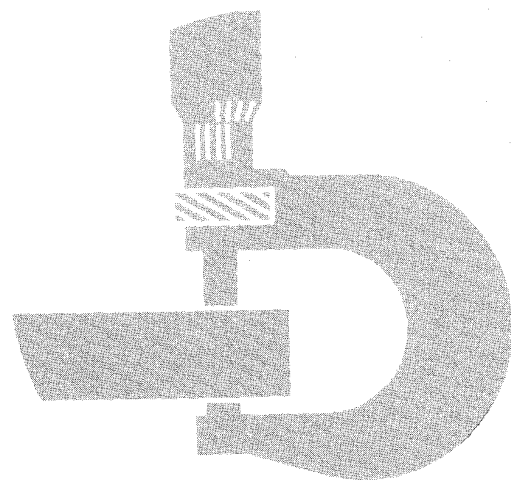


**John Deere
860-B
Scraper**



Technical Manual

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 switch 1830-22
 Thermostats, housings and
 water piping 0418-1
 Torque converter:
 Housing and cover 0641-3
 Hydraulic system - See
 transmission hydraulics,
 page 0360-1 - 0360-15
 Turbine, gears, shaft, etc 0651-1
 Transmission:
 Gears, shafts, bearings and
 power shift clutch 0350-1
 Housings and covers 0341-1
 Hydraulic system 0360-1
 Input drive shafts and U-joints 0325-3
 Transmission belly pan 1913-1
 Transmission filter restriction
 indicator 1676-7

Transmission oil pressure gauge 1676-2
 Transmission oil temperature gauge 1676-5
 Turbocharger 0416-1
 Turn indicator lights 1676-6

U

Unloading valve, brake 1060-6
 Upper idler assembly 3612-3

V

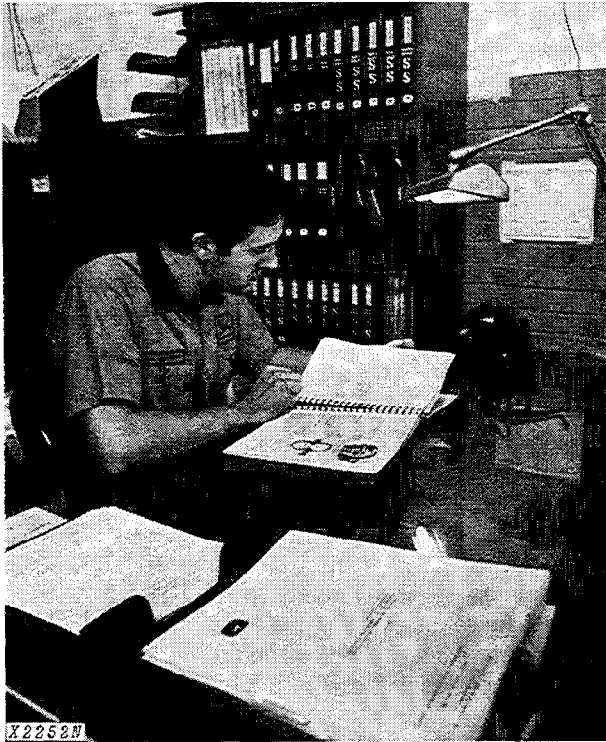
Valve, bowl control 3560-1
 Valve, brake 1060-1
 Valve, brake unloading 1060-6
 Valve, compressor relief 1830-23
 Valve, differential lock
 control 0210-13
 Valve, elevator control 3660-1
 Valve, expansion 1830-21
 Valve, lockup clutch 0360-7
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 Valve, steering control 0960-13
 Ventilating system, engine 0408-1
 Ventilator outlet tube assembly 0408-1

W

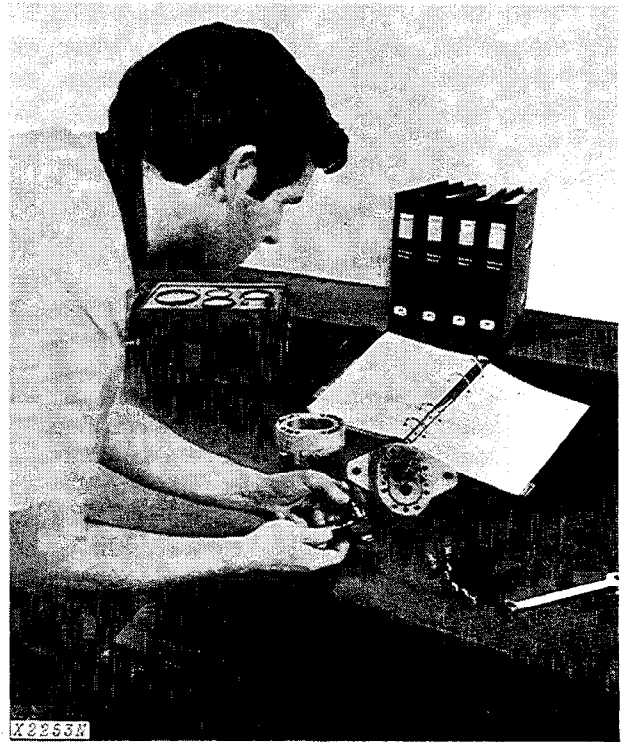
Water manifold 0418-1
 Water pump, engine 0417-1
 Wheel axles 0230-1
 Wheels and fastenings 0110-3
 Windshield wiper 1810-3
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 Wiper switch 1674-5
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Group II INTRODUCTION AND SAFETY INFORMATION

INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

•FOS Manuals—for reference

Fundamentals of Service (FOS) Manuals cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced service technicians.



When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the technical manual.

•Technical Manuals—for actual service

Technical Manuals are concise service guides for *specific* machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

This technical manual was written for you—an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Read it when you need to know correct service procedures or specifications.


Some features of this manual:

- Inside front cover - "Table of Contents".
- Section I - Contents, safety information, general specifications and general services.
- Sections 1 through 42 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, visual inspection, testing, and adjustments.
- Specifications are listed and illustrated at the end of each section.

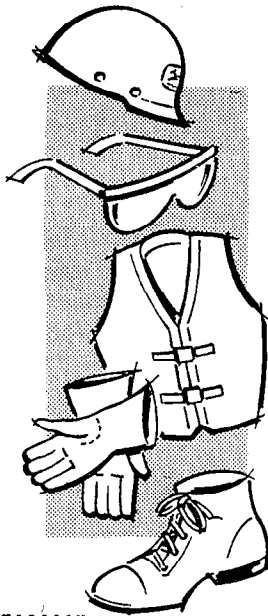
MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27999N

 This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.

EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!



T27501N

See your shop supervisor for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirator.

RIGHT

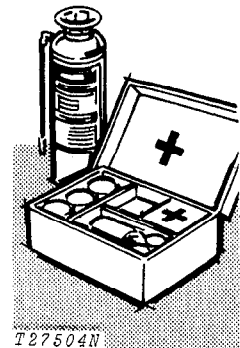


WRONG

T27502N

BE ALERT!

Plan ahead — work safely — know how to use a first aid kit and a fire extinguisher — and where to get assistance.



T27504N

Maintenance Area

Make sure the maintenance area has enough ventilation.

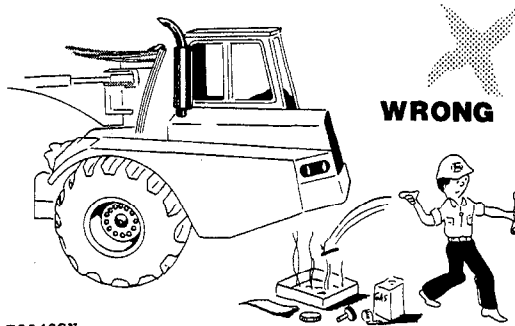
Keep the maintenance area CLEAN AND DRY. Oily and wet floors are slippery. Greasy rags are a fire hazard. Wet spots are dangerous when working with electrical equipment.

Keep starting aids in a cool, well-ventilated place, out of reach of unauthorized personnel.

MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS

Fuel Is Dangerous!

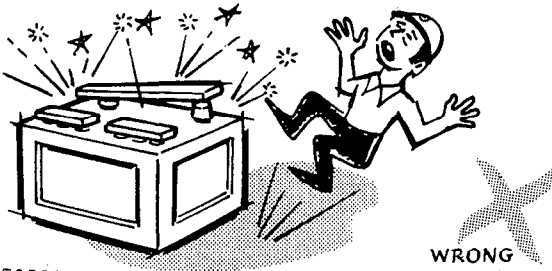


T55487N

- Do not smoke while putting fuel in the fuel tank.
- Do not smoke while working with material that will start on fire easily.
- Stop the engine before filling the fuel tank.
- Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.

Battery Gas Is Highly Flammable!

When charging batteries, be sure there is enough ventilation.



T27506N

- Do not check the battery charge by putting metal objects across the posts.
- Do not let sparks or open flame near batteries.
- Do not smoke near battery.

Flame Is Not a Flashlight!

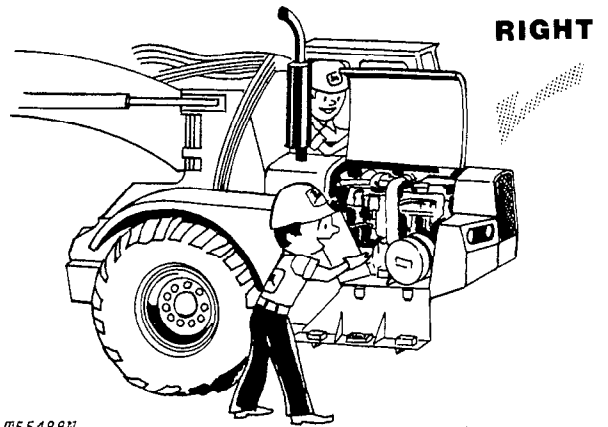
NEVER USE OPEN FLAME AROUND THE MACHINE.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

UNDER ALL MAINTENANCE CONDITIONS

Do not work on the equipment unless you are approved to do so. Then be sure you know the safe and correct procedure.

Never work on equipment while it is being operated.



T55488N

When the engine is running, avoid working on equipment.

If you must work on the machine with the engine running, ALWAYS USE TWO service technicians. One must be at the controls. The other must be within sight of the operator.

KEEP HANDS AWAY FROM MOVING PARTS

- Put a support under all raised equipment.
- Never work under a raised bowl.
- Lower the bowl to the ground.

If the machine is on a slope, use blocks to hold it in place.

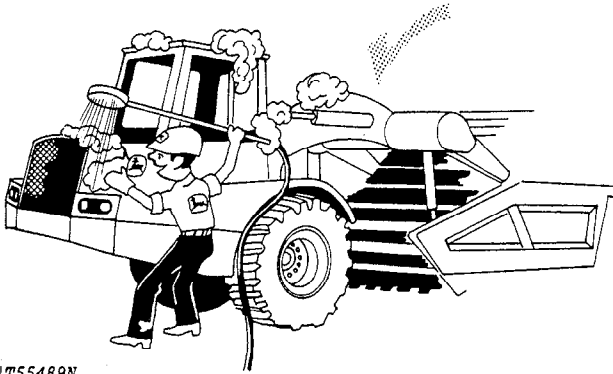
Do not lift heavy parts by yourself. Use hoisting equipment for this.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA

When drilling, grinding, or hammering metal, wear safety glasses.

BE CAREFUL DURING SERVICE AND REPAIR

RIGHT



T55489N

Keep ALL equipment free of dirt and oil.

Clean oil, grease, mud, ice or snow from the operator's station, steps and hand rails.

When getting the engine ready for storage, remember that inhibitor changes easily into gas and is dangerous. After adding the inhibitor, seal and tape openings. When you are not using the inhibitor, keep the can tightly closed.

Do not remove the radiator cap unless you can hold your hand on the radiator tank. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before removing the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before working on the hydraulic system. Stop the engine. Lower the bowl to the ground. Move the control levers until the bowl does not move.

When checking hydraulic pressure, be sure to use the correct test gauge.

Before working on the fuel system, close the fuel shutoff valve.

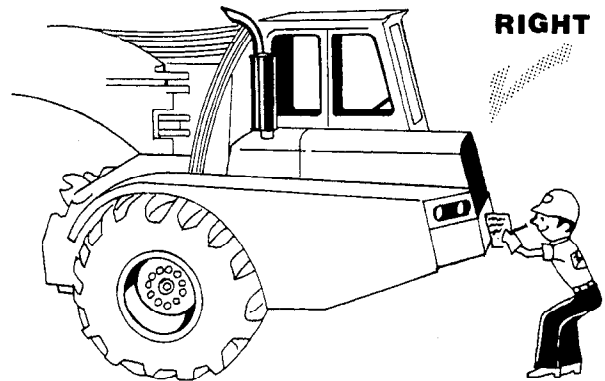
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

KNOW EQUIPMENT IS READY!

Check all guards, shields, and safety bars. Every one must be in place and tight.

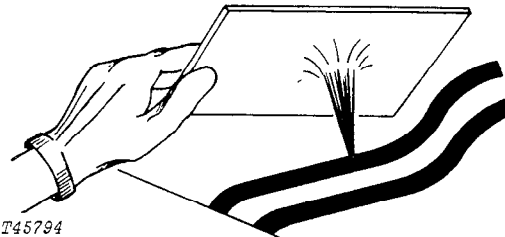
CHECK IT OUT!

- GUARDS
- SHIELDS
- SAFETY BARS
- ROLL-OVER PROTECTIVE STRUCTURES
- SEAT BELTS, ETC.



T55789N

Carefully inspect all systems for leaks.



T45794

Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

Escaping fluid under pressure can penetrate the skin.

If injured by escaping fluid, see a doctor at once.

Group III GENERAL SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 26.5-25, 24 ply rating tires and standard equipment.)

Capacity (SAE heaped):

Volume 15 cu. yd. (11.47 m³)
 Total weight of payload @ 2500 lb./yd.³
 (1483 kg/m³) 37,500 lb. (17 010 kg)

Power (@ 2100 engine rpm): **SAE** **DIN**
 Gross 240 hp (179 kW*)
 Net 225 hp (168 kW) 228 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. Gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500 ft. altitude and 85°F. temperature and DIN 70 020 standard conditions of 760 mm Hg barometer (sea level) and 20°C temperature. Engine maintains rated horsepower up to 6000 feet (1 829 m) altitude.

**In the International System of Units (SI), power is expressed in kilowatts (kW).*

Engine: John Deere turbocharged and intercooled diesel, 6-cylinder, 4-stroke cycle
 Bore and stroke 5.12x5 in. (130x127 mm)
 Piston displacement 619 cu. in. (10 144 cm³)
 Compression ratio 15.2 to 1
 Maximum torque @
 1400 rpm 724 lb-ft (982 Nm) (100 kg-m)
 NACC or AMA (U.S. Tax) horsepower 62.9
 Main bearings 7
 Lubrication Pressure system w/full-flow filter
 Cooling Pressurized w/thermostat and fixed bypass
 Fan Suction
 Air cleaner w/restriction indicator Dry
 Electrical system 24 volt w/alternator
 Batteries (two 12 volt) Reserve capacity:
 310 minutes

Transmission:

Two-phase, single-stage torque converter with free-wheeling stator lockup clutch and Power Shift transmission (5 speeds forward - 1 reverse). Stall ratio is 2.56 to 1.

Differential Lock Foot-operated, hydraulically actuated

Drive Axle .. Differential drive; over-all ratio 22.22 to 1; planetary final drives

Brakes: Hydraulic, power actuated. Two accumulators provide several brake applications after engine is stopped.

Tractor Wet-disk between differential and planetaries. No adjustment needed.

Scraper... Expanding shoe self-adjusting in wheels.

Parking..... Manually controlled, mechanical, on axle input shaft.

Power Steering: Position-responsive
 Articulated frame hydraulically actuated by dual cylinders.

Turning circle
 (180 deg. turn) 32 ft. 5.4 in. (9.89 m)

Articulation 180 deg.

Tractor Oscillation (total) 50 deg.

Hydraulic System: Open-center
 System Pressure 2000 psi (137.9 bar) (140.6 kg/cm²) for brakes and differential lock; 2250 psi (155.1 bar) (158.2 kg/cm²) for elevator and steering.

Pumps (@ 2050 pump rpm):
 Steering 34 gpm (129 L/min)

Brakes, differential, and differential lock 4.5 gpm (17 L/min)

Elevator and bowl 85 gpm (322 L/min)

Hydraulic Cylinders:	Bore	Stroke
Lift (2).....	5 in. (127 mm)	20 in. (508 mm)
Sliding floor (1)	5.25 in. (133 mm)	38.8 in. (986 mm)
Ejector gate (2) ...	3 in. (76 mm)	44.5 in. (1.13 m)
Steering (2)	4 in. (102 mm)	25.6 in. (650 mm)
Piston rods ... Ground, heat-treated, chrome-plated, polished		
Lift and steering cylinders	2 in. (51 mm) dia.	
Sliding floor cylinder	2.5 in. (64 mm) dia.	
Ejector gate cylinders	1.75 in. (44 mm) dia.	

Elevator ... Heavy duty reversible, hydraulic pump-driven w/planetary gears and live driveshaft.
 Number of flights 23
 Spacing of flights 12.52 in. (318 mm)
 Width of flights 6 ft. 6 in. (1.98 m)
 Speed (@ 2100 engine rpm) .. 200 fpm (61 m/min)
 Length (top to bottom) 12 ft. (3.66 m)

Bowl ... Heavy-gauge steel with reinforcing and box construction. Sliding floor rides on heat-treated rails. Cutting edge retracts. Independent axles are vertically adjustable.

Cutting Edge ... 8 ft. 9.9 in. (2.69 m) wide; 3 sections, reversible and replaceable, high-carbon steel. Each section is adjustable vertically 2 in. (51 mm).
 Center section ... 1x13x77.9 in. (25x330x1979 mm)
 End sections 1x13x14 in. (25x330x356 mm)

Tires:
 26.5-25, steel-cord radials
 26.5-25, 24 ply rating, E2

Capacities:	U.S.	Liters
Cooling system	11.5 gal.	43.5
Fuel tank	90 gal.	340.7
Engine lubrication, including filter	34 qt.	32.2
Transmission case and filter	12 gal.	45.4
Differential case, filter, and lines ...	15 gal.	56.8
Hydraulic reservoir	25 gal.	94.6
Elevator gear case	10 qt.	9.5

Weight Distribution:	lb.	kg
Empty: Drive axle	32,120	14 570
Scraper axle	15,720	7 130
Total	47,840	21 700
Loaded: Drive axle	44,110	20 010
Scraper axle	41,230	18 700
Total	85,340	38 710

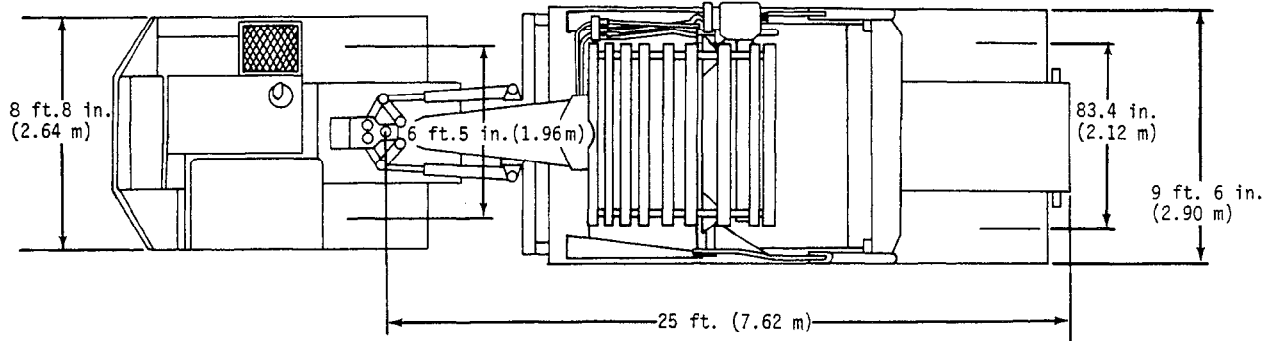
Additional Standard Equipment:

Tachometer	Engine oil pressure gauge
Hour meter	Engine water temperature gauge
Speedometer	Alternator indicator light
Suspension seat	Reverse warning alarm
Foot throttle	Low brake pressure warning system
Differential lock	Independent, adjustable scraper axles
Vandal protection	Parking brake warning light
Vertical muffler	Transmission pressure gauge
Fuel gauge	Transmission filter indicator
Fenders (tractor)	Converter temperature gauge
Cigar lighter	Windshield w/wiper
Horn	Heavy-duty elevator
Lights	Cold weather starting aid
Transmission bottom guard	Rear frame central lube system
Hydraulic oil filter indicator	Self-adjusting scraper brakes

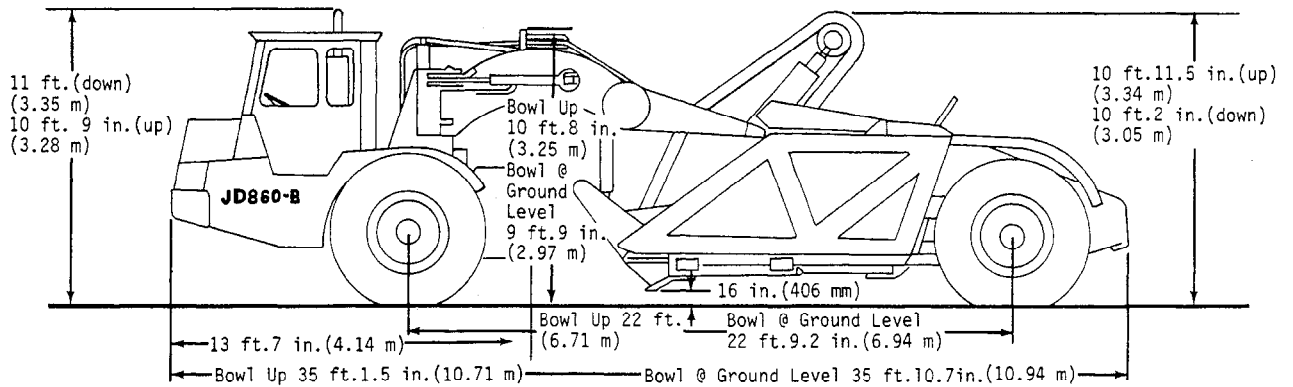
Special Equipment:

- Teeth for cutting edge
- Fenders and mud flaps for scraper wheels
- Lights (turn signal and flashing)
- ROPS cab or canopy and seat belt
- Quiet cab
- Air conditioner
- Cab panels

JD860-B SCRAPER DIMENSIONS



T66856N



T55484N

Group IV PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

TEMPORARY STORAGE

After receiving your scraper from the factory and before putting the machine into temporary storage, make the following checks and services:

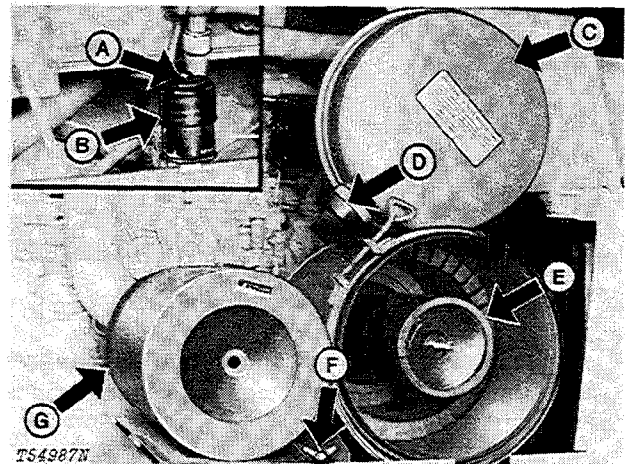
1. Check the battery electrolyte level. Charge the battery, if necessary.
2. Check the level of the coolant in the radiator. The coolant must be 1-1/2 in. (38 mm) below the filler neck.
3. Fill the fuel tank.
4. Check the crankcase oil level. Oil must be between marks on the dipstick after the engine has been stopped for 10 minutes.
5. Release hydraulic pressure by stopping the engine, lowering the bowl, and operating the control levers until the bowl does not move.

PREDELIVERY SERVICE

The service technician must carefully check and service the machine before the dealer delivers it to the customer. When the customer receives a machine that is correctly prepared, the customer is well-satisfied. For these reasons, correct predelivery service is very important to the dealer and the customer.

Use the following list when getting a unit ready for delivery to the customer.

1. Air Cleaner



- | | |
|-------------------------|-------------------|
| A—Reset Button | E—Safety Element |
| B—Restriction Indicator | F—Wing Nut |
| C—Filter Cover | G—Primary Element |
| D—Unloading Valve | |

Fig. 1-Air Cleaner Components

Check the restriction indicator (B). If the red signal can be fully seen, check the air intake system for a restriction.

Air cleaner checked	Yes	No
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2. Air Intake Hoses

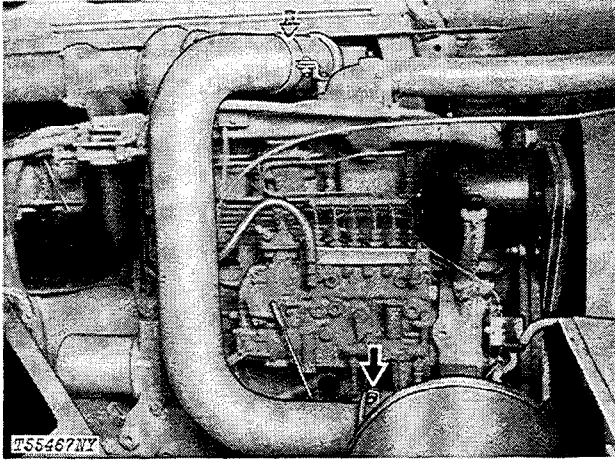
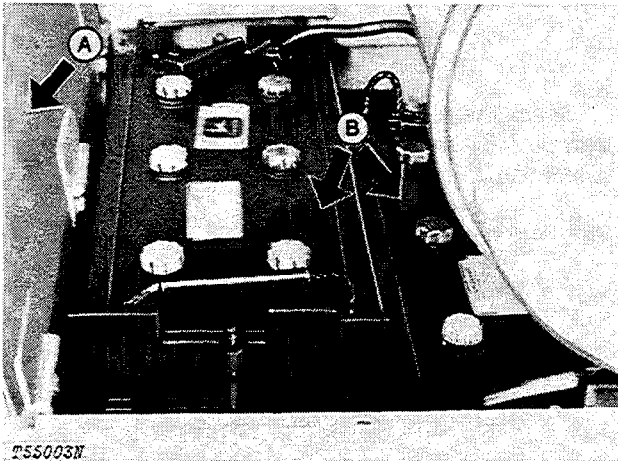


Fig. 2-Air Intake Hose Connections

Inspect clamps on hoses connecting the air cleaner and the engine. Tighten the hose clamps. Inspect the hoses for cracks.

Air intake hoses checked Yes No

3. Batteries



A—Cover

B—Batteries

Fig. 3-Batteries

Check the electrolyte level of the batteries. If distilled water is not available, use clean soft water. Do not use hard water. Remove dirt from the top of the batteries with a damp cloth. Put petroleum jelly on terminals.

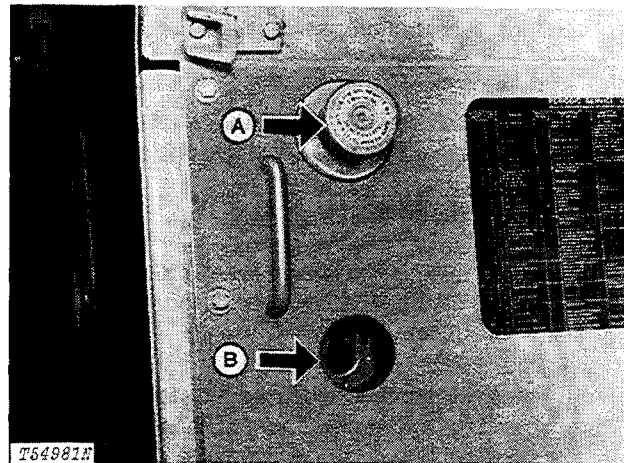
IMPORTANT: Never add water to the batteries in freezing weather unless the engine will be run 2 or 3 hours.

Check battery connections.

Punch the date code on the battery.

Batteries checked Yes No

4. Hydraulic Reservoir Oil Level



A—Filler Cap

B—Oil Level Window

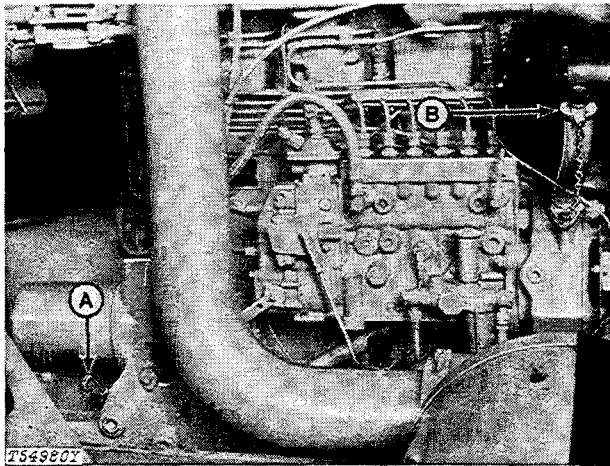
Fig. 4-Hydraulic Reservoir

Check the oil level of the hydraulic system. Oil level must be halfway up the oil level window when the bowl cutting edge is on the ground, the sliding floor is forward, and the ejector gate is back.

To add oil, remove the filler cap (A). Add oil specified on page I-V-3.

Hydraulic oil checked Yes No

5. Crankcase Oil Level



A—Dipstick

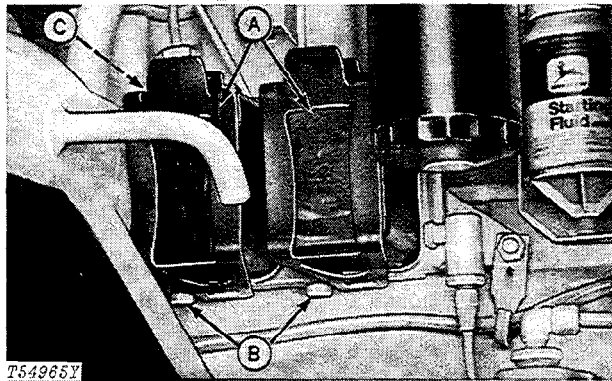
B—Filler Cap

Fig. 5-Crankcase Oil Level

Check the oil level when the scraper is on a level surface. Wait ten minutes after stopping the engine before checking the oil level. If the oil level is at or below the bottom mark on the dipstick, add oil specified on page I-V-3. Do not operate the engine with the oil level below the bottom mark. Keep the oil level between the marks on the dipstick.

Crankcase oil level checked	Yes	No
Oil added	_____	qts. (L)

6. Fuel Filters



A—Fuel Filters

B—Drain Screws

C—Bleed Screw

Fig. 6-Fuel Filter Drain Screws

Check the fuel filters. Drain sediment, if necessary.

Loosen the drain screws.

Drain all water and sediment.

Tighten the drain screws.

Remove air from the fuel system.

Removing Air From the Fuel System

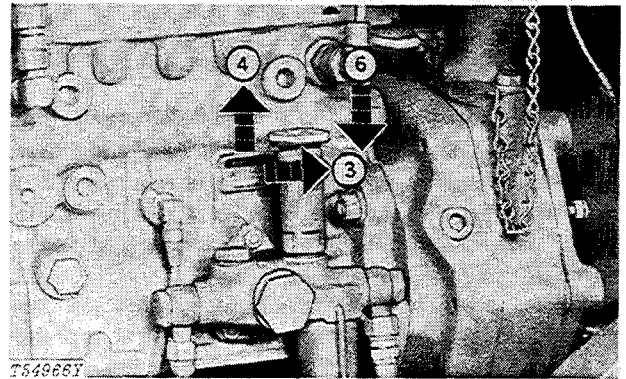


Fig. 7-Removing Air From The Fuel System

- 1 - Be sure there is enough fuel in the fuel tank.
- 2 - Loosen the bleed screw.
- 3 - Turn the hand primer counterclockwise to loosen it.
- 4 - Pull the hand primer up. Pump the primer until a solid stream of fuel, free from air bubbles, comes from the bleed screw.
- 5 - Tighten the bleed screw.
- 6 - Push the hand primer down completely. Turn the knob clockwise by hand to tighten it.

Fuel filters checked	Yes	No
Air removed from system	Yes	No

7. Radiator

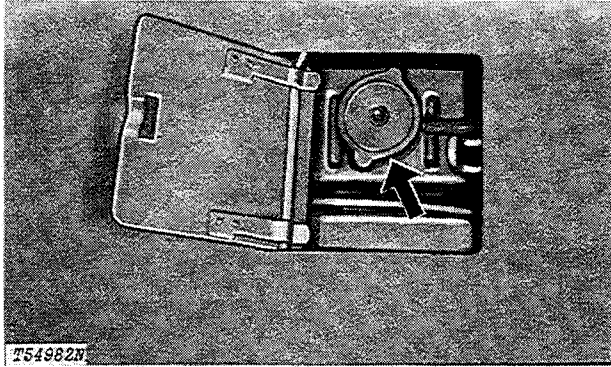


Fig. 8-Radiator Cap

CAUTION: Do not remove the radiator filler cap unless you can hold your hand on the radiator tank. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before removing the cap.

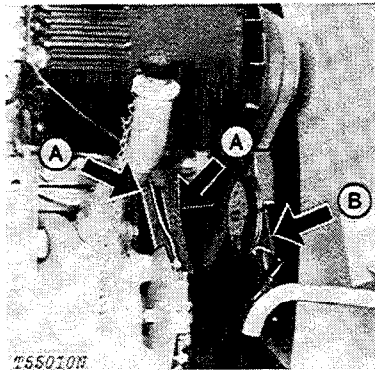
Check the level of the coolant in the radiator. Coolant must be 1-1/2 in. (38 mm) below the bottom of the filler neck. Use clean water for warm weather. Use a solution of 50% clean water and 50% permanent anti-freeze (ethylene glycol with approved rust inhibitor) for cold weather.

Check the cooling system for loose connections and leaks. Remove trash from the radiator.

Be sure the shut-off valves on the coolant conditioner-filter are open.

Coolant level checked	Yes	No
Shut-off valves open	Yes	No

8. Belt Tension



A—Fan Belts B—Strand Tension Gauge On Alternator Belt

Fig. 9-Engine Belts

Strand Tension Gauge

Belts must have 90 lb. (400 N) (41 kg) strand tension. Check the front fan belt only.

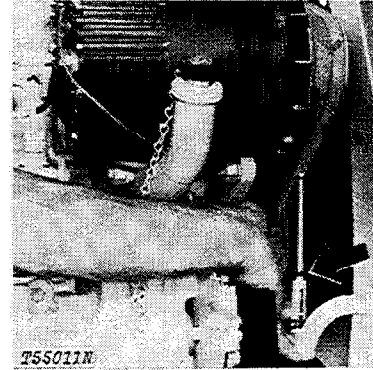


Fig. 10-Tension Tester On Alternator Belt

Tension Tester

A 20 lb. (89 N) (9 kg) force halfway between pulleys must move the belt 1/2 in. (13 mm).

Immediately after stopping the engine (run the engine 5 minutes or more), check the belt tension. If tension is less than 50 lb. (223 N) (23 kg), wait ten minutes. Then change tension to 90 lb. (400 N) (41 kg).

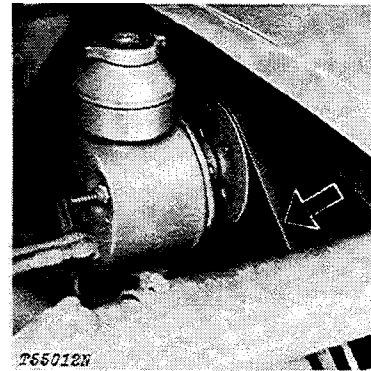


Fig. 11-Power Steering Belt

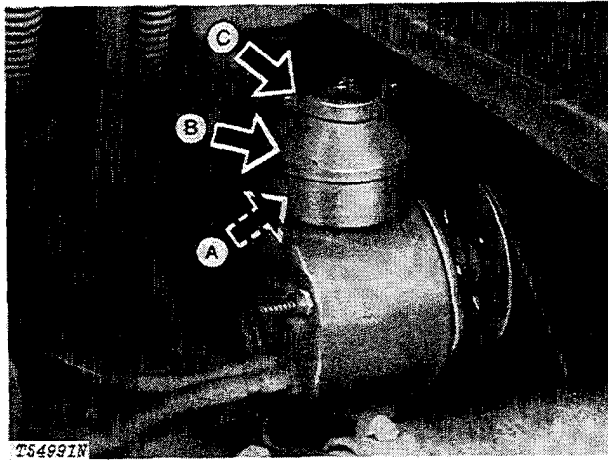
A 14 lb. (62 N) (6 kg) force halfway between pulleys must move the power steering pump belt 1/2 in. (13 mm).

NOTE: On units with air conditioning, a 10 to 15 lb. (45 to 67 N) (5 to 7 kg) force halfway between pulleys must move the compressor belt 1/2 in. (13 mm).

See page I-IV-24 for adjustment.

Belt tension checked	Yes	No
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9. Power Steering Pump Oil Level



A—Full Line
 B—Power Steering Pump Reservoir
 C—Filler Cap

Fig. 12-Power Steering Pump Reservoir

Check the oil level when the oil is cold.

Oil must be to the full line on the side of the reservoir.

If not, remove the filler cap. Add oil specified on page I-V-3.

Install the filler cap.

Oil level checked _____ Yes No
 Oil added _____ qts. (L)

10. Fuel Tank

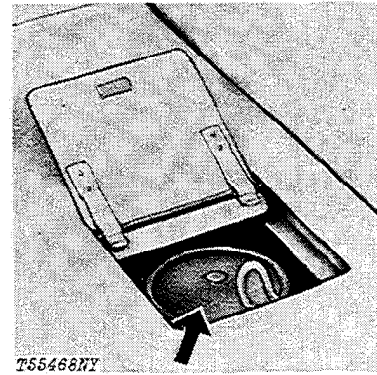
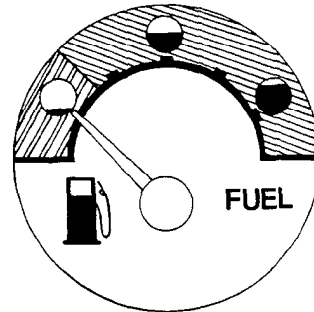


Fig. 13-Fuel Tank

Fill the fuel tank with correct fuel. Check the action of the fuel gauge (Fig. 14).

Fuel tank filled _____ Yes No
 Fuel gauge checked _____ Yes No

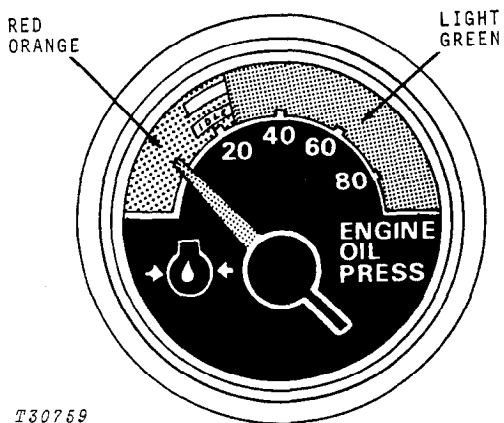
11. Gauges, Switches, and Indicator Lights



T40227N

Fig. 14-Fuel Level Gauge

The fuel gauge shows the amount of fuel in the fuel tank.

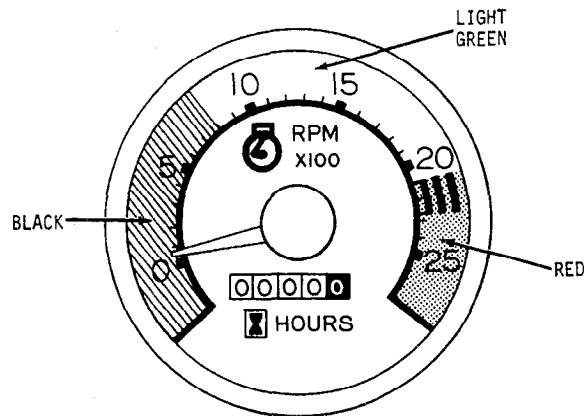


T30759

Fig. 15-Engine Oil Pressure Gauge

Normal operating range is 25-80 psi (1.7-5.5 bar) (1.8-5.6 kg/cm²).

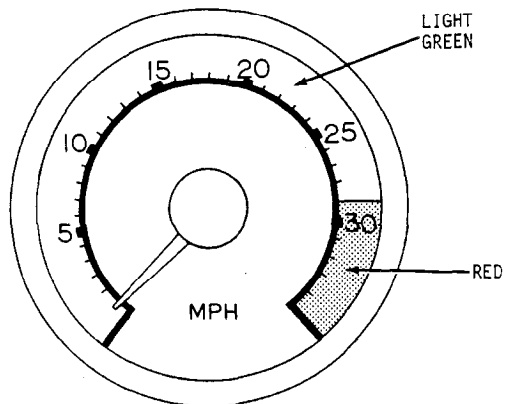
If the indicator hand goes into the red-orange zone, stop the scraper. Check the engine oil level. If the oil level is not low, check for restrictions in the oil lines or wrong viscosity oil.



T55470N

Fig. 17-Tachometer

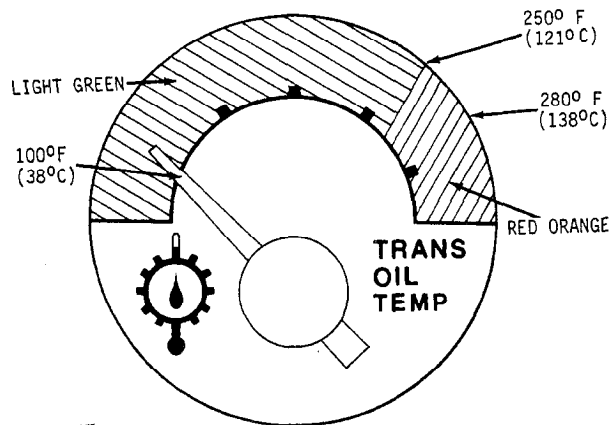
The tachometer shows engine rpm from 0 to 2500 rpm. Normal operating range is 900 to 2300 rpm. The hour meter measures the time the engine has run in hours and tenths of hours.



T55469N

Fig. 16-Speedometer

The speedometer shows scraper speeds from 0 to 34 mph (0 to 54.7 km/h). Red background at 29 mph (46.7 km/h) and over shows overspeed.



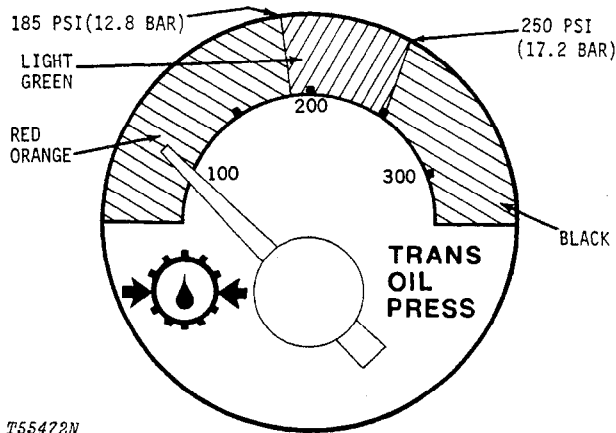
T55471N

Fig. 18-Transmission Oil Temperature Gauge

The light green zone shows the normal operating range, 100-250°F (38-121°C).

If the indicator hand enters the red zone, operate in a lower gear. If the hand remains in the red zone, check the transmission oil level.

If these possible solutions do not lower the oil temperature, do not operate the scraper.



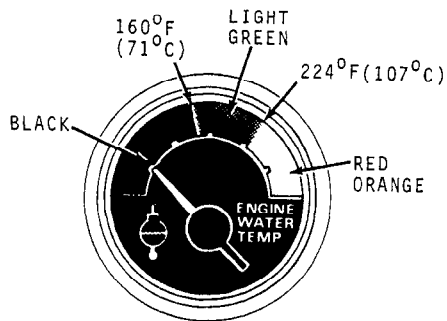
T55472N

Fig. 19-Transmission Oil Pressure Gauge

The light green zone shows the normal operating range.

IMPORTANT: If the indicator hand is in either red-orange zone or black zone, stop the scraper and find the cause.

NOTE: During cold weather, the gauge will normally read high for a short time after the engine starts.

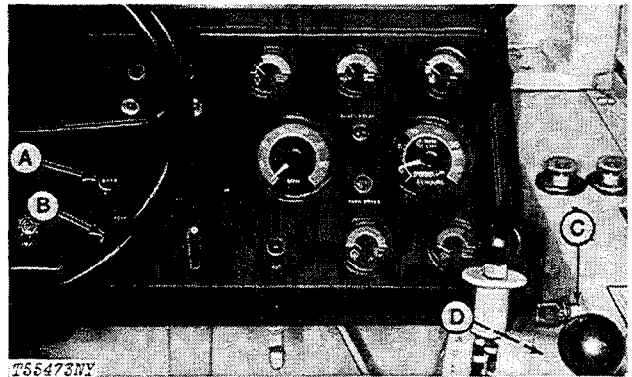


T38572

Fig. 20-Engine Coolant Temperature Gauge

The light green zone shows the normal operating temperatures, 160-224°F (71-107°C).

IMPORTANT: If the indicator hand goes into the RED-ORANGE ZONE, stop the engine and find the cause.



A—Wiper Switch
 B—Horn Switch

C—Ignition Switch
 D—Starter Switch

Fig. 21-Switches

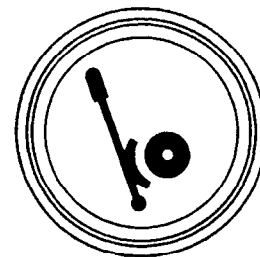
Wiper Switch - Turn the switch clockwise for low or high speed.

Horn Switch - Push the button to sound dual horns.

Ignition Switch - Turn the key clockwise to turn the switch on. No other switches or gauges work unless the ignition switch is on.

Starter Switch - Push the button to start the engine.

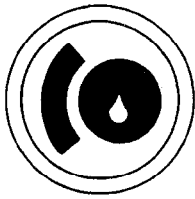
NOTE: Check the cold weather starting aid switch (to right of operator's seat) during warm weather by removing the starting fluid can from the engine, pushing the starting aid button, and listening for the solenoid click.



T41299N

Fig. 22-Parking Brake Indicator Light

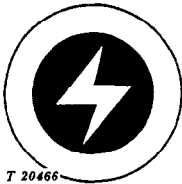
This light will go on when the ignition key is on and the parking brake is engaged. The flasher will also click at intervals.



T38468N

Fig. 23-Brake Pressure Indicator Light

When the hydraulic brake pressure goes below 1525 psi (105 bar)(107 kg/cm²), horns will sound at intervals, and the indicator light will go on.



T 20466

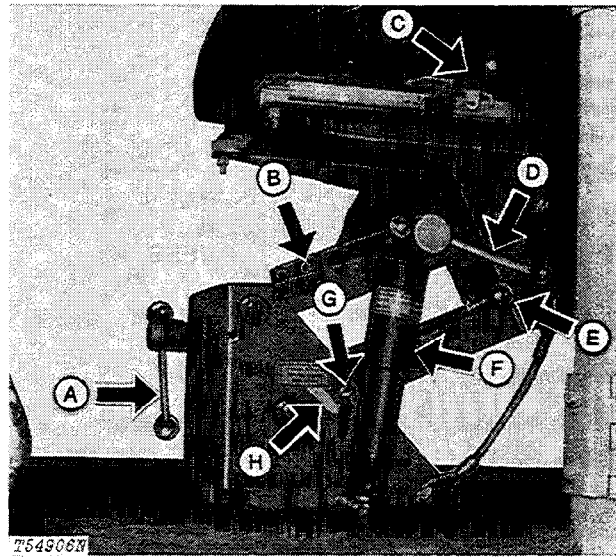
Fig. 24-Alternator Indicator Light

This light will go on when the alternator is not charging.

Gauges, switches, and indicator lights operational

Yes No

12. Seat



T54906N

- | | |
|--|------------------|
| A—Weight Adjustment Lever | E—Up-Latch Lever |
| B—Cap Screw | F—Shock Absorber |
| C—Forward or Rearward Adjustment Lever | G—Pointer |
| D—Ride Adjustment Lever | H—Ride Zone |

Fig. 25-Seat

Check the operation of levers and shock absorbers.

Adjustment for Weight

While seated, turn lever A clockwise to lower the seat. Turn the lever counterclockwise to raise the seat.

Change the height so the pointer (G) is in the ride zone (H).

Adjustment Forward or Rearward

While seated, move lever C to the left (L.H.). Slide the seat to the desired position. Release the lever.

Adjustment for Ride

Right (R.H.) side: Install the shock absorber cap screw (B) in the front hole for a soft ride, or in the rear hole for a firm ride.

Left (L.H.) side: Loosen lever D. Slide the shock absorber forward for a soft ride or rearward for a firm ride. Tighten the lever.

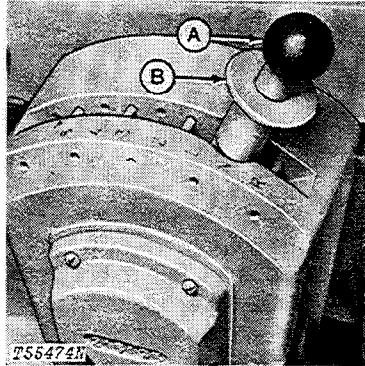
Up-Latch Lever

While seated, pivot lever E rearward before standing to lock the seat in position.

The lever will automatically release when you sit.

Seat operation checked Yes No

13. Transmission Shifting



A—Shifting Lever B—Detent Sleeve

Fig. 26-Transmission Shifting Lever

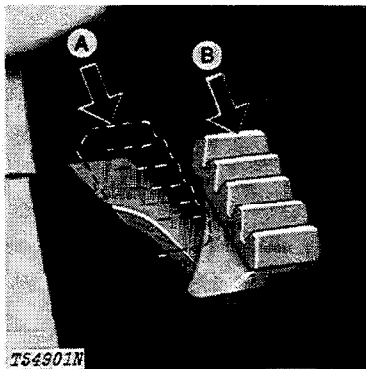
Check the operation of the scraper in all gears.

Run the engine at slow idle. Lift the detent sleeve to shift to reverse or 1st gear.

NOTE: When the shift lever is in reverse, the rear warning horn will sound at intervals and brake lights will flash.

Transmission shifting checked Yes No

14. Differential Lock



A—Engaged B—Disengaged

Fig. 27-Differential Lock Pedal

Check the action of the differential lock. Start the engine. Engage the lock. Turn the steering wheel. If the lock is working correctly, steering resistance will be felt.

Differential lock checked Yes No

15. Engine Speeds

Check engine speeds on the tachometer. Slow idle must be 900-950 rpm. Fast idle must be 2275-2375 rpm.

If adjustment is necessary, see page I-IV-29.

Engine speeds checked Yes No

16. Accumulator Action

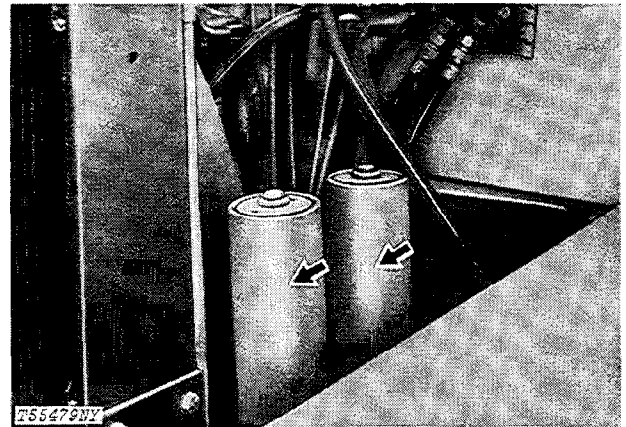


Fig. 28-Accumulators

If brakes will not work immediately after the engine stops, the accumulator is not working correctly.

CAUTION: The accumulators serve the service brakes and the differential lock. Release pressure in the accumulators before disconnecting the hydraulic lines.

To check the accumulators, run the engine to get full hydraulic pressure. Stop the engine. Wait two minutes after the engine has stopped. Push down hard on the brake pedal. The pedal must not bottom. Release the pedal. Wait at least 5 seconds. Push down the pedal again.

Repeat this cycle ten times. If the pedal bottoms at ten strokes or less, remove air from the brakes. Re-check the accumulators. If removing air from the brakes does not correct the condition, troubleshoot the hydraulic system.

If the pedal does not bottom during the first ten strokes, the accumulators are working correctly.

When the brake pressure goes below approximately 1525 psi (105 bar) (107 kg/cm²), the brake pressure indicator light will go on and the horn will sound at intervals. (The key switch must be on.)

IMPORTANT: If air is not removed from the scraper brake system correctly, the accumulators will lose oil pressure in less than ten pedal strokes.

Accumulator action checked Yes No

17. Service Brakes

Check the operation of the hydraulic brakes.

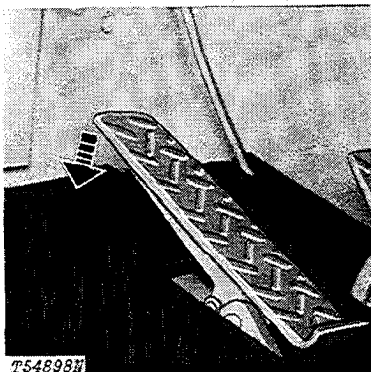


Fig. 29-Brake Pedal

Put the scraper in gear. Push down the brake pedal. Moderate pedal force must hold the machine in place.

Remove air from the brake system:

1. If moderate pedal force does not hold the machine in place.
2. If the pedal feels spongy.
3. If the pedal jumps back when it is pushed down.
4. If the pedal has too much travel.

See page I-IV-31 for the correct procedure.

Brakes checked Yes No

18. Parking Brake

Check the action of the parking brake.

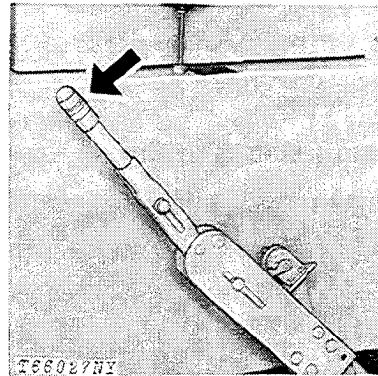


Fig. 30-Parking Brake

The parking brake must hold the scraper in place. If not, see page I-IV-32 for adjustment.

Parking brake checked Yes No

19. Hydraulic System Cycle Times

NOTE: Operate each hydraulic control until all air has been removed from the hydraulic system. Check all controls for freedom of movement and proper direction of travel before checking cycle times.

Use the following times as a guide. If cycle times are much different from those listed, trouble shoot the hydraulic system. Check cycle times when the oil is warm and the engine at fast idle.

	Seconds
Elevator Speed (one complete revolution)	6.6 max.
Bowl Lift	4.9
Eject Cycle	9.7 max.
Steering (180° turn to right and left)	5.0 - 5.5 (Either Direction)

While checking cycle times, make a note of any equipment that is not working correctly.

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for your reading.**

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Information.**