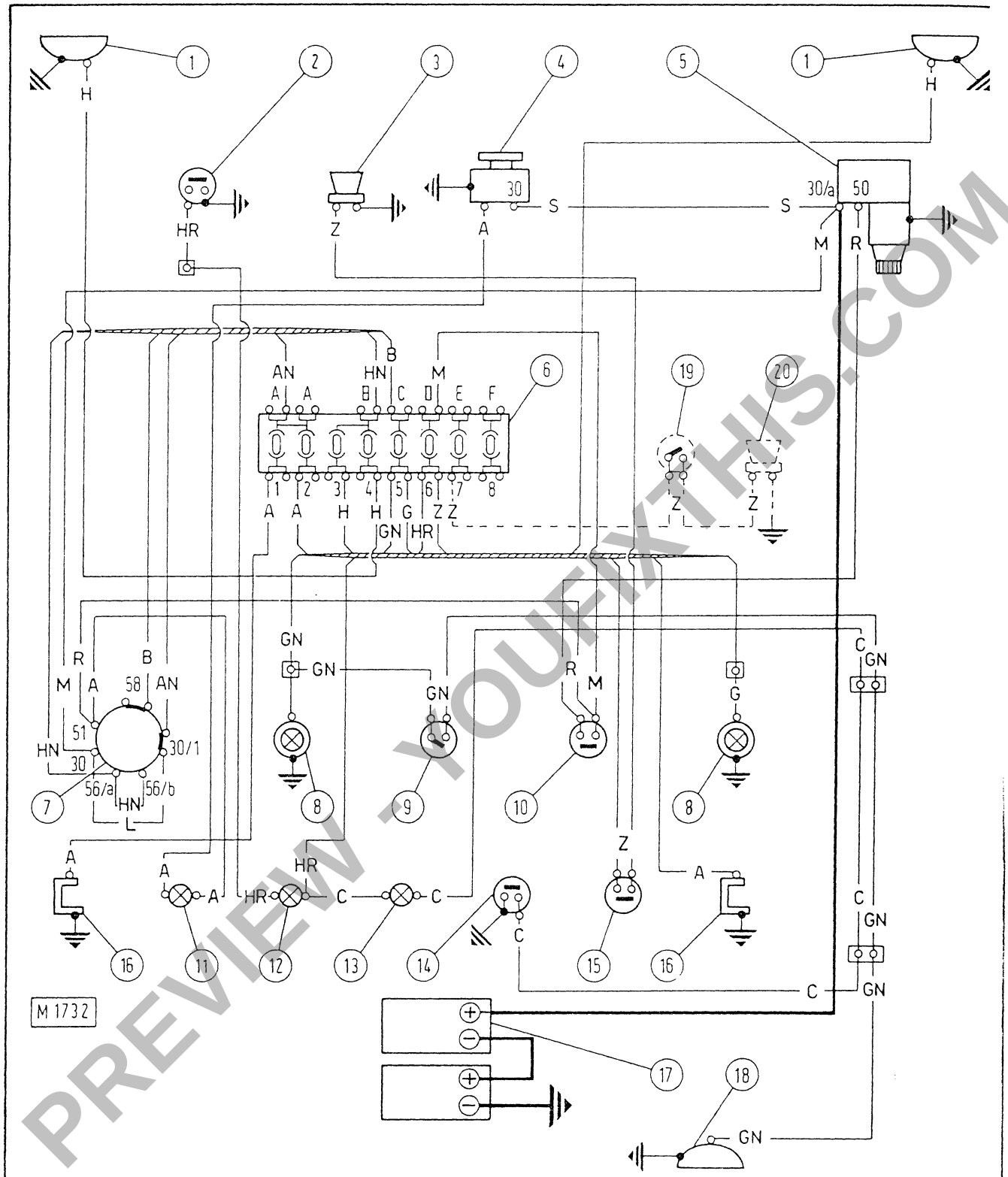


Note: The traced lines show the back-up alarm connections.

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FIG. 33 - ELECTRICAL SCHEMATIC (24 Volt)

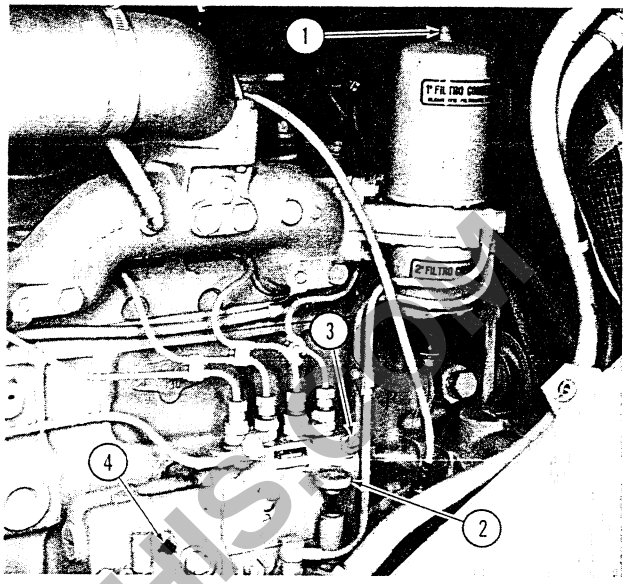
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BLEEDING FUEL SYSTEM

Air enters the fuel system during long periods of shut-down, when filters are changed, lines are disassembled and when the tank becomes empty. The presence of air in the system makes it difficult to start the engine and requires bleeding the system. When the tank has been filled, make sure the cock behind the operator's seat is open and proceed as follows to bleed system:

Unscrew plug, Fig. 12 (1), about 3 turns; turn handle (2) on the priming pump and pump fuel which will come out of the plug, until it is free of air bubbles. Tighten the plug and pump the handle (2) a few more times before retightening it; loosen screw (3) and repeat above procedure to bleed injection pump.



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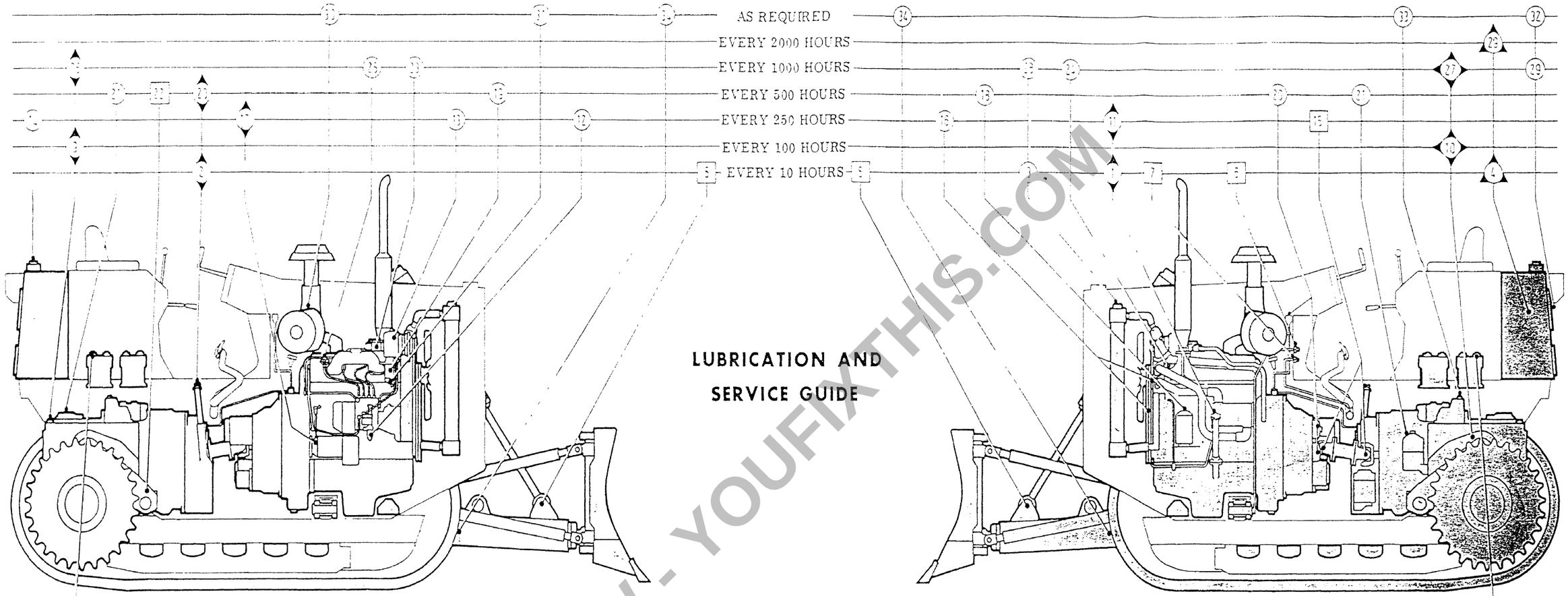
FIG. 12 - INJECTION PUMP

1. Fuel filters air bleed plug
2. Priming pump handle
3. Injection pump air bleed screw
4. Excess fuel button

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LUBRICATION AND SERVICE GUIDE

○ Clean, check and or adjust △ Hydraulic circuit oil □ Pressure gun lubricant

▲▼ Engine crankcase oil ✧ Regular gear oil

SERVICE INTERVAL	SERVICE POINT ITEM	SERVICE POINT PAGE	DESCRIPTION OF SERVICE	NO. OF POINTS	TYPE OF LUBRICANT
Each 10 hours or Daily	1	38	Engine crankcase - check oil level	1	▲▼
	2	38	Radiator - check coolant level	1	○
	3	39	Transmission and torque converter system - check oil level	1	▲▼
	4	39	Hydraulic tank - check oil level	1	△
	5	39	Dozer linkage - lubricate	4	□
	6	40	Front suspension - lubricate		□
	7	40	Pedals - lubricate		□
	●	40	Ripper linkage - lubricate	all	□
Each 50 hours or weekly (Also perform 10 hour services)	8	41	Batteries - check electrolyte level	12	○
Each 100 hours or 2 weeks (Also perform 10 and 50 hour services)	9	41	Bevel gear, steering clutches - check oil level	1	
	10	41	Final drives - check oil level	2	
Each 250 hours or monthly (Also perform 10 and 50 hour services)	11	42	Engine crankcase - change oil	1	▲▼
	12	42	Fuel sediment bowl - clean	1	○
	13	43	First fuel filter - change	1	○
	14	43	Fuel tank - drain condensation		
	15	43	Drive shaft - lubricate	2	
	16	44	Belts - check sag on fan and alternator belts		
	17	44	Starter motor - lubricate pinion side support		
Each 500 hours or 3 months (Also perform 10, 50 and 250 hour services)	18	45	Engine oil filter - change		○
	19	45	Second fuel filter - change		○
	20	45	Hydraulic system - change oil and clean filter (filter element and magnetic rod on intake side and filter element on delivery side)		
	21	47	Steering clutches hydraulic oil filter - change return oil filter, clean intake filter screen and magnetic rod		
	22	47	Track supports - lubricate	4	
Each 1,000 hours or 6 months (Also perform 10, 50, 100, 250 and 500 hour services)	23	48	Engine breather - clean		
	24	48	Engine valves - check gap		
	25	48	Fuel injectors - check setting		
	26	48	Bevel gear, steering clutches - change oil		
	27	49	Final drives - change oil		
	28	49	Engine cooling system - flush system		
Each 2,000 hours or yearly (Also perform 10, 50, 100, 250, 500 and 1000 hour services)	29	50	Dozer hydraulic system - change oil and clean tank, filter, screen and magnetic rod		
PERIODIC SERVICES (Perform as required)	30	51	Air filter - clean outer element		
	31	53	Fuel filters - drain condensed moisture		
	32	53	Dozer hydraulic return oil filter - change		
	33	54	Brakes - check pedal travel		
	34	54	Tracks - check sag		

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OPERATING INSTRUCTIONS

Before starting engine and/or placing vehicle in motion, be certain vehicle has been properly prepared for use and has been properly serviced since last operating period. Refer to PREPARATION FOR USE and LUBRICATION and SERVICE INSTRUCTIONS for detailed information.

WARNING

- Your safety and the safety of those around you depends upon your using care and judgment in the operation of this equipment. Know the positions and the functions of all controls. All equipment has limitations. Understand the speed, braking, steering, stability and load characteristics of the machine before starting to operate.
- This machine and its attachments are to be operated only by a qualified operator seated in the operator's seat.
- Before moving machine or attachments be sure exposed people in the area are clear of the machine. Walk completely around machine before mounting. Sound horn.
- If the engine is to be started indoors, insure proper ventilation to remove deadly exhaust gases.
- Warn all people who may be servicing or working around machine before starting engine.
- Never leave machine unattended with engine running.
- Don't rush when mounting vehicle. Use grab handles; be certain grab handles are free of mud and debris. Clean floor plates if cluttered or slippery. Remove or secure all maintenance equipment and personal items not necessary on vehicle.

If repairs have been made since last operating period, be sure all nuts and bolts affected by repairs have been tightened and all necessary adjustments have been made.

If unit is to be operated in frigid climates, consult Dealer or write factory for information regarding availability of special cold weather equipment.

STARTING THE ENGINE

Make sure the transmission shift lever is in neutral and the neutral lock lever is in the lowered position, and the dozer equipment lever(s) are disengaged.

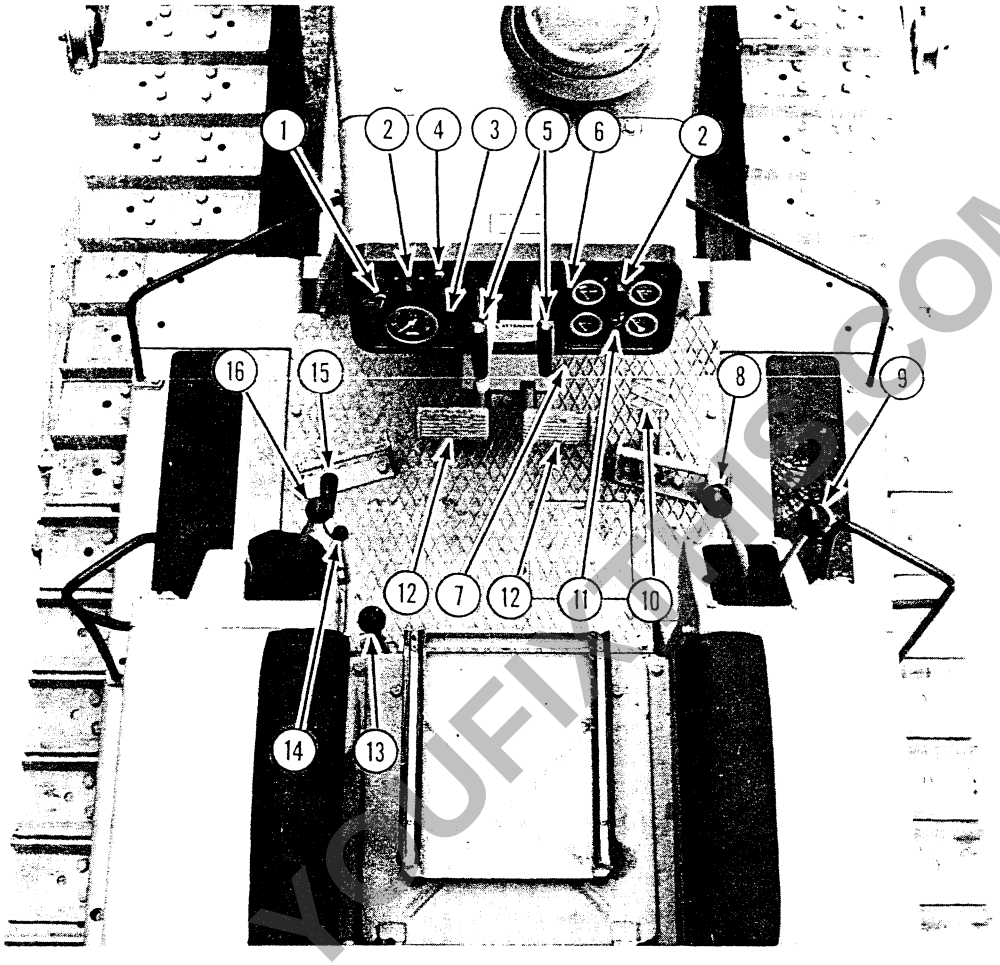
Make sure fuel supply line cock, Fig. 11 (C), is open. If the engine has been shutdown for a long period or if starting for the first time with low outside temperature, unscrew the priming pump handle Fig. 12 (2), and pump it about twenty times; push excess fuel button, Fig. 12 (4). Turn the starter key to the first position and then press starter button.

Before operating the tractor, let the engine warm-up for a few moments at low speed and avoid any quick accelerations.

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OPERATING CONTROLS AND INSTRUMENTS



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FIG. 6 - OPERATING CONTROLS

1. Electrical system switch
2. Dashboard lights
3. Starter button
4. Rear floodlight switch
5. Steering clutch levers
6. Instrument panel
7. Inspection light electrical receptacle
8. Dozer blade control lever
9. Ripper control lever (optional)
10. Decelerator pedal
11. Horn button
12. Brake pedals
13. Brake locking lever
14. Throttle/engine shut-off lever
15. Neutral lock lever
16. Transmission shift lever

1. ELECTRICAL SYSTEM SWITCH. Individual positions for the key are shown in Fig. 7.

Position 0 — None of the circuits is activated except the electrical receptacle (7) which always has voltage. (The key is removable).

Position 1 — Current to starter button, battery charging gauge, low transmission oil pressure gauge, and restricted hydraulic system return oil filter gauge.

Position 2 — As position 1, plus dashboard lights, rear flood-

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SPECIFICATIONS

ENGINE

Type ..... OMC03-130MT Var. 11, Diesel, 4 stroke, direct injection
Number of Cylinders 4
Bore and Stroke ..... 4.5" x 5.1" (115 x 130 mm)
Displacement ..... 330 cu. in. (5401 cm^3)
Compression ratio 17.4

VALVES

Overhead valves; camshaft in crankcase:

Intake	opens B. T. D. C.	8°
	closes A. B. D. C.	60°
Exhaust	opens B. B. D. C.	60°
	closes A. T. D. C.	8°

Valve to rocker clearance (to check timing)
Intake ..... 0.012" (0,30 mm)
Exhaust ..... 0.020" (0,50 mm)

FUEL SYSTEM

Fuel pump, in-line injection pump and centrifugal-weights speed governor in a single unit, lubricated by engine oil.

Fuel filtered by: bowl filter with strainer on fuel inlet pump: double filter with one element over other; inner element acts as water separator.

Pump timing to engine: 25° B. T. D. C. with 1st cylinder in compression stroke (begin delivery).

Injection firing order 1-3-4-2

Injectors with 4 orifice nozzles calibrated to 2773-2816 psi (195-205 kg/cm^2).

Dry air cleaner with paper cartridges; automatic exhaust of dust from filter. Restricted filter indicator on dash.

Oil bath air cleaner (optional).

LUBRICATION

Forced by dual gear pump (delivery and scavenge).

Oil pressure (with engine warm and at maximum speed): ..... 71.7 psi (5 kg/cm^2)

Oil filtration: strainer on suction side; replaceable filter with relief valve on delivery side.

Oil cooling: heat exchanger through water from engine radiator.

COOLING

Water circulated by centrifugal pump. Radiator with vertical tubing. Pusher fan mounted on water pump shaft. Water circulation from engine to radiator controlled by thermostat.

Thermostat check data:
begins to open ...179°-184°F (81°-85°C)
fully open ..... 198° F (94°C)

STARTING ..... electric motor

POWER TRAIN

Transmission and Transmission Converter.

Torque Converter: 13 in., single stage with maximum conversion ratio at stall 2.3:1.

Transmission: three speeds forward and three reverse controlled by hydraulic power-shift acting on clutch.

Automatic shift lever return (to neutral) when engine is shut-off. Neutral lever lock.

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LEGEND FOR FIGURE 33

1. Headlights
2. Pressure switch (Indicator lamp 12)
3. Horn
4. Alternator
5. Starter motor
6. Fuse box
7. Starter switch/light switch
8. Dashboard lights
9. Rear light switch
10. Starter button
11. Battery recharge indicator
12. Low transmission oil pressure
13. Restricted hydraulic oil filter
14. Pressure switch (Indicator lamp 13)
15. Horn button
16. Current receptacle
17. Batteries
18. Rear light
19. Back-up alarm pressure switch
20. Back-up alarm

COLOR CODE

A — Light Blue
B — White
F — Orange
G — Yellow
H — Gray
L — Blue
M — Brown
N — Black
R — Red
S — Pink
V — Green

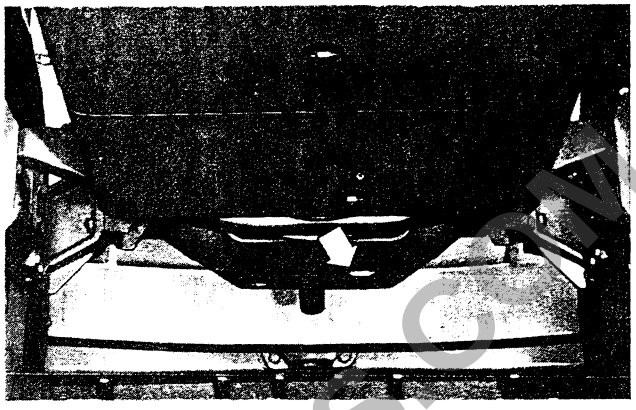
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250 HOUR (or monthly) SERVICES

Also perform 10 and 50 hour services



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11. Engine Crankcase — Change oil. Drain oil through bottom plug; to facilitate draining remove the indicator rod (see point 1). When oil stops flowing, crank the engine a few seconds by the starter to discharge the oil left in the system. Refill with fresh oil proceeding as follows:

Replace the drain plug. Pour in oil to the MAX mark on rod.

WARNING

- Do not run engine of this machine in closed areas without proper ventilation to remove deadly exhaust gases.
- Warn all people who may be servicing or working around machine before starting engine.
- Never leave machine unattended with engine running.

Run the engine at idle speed

Stop the engine and after a few minutes add oil up to the MAX mark on rod.

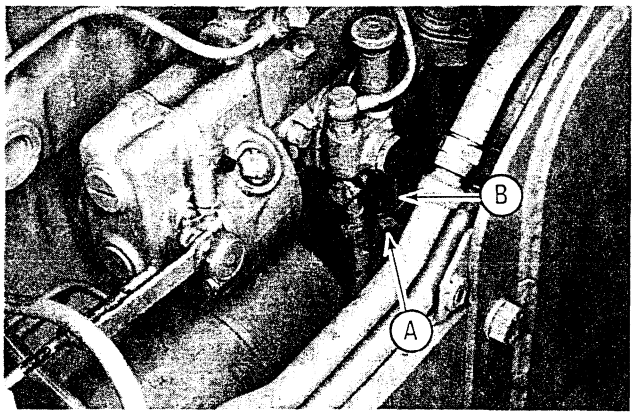
NOTE: If the fuel used has a sulfur content higher than 1%, change oil at every 150 working hours.

12. Fuel Filter Sediment Bowl

WARNING

Never use gasoline, solvent, or other flammable fluids to clean element.

Close tank cock, Fig. 11, (B) and push lever A. Remove the strainer in bowl B and clean it with brush and a non-inflammable, non-toxic commercial solvent. After reassembling the filter and bowl, open cock and pump priming pump several times.



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