SECTION 00 – GENERAL INFORMATION

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SAFETY PRECAUTION INFORMATION

⚠ CAUTION ⚠

Unsafe operating practices and improper use of the skid steer and its attachments on the part of the operator can result in injuries. Observe the following safety precautions at all times:

1. **For servicing, the skid steer should be on level terrain, engine stopped with the wheels blocked or the entire skid steer solidly supported with the wheels off the ground before servicing any component of the drivetrain.**
2. **For servicing under the operator's seat, raise the seat and pan assembly to the raised latched position and securely latch.**
3. **Do not operate the skid steer unless the seat is latched in the operate position.**
4. **Do not service the skid steer with a raised boom unless the boom is resting on the boom lock pins.**
5. **Do not service the skid steer with the engine running unless the skid steer is properly and securely supported with all four wheels off the ground.**
6. **Use caution when servicing the unit around moving parts.**
7. **Do not tilt the boom and cab without proper instruction.**
8. **Do not tilt the boom and cab without using the proper cab tilting tool.**
9. **Reinstall all shields removed for service.**
10. **Never loosen any hydraulic connections before relieving the pressure in the hydraulic system.**
11. **Wear eye protection such as goggles, etc.**
12. **Wear ear protection such as earplugs, etc. When you feel the noise level is uncomfortable.**
13. **If any servicing or adjustments require the battery to be disconnected, disconnect the (–) negative ground cable.**
14. **When servicing electrical components, disconnect the (–) negative ground cable.**
15. **If the electronic instrument cluster (EIC) requires removal from the dash area of the skid steer, disconnect the (–) negative ground battery cable. this will shut off power to the eic and prevent damage to the eic board or blowing the 5-amp fuses if the board is accidentally grounded.**
16. **If welding is required on the skid steer, disconnect the (–) negative ground cable. Failure to disconnect the battery may result in damage to the EIC (electronic instrument cluster) monitoring system and other electrical components.**
17. **If welding is required on an attachment, remove the attachment from the skid steer.**
18. **Give complete and undivided attention to the job at hand so that complete control of the skid steer is maintained at all times.**
19. **Drive slowly over rough ground and on slopes; keep alert for holes, ditches and other irregularities that may cause the skid steer to overturn.**
20. **Avoid steep hillside operation which could cause the skid steer to overturn.**
21. **Never transport a loaded bucket at full height. Operate the skid steer with the load as low as possible until it becomes necessary to raise the boom to discharge the load into a truck, container, etc.**
22. **Reduce speed when turning so there is no danger of the skid steer overturning.**
23. **Never drive up or back up a hill or incline with a raised boom or the skid steer could overturn.**
24. **Always look behind you before backing up the skid steer.**
25. **Maintain proper transmission oil level to prevent loss of hydrostatic braking.**
26. **Do not allow passengers to ride on the skid steer at any time.**
27. **Do not allow children to operate the skid steer or ride on the skid steer at any time.**
28. **Do not allow anyone to operate the skid steer without proper instruction. OSHA requires that all operators be instructed on the proper operation of the machine before they operate the unit.**
29. **Do not operate the skid steer in any position other than while in the operator's seat with the seat belt securely fastened.**

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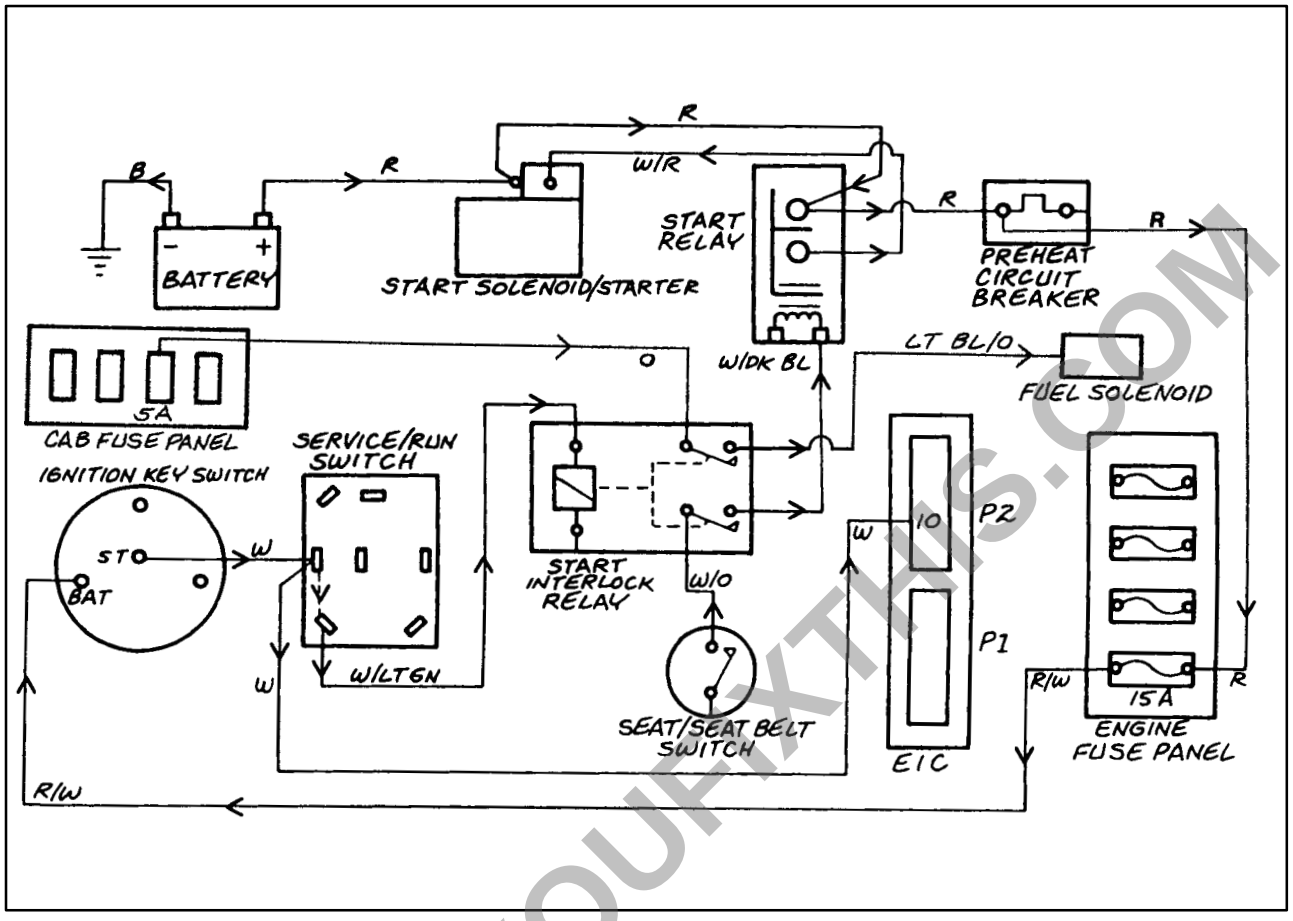
TORQUE SPECIFICATIONS

COMPONENT	SETTING/REMARKS
Bearing holder bolts - hex hole type	24 - 30 N·m (18 - 22 ft. lbs.)
- hex bolt type	49 - 54 N·m (36 - 40 ft. lbs.)
Rear plate bolts	14 - 18 N·m (10 - 13 ft. lbs.)
Flywheel housing bolts	24 - 28 N·m (18-21 ft. lbs.)
Flywheel bolts	58-69 N·m (43 - 51 ft. lbs.)
Connecting rod nuts	49 - 54 N·m (36 - 40 ft. lbs.)
Suction filter bolt	9 - 12 N·m (7 - 9 ft. lbs.)
Sump bolts	9 - 12 N·m (7 - 9 ft. lbs.)
Crankshaft pulley nut	275 - 333 N·m (203 - 246 ft. lbs.)
Cylinder head bolts	98 - 103 N·m (72 - 76 ft. lbs.)/oiled
Injection pump bolts	9 - 12 N·m (7 - 9 ft. lbs.)
Injection pump nuts	9 - 12 N·m (7 - 9 ft. lbs.)
Rocker arm nuts	20 - 26 N·m (15 - 19 ft. lbs.)/3-cylinder engines
Head cover nuts	8 - 12 N·m (6 - 9 ft. lbs.)/3-cylinder engines
Cooling fan bolts	9 - 12 N·m (7 - 9 ft. lbs.)
Oil pipe banjo bolts	9 - 12 N·m (7 - 9 ft. lbs.)
Oil sump drain bolt	30 - 39 N·m (22 - 29 ft. lbs.)
Injection nozzle	58 - 69 N·m (43 - 51 ft. lbs.) IDI engines
Injection pipe	15 - 24 N·m (11 - 18 ft. lbs.)
Thermo switch	24 - 30 N·m (18 - 22 ft. lbs.)
Oil pressure switch	15 - 20 N·m (11 - 15 ft. lbs.)
Glow plug	15 - 20 N·m (11 - 15 ft. lbs.)
Stop solenoid	15 - 20 N·m (11 - 15 ft. lbs.)
Oil relief valve	60 - 69 N·m (44 - 51 ft. lbs.)
Smokeset nut (max fuel)	20 - 26 N·m (15 - 19 ft. lbs.)
Adjusting screw nuts	9 - 16 N·m (7 - 12 ft. lbs.)

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“SERVICE/RUN” SWITCH IN THE “RUN” POSITION

The power originates at the battery and flows through the (R) positive battery cable to the starter solenoid. From here the power flows through the (R) wire to the battery side of the start relay.

The power then flows through the (R) wire to the preheat circuit breaker and to the engine fuse panel to the 15A key main fuse.

The power then flows through the (R/W) wire to the battery terminal on the ignition key switch.

With the key switch in the “START” position, current flows through the (W) wire to the service/run switch. Power also flows through the (W) wire to connector P2 terminal 10-key start at the EIC board.

Power then flows from the service/run switch through the (W/LTGN) wire to the start interlock relay coil terminal.

With the interlock energized, the power from the seat/seat belt circuit (W/O) wire flows through the (W/DKBL) wire to the start relay to activate the relay.

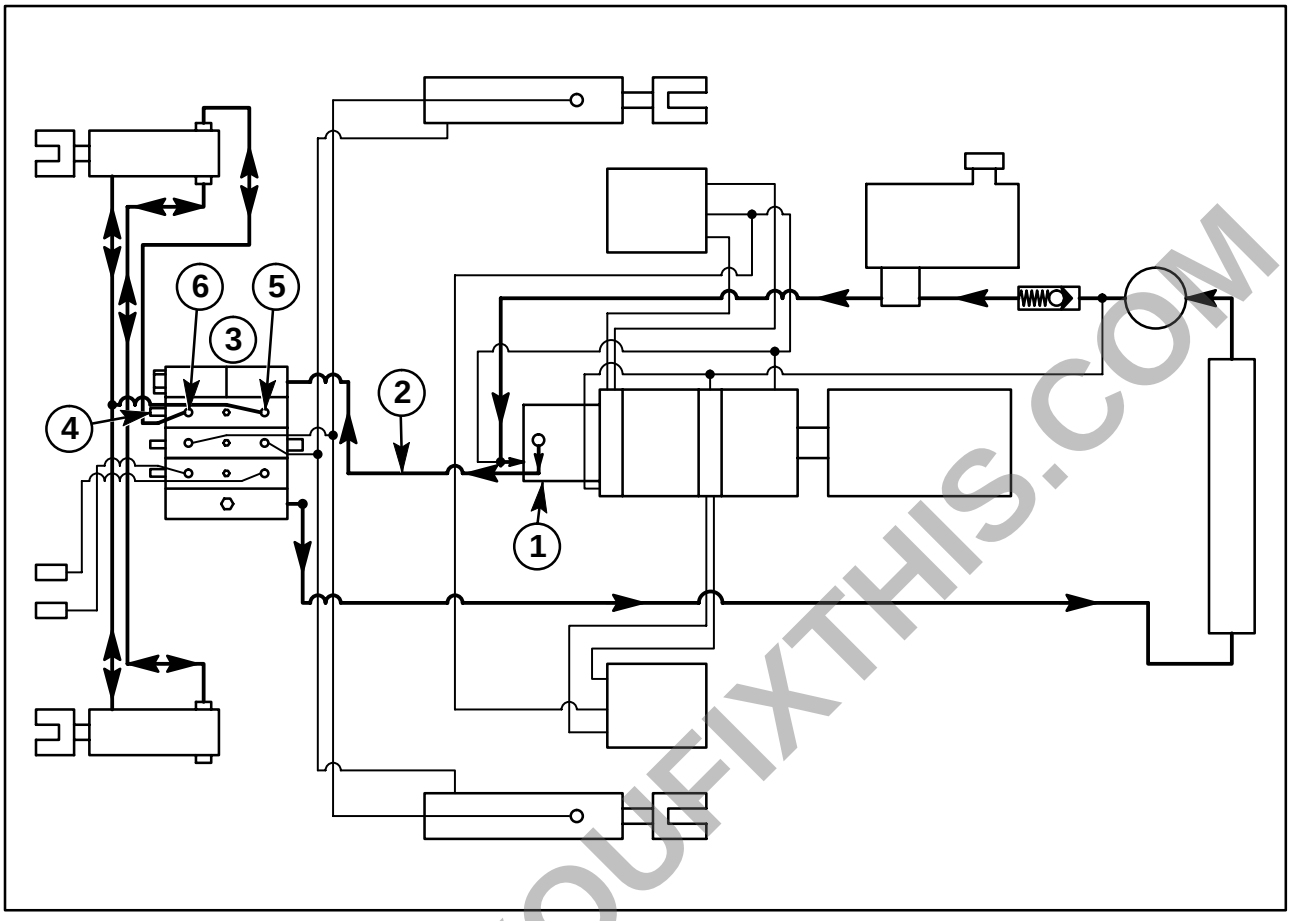
Power also flows from the start interlock relay through the LTBL/O wire to the fuel solenoid to open the solenoid to allow fuel flow to the injection pump.

When the start relay is activated, power goes through the (W/R) wire to the starter solenoid, which connects battery power to the starter motor.

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CONTROL VALVE - BUCKET SPOOL SHIFTED

Bucket Control Operation

Foot Controls

When the toe of the control pedal is pushed down, it will shift the control valve spool in, dumping the bucket. When the heel of the control pedal is pushed down, it will shift the control valve spool out curling the bucket back.

Hand Controls

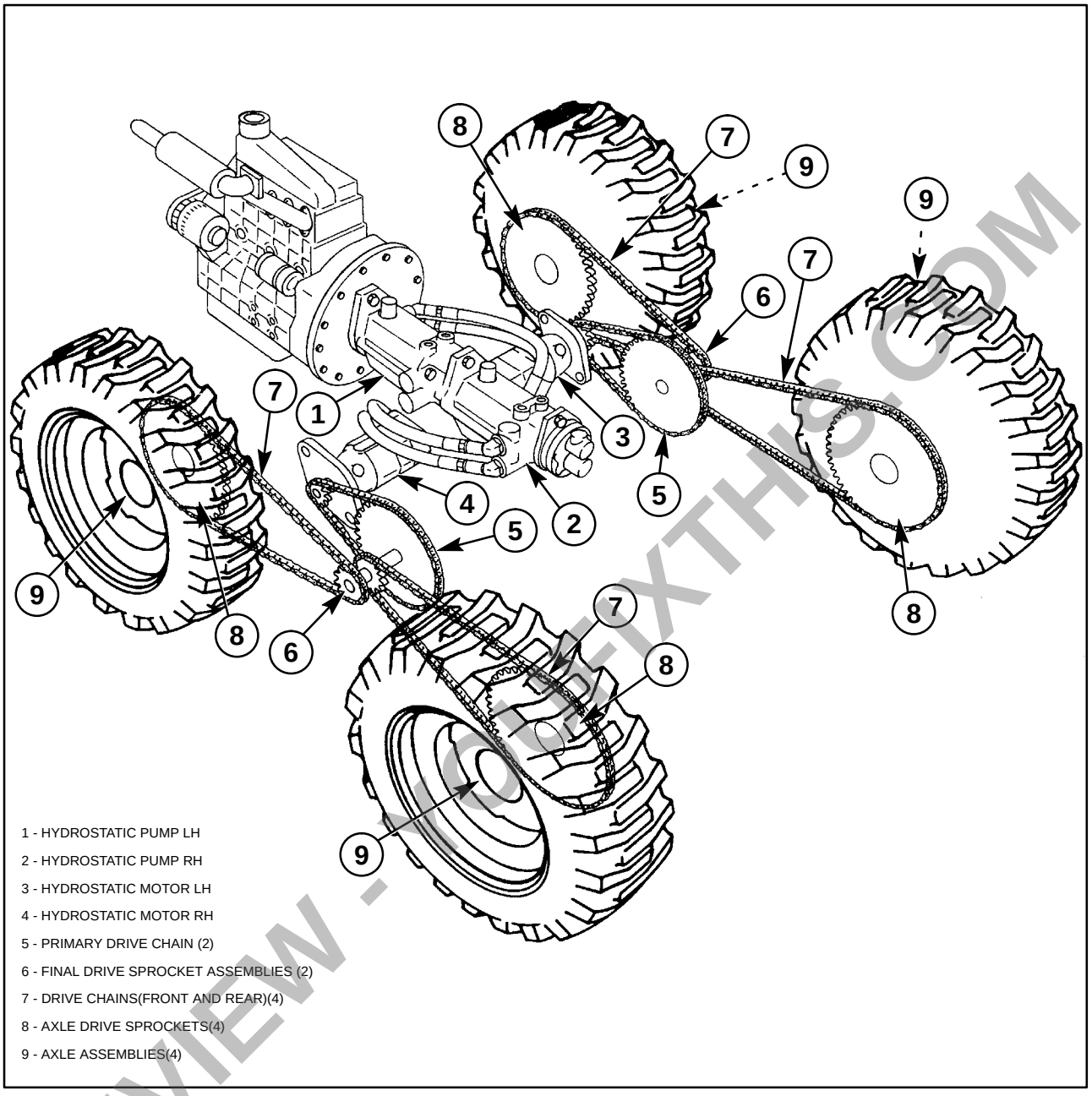
When the right control handle is pivoted up it will shift the control valve spool in, dumping the bucket. When the right control handle is pivoted down it will shift the control valve spool out, curling the bucket back.

1. Oil flows from the gear pump, 1, through pressure line, 2, to control valve, 3.
2. When the bucket valve spool, 4, is pulled out, the oil flows from the rear work port, 5, to the shaft side of the bucket cylinder to curl the bucket back.
3. When the bucket valve spool, 4, is pushed in, the oil flows from the front work port, 6, to the base (piston) end of bucket cylinder to dump the bucket.
4. When the bucket circuit is operated to maximum pressure or cylinders are bottomed, the main system relief valve will relieve the high pressure oil into the return oil galley in the control valve, returning the oil to the reservoir.
5. The return oil from the opposite side of the cylinder being pressured will return through the control valve to the reservoir.

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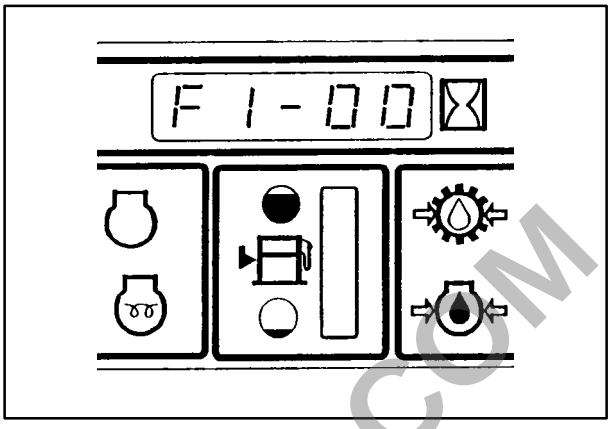


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Pressing and releasing the “ARROW” switch again will forward to the next fault “F1-00” and pressing and releasing the “OPEN BOOK” switch again will display the hour of the last occurrence if any fault occurrences were shown. Use this procedure to go through all the fault codes:



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FAULT CODES	FAULT	SYMBOL LIGHT
F0-00	Hydraulic oil filter	Oil filter
F1-00	Engine air cleaner	Air cleaner
F2-00	Not used	Blank
F3-00	Engine preheat	Preheat
F4-00	Fuel solenoid	Fuel level bar lights
F5-00	Engine coolant temperature	Engine coolant
F6-00	Hydrostatic transmission charge pressure	Charge pressure
F7-00	Transmission/Hydraulic oil temperature	Oil temperature
F8-00	Battery voltage	Battery
F9-00	Engine oil pressure	Oil pressure
FA-00	Hydraulic boom/bucket solenoid	Seat belt

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TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Engine will crank but does not start	Faulty key switch	Correct the connection and/or replace switch
	Blown 5-amp electronic ignition fuse (cab fuse panel)	Replace fuse
	Fuel solenoid not operating	Check solenoid for battery voltage and correct
	Battery insufficiently charged or completely discharged	Charge or replace battery
	Lack of fuel	Fill fuel tank
	Air mixed in the fuel system	Bleed the air
	Clogged fuel filter	Replace
	Irregular and faulty fuel supply (electric fuel pump)	Check power supply and/or replace pump
	Irregular and faulty fuel supply (injection pump trouble)	Repair in an authorized service shop
	Glow plug not heating	Failure of the glow plug; replace
	Improper viscosity of the lubricating oil	Inspect and replace
	Clogged air cleaner	Clean or replace
	Low compression	Repair in a service shop
Engine will not crank or start	Seat belt not fastened	Buckle seat belt
	Faulty key switch	Correct the connection and/or replace switch
	Battery insufficiently charged or complete discharged	Charge or replace battery
	Blown 5-amp electronic battery fuse (engine fuse panel)	Replace fuse
	Blown 15-amp key main fuse (engine fuse panel)	Replace fuse
	Open in W/O (white-orange) wire between the seat/seat belt connector and start interlock relay	Check and repair as required
	Faulty start interlock relay	Check and repair as required
Irregular running of the engine	Air mixed in the fuel system	Bleed the air from the system
	Uneven fuel injection (faulty fuel injection pump)	Repair at authorized shop
	Clogged fuel filter	Replace
	Defective governor	Check and correct
	Engine itself defective	Repair in a service shop

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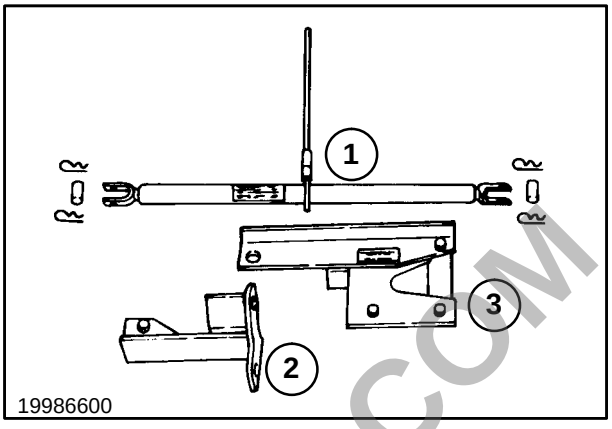
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CAB AND BOOM TILT PROCEDURE

The cab and boom assembly can be tilted forward for easier access to the major skid steer hydrostatic transmission or engine components. To tilt the cab, the proper cab tilting tool must be used to ensure safety and to prevent damage to the skid steer frame, cab, and boom structure. Contact your New Holland dealer for major service or repairs of the skid steer. Using the proper cab tilting tool and following these steps, the cab and boom can be tilted forward.

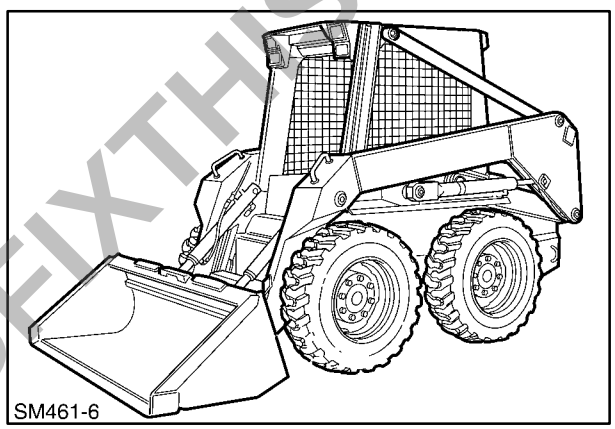
Cab Tilting Jack and Support Bracket

1. Jack and Screw Assembly
2. Lower Support
3. Upper Support



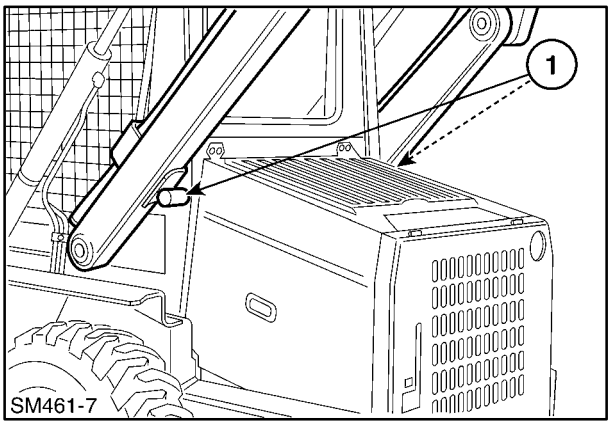
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1. Remove any attachment, bucket, etc. from the boom quick-attach plate.



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2. Raise the boom and lower onto boom lock pins, 1.
   a. Raise boom above boom lock pins.
   b. Engage boom lock pins.
   c. Stop engine, ignition key off position.
   d. Turn ignition key to the on position.
   e. Lower boom onto boom lock pins.
   f. Turn the ignition key to the “OFF” position.



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SPECIFICATIONS

MODEL	LS140	LS150
ENGINE		
MANUFACTURER	NEW HOLLAND	NEW HOLLAND
MODEL	N843	N843H
CYLINDERS	3	3
ASPIRATION	NATURAL	NATURAL
CYCLE	4 STROKE	4 STROKE
BORE AND STROKE	84 x 90 mm (3.3″ x 3.54″)	84 x 90 mm (3.3″ x 3.54″)
DISPLACEMENT	1496 cu. cm (91.3 cu. in.)	1496 cu. cm (91.3 cu. in.)
COMPRESSION RATIO	22 to 1	22 to 1
SPEEDS		
-FAST (no load)	3070 - 3150 RPM	3410 - 3480 RPM
-IDLE (no load)	950 - 1050 RPM	950 - 1050 RPM
HORSEPOWER		
(GROSS) Mfg rating	33 @2900 RPM	38 @3200 RPM
(SAE NET)	30 @2900 RPM	36 @3200 RPM
TORQUE (Mfg rating) Gross	94.2 N·m (69.5 ft. lbs.)	99 N·m (73 ft. lbs.)
VALVE CLEARANCE		
Intake (cold)	0.21 mm (0.008″)	0.21 mm (0.008″)
Exhaust (cold)	0.21 mm (0.008″)	0.21 mm (0.008″)
FIRING ORDER	1-2-3	1-2-3
FUEL CONSUMPTION (approximate at continuous full load)	7.6 L (2.0 gal.)	8.7 L (2.3 gal.)
IGNITION TYPE	Compression	Compression
GRADEABILITY (Intermittent duty)		
All Directions	30 Degrees	30 Degrees
AIR CLEANER Dry-type dual element		
(Primary element)	NH #86504145	NH #86504145
(Safety element)	NH #86504143	NH #86504143
FUEL SYSTEM		
Type of fuel	Diesel	Diesel
Injection Type	Indirect	Indirect
Cleaning system	Inline filter replaceable	Inline filter replaceable
	NH#9611973	NH#9611973
	Inline water trap (diesel)	Inline water trap (diesel)
	NH#86504140	NH#86504140

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MODEL	LS140	LS150
ENGINE		
Oil type	API SH/CG-4 SAE 10W-30	API SH/CG-4 SAE 10W-30
Filter part #	NH #86546618	NH #86546618
Engine crankcase capacity w/filter	5.7 L (6 qt.)	5.7 L (6 qt.)
Dipstick length	394 mm (15.5″)	394 mm (15.5″)
CAPACITIES		
Cooling system	9.2 L (9.8 qt.)	9.2 L (9.8 qt.)
Cooling system pressure	Radiator cap pressure 48.3 kPa (7 PSI)	Radiator cap pressure 48.3 kPa (7 PSI)
Fuel tank	37.8 L (10 gal.)	37.8 L (10 gal.)
Hydraulic system	18.9 L (5 gal.)	18.9 L (5 gal.)
Chain case (final drive)	5.7 L (1.5 gal.)	5.7 L (1.5 gal.)
ELECTRICAL SYSTEM		
Battery	BCI Group 31-12V 650 amps @ –18° C (0° F)	BCI Group 31-12V 650 amps @ –18° C (0° F)
Alternator capacity	40 amps	40 amps
Starter switch	Key start and relay	Key start and relay
Ignition system protection	Fuse 15 amps	Fuse 15 amps
Headlights	NH #86533429	NH #86533429
Taillights	NH #86533429	NH #86533429
Taillights (road)	NH #86505510	NH #86505510
Amber flasher	NH #529068	NH #529068
HYDRAULIC SYSTEM		
Pump - Type	Gear pump	Gear pump
Output	10.8 GPM (40.9 LPM) @ 2900 RPM	11.9 GPM (45.0 LPM) @ 3200 RPM
Hydraulic system	18.9 L (5 gal.)	18.9 L (5 gal.)
Hydraulic fluid	API SH/CG-4 SAE 10W-30	API SH/CG-4 SAE 10W-30
Control valve	3 Spool Open Center	3 Spool Open Center
Main system relief	170 - 176 bar (2500 - 2600 PSI)	170 - 176 bar (2500 - 2600 PSI)
Circuit relief - boom	238 bar (3500 PSI)	238 bar (3500 PSI)
Filter - Spin-on canister	NH #9842392	NH #9842392

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PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements ("**CAUTION**", "**WARNING**", and "**DANGER**") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

⚠ CAUTION ⚠

The word "CAUTION" is used where a safe behavioral practice according to operating and maintenance instructions and common safety practices will protect the operator and others from accident involvement.

⚠ WARNING ⚠

The word "WARNING" denotes a potential or hidden hazard which has a potential for serious injury. It is used to warn operators and others to exercise every appropriate means to avoid a surprise involvement with machinery.

⚠ DANGER ⚠

The word "DANGER" denotes a forbidden practice in connection with a serious hazard.

FAILURE TO FOLLOW THE "**CAUTION**", "**WARNING**", AND "**DANGER**" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

MACHINE SAFETY

Additional precautionary statement ("**IMPORTANT**") is followed by specific instructions. This statement is intended for machine safety.

IMPORTANT: *The word "**IMPORTANT**" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.*

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Recommended Engine Fluids

Coolant	Clean soft water. Maximum antifreeze concentration 50% with 5% corrosion inhibitor.
Fuel	Use clean, quality No. 1-D or 2-D fuel (ASTM D975).
	Use No. 1-D if the ambient temperature is expected to be less than 4°C (40°F) or if the skid steer is to be used at an altitude exceeding 1524 m (5000′).
	The sulphur content of the fuel should not exceed 0.5%.
	The sediment and water content should not exceed 0.5%.
	To prevent fuel flow problems in cold weather, use No. 1-2 diesel fuel with a pour point of at least 5.5°C (10°F) below the expected ambient temperature.
	Minimum cetane number is 40. Lower temperature or high altitude operation may require the use of a higher cetane number.

Lubricating System

System	Pressure feed with Trochoid pump
Oil Type	API SH/CG4 SAE 10W-30 (SAE 5W-30 for extended cold weather operation)
Filter Part #	NH #86546618
Engine Crankcase Capacity w/Filter	5.7 L (6 qt.)
Dipstick Length	394 mm (15.5″)

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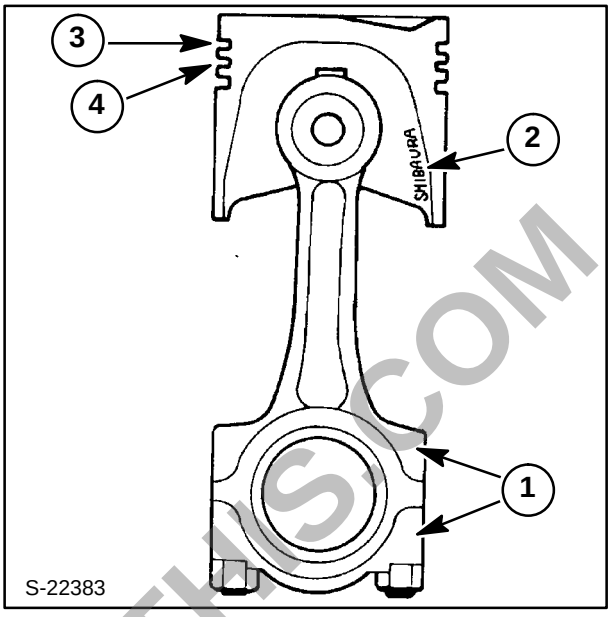
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Reassembly

1. The piston and connecting rods are to be assembled with the matching marks, 1, on the same side as the trade name “SHIBAURA” embossed on the inside of the piston skirt, 2.

2. Uniformly heat the piston to 100° C (212° F) then assemble the rod to the piston.

3. Using a suitable ring expander tool, install the first two piston rings, at 3 and 4, positioning the end gaps 120° from each other. Do not position a gap directly over the piston pin bore.



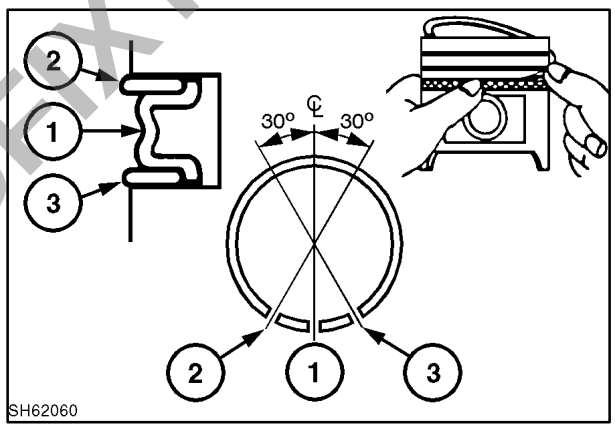
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4. Fit the third ring by putting the expander, 1, into position in its groove. Ensure the ends of the expander do not overlap.

   Fit the upper side rail, 2, on top of the expander. Insert the end of the side rail into the groove and hold it in position with the thumb. Slide the rail into position with the other thumb.

   Fit the lower side rail, 3, in a similar manner.

   Ensure the side rails are free to move in both directions and the gaps of the expander and the side rails are in the correct positions.



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Standard OD	Allowable Limit
27.996 - 28.0 mm (1.1022 - 1.1024″)	27.98 mm (1.1016″)

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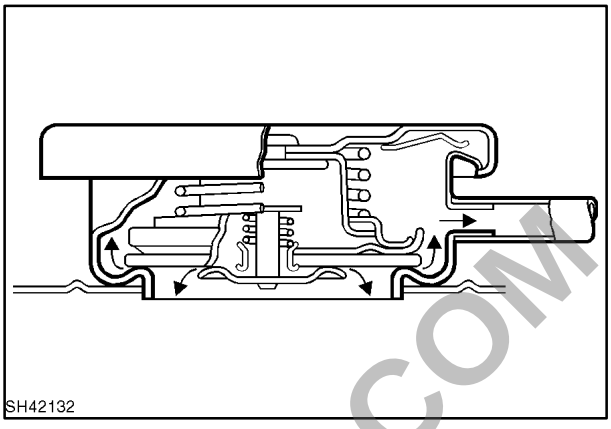
RADIATOR

Op. 10 406 02

Radiator Cap

A pressure-type radiator cap rated at 0.5 bar (7 PSI) is employed to obtain higher cooling efficiency. When the coolant pressure builds up to the range of 0.5 bar (7 PSI), excessive pressure is relieved from the overflow pipe (shown by white arrow).

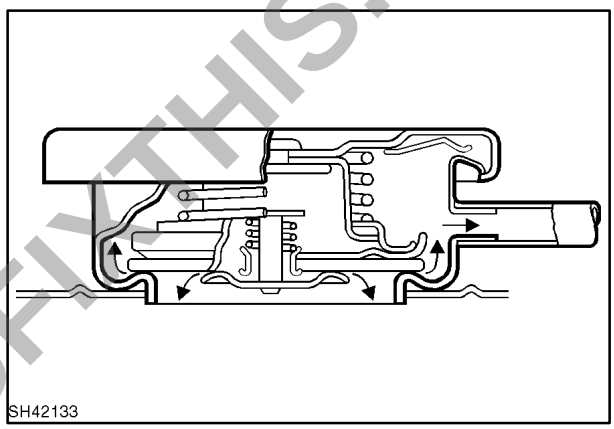
When coolant temperature falls, coolant pressure may become less than atmospheric pressure. As this may fracture the radiator, the vacuum relief valve opens at –0.04 - –0.05 kg/cm^2 (–1.3 - –1.6″ Hg) to protect the radiator (black arrow).



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Inspection

1. Check the radiator for coolant leaks. If there are coolant leaks, repair or replace the radiator.
2. Check radiator fins for clogging by mud and/or other foreign matter. If clogged, clean the fins.
3. Check the pressure cap and vacuum pressure relief cap for operating pressure or sealing condition. Replace if defective.
4. Check the radiator hoses; replace if damaged, swollen or soft.



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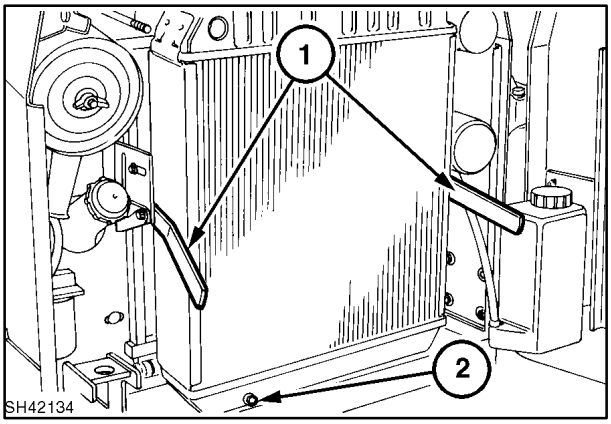
Op. 10 406 10

Radiator Removal

Drain the radiator and cooling system by raising up on handles, 1, moving the radiator to the rear. Remove the drain plug, 2, and drain the coolant into a clean container.

Remove the upper and lower radiator hoses.

Remove the radiator support hardware and handles, 2, from both sides of the radiator. Remove the overflow hose from the radiator at the cap.



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AUXILIARY BOOM HYDRAULICS TROUBLESHOOTING

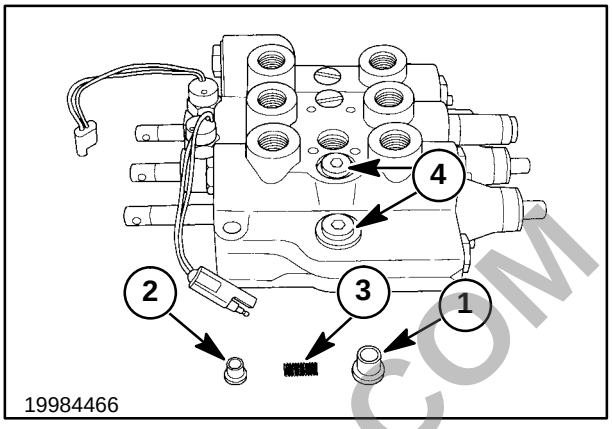
PROBLEM	POSSIBLE CAUSE	CORRECTION
No oil flow to quick couplers	Broken control linkage	Check and repair linkage
	Inoperative quick coupler	Repair or replace
	Plugged supply line	Clean or replace
	Control valve plugs leaking oil to return	Check O ring and back-up washer on plugs
	Inoperative gear pump	Check and repair
Control will not hold in detent position	Loose linkage	Repair
	Misadjusted linkage	Repair
	Inoperative control valve spool (binding)	Check and repair
	Inoperative control valve detent cap	Check and repair
Hydraulic system overheats when auxiliary hydraulics is in use	Restriction in return line	Check and repair
	Inoperative quick coupler	Repair or replace
	Restriction in attachment	Check and repair
	Operating at, or close to, relief pressure	Operate at lesser loads
	Relief pressure too low	Check operating pressure
	Plugged oil cooler not allowing cooking air to pass through	Clean oil cooler
Hydraulic system overheats when auxiliary hydraulics is not in use	Control handle shifted slightly	Return control to neutral and lock
	Control linkage not adjusted properly	Adjust linkage
	Control valve spool binding	Check and repair

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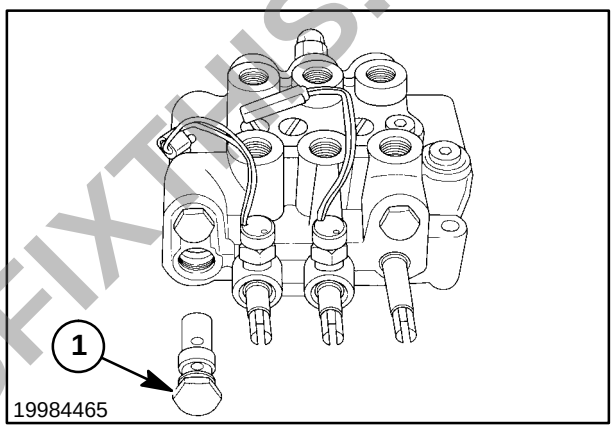
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14. Add O rings to the lift check valve caps, 1. Install the lift checks, 2, springs, 3, and caps.
15. Install the two caps, 4, with O rings into the valve body.



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16. Install an O ring on the main system relief valve, 1, and install into the valve body.



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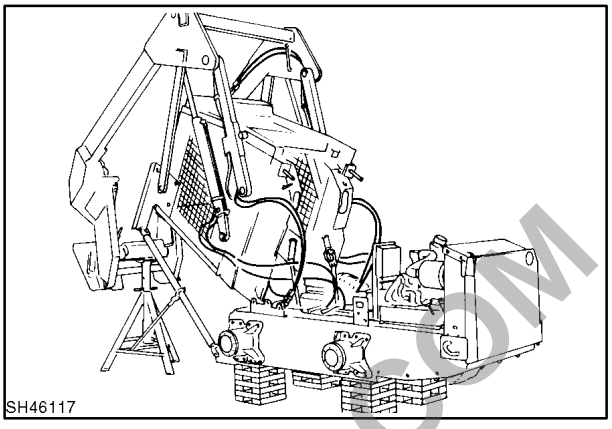
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OIL RESERVOIR REMOVAL

To access the reservoir, open the rear door and remove the right engine side shield.

To remove the reservoir from the loader, the cab and boom must be tilted forward. Refer to “Section 1” for the cab tilting procedure.

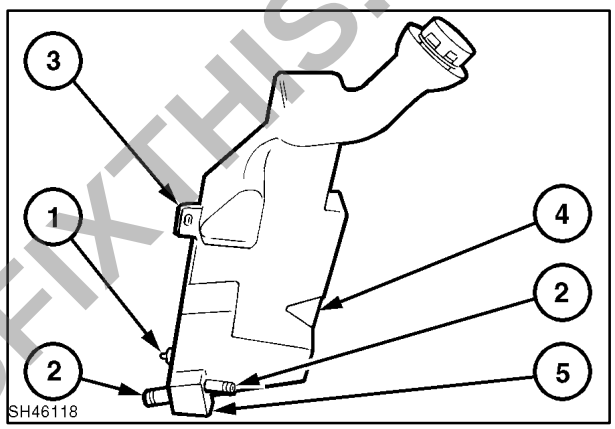


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With the cab tilted forward:

1. Drain the reservoir by lowering the engine belly pan, removing the return line from the charge check valve and rotating the line into a container. Allow the oil to drain.
2. Remove the hydraulic oil temperature sender wires, 1.
3. Remove the suction and return lines, 2, from the reservoir.
4. Remove the front mounting hardware at 3, and the rear retaining bracket at 4.
5. Remove the battery and battery hold down bracket.
6. Loosen the two rear engine attaching bolts and lift or jack the engine just far enough to slide the reservoir rearward so the reservoir at 5, fits between the engine bell housing and the loader frame.
7. Lift the reservoir from the loader.

NOTE: *If the reservoir tank should leak due to a hole or crack, DO NOT repair. Replace the tank, as the type of material used in the molded tank is not reliably repaired.*



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6. With the axle housing tight against the case at 1, install the retaining nuts and flat washers, 2, to hold the housing against the case.
7. Slide the axle housing assembly to tighten the drive chains.

NOTE: NOTE: *The chains are properly tensioned when there is 0 - 6 mm (0 - 1/4″) movement at the outer edge of tire tread. In most cases, using the kick method against the axle housing with the retaining nuts, 2, snug will be sufficient to tighten the chains. Use of a porta-power is not recommended.*

8. Torque the axle retaining hardware, 2, to 190 N·m (140 ft. lbs.)

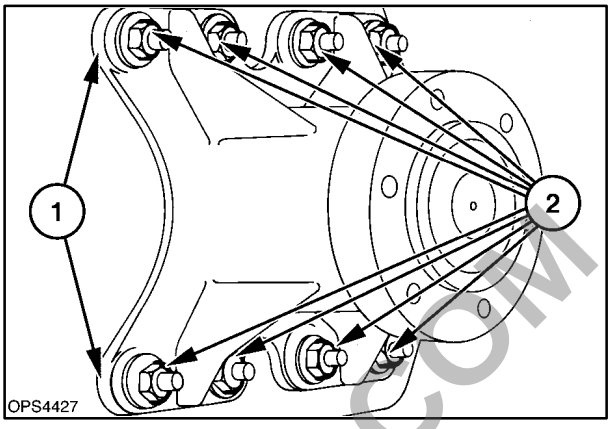
⚠ CAUTION ⚠

When tightening the axle retaining hardware, the axle housing must be tight against the case at 1, or damage to the case may occur.

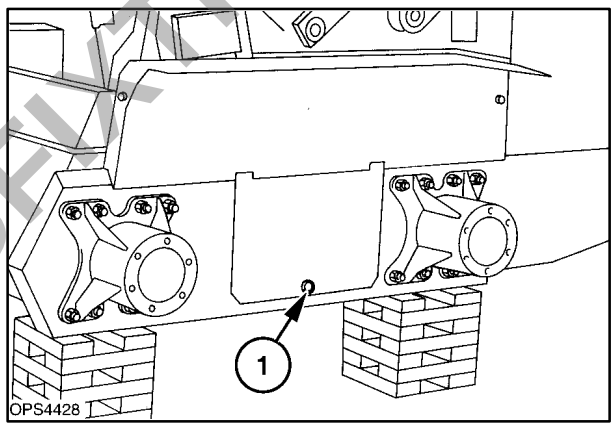
9. Check the final drive case oil level at check plug, 1; add SAE 10W-30 oil as required.

   Replace any shields that were removed for the repair.

   The skid-steer loader can now be lowered to the ground.



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SPECIFICATIONS

Alternator . . . . . 40 amp

Tachometer output . . . . . 5 - 6.5 AC Volts

Battery . . . . . BCI PC31 - 12 volt - 625 amps @ –18 C (0° F) Top stud

System Ground . . . . . Negative (–)

Protection . . . . . Fuse blocks in cab and engine areas

Cab panel (standard)
- Fuel pump 7.5A
- Electronics ignition 5A
- Wiper 7.5A
- Lights (road/work) 15A

Engine panel (standard)
- Turn signals 10A
- Accessory 25A
- Electronic (EIC) 5A
- Key main 15A
- Preheat circuit breaker 50A/40A

Cab panel (optional equipment)
- Beacon light 7.5A

Engine panel (optional equipment)
- Heater 20A
- Spare 7.5A
- Attach/Horn 15A
- Backup alarm 5A

Electronic Instrument Cluster (EIC)
- Low voltage . . . . . EIC will fault at 11.9 volts (low)
- High voltage . . . . . EIC will fault at 16.5 volts (high)

Fuel gauge sensor resistance
- Full tank . . . . . 35 ohms
- Empty tank . . . . . 240 ohms

Fuel shutoff solenoid
- Pull-in amperage . . . . . 1.5 - 1.8 amps
- Hold-in amperage . . . . . 1.3 - 1.7 amps

Engine air filter sensor . . . . . Switch is normally closed
EIC will fault at 1.6″ Mercury or 22″ Water

Engine coolant temperature sensor . . . . . EIC will read “COLD” until 0° C (32° F)
EIC will fault at 102° C (216° F)

Engine coolant temperature sensor resistance . . . . . At 20° C (68° F) 2.21 - 2.69 K ohms
At 0° - 30° C (32° - 86° F) 1.65 - 5.88 K ohms

Engine crankcase oil pressure . . . . . EIC will fault at 0.3 bar (4.3 PSI)

NOTE: *The EIC will not alarm unless coolant temperature is above 64 °F or two minutes have passed since starting.*

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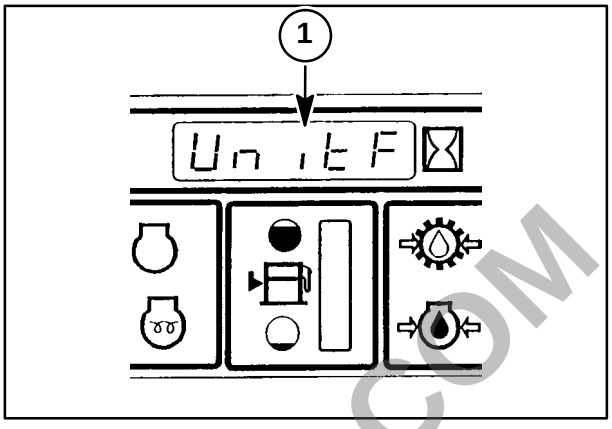
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Unit F or Unit C (EIC Reading Fahrenheit or Celsius)
With display showing “LOC_ _” for lock.

1. Press and release the “ARROW” switch; “dIAg” will appear in the character display. Then press and release the “ARROW” switch again; “SEtUP” will appear in the display.
2. Press and hold the “OPEN BOOK” switch until “FAULt” appears in the character display; release switch.
3. Press and release the “ARROW” switch until “Unit F” or “Unit C” appears in the character display, 1.
4. Press and hold the “OPEN BOOK” switch until the rightmost letter flashes, then release the switch.
5. Press and release the “OPEN BOOK” to change from F to C or C to F.
   - Unit F will read temperature degrees in Fahrenheit
   - Unit C will read temperature degrees in Celsius

To exit this item press and hold the “ARROW” switch two times to return to the “SEtUP” mode item list or turn the ignition key switch to the “OFF” position to return the EIC to the Normal Operating Mode.



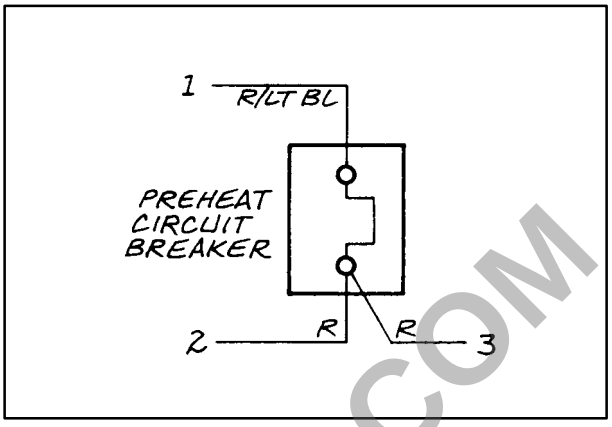
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PREHEAT CIRCUIT BREAKER WIRING

Ref	Color	Destination	Battery Voltage
1	R/LTBL	To Preheat Relay	All Times
2	R	To Start Relay	All Times
3	R	From 15A Key Main Fuse Engine Fuse Block	All Times



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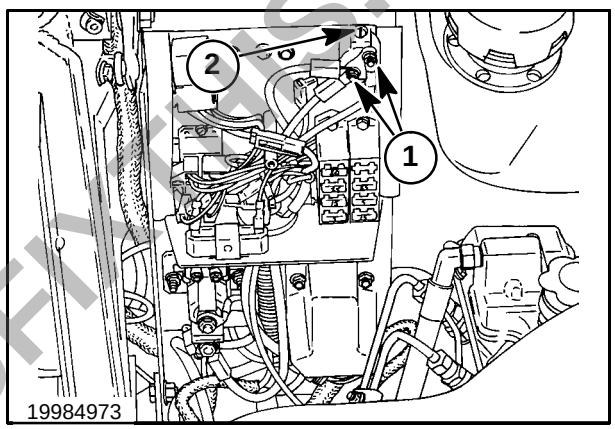
Op. 55 100 24

PREHEAT CIRCUIT BREAKER REMOVAL

1. Disconnect the negative (–) battery cable.
2. Disconnect wires from the terminals, 1.
3. Remove the circuit breaker, 2, retaining hardware.

PREHEAT CIRCUIT BREAKER INSTALLATION

1. Reinstall the retaining hardware.
2. Reconnect the wires to the proper terminals.
3. Reconnect the negative (–) battery cable.



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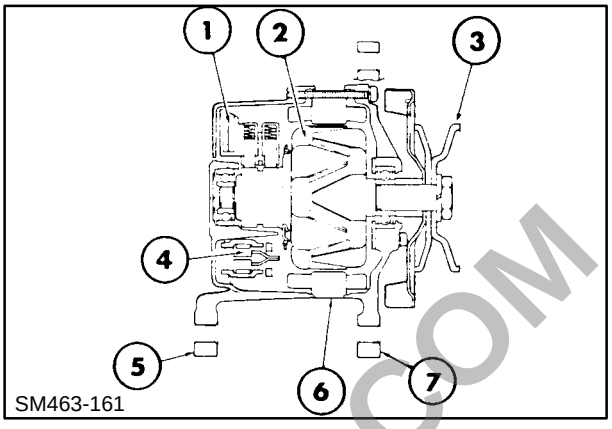
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Alternator Construction

The principal components of the IC alternator are the IC voltage regulator, 1, the rotor, 2, the pulley, 3, the rectifier assembly, 4, the rear support bracket, 5, the stator, 6, and the front support bracket, 7.

The rectifier assembly consists of two diode heat sinks, one positive and one negative, and a diode trio. The diode trio is used as a field supply diode and is connected to the field coil and terminal L on the alternator.

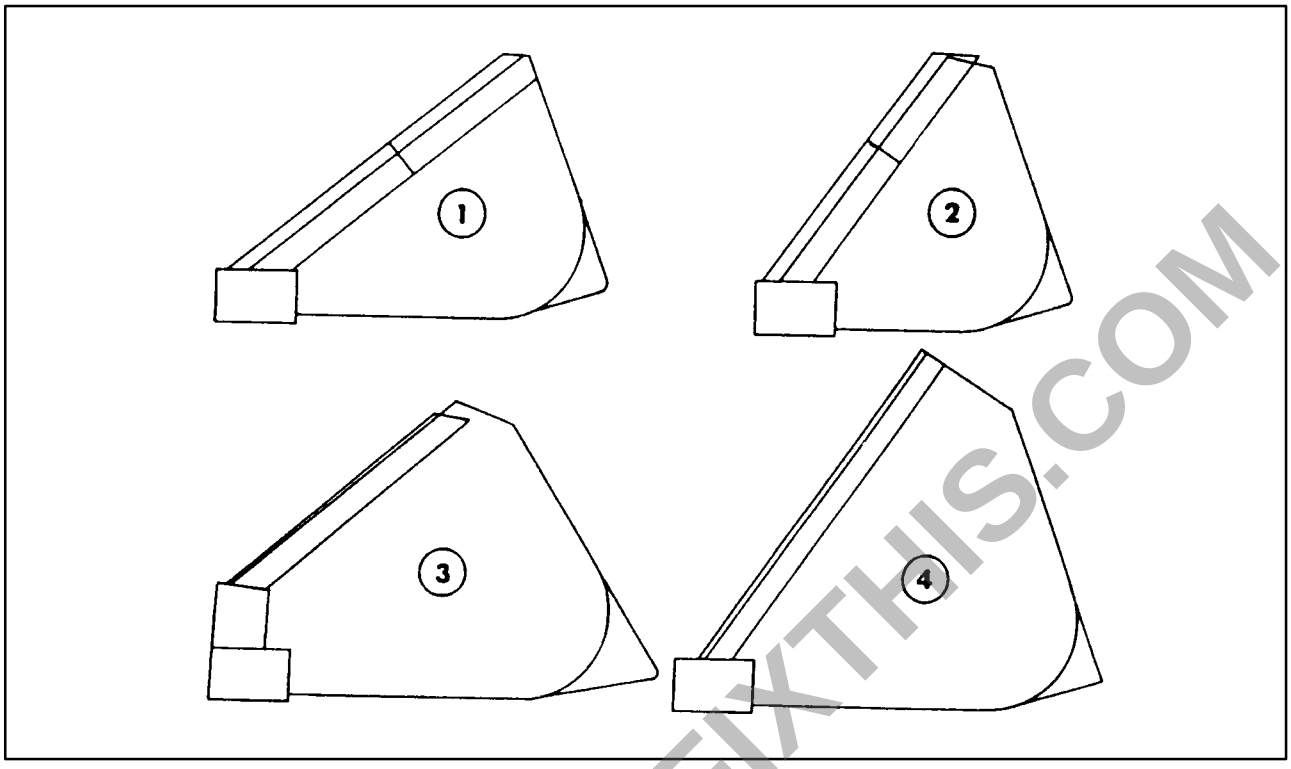
The built-in Integrated Circuit regulator is a solid state unit which can only be serviced as an assembly.



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Op. 82 100

GENERAL INFORMATION

BUCKETS

Bucket Types

1 - LP - Low profile

The low-profile bucket has a shorter back and is longer from bucket heel to cutting edge for optimum cutting edge visibility. This is important for finish grading and accurate cut and fill jobs.

2 - D & F - Dirt and foundry

The dirt and foundry bucket is shorter from bucket heel to cutting edge to provide maximum breakout force for tough digging conditions.

3 - M & F - Manure and fertilizer (slurry)

The manure and slurry bucket is for handling loose or fluid materials with more rollback to minimize spillage.

4 - LM - Light material

The light-material bucket is for light, high- volume materials for more productivity handling light material.

Select bucket styles and sizes to provide both adequate breakout force and reasonable carrying capacity. Handle dense materials with a relatively small bucket. Handle lighter materials with higher capacity buckets. Refer to the following bucket capacity chart and the material weight chart in the operator's manual when choosing the bucket for a job.

Bucket Capacity Cubic Feet

Width		Bucket Capacity Heaped (cu ft)	Bucket Capacity Struck (cu ft)
54″	Utility fork	N/A	N/A
54″	Low profile	10.3	8.0
54″	Dirt and foundry	10.2	7.8
60″	Low profile	11.5	8.9
60″	Dirt and foundry	11.5	8.7
66″	Low profile	13.2	9.7
66″	Dirt and foundry	15.2	11.6

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CHECKING PROCEDURE

The following are the procedures used to measure the skid-steer loader faceplate and how to measure the attachment.

Checking the Attachment

1. Check the placement of the lower latch plates at 1. Measure from the back surface of the attachment to the rear of the latch plate slot at 1: 35.8 mm ± 0.8 mm (1-9/32″ ± 1/32″).

   a. If this dimension is too short, the slot can be widened by grinding out the slot 1/16″ maximum or replace the latch plates.

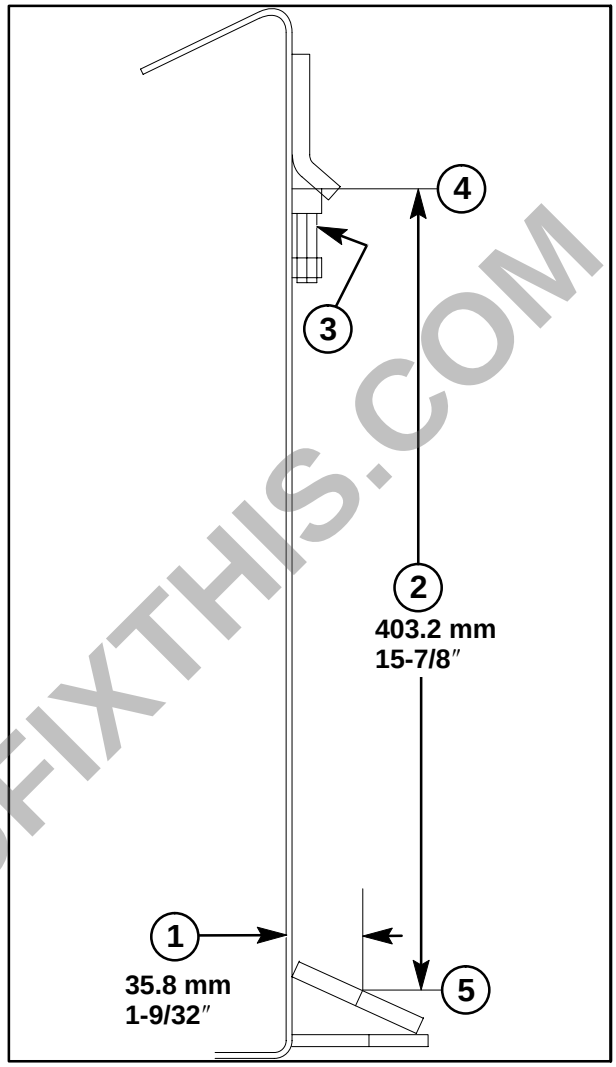
   If grinding is required, the rear of the slot must be ground square with the top surface of the plate to ensure proper pin engagement, 2, Figure 86.

   b. If the dimension is too long, replace the latch plates.

2. Check the height of the attachment at 2. Insert a 1/2″ x 2″ with 1/2″ standard nut as shown at 3. Measure from the top of the bolt, 4, to the rear of the latch plate slot at 5: 403.2 mm ± 0.8 mm (15-7/8″ ± 1/32″).

If this dimension is incorrect, the lower latch plates will require replacement.

NOTE: *If new latch plates are required, order four plates #86506587 (102 mm, 4″ slot) through Parts and follow the latch plate installation procedure.*



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