

**9020 Excavator**  
**Operators Manual**

9-23790



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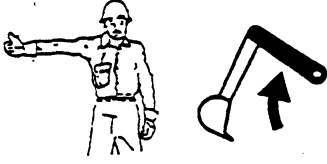
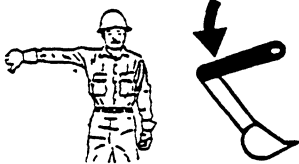

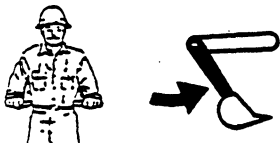

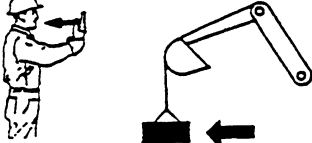
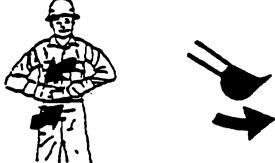
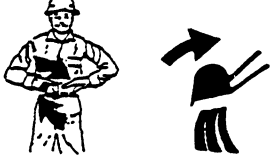
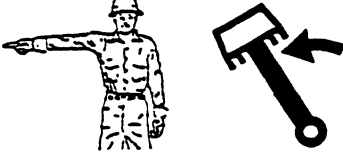
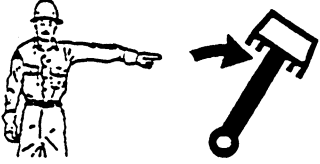
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## SAFETY/DECALS/HAND SIGNALS

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- Be alert and always know the location of all workers in your area. Keep all other persons completely away from your machine and out of the job site area. Injury or death can result if you do not follow these instructions.
- Operate the machine controls from the operators seat only.
- Digging through underground cables, pipes, lines, etc., can cause injury or death. Learn the location of all underground hazards before you operate your machine in any area.
- Operate the machine within the specified capacities and limits. Specifications such as lifting capacities, digging depths, etc., are shown in this manual, starting on page 114.
- When loading trucks, Do Not move the load over the top of the truck cab.
- When working in areas where traffic is heavy, always have a person directing traffic and directing other people for you. Have guard rails, warning signs, etc. as required for your job.
- Stop operating the machine if the machine has trouble. Watch the indicator and warning lamps in the machine. Listen or smell for things that are not normal on your machine.
- Make sure that the travel route on the job site is safe. If there are any bridges, make sure the bridges will safely support the machine.
- Drive around large objects such as large rocks or trees.
- Do Not allow anyone to ride in the bucket of this machine.

### HAND SIGNALS

 BOOM UP	 BOOM DOWN
 ARM OUT	 ARM IN
 LOAD IN	 LOAD OUT
 BUCKET IN	 BUCKET OUT
 SWING LEFT	 SWING RIGHT

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## INSTRUMENTS AND CONTROLS \_\_\_\_\_

**IMPORTANT:** *When driving the machine, always have the drive sprockets positioned to the rear. Your Travel Controls are reversed if the drive sprockets are positioned to the front.*

5. **SELECTOR BUTTON FOR TRAVEL SPEEDS:** Push and release this button for HIGH travel speed. The Travel Speed Indicator Lamp will illuminate. Push and release this button again for LOW travel speed. The Travel Speed Indicator Lamp will be OFF.

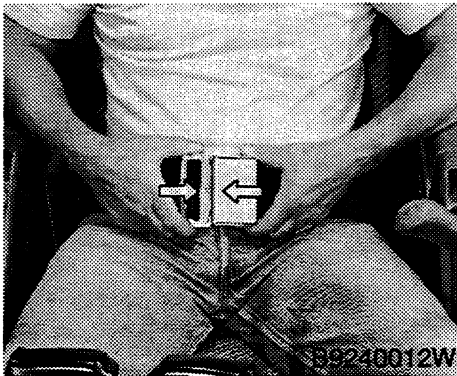
## Seat Belt

**NOTE:** The illustrations that follow show the correct procedure to fasten, release, tighten, and loosen the seat belt. See page 106 for seat belt maintenance.



**WARNING: An accident or sudden machine movement can cause injury or death. Always fasten the seat belt and adjust the seat before you start the engine.**

SA054



*Fasten*



*Release*



*Tighten*



*Loosen*

## Ether Cold Start Aid



**WARNING: Starting fluid (ether) can cause injury or death. An explosion can result if sparks, flame, or extreme heat contact the ether in the starting fluid container. Do not breathe starting fluid vapors. Wear face protection when you remove or install a starting fluid container or when you use an aerosol spray starting fluid. Use starting fluid according to instructions in this manual.**

SA039

### Important Rules When Using Ether

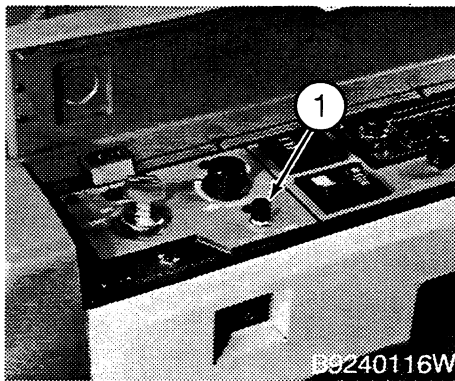
1. Know the correct method for starting your engine with ether.
2. If you weld, grind, or use a cutting torch on the machine, always remove the starting fluid container from the machine. Use compressed air to remove any ether fumes from the area.
3. Do not breathe the ether vapor or let the ether touch your skin.
4. Keep the starting fluid container out of the reach of children.
5. When the temperature is above 35° to 40°F (1.6 to 4.4°C) remove the starting fluid container from the machine. See page 105.
6. Before you discard an empty container use rubber gloves and push the valve in the end of the container to remove any pressure. Do not make a hole in the container and do not put the container in a fire.
7. Do not store extra containers in the operators area.
8. Always read the instructions on the ether container.

### Starting the Engine

The ether start aid injects a measured amount of ether into the engine during cold weather starting.

**NOTE:** *The ether start aid system will operate only when the engine is cold.*

1. See page 45 and use the correct procedure to start the engine.
2. Turn the engine throttle knob to 1/2 open.
3. Actuate the starter motor.
4. Push and release the Ether Start button. If the engine does not start after two attempts, check the supply of ether in the container.



1. Ether Start Button

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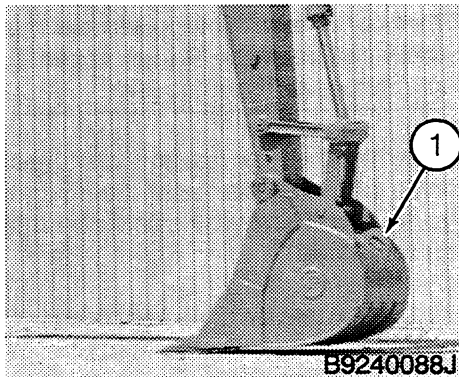
## Lifting Loads with the Machine



**WARNING: This machine is not a crane. For this reason, be very careful if you lift a load. You or others in the area can be injured or killed if you do not follow the instructions below.**

SA141

This machine is not a crane. For this reason, always be very careful when you lift a load. Use the lifting capacity charts in the specifications section of this manual or the lifting capacity charts in the cab. Read the instructions below before you lift with this machine.

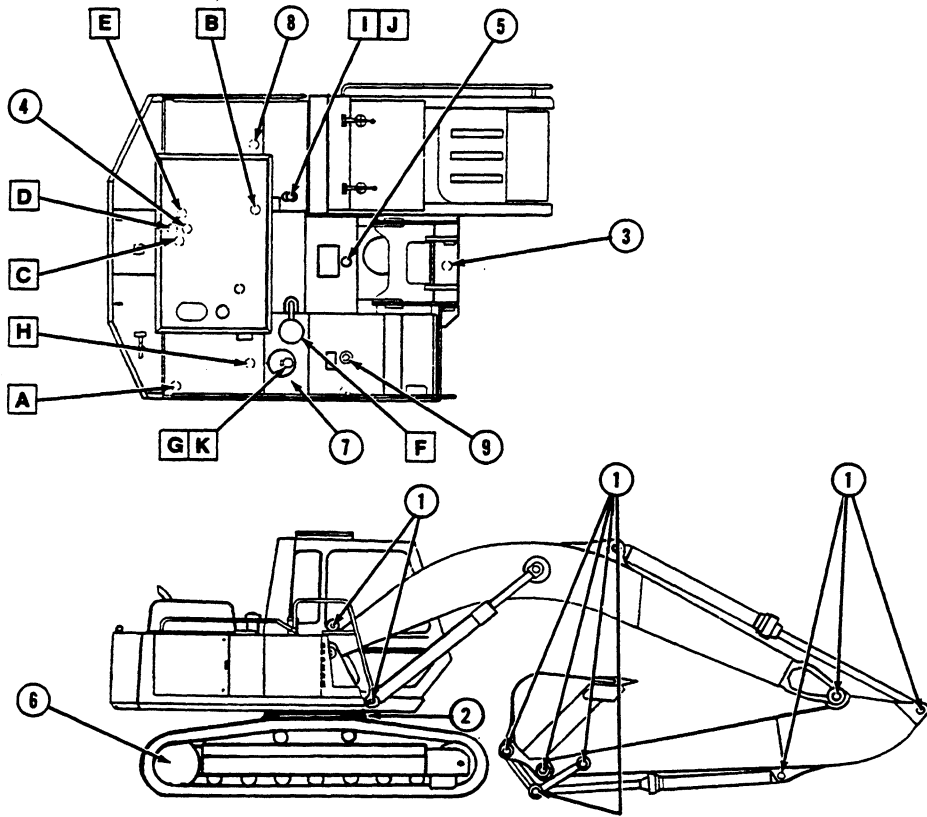


1. Lifting Point - Always Attach the Rigging to This Eye

- Know and understand each signal from the signal person before you start. See pages 19 and 20.
- Always know the location of all persons in your work area.

- Be sure that there is no damage to the wire rope that is used to lift loads.
- Be sure that the wire rope and rigging parts are strong enough for the load being lifted.
- Do not exceed either the radius or the height restrictions shown on the lift capacity charts posted in the cab or in the specifications section of this manual.
- Always move the load slowly. Do not move the load over the top of persons. Keep all persons away from the load.
- When the load is raised, keep all persons away until the load is placed on blocks or is placed on the ground.
- It is dangerous if the load being lifted begins to swing. Be very careful to balance the load correctly.

LUBRICATION/MAINTENANCE CHARTS \_\_\_\_\_



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## Engine Oil Selection

Case No. 1 Engine Oil is recommended for use in your Case Engine. Case Engine Oil will lubricate your engine correctly under all operating conditions.

If Case No. 1 Multi-Viscosity or Single Grade Engine Oil is not available, use only oil meeting API engine oil service category CE.



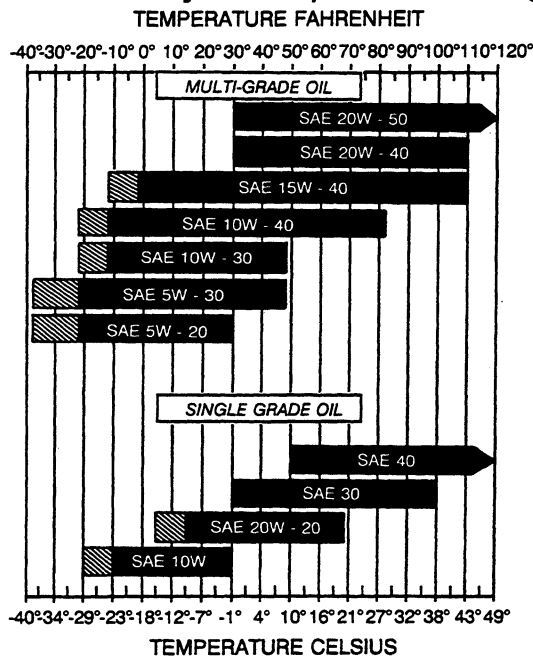
654L9



See the chart below for recommended viscosity at ambient air temperature ranges.

**NOTE:** Do not put Performance Additives or other oil additive products in the engine crankcase. The oil change intervals given in this manual are according to tests with Case lubricants.

### Oil Viscosity / Temperature Ranges



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**NOTE:** Use of an engine oil pan heater or an engine coolant heater is required when operating temperatures are in the cross-hatched area.

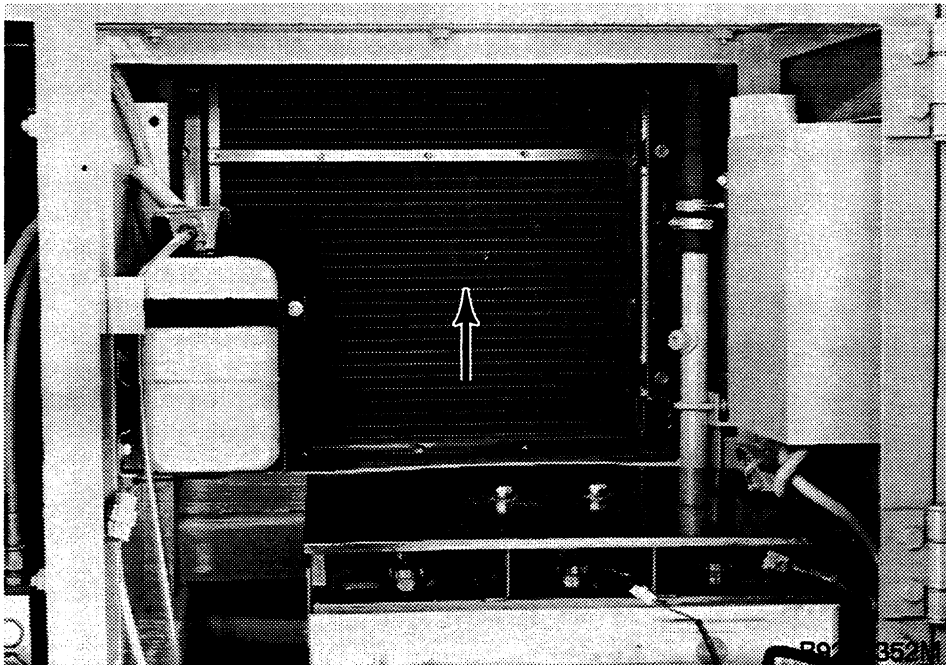
## LUBRICATION/FILTERS/FLUIDS

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10. Start the engine and run at idle speed, close the air bleed valve of the aftercooler when you see air free coolant passing through the clear plastic hose.
11. Add coolant to the radiator and coolant reservoir. Make sure both are full.
12. Cover the radiator core completely on the left-hand side of the machine and start the engine. This will increase the temperature of the coolant faster. Run the engine at full throttle.
13. When the coolant temperature gauge shows normal operating temperature (4th or 5th bar illuminates) open the heater shutoff valve.
14. Continue to run the engine until the last AMBER bar illuminates. Remove the cover from the radiator.
15. Reduce the engine speed to IDLE and continue to run for at least 30 seconds.
16. Stop the engine and let the coolant cool.
17. When the radiator feels cool, remove the radiator cap and coolant reservoir cap.
18. Fill the radiator to the top and install the radiator cap.
19. Fill the coolant reservoir to the FULL mark and install the cap.

### Cleaning the Radiator and Hydraulic Oil Cooler

The radiator and hydraulic oil cooler must be cleaned periodically.

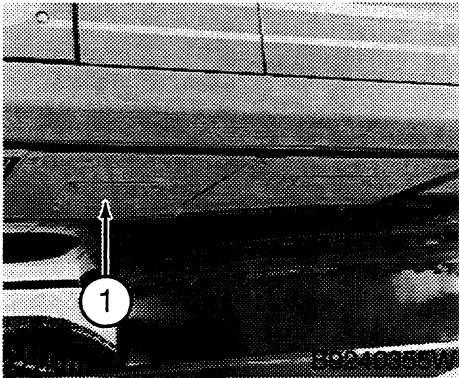


Remove the cooler screen and clean with warm water and detergent.

## Hydraulic Oil Change

Change the hydraulic oil every 2000 hours of operation.

1. Remove the reservoir fill cap.
2. Remove the cover plate that is located under the hydraulic reservoir.



1. Cover Plate

3. Have a container that will hold 22 U.S. gallons (83.3litres).

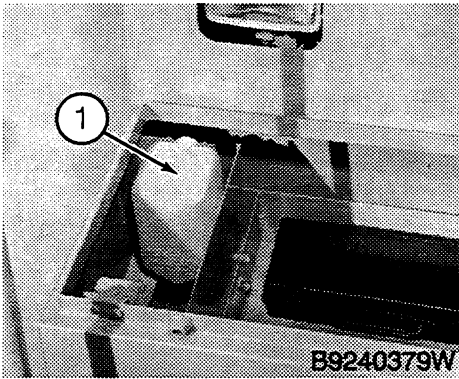
4. Remove the drain plug from the reservoir. After all oil is removed, install the drain plug.

5. Put new hydraulic oil in the reservoir. Raise the oil level up to a point between the two lines on the oil level decal.

6. Start the engine and run at idle speed. Check for oil leak.

7. Stop the engine and check the oil level.

## WINDSHIELD WASHER RESERVOIR



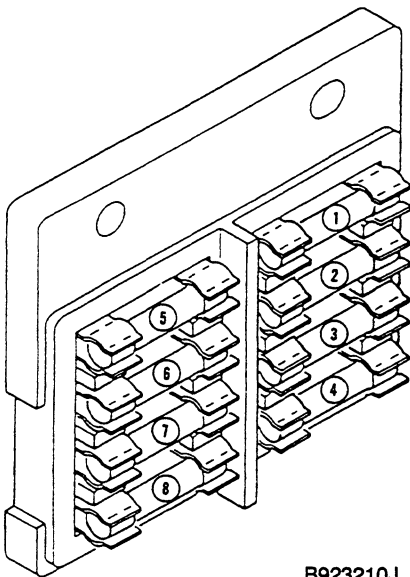
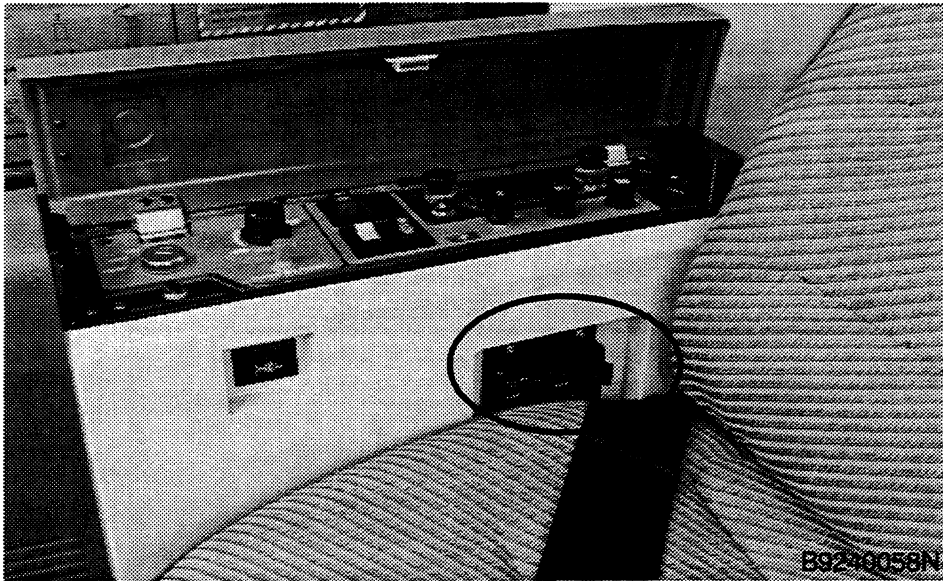
1. Windshield Washer Reservoir

The windshield washer reservoir is located on the right side of the machine. To add fluid, pull the cap up.

**IMPORTANT:** *When the temperature of the outside air is below freezing, 32°F (0°C) and below, use an antifreeze type washer solution.*

## Fuses

The fuses in this machine are to the right of the operators seat. Remove the cover for access. The amperage for each fuse is stamped on the fuse. See the following chart for the correct location of each fuse.



Fuse	Fuse rating	Name
1	10A	Controller
2	15A	Electric control
3	15A	Horn Work light
4	15A	Wiper
5	10A	Radio Cab light
6	10A	Oil Pressure control
7	15A	Heater Cooler
8	15A	Spare

**IMPORTANT:** Always replace the old fuse with a new fuse of the same rating. Always turn the the key switch OFF before replacing a fuse.

SPECIFICATIONS

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**SPECIAL BOLT TORQUES**

	(Bolt Size)	(Hex Size)	pound-feet	(Nm)
Turntable bearing mounting bolt	M20	30 mm	384 to 434	(520 to 590)
Swing reduction gear mounting bolt	M20	30 mm	384 to 434	(520 to 590)
Engine mounting bolt				
Radiator side	M12	19 mm	40 to 47	(55 to 65)
Pump mounting side	M10	17 mm	46 to 54	(60 to 75)
Radiator mounting bolt	M12	19 mm	40 to 47	(55 to 65)
Hydraulic pump mounting bolt				
Pump mounting	M10	17 mm	46 to 54	(60 to 75)
Coupling hub mounting	M16	Hexagon hole	152 to 166	(205 to 225)
Oil tank mounting bolt	M16	24 mm	137 to 152	(185 to 205)
Control valve mounting bolt	M16	24 mm	105 to 127	(140 to 170)
Operator's cab mounting nut	M16	24 mm	109 to 128	(150 to 175)
Travel reduction gear mounting bolt				
Motor section	M16	24 mm	197 to 230	(265 to 310)
Sprocket section	M16	24 mm	197 to 230	(265 to 310)
Shoe mounting bolt	M18	27 mm	394 to 401	(535 to 545)
Carrier roller mounting bolts	M20	30 mm	384 to 434	(520 to 590)
Track roller mounting bolt	M16	24 mm	195 to 230	(265 to 310)
Counterweight mounting bolts	M27	41 mm	536 to 625	(725 to 845)

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