SPX 4260 TROUBLESHOOTING MANUAL

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CASE IH APPLICATION EQUIPMENT
260 Highway 12 SE
Benson, MN 56215 U.S.A

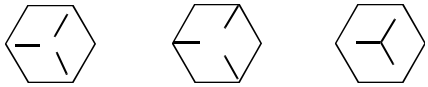
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SPX 4260 Troubleshooting Manual
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TORQUE SPECIFICATIONS - DECIMAL HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers dry, or when lubricated with engine oil. Not applicable if special graphites, Molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts and Studs		
		
Size	Pound-Inches	Newton Metres
1/4 inch	108 to 132	12 to 15
5/16 inch	204 to 252	23 to 28
3/8 inch	420 to 504	48 to 57
Size	Pound-Feet	Newton Metres
7/16 inch	54 to 64	73 to 87
1/2 inch	80 to 96	109 to 130
9/16 inch	110 to 132	149 to 179
5/8 inch	150 to 180	203 to 244
3/4 inch	270 to 324	366 to 439
7/8 inch	400 to 480	542 to 651
1.0 inch	580 to 696	787 to 944
1-1/8 inch	800 to 880	1085 to 1193
1-1/4 inch	1120 to 1240	1519 to 1681
1-3/8 inch	1460 to 1680	1989 to 2278
1-1/2 inch	1940 to 2200	2631 to 2983

Grade 8 Bolts, Nuts and Studs		
		
Size	Pound-Inches	Newton Metres
1/4 inch	144 to 180	16 to 20
5/16 inch	288 to 348	33 to 39
3/8 inch	540 to 648	61 to 73
Size	Pound-Feet	Newton Metres
7/16 inch	70 to 84	95 to 114
1/2 inch	110 to 132	149 to 179
9/16 inch	160 to 192	217 to 260
5/8 inch	220 to 264	298 to 358
3/4 inch	380 to 456	515 to 618
7/8 inch	600 to 720	814 to 976
1.0 inch	900 to 1080	1220 to 1465
1-1/8 inch	1280 to 1440	1736 to 1953
1-1/4 inch	1820 to 2000	2468 to 2712
1-3/8 inch	2380 to 2720	3227 to 3688
1-1/2 inch	3160 to 3560	4285 to 4827

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1. Clean the tank top and filter areas before proceeding.
2. Vent hydraulic tank by removing the plug located on the top.
3. Remove safety cap on the bottom of the drain hose, open the drain gate valve on the bottom of the hydraulic tank, and drain the oil into appropriate container.
4. Close drain gate valve on the bottom of the hydraulic tank and install safety cap on the bottom end of the drain hose.
5. Install new hydraulic oil filter canisters on dual hydrostatic pumps, also install new in-tank filter.
6. The top of the tank should be clean. (Refer to the note above covering pressure washing.) Remove -12 SAE plug in the top of in-tank return filter and pump oil into tank through this port. Do not drop foreign material in the tank.
7. Fill the hydraulic oil tank with specified hydraulic oil (approximately 25 gals).
8. Install -12 SAE plug in the in-tank filter.
9. Start engine and run, in neutral, at a minimum engine RPM of 1800 for a minimum of 20 minutes to filter and warm the oil prior to any operation.

NOTE: *There must be oil in the tank when the engine is running. If the pumps do not receive oil, severe pump damage is possible within 10 seconds.*

Hydraulic System Breather

The hydraulic tank is equipped with a screw on canister breather that maintains atmospheric pressure in the tank. The breather is located on top of the tank. The breather should be replaced if the unit is run in extremely dirty conditions or once every season.

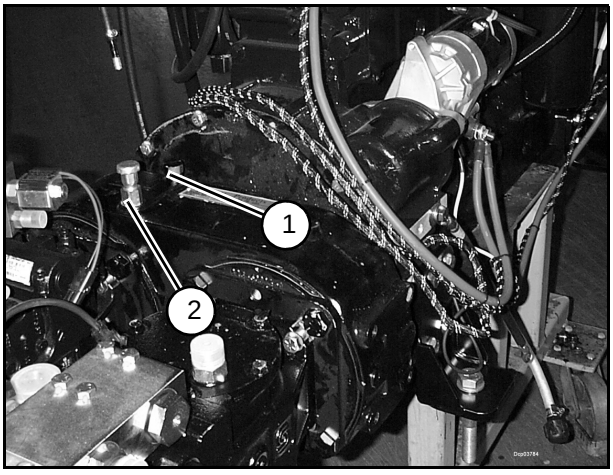
Spray System

Every 500 hours of operation your spray system should be recalibrated. Refer to the controller manual for recalibration procedures.

Gear Increaser on Engine

The gear increaser lubricant should be changed after the first 100 hours of operation. Then seasonally or every 500 hours of operation. Use 80W90 GL-5 gear lube.

1. Dipstick
2. Breather



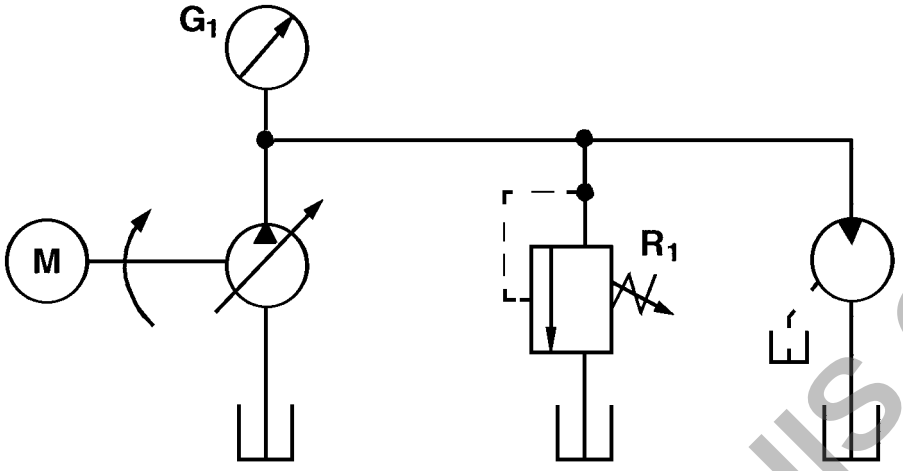
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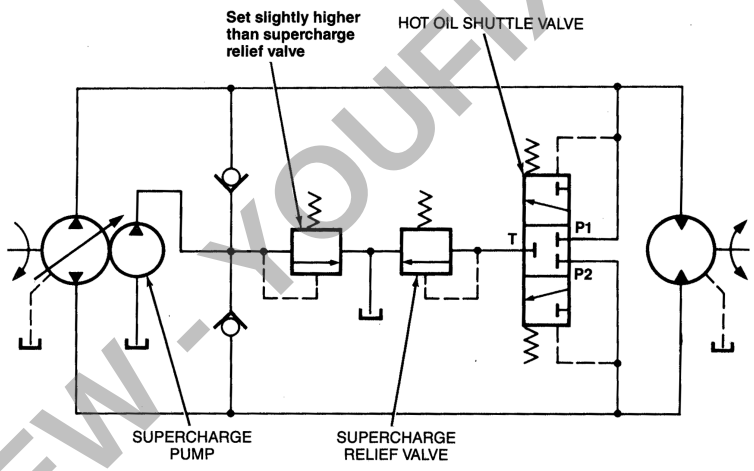
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HYDRAULIC SCHEMATICS AND DIAGNOSTICS

Open Loop



Closed Loop



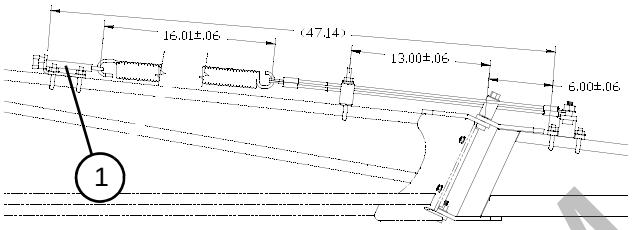
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Booms

Boom Breakaways

It is very important that the breakaway locking mechanism be adjusted so the breakaway section breaks away only when it encounters an obstruction. It should not break away under normal operation. Tighten or loosen the tension bolt (Item 1) to maintain the below dimensions.



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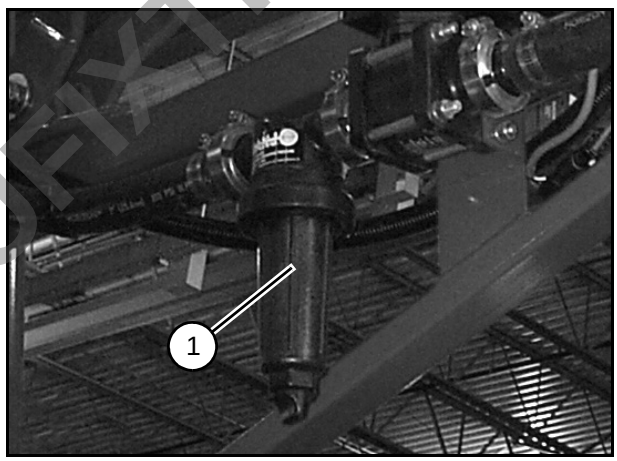
Boom Strainers

WARNING: *Strainer may be pressurized. Remove pressure in the feed line before removing strainer bowl.*

WARNING: *If the sprayer contains chemical or fertilizer solution, be sure to wear the appropriate safety equipment.*

Before cleaning boom strainers (Item 1), be sure pressure has been bled from boom plumbing.

High volume booms have no strainers.



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1. Place ignition switch in “RUN” position. Do not start the engine.
2. Place product pump switch to “ON” and boom valve switches to “OFF”.
3. Place the product pump switch to “OFF”.
4. Place catch pans under several nozzles on each of the boom sections.
5. Carefully loosen diaphragm caps on the nozzle bodies located over the catch pans.
6. Allow liquid to drain from the boom plumbing. This may take several minutes.
7. Remove line strainer bowls with care as some product will remain in the strainer housing. Clean screens as necessary.
8. Reinstall line strainer bowls.
9. Tighten all diaphragm caps which were previously loosened.

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SERVICE POINTS	FREQUENCY IN HOURS						
	GREASE	DRAIN	CHECK	CLEAN	CHANGE	FILL	TORQUE
Tire Pressure			50				
Engine Air Filter			50				
Radiator and Coolers				50			
Battery Top				250			
Hydraulic Hoses and Wiring Connections			250				
Air Intake Hoses			250				
A/C Compressor Belt			250				
Engine Coolant Mixture Level			250				
Engine Oil					250	250	
Engine Oil Filter					250		
Gear Increaser Lubricant					500	500	
Hub Lubricant					500	500	
Hydraulic Tank Fluid					500	500	
Hydraulic Return Filter					500		
Coolant Filter /Conditioner / Hoses					500		
Hydraulic System Breather					500		
Fuel Filter					500		
In-line Fuel Filter					500		
Fuel System Air Removal				500			
Spray System			500				
Cab Recirculation Screen					900		
Cab Air Filter					900		
Engine Air Filter (Primary/Secondary)					1200		
Coolant					2100	2100	

NOTE: *Be sure to completely read through the Maintenance section. There are important warnings and notes that apply to the items above.*

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LUBRICATION AND MAINTENANCE

Proper Disposal Of Materials

Before servicing this machine and before you dispose of old fluids, lubricants, and filters always remember the environment.

Do not pour oil or fluids in the ground, down drains or into containers that can leak.

Dispose of all old fluids, lubricants and filters in accordance with local regulations.

Check with your local environment recycling center or your dealer for correct information.

PLASTIC AND RESIN PARTS

DO NOT use gasoline, paraffin, paint thinner, naptha, etc., when cleaning plastic, e.g.; console, instrument cluster, monitors and gauges etc.

Use ONLY water, mild soap and a soft cloth when you clean these parts. Using gasoline, paraffin, paint thinner etc., will cause discoloration, cracking or deformation of the part being cleaned.

WARNING: *To prevent eye injury, always wear goggles or full face protection before using compressed air or high pressure washers.*

LUBRICANTS AND CAPACITIES

Engine

Oil Type..... Case No.1, See recommendation
Oil Capacity - Without Filter Change ..... 19 Liters (5 gal)
Oil Capacity - With Filter Change ..... 21 Liters (5-1/2 gal)

NOTE: *The oil level dipstick is only a guide, when you fill the engine crankcase with oil always measure the amount of oil you put in.*

Cooling System

Coolant Mix.....Solution of 50% Water and 50% Ethylene Glycol
System Coolant Capacity .....42.4 Liters (11.2 U.S. Gal)
Radiator Capacity .....27.3 Liters (7.2 U.S. Gal)

Fuel Tank

Fuel Type.....No. 2 Diesel Fuel
Fuel Tank Capacity .....530 Liters (140 U.S. Gal)

Hydraulic System

Oil Type..... Case HY-TRAN ULTRA®
Tank Capacity.....94.6 Liters (25 U.S. Gal)

Gear Increaser

Oil Type.....80W90 GL-5
Capacity..... 7.5 Pints

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MAINTENANCE SCHEDULE

Recommended Break-In Maintenance

The following maintenance is only recommended as a first time required maintenance. Regularly scheduled maintenance is still required in addition to the break-in maintenance.

SERVICE POINTS	FREQUENCY IN HOURS						
	GREASE	DRAIN	CHECK	CLEAN	CHANGE	FILL	TORQUE
Hub Lubricant					50	50	
A/C Compressor Belt			50				
Gear Increaser Lubricant					100	100	

Recommended Maintenance Schedule

The following maintenance schedule is recommended at every time interval stated below.

SERVICE POINTS	FREQUENCY IN HOURS						
	GREASE	DRAIN	CHECK	CLEAN	CHANGE	FILL	TORQUE
Machine Care				10			
Liquid Tank				10			
Cab				10			
Trailing Arm Pivot Area				10			
Fuel Tank						10	
Engine Oil Level			10				
Hydraulic Oil Level			10				
Coolant Level			10				
Brake Operation			10				
Indicators, Switches, Lights			10				
Safety Equipment			10				
Wheel Nuts							10
Boom Cylinders and Joints	10						
Boom Parallel Linkage	10						
Strut and Axle Assembly (Hours vary see recommendation)	10						
Fuel Filter Water Drain		50					
Fuel Tank Water Drain		50					
Battery Connections			50				
Hub Lubricant Level			50				
Loose Bolts or Parts			50				

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Cleaning the Hydraulic System

IMPORTANT: *All hydraulic fluid is dirty! Anytime the hydraulic system(s) is opened up for repairs and/or anytime fluid is changed or added, it must be assumed that contaminants are being introduced to the system. Cleanliness cannot be overemphasized. Changing the oil filter and oil at the proper intervals is necessary to maintain quality and a reliable system.*

New oil purchased either in bulk or in sealed containers does not meet the cleanliness standards required to insure satisfactory operation and prolonged life of hydrostatic components. Therefore, it is recommended that new oil be pumped into the reservoir through the return filter, center fitting.

The vehicle's filtration system is a very effective one, and can be utilized to clean the hydraulic oil after the hydraulic system has been opened up for repair or after adding or changing the hydraulic oil. This will minimize the risk of contamination damage. Run the machine for at least 1 hour under light load, after changing the hydraulic fluid.

IMPORTANT: *It is of utmost importance when working on any hydraulic system to keep the components and surrounding area being serviced as clean as possible. Pressure wash all mud, grease, oil, and dirt off the area to be opened up and serviced. Before loosening and removing hydraulic fittings and hoses, spray the immediate area around the fittings with a pressure washer. If an aerosol degreaser such as brake cleaner or carburetor cleaner are used, (these are flammable fluids) do not smoke and only use in a well ventilated area. Have threaded plugs and/or caps of the proper size in hand to install immediately. Do not leave hoses or hydraulic components exposed.*

NOTE: *Only use hydraulic oil filters that meet or exceed the Micron and Beta Ratio specified by Case IH Application Equipment. Filters used on Case IH Application Equipment machines that fall below the specifications may void the hydraulic system warranty depending on individual circumstances. It is highly recommended to use Case IH Application Equipment supplied filters as we continually monitor our filter manufacturers for quality.*

1. Replace the in-tank filter and the two hydrostatic charge filters.
2. After new filters are installed, start engine and run at 1800 rpm with vehicle in neutral. Cycle all cylinders 5 times and turn the steering wheel lock to lock. Run the product pump for 5 minutes if repair was done to its circuit (be sure there is water in the liquid tank). This will move any contamination debris to the tank.
3. Allow engine to run at 1800 rpm with the vehicle in neutral for 30 minutes to warm the system and clean the oil in the tank.

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SPECIFICATIONS

Item	Specification	
Engine	CDC 6TA-830, 260 hp turbo charged and after cooled diesel	
Drive	Hydrostatic with full-time, 4-wheel drive. Infinitely variable shifting returns the wheel motor to maximum torque each time the hydrostatic control lever is returned to neutral. Allows maximum torque for each start.	
Wheel Adjustment	120 in. - 152 in.	
Suspension	4 wheel independent trailing arm with spring and shock standard. Active suspension optional. 11 in. of travel.	
Steering	Hydraulic power steering. Orbital with master/slave rephasing cylinders.	
Cab	Air conditioner and heater with activated charcoal air filter	
	6 way adjustable suspension seat	
	2 speed windshield wiper	
	AM/FM stereo cassette system	
	Adjustable automotive type steering wheel	
	Full instrumentation	
	Tinted glass	
	Cab lighting	
	Hydraulic all wheel parking brakes with dynamic disc brakes on front wheels with brake pedal in cab.	
Travel Speed	30 mph / 48 kph	
Fuel Tank	140 gallons (399 liters) diesel only	
Dimensions	Dry weight	24,000 lbs (10,896 kg) (380/85 R46 tires, 90’ boom)
	Tank size	1200 gal (4560 liters) SS
	Nozzle spacing	20 in. preset others available
	Overall length	336 in. (28 ft. / 8.6 m)
	Overall width	138 in. (11 ft. 6 in. / 3.5 m) (retracted)
		170 in. (14 ft. 2 in. / 4.4 m) (extended)
	Overall height	144 in. (12 ft. / 3.65 m)
	Wheel base	150 in. (12 ft. 6 in. / 3.8 m)
	Ground clearance	54 in. / 137 cm (tank empty)
		52 in. / 132 cm (tank full)
Tire Sizes	380/85 R46	
	650/65 R38	
	320/90 R46 (optional)	
Turning Radius	Axles in - 20 ft. 6 in. / 6.25 m	
	Axles out - 21 ft. 4 in. / 6.5 m	
Boom	Boom length	60’-90’
		60’-80’ (optional)
	Boom tip breakaway	5.5 ft. / 1.68 m

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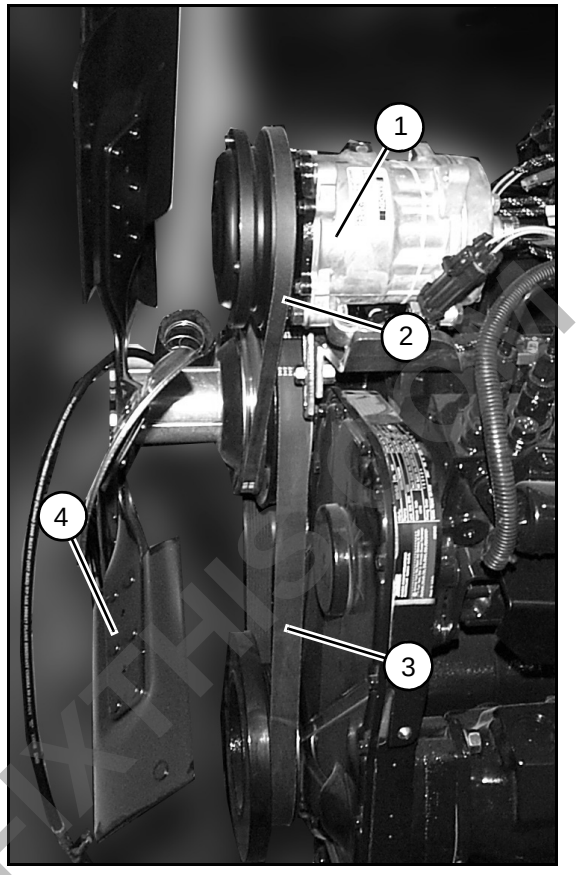
Compressor Belt Adjustment

To adjust the belt tension, loosen the compressor adjusting bolts and pivot bolts. Push the compressor up until the correct tension for the belt is reached. Tighten the compressor adjusting bolts and pivot bolt.

1. A/C Compressor
2. A/C Compressor Belt
3. Engine Fan Belt
4. Fan

Compressor Belt Replacement

1. Loosen the adjusting bolts and pivot bolt for the compressor. Push the compressor down to loosen the belt.
2. Remove the compressor drive belt. Install a new drive belt.
3. Measure the compressor belt for correct tension using a belt gauge. Belt tension must be 95 to 115 lbs (422 to 516 Nm) for a new belt. After ten minutes run-in time on the new belt, adjust tension for 90 to 110 lbs (400 to 489 Nm).
4. Push compressor up until correct tension for the belt is reached. Tighten the adjusting bolt and pivot bolt.



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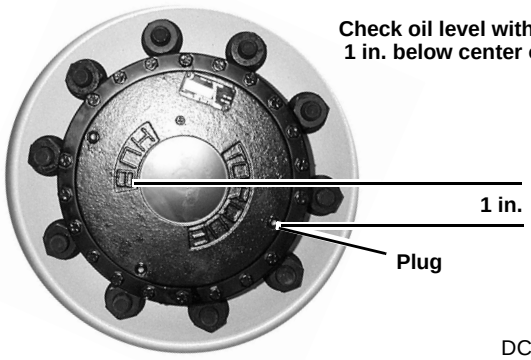
Hub Lubricant

The initial OEM lubricant fill for all planetary hubs on this vehicle is 85W140 GL-5 gear lube. It is extremely important that the hub lubricant be changed at 50 hours of operation (break-in period) for all new hubs or any time new hubs or gears are installed into a hub as repair parts. The importance of this initial break-in lubricant change cannot be overemphasized. The recommended lubricant for all hubs is 85W90 GL-5 gear lube or 85W140 in warmer climates.

The vehicle is propelled with four (4) hubs giving it very good traction on all terrains. Each hub should be checked regularly for the proper amount of lubrication.

To check the hub lubricant:

1. Rotate the wheel so that the check plug is 1 in. below center point of the wheel as shown.
2. Remove the check plug using a 1/4” Allen head wrench. If oil is at this level, it's at the correct operating level and the plug should be inserted. If oil is below hole, add 85W90 GL-5 gear lube or 85W140 in warmer climates until oil just begins to run out.
3. Insert check plug.



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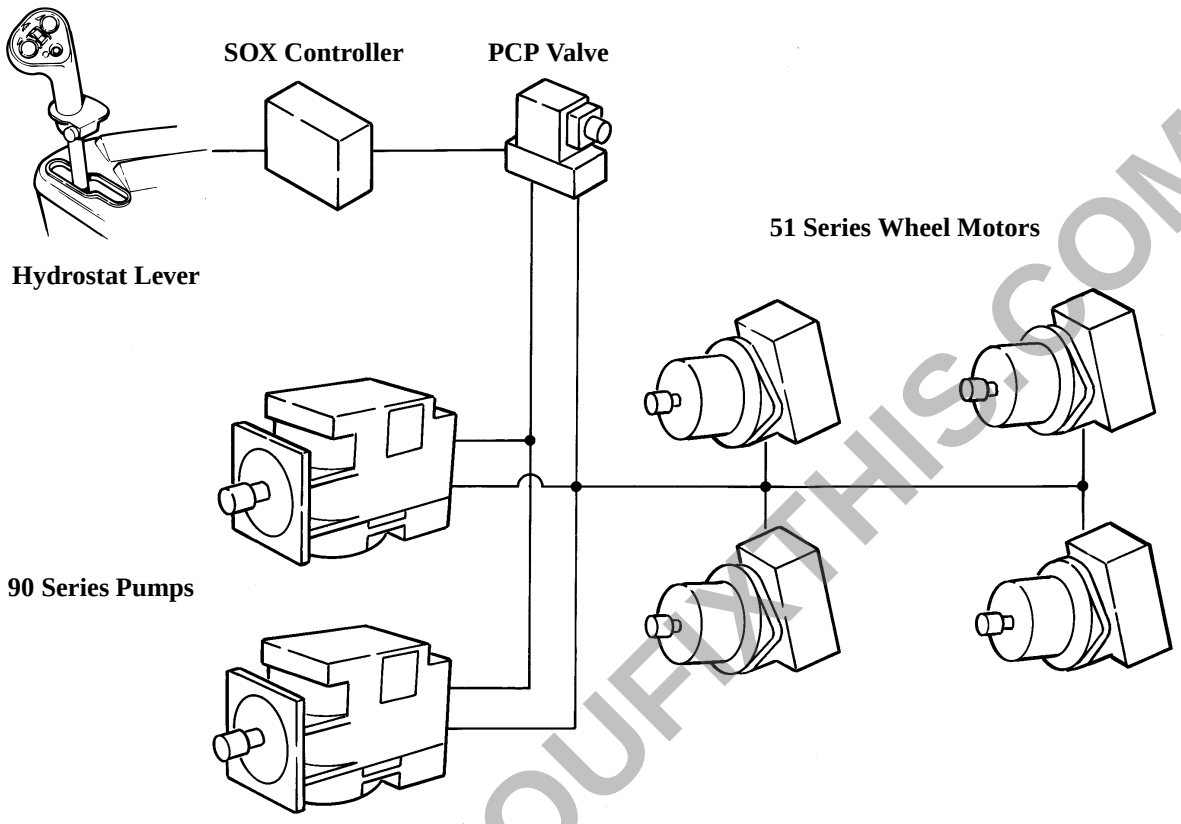
Each hub with integral brake has a total oil capacity of 58 oz. All four hubs have integral brakes. The oil level in the hubs should be checked every 50 hours and changed every 500 hours under normal operating conditions. If the hub is “overfull”, drain to proper level. Recheck two hours later. If it is “overfull” again it is likely the wheel motor has a shaft seal that is leaking hydraulic oil into the hub. In this case, call your local service representative.

NOTE: *Under high speed use (driving down the road) the planetary gears create heat and pressure in the hub. This pressure is released around the seal and some oil weeping may occur.*

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Hydraulic Component Schematics

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SAFETY

WARNING: *This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.*

To prevent injury, always follow the Warning, Caution and Danger notes in this section and throughout the manual.

Put the “Do Not Operate” tag shown below on the key for the key switch when servicing or repairing the machine. Tags are available from your service parts supplier.

Before servicing a machine, park the machine on hard level ground. Turn off the engine, apply the parking brake and remove the key from the key switch. Put blocks in front of and behind either the front or rear wheels.



WARNING: *Read the Operators Manual to familiarize yourself with the correct control functions.*

WARNING: *Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.*

WARNING: *This is a one person machine, no riders allowed.*

WARNING: *Before starting engine, study Operators Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating. It is your responsibility to understand and follow manufacturers instructions on machine operation, service, and to observe pertinent laws and regulations. Operator and Parts Manuals may be obtained from your equipment dealer.*

WARNING: *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflective clothing.*

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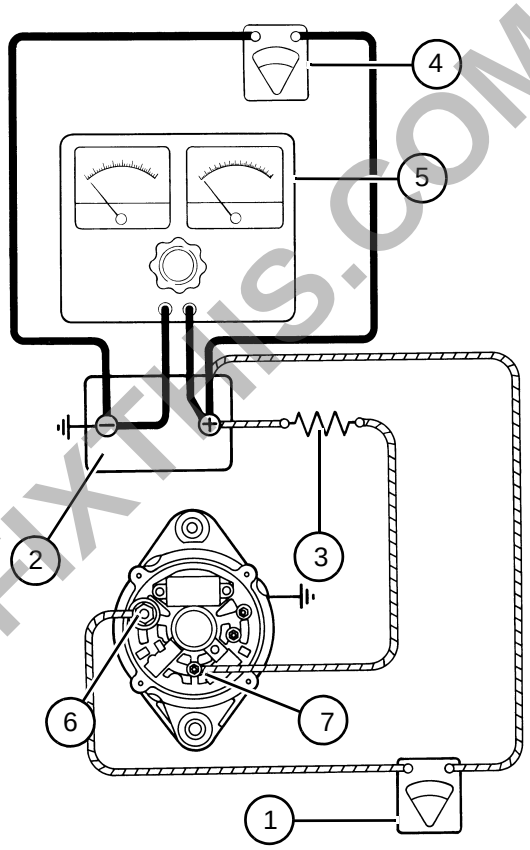
CHECKING ALTERNATOR OUTPUT ON BENCH

Install the alternator onto an alternator-generator tester. Follow the instructions supplied with the tester for testing the alternator.

When an alternator-generator tester is not available, but a variable speed source is available, connect the equipment as shown to the alternator and a fully charged battery. Do not connect the battery load tester across the battery at this time.

1. Apply rotation to the alternator shaft and slowly increase the shaft RPM. The reading on the voltmeter will increase with speed, but must not increase beyond 15 volts at maximum speed. If the voltage increases beyond 15 volts, check to make sure that there is not an electrical connection between the slip rings and ground. Test the voltage regulator and replace if bad before continuing to part 2 below.
2. If voltage in part 1 is less than 15 volts, connect the carbon pile across the battery. Operate the alternator at 5000 RPM and increase the load on the carbon pile until the alternator shows maximum output on the ammeter. The amperage read on the ammeter must not be less than 130 amperes.

NOTE: *Use heavy gauge wire for all connections.*



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Item Numbers

1. Ammeter
2. 12 Volt Battery
3. 10 OHM 8.5 Watt Register
4. Ammeter
5. Battery Load Tester
6. B+ Terminal
7. D+ Terminal

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Cab Pressurizer Blower Relay Supply & Ground Test (Standard A/C)

Steps and Test Point	Corrective Actions
NOTE: *The cab pressurizer blower relay is located in the electronics compartment on the right hand side of the operator's seat.* **NOTE:** *The cab pressurizer blower is located under the instructional seat behind a trim panel at the cab rear.* 1. Start the tractor and run the engine at RPM greater than 500 to engage the cab pressurizer blower.	
2. The engine controller should recognize any fault conditions from the control side (pin 2) of the cab pressurizer blower relay. Check for engine controller fault codes and follow instructions provided. See engine manual.	
3. Check fuse #32 on block 262. Is 12V present?	YES - There is a problem with power and ground to the relay or the blower motor is defective. Go to next Step. NO - Replace fuse 32 (15 amp) and/or locate and correct open circuit to the fuse.
4. Measure the voltage on pin A on connector 90 at the cab pressurizer blower motor. Is 12V present?	YES - There is an open circuit between the motor and the relay or the motor is defective. Go to next Step. NO - Locate and correct open circuit on 92(R).
5. Disconnect the cab pressurizer motor from the harness and check for continuity through the motor between pins A and B.	OK - There is an open circuit between the motor and the cab pressurizer blower relay. Go to next Step. NOT OK - Replace the cab pressurizer blower motor.
6. Measure the resistance on terminal 5 on the cab pressurizer blower relay. Less than 1 ohm?	YES - There is a problem with the ground circuit to the relay. Go to next Step. NO - Locate and correct the open circuit between the motor and terminal 5 of the relay on 130(Bk).
7. Measure resistance on terminal 3 on the cab pressurizer relay to ring terminal ground 173. Less than 1 ohm?	YES - Replace the cab pressurizer blower relay. NO - Locate the open circuit and correct.

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