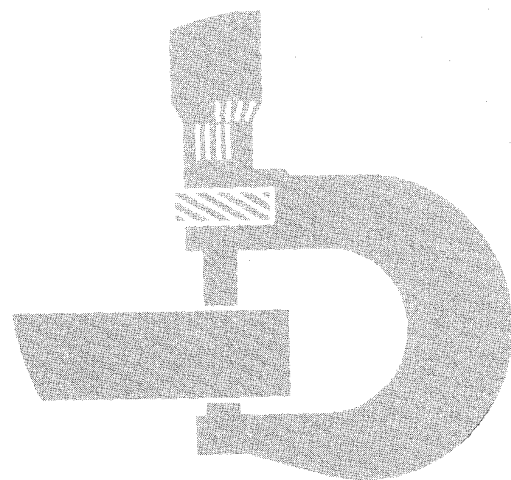


**John Deere
860-B
Scraper**



Technical Manual

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 Upper idler assembly 3612-3

V

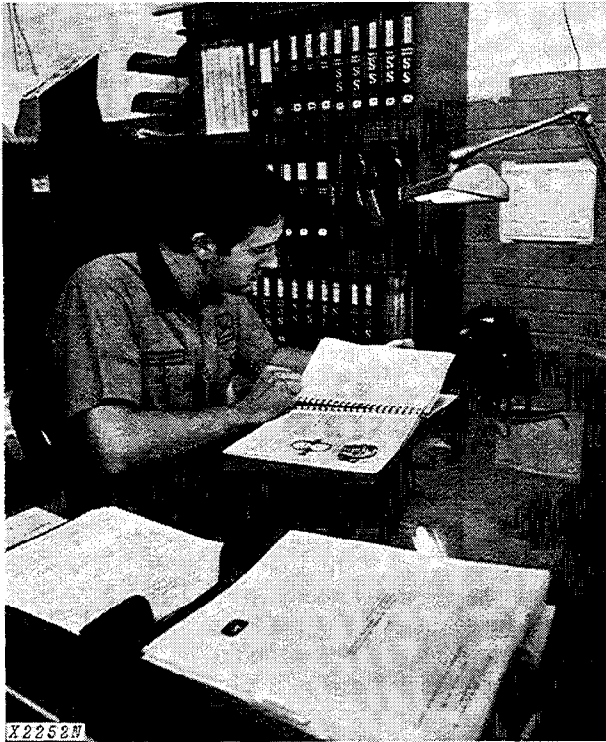
Valve, bowl control 3560-1
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 Valve, brake unloading 1060-6
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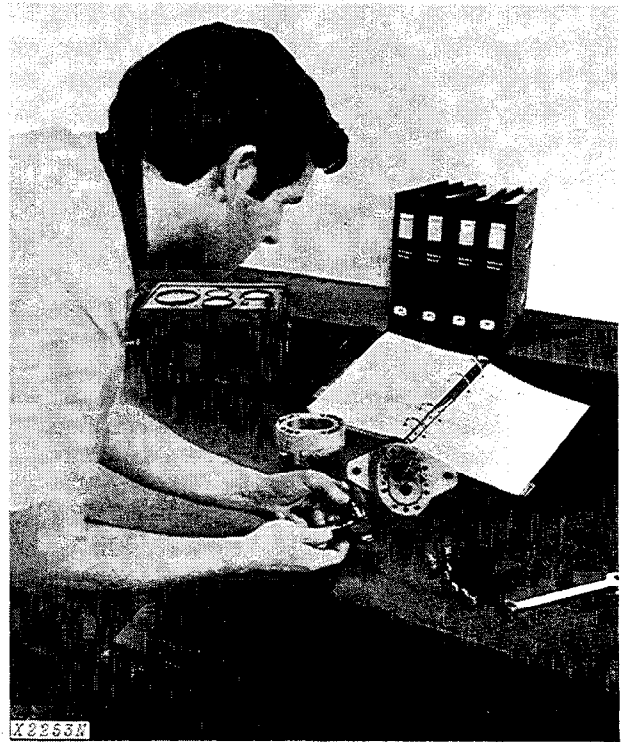
Water manifold 0418-1
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Group II INTRODUCTION AND SAFETY INFORMATION

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.

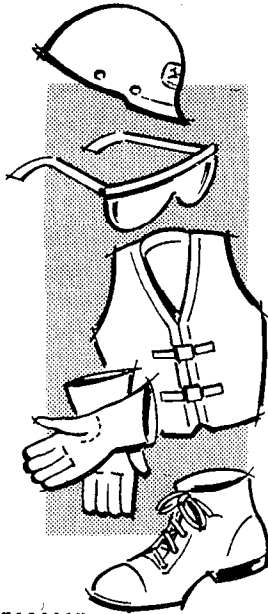
MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



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

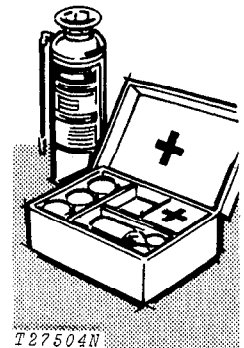


WRONG

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.

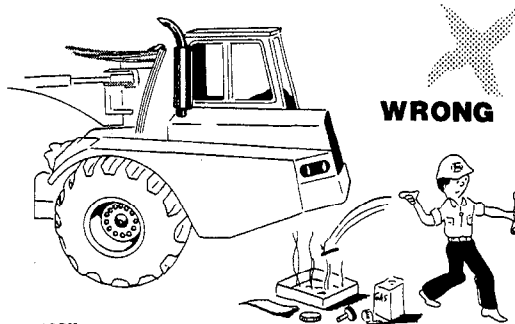
Keep the maintenance area **CLEAN AND DRY**. Oily and wet floors are slippery. Greasy rags are a fire hazard. Wet spots are dangerous when working with electrical equipment.

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

MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS

Fuel Is Dangerous!

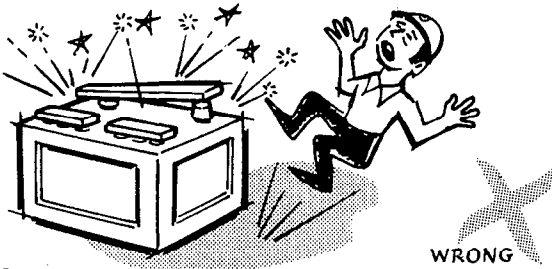


T55487N

- 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!

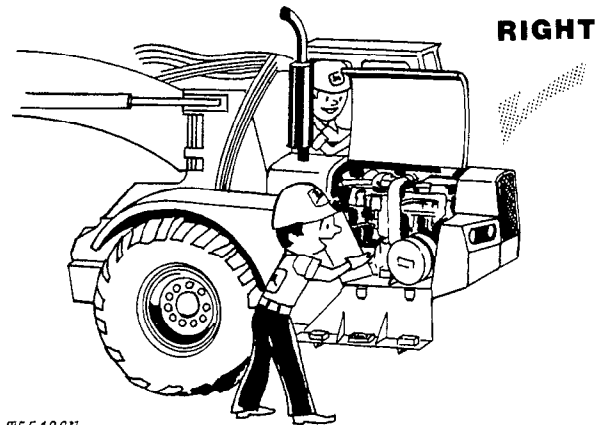
NEVER USE OPEN FLAME AROUND THE MACHINE.

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.

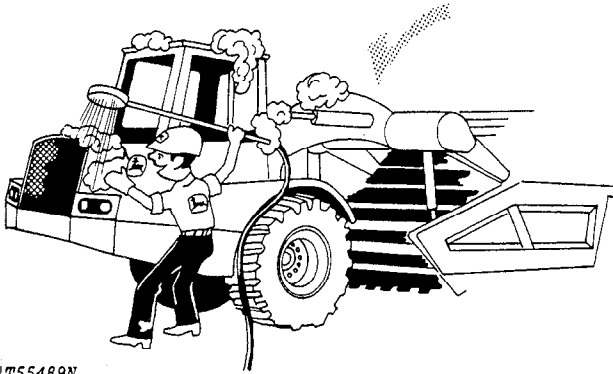
Do not lift heavy parts by yourself. Use hoisting equipment for this.

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.

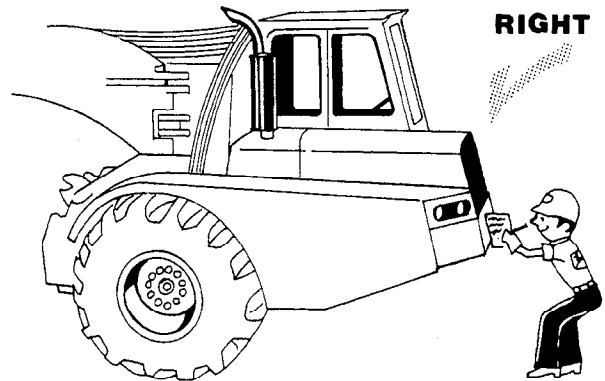
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

KNOW EQUIPMENT IS READY!

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

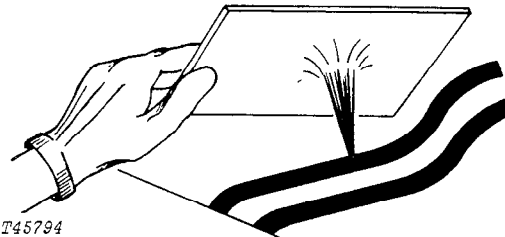
CHECK IT OUT!

- 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

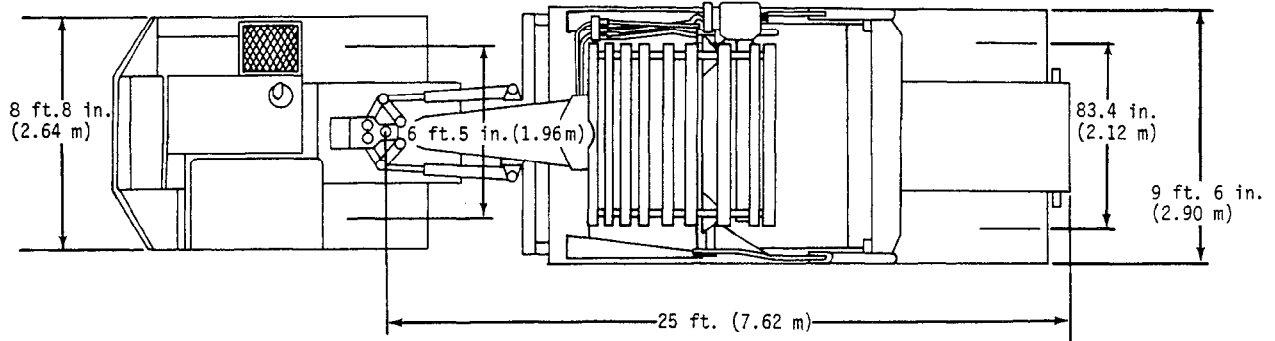
Additional Standard Equipment:

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

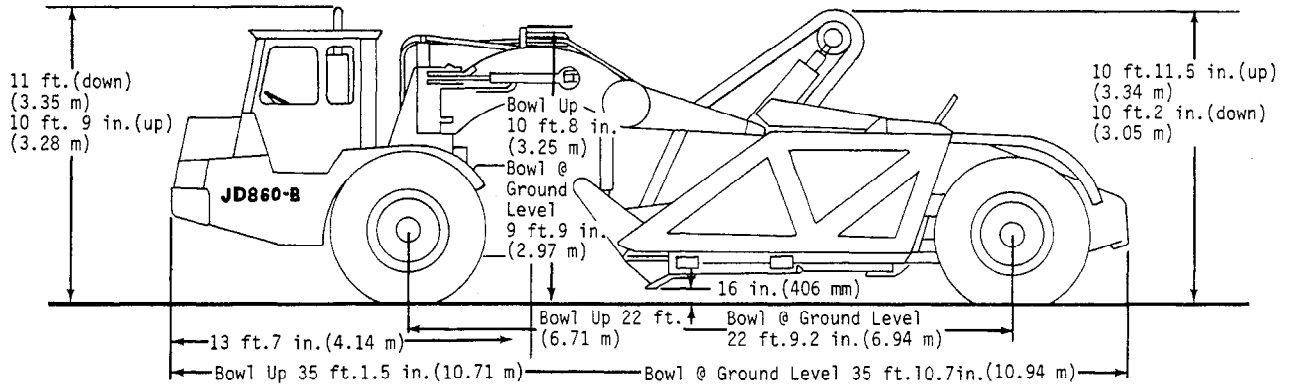
Special Equipment:

- 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:

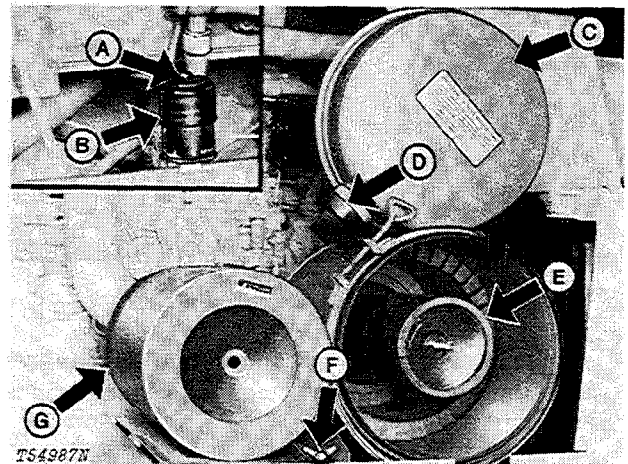
1. Check the battery electrolyte level. Charge the battery, if necessary.
2. Check the level of the coolant in the radiator. The coolant must be 1-1/2 in. (38 mm) below the filler neck.
3. Fill the fuel tank.
4. Check the crankcase oil level. Oil must be between marks on the dipstick after the engine 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
---------------------	-----	----



Download the full PDF manual instantly.

Our customer service e-mail:

aservicemanualpdf@yahoo.com