

FH4
Operators Manual

9-8470



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CAUTION: Engage the transport locking mechanisms in the backhoe before moving the machine between work areas, or when the backhoe is not being used.

100-76



CAUTION: Make sure the seat belt is not twisted or can be cut by the parts of the seat or machine.

100-71



WARNING: Articulating joint! Stay clear of this area. Machine movement can cause personal injury.

100-48



WARNING: Put the backhoe in the transport position from the operator's seat only. Do not stand beside the boom and operate the backhoe. Serious injury can result.

100-81



CAUTION: Keep alert. Permit only authorized persons in the work area. Make sure you know the location of all persons in the work area.

100-6



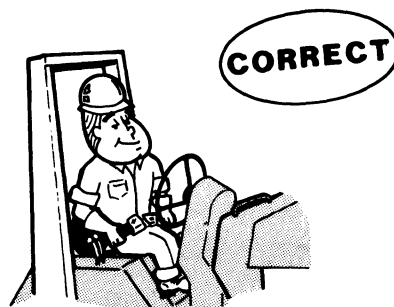
WARNING: Operate this machine from the operator's seat only. Any other position can result in personal injury.

100-26



WARNING: Fasten your seat belt. When operating a machine equipped with a ROPS, always fasten your seat belt before starting the engine.

D 100 70





WARNING: Special hardware is used to install the ROPS. Replace parts only with those parts shown in the Case Parts Catalog.

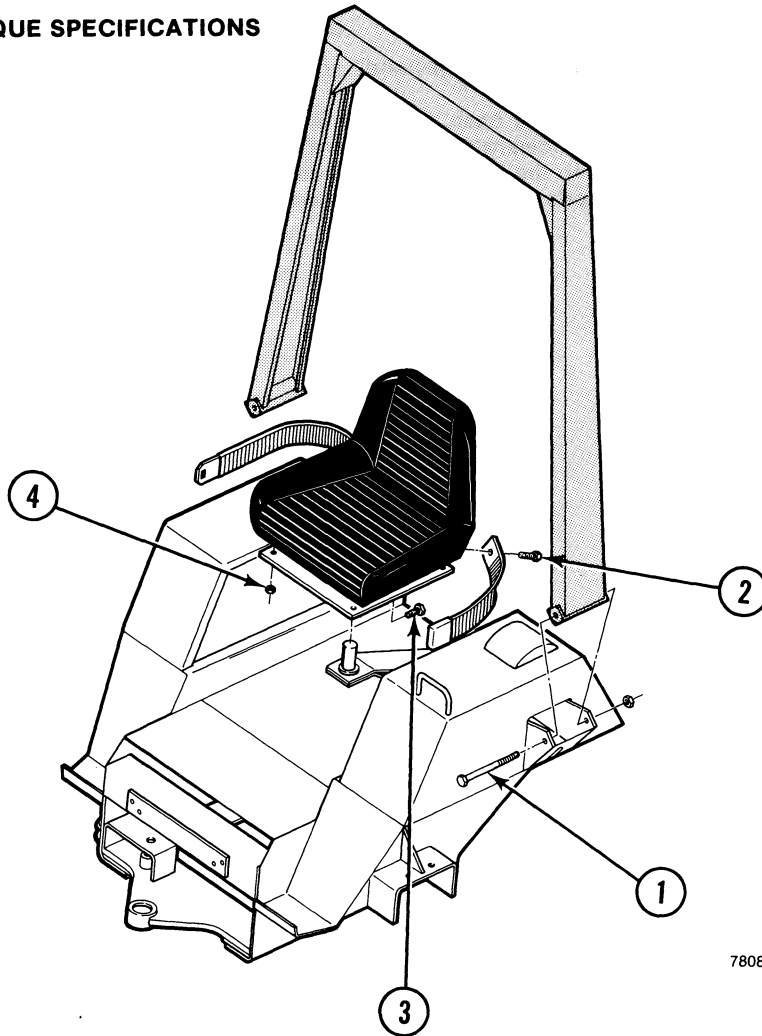
100-66



WARNING: Do not remove the ROPS except for service. Install the ROPS correctly before operating the machine.

100-67

ROPS TORQUE SPECIFICATIONS







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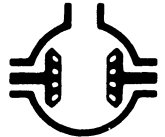


- | | | |
|--------------------------------|-------|-------------------------------|
| 1. 3/4" NC Grade 5 (2 places) | | 250-300 N•m (180-220 lb. ft.) |
| 2. 7/16" NF Grade 5 (2 places) | | 45-60 N•m (35-45 lb. ft.) |
| 3. 3/8" NC Grade 5 | | 25-35 N•m (20-25 lb. ft.) |
| 4. 5/16" NC Grade 5 (4 places) | | 15-20 N•m (10-15 lb. ft.) |

INTERNATIONAL SYMBOLS

International symbols are used in this manual. These symbols help give a description of the controls, operation and maintenance of this machine.

A solid arrow (\longrightarrow) always indicates direction. A broken arrow (\dashrightarrow) indicates movement in a particular direction.

Study the following symbols carefully. Many of them are self-explanatory. Others require more study. For example, the symbol for engine is (). This symbol can be used in various combinations to stand for engine oil (), engine oil pressure (), or engine rpm ().

				
FAST	SLOW	IGNITION SWITCH	ALTERNATOR	ENGINE SPEED (RPM)
				
HYDRAULIC OIL TEMPERATURE	VOLTMETER	PARKING BRAKE	THROTTLE	FILTER
				
OIL	AIR FILTER	GREASE	GEARBOX	HOURLMETER
				
ENGINE OIL PRESSURE	HYDRAULIC RESERVOIR	WATER TEMPERATURE	ENGINE OIL	FUEL SHUTOFF
				
TRANSMISSION OIL	ENGINE COOLANT	DIFFERENTIAL	DIESEL FUEL	OIL FILTER INDICATOR



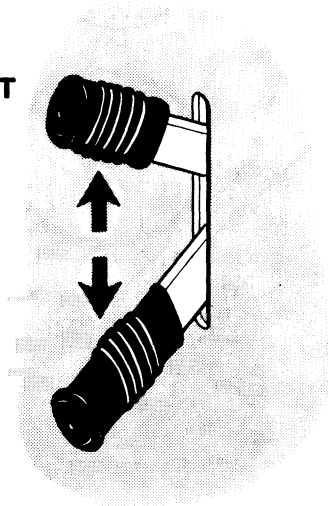
WARNING: Stop the machine and engage the parking brake before shifting. Hydrostatic braking will not occur if the gearbox is in neutral.

100-62

**TRANSPORT
RANGE**

NEUTRAL

**WORK
RANGE**



800072

5. **PREHEATER CONTROL.** The control energizes the glow plugs to help cold starting. Push the button for approximately one minute before starting the engine. Hold the button in while operating the starter.

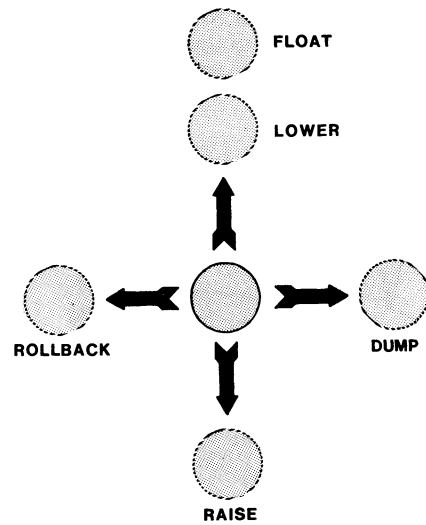


WARNING: Do not use ether as a starting aid to the engine preheater. Using ether can cause an explosion and fire.

100-43-A

6. **GLOW PLUG HEAT INDICATOR.** The indicator will illuminate when the glow plugs are hot enough to start the engine.

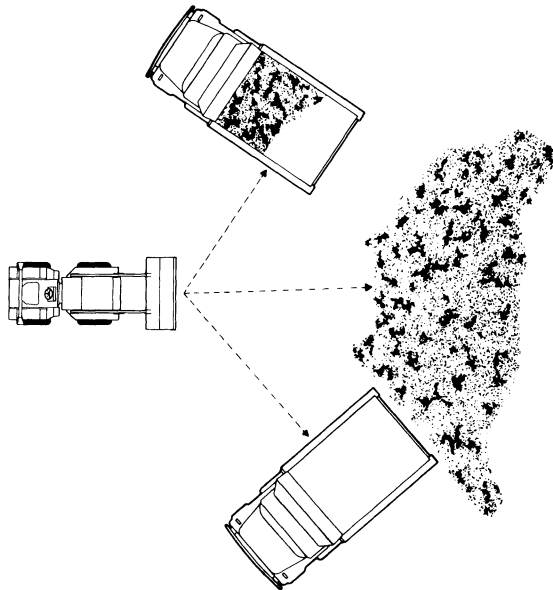
CONTROLS



1. **SINGLE LEVER CONTROL FOR THE LOADER.** Move the lever to the left to roll back the loader bucket. Move the lever to the right to dump the bucket. Move the lever rearward to raise the lift arms. Move the lever forward to lower the lift arms. Push the lever completely forward into the "FLOAT" detent. While the lever is in the "FLOAT" detent, the bucket will follow the contour of the ground. The lever must be manually returned to the neutral position from the "FLOAT" detent.

PREPARING THE WORK AREA

The work cycle must be as short as possible. It is important to good operation for the truck to be in the correct position. Make the work area level, if necessary. A smooth work area for the machine and a level parking area for trucks will decrease the time needed to do the job.



810102

FUELS, FLUIDS AND LUBRICANTS

FUELS

The diesel engine in the machine runs most efficiently with No. 2 diesel fuel.

NOTE: The use of No. 1 diesel fuel can result in a loss of engine power and an increase in fuel consumption.

In very cold weather, temporary use of No. 1 diesel fuel (or a mixture of No. 1 and No. 2 diesel fuel) can be necessary. This will prevent wax particles from stopping the flow of fuel to the injection pump.

DIESEL FUEL SPECIFICATIONS

The American Society for Testing Materials (ASTM) has made a widely known specification for diesel fuels. This specification is known as D975. This specification is used in the United States, Canada and many other areas. The fuel used in this machine must be according to this ASTM specification.

Pour point, maximum	12° C (10° F) below lowest atmospheric temperature at which the engine must start and run.
Cetane Number, minimum	40 (45-55 for winter or high altitudes)
Sulphur, by weight, maximum	0.50 of 1%
Water and Sediment, by volume, maximum	0.05 of 1%
Ash, by weight, maximum	0.01 of 1%
Carbon residue on 10% maximum	0.20 of 1%
Distillation, 90% point	282°-329° C (540°-625° F)
End point	357° C (675° F)
Flash point, minimum	51° C (125° F) or Legal
Viscosity, centistokes at 38° C (100° F)	2.0-4.3
Saybolt Universal Seconds at 38° C (100° F)	32-40
Corrosion, copper strip, 3 hours at 100° C (212° F)	No. 3 ASTM
API gravity, minimum	30

FUEL STORAGE

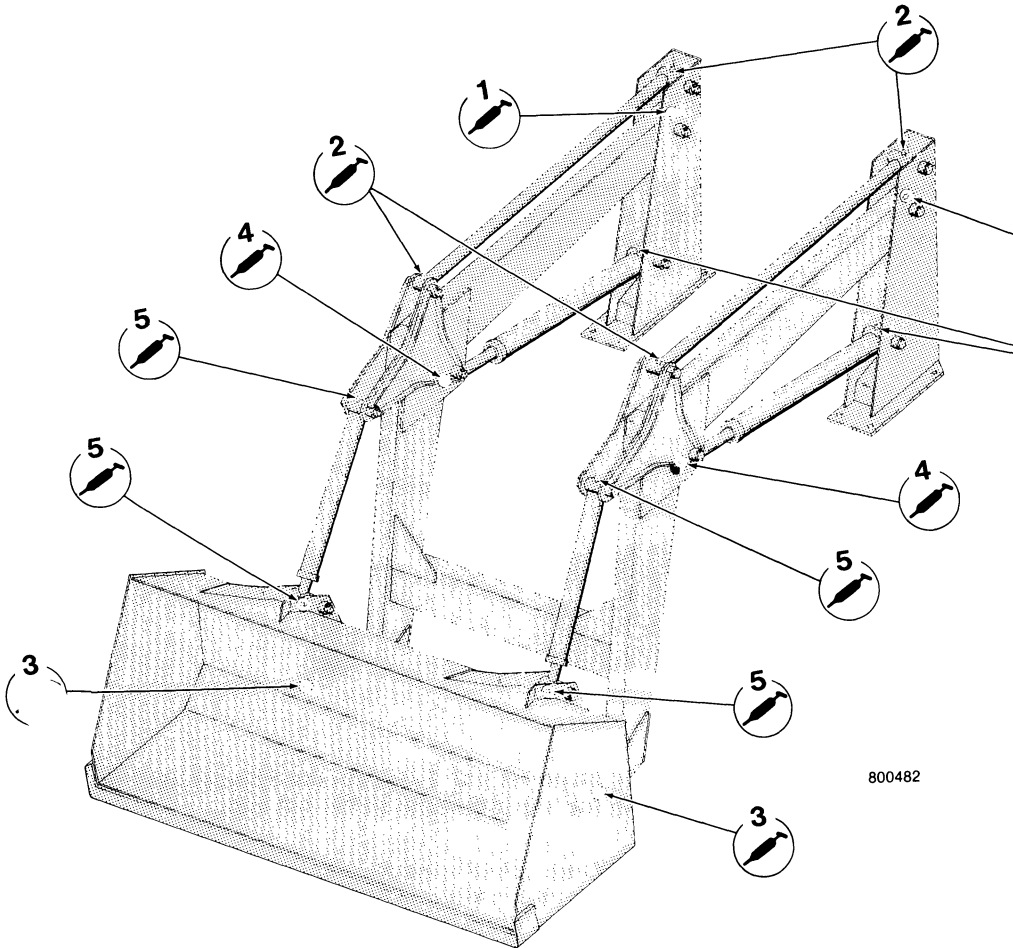
Long storage periods will increase the amount of sediment, dirt, water and other foreign material in the fuel. Many engine problems can be caused by dirty fuel and long storage periods.

Diesel fuel must not be put in black iron tanks or containers for storage. These containers will cause compounds that can damage the fuel injection system of the engine.

A storage installation like the one shown following is the best type. The storage tank can be above or below ground level. The tank must have a slope of 1/2 inch per foot away from the fuel outlet. This slope permits sediment to move away from the fuel outlet.

SERVICE POINTS — LOADER

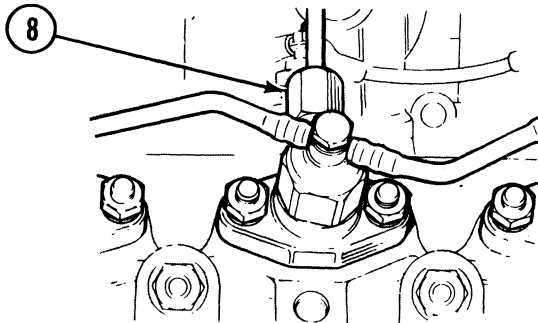
CAUTION: Stop the engine before maintenance is done on the machine unless the operator's or service manual gives other instructions.



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REF. NO.	SERVICE POINTS	SERVICE REQUIRED	FREQUENCY
1	Arm Lift Pivots (2 places)	Lubricate with No. 2 Lithium Base Grease	Daily or after every 10 hours of operation
2	Leveling Arm Pivots (4 places)	Lubricate with No. 2 Lithium Base Grease	
3	Bucket Pivots (2 places)	Lubricate with No. 2 Lithium Base Grease	
4	Lift Cylinder Pivots (4 places)	Lubricate with No. 2 Lithium Base Grease	
5	Bucket Cylinder Pivots (4 places)	Lubricate with No. 2 Lithium Base Grease	

- E. Loosen the high pressure bolt (7) on the injection pump. Operate the starter with the throttle control in the full speed position. When the fuel flowing from around the bolt is free of air bubbles, tighten the bolt.

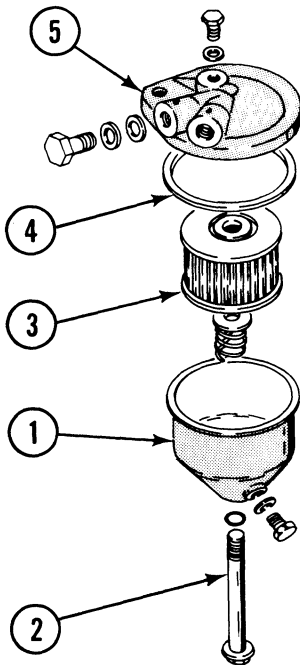


770433

- F. Loosen the union nut (8) at the injector on the four high pressure tubes. Operate the starter with the throttle in the full speed position. When the fuel flowing from around the union nuts is free of air bubbles, tighten the nuts.
- G. Dry any diesel fuel that is on the engine.
- H. Start and run the engine.
- I. Check for leaks.

FUEL FILTER — 2.1 Litre Engine

The fuel filter must be replaced after every 250 hours of operation or yearly, whichever comes first.



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Hold the bottom of the filter case (1) in position and remove the center bolt (2) from the bottom of the filter case (1). Remove the filter case (1) and the filter element

ADJUSTMENTS

FAN BELT ADJUSTMENT — 1.8 LITRE ENGINE



WARNING: Do not try to make any adjustment or repairs to the belts or chains while the engine is running. Personal injury can result.

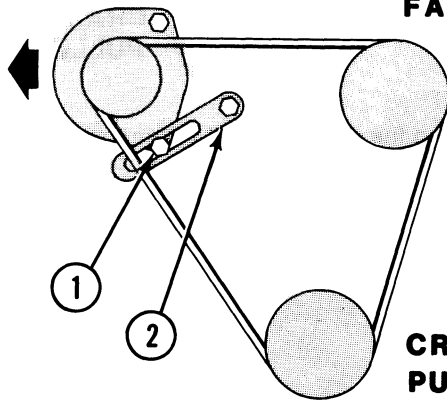
100-58

Check the fan belt tension after the first 20 hours of operation and then every 200 hours. The use of a belt tension gauge will give the most accurate reading.

Adjust a new belt to 54 kg (120 lb.). Then keep 36 kg (80 lb.) tension on the belt.

ALTERNATOR

FAN PULLEY



CRANKSHAFT PULLEY

790031

To adjust the belt tension, loosen the adjusting bolt (1) on the mounting strap (2). Hold the alternator away from the engine with a prybar and tighten the adjusting bolt. Check the belt tension.

FAN BELT ADJUSTMENT — 2.1 LITRE ENGINE



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100-58

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