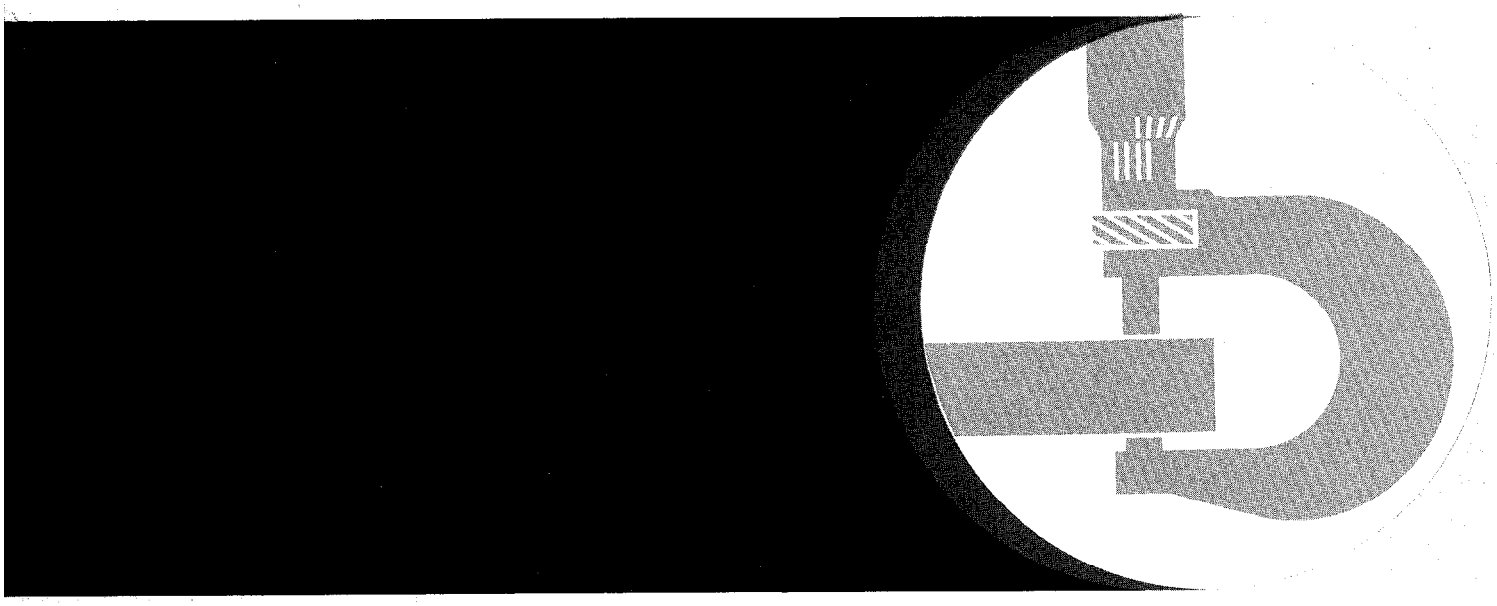
John Deere JD862 Scraper



TECHNICAL MANUAL

TM-1212

LITHO IN U.S.A. (T) New

JD862 SCRAPER
Technical Manual
TM-1212 (Sep-84)

SECTION AND GROUP CONTENTS OF THIS MANUAL

OOA

Litho in U.S.A.

SECTION AND GROUP CONTENTS OF THIS MANUAL—Continued

The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with SAE and ICED standards.

Litho in U.S.A.

ALPHABETICAL INDEX

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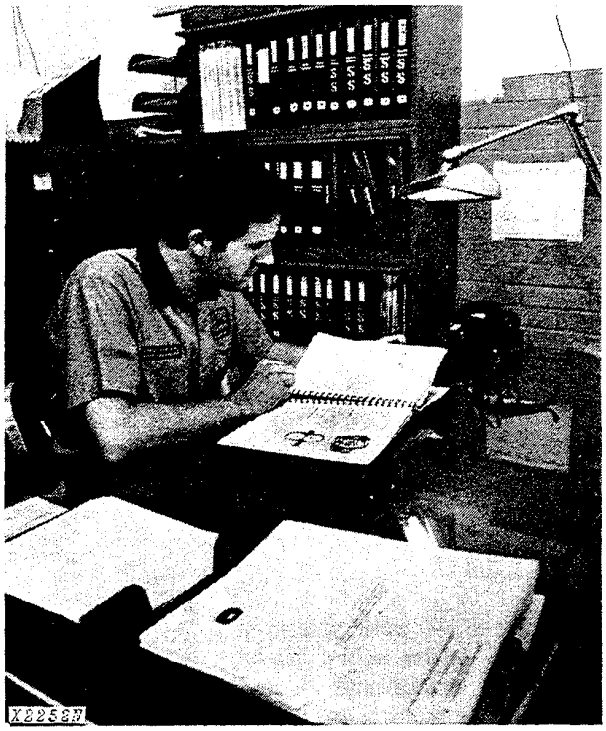
Group II
INTRODUCTION AND SAFETY INFORMATION
INTRODUCTION



X2252N

Use FOS Manuals for Reference

X2253N

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, general services and fuels and lubricants.
- 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.

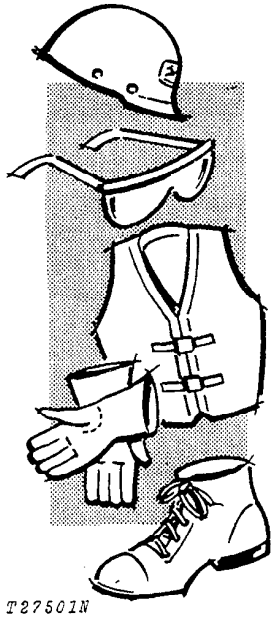
Litho in U.S.A.

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

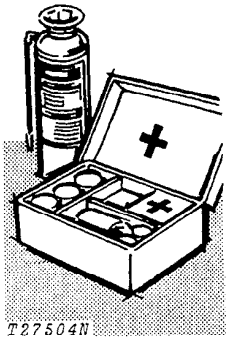
See your shop supervisor for specific instructions on a job, and the safety equipment required.

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

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.

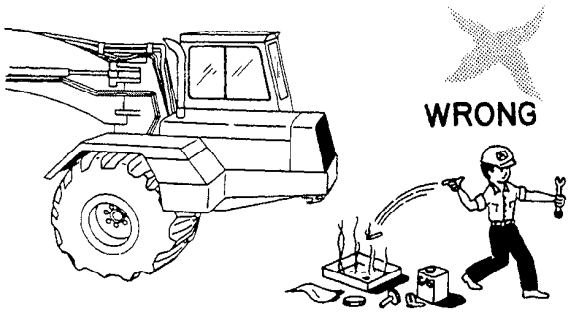
Keep starting aids in a cool, well-ventilated place, out of reach of unauthorized personnel.

Litho in U.S.A.

MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS

Fuel Is Dangerous!



T71141

Do not smoke while putting fuel in the fuel tank.

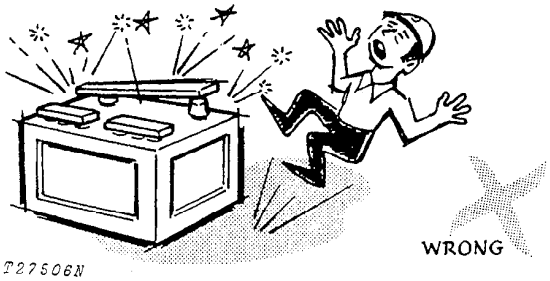
Do not smoke while working with material that will start on fire easily.

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 terminals.

Do not let sparks or open flame near batteries.

Do not smoke near battery.

Flame Is Not a Flashlight!

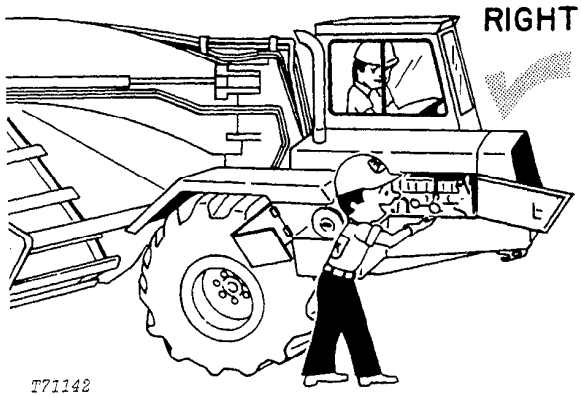
NEVER USE OPEN FLAME AROUND THE MACHINE.

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.



T71142

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

T71143

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 the engine is cool. 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. Lower the bowl to the ground. Stop the engine. Move the steering wheel 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.

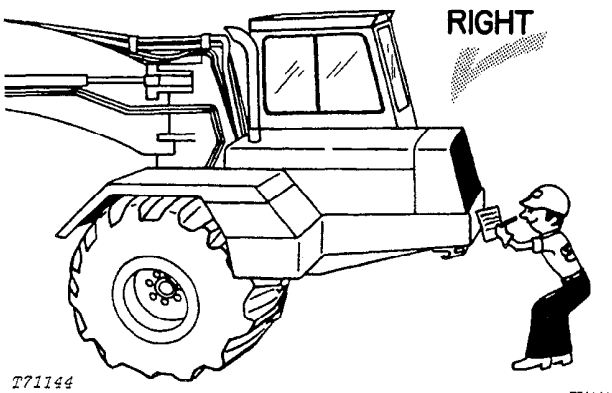
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

KNOW EQUIPMENT IS READY!

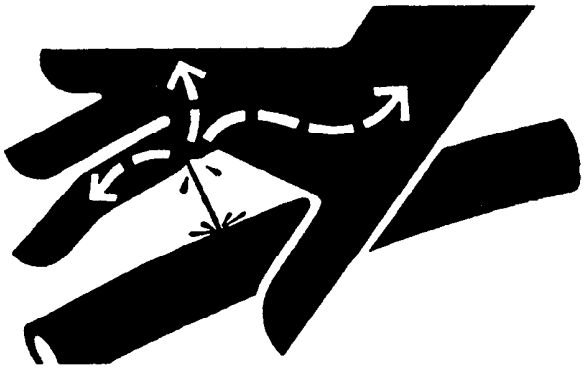
All parts should be in good condition and fastened in place.

CHECK IT OUT!

- ☐ ROLL-OVER PROTECTIVE STRUCTURE
- ☐ SEAT BELT, ETC.



T71144



X9811

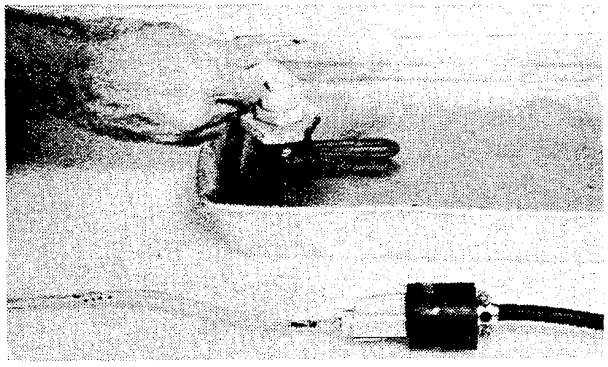
Escaping fluid under pressure can penetreate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear and will move if normal circuitry is bypassed

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral, direction selector lever in neutral, and park brake applied.

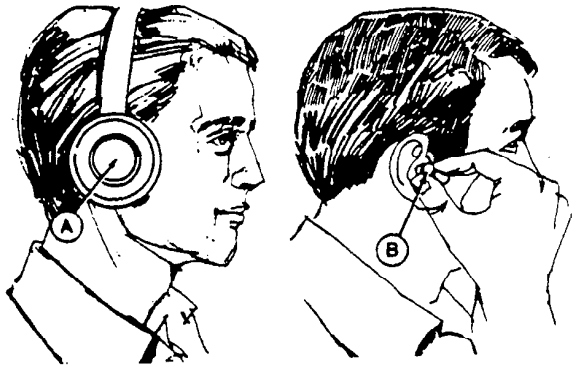


T87098

Test coolant heater in liquid only.

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.



X7662

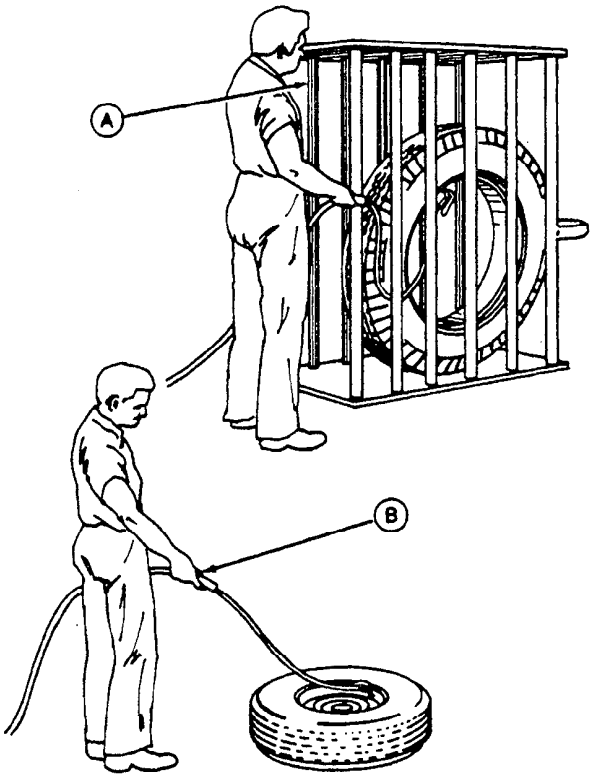
Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noise.

If your machine is equipped with a strating fluid starting aid, remember starting fluid is highly flammable. DO NOT incinerate or puncture a starting fluid container. DO NOT store a starting fluid container in a high-temperature area.

T84926

If your machine has a roll-over protective structure, USE A SEAT BELT.

If your machine does not have a roll-over protective structure, DO NOT USE A SEAT BELT.



TS0123

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

Detailed tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55, Tires and Tracks, available through your John Deere dealer. Such information also available from the Rubber Manufacturers Association and from tire manufacturers.

A—Use a Safety Cage if Available
B—DO NOT Stand Over Tire. Use a Clip-On Chuck and Extension Hose.

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, ROPS canopy, full fuel tank, 175 lb. (80 kg) operator, and all standard equipment.)

Capacity (SAE heaped):
Volume . . . . . 16 cu. yd. (12.23 m^3)
Total weight of payload @ 2500 lb./$yd.^3$
(1483 kg/m^3) . . . . . 40,000 lb. (18 144 kg)

Power (@ 2100 engine rpm):	SAE	DIN
Gross	270 hp (201 kW*)	
Net	250 hp (186 kW)	253.5 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 7500 feet (2 290 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 cm^3)
Compression ratio . . . . . 15.2 to 1
Maximum torque @
1400 rpm . . . . . 813 lb-ft (1102 N·m) (112.4 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: Planetary Power-Shift, 6 speeds forward, 1 reverse. Micro-processor controlled, fully automatic shift with complete modulation

Torque Converter: Two phase, single stage with a 2.84 to 1 multiplication ratio, free-wheeling stator lock-up clutch and automatic control

Differential Lock . . . . . Foot-operated, hydraulically actuated

Drive Axle . . Differential drive; over-all ratio 22.22 to 1; planetary final drives with 4.4 gpm (0.28 L/s) for lubrication and differential lock actuation

Brakes: Hydraulic, power actuated. An accumulator provides 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. 9.9 in. (10.0 m)
Articulation . . . . . 180 deg.

Tractor Oscillation (total) . . . . . 40 deg.

Hydraulic System:
Main tractor system: Closed-center
System pressure . . . . . 2350 psi (16 203 kPa) (165.2 kg/cm^2)
Operates steering, brakes, and all scraper functions except elevator drive.
Main pump . . . Variable displacement, constant pressure; delivers 63 gpm (3.97 L/s) @ 2100 engine rpm. Main charge pump delivers 20.3 gpm (1.28 L/s) @ 2100 engine rpm.
Elevator system . . . Engine-driven, 5.43 cu. in. (89 cm^3) variable displacement, reversible hydrostatic pump delivers 53.5 gpm (3.38 L/s) @ 2100 engine rpm.
System pressure . . . . . 5000 psi (34 475 kPa) (351 kg/cm^2)
Filtration . . . All systems are protected by replaceable filters.
Main hydraulic system . . . . . 10-micron filters
Elevator system . . . . . 10-micron filters
Transmission . . . . . 10-micron filters

Litho in U.S.A.

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)	49.0 in. (1.24 m)
Steering (2)	4 in. (102 mm)	25.9 in. (658 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: Reversible, hydrostatic drive with heavy-duty planetary reduction

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) . . 0-240 fpm (73 m/min)
Length (top to bottom) . . . . . 12 ft. (3.66 mm)

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

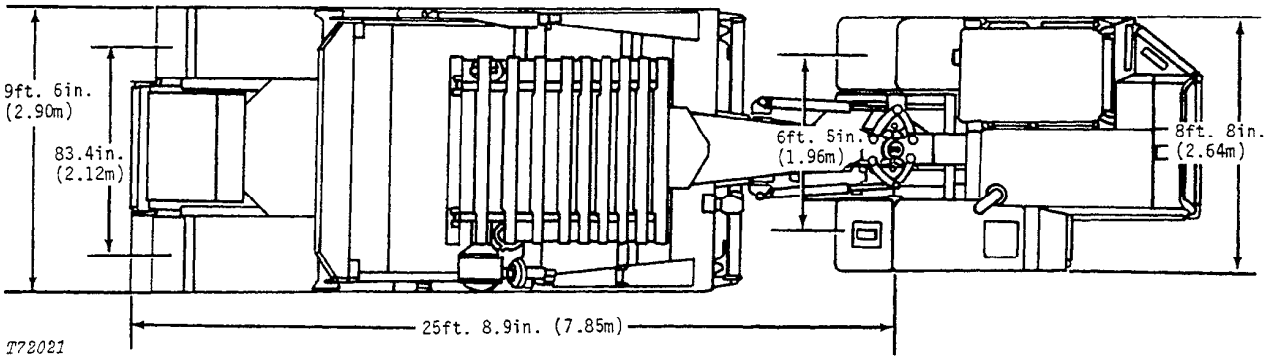
Cutting Edge: . . . 8 ft. 9.9 in. (2.69 m) wide; 3 sections, reversible and replaceable, high-carbon steel. Each section is adjustable vertically 2 in. (51 mm).
Center section . . . 1x13x77.9 in. (25x330x1979 mm)
End sections . . . . . 1x13x14 in. (25x330x356 mm)

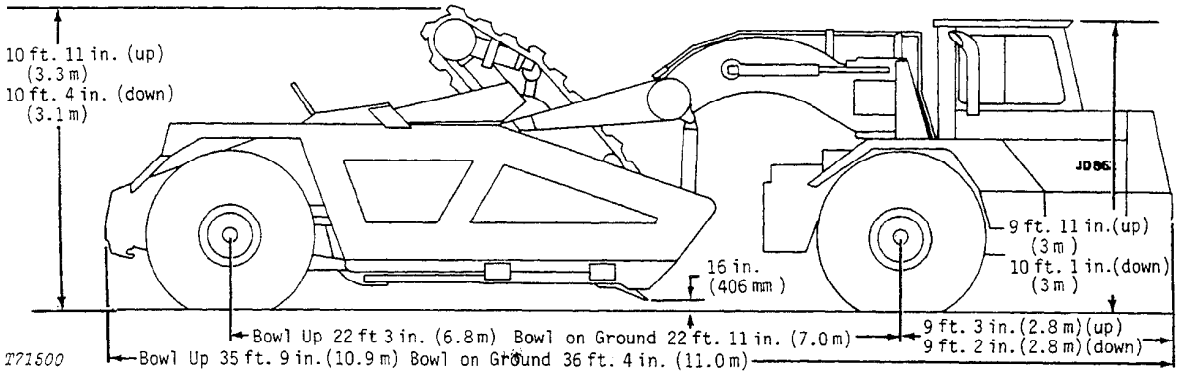
Tires:
26.5-29, steel-cord radials
26.5-25, 24 ply rating, E2
26.5-29, 26 ply rating, E3
26.5-29, steel-cord radials

Capacities:	U.S.	IMP.	Liters
Cooling system	15 gal.	12.5 gal.	56.8
Fuel tank	113 gal.	94.4 gal.	429
Engine lubrication, including filter	31 qt.	25.8 qt.	29.3
Transmission case and filter	19 gal.	15.8 gal.	71.9
Differential case	7.5 gal.	6.2 gal.	28.4
Hydraulic reservoir	24 gal.	20.0 gal.	90.8
Elevator gear case	8 qt.	6.7 qt.	7.6

Weight Distribution:		lb.	kg
Empty:	Drive axle	32,050	14 538
	Scraper axle	17,139	7 774
	Total	49,189	22 312
Loaded:	Drive axle	44,400	20 140
	Scraper axle	44,789	20 316
	Total	89,189	40 456

JD862 SCRAPER DIMENSIONS





CUSTOMARY HARDWARE TORQUE

NOTE: Torques shown are for dry (no lubrication on threads) hardware.

NOTE: Torque wrench tolerance is ± 10 percent of specified torque.

Cap Screw Size-Inches	Customary Hardware Grade B lb-ft.	(N-m)	Grade D lb-ft.	(N-m)	Grade F lb-ft.	(N-m)
1/4	----	----	10	(14)	14	(19)
5/16	----	----	20	(27)	30	(41)
3/8	----	----	35	(47)	50	(68)
7/16	35	(47)	55	(75)	80	(108)
1/2	55	(75)	85	(115)	120	(163)
9/16	75	(102)	130	(176)	175	(237)
5/8	105	(142)	170	(230)	240	(325)
3/4	185	(251)	300	(407)	425	(576)
7/8	160	(217)	445	(603)	685	(929)
1	250	(339)	670	(908)	1030	(1396)
1-1/8	330	(447)	910	(1234)	1460	(1979)
1-1/4	480	(651)	1250	(1695)	2060	(2793)

T5859AC

Check all cap screws and nuts, which can be easily reached, to be sure they are tight. If hardware is loose, tighten it to torque shown on chart above unless a special torque is specified.

METRIC HARDWARE TORQUE

NOTE: Torques shown are for hardware with SAE30W oil on threads.

NOTE: Torque wrench tolerance is ± 10 percent of specified torque.

Metric Standard Thread

Thread	8.8		10.9		12.9	
	N·m	(lb-ft)	N·m	(lb-ft)	N·m	(lb-ft)
M5	5.9	(4.4)	7.9	(5.8)	9.8	(7.2)
M6	9.8	(7.2)	13.8	(10.2)	16.7	(12.3)
M8	24.6	(18.1)	34.4	(25.4)	40.2	(29.6)
M10	48.1	(35.5)	67.8	(50.0)	81.5	(60.1)
M12	84.4	(62.2)	118.0	(87.0)	142.0	(105.0)
M14	133.0	(98.0)	187.0	(138.0)	226.0	(167.0)
M16	206.0	(152.0)	290.0	(214.0)	348.0	(257.0)
M18	285.0	(210.0)	398.0	(294.0)	476.0	(351.0)
M20	402.0	(296.0)	570.0	(420.0)	677.0	(499.0)
M22	540.0	(398.0)	765.0	(564.0)	914.0	(674.0)
M24	697.0	(514.0)	980.0	(723.0)	1180.0	(870.0)

Metric Fine Thread

Thread	8.8		10.9		12.9	
	N·m	(lb-ft)	N·m	(lb-ft)	N·m	(lb-ft)
M8 x 1	26.5	(19.5)	37.3	(27.5)	44.2	(32.6)
M10 x 1	47.1	(34.7)	68.8	(50.7)	81.5	(60.1)
M12 x 1.5	88.4	(65.2)	123.0	(91.0)	147.0	(108.0)
M14 x 1.5	147.0	(108.0)	206.0	(152.0)	246.0	(181.0)
M16 x 1.5	221.0	(163.0)	309.0	(228.0)	373.0	(275.0)
M18 x 1.5	319.0	(235.0)	451.0	(333.0)	540.0	(398.0)
M20 x 1.5	451.0	(333.0)	628.0	(463.0)	755.0	(557.0)
M22 x 1.5	559.0	(442.0)	845.0	(623.0)	1030.0	(760.0)
M24 x 2	765.0	(564.0)	1080.0	(796.0)	1275.0	(940.0)
M26 x 2	1130.0	(833.0)	1570.0	(1158.0)	1915.0	(1412.0)

T5859AC

NOTE: Numbers are used to mark heads of metric hardware.

8.8 Head - Tempered steel, high strength bolts and cap screws.

10.9 Head - Tempered steel, extra-high strength bolts and cap screws

12.9 Head - Tempered steel, extra-extra-high strength bolts and cap screws.

Litho in U.S.A.

TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR SERVICE RECOMMENDATIONS

1. Inspect the flare and the flare seat. They must be free of dirt and defects. If repeated leaks occur, inspect for defects with a magnifying glass. If burrs and raised nicks on the connector body cannot be removed with a slip stone, replace the connector.

2. Defects in the tube flare cannot be repaired. Replace the tube. Overtightening a defective flared fitting will not stop leaks.

3. As a field repair, a ductile truncated cone shaped washer can be used between the tube flare and connector body. These washers are soft enough to fill defects in the seat and flare. They will also seal the connection. Ductile washers are available from industrial supply houses.

4. Align the tube with the fitting before attempting to start the nut. Failure to do so can cause a deformed flare and subsequent leaks. Install hoses without twists. A twisted hose attempts to straighten out when pressure is applied. This exerts a torque on the connection, eventually causing failure.

5. Lubricate the connection with hydraulic fluid, petroleum jelly or soap. Tighten the swivel nut by hand until it is snug.

6. Mark a line across the nut and connector body. This line will serve as a visual indicator as to whether the nut has been tightened and by how much.

7. Using two wrenches, one on the connector body and a torque wrench on the nut, tighten the nut to the torque value as shown in the chart. In the case of a hose, it may be necessary to use three wrenches to prevent twisting.

TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR TORQUE

Thread Size	Torque[1] N·m	Torque[1] (lb-ft)	New[2] Number of Flats	Used[3] Number of Flats
3/8-24 UNF	8	(6)	2-1/2	1
7/16-20 UNF	12	(9)	2-1/2	1
1/2-20 UNF	16	(12)	2-1/2	1
9/16-18 UNF	24	(18)	2	1
3/4-16 UNF	46	(34)	2	1
7/8-14 UNF	62	(46)	1-1/2	1
1-1/16-12 UN	102	(75)	1	3/4
1-3/16-12 UN	122	(90)	1	3/4
1-5/16-12 UN	142	(105)	3/4	3/4
1-5/8-12 UN	190	(140)	3/4	3/4
1-7/8-12 UN	217	(160)	1/2	1/2

1. Tolerance of ± 10%.

2. To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark across the fittings, then tighten fitting the number of flats shown.

3. Flare connection seal by deforming or squeezing the tube between the nut and the connector. More deformation is possible with new parts than with old. Therefore, if a torque wrench is not used for re-assembly, the values in this column must be used to prevent damage.

T5859AE

O-RING BOSS FITTING SERVICE RECOMMENDATIONS

1. Inspect boss O-ring seat. It must be free of dirt and defects. If repeated leaks occur, inspect for defects with a magnifying glass. Some raised defects can be removed with a slip stone.

Occasionally a lower durometer O-ring will seal against a rough seat. If neither of these solutions work, the component must be replaced.

2. Put hydraulic oil, petroleum jelly or soap on the O-ring. Put a thimble over the threads to protect O-ring from nicks. Slide O-ring over the thimble and into the turned down section of fitting.

For angle fittings, loosen special nut and push special washer against threads so O-ring can be installed into the turned down section of fitting.

3. Turn fitting into the boss by hand until special washer or washer face (straight fitting) contacts boss face and O-ring is squeezed into its seat.

4. To position angle fittings, turn the fitting counterclockwise a maximum of one turn.

5. Tighten straight fittings to the torque valve shown in chart. For angle fittings, tighten the special nut to valve shown in the chart while holding body of fitting with a wrench.

STRAIGHT FITTING OR SPECIAL NUT TORQUE (1)

Thread Size	Torque[1] N·m	(lb-ft)	Number Of Flats[2]
3/8-24 UNF	8	(6)	2
7/16-20 UNF	12	(9)	2
1/2-20 UNF	16	(12)	2
9/16-18 UNF	24	(18)	2
3/4-16 UNF	46	(34)	2
7/8-14 UNF	62	(46)	1-1/2
1-1/16-12 UNF	102	(75)	1
1-3/16-12 UNF	122	(90)	1
1-5/16-12 UNF	142	(105)	3/4
1-5/8-12 UNF	190	(140)	3/4
1-7/8-12 UNF	217	(160)	1/2

1. Tolerance ± 10%.

2. To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark on nut and boss; then tighten special nut or straight fitting the number of flats shown.

T5859AG

SAE FOUR BOLT FLANGE FITTING SERVICE RECOMMENDATIONS

1. Inspect the sealing surfaces for nicks or scratches, roughness or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.

2. Install the correct O-ring (and backup washer if required) into the groove using petroleum jelly to hold it in place.

3. For split flange; loosely assemble split flange halves, being sure that the split is centrally located and perpendicular to the port. Hand tighten cap screws to hold parts in place. Do not pinch O-ring.

4. For single piece flange; put hydraulic line in the center of the flange and install four cap screws. With the flange centrally located on the port, hand tighten cap screws to hold it in place. Do not pinch O-ring.

5. For both single piece flange and split flange, be sure the components are properly positioned and cap screws are hand tight. Tighten one cap screw, then tighten the diagonally opposite cap screw. Tighten the two remaining cap screws. Tighten all cap screws within the specified limits shown in the chart.

DO NOT use air wrenches. DO NOT tighten one cap screw fully before tightening the others. DO NOT overtighten.

SAE FOUR BOLT FLANGE FITTING TORQUE

Nominal Flange Size	Cap Screw Size[1]	Torque[2] N·m Min.	N·m Max.	(lb-ft) Min.	(lb-ft) Max.
1/2	5/16 - 18 UNC	20	31	(15)	(23)
3/4	3/8 - 16 UNC	28	54	(21)	(40)
1	3/8 - 16 UNC	37	54	(27)	(40)
1-1/4	7/16 - 14 UNC	47	85	(35)	(63)
1-1/2	1/2 - 13 UNC	62	131	(46)	(97)
2	1/2 - 13 UNC	73	131	(54)	(97)
2-1/2	1/2 - 13 UNC	107	131	(79)	(97)
3	5/8 - 11 UNC	158	264	(117)	(195)
3-1/2	5/8 - 11 UNC	158	264	(117)	(195)
4	5/8 - 11 UNC	158	264	(117)	(195)
5	5/8 - 11 UNC	158	264	(117)	(195)

1. SAE Grade 5 or better cap screws with plated hardware.

2. Tolerance ± 10%. The torques given are enough for the given size connection with the recommended working pressure. Torques can be increased to the maximum shown for each cap screw size if desired. Increasing cap screw torque beyond this maximum will result in flange and cap screw bending and connection failures.

TS859AF

O-RING FACE SEAL FITTING SERVICE RECOMMENDATIONS

1. Inspect the sealing surfaces for nicks or scratches, roughness, or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.

2. Lubricate O-ring and male threads with petroleum jelly.

For O-ring face seal fittings, push O-ring into groove.

For O-ring boss fittings, put a thimble over the threads to protect O-ring from nicks. Slide O-ring over the thimble and into the turned down section of fitting.

For angle fittings, loosen special nut and push special washer against threads so O-ring can be installed into the turned down section of fitting.

3. Install fitting and hand tighten until snug. To position angle fittings, turn fitting counterclockwise a maximum of one turn.

4. Tighten fitting for nut to the torque value shown in chart. Use one wrench to hold connector body and another wrench to tighten nut. When tightening a fitting on a hose, it may be necessary to use three wrenches to prevent twisting hose; one on the connector body, one on the nut, and one on the body of the hose fitting.

O-RING FACE SEAL FITTING TORQUE (1)

Nominal Tube O.D. mm	Nominal Tube O.D. in.	Dash Size	O-Ring Face Seal End: Thread Size in.	O-Ring Face Seal End: Swivel Nut Torque N·m	O-Ring Face Seal End: Swivel Nut Torque lb-ft	O-Ring Face Seal End: Bulkhead Nut Torque N·m	O-Ring Face Seal End: Bulkhead Nut Torque lb-ft	O-Ring Boss End: Thread Size in.	O-Ring Boss End: Straight Fitting or Jam Nut Torque N·m	O-Ring Boss End: Straight Fitting or Jam Nut Torque lb-ft
4.76	0.188	-3	— — —	—	—	—	—	3/8-24	8	6
6.35	0.250	-4	9/16-18	16	12	5.0	3.5	7/16-20	12	9
7.94	0.312	-5	— — —	—	—	—	—	1/2-20	16	12
9.52	0.375	-6	11/16-16	24	18	9.0	6.5	9/16-18	24	18
12.70	0.500	-8	13/16-16	50	37	17.0	12.5	3/4-16	46	34
15.88	0.625	-10	1-14	69	51	17.0	12.5	7/8-14	62	46
19.05	0.750	-12	1-3/16-12	102	75	17.0	12.5	1-1/16-12	102	75
22.22	0.875	-14	1-3/16-12	102	75	17.0	12.5	1-3/16-12	122	90
25.40	1.000	-16	1-7/16-12	142	105	17.0	12.5	1-5/16-12	142	105
31.75	1.250	-20	1-11/16-12	190	140	17.0	12.5	1-5/8-12	190	140
38.10	1.500	-24	2-12	217	160	17.0	12.5	1-7/8-12	217	160

1. Tolerance: ± 15-20%.

T5859AH

Litho in U.S.A.

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 connections. Turn key switch on. Check the voltmeter. Charge the battery, if necessary.

2. Check the level of the coolant in the radiator. The coolant must be seen in the sight glass when the engine is cold.

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 lowering the bowl, stopping the engine, and moving the steering wheel until the machine 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.

*Numbers in parenthesis are same as item numbers on the periodic maintenance chart on your scraper.

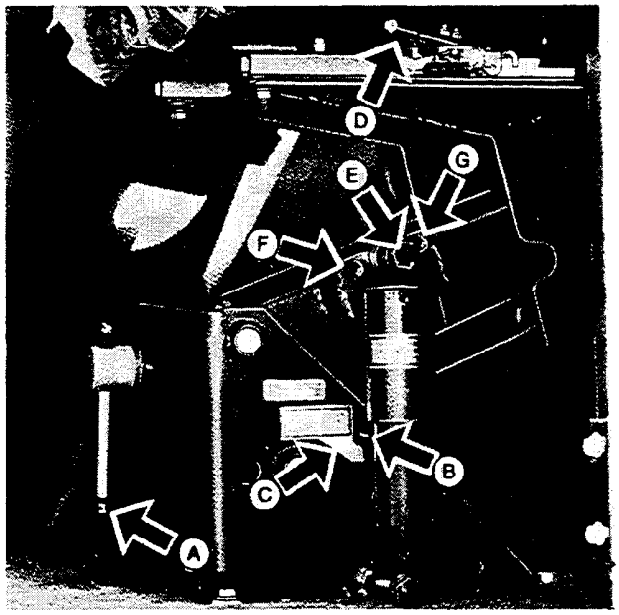
1. Cab Equipment

Check the operation of the following equipment: seat belt, right (R.H.) window, vandal cover and locks, door, steering wheel, dome light, auxiliary heater. Make adjustments, if necessary.

Cab equipment checked *Yes* *No*

2. Seat

Check the operation of the seat.



T84922

A—Weight Adjustment Lever
B—Pointer
C—Ride Zone
D—Forward or Rearward Adjustment Lever
E—Cap Screw
F—Soft Ride
G—Firm Ride

Fig. 1-Seat

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 (B) is in the ride zone (C).

Litho in U.S.A.

Adjustment Forward or Rearward

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

Adjustment for Ride

Install the shock absorber cap screw (E) in the front hole (F) for a soft ride, or in the rear hole (G) for a firm ride.

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*

3. Gauges, Switches, and Indicator Lights

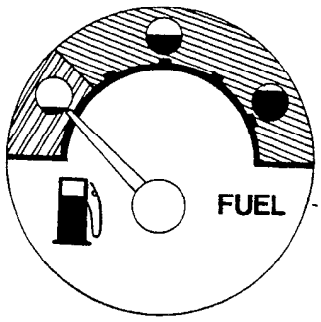


Fig. 2-Fuel Level Gauge

Add a small amount of fuel to the fuel tank. Check the action of the fuel gauge.

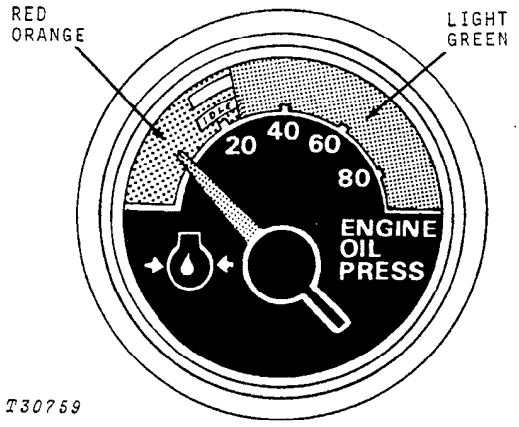


Fig. 3-Engine Oil Pressure Gauge

Normal operating range is 170-550 kPa (1.7-5.5 bar) (25-80 psi).

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.

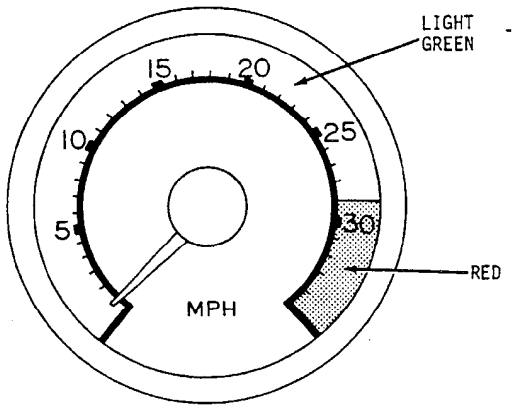


Fig. 4-Speedometer

The speedometer shows scraper speeds from 0 to 55 km/h (0 to 34 mph). Red background at 46.7 km/h (29 mph) and over shows overspeed.

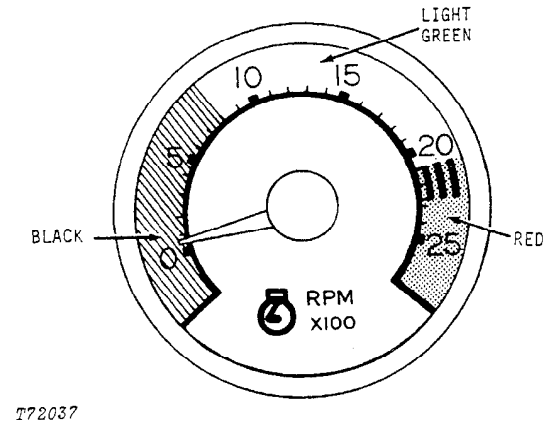


Fig. 5-Tachometer

The tachometer shows engine rpm from 0 to 2500 rpm. Normal operating range is 925 to 2300 rpm.

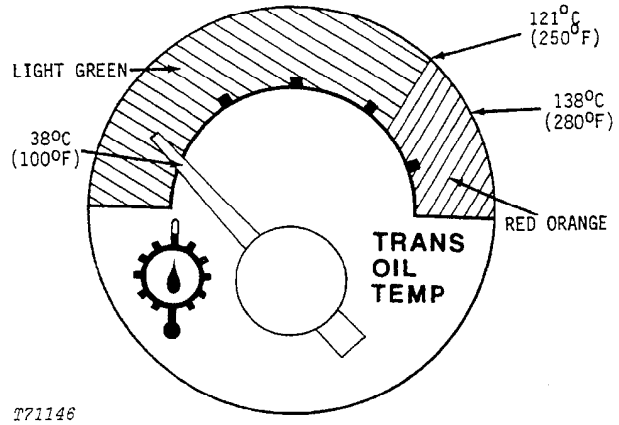


Fig. 6-Transmission Oil Temperature Gauge

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

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.

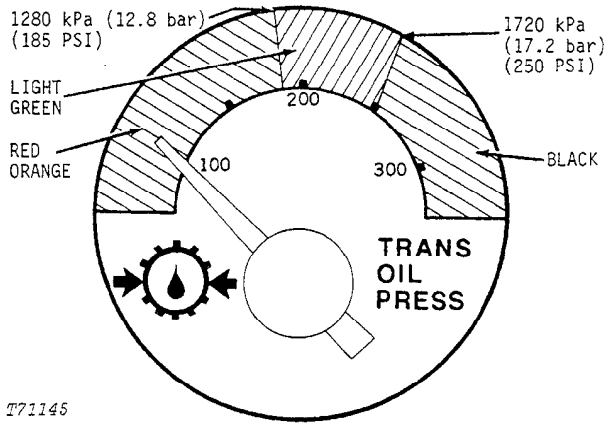


Fig. 7-Transmission Oil Pressure Gauge

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.

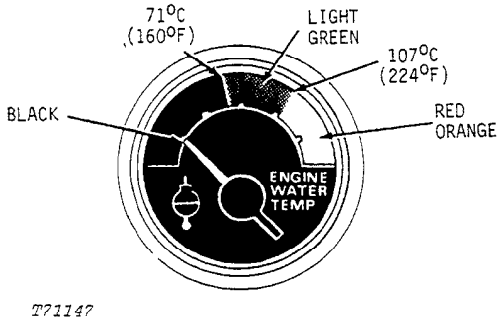


Fig. 8-Engine Coolant Temperature Gauge

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

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

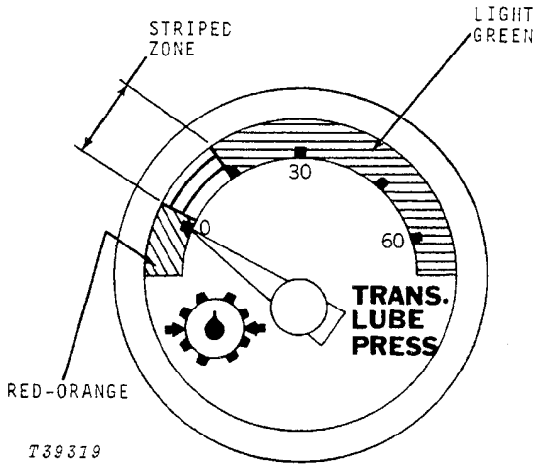


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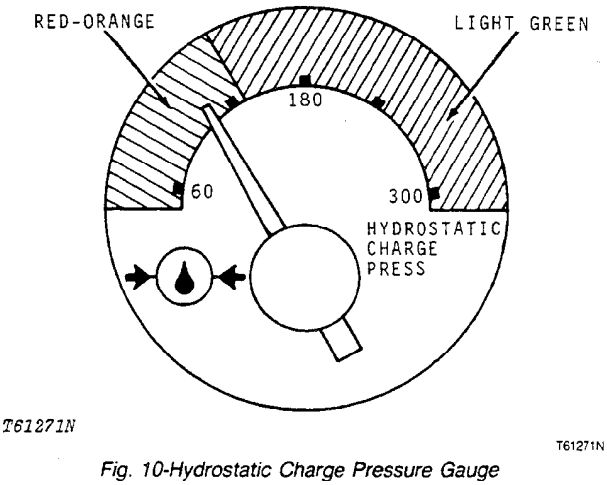
Fig. 9-Transmission Lube Pressure Gauge

When engine is running at slow idle, the gauge must show in striped zone. When operating under constant heavy loads, the gauge must show in the light green zone.

DO NOT operate the scraper when the needle is in the red-orange zone. If needle is in this zone, stop the scraper. Check transmission filter. If filter is not clogged and needle is still in red-orange zone, see your John Deere dealer.

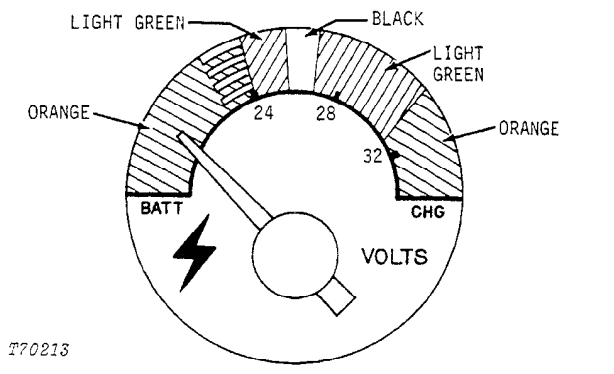
NOTE: Transmission lube pressure will vary with engine speed and oil temperature.



T61271N

Fig. 10-Hydrostatic Charge Pressure Gauge

Normal operating range is in light green zone. If gauge registers in red-orange zone, stop the scraper. Find the cause.



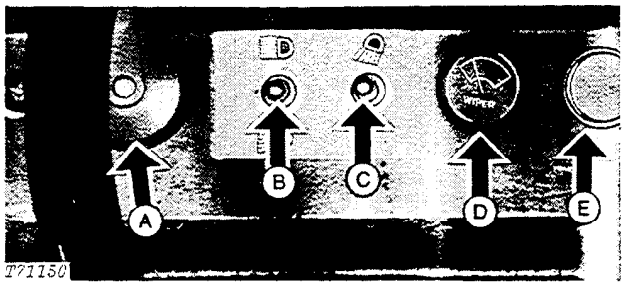
T70213

Fig. 11-Voltmeter

Normal operating range is indicated by the right (R.H.) green zone.

If the indicator hand is not in this green zone, troubleshoot the electrical system.

Check the operation of the switches.



T71150

Fig. 12-Switches

A - Turn Signal Switch - Lift switch to flash right (R.H.) turn signal. Push down switch to first position to flash left (L.H.) turn signal. Push switch all the way down to flash all four turn signal lights.

B - Headlight Switch - Activate switch upward to turn on four headlights and taillights. Push switch downward to turn on two low beam headlights and tail lights.

C - Work Light Switch - Activate switch to turn on two rear work lights.

D - Wiper Switch - Turn switch clockwise for low or high speed wiper action.

E - Starting Aid Button - Remove starting fluid can from engine. Push starting aid button. Listen for solenoid click.

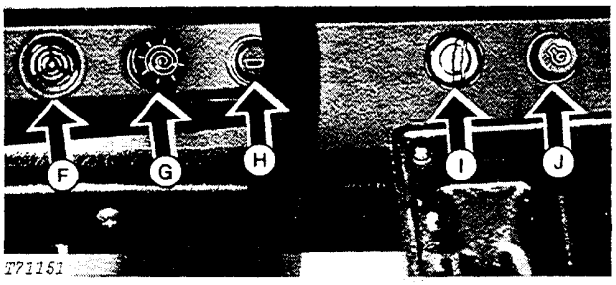


Fig. 13-Switches

F - Buzzer - Read information on indicator lights below.
G - Cigar Lighter - Push to activate.
H - Horn Switch - Push the button to sound dual horns.
I - Ignition Switch - Turn the key clockwise to turn the switch on. No other switches or gauges work unless the ignition switch is on.
J - Starter Switch - Push the button to start the engine.

Check operation of indicator lights.

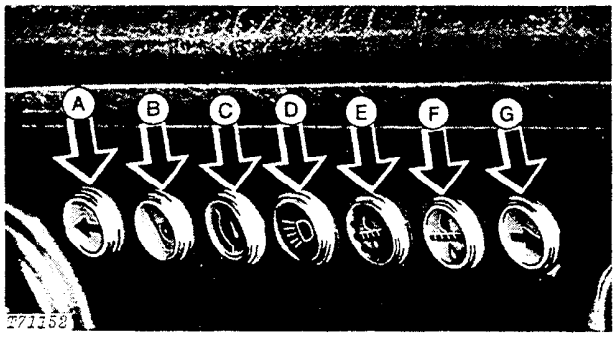


Fig. 14-Indicator Lights

A - Left (L.H.) Turn Indicator Light - Flashes for left turn and emergency flashing.
B - Parking Brake Indicator Light - Glows when parking brake is engaged and key switch is on. Buzzer will sound at intervals.
C - Brake Pressure Indicator Light - Glows when pressure in system falls below 10,500 kPa (105 bar) (1525 psi). Buzzer will sound at intervals.

Light may glow briefly after engine starts until pressure goes above 10,500 kPa (105 bar) (1525 psi).

If this light glows when scraper is operating, stop scraper and find cause.

D - High Beam Indicator Light - Glows blue when bright headlights are on.
E - Transmission Filter Restriction Indicator Light - Glows when transmission filter is plugged. Also glows during warm-up when oil is cold. Buzzer will sound at intervals.
F - Hydraulic Filter Restriction Indicator Light - Glows when hydraulic filter is plugged. Also glows during warm-up when oil is cold. Buzzer will sound at intervals.
G - Right Turn Indicator Light - Flashes for right (R.H.) turn and emergency flashing.

Gauges, switches, and indicator lights checked	*Yes*	*No*

4. Transmission

Check the operation of the transmission.

Controls

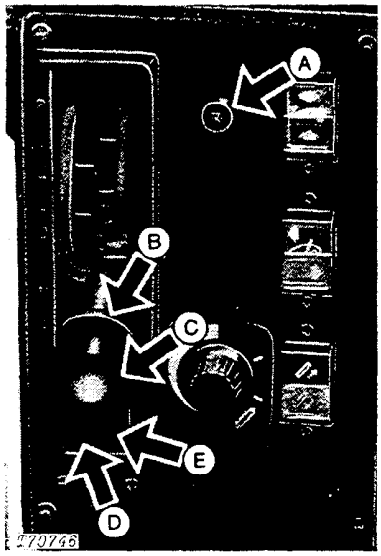


Fig. 15-Transmission Controls

A - Transmission Indicator Light - If light glows amber, transmission is in automatic mode. If light is off, transmission is in manual mode.

B - Neutral Lock - Lift sleeve before moving shift lever from neutral into reverse or first gear. Lift sleeve before moving lever from first gear to neutral. Move lever from reverse to neutral without lifting sleeve.
C - Gear Shift Lever - Move lever to desired gear.
D - Gear Indicator Light - Shows the gear the transmission is in. Also shows neutral ("0") and reverse (– [minus sign]). When shift lever is in neutral, the light flashes available gears if transmission electrical system is not working correctly.
E - Lockup Indicator Light - Light shows "L" when the lockup clutch locks a gear in direct drive. Light also flashes if transmission lockup electrical system is not working correctly.

Check the operation of the transmission in the three shift patterns in automatic mode.

Transporting Shift Pattern

1. Move shift lever to 6th gear.

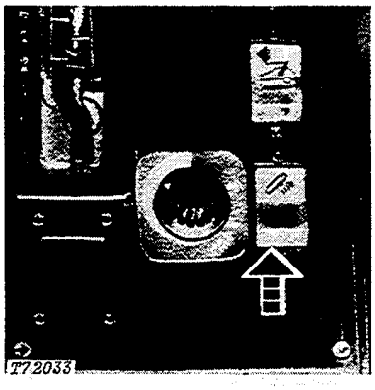


Fig. 16-Elevator Switch (Unloading)

2. Move the elevator switch to unload position (Fig. 16) or to neutral.
3. Push down accelerator.
4. Transmission should shift: 3TC*, 4TC, 4L+, 5TC, 5L, 6TC, 6L.

* - Torque Converter Drive
+ - Lockup in Direct Drive

Loading Shift Pattern

1. Move shift lever to 6th gear.

Fig. 17-Elevator Switch (Loading)

2. Move the elevator switch to loading position.
3. Push down accelerator.
4. Transmission should shift: 1TC, 2TC, 3TC, 4TC, 5TC, 6TC.

Downshift Pattern

1. Drive the scraper in 6L gear.
2. Release the accelerator.
3. Transmission should shift: 6L, 5L, 4L, 3TC.

NOTE: To make a manual downshift, move the shift lever to the next lower gear. Do not manually downshift more than one gear lower at a time. Do not manually downshift above 1800 rpm.

Check the operation of the hold pedal.

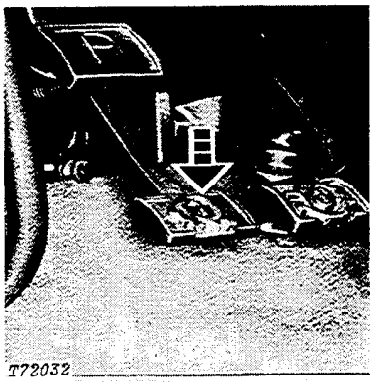


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Fig. 18-Hold Pedal

Use pedal only when transmission is in automatic mode.

Push down pedal. Transmission will operate as follows:

1. Will not shift out of gear it is in.
2. If in torque converter drive, transmission will stay in torque converter drive.
3. If in direct drive ("L" shows on lockup indicator), will stay in direct drive.

Diagnostics of Transmission Electrical System

1. If the transmission electrical system is not working correctly, the transmission will automatically shift to 4th gear. The gear indicator will flash "4". If 4th gear is not working, the transmission will shift to neutral and the indicator will flash "0".

   NOTE: If lockup electrical system is not working, the lockup indicator will flash.

2. Move the shift lever to neutral.

3. The gear indicator will flash the gears that are working.

4. Switch to manual operation. Use only the working gears.

Transmission checked *Yes* *No*

5. Differential Lock Operation

Check the operation of the differential lock.

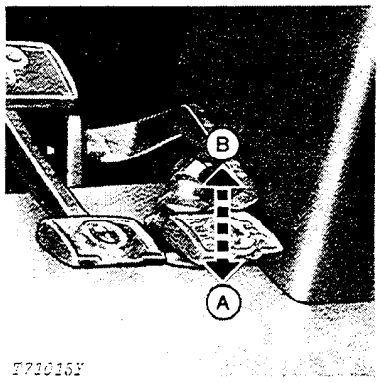

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Fig. 19-Differential Lock Pedal

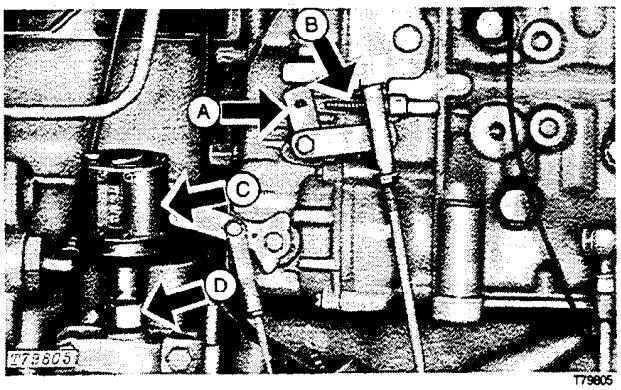
Start the engine. Engage the lock (A). Turn the steering wheel. If the lock is working correctly, steering resistance will be felt.

Differential lock checked *Yes* *No*

6. Engine Speed Linkage (30)

Check engine speeds when engine is at normal operating temperature.

IMPORTANT: Use only a calibrated tachometer to check engine speeds.



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A—Control Lever **C—Service Meter**
B—High Speed Stop Screw **D—Tachometer Drive**

Fig. 20-Checking Engine Speeds

Remove service meter (C). Connect calibrated tachometer to tachometer drive (D).

Slow idle must be 925 rpm. Fast idle must be 2325 rpm.

Check injection pump linkage for full travel. Control lever (A) must hit high speed stop screw (B).

If engine speeds need adjustment, see page I-IV-26.

Engine speeds checked *Yes* *No*

7. Accumulator Action (24)

Check brake accumulator action. Brakes should operate for several applications after engine is stopped. Brakes should be solid for a minimum of five applications.

Accumulator checked *Yes* *No*

8. Brakes

Check the operation of the hydraulic brakes.

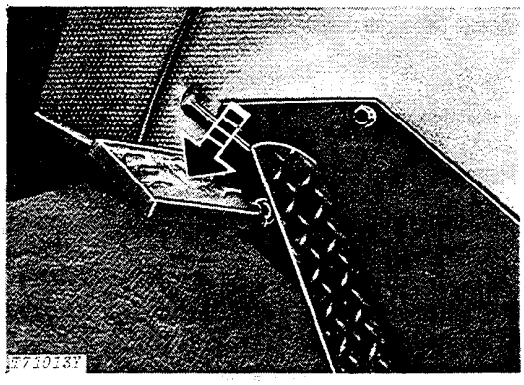

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Fig. 21-Brake Pedal

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:

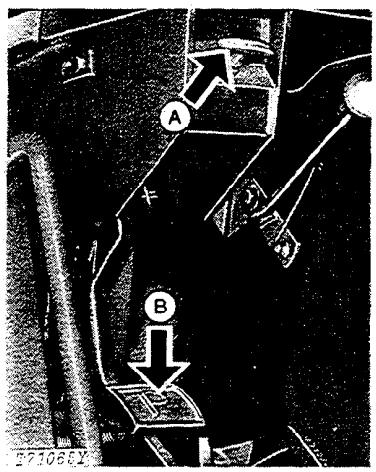
1. If moderate pedal force does not hold the machine in place.
2. If the pedal feels spongy.
3. If the pedal jumps back when it is pushed down.
4. If the pedal has too much travel.

See page I-IV-27 for the correct procedure.

Brakes checked *Yes* *No*

9. Parking Brake

Check action of parking brake.



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A—Release Handle **B—Parking Brake Pedal**

Fig. 22-Parking Brake

Push down pedal (B) firmly. Pedal must not move more than four notches.

If adjustment is needed, see page I-IV-28.

Parking brake checked *Yes* *No*

10. Cycle Times

Check cycle times when the oil is warm and the engine at fast idle.

NOTE: Operate each hydraulic control until all air has been removed from the hydraulic system. Check all controls for freedom of movement and correct 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.

	Seconds
Elevator Speed (one complete revolution)	6.0 max.
Raise bowl	2.5 - 3.5
Lower bowl	3.5 - 4.0
Eject or Return Cycle	7.0 - 8.0
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.

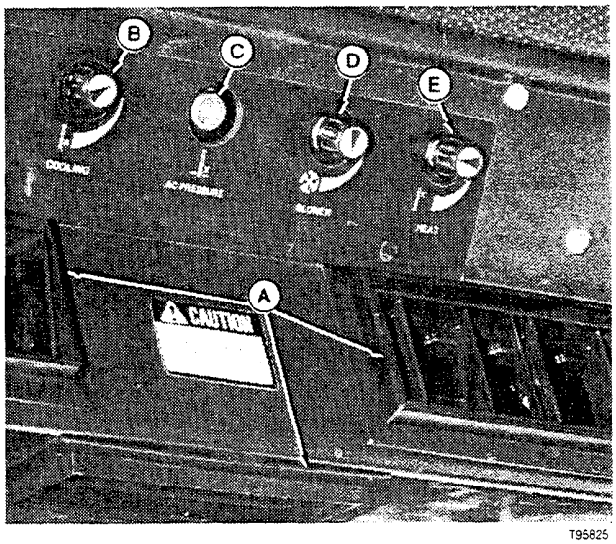
When the engine is at slow idle (925 rpm), turn the steering wheel from stop to stop. Turn the steering wheel faster than normal to "force the turn". This will remove air from the steering system.

Cycle times checked *Yes* *No*

*Malfunctions*_____

11. Air Conditioner

Check the air conditioner controls.



T95825

A—Louvers
B—Temperature Control Knob
C—Refrigerant Pressure Indicator Light
D—Blower Control Knob
E—Heater Control Knob

Fig. 23-Air Conditioner Controls

NOTE: Air temperature must be 16°C (60°F) or higher.

1 - Turn the key switch ON. Operate the blower control knob (D) in all positions. Check the fan speeds and air volume from the louvers (A).

2 - Turn the key and blower switches ON. Turn the temperature control knob (B) clockwise toward maximum cooling. Listen for the click from the compressor clutch.

3 - Turn the heater valve (on the engine) clockwise to closed position.

4 - Turn the blower control knob clockwise to high speed. Turn the temperature control knob clockwise to maximum cooling. Run the engine at approximately 2000 rpm.

5 - After ten minutes check the sight glass on the receiver dryer for bubbles. The receiver dryer is behind the cab.

NOTE: Bubbles may be seen immediately after the compressor cycles ON. If bubbles are seen under any other condition, see Section 90, Group 9031.

6 - Check the temperature of air from the louvers. Hold a thermometer in the louver until you get the lowest reading.

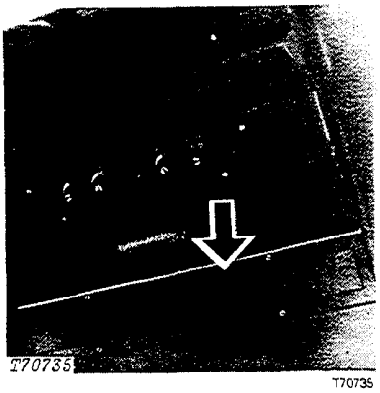
When air temperature is above 27°C (80°F) the temperature of air from the louvers must be 14-17°C (25-30°F) lower.

When air temperature is below 27°C (80°F), the temperature of air from the louvers must be less than 10°C (50°F).

7 - If the unit does not operate correctly or if the pressure indicator light goes on, see Section 90, Group 9031.

Air conditioner checked *Yes* *No*

12. Cab Recirulating air Filter (22)



T70735

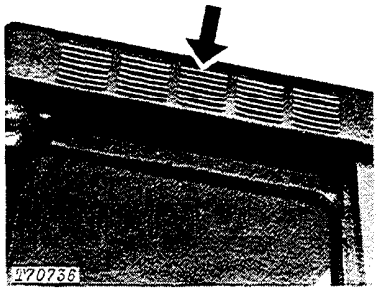
Fig. 24-Recircuilating Air Filter

Remove cover and filter.

If required, wash filter in warm, soapy water.

Rinse and dry.

13. Cab Fresh Air Filter (18)



T70736

Fig. 25-Fresh Air Filter

Remove cover. Pull out filter.

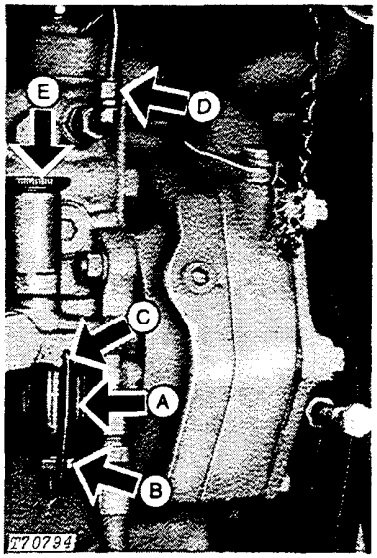
To clean filter:

Tap filter onflat surface, dirty side down.

Blow low-pressure compressed air through filter opposite to normal air flow.

If required, wash filter in warm, soapy water. Rinse and dry.

14. Injection Pump Sediment Bowl and Filter (28)



T70794

Fig. 26-Sediment Bowl and Filter

Check sediment bowl (A) for dirt and water.

If bowl needs cleaning, loosen nut (B).

Swing clip (C) away from bowl.

Remove bowl and filter.

Clean the bowl and filter.

Assemble all parts.

Be sure bowl gasket fits correctly.

Bleed the fuel system.

Bleeding the Fuel System:

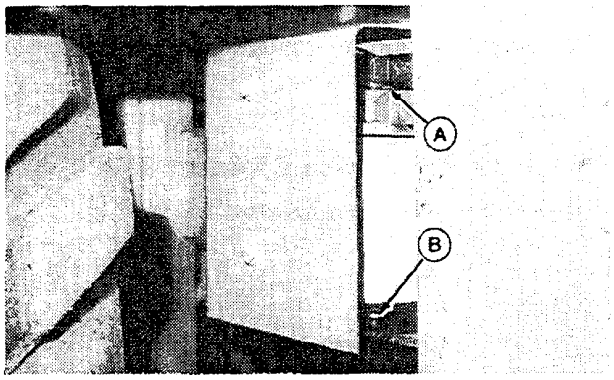
Loosen fuel line (D).

Loosen the primer (E). Pump the primer until fuel free of bubbles flows from the fuel line.

Tighten the fuel line.

Push the primer down Tighten it by hand.

15. Water Separator (2)



T95826

A—Vent Screw **B—Drain Petcock**

Fig. 27-Water Separator

The water separator is located on bowl frame, under left rear fender.

Drain water and sediment when engine is cold.

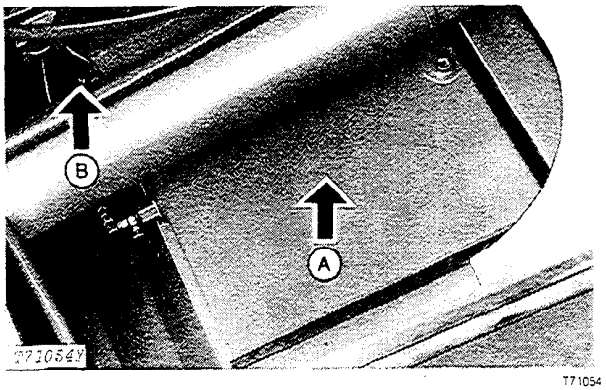
Loosen drain petcock (B) shown.

Drain liquid until fuel flows from petcock.

Tighten drain petcock.

NOTE: If fuel does not flow, loosen vent screw (A).

16. Fuel Tank Sump (1)



T71054

Fig. 28-Bottom of Fuel Tank

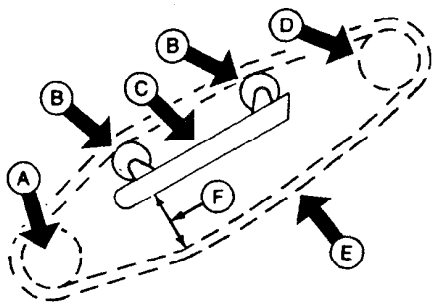
Open drain cock (B).

Drain water or sediment. Close drain cock.

NOTE: Fill fuel tank (A) after shutdown each day.

This view is of the bottom of the fuel tank.

17. Elevator Chain Sag (43)



T84945

A—Lower Idler **D—Upper Idler**
B—Center Idler **E—Chain**
C—Elevator Frame **F—7 to 12 in. (18 to 31 cm)**

Fig. 29-Elevator Chain

Measure chain sag between box section of elevator frame and top of chain sidebar at point of greatest sag.

Sag should be 7 to 12 in. (18 to 31 cm).

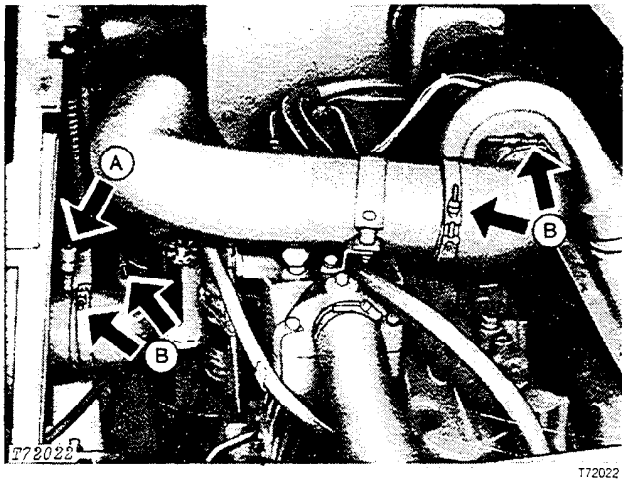
If sag is less than 7 in. (18 cm), chain will wear excessively.

If sag is more than 12 in.(31 cm), chain will jump sprocket teeth.

IMPORTANT: Chain sag should not vary more than 1 in. (25 mm) from side to side.

If adjustment is needed, see page I-IV-31.

18. Air Intake System (36)



A—Restriction Indicator **B—Clamps**

Fig. 30-Air Intake System

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

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

Air intake system checked *Yes* *No*

19. Batteries

Check terminals and connections.

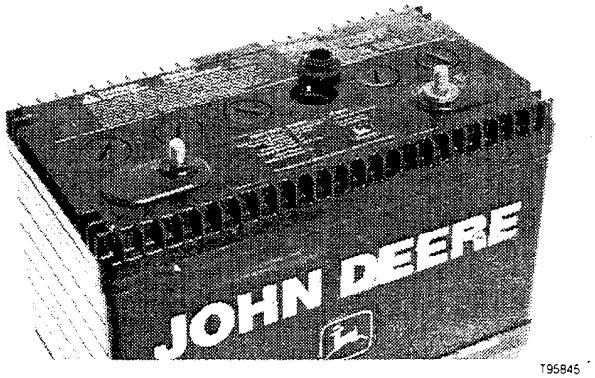


Fig. 31-Battery
(Calcium/Lead Battery Illustrated)

If terminals are corroded, clean them with a stiff brush.

Clean batteries with a damp cloth, if necessary.

Batteries checked *Yes* *No*

20. Engine Crankcase Oil Level (29)

Check the crankcase oil level.

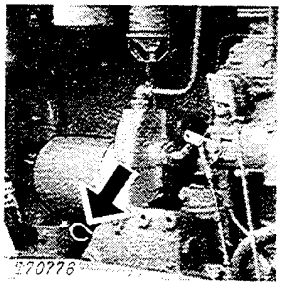


Fig. 32-Dipstick

Park scraper on level surface. Lower bowl to ground. Stop engine. Wait ten minutes for oil to drain into crankcase. Oil should be between marks on dipstick. If not, add oil specified on page I-V-4.

Crankcase oil level checked *Yes* *No*

21. Coolant Conditioner-Filter

Check coolant conditioner-filter valves.

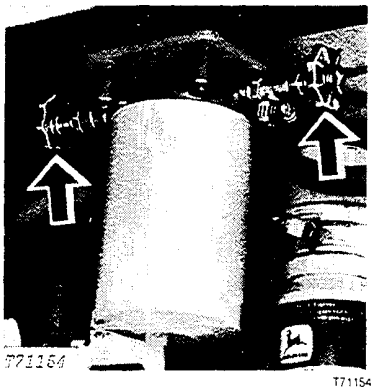


Fig. 33-Conditioner-Filter Valves

Valves must be open. Turn valves counterclockwise to open them.

Coolant conditioner-filter checked *Yes* *No*

22. Radiator Coolant Level (27)

Check coolant level.

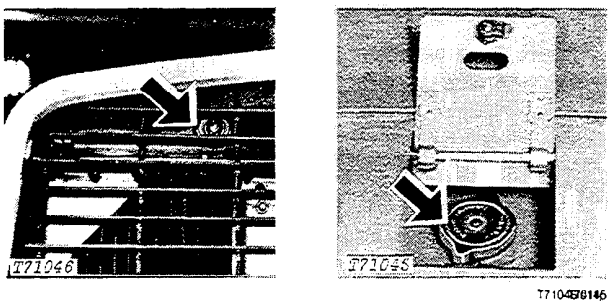


Fig. 34-Checking Coolant Level

Coolant should be seen in sight glass when engine is cold. If not, remove radiator cap.

⚠ CAUTION: Do not remove radiator cap unless the engine is cool. Then loosen the cap slowly to the stop. Release pressure before removing cap.

Add clean soft water for warm weather or a solution of 50% clean water and 50% ethylene glycol (permanent type antifreeze with approved rust inhibitor) for cold weather. Tighten the filler cap.

IMPORTANT: Do not use methoxy propanol antifreeze (such as Dowtherm 209 antifreeze or its equivalent) in the coolant solution. It may damage the cylinder sleeves and seals. This antifreeze is also not compatible with either the Precharge or Service filters.

Check cooling system for loose connections and leaks.

Coolant level checked *Yes* *No*

23. Engine Belts (26)

Check the tension of the engine belts.

Strand Tension Gauge

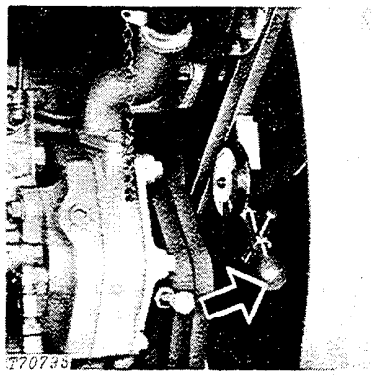


Fig. 35-Strand Tension Gauge on Front Alternator Belt

Run the engine 5 minutes. Immediately after the engine stops, check belt tension of front alternator belt and front fan belt.

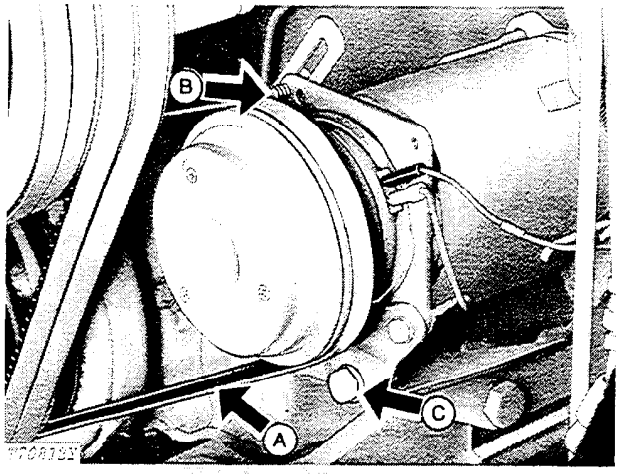
If tension is less than 223 N (50 lb.), let the engine cool 10 to 15 minutes. Then make tension 400 N (90 lb.).

Tension Tester

Fig. 36-Tension Tester on Front Fan Belt

Check front alternator and front fan belt. A force of 27 N (20 lb.) halfway between pulleys should move the belt 19 mm (3/4 in.).

Compressor Belt



A—Compressor Belt
B—Adjusting Strap Cap Screw
C—Mounting Cap Screw

Fig. 37-Compressor Belt Tension

Strand tension: 400 N (90 lb.) measured halfway between pulleys.

Tension tester: 67 N (15 lb.) force halfway between pulleys must move belt 8 mm (5/16 in.).

Adjustment

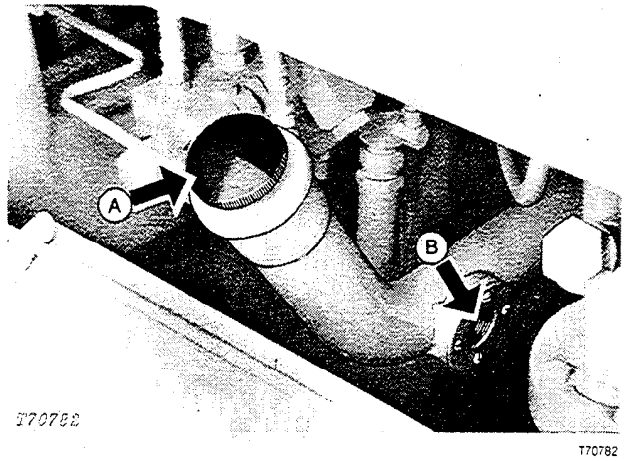
If any belts need adjustment, see page I-IV-36.

Belt tension checked *Yes* *No*

24. Hydraulic System Oil Level (23)

Check oil level when oil is cold. Park scraper on level surface. Lower bowl to ground. Sliding floor must be forward. Ejector gate must be to the rear.

Open the service door on front of cab.



A—Filler Cap
B—Sight Glass

Fig. 38-Hydraulic Oil Level

Oil should be to middle of sight glass.

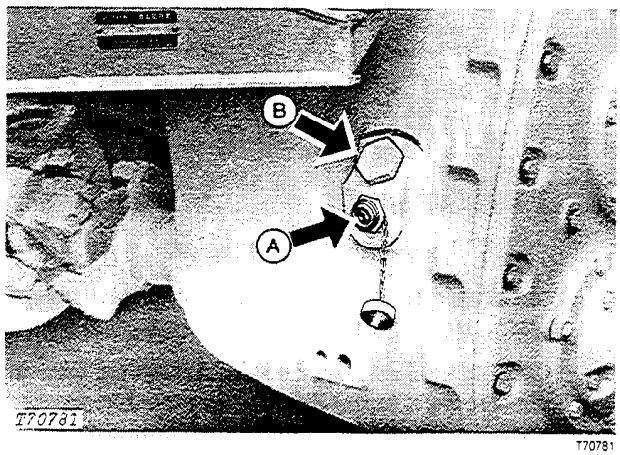
If not, add oil specified on page I-V-3.

Do not overfill.

Hydraulic oil level checked *Yes* *No*

25. Transmission Oil Level (10)

Check transmission oil level.



A—Sight Glass
B—Filler Plug

Fig. 39-Transmission Oil Level

Park scraper on a level surface. Lower bowl to ground. Run engine at slow idle. Sight glass must be full of oil. If not, remove filler plug. Add oil specified on page I-V-3. Install filler plug and sight glass cover.

Transmission oil level checked *Yes* *No*

26. Drive Axle Oil Level (39)

Check the drive axle oil level.

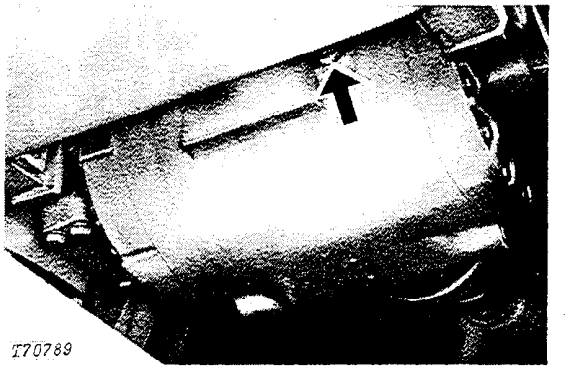


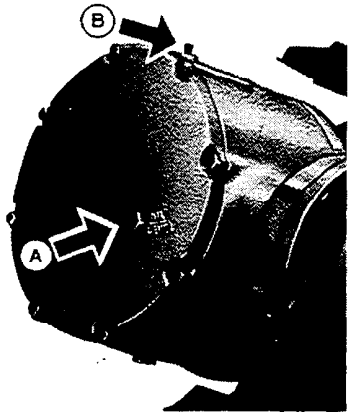
Fig. 40-Fill Plug

Remove fill plug. Oil must be to level of the fill plug. If not, add oil specified on page I-V-3. Install plug.

Drive axle oil level checked *Yes* *No*

27. Elevator Gearbox Oil Level (46)

Check the elevator gearbox oil level.



A—Check Plug **B—Fill Plug**

Fig. 41-Elevator Gearbox Oil Level

1 - Remove check plug (A). Oil should be level with plug.

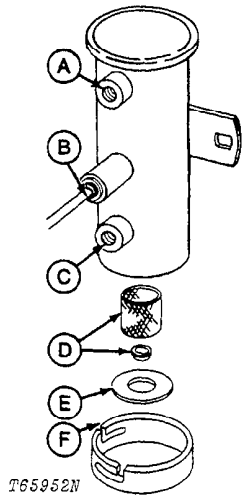
2 - If not, remove fill plug (B). Add oil specified on page I-V-3.

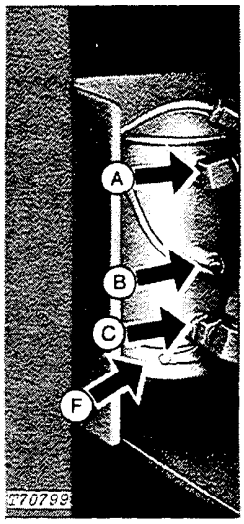
Install check plug and fill plug.

Elevator gearbox oil level checked *Yes* *No*

28. Fuel Pump (4)

The electric fuel pump is in the left (L.H.) rear side of the scraper bowl next to the fuel tank.





A—Fuel Outlet
B—Wiring Lead
C—Fuel Inlet
D—Filter and Magnet
E—Gasket
F—Bottom Cover

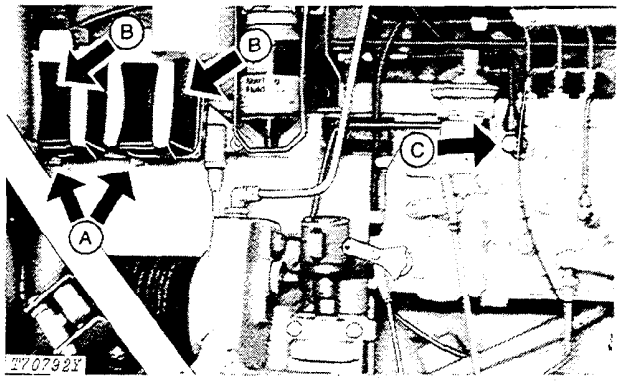
Fig. 42-Electric Fuel Pump

Close the fuel tank shut-off valve.

Remove cover (F), gasket (E), magnet and filter (D). Clean the magnet. If the filter is dirty or damaged, install a new one.

Install the magnet and filter, cover, and gasket. Open the shut-off valve.

Remove air from the fuel system.



A—Drain Screws
B—Fuel Filters
C—Fuel Line Fitting

Fig. 43-Removing Air From Feed System

1. Be sure there is enough fuel in the fuel tank.
2. Loosen the fuel line fitting (C).
3. Turn the key switch on. The electric fuel pump will pump fuel.
4. Wait until fuel free from air bubbles flows from the fitting.
5. Tighten the fitting.
6. Turn the key switch off.

Fuel pump checked *Yes* *No*

Air removed from fuel system *Yes* *No*

29. Tires (49)

Check air pressure in all tires with an accurate gauge having 7 kPa (1 psi) graduations.

NOTE: Do not use tire ballast.

Tire Size	Type	Ply Rating	Pressure Psi	(kPa)
26.5 x 29	Steel Cord Radial		50	(345)
26.5 x 25	E2	24	55	(380)
26.5 x 29	E2	26	50	(345)
26.5 x 25	Steel Cord Radial		55	(380)

Tire pressures can be changed to suit working conditions, according to tire manufacturer's recommendations.

Tire pressure checked *Yes* *No*

30. Wheel Cap Screws (53)

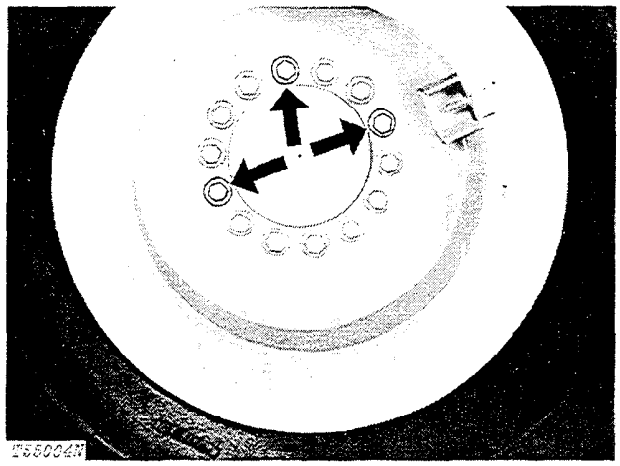


Fig. 44-Front Wheel Cap Screws

Tighten cap screws on all four wheels (56 total) to 542 N·m (400 lb-ft).

Cap screws checked *Yes* *No*

31. All Grease Fittings

All grease fittings were checked and lubricated before the scraper left the factory. However, to make sure of customer satisfaction, check each lubrication point shown on the following pages. Lubricate with several strokes of John Deere Multi-Purpose Grease or equivalent, if necessary.

CAUTION: Before lubricating always stop the engine and lower the bowl to the ground.

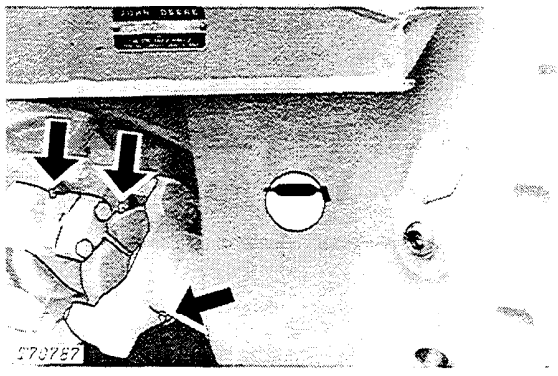
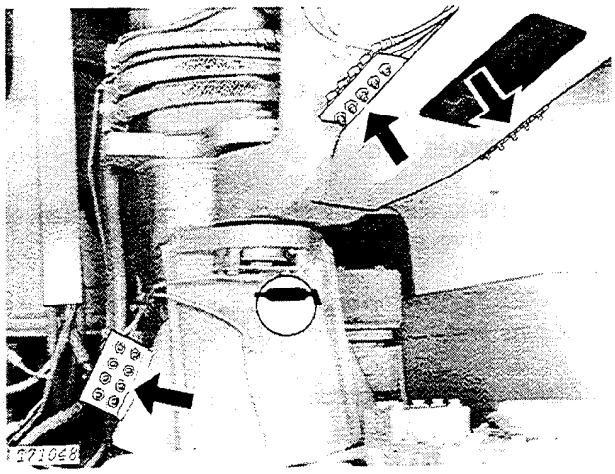


Fig. 45-Axle Drive Shaft Universal Joints (3 points)

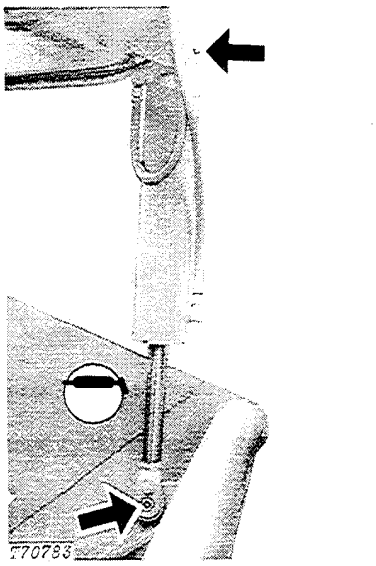
Lubrication required *Yes* *No*



T71048

Fig. 46-Oscillation Hitch Pivots, Steering Links, and Cylinder Pivots (18 points)

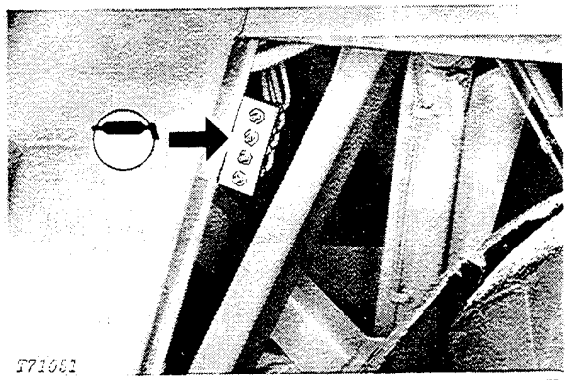
Lubrication required *Yes* *No*



T70783

Fig. 47-Cylinder Pivots (4 points)

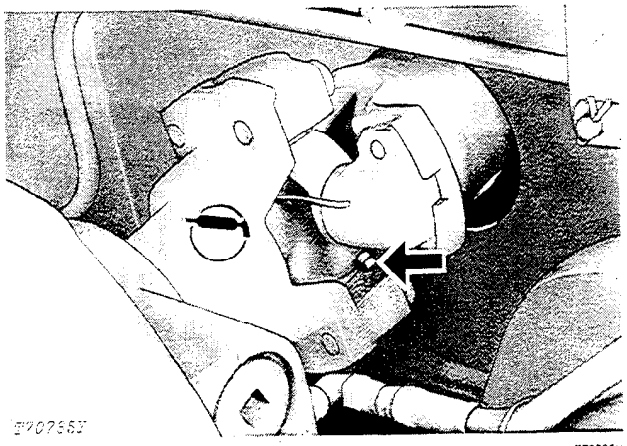
Lubrication required *Yes* *No*



T71051

Fig. 48-Sliding Floor Lever and Cylinder Pivots (4 points)

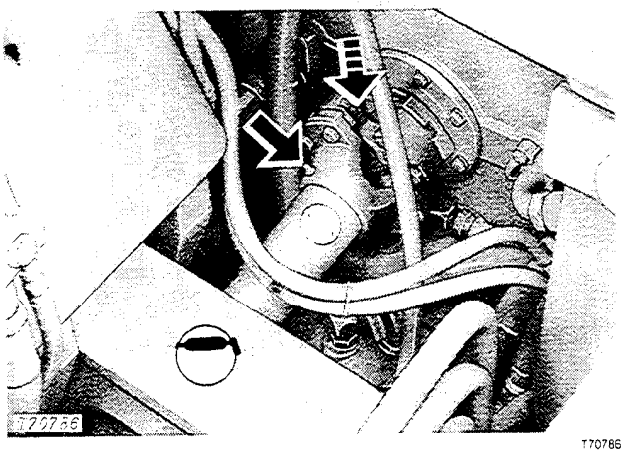
Lubrication required *Yes* *No*



T70785Y

Fig. 49-Transmission Drive Shaft Universal Joints and Tube (rear joint) (1 point)

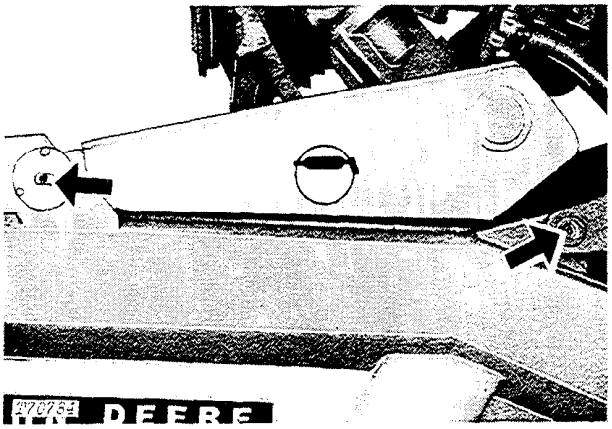
Lubrication required *Yes* *No*



T70786

Fig. 50-Transmission Drive Shaft Universal Joints and Tube (front joint) (2 points)

Lubrication required *Yes* *No*

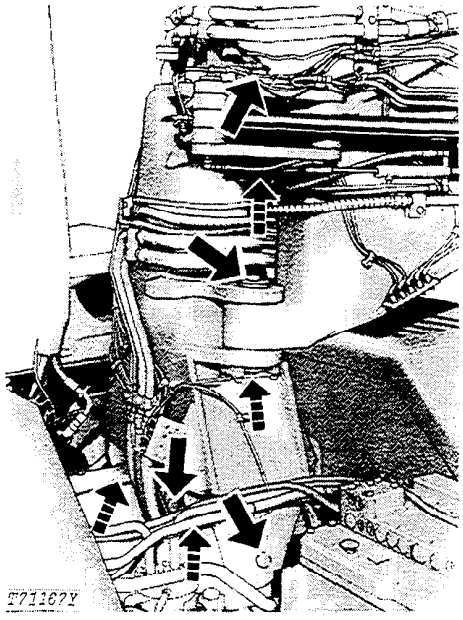


T70784

Fig. 51-Draft Frame and Elevator Pivots (4 points)

Lubrication required *Yes* *No*

32. Tighten Oscillation Hitch Pivots Cap Screws



T71167

Fig. 52-Oscillation Hitch Pivot Pin Cap Screws (8 points)

Tighten bolts to 670 lb-ft (908 N·m).

Shock load tapered sleeves with a brass, lead or aluminum hammer.

If washers are accessible and large enough, strike both washers in three places.

If washers are not accessible or are too small to strike directly, place a spacer over bolt head or bolt nut and strike spacer three times. Do not strike bolt head or nut.

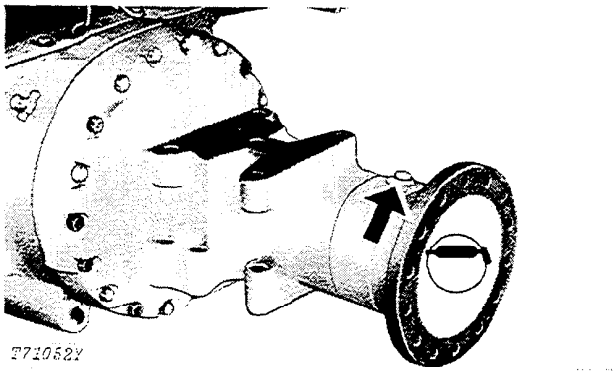
Check torque again.

Continue to alternately shock load tapered sleeves and check torque.

NOTE: Tighten top cap screws in vertical draft frame pivot pins first.

Check cap screw torque after the first 10 hours, 50 hours, and 200 hours.

NOTE: After disassembly and assembly of pivots, cap screw torque should be checked daily on three consecutive days.



T71052Y

Fig. 53-Drive Axle Outer Bearings (2 points)

NOTE: Remove pipe plug. Install grease fitting.

Lubrication required *Yes* *No*

33. Accessible Hardware Torque Values

Check all accessible hardware. If hardware is loose, tighten it to the correct torque. See the torque charts in Group III.

All accessible hardware checked *Yes* *No*

34. Fluid Leakage

Check the following systems for leakage. Check for broken hoses, broken lines, and loose or worn connections:

A. Cooling system checked *Yes* *No*
B. Hydraulic system checked *Yes* *No*
C. Fuel system checked *Yes* *No*
D. Lubrication system checked *Yes* *No*
E. Air intake system checked *Yes* *No*

35. Radiator Air Flow Pre-Test Inspection

CAUTION: DO NOT remove radiator cap until radiator top tank feels cool.

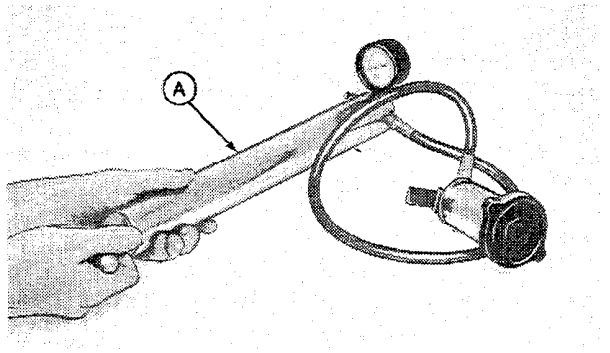
1. Check coolant level.

2. Check belt strand tension. Adjust belt if necessary. See page IV-11.

3. Check radiator fin condition. Make sure fins are not bent or damaged.

4. Check fan blade tips (A), shroud (B), and baffle (C), for damage. Fan blade tip to shroud distance must be equal at top and bottom.

5. Check for sucker fan installation.



T82483

Fig. 53A-Testing Radiator Cap

6. Connect radiator cap to a D-05104ST Pressure Pump (A). Raise pressure until cap valve opens. Valve must hold pressure at 43 to 50 kPa (0.43 to 0.51 bar) (6.25 to 7.50 psi) for one minute. If pressure decreases, install a new cap.

36. Radiator/Oil Cooler Air Flow Test

1. Apply parking brake, put transmission in neutral, lock reverser lever in neutral, and start engine.

2. Remove side shields and grill screen.

3. Divide the surface of radiator into 16 equal squares with white chalk lines on the front of the radiator.

4. Install a D-01084AA Tachometer/Temperature Reader on the machine. Start engine and check low idle. Low idle must be 925 rpm.

5. Run engine at 1025 rpm.

6. Connect JTO5529 Air Flow Meter to D-27501BM Digital-Multimeter or JT27504 Heavy Duty Digital Multimeter. Turn switch on multimeter to 20 volts AC.

IMPORTANT: Unit is equipped with a sucker fan.

Direction arrow on Air Flow meter must be toward radiator.

7. Hold Air Flow Meter in direct contact with radiator with direction arrow toward radiator. Hold multimeter with other hand and stand to side of unit to prevent interference with air flow. Make a record of the multimeter reading for each square.

8. Compare readings to Pre-Delivery Inspection records or repeat entire procedure on a new unit, with the same equipment for comparison. If readings are reduced by 20% or more, remove oil cooler. Clean external suraces of both oil cooler and radiator. Install oil cooler.

Air Flow Test Readings

Record sum of individual values for future reference:

T94610

37. Final Check

Clean the whole unit. Make the unit LOOK like a new machine. Touch up any chipped paint. Wash the machine thoroughly. Deliver to the customer a machine anyone would be proud to own.

DELIVERY SERVICE

A thorough discussion of the operation and service of a new machine at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

Many complaints arise simply because the owner was not shown how to operate and service a new machine properly. Devote enough time, at the customer's convenience, to introduce the owner to the new scraper and explain how to operate and service it.

The following procedure is recommended before the service technician and owner complete the delivery acknowledgments portion of the Delivery Receipt.

Using the operator's manual as a guide, be sure that the owner understands these points thoroughly:

1. The importance of safety.
2. The importance of lubrication and periodic services.
3. The importance of the break-in period.
4. Controls and instruments.
5. How to start and stop the engine.
6. All functions of the hydraulic system.

After explaining and demonstrating the above features, have the owner sign the Delivery Receipt and give the owner the operator's manual.

AFTER-SALE INSPECTION

The purchaser of a new John Deere machine is entitled to a free inspection at some mutually agreeable time within the warranty period after the equipment has been "run-in," usually after 50 to 100 hours of machine operation. The terms of this after-sale inspection are outlined on the customer's John Deere Delivery Receipt.

The purpose of this inspection is to make sure that the customer is receiving satisfactory performance from the scraper. At the same time, the inspection should reveal whether or not the machine is being operated, lubricated, and serviced properly.

If the recommended after-sale service inspection is followed, the dealer can eliminate a needless volume of service work by preventing minor irregularities from developing into serious problems later on. This will promote strong dealer-customer relations and present the dealer an opportunity to answer questions that may have arisen during the first few days of operation.

During the inspection service, the dealer has the further opportunity of promoting the possible sale of other new equipment.

Check operation of all controls and instruments for freedom of movement and correct operation.

**Numbers in parenthesis are same as item numbers on the periodic maintenance chart on your scraper.*

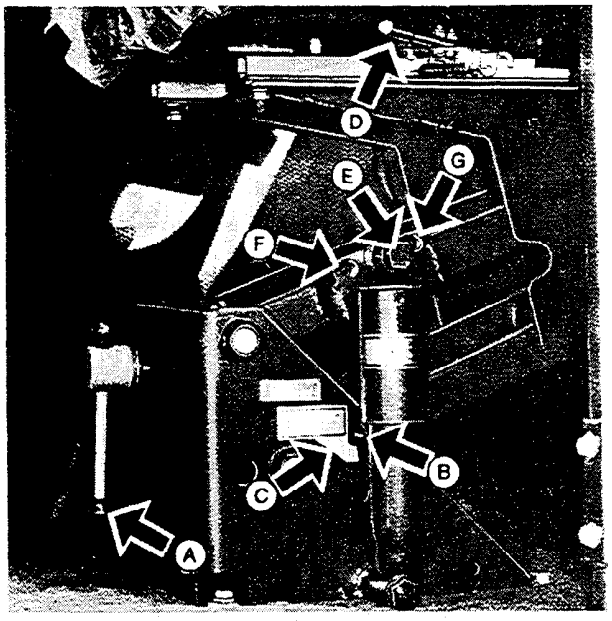
1. Cab Equipment

Check the operation of the following equipment: seat belt, right (R.H.) window, vandal cover and locks, door, steering wheel, dome light, auxiliary heater. Make adjustments, if necessary.

Cab equipment checked *Yes* *No*

2. Seat

Check the operation of the seat.



T84922

A—Weight Adjustment Lever
B—Pointer
C—Ride Zone
D—Forward or Rearward Adjustment Lever
E—Cap Screw
F—Soft Ride
G—Firm Ride

Fig. 54-Seat

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 (B) is in the ride zone (C).

Adjustment Forward or Rearward

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

Adjustment for Ride

Install the shock absorber cap screw (E) in the front hole (F) for a soft ride, or in the rear hole (G) for a firm ride.

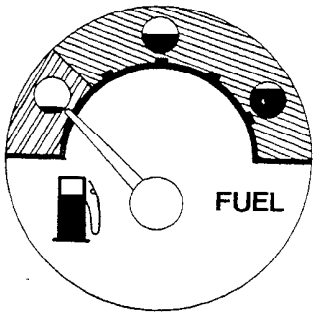
Up-Latch Lever

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*

3. Gauges, Switches, and Indicator Lights



T40227N

Fig. 55-Fuel Level Gauge

Add a small amount of fuel to the fuel tank. Check the action of the fuel gauge.

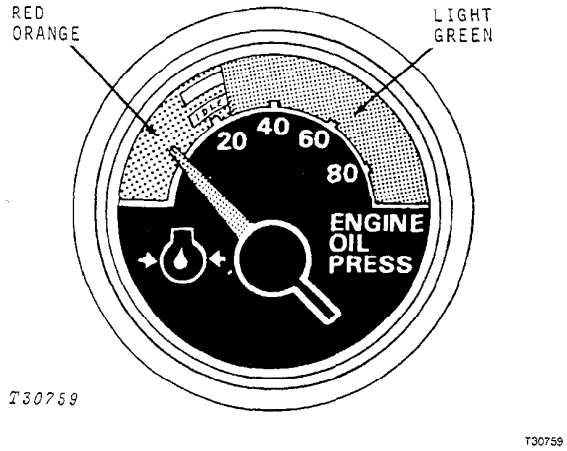


Fig. 56-Engine Oil Pressure Gauge

Normal operating range is 170-550 kPa (1.7-5.5 bar) (25-80 psi).

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.

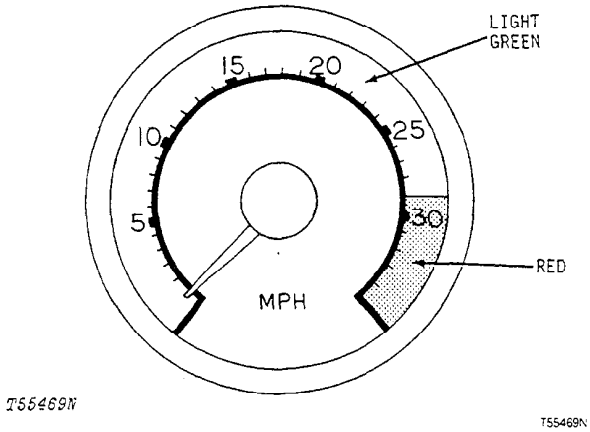


Fig. 57-Speedometer

The speedometer shows scraper speeds from 0 to 55 km/h (0 to 34 mph). Red background at 47 km/h (29 mph) and above shows overspeed.

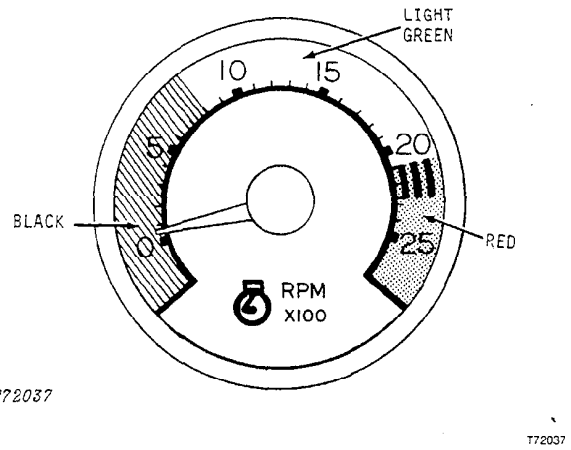


Fig. 58-Tachometer

The tachometer shows engine rpm from 0 to 2500 rpm. Normal operating range is 925 to 2300 rpm.

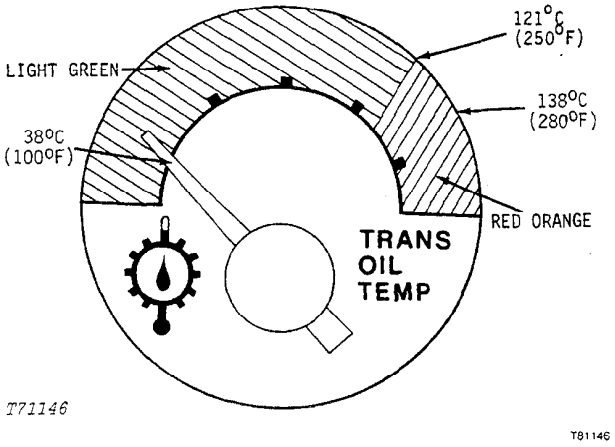


Fig. 59-Transmission Oil Temperature Gauge

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

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.

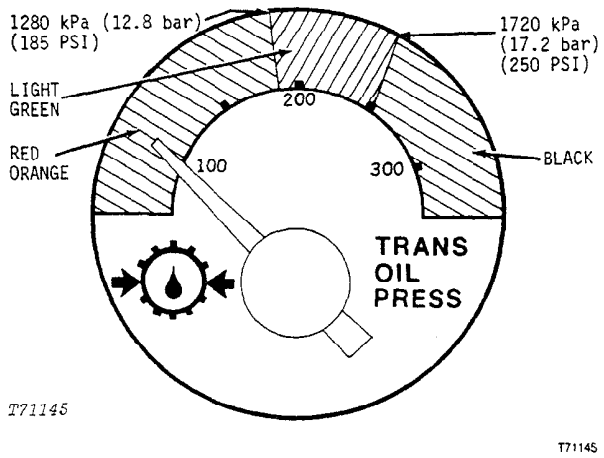


Fig. 60-Transmission Oil Pressure Gauge

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.

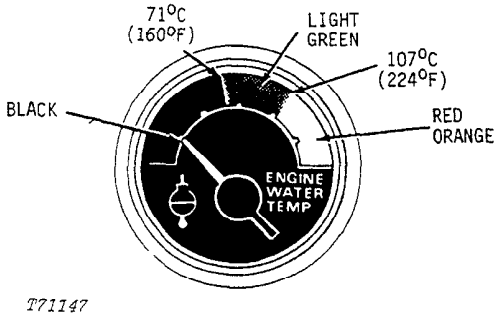


Fig. 61-Engine Coolant Temperature Gauge

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

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

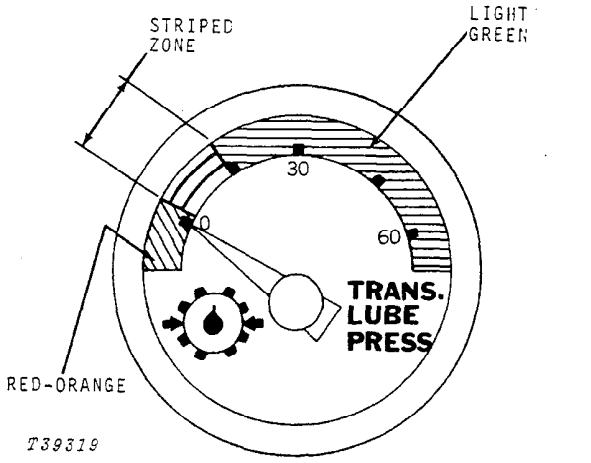


Fig. 62-Transmission Lube Pressure Gauge

When engine is running at slow idle, the gauge must show in striped zone. When operating under constant heavy loads, the gauge must show in the light green zone.

DO NOT operate the scraper when the needle is in the red-orange zone. If needle is in this zone, stop the scraper. Check transmission filter. If filter is not clogged and needle is still in red-orange zone, see your John Deere dealer.

NOTE: Transmission lube pressure will vary with engine speed and oil temperature.

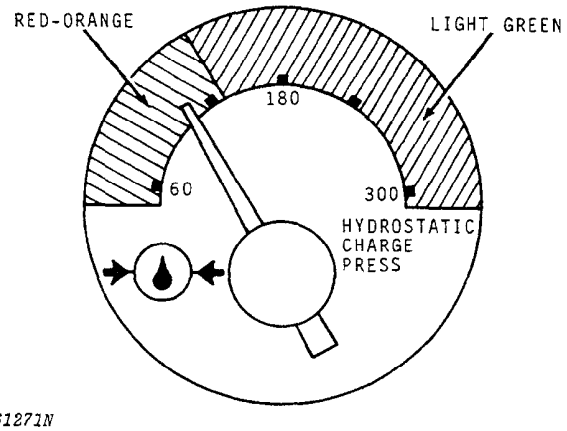


Fig. 63-Hydrostatic Charge Pressure Gauge

Normal operating range is in light green zone. If gauge registers in red-orange zone, stop the scraper. Find the cause.

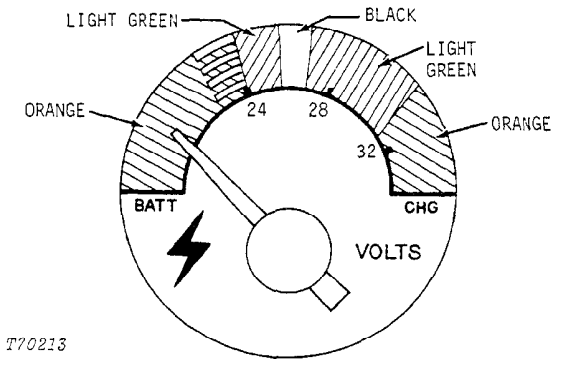


Fig. 64-Voltmeter

Normal operating range is indicated by the right (R.H.) green zone.

If the indicator hand is not in this green zone, troubleshoot the electrical system.

Check the operation of the switches.

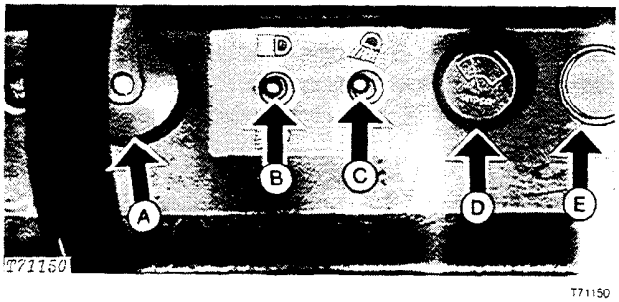


Fig. 65-Switches

A - Turn Signal Switch - Lift switch to flash right (R.H.) turn signal. Push down switch to the first position to flash left (L.H.) turn signal. Push switch all the way down to flash all four turn signal lights.

B - Head Light Switch - Activate switch to turn on headlights and taillights. Push switch up for bright lights. Push down to dim lights.

C - Work Light Switch - Activate switch to turn on two rear work lights.

D - Wiper Switch - Turn switch clockwise for low or high speed wiper action.

E - Starting Aid Button - Remove starting fluid can from engine. Push starting aid button. Listen for solenoid click.

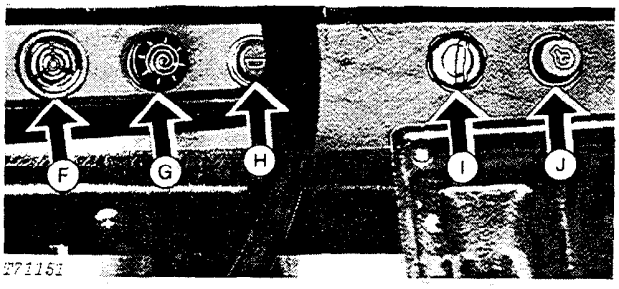


Fig. 66-Switches

F - Buzzer - Read information on indicator lights below.

G - Cigar Lighter - Push to activate.

H - Horn Switch - Push the button to sound dual horns.

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

J - Starter Switch - Push the button to start the engine.

Check operation of indicator lights.

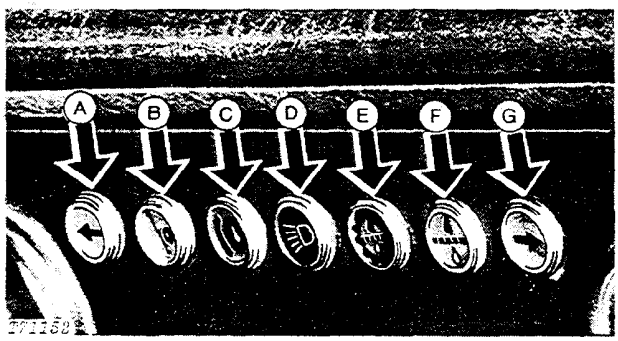


Fig. 67-Indicator Lights

A - Left (L.H.) Turn Indicator Light - Flashes for left turn and emergency flashing.

B - Parking Brake Indicator Light - Glows when parking brake is engaged and key switch is on. Buzzer will sound at intervals.

C - Brake Pressure Indicator Light - Glows when pressure in system falls below 10,500 kPa (105 bar) (1525 psi). Buzzer will sound at intervals.

Light may glow briefly after engine starts until pressure goes above 10,500 kPa (105 bar) (1525 psi).

If this light glows when scraper is operating, stop scraper and find cause.

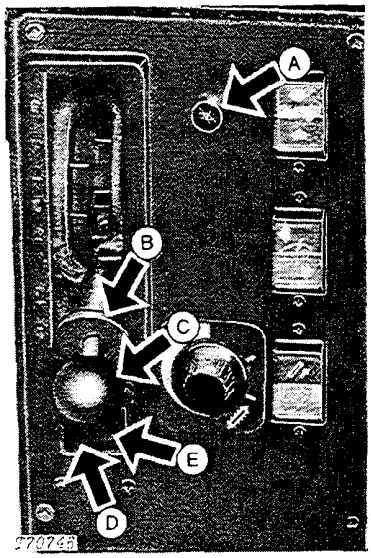
D - High Beam Indicator Light - Glows blue when headlights are on.
E - Transmission Filter Restriction Indicator Light - Glows when transmission filter is plugged. Also glows during warm-up when oil is cold. Buzzer will sound at intervals.
F - Hydraulic Filter Restriction Indicator Light - Glows when hydraulic filter is plugged. Also glows during warm-up when oil is cold. Buzzer will sound at intervals.
G - Right Turn Indicator Light - Flashes for right (R.H.) turn and emergency flashing.

Gauges, switches, and indicator lights checked *Yes* *No*

4. Transmission Operation

Check the operation of the transmission.

Controls



T70746

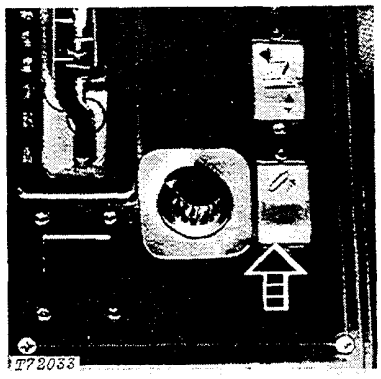
Fig. 68-Transmission Controls

A - Transmission Indicator Light - If light glows amber, transmission is in automatic mode. If light is off, transmission is in manual mode.
B - Neutral Lock - Lift sleeve before moving shift lever from neutral into reverse or first gear. Lift sleeve before moving lever from first gear to neutral. Move lever from reverse to neutral without lifting sleeve.
C - Gear Shift Lever - Move lever to desired gear.
D - Gear Indicator Light - Show the gear the transmission is in. Also shows neutral ("0") and reverse (–[minus sign]). When shift lever is in neutral, the light flashes available gears if transmission electrical system is not working correctly.
E - Lockup Indicator Light - Light shows "L" when the lockup clutch locks a gear in direct drive. Light also flashes if transmission lockup electrical system is not working correctly.

Check the operation of the transmission in the three shift patterns in automatic mode.

Transporting Shift Pattern

1. Move shift lever to 6th gear.



T72033

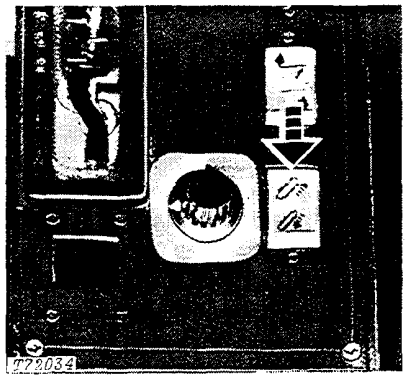
Fig. 69-Elevator Switch (unloading)

2. Move the elevator switch to unload position (Fig. 69) or to neutral.
3. Push down accelerator.
4. Transmission should shift: 3TC*, 4TC, 4L+, 5TC, 5L, 6TC, 6L.

* - Torque Converter Drive
\+ - Lockup in Direct Drive

Loading Shift Pattern

1. Move shift lever to 6th gear.



T72034

Fig. 70-Elevator Switch (loading)

2. Move the elevator switch to loading position.
3. Push down accelerator.
4. Transmission should shift: 1TC, 2TC, 3TC, 4TC, 5TC, 6TC.

Downshift Pattern

1. Drive the scraper in 6L gear.
2. Release the accelerator.
3. Transmission should shift: 6L, 5L, 4L, 3TC.

NOTE: To make a manual downshift, move the shift lever to the next lower gear. Do not manually downshift more than one gear lower at a time. Do not manually downshift above 1800 rpm.

Check the operation of the hold pedal.

T72032

Fig. 71-Hold Pedal

Use pedal only when transmission is in automatic mode.

Push down pedal. Transmission will operate as follows:

1. Will not shift out of gear it is in.
2. If in torque converter drive, transmission will stay in torque converter drive.
3. If in direct drive ("L" shows on lockup indicator), will stay in direct drive.

Diagnostics of Transmission Electrical System

1. If the transmission electrical system is not working correctly, the transmission will automatically shift to 4th gear. The gear indicator will flash "4". If 4th gear is not working, the transmission will shift to neutral and the indicator will flash "0".

   NOTE: If lockup electrical system is not working, the lockup indicator will flash.

2. Move the shift lever to neutral.

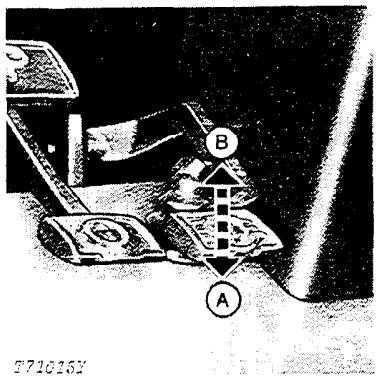
3. The gear indicator will flash the gears that are working.

4. Switch to manual operation. Use only the working gears.

Transmission checked *Yes* *No*

5. Differential Lock Operation

Check the operation of the differential lock.



T71015Y

Fig. 72-Differential Lock Pedal

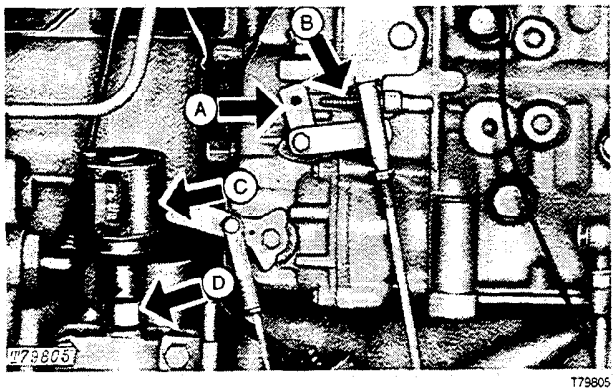
Start the engine. Engage the lock (A). Turn the steering wheel. If the lock is working correctly, steering resistance will be felt.

Differential lock checked *Yes* *No*

6. Engine Speed Linkage (30)*

Check engine speeds when engine is at normal operating temperature.

IMPORTANT: Use only a calibrated tachometer to check engine speeds.



T79805

A—Control Lever **C—Service Meter**
B—High Speed Stop Screw **D—Tachometer Drive**

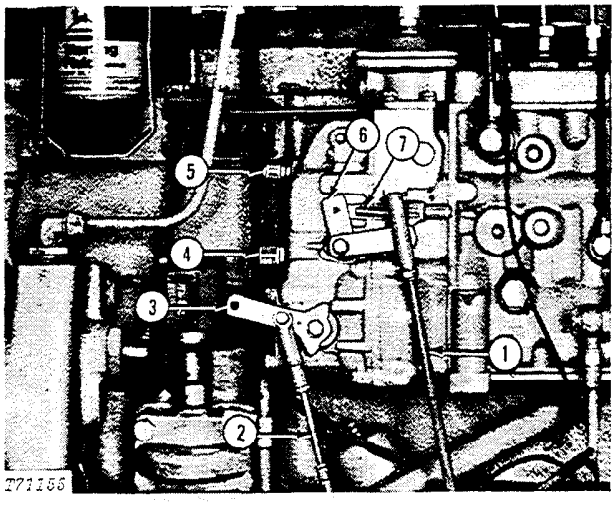
Fig. 73-Checking Engine Speeds

Remove service meter (C). Connect calibrated tachometer to tachometer drive (D).

Slow idle must be 925 rpm. Fast idle must be 2325 rpm.

**Numbers in parenthesis are same as item numbers on the periodic maintenance chart on your scraper.*

If adjustment is needed, follow the procedure below.



T71155

Fig. 74-Adjusting Engine Speeds

Disconnect speed control cable (1, Fig. 74) and engine stop cable (2) from injection pump. Fuel shut-off lever (3) must be all the way down.

Remove supplementary idling spring cover (4). Back out the adjusting screw until engine speed begins to change. Back out the screw a little more.

Remove cover from slow idle adjustment screw (5). Turn the screw until slow idle is 905 rpm. Tighten the lock nut.

Turn in idling spring adjustment until engine runs at 925 rpm. Tighten the lock nut.

Hold speed control lever (6) against fast idle stop screw (7). Turn the stop screw until the engine runs at 2325 rpm.

Install covers (4 and 5). Install lead seal on fast idle adjusting screw.

Connect two cables (1 and 2). Adjust as necessary for full travel.

Engine speeds checked *Yes* *No*

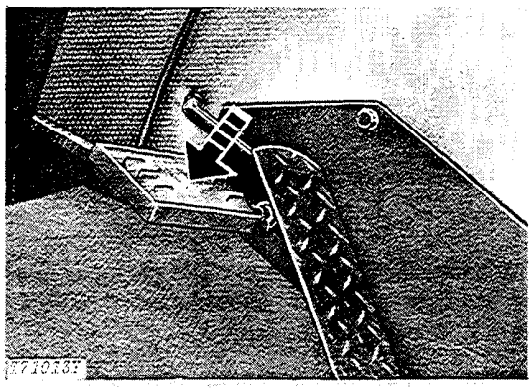
7. Accumulator Action (24)

Check brake accumulator action. Brakes should operate for several applications after engine is stopped. Brakes should be solid for a minimum of five applications.

Accumulator checked *Yes* *No*

8. Brakes

Check the operation of the hydraulic brakes.



T71013Y

Fig. 75-Brake Pedal

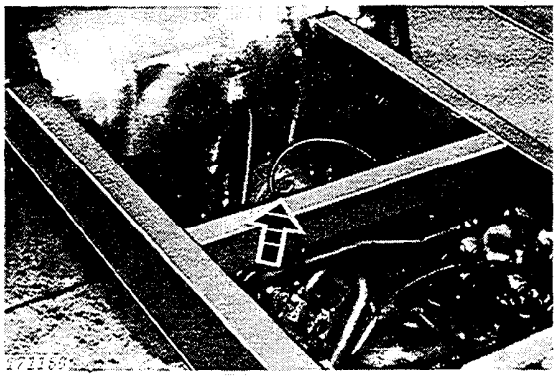
Put the scraper in gear. Push down the brake pedal. Moderate pedal force must hold the machine in place.

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.

CAUTION: Before removing air from the brake system, lower the bowl, stop the engine, engage the parking brake, put the transmission in neutral.

CAUTION: Removing air from the brake system is a two-person job: one person must be in the operator's station at all times during this procedure.



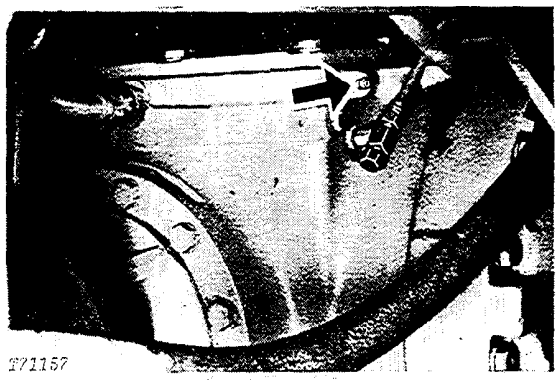
T71156

Fig. 76-Pump Shut-Off Screw

Before removing air from the brakes, follow this procedure to release excessive pressure at the bleed screws:

1. Close the shut-off screw (turn clockwise) on the main hydraulic pump to destroke the pump. Pump is on torque converter at the rear of drive axle.
2 - Turn the steering wheel back and forth until no response is felt.
3 - Pump the brakes until no response is felt.

Removing Air From The Tractor Brakes



T71157

Fig. 77-Tractor Bleed Screw

Tractor brakes: Put the end of the tube in a container of oil specified for drive axles on page I-V-3. Fasten the other end to the bleed screw. When the engine is running at slow idle, push down brake pedal. Loosen the bleed screw about 3/4 turn. Let air and oil flow into the container until no more bubbles are seen.

After removing air, tighten the bleed screw when the pedal is pushed down. Remove the hose. Remove air from both brakes in the same manner.

Removing Air From The Scraper Brakes

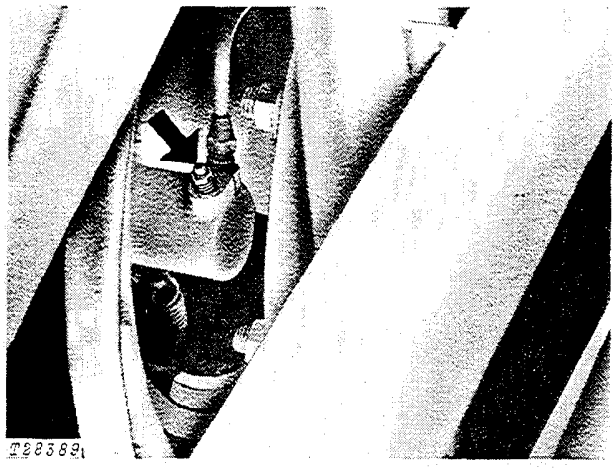


Fig. 78-Scraper Bleed Screw

Scraper brakes: Fasten a tube to the bleed screw on the rear wheel cylinder. Put the end of the hose in a container of oil specified for drive axles on page I-V-3. Start the engine. Push down the brake pedal. Loosen the bleed screw about 3/4 turn. Let air and oil flow into the container until no more bubbles are seen.

After removing air, tighten the bleed screw when the pedal is pushed down. Remove the hose. Remove air from both brakes in the same manner.

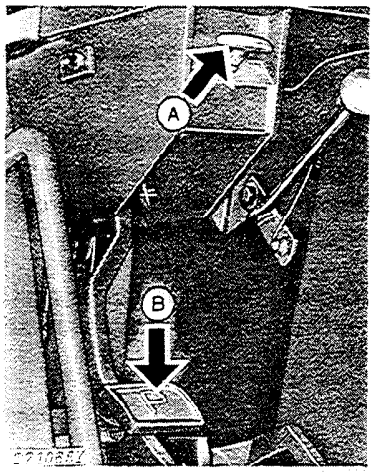
Check the hydraulic reservoir oil level. (See page I-IV-14).

IMPORTANT: When removing air from the scraper brakes, be careful not to get oil on the brake shoes.

Brake action checked	*Yes*	*No*
Air removed from brakes	*Yes*	*No*

9. Parking Brake

Check action of parking brake.



A—Release Handle **B—Parking Brake Pedal**

Fig. 79-Parking Brake

Push down pedal (B) firmly. Pedal must not move more than four notches.

If adjustment is needed, follow the steps below.

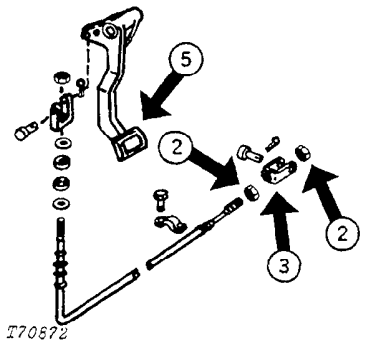


Fig. 80-Parking Brake Adjustment

1. Release the parking brake. Push pedal down slightly. Pull release handle (A, Fig. 79).
2. Loosen two lock nuts.
3. Move cable end to desired position.
4. Tighten lock nuts.
5. Engage parking brake. If pedal moves more than four notches, repeat steps 1-4.

Parking brake checked	*Yes*	*No*

10. Cycle Times

Check cycle times when the oil is warm and the engine at fast idle.

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.

	Seconds
Elevator Speed (one complete revolution)	6.0 max.
Raise Bowl	2.5 - 3.5
Lower Bowl	3.5 - 4.0
Eject or Return Cycle	7.0 - 8.0
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.

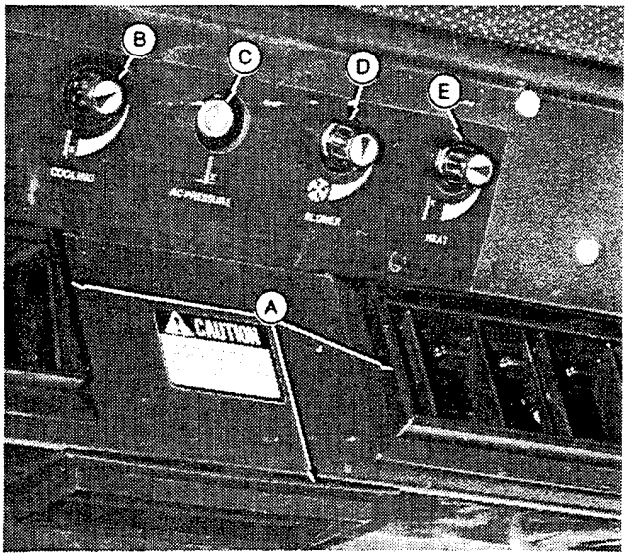
When the engine is at slow idle (925 rpm), turn the steering wheel from stop to stop. Turn the steering wheel faster than normal to "force the turn". This will remove air from the steering system.

Cycle times checked *Yes* *No*

*Malfunctions*_____

11. Air Conditioner

Check the air conditioner controls.



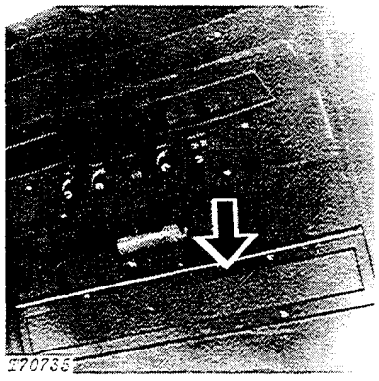
T95825

A—Louvers
B—Temperature Control Knob
C—Refrigerant Pressure Indicator Light
D—Blower Control Knob
E—Heater Control Knob
F—Louvers

Fig. 81-Air Conditioner Controls

A - Turn knob to recirculate air or to bring in outside air.
B - Turn knob clockwise for cooling.
C - If indicator light goes on, see Section 90, Group 9031.
D - Turn knob clockwise to increase blower speed.
E - Turn knob clockwise for heat.
F - Move tab on louver to control direction of air.

12. Cab Recirculating Air Filter (22)



T70735

Fig. 82-Recirculating Air Filter

Recirculating filter: Remove cover and filter. Wash filter in warm, soapy water. Rinse and dry.

Controls checked *Yes* *No*
Filters checked *Yes* *No*

13. Fresh Air Filter (18)

Check the air filters. Clean elements as necessary.

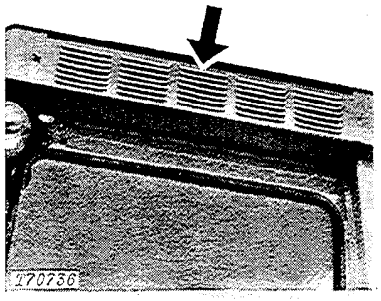


Fig. 83-Outside Air Filter

Outside air filter: Remove cover. Pull out filter.

Clean filter by:
Tapping filter on flat surface, dirty side down.
Blowing low pressure compressed air through filter opposite to normal air flow.
Washing filter in warm soapy water. Rinse and dry.

14. Injection Pump Sediment Bowl and Filter (28)

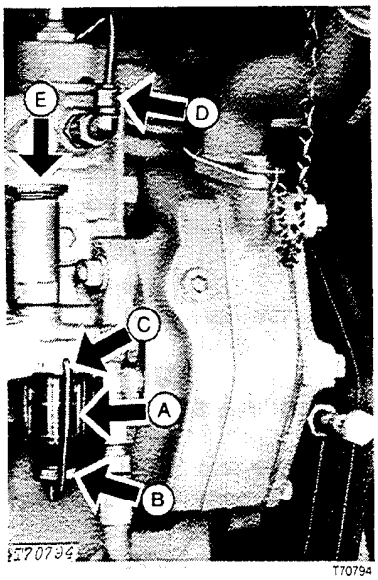


Fig. 84-Sediment Bowl and Filter

Check sediment bowl (A) for dirt and water.

If bowl needs cleaning, loosen nut (B).

Swing clip (C) away from bowl.

Remove bowl and filter

Clean the bowl and filter.

Assemble all parts.

Be sure bowl gasket fits correctly.

Bleed the fuel system.

Bleeding the Fuel System

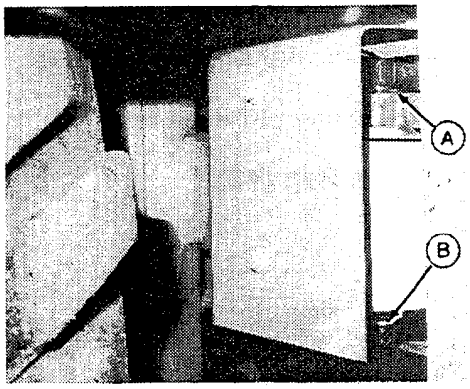
Loosen fuel line (D).

Loosen the primer (E). Pump the primer until fuel free of bubbles flows from the fuel line.

Tighten the fuel line.

Push the primer down. Tighten it by hand.

15. Water Separator (2)



A—Vent Screw **B—Drain Petcock**

Fig. 85-Water Separator

The water separator is located on bowl frame, under left rear fender.

Drain water and sediment when engine is cold.

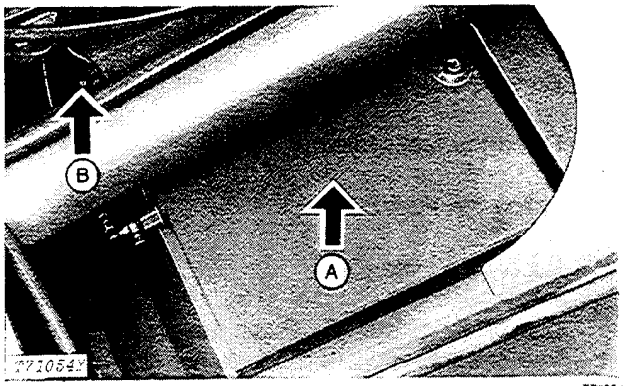
Loosen drain petcock (B) shown.

Drain liquid until fuel flows from petcock.

Tighten drain petcock.

NOTE: If fuel does not flow, loosen vent screw (A).

16. Fuel Tank Sump (1)



A—Fuel Tank **B—Drain Cock**

Fig. 86-Bottom of Fuel Tank

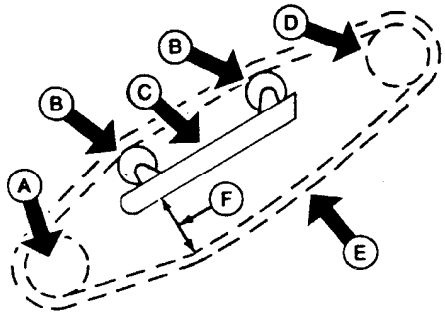
Open drain cock (B).

Drain water or sediment. Close drain cock.

NOTE: Fill fuel tank (A) after shutdown each day.

This view is of the bottom of the fuel tank.

17. Elevator Chain Sag (43)



A—Lower Idler **D—Upper Idler**
B—Center Idler **E—Chain**
C—Elevator Frame **F—7 to 12 in. (18 to 31 cm)**

Fig. 87-Elevator Chain

Mesure chain sag between box section of elevator frame and top of chain sidebar at point of greatest sag.

Sag should be 7 to 12 in. (18 to 31 cm).

If sag is less than 7 in. (18 cm), chain will wear excessively.

If sag is more than 12 in. (31 cm), chain will jump sprocket teeth.

IMPORTANT: Chain sag should not vary more than 1 in. (25 mm) from side to side.

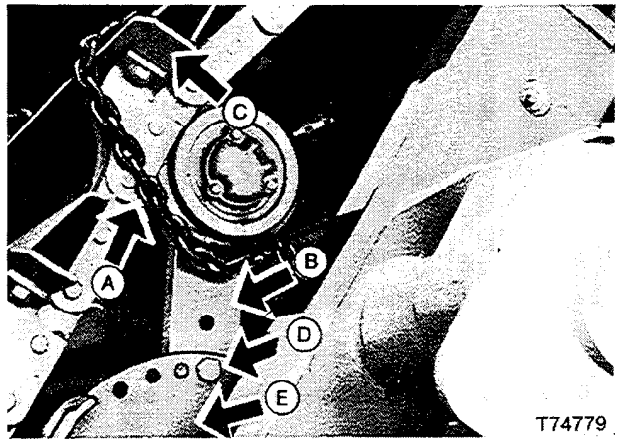


Fig. 87A-Elevator Chain

To adjust sag:

Install a chain (A) around upper adjusting idler arm (B) and flight (C).

Remove cap screw (D). If necessary, move elevator slightly to take pressure off cap screw.

Run elevator forward VERY SLOWLY to tighten chain part of the way.

Install cap screw.

Remove chain. Install chain around lower adjusting idler arm and flight.

Remove cap screw from lower idler arm.

Run elevator VERY SLOWLY in reverse to remove the rest of the sag desired.

NOTE: Upper idler plate (E) should be in the same position or one adjustment higher than lower idler plate.

Install cap screw. Remove chain.

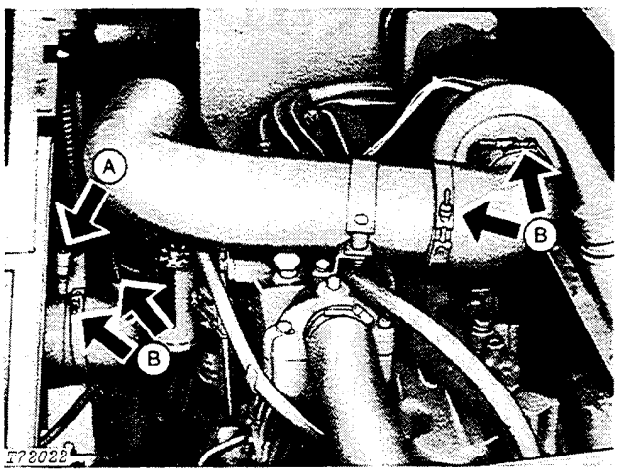
Measure sag again. Make adjustment if necessary.

Adjust opposite side so sag varies less than 1 in. (25 mm).

18. Air Intake System (36)

Check the restriction indicator (A, Fig. 88). If the red signal can be fully seen, check the air intake system for a restriction.

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



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A—Restriction Indicator **B—Clamps**

Fig. 88-Air Intake System

Air intake system checked *Yes* *No*

19. Batteries

Check terminals and connections.

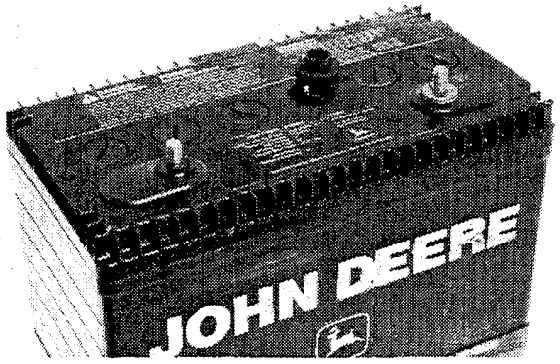

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Fig. 89-Battery

If terminals are corroded, clean them with a stiff brush.

Clean batteries with a damp cloth, if necessary.

Batteries checked *Yes* *No*

20. Engine Crankcase Oil Level and Filter (29)

Check the crankcase oil level. Change the filter.

NOTE: Check with the customer if oil and filter have been changed (first 100 hours service) before doing this service.

If the oil and filter have been changed, write the information below.

Approximate hours at change:
Crankcase oil_____
Crankcase oil filter_____

If the oil and filter have not been changed, follow the procedure below:

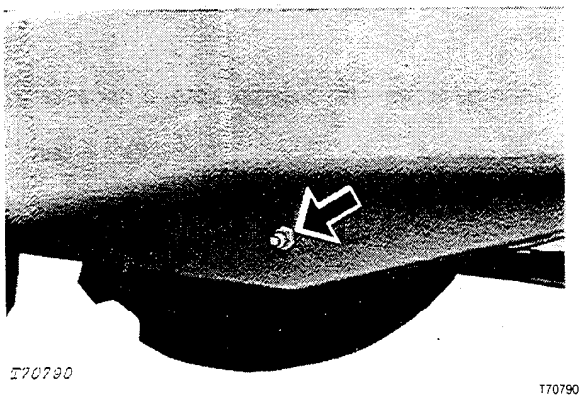

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Fig. 90-Crankcase Drain Plug (in right side frame)

Run the engine to heat the oil. Stop the engine. Drain the oil from the crankcase. While oil is draining, change the engine oil filter.

1. Remove the pipe plug. Drain the filter. Install the plug.
2. Remove the filter. Turn it counterclockwise.

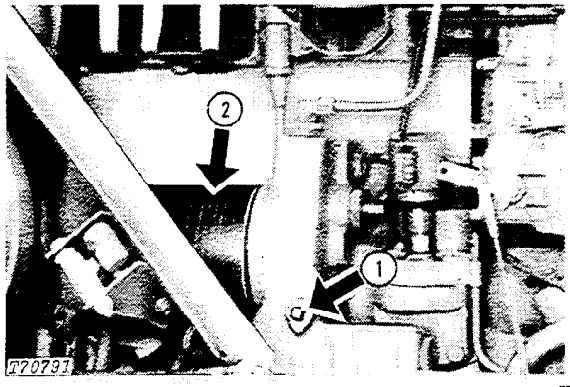

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Fig. 91-Crankcase Oil Filter

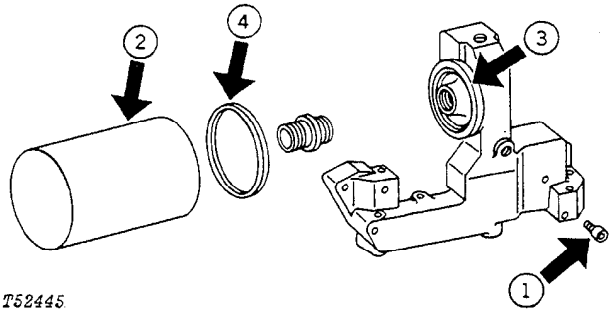

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Fig. 92-Crankcase Oil Filter

3. Clean the mounting surface.
4. Apply a film of oil to the packing.
5. Tighten the new filter until it touches mounting surface.
6. Tighten 1/2 to 3/4 turn more.
7. Install the crankcase drain plug.
8. Fill the crankcase with oil specified on page I-V-4. Capacity is 29 L (31 quarts) with a filter change.

IMPORTANT: Before starting the scraper after a filter change, crank the engine for 20 seconds with the fuel shut-off handle pulled out.

9. Start the engine. Check for leaks around the filter and drain plug. Tighten only enough to stop leaks.
10. Check the oil level of the crankcase.

Oil changed	*Yes*	*No*
Filter changed	*Yes*	*No*

Thank you very much for your reading.

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