580F Construction King Loader Backhoe

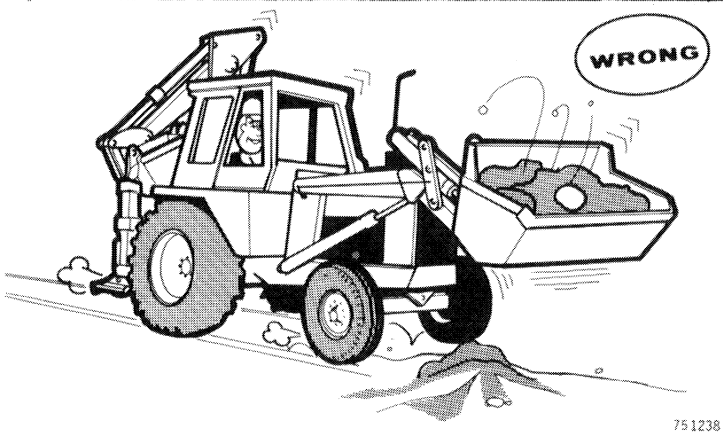
Operator's Manual

9-3611

Reprinted

CASE

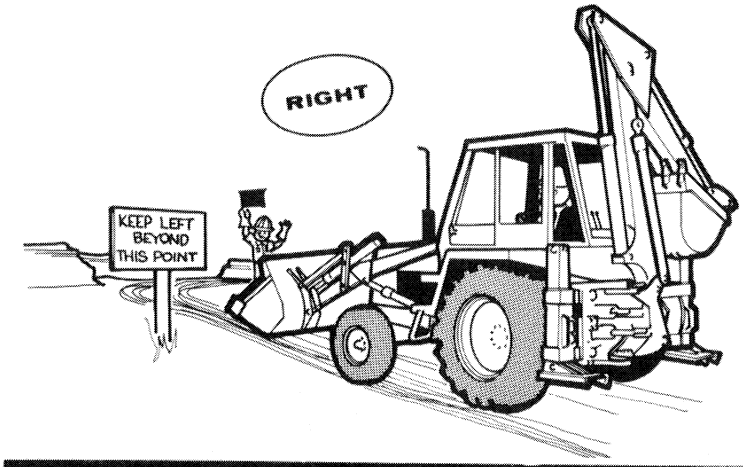
WARNING: Never use the machine when a full bucket is at full height. Keep the bucket as low as possible. This gives better balance and permits you to see more clearly. If you use the machine with a full bucket over ground that is rough, operate at a speed that is safe. 18–6



751238

CAUTION: Before you get out of the machine, lower the components that have been lifted, or put a block to keep them in position, then put the hand brake in the 'ON' position. 28–7

CAUTION: Know and understand the movement of vehicles in your work area. Understand the instructions of the flagman. Understand the road signs or signals. 1–8



751230

WARNING: Put the transmission in a lower gear when you go down difficult grades. Never go down a grade when the transmission is in the 'neutral' position. If you do, there is no control and the machine can turn over. 24–8

SPECIFICATIONS

NOTE: All specifications are given according to ICED definitions, or SAE standards, or correct practices where they have application.

ENGINE

Model	219 David Brown
Type	4 cylinder, inline, Diesel
Firing order	1–2–4–3
Bore and stroke	100.0 x 114.3 cm (3.938 x 4.500 in)
Piston displacement	.3589 cm^3 (219 in^3)
Compression ratio	17.0:1
Horsepower, power shuttle models	
Gross	50 kW (67 hp)
SAE net	47 kW (63 hp)
Horsepower, mechanical shuttle models	
Gross	50 kW (67 hp)
SAE net	47 kW (63 hp)
Engine speeds	
Full throttle, no load	2880 ± 50 r/min
Rated, full throttle	200 r/min
Idle Speed	280 ± 25 r/min
Fuel	Diesel
Air cleaner	Dry type
Valve clearance - engine cold	
Intake	0.30 mm (.010")
Exhaust	0.30 mm (.010")

COOLING SYSTEM

Radiator pressure cap	48 kPa (7 psi)
Thermostat range	82^{o}–93^{o}C (180^{o}–200^{o}F)

ELECTRICAL SYSTEM

Type	12 volt, negative ground
Battery	One 12 volt, 98 amp hour
Alternator	12 volt, 45 amp
Replacement bulbs:	
Instrument cluster	#168 and #194

HYDRAULIC SYSTEM

Main relief valve pressure setting at 2380 rpm high idle	15 167 kPa (2200 ± 50 psi)

6.  WATER TEMPERATURE: This gauge shows the temperature of the engine coolant. The green area shows normal operating temperature. If the gauge needle is in the yellow zone or moves to the red zone, stop the engine and find the cause.

7.  INDICATOR FOR THE LEFT AND TURN SIGNAL LIGHT: This indicator light will go 'ON' and 'OFF' when the switch of turn signal is in the left position.

8.  SERVICE INDICATOR LIGHT FOR THE AIR FILTER: When the air filter service indicator light shows an 'ON' position, check or change the air cleaner element. Do not operate the engine if the indicator light shows the 'ON' position.

NOTE: Before you operate the machine, check the indicator bulb. See item 20 on page 29.

9.  INDICATOR FOR THE ENGINE OIL PRESSURE LIGHT: The oil pressure warning light tells you that the oil pressure in the engine is low or that there is no pressure. You will see it when (1) there is no pressure or low pressure in the engine, or when (2) the engine is running at idle speed and is hot or when (3) the engine is not running and the key switch is in the ON position. Do not permit the engine to run if this light is on and the engine is running above idle speed.

NOTE: Before you operate the machine, check the indicator bulb. When you put the key switch in the ON position, the warning light will show. See item 20 on page 29.

10. Not used.

11.  INDICATOR FOR THE ALTERNATOR LIGHT: You will see this light only when there is a defect condition in the electric system.

8. Do not operate the starter motor more than 30 seconds at one time. After at least 3 minutes, you can operate it again. This will permit the batteries to make another charge and the starter motor to become cool.

9. When you are using the starter, it is possible that white or black smoke will come out at the top of the exhaust pipe. If you do not see smoke and the engine does not start, no fuel is coming into the cylinders.

10. When the engine starts, check the instrument panel for the correct gauge settings.

NOTE: For assistance in starting in cold weather, see page 38.

TO WARM THE ENGINE

Before you run the engine at full speed, run it with the throttle in a position that is half open, for about 5 minutes.

This will make sure there is enough oil, when you start in a cold temperature, and after you change the oil and the filter.

For the first 30 minutes, operate the machine in a gear one position lower than normal. This permits the engine and transmission oils to move freely through the system and prevents extra wear on the parts.

THE 'IDLE SPEED'

When the engine runs at idle speed for a long time, the temperature of the engine coolant goes below the normal operating level. When the engine temperature is low, combustion is not fully activated. This causes deposits of foreign material in the crankcase.

If it is necessary to run the engine at idle speed for a long period, put the throttle in a position that is half open.

Stopping

CAUTION: Before you get out of the machine, STOP THE ENGINE. If the machine operates and there is no operator, the result can be a bad accident.

1. Stop the machine and put the shuttle control in the 'neutral' position. Engage the parking brake.

2. If the machine has operated under heavy load, make a reduction in the engine speed. Put the throttle in a position that is half open for about 5 minutes. This will permit the engine to cool evenly.

To operate in hot temperature

When the temperature is hot, it is necessary to be especially careful with the following:

1. Keep the coolant at the correct level. Keep the cooling system under pressure. If a radiator cap has a defect, change it immediately.

2. Keep radiator free of dirt.

3. Check the tension on the fan belt with frequency.

4. Use lubricants with the correct viscosity for operation at high temperatures.

5. When there is dust in the work area, carefully check the indicator on the air cleaner. Clean or change the air filter element if necessary. Check the dust cup. See P.102.

To operate in cold temperature

The machine can operate in all temperatures. It is necessary to take care when the temperature is cold to prevent damage and make sure that the machine starts easily and operates correctly.

1. Make sure the batteries have a full charge.

2. Use oil of correct viscosity in the crankcase.

3. Use a good ethylene glycol antifreeze in the cooling system.

4. At the end of the day, put the machine in a closed area, or put a cover on it.

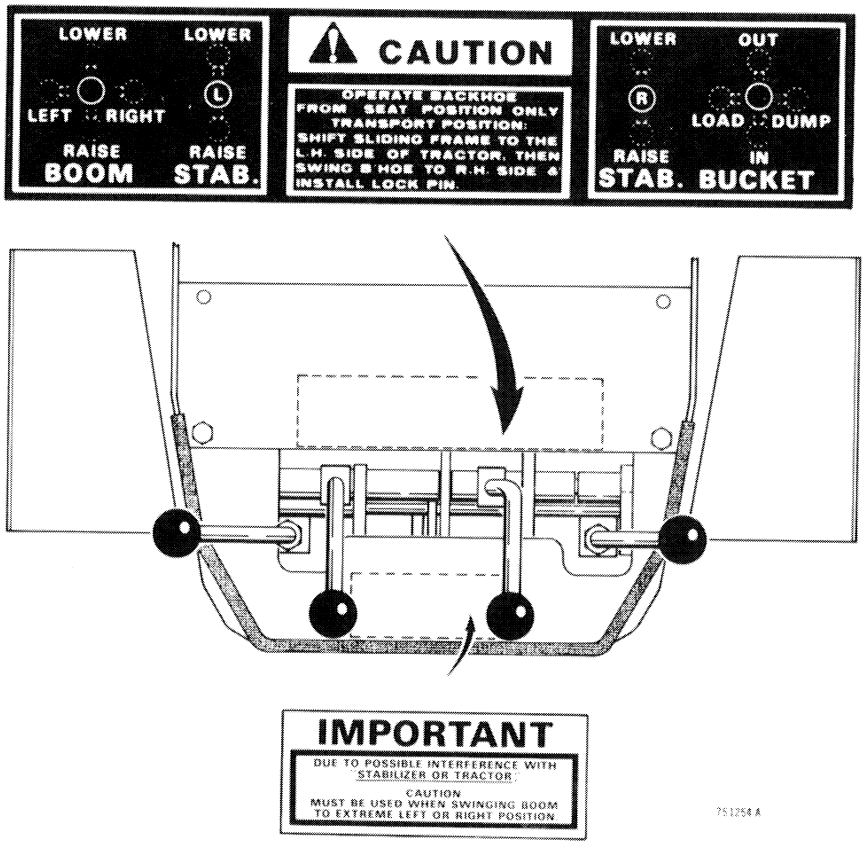
5. At the end of the day fill the fuel tank. This will prevent the water deposits in the tank. Remove any water from the water trap on the tank.

6. When the temperature is cold:

    a. Remove the battery and put it in a warm place. A place where the temperature is about 21°C (70°F) is the best. Before you start the machine for the day, install the battery again. See Battery Heater, page 41.

Axial Backhoe with Dual Controls

The illustration below shows the positions of the control levers and the backhoe action of the dual lever controls.



of the bucket in the fully extended position. When the cylinder is in the fully extended position, keep the bucket control in the 'Load' position for several seconds to fasten the backhoe in position.

IMPORTANT: Do not use the bucket to move the backhoe. This puts hydraulic pressure on the locking cylinders.

To Remove the Backhoe

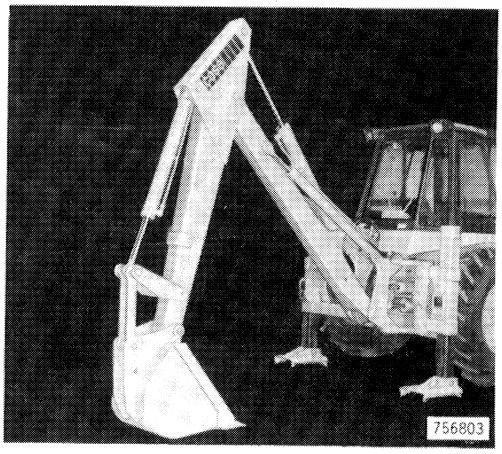
1: Remove the rear panels of the cab. Close the rear window. Remove the rubber mat on the floor at the backhoe control panel. Disconnect the rear lights at the plug on both sides of the machine.

2. Put the backhoe into the correct position:

   a. Put the loader bucket on the ground.

   b. Lower the stabilizers.

   c. Put the boom in the extended position and lower the bucket to the ground. Stop the machine.

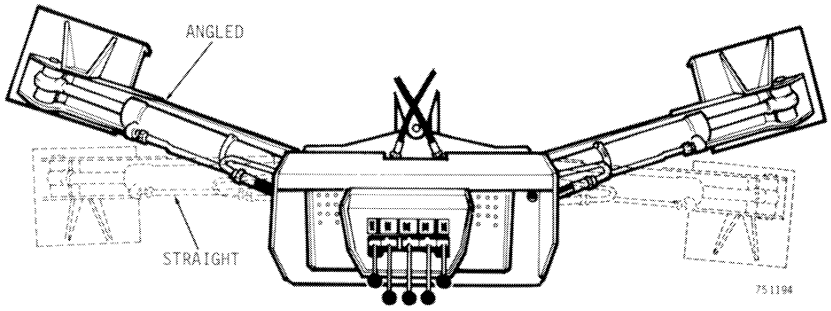


Sideshift Backhoe

3. Use a wrench with a long handle to remove the nut on the upper tie rod, and remove the nut on both sides of the machine.

   NOTE: The torque applied to this nut in the factory is 780-840- N m (575-625 foot-pounds). It is possible that an impact wrench will be necessary to loosen the nut.

NOTE: Be careful when you move the backhoe all the way to the right or left. It is possible for the backhoe to hit the stabilizers or the machine.



To Adjust the Stabilizers on the Axial Backhoe (With 14.9 x 28 Tires Only)

1. Make sure the stabilizer is off the ground.
2. Remove the snap ring from the sharp end of the pivot pin of the stabilizer.
3. Push the pivot pin towards the backhoe bucket just far enough to turn the stabilizer and put the opposite pin hole in alignment.
4. Push the pivot pin into position and install the snap ring.
5. Do the same thing for the opposite stabilizer.

To Change the Direction of the Pads on the Stabilizers

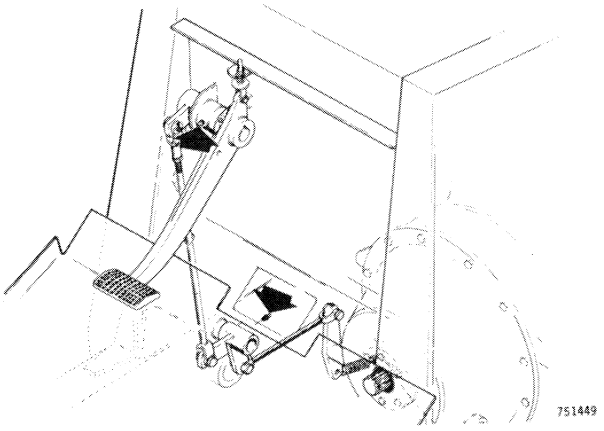
1. Lower the stabilizer until the pad comes in contact with the ground. Make sure there is no hydraulic pressure pushing down on the pad.
2. Remove the snap ring and the mounting pin of the stabilizer pad.
3. Turn the pad around. Install the mounting pin and the snap ring.

IMPORTANT: Be careful when you move the backhoe all the way to the right or left. It is possible that it will hit the stabilizers and cause damage.

Keep fuel in storage outside. Keep the fuel as cold as possible. It is necessary to remove any water from the storage reservoir at regular periods of time. If you keep the fuel in container, put the container in a horizontal position. Make sure the outlet end is about 50 mm (few inches) higher than the base. In this way, water and foreign material can go down to the bottom.

LUBRICANTS

If you use oil and grease of good quality as lubricants at the correct periods of time, the machine will operate with fewer problems. Use the recommendations in this manual when you make a selection of lubricants. See your Authroized Case Dealer for the lubricants shown on page 87.

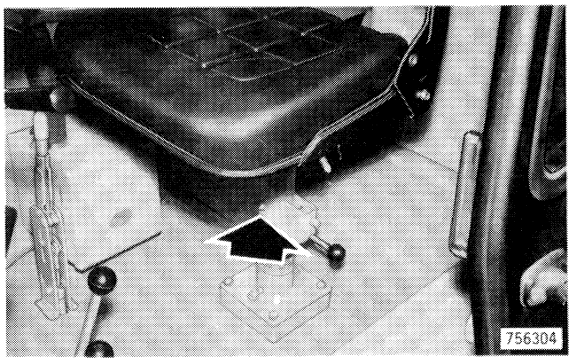


Clutch Linkage (Mechanical Shuttle). . . . . (2)

THE 'BRAKE SHAFTS'

The brake shaft for the mechanical shuttle has (2) grease fittings. The power shuttle has (4) grease fittings. You get access to them from the top of the instrument panel. Remove the two oval plates.

THE 'SEAT'



THE 'REAR AXLE HUBS'

Put grease on the rear axle hubs every 500 hours of machine operation. There is one grease fitting on each side of the rear axle.

Antifreeze

Ethylene glycol is a coolant and antifreeze which you can use in the engine cooling system of your machine during the year. When you make a mixture of ethylene glycol and water according to the instructions, the engine will run at a lower temperature than with water only. The mixture also gives protection in cold temperatures.

Do not mix different types of antifreeze in the cooling system.

When the machine comes from the factory, it has antifreeze in the cooling system. This will give protection to -29°C (-20°F). Never use the same antifreeze for more than one winter.

IMPORTANT: Before the machine is left outside in temperatures below 0°F (32°F), mix the antifreeze and the water together by running the engine at operating temperatures for about 5 minutes.

The 'Thermostat'

Temperature Range

The engine cooling system has a thermostat which starts to open at 80° to 84°C (175° to 182°F), is fully open at 94°C (202°F). It does not close above 94°C (202°F). The temperature of the coolant will change according to the work load of the machine.

To check the Thermostat

You can check to see if a thermostat is bad. Do the following actions:
- Remove the thermostat
- Hang it in water that is being heated
- Using a thermometer, check the temperature at which it opens.

If the thermostat is bad, make a replacement. Make sure the thermostat which you install is a Case thermostat.

To Change the Thermostat

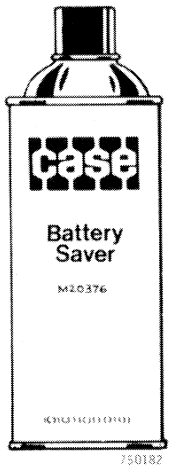
To change the thermostat:

1. Remove fluid from the radiator to a level below the thermostat.

2. Remove the upper radiator hose from the housing of the thermostat. Then, remove the bolts from the thermostat housing. Remove the housing from the water manifold.

›an the battery and terminals by either:

a. Use a Case Battery Saver, part number M20376, according to the instructions. To use this cleaner, put it on and remove it. You do not need any water. It will prevent more corrosion.



or

b. Clean the battery with soda or ammonia. Then flush the battery with clean water. If a Case Battery Saver is not available, install corrosion retarding washers on the battery terminals. You can get these washers where you work.

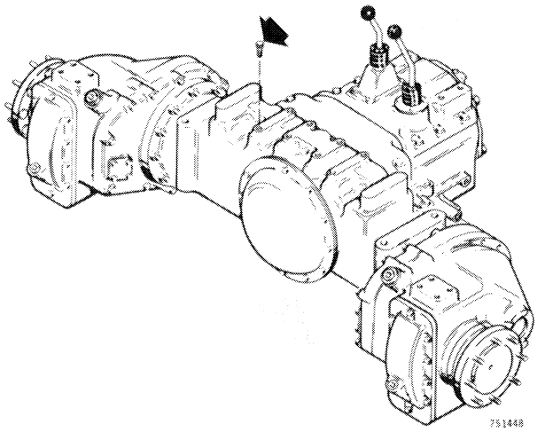
Remove the battery and then clean the battery carrier.

To Check the Specific Gravity of the Electrolyte in the Battery

Use a hydrometer to check the specific gravity (weight) of the electrolyte in the battery. The specific gravity of the electrolyte shows the approximate charge of the battery. Hydrometers give the correct reading when the temperature of the electrolyte is 26.7°C (80°F). To learn the correct value of the specific gravity, it is necessary to know the temperature of the electrolyte. Some hydrometers have a thermometer. If your hydrometer does not have a thermometer, it is necessary to use a separate thermometer to check the temperature of the electrolyte.

The 'Breather Bolt'

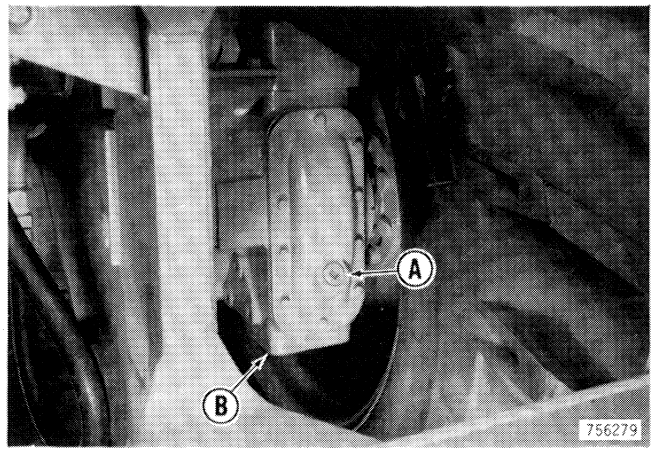
Remove the breather bolt and clean it every 1000 hours of machine operation. It is found on the top of the axle on the left hand side. Clean it in solvent. Use compressed air to make it dry. The top of the bolt is red.



THE 'FINAL DRIVES'

Oil Level

Check the oil level in the final drives every 100 hours of machine operation. There is one final drive on each side of the machine. Make sure the oil level is up to the plug hole. See the illustration below. Add oil if necessary.



A. Oil Level Position and Fill Plug

B. Oil Drain Plug