

Replace the two fuel filters after every 500 hours of operation or when engine power has decreased.

1. Close the fuel shutoff valve.

2. Clean the area around the filters.




1. Air Removal Screw
2. Turn to Remove
3. Seal
4. Turn to Remove
5. Drain Plug
6. First Stage Filter
7. Turn to Install
8. Filter Body
9. Turn to Install
10. Second Stage Filter

3. Use a strap wrench and turn the second stage filter counterclockwise to remove.

4. Remove the air removal screw and washer from the top of the second stage filter. Keep the screw and washer and discard the filter.

5. Remove and discard the seal from the base of the second stage filter.

6. Use a strap wrench and turn the first stage filter counterclockwise to remove. Remove the drain plug and washer from the bottom of the filter. Discard the filter and keep the drain plug and washer.

7. Use a cloth and clean the gasket contact surface of the filter base.

8. Install the air removal screw and washer in the top of the new second stage filter.

   **NOTE:** The first stage filter (A39868) has a 3/4 inch hole in the base. The second stage filter (A39867) has a 7/8 inch hole.

9. Install the drain screw and washer in the bottom of the first stage filter.

10. Install a new seal for the second stage filter.

11. Apply a layer of clean oil or grease to the gaskets of the new filters.

12. Turn each filter clockwise onto the filter body until the gasket makes contact with the filter body. Continue to tighten each filter for 1/2 turn to 3/4 turn.

13. Open the fuel shutoff valve.

14. Fill the fuel tank and remove air from the fuel system. See the following topic.

## Removing Air from the Fuel System

You must remove air from the fuel system if (1) the fuel tank is empty, (2) parts in the fuel system are removed for service or repair, or (3) the machine is kept in storage for three months or more.

1. Clean the top of the second stage filter.

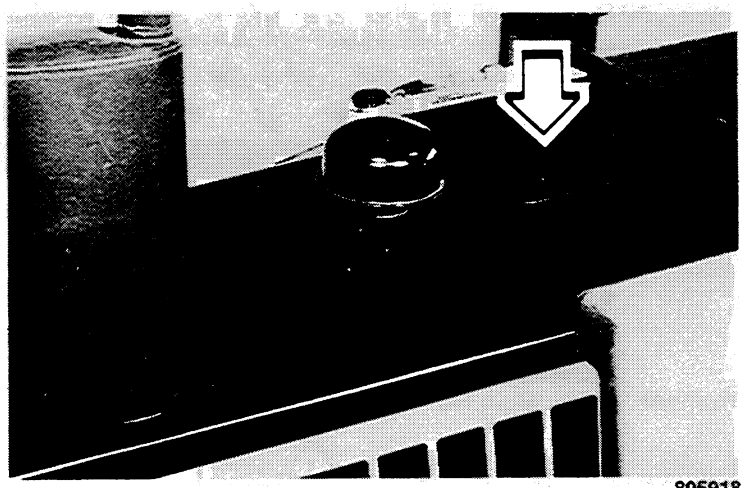
2. Make sure the fuel tank is full.

3. Loosen the air removal screw on top of the second stage filter.

4. When air free fuel comes out of the filter top, tighten the screw.

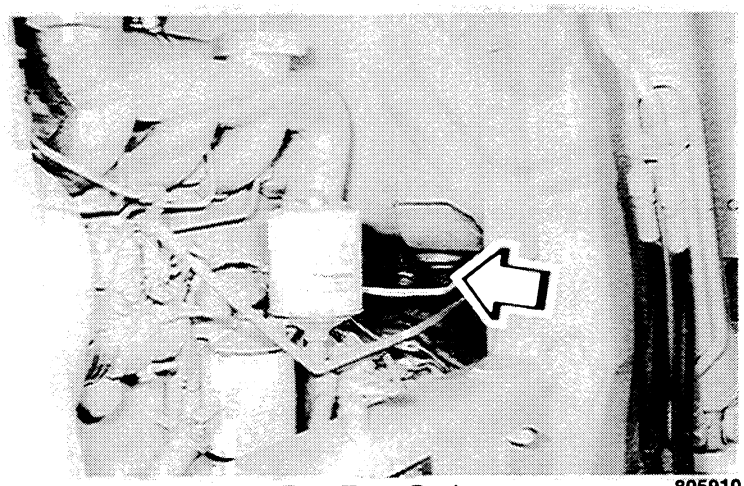
# Fuel Tank

Fill the tank at the end of operation each day. A full fuel tank will prevent water condensation. The use of Case Diesel Fuel Conditioner also helps control water in the system.



Fuel Tank Access 805918

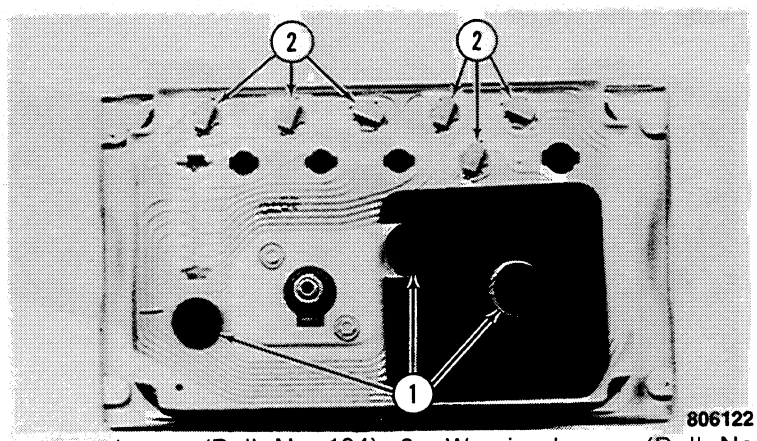
Drain water and sediment from the fuel tank as required or every 1000 hours of operation.



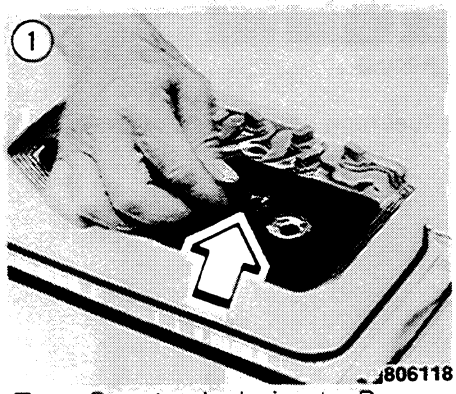
Fuel Tank Drain 805910

# ELECTRICAL SYSTEM

## Instrument Lamps and Warning Lamps

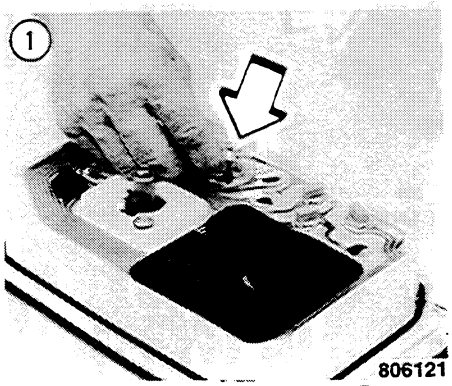



1. Instrument Lamps (Bulb No. 194) 2. Warning Lamps (Bulb No. 168)




Turn Counterclockwise to Remove Assembly

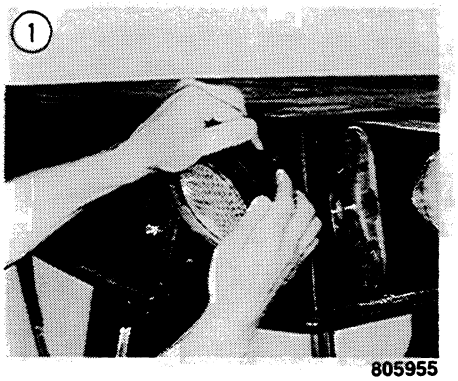

Pull Out Bulb to Replace



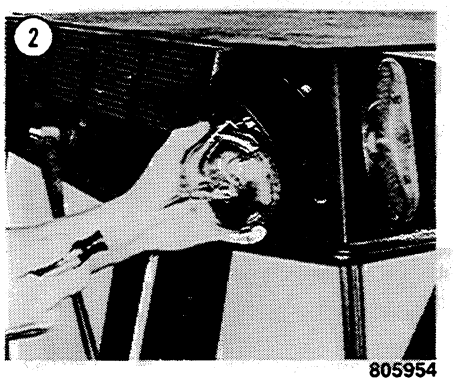

Turn Counterclockwise to Remove Assembly


Pull Out Bulb to Replace

## Front Driving Lamps and Rear Flood Lamps




Roll Back Rubber Seal and Remove Lamp



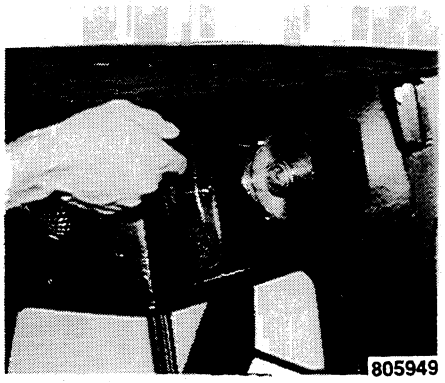

Disconnect Two Wires


Connect Wires to New Lamp and Push Lamp Into Rubber Seal

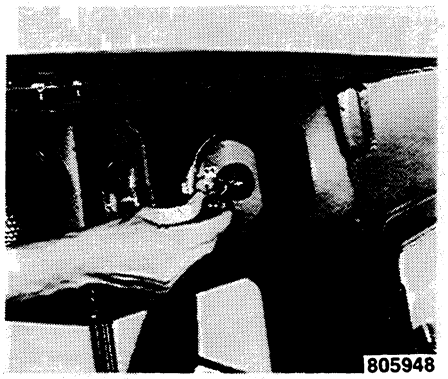
Front Driving Lamp
Use a 4411 Sealed Beam

Rear Flood Lamp
Use a 4406 Sealed Beam

## Directional and Flasher Lamps

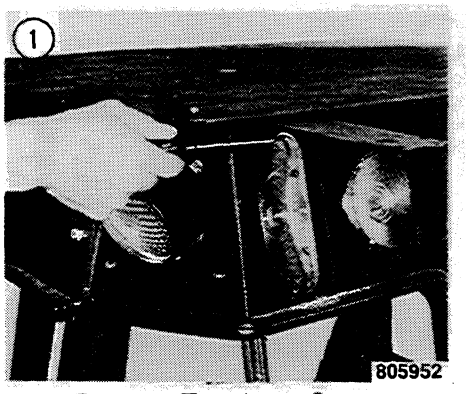



Remove Three Lens Screws and Remove Lens

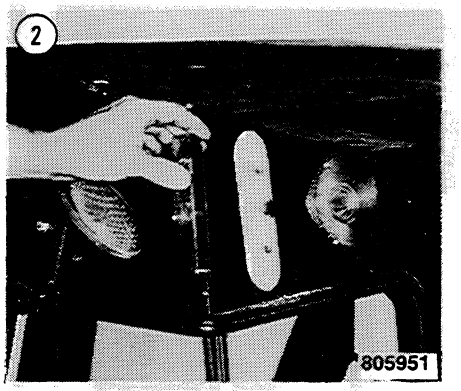



Push In on Bulb and Turn Counterclockwise to Remove Old Bulb. Install New 1156 Bulb.

## Stop and Tail Lamps




Remove Two Lens Screws

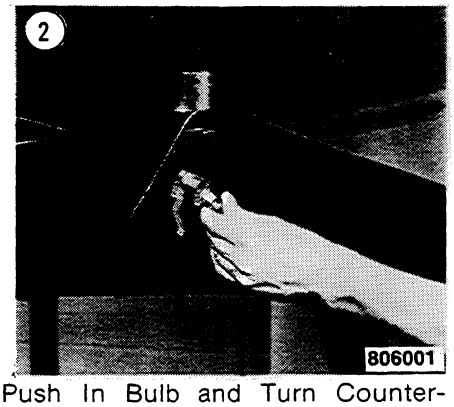



Remove Lens


Push in Bulb and Turn Counter-clockwise to Remove. Install New 1157 Bulb.

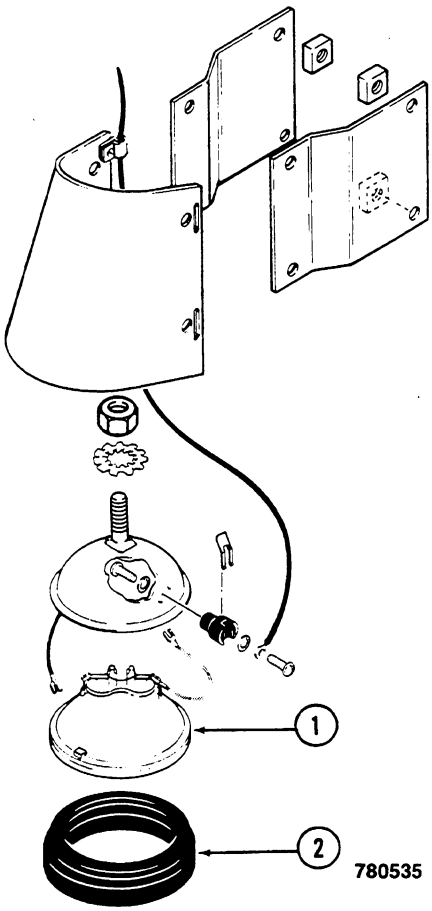
## Tail Lamp


Roll Back Rubber Seal and Remove Lens



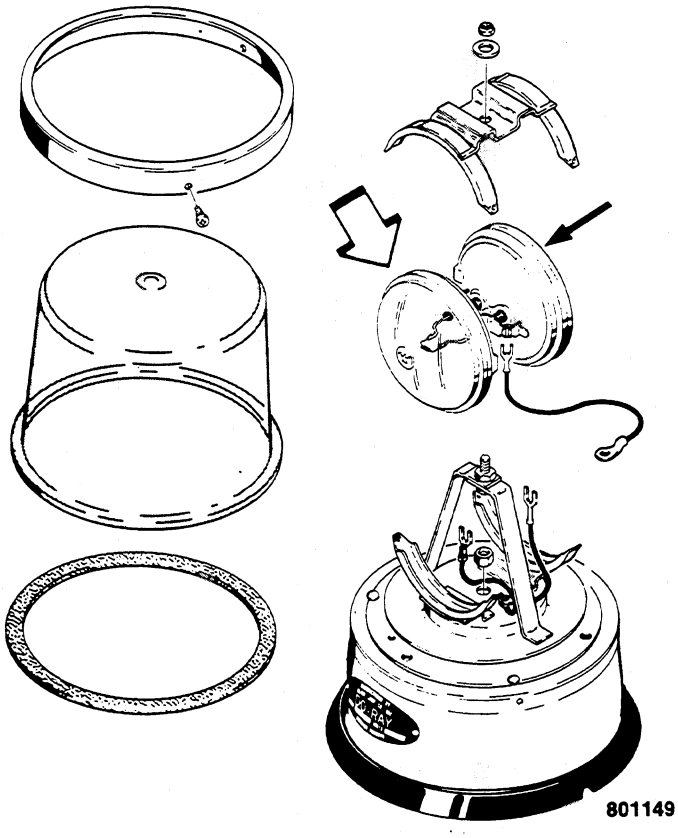

Push In Bulb and Turn Counter-clockwise to Remove. Install New 97 Bulb.

## Backhoe Dipper Lamp




1. Lamp Number 4410
2. Rubber Retainer

## Rotating Beacon




Use a Replacement Bulb No. 4416

# Alternator Charging System

**CAUTION:** *When you remove a battery, always disconnect the (-) negative ground cable first. When you install a battery, always connect the (-) negative ground cable last. This procedure can prevent an explosion that is caused by a spark.* *47-38*

**CAUTION:** *Never wear metal rings or metal watch bands. You can make a ground for the electrical circuit and get a burn on your hand or arm.* *46-55-A*

**CAUTION:** *Know the electrical circuit before you connect or disconnect an electrical component. A wrong connection can cause injury or damage.* *5-4-A*

## Rules for Service

1. Before you service components of the electrical system or before you charge a battery, disconnect the battery cables.
2. Before you use an electric welder on this machine, disconnect the alternator wires.
3. Keep the correct tension on the drive belt. Replace the drive belt if not in good condition.
4. Do not connect the negative battery cable to the positive battery terminal.
5. Do not connect the positive battery cable to the negative battery terminal. This machine has a negative ground.
6. Do not make a wrong connection with the wires of the alternator. See the service manual for this machine.
7. Do not operate the engine if the battery cables are disconnected.
8. Do not use a steam cleaner or a cleaning solvent to clean the alternator.
9. This machine has a 12 volt, electrical system.

## Battery Maintenance

To get long life from your battery, give the battery correct maintenance.

**DANGER:** *Batteries produce explosive gases. Keep sparks, flame and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.* D-38-14

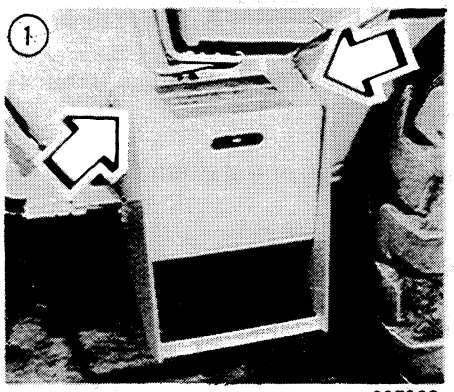
**POISON/DANGER:** *Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL flush with water; INTERNAL, drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately; EYES, flush with water for 15 minutes and get prompt medical attention. Keep out of reach of children.* D-19-2-A

### Battery Fluid Level

"Maintenance Free" means that little or no water is put into the battery during normal service.

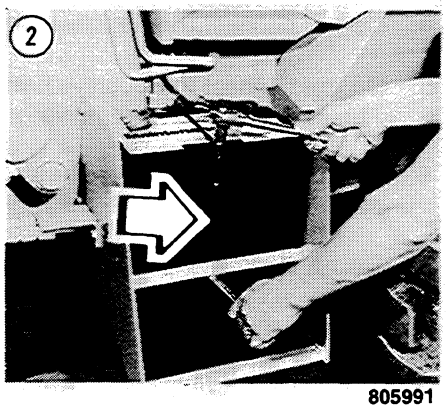
Check the battery fluid level every 1000 hours of operation or once every six months, whichever comes first.

**NOTE:** If the battery is new, you must remove part of the decal on top of the battery.




805989

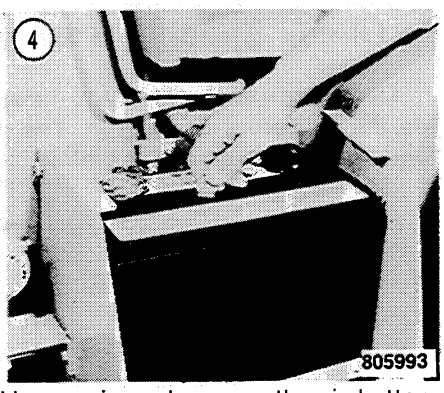
Remove the battery cover.



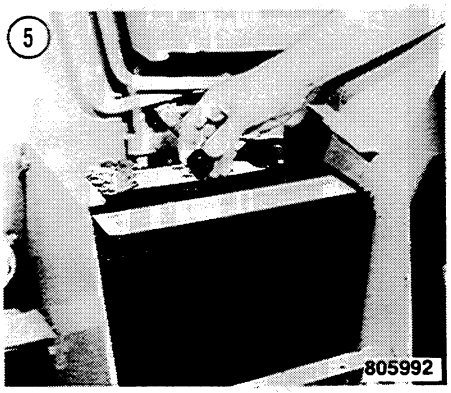

805991

Remove the battery strap. Clean the top of the battery.

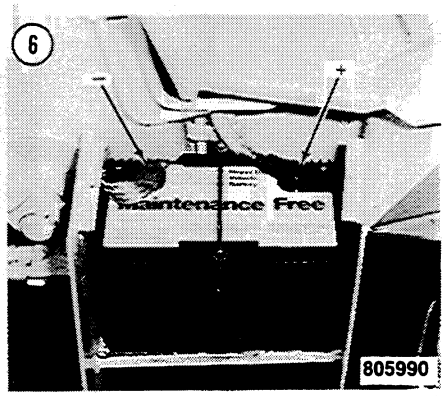

Use a knife to remove the center section of the decal.




Use a coin and remove the six battery caps.




Make sure the fluid level is at the bottom of the ring below each cell opening.

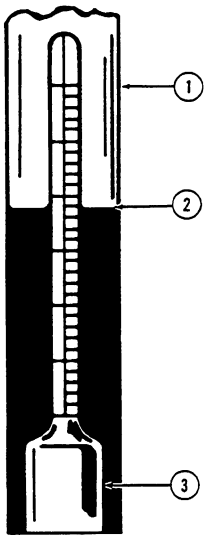



Tighten each cap, install the battery strap, and install the battery cover.

**NOTE:** Add water only. Do not add electrolyte.

## To Check Specific Gravity of the Battery

Use a hydrometer to check the specific gravity (weight) of the electrolyte. See the following illustration. The specific gravity shows the approximate condition or charge of the battery.




1. HOLD HYDROMETER VERTICAL
2. READ AT EYE LEVEL
3. FLOAT MUST BE FREE

**761132**

Hydrometers are made to show the correct specific gravity when the temperature of the electrolyte is 80° F or 26.7° C. When you check the specific gravity, you must know the temperature of the electrolyte. If your hydrometer does not have a thermometer, you must get a thermometer to check the temperature of the electrolyte.

**NOTE:** If you add water to a battery, charge the battery before you check the specific gravity.

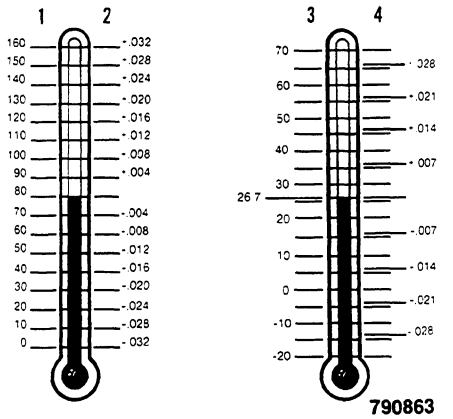
Use the hydrometer to remove the electrolyte from one cell. Make a record of the specific gravity shown by the hydrometer.

2. Check the temperature of the electrolyte. See the illustrations below and add or subtract specific gravity points as follows:

   a. Fahrenheit: Add or subtract .004 specific gravity points for each 10° above or below 80° F.

   b. Celsius: Add or subtract .007 specific gravity points for each 10° above or below 26.7° C.

3. Repeat steps 1 and 2 for the other cells.




1. TEMPERATURE IN °F
2. GRAVITY POINTS TO ADD OR SUBTRACT FROM HYDROMETER READING FOR EVERY 10° F ABOVE OR BELOW 80° F.
3. TEMPERATURE IN °C
4. GRAVITY POINTS TO ADD OR SUBTRACT FROM HYDROMETER READING FOR EVERY 10° C ABOVE OR BELOW 26.7° C

## Comparison of Test Results

1. To find the state of charge, make a comparison between the test results and the Specific Gravity Table.

| Level of Charge | Specific Gravity 80° F (26.7° C) | Approximate freezing point of electrolyte |
|---|---|---|
| 100% | 1.275 | -85° F (-65° C) |
| 75% | 1.245 | -57° F (-49° C) |
| 50% | 1.215 | -30° F (-34° C) |
| 25% | 1.185 | -10° F (-23° C) |
| Discharged | 1.125 | 12° F (-11° C) |

780514

Specific Gravity Table

2. If the specific gravity in all cells is between 1.215 and 1.275 and the difference between the high and low cell is less than .050 specific gravity points, the battery is in good condition. If the difference is less than .050 specific gravity points, but all cells are below 1.230, charge the battery before use.

3. If the specific gravity in all cells is between 1.215 and 1.275 and the difference between the high and low cell is more than .050 gravity points, charge the battery and test the battery again. If the difference is still more than .050 specific gravity points, the battery has internal damage and must be replaced.

**WARNING:** *When the battery electrolyte is frozen, the battery can explode if, (1) you try to charge the battery, or (2) you try to jump start and run the engine. To prevent the battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.* 48-35

## To Clean the Battery

Check the battery regularly for dirt, corrosion and damage. Dirt, mixed with electrolyte or moisture on the top of the battery, can cause a discharged condition in the battery. Use one of the following methods to clean the battery.

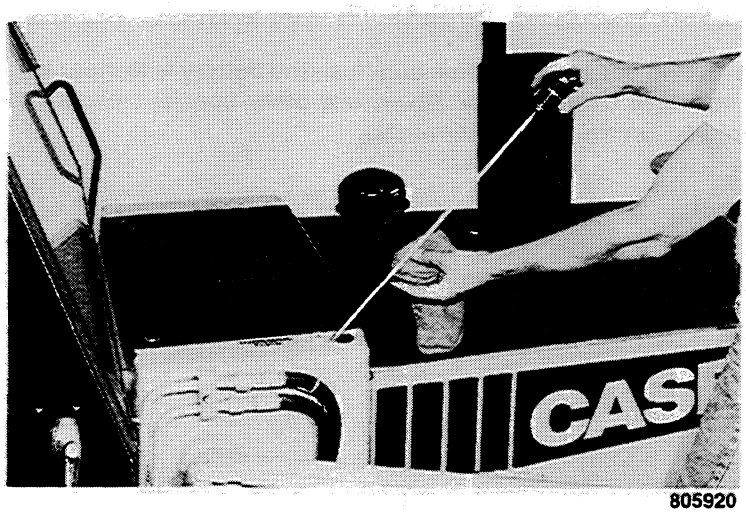
1. Use Case Battery Saver, part number M20376. Follow the instructions on the container. This cleaner does not need water.

2. Use baking soda or ammonia and flush the battery with clear water. If you do not have Case Battery Saver, use other special cleaners to prevent corrosion on the battery terminals.

# HYDRAULIC SYSTEM

## Oil Level

Check the oil level of the hydraulic reservoir every 10 hours of operation or each day, whichever comes first. The oil level dipstick is located on the right side of the machine. See the following photograph.




805920

To check the oil level:

1. Park the machine on a level surface.

2. Make sure the loader bucket is on the ground and the backhoe is in the Transport position. Make sure the bottom of the loader bucket is parallel to the ground.

3. Make sure the oil is cold when you check the oil level (oil temperature the same as the outside air temperature).

4. Turn the top of the dipstick counterclockwise two or three turns and pull up.

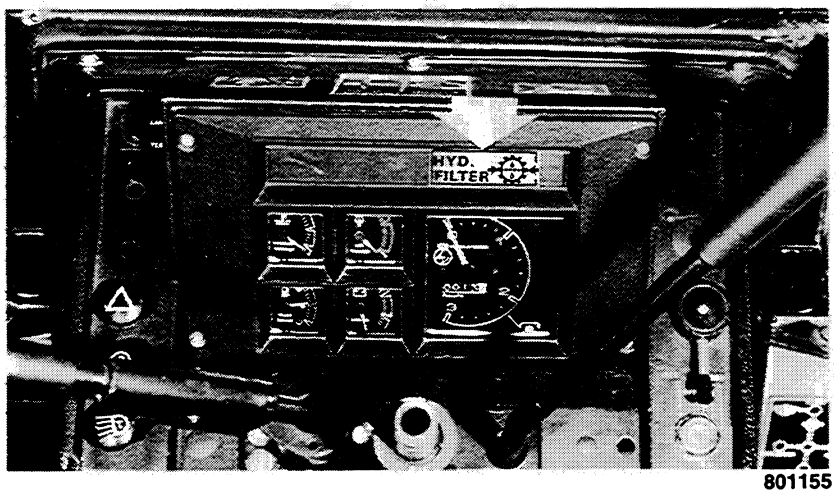
   **NOTE:** The dipstick will come up about 2 inches (50 mm) and stop. Continue to turn the dipstick, the dipstick will release two more times before removal.

5. The level of the oil must be between the Full and Add marks on the dipstick. If the oil level is at the Add mark, add one gallon (3.8 litres) of Case TCH Fluid to raise the oil level up to the Full mark.

6. When you install the dipstick, rotate and push down. After the dipstick is completely down, turn the top clockwise to tighten.

# Hydraulic Oil Filter

The hydraulic filter is installed on the right side of the machine. If the machine is new, replace the filter after the first 20 hours of operation. Then, replace the filter after every 500 hours of operation or if the warning lamp for the hydraulic filter is illuminated.



801155

## Procedure to Check the Condition of the Hydraulic Oil Filter

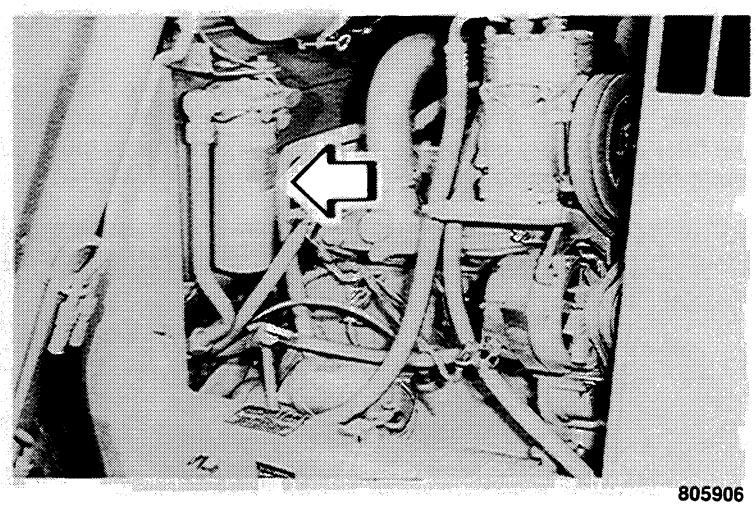
1. Start the engine and raise the temperature of the hydraulic oil to operating temperature (side of the hydraulic oil reservoir feels very warm). To increase the temperature of the oil, do the following:

   a. Roll back the loader bucket and hold the control lever in this position for 15 seconds.

   b. After 15 seconds, move the control lever to the Neutral position.

   c. Do this procedure until the side of the hydraulic reservoir feels very warm.

2. Increase the engine speed to full throttle. If the warning lamp for the hydraulic oil filter is illuminated, replace the filter.



805906

## Procedure to Replace the Hydraulic Oil Filter

1. Use a strap wrench and remove the old filter. Turn the filter counter-clockwise to remove.

2. Lubricate the O-ring seal on the new filter with clean Case TCH fluid and install the new filter.

3. Turn the filter clockwise with your hand until the O-ring seal contacts the head of the filter assembly. Continue to tighten the filter for 1/3 turn.

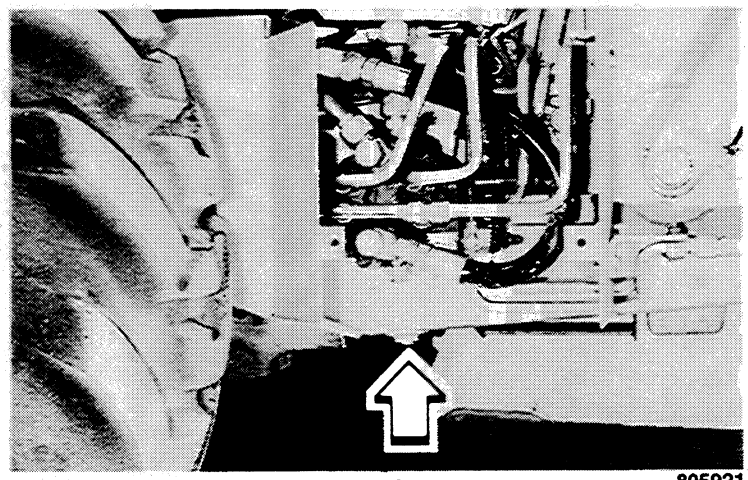
   **IMPORTANT:** Do not use a filter wrench to install the oil filter. An oil leak can occur if the filter is dented by the filter wrench.

4. Start the engine and check for oil leaks around the filter.

# Oil Change

Change the hydraulic oil every 1000 hours of operation.

1. Make sure the oil is at operating temperature.
2. Lower the loader bucket to the ground and put the backhoe in the Transport position.
3. Stop the engine and put a Do Not Operate tag on the key switch.
4. Put a container under the drain plug that will hold 13 U.S. gallons (49 litres).
5. Remove the hydraulic reservoir dipstick and remove the drain plug.



Drain Plug 805921

6. Replace the hydraulic oil filter. See page 172.
7. Install the drain plug.
8. Put 12.5 U.S. gallons (47.5 litres) of new Case TCH fluid into the reservoir. Refer to page 123.
9. Start the engine and operate the loader and backhoe controls for three or four minutes. Stop the engine and check for leaks. Check the oil level.

## Hydraulic Reservoir Relief Valve and Breather

Clean the relief valve and the breather for the hydraulic reservoir after every 500 hours of operation. The relief valve and breather are located on the left side of the reservoir.

1. Remove the center cover that is above the fuel tank.
2. Remove the relief valve and breather from the hydraulic reservoir.
3. Use cleaning solvent to clean the relief valve and breather. Dry with compressed air.
4. Install the relief valve and breather and install the cover.


805918

1. Remove Cover
2. Location of Relief Valve and Breather

# POWER SHUTTLE TRANSMISSION

# HYDRAULIC SYSTEM

## Oil Level

Check the oil level of the power shuttle transmission every 10 hours of operation or each day. The dipstick is located on the right side of the engine. Do the following before you check the oil level:

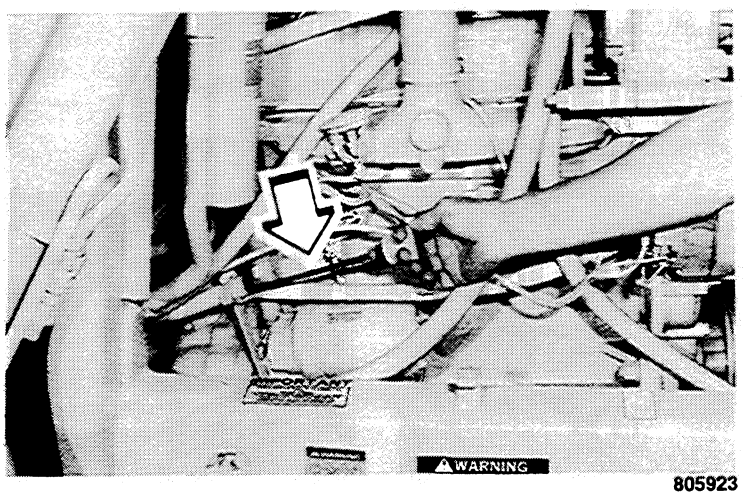
1. Make sure the transmission oil is at operating temperature (gauge needle of the transmission oil temperature gauge is in the green area).

2. Park the machine on a level surface, put the direction control lever in Neutral and engage the parking brake.

3. Raise the loader lift arms to full height and put the support strut in the Locked position.

4. Shift the four-speed transaxle to 4th gear.

5. Turn the handle of the dipstick counterclockwise two or three turns and remove the dipstick.



805923

6. Run the engine at idle speed and completely push the dipstick into the tube. Remove the dipstick. The oil level must be between the L (low) and F (full) marks on the dipstick. Add oil as required to raise the oil level up to the F mark.

7. After you check the oil level, install the dipstick and turn the handle clockwise two or three turns to tighten.

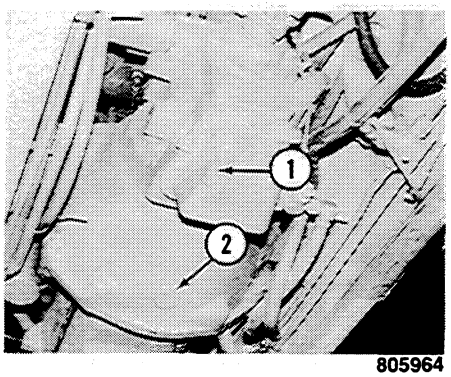
## Oil Change and Suction Screen Service

Change the oil and clean the suction screen for the power shuttle transmision every 1000 hours of operation or once a year, whichever comes first.

1. Have a container that will hold 9 U.S. quarts (8.5 litres).
2. Clean the area around the fill tube. Remove the dipstick from the fill tube.
3. Drain the oil from the torque converter.
   a. Remove the rubber plug from the bottom of the flywheel housing.
   b. Refer to the following photograph and disconnect the electrical wire from the fuel injection pump. This will prevent the engine from starting.

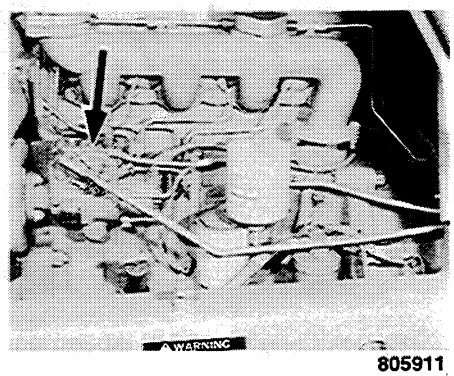
**WARNING:** *Before you do service under the machine, put the machine on a level surface, engage the parking brake and stop the engine. Put blocks at the front and rear of the tires. Failure to follow these instructions can cause injury.* *46-77-A*

   c. Operate the starter motor to rotate the torque converter. You can see the drain plug of the torque converter in the hole of the flywheel housing. Keep your fingers out of the hole when the torque converter is turning.
   d. Remove the drain plug from the torque converter.
   e. Connect the electrical wire to the injection pump.



805964

1. Drain Plug for the Power Shuttle Transmission
2. Rubber Plug in the Flywheel Housing



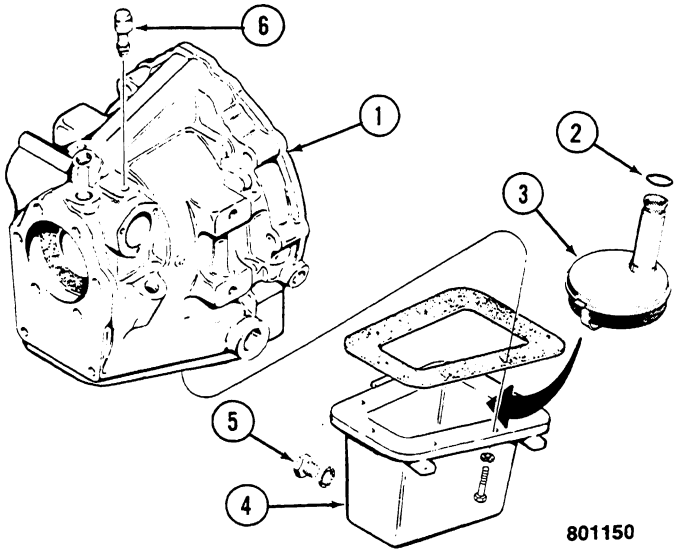
805911

Disconnect Electrical Wire from Fuel Injection Pump

4. Remove the plug and drain the oil from the power shuttle transmission.

Remove the oil pan from the transmission.

6. Remove the screen. The screen is held in position with an O-ring.
7. Clean the parts with solvent and dry with compressed air.
8. Check the condition of the O-ring and replace as required.
9. Install the O-ring on the tube of the screen and install the screen.
10. Install the oil pan with a new gasket to the transmission.
11. Install the drain plugs.
12. See the following topic when you put the oil into the transmission.




1. Transmission
2. O-ring
3. Screen
4. Oil Pan
5. Drain Plug
6. Breather

Power Shuttle Transmission

## Procedure to Fill the Power Shuttle Transmission with Oil

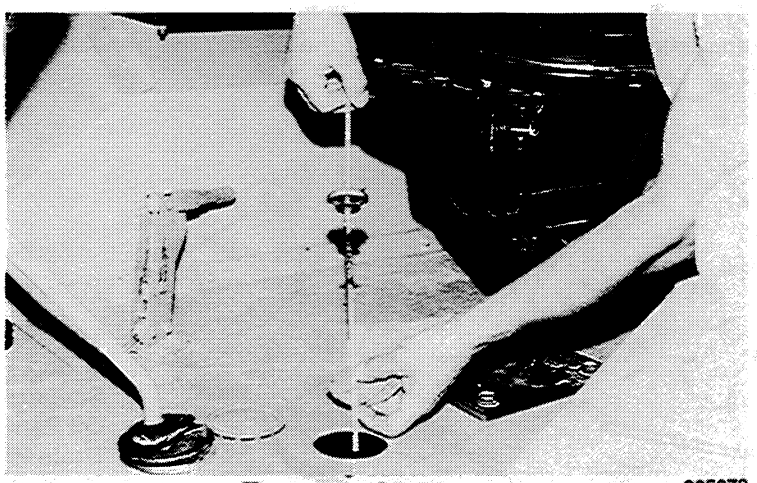
1. Have 8 U.S. quarts (7.5 litres) of Case TCH Fluid in a container.
2. Add 3 U.S. quarts (2.8 litres) to the transmission. Have the remaining oil ready to add to the transmission. This is a two man job.
3. Have one person start the engine and engage the parking brake, run the engine at idle speed. Add oil immediately to the transmission. Have the other person slowly add the remainder of the oil.
4. Move the direction control lever from Forward to Reverse several times to fill all passages in the transmission. When the oil is at operating temperature, check the oil level.

# FOUR-SPEED TRANSAXLE

## Oil Level

Check the oil level of the four-speed transaxle after the first 20 hours of operation with a new machine. Then, check the oil level every 100 hours of operation. The dipstick is located below a hole in the floor. Remove the cover with a screwdriver and pull the dipstick straight up out of the fill tube. Make sure the engine is stopped when you check the oil level.

The oil level must be between the Add and Full marks on the dipstick. If the oil is at the Add mark, add oil as required until the oil level is at the Full mark.

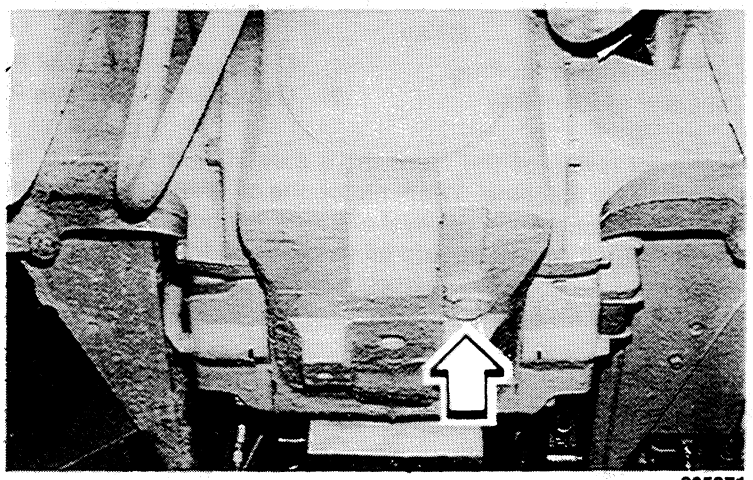


Transaxle Oil Dipstick 805973

# Oil Change

Change the oil in the four-speed transaxle every 1000 hours of operation. Do the following:

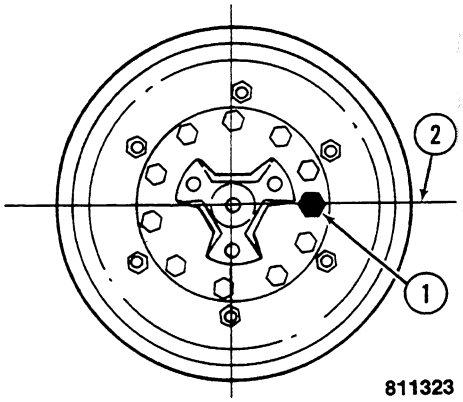
1. Have a container that will hold six U.S. gallons (22.7 litres).
2. Remove the dipstick from the fill tube.
3. Remove the drain plug from the transaxle.
4. After all the oil has been drained, install the drain plug.
5. Put 20 U.S. quarts (18.9 litres) of Case FDL into the transaxle. See page 115.
6. Start the engine and operate the machine in first or second gear for a few minutes. Stop the engine and check the oil level.



Transaxle Oil Drain Plug 805971

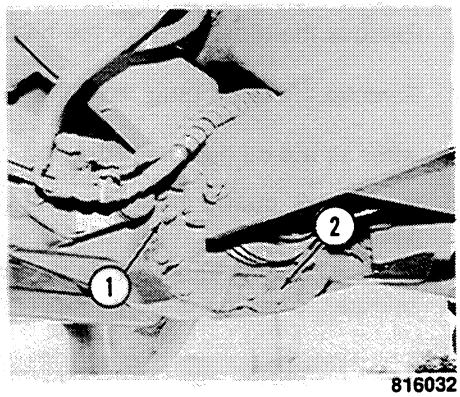
# FRONT DRIVE AXLE
# (Four Wheel Drive Machines)

## Oil Level for Front Drive Axle




811323

1. Oil Level and Drain Plug
2. Oil Level of Planetary




816032

1. Center Bowl Oil Level Plug
2. Center Bowl Oil Drain Plug

Check the oil levels of the front drive axle after the first 20 hours of operation with a new machine. Then, check the oil levels every 200 hours of operation. You must check the oil level of the center bowl and each planetary end. Use Case FDL oil when you add oil to the front drive axle.

1. Park the machine on a level surface.

2. Use the loader and raise the front wheels about one inch (25 mm) off the ground.

3. Rotate the wheel so that the oil level plug is in the position shown above.

4. Remove the oil level plug. The oil level must be up to the plug hole. Add Case FDL oil as required.

5. Lower the wheels to the ground and remove the oil level plug from the center bowl. The oil level must be at the plug hole. Add Case FDL oil as required.

## Oil Change for Front Drive Axle

You must change the oil of the front drive axle every 1000 hours of operation. Use 1.6 U.S. quarts (1.5 litres) of oil in each planetary end and 6.8 U.S. quarts (6.5 litres) of oil in the center bowl. Use Case FDL oil.

1. Park the machine on a level surface and make sure the oil in the front drive axle is at operating temperature.

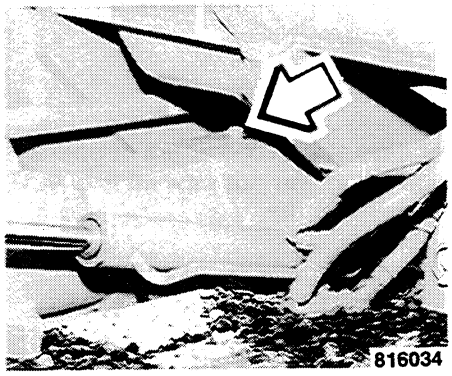
2. If the drain plugs for the planetaries are not in the correct position to drain the oil, disengage the front drive axle and raise the front wheels off the ground. Turn the wheels as required and put a pan under each planetary.

3. Lower the front wheels to the ground. Put a pan under the drain plug for the center bowl.

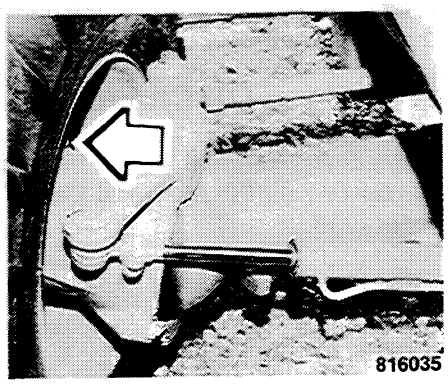
4. Remove the three drain plugs and remove the oil from each planetary and from the center bowl.

5. Install the drain plugs and put 1.6 U.S. quarts (1.5 litres) of oil in each planetary end and put 6.9 quarts (6.5 litres) of oil in the center bowl. Use Case FDL oil.

## Breathers for Front Drive Axle




Breather for Center Bowl

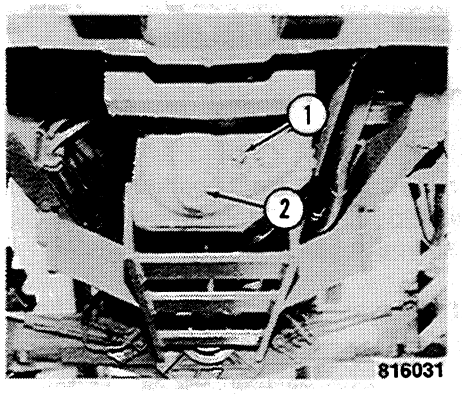



Breather for Planetaries
(One each Planetary)

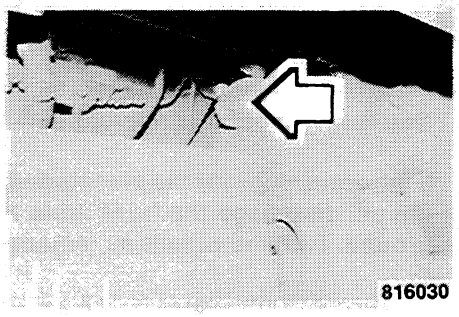
Clean the three breathers for the front drive axle every 100 hours of operation. If you operate the machine during severe operating conditions, clean the breathers move frequently.

Remove the dirt from the area around the breathers and clean the breathers with solvent. Blow dry with compressed air.

# TRANSFER CASE
# (Four Wheel Drive Machines)




1. Oil Level Plug
2. Oil Drain Plug




Breather for Transfer Case

## Oil Level for Transfer Case

Check the oil level of the transfer case after the first 20 hours of operation with a new machine. Then, check the oil level every 100 hours of operation. The oil level plug is on the rear of the transfer case. Make sure that the machine is parked on a level surface and the engine is stopped. Use Case FDL oil when you add oil to the transfer case.

## Oil Change for Transfer Case

You must change the oil of the transfer case every 1000 hours of operation. Use one pint (0.5 litre) of Case FDL oil when you put new oil into the transfer case.

1. Remove the drain plug and the oil level plug and remove the old oil.

2. Install the drain plug.

3. Put one pint (0.5 litre) of Case oil in the transfer case and install the oil level plug.

## Breather for Transfer Case

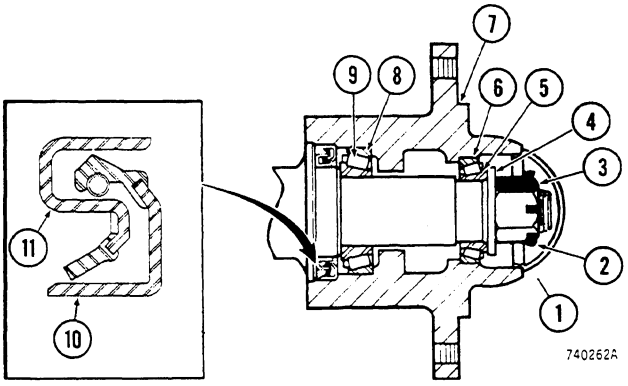
Clean the breather for the transfer case every 200 hours of operation. If you operate the machine during severe operating conditions, clean the breather more often.

Remove the dirt from the area around the breather and clean the breather with solvent. Blow dry with compressed air.

# FRONT WHEEL BEARINGS
# (Two Wheel Drive Machines Only)

Lubricate the bearings of the front wheels every 500 hours of operation. See page 123.

## Removal and Installation




1. Hub Cap
2. Cotter Pin
3. Slotted Adjusting Nut
4. Thrust Washer
5. Outer Bearing Cone
6. Outer Bearing Cup
7. Wheel Hub
8. Inner Bearing Cup
9. Inner Bearing Cone
10. Outer Seal Half
11. Inner Seal Half

1. Engage the parking brake. Raise the front wheels off the ground and put blocks under the front of the machine.

2. Remove the hub cap (1), cotter pin (2), slotted adjusting nut (3), and thrust washer (4).

3. Remove the outer bearing cone (5) and pull the wheel hub (7) off the spindle.

4. Remove the outer bearing cone (5) from the wheel hub (7).

5. Remove the outer seal half (10) and inner bearing cone (9) from the wheel hub (7). Do not remove the bearing cups (6 and 8) unless inspection indicates replacement.

6. Remove the inner seal half (11) from the spindle and discard the seal.

7. Clean the bearings in cleaning solvent to remove all grease.

8. Remove grease from the bearing cups and spindle with a clean cloth. Also remove grease from the hub bore.

9. Inspect the bearings and bearing cups for scoring, etc. Also check bear. race and cage for cracks.

10. Thoroughly lubricate each bearing with number 2 wheel bearing grease.

11. Put grease in the hub bore and on each bearing cup.

12. Install the inner bearing cone (9) in the inner bearing cup (8). Install a new hub seal with the seal lip away from the bearing. Use a driver that contacts the O.D. of the seal. Press or drive the seal into the hub until the seal is against the shoulder in the bore.

13. Install a new inner seal half (11) on the spindle with the seal lip toward the flange on the spindle. Use a driver that contacts the I.D. of the seal only and drive the seal against the flange. Fill the seals (10 and 11) with grease.

14. Install the wheel hub (7) on the spindle. Be careful not to damage the outer seal half (10). Then install the outer bearing cone (5), thrust washer (4), and slotted adjusting nut (3).

15. Adjust the bearings as instructed under Wheel Bearing Adjustment.

16. Install the cotter pin (2) and the hub cap (1).

## Wheel Bearing Adjustment (Two Wheel Drive Machines Only)

1. Rotate the wheel while tightening the slotted adjusting nuts (3) to a torque of 75 to 85 pound-feet (101 to 115 N m).

2. When the torque is as specified, back the nut off 1/6 turn maximum and install a new cotter pin (2).

# WHEELS AND TIRES

## Wheel Bolt Torque

Check the wheel bolts on your machine for the correct torque. Check the heel bolts every 10 hours or each day, whichever comes first, until the wheel olts stay tight. The wheel bolts are tightened to a torque of 115 to 130 pound-eet (155 to 176 N m).

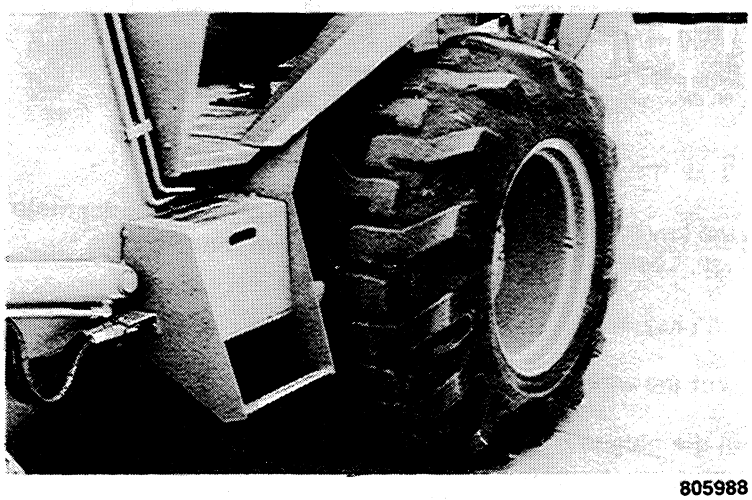
Check the wheel bolts when a wheel is removed for service. Check the heel bolts every 10 hours of operation or each day, whichever comes first, ntil the wheel bolts stay tight.

## Tire Air Pressure

See specifications section of this manual, page 33, for correct tire pressure.

## Procedure to Install the Tires

When the rear tire is installed on a wheel, make sure to have the tread of the tire in the direction shown in the following photograph.



805988

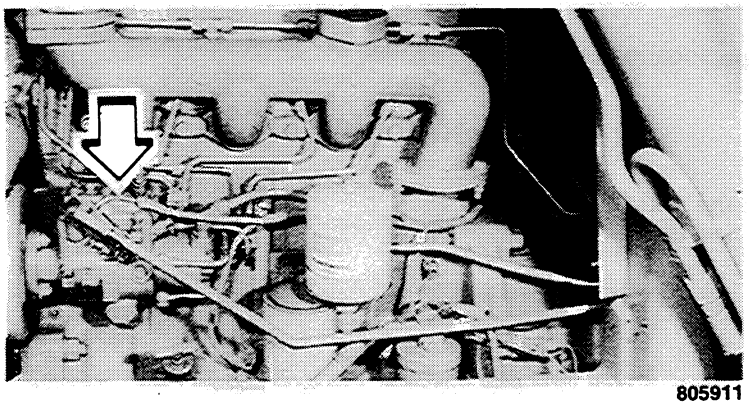
# SPARK ARRESTER MUFFLER (If Equipped)

Remove the loose carbon from the spark arrester muffler after every 100 hours of operation.

1. Remove the plug from the side of the muffler.

2. Put a piece of wood over the outlet of the exhaust pipe to stop the exhaust flow.

3. Disconnect the wire from the injection pump. This will prevent the engine from starting.



805911

4. Make sure the parking brake is in the Engaged position.

5. Turn the key switch to the Start position. Operate the starter motor for 30 seconds. Loose carbon will be removed from the muffler.

6. Turn the key switch to the Off position.

7. Connect the wire to the fuel injection pump.

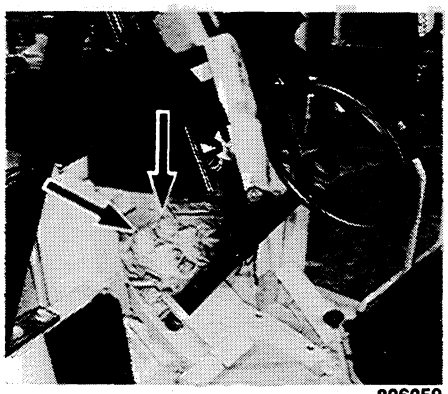
8. Install the plug in the side of the muffler and remove the piece of wood.

# BRAKES

## Brake Master Cylinder

**CAUTION:** *Do not use DOT 3 brake fluid. Use only J I Case TCH oil or Dexron II. Use of incorrect fluid will cause damage to cylinder seals and potential brake failure.* *D-48-26*

Check the fluid level in each brake master cylinder every 100 hours of operation. The brake master cylinders are located under the instrument panel. Remove the bolts that fasten the instrument panel to the machine. Move the instrument panel up and support in the up position with a piece of wood. The fluid level must be 1/2 inch (13 mm) from the top surface. See page 123.



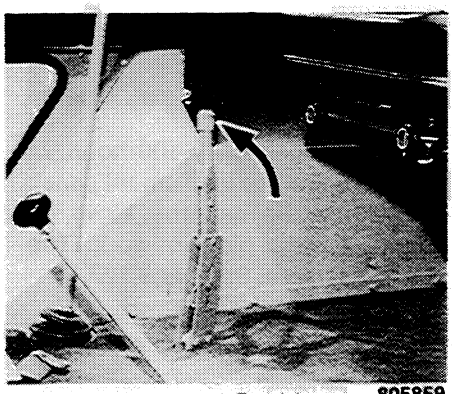
Master Cylinders 806059

## Parking Brake Adjustment

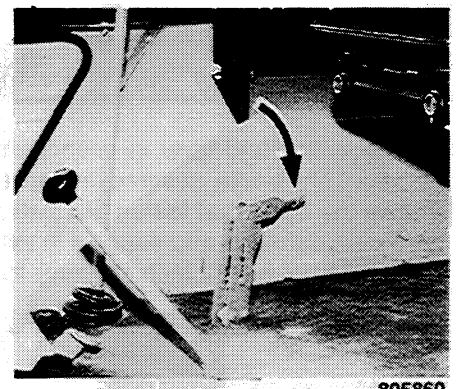
1. Push the parking brake down to the Released position.
2. Turn the handle of the parking brake two or three turns clockwise.
3. Engage the parking brake.
4. Put the control lever for the transaxle in third gear.
5. Start the engine and put the direction control lever in Forward.

6. Increase the engine speed to 1500 rpm. The machine must not move.

**NOTE:** If the machine moves after this adjustment is complete, see the service manual for this machine or see your Case dealer.



Engaged Position 805859



Disengaged Position 805860

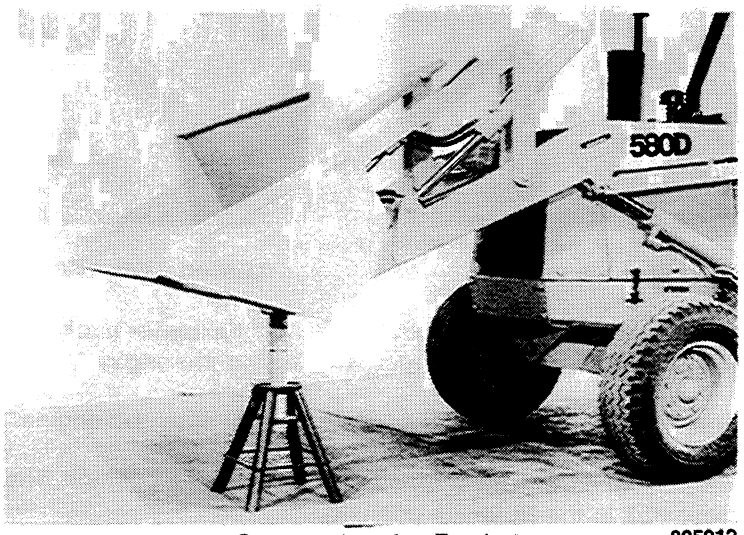
# LOADER ADJUSTMENTS

## Return-To-Dig Adjustment

This adjustment controls the digging angle of the loader bucket when you use the return-to-dig. To change the digging angle of the bucket, do the following:

1. Put the machine on a level surface.

2. Raise the loader bucket approximately 3 feet (1 m) above the ground. Put a support under the loader bucket. Roll the bucket back.

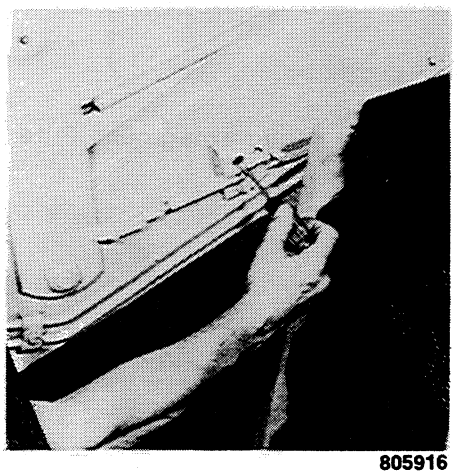



Support Loader Bucket 805912

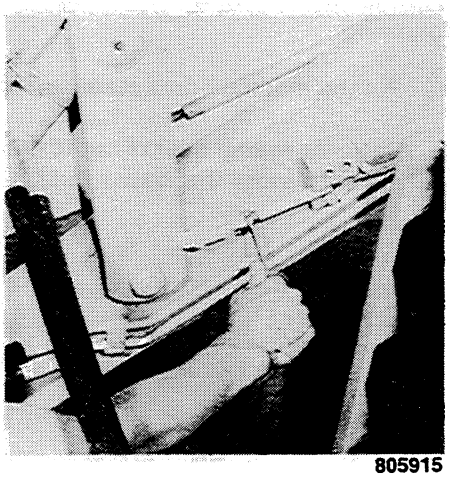
3. Engage the parking brake and put the backhoe in the transport position. Stop the engine.

4. Loosen the switch mounting screws and push the switch up. Push t. switch down until the switch makes a noise. Tighten the switch mounting screws.

5. Loosen the rod lock nut and move the rod into the clevis several turns.


805916

Adjust Switch


805915

Loosen Lock Nut

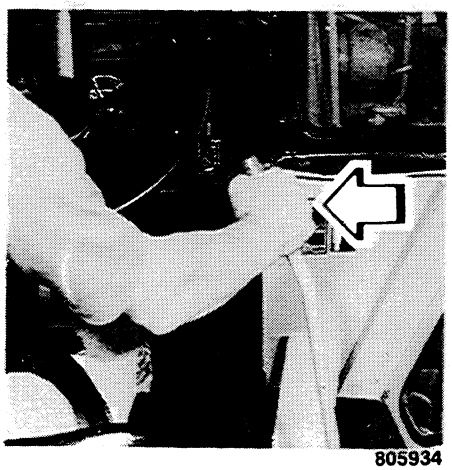
6. Start the engine, remove the stand, and lower the loader bucket flat on the ground or at the necessary digging angle. Stop the engine.

7. Turn the key switch to the On position. Do not start the engine.

8. Push the loader control lever forward to the Rollback position. The control lever will stay in the Rollback position.

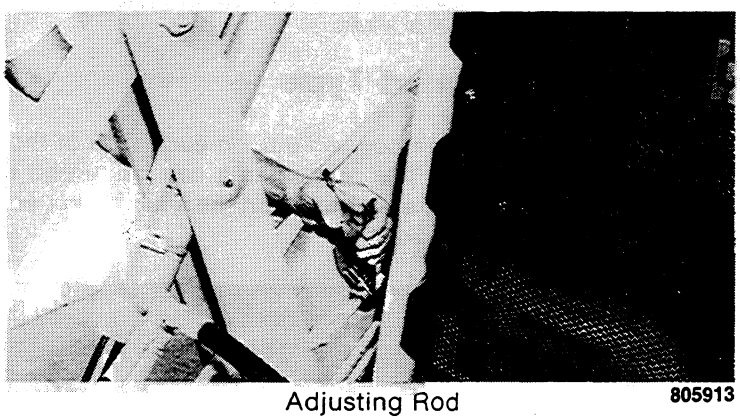

805931

Key Switch On


805934

Lever in Rollback

Move the rod toward the switch until the loader control lever releases and returns to the Neutral position. Tighten the lock nut.



Adjusting Rod 805913

10. Start the engine and check the operation of the return-to-dig. If the loader bucket did not stop in the correct position, do the return-to-dig adjustment again.

# BUCKET TEETH

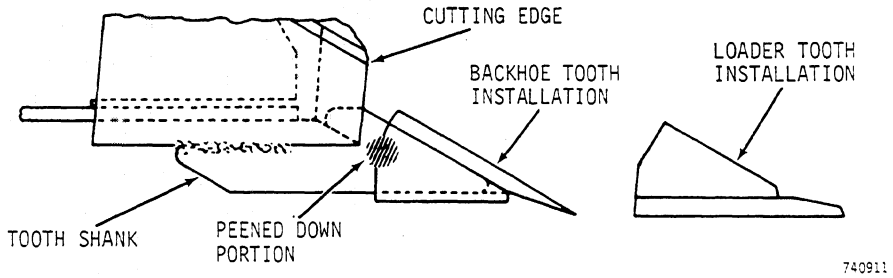
The same bucket teeth are used by the loader and backhoe buckets except for the heavy duty backhoe bucket.

## Peened Type

Use a suitable tool and raise the peened area on each side of the tooth. Remove the tooth from the shank. The peened area can be heated with an acetylene torch if necessary. Install a new tooth on the shank and peen each side into the depression in the shank.

**CAUTION:** *Wear eye or face protection when you service the machine. Use a hammer with a soft face, such as plastic, wood, brass or leather, when you hit hardened tools or hardened metal surfaces. Any other procedure can cause injury from flying chips.*

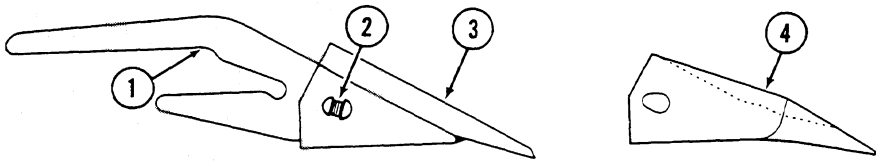
*46-14-C*




1. Cutting Edge
2. Backhoe Tooth
3. Loader Tooth
4. Peened Down Area
5. Tooth Shank

## Flex Pin Type

Heavy duty backhoe buckets use teeth that are flex pin retained. Use an oval shaped punch and hammer to remove the flex pin. Install a new tooth on the shank and install the flex pin.




1. Shank
2. Flex Pin
3. Tooth
4. Optional Tooth

**780534**

# DRIVE BELTS

Stop the engine and check the tension of a new drive belt after the first 20 hours of operation. Then, check the tension of the drive belt every 200 hours of operation.

**WARNING:** *Keep clear of the fan and fan belts when the engine is running. The moving fan and belts can cause serious injury.27-9-A*

## Belt Tension

Check the tension of a new drive belt after the first 20 hours of operation. Then, check the tension of the drive belt every 200 hours of operation.

### Single Drive Belt

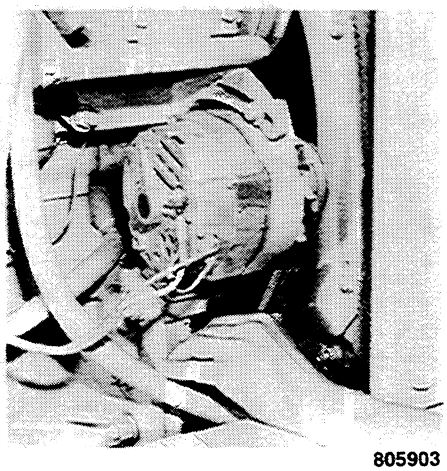
When the belt tension is checked with a belt tension gauge, adjust a new belt to 120 pounds (54 kg).

**NOTE:** After a new belt has been used for 20 hours, adjust the belt to a reading of 80 pounds (36 kg) on the belt tension gauge.

### Double Drive Belts

When the belt tension is checked with a belt tension gauge, adjust a new belt to 55 - 65 pounds (25 - 30 kg).

**NOTE:** After a new belt has been used for 20 hours, adjust the belt to a reading of 37 - 43 pounds (17 - 20 kg) on the belt tension gauge.



805903

Alternator Belt

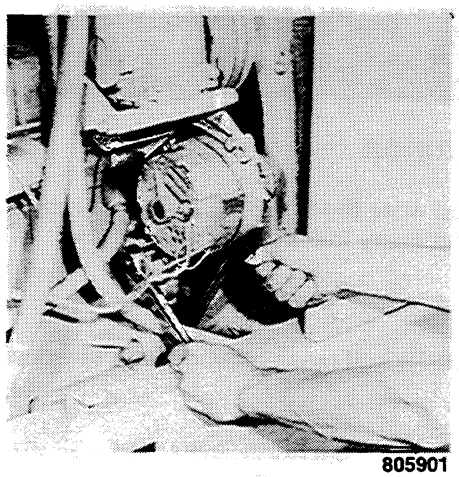
805947

Air Conditioning Compressor Belt

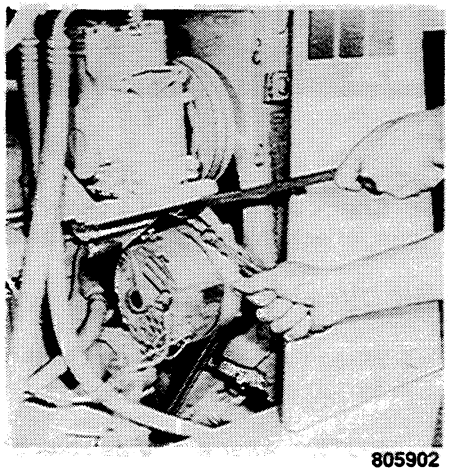
Krikit Belt Tension Gauge (Case Part Number CAS-1441)

## Adjustment of Alternator Drive Belt

Loosen the upper and lower mounting bolts of the alternator. Move the alternator away from the engine. Tighten the upper mounting bolt. Check the belt tension. If the belt tension is correct, tighten the lower mounting bolt.



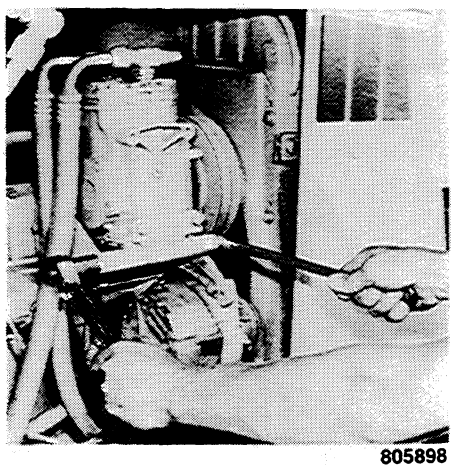

Lower Mounting Bolt



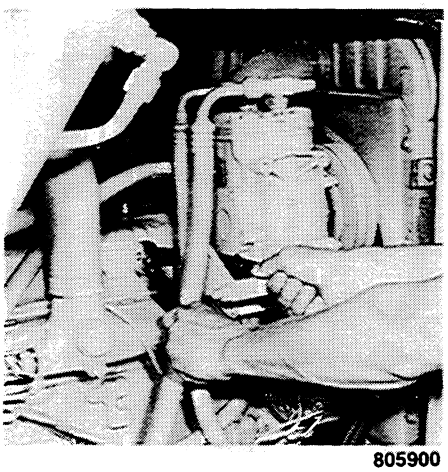

Upper Mounting Bolt

## Adjustment of Air Conditioning Compressor Belt

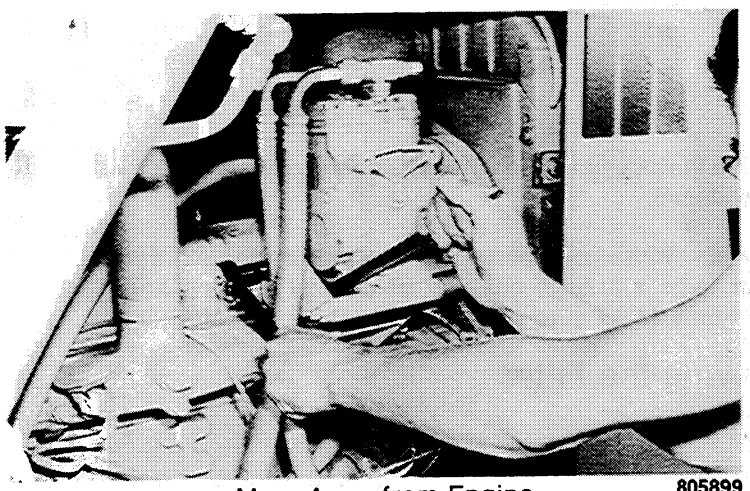
Loosen the right and left-hand mounting bolts of the air conditioning compressor. Move the air compressor away from the engine (see photograph next page). Tighten the left-hand mounting bolt. Check the belt tension. If the belt tension is correct, tighten the right-hand mounting bolt.




Right-Hand Mounting Bolt




Left-Hand Mounting Bolt



Move Away from Engine 805899

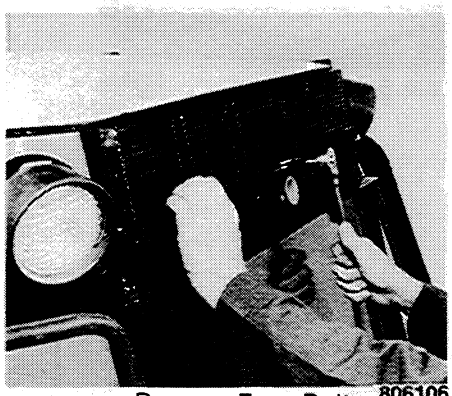
# CAB SERVICE

## Cab Air Filter

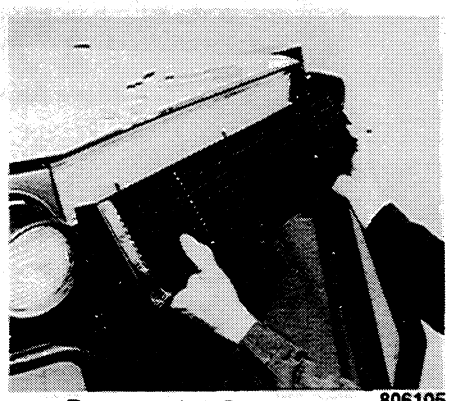
Clean the cab air filter every 1000 hours of operation or if the air flow in the cab is reduced.

**NOTE:** When you operate the machine during extreme dust conditions, you can remove a large quantity of dust by opening and closing the door several times. Make sure you turn the cab blower off first.

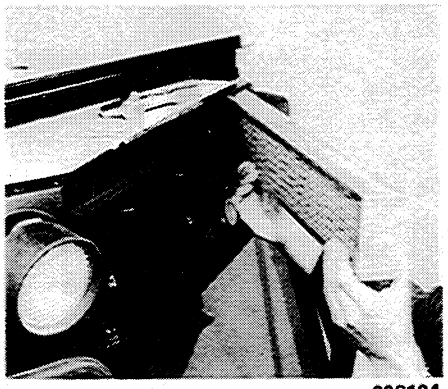
### Removing the Filter



Remove Four Bolts 806106



Remove the Outer Cover 806105



Remove the Filter 806104

## Cleaning the Filter

The filter can be cleaned by three methods:
A. Hit the filter lightly on a flat surface - Do not use force.
B. Clean with compressed air.
C. Wash with water.

METHOD A - When most of the dirt is dust, this method can be used to clean the filter. Hit the dirty side of the filter against a flat surface. Do not use force that can cause damage to the filter.

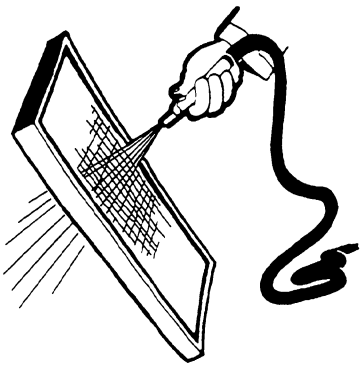
**HIT ON FLAT SURFACE**

801151

METHOD B - The compressed air method is used if most of the dirt is dust. Move the flow of air up and down the clean side of the filter opposite to the air flow arrows shown on the element.

**IMPORTANT** *The maximum air pressure at the nozzle must not be more than 30 psi (206 kPa). Too much air pressure will cause damage to the filter.*

**COMPRESSED AIR**



801152

METHOD C - If the filter has heavy dirt and soot, use the water washing method to clean.

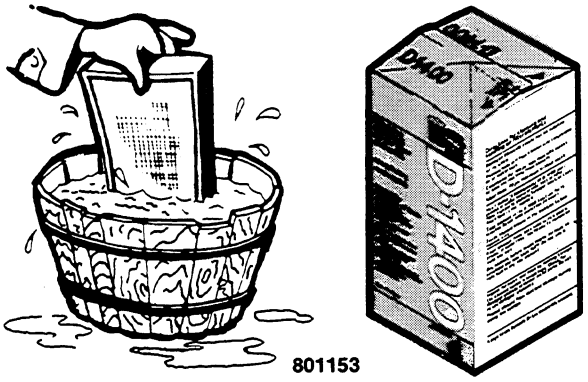
1. Wash the element in water using Case Filter Element Cleaner, Part Number A40910. Mix two ounces (56.7 grams) of cleaner to one gallon (3.8 litres) of water at 70°F to 100°F (21° to 38°C).

2. Wash the filter for 15 minutes. Completely remove the cleaner from the element with clean water. Do not use water pressure of more than 40 PSI (276 kPa) at the nozzle if you use a hose.

3. Permit the filter to become completely dry in the air before use in the tractor. The filter needs 24 to 72 hours to dry.

**IMPORTANT:** *Do not use compressed air to dry the filter. Get a second filter to use while you permit the washed filter to dry.*

## WASHING

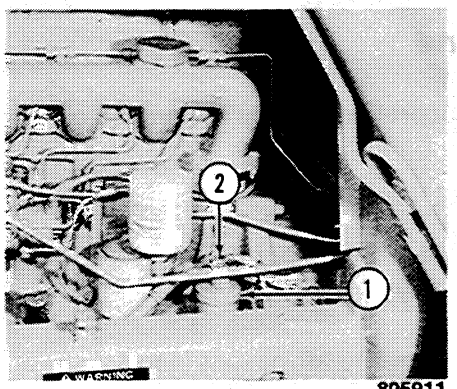



801153

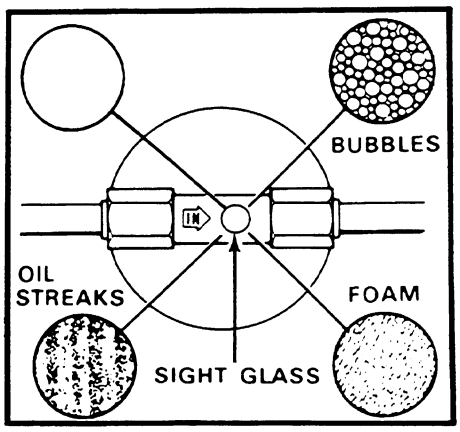
**CASE PART NUMBER A40910**

## Refrigerant Check

Before warm weather begins or when the air conditioning system does not work correctly, check the condition of the refrigerant. Look in the sight glass window.




1. Receiver-Drier
2. Sight Glass Window




Check the sight glass at ambient temperatures above 70° F (21° C) when the system is operating. After about five to ten minutes of compressor operation, you should see no or very few bubbles when the system is working correctly.

If you see bubbles in the sight glass, the system needs refrigerant. If you see foam in the sight glass, the system has very little refrigerant. If the sight glass shows oil streaks, there is no refrigerant in the system. See your Case Dealer if you have any questions.

**WARNING:** *Liquid refrigerant can cause severe and painful frostbite to your skin. Do not attempt to service the air conditioning system on this machine unless you are completely familiarized with air conditioning and the safety precautions which must be followed. Serious injury can result if you do not follow these instructions.*
*48-33*

## Lubrication of the Air Conditioning Compressor Seals

Operate the air conditioner once every 100 hours to lubricate the compressor seals. Turn the air conditioning control to Maximum for at least 15 minutes. In temperatures below 32° F (0° C) put a cover over the air conditioning condenser. This will make sure the refrigerant and lubricants in the system will be at operating temperature.

# PROCEDURE TO PUT THE MACHINE IN STORAGE

If you put the machine in storage for 30 days or more, move the machine to a location which is dry and which gives protection. If possible, put the machine inside a heated building. Do the following actions to prevent rust, corrosion and damage of parts.

## Engine

1. While the engine is still warm from operation, change the engine oil.
2. Replace the engine oil filter.
3. Clean the air cleaner element.

## Diesel Fuel System

1. Remove the fuel from the fuel tank. Put one to two gallons (4 to 8 litres) of diesel flushing oil into the fuel tank. You can use any one of the diesel flushing oils in the following list:

Solnus XXX ..... Sun Oil Co.
Carnea Oil No. 21 ..... Shell Oil Co.
Alweather Oil ..... Arco
Capella Oil A ..... Texaco Inc.
Texaco Almag ..... Texaco Inc.
No. 10C ..... General Electric Co.
Wemco C ..... Westinghouse Electric Co.
Lonco No. 71 ..... London Chemical Co.
Vacmul 3A ..... Mobil Oil

2. Start and operate the engine until you see blue or white smoke coming from the exhaust pipe. This blue or white smoke shows that the regular diesel fuel in the filters has been used and that the diesel flushing oil is being burned.

Operate the engine for 10 minutes more. Stop the engine. Remove the diesel flushing oil from the fuel tank. Put one level teaspoon of VPI 260 Crystals into the fuel tank. VPI 260 Crystals will prevent rust.

**NOTE:** VPI 260 Crystals are made by the Shell Oil Company.

## Cooling System

Make sure the coolant in the cooling system will give protection against freezing in the lowest temperature that will occur in your area. If necessary, drain the coolant as follows:

1. While the engine is warm, remove the coolant from the cooling system.

2. After you drain the coolant, keep open the drain valves for the radiator and engine block and oil cooler.

3. Loosen the radiator cap.

4. Put a Do Not Operate tag on the instrument panel. Write on the Do Not Operate tag that there is no coolant in the cooling system.

## Battery

Remove the battery. Put the battery in a cool, dry place on a piece of wood. Use a hydrometer to check the battery every month. Make a record of the hydrometer readings. When you get a reading that is near 1.215, charge the battery.

## Hydraulic System

1. Lower the equipment onto wood blocks. Engage the parking brake.

2. Stop the engine and move the equipment control levers in both directions several times. This procedure will release pressure in the hydraulic system.

3. Put a special grease on the cylinder rods to prevent corrosion. Use Case Corrosion Inhibitor grease.

# PROCEDURE TO REMOVE THE MACHINE FROM STORAGE

Before you operate a machine which has been in storage, do the following steps:

1. If you drained the coolant from the cooling system, fill the cooling system. Use the correct mixture of clean water and ethylene glycol. Use water which has a low mineral content.

2. Make sure the engine oil is at the correct level.

3. Install the battery. Make sure the battery has a full charge.

4. Fill the fuel tank.

5. Diesel Engine: Replace the fuel filters and remove the air from the fuel lines.

6. Start the engine and run at idle speed. Remove the valve cover and make sure the valves are working freely and that the rocker arm assemblies are getting lubrication.

# AFTER DELIVERY CHECK

## (After First 20 Hours of Operation of New Machine)

Date of Check _____ Hourmeter reading: _____ hours

MACHINE: Model 580D Product Identification Number _____

OWNER: Name _____

Address _____

DEALER: Name _____

Address _____

FUEL SYSTEM

- ☐ Check for leaks.
- ☐ Drain water and sediment from the fuel tank.

ELECTRICAL SYSTEM

- ☐ Check operation of starter, alternator, instruments, and warning lamps.
- ☐ Check operation of all lamps.

LUBRICATION

- ☐ Lubricate all grease fittings.
- ☐ Change engine oil.
- ☐ Replace engine oil filter.
- ☐ Check the oil level of the power shuttle transmission.
- ☐ Check the oil level of the transaxle.
- ☐ Check the oil level of the front drive axle (if equipped).
- ☐ Check the oil level of the transfer case (four wheel drive).

ENGINE

- ☐ Tighten cylinder head bolts. (See the Service Manual).
- ☐ Check valves for correct clearance.
- ☐ Check engine idle speed, full throttle-no load speed and full throttle-full load speed.

COOLING SYSTEM

- ☐ Check the coolant level.
- ☐ Tighten all hose clamps.

HYDRAULIC SYSTEM

- ☐ Check the oil level.
- ☐ Check the pressure setting of the loader main relief valve.
- ☐ Replace the hydraulic oil filter.

GENERAL

- ☐ Check operation of loader, backhoe or three-point hitch.
- ☐ Check the operation of the foot and parking brakes.
- ☐ Service the air cleaner.
- ☐ Check the brake master cylinder fluid level.
- ☐ Check for leaks under the machine.
- ☐ Check for loose part.
- ☐ Tighten all hose clamps
- ☐ Check the wheel bearings.
- ☐ Check the tension of the drive belts.

SAFETY

- ☐ Inspect the ROPS.
- ☐ Check the safety decals and replace if necessary.
- ☐ Check safety components (seat belt, lamps, back up alarm, etc.)
- ☐ Make sure the machine has the 580D Operator's Manual in the Manual Storage Box.

DEALER: Learn whether the owner or operator has any problems with the machine. Make sure the owner or operator understands all the information in this manual. Give the owner or operator information he needs.

After Delivery Check done by _____

Name of Dealer (signature) _____

Name of Owner (signature) _____

Dealer Copy

# AFTER DELIVERY CHECK

## (After First 20 Hours of Operation of New Machine)

Date of Check _____ Hourmeter reading: _____ hours

MACHINE: Model 580D Product Identification Number _____

OWNER: Name _____

Address _____

DEALER: Name _____

Address _____

FUEL SYSTEM

- ☐ Check for leaks.
- ☐ Drain water and sediment from the fuel tank.

ELECTRICAL SYSTEM

- ☐ Check operation of starter, alternator, instruments, and warning lamps.
- ☐ Check operation of all lamps.

LUBRICATION

- ☐ Lubricate all grease fittings.
- ☐ Change engine oil.
- ☐ Replace engine oil filter.
- ☐ Check the oil level of the power shuttle transmission.
- ☐ Check the oil level of the transaxle.
- ☐ Check the oil level of the front drive axle (if equipped).
- ☐ Check the oil level of the transfer case (four wheel drive).

ENGINE

- ☐ Tighten cylinder head bolts. (See the Service Manual).
- ☐ Check valves for correct clearance.
- ☐ Check engine idle speed, full throttle-no load speed and full throttle-full load speed.

COOLING SYSTEM

- ☐ Check the coolant level.
- ☐ Tighten all hose clamps.

HYDRAULIC SYSTEM

- ☐ Check the oil level.
- ☐ Check the pressure setting of the loader main relief valve.
- ☐ Replace the hydraulic oil filter.

GENERAL

- ☐ Check operation of loader, backhoe or three-point hitch.
- ☐ Check the operation of the foot and parking brakes.
- ☐ Service the air cleaner.
- ☐ Check the brake master cylinder fluid level.
- ☐ Check for leaks under the machine.
- ☐ Check for loose part.
- ☐ Tighten all hose clamps
- ☐ Check the wheel bearings.
- ☐ Check the tension of the drive belts.

SAFETY

- ☐ Inspect the ROPS.
- ☐ Check the safety decals and replace if necessary.
- ☐ Check safety components (seat belt, lamps, back up alarm, etc.)
- ☐ Make sure the machine has the 580D Operator's Manual in the Manual Storage Box.

DEALER: Learn whether the owner or operator has any problems with the machine. Make sure the owner or operator understands all the information in this manual. Give the owner or operator information he needs.

After Delivery Check done by _____

Name of Dealer (signature) _____

Name of Owner (signature) _____

CE Service Copy

# AFTER DELIVERY CHECK

## (After First 20 Hours of Operation of New Machine)

Date of Check _____ Hourmeter reading: _____ hours

MACHINE: Model 580D Product Identification Number _____

OWNER: Name _____

Address _____

DEALER: Name _____

Address _____

FUEL SYSTEM

- ☐ Check for leaks.
- ☐ Drain water and sediment from the fuel tank.

ELECTRICAL SYSTEM

- ☐ Check operation of starter, alternator, instruments, and warning lamps.
- ☐ Check operation of all lamps.

LUBRICATION

- ☐ Lubricate all grease fittings.
- ☐ Change engine oil.
- ☐ Replace engine oil filter.
- ☐ Check the oil level of the power shuttle transmission.
- ☐ Check the oil level of the transaxle.
- ☐ Check the oil level of the front drive axle (if equipped).
- ☐ Check the oil level of the transfer case (four wheel drive).

ENGINE

- ☐ Tighten cylinder head bolts. (See the Service Manual).
- ☐ Check valves for correct clearance.
- ☐ Check engine idle speed, full throttle-no load speed and full throttle-full load speed.

COOLING SYSTEM

- ☐ Check the coolant level.
- ☐ Tighten all hose clamps.

HYDRAULIC SYSTEM

- ☐ Check the oil level.
- ☐ Check the pressure setting of the loader main relief valve.
- ☐ Replace the hydraulic oil filter.

GENERAL

- ☐ Check operation of loader, backhoe or three-point hitch.
- ☐ Check the operation of the foot and parking brakes.
- ☐ Service the air cleaner.
- ☐ Check the brake master cylinder fluid level.
- ☐ Check for leaks under the machine.
- ☐ Check for loose part.
- ☐ Tighten all hose clamps
- ☐ Check the wheel bearings.
- ☐ Check the tension of the drive belts.

SAFETY

- ☐ Inspect the ROPS.
- ☐ Check the safety decals and replace if necessary.
- ☐ Check safety components (seat belt, lamps, back up alarm, etc.)
- ☐ Make sure the machine has the 580D Operator's Manual in the Manual Storage Box.

DEALER: Learn whether the owner or operator has any problems with the machine. Make sure the owner or operator understands all the information in this manual. Give the owner or operator information he needs.

After Delivery Check done by _____

Name of Dealer (signature) _____

Name of Owner (signature) _____

*Owner Copy*

# CASE TECHNICAL MANUALS

Manuals are available from your Dealer for the operation, service and repair of your machine. For prompt convenient service, contact your Dealer for assistance in obtaining the manuals for your machine.

Your Dealer can expedite your order for operators manuals, parts catalogs, service manuals and maintenance records.

Always give the Machine Name, Model and P.I.N. (product identification number) or S.N. (serial number) or your machine so your Dealer can provide the correct manuals for your machine.

## 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.

**NOTE:** Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

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