GENERAL MACHINE SPECIFICATIONS

MODEL ..... 8860 and 8860HP Windrower Tractor

DIMENSIONS AND WEIGHTS

Length
- overall with draper header ..... 7267 mm (286.1 IN)
- overall with auger header ..... 6543 mm (257.6 IN)
- wheel base ..... 3556 mm (140 IN)

Height
- top of cab ..... 3308 mm (130.2 IN)
- clearance under walking beam ..... 953 mm (37.5 IN)
- clearance under frame ..... 950 mm (37.4 IN)

Width
- outside of hubs ..... 3034 mm (119.5 IN)
- with standard tires ..... 3706 mm (145.9 IN)

Tread width, drive tires ..... 3202 mm (126 IN)

Tread width, tailwheels
- minimum ..... 2144 mm (84.4 IN)
- maximum ..... 3048 mm (120 IN)

Weight (approximate)
- without header ..... 3629 kg (8000 LB)

TIRES

Drive wheels ..... 19.5L x 24, bar tread
19.5L x 24, turf tread
- wheel bolts ..... 5/8 IN
- wheel bolt torque ..... 271 N·m (200 LB·FT)

Tailwheels ..... 14L x 16.1 6-ply implement rib
- wheel bolts 9/16-18
- wheel bolt torque ..... 165 N·m (120 LB·FT)

Tire pressure ..... drive wheels 137 kPa (20 psi)
tailwheels 68.9 kPa (10 psi)

ENGINE

Model
- 8860 ..... Case, 4-390
- 8860HP ..... Case, 4T-390

Horsepower
- 8860 ..... 80 @ 2500 r/min (rpm)
- 8860HP ..... 110 @ 2500 r/min (rpm)

High idle ..... 2750 r/min (rpm)

Displacement ..... 3.9 L (239 CU IN)

Cooling system capacity ..... 20.8 L (22 U.S. quarts)

Cooling fan diameter ..... 586 mm (23 IN)

Fuel ..... ASTM No. 2 Diesel

Fuel tank capacity ..... 227 L (60 U.S. gallons)

ELECTRICAL SYSTEM

System voltage ..... 12 volts

Grounding ..... negative

Batteries
- quantity 2
- capacity, each ..... 12V, 450 amp minimum cranking capacity @ 0°F
- type ..... SAE J537, Size 24 or 27, top/side post

Alternator
- manufacturer ..... Robert Bosch
- output ..... 95 amperes

CAB

Cab glass ..... tinted, 6.8 m^2 (73 sq ft)

Steering column ..... adjustable pivot and tilt

Gauges ..... analog gauges: fuel, volts, water temperature, oil pressure, flotation pressure, speedometer (optional)

GROUND DRIVE SYSTEM

Final drive ..... double chain reduction
- primary reduction chain ..... No. 50
- secondary reduction chain ..... No. 80

Tandem pump ..... Vickers Model 19, piston

Motors ..... Vickers Model MFE19, fixed displacement

Speed, approximate
- FIELD range ..... 0 to 16 km/h (0 to 10 mph)
- ROAD range ..... 0 to 24 km/h (0 to 15 mph)

HEADER DRIVE SYSTEM

Pump ..... Vickers Model 19, piston

Motor ..... Eaton, fixed displacement piston

HYDRAULIC SYSTEM

Ground drive system
- relief pressure ..... 37 925 kPa (5500 psi)

Header drive system
- relief pressure ..... 34 475 kPa (5000 psi)

Header lift system
- relief pressure ..... 17 237 kPa (2500 psi)

HEADER FLOTATION SYSTEM

Type ..... hydraulic with accumulator, adjustable from cab

Accumulator charge pressure ..... 5516 kPa (800 psi)

AIR CONDITIONING

System size ..... 22 000 BTU/hr

Refrigerant ..... HFC 134a

Capacity ..... 1.8 kg (4.0 LBS)

Compressor ..... Sanden 507H
- displacement ..... 154.9 cc (9.5 CU IN)

ACCESSORIES

Lighting ..... 5 lamps front, rectangular halogen
1 lamp rear, rectangular halogen
flashers on header and tractor
2 lamps side, tail light, turn signals

Rear view mirrors, right and left ..... STD

Controls ..... Shape-coded handles

LUBRICATION

Grease fittings
- lubricant ..... CASE IH 251 HEP Lithium Grease

Wheel bearings
- lubricant ..... CASE IH 251 HEP Lithium Grease

Engine oil
- quantity with filter change ..... 10.5 L (11 U.S. quarts)
- type of fluid ..... Case IH No. 1 Engine Oil, SAE 15W 40, API CE

Hydraulic system
- quantity
  - total system ..... 87 L (23 U.S. gallons)
  - reservoir ..... 76 L (20 U.S. gallons)
- type of fluid ..... Engine Oil, SAE 15W 40
- type of fluid, alternate ..... Case IH Hy-Tran Plus

NOTE: Hy-Tran Plus can be added to factory-installed fluid, but to get the full benefit of the qualities of Hy-Tran Plus a complete oil replacement is required.

Chaincases, final drive
- quantity, each ..... 3.8 L (8 pints)
- lubricant ..... Case IH 135H EP Gear Lube 85W 140

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ENGINE REMOVAL AND INSTALLATION

Removal

See the safety warnings at the beginning of this section and follow the procedures.

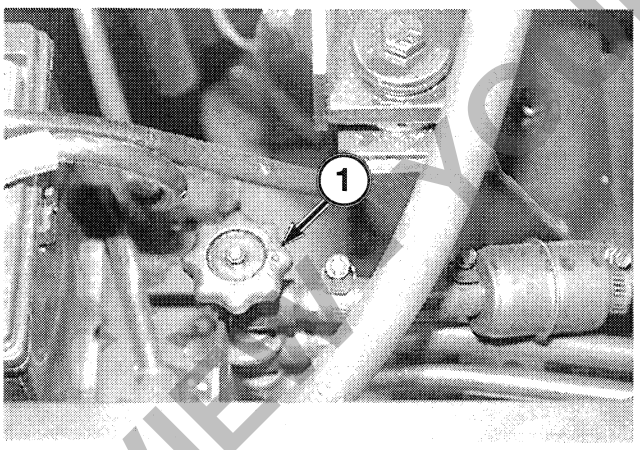
NOTE: Fasten identification tags to all of the wires during removal.

1. Park the machine on a level surface and lower the header to the floor.

2. Stop the engine and apply the parking lock. Make sure the steering wheel is centered and locked.

3. Let the engine cool down. Turn the key switch to the ON position and check the engine temperature. Make sure that the temperature of the coolant is cool. Turn the key switch to the OFF position.

4. Close the fuel shutoff valve to stop the fuel. The fuel shutoff valve is located behind the left-hand battery by the engine.

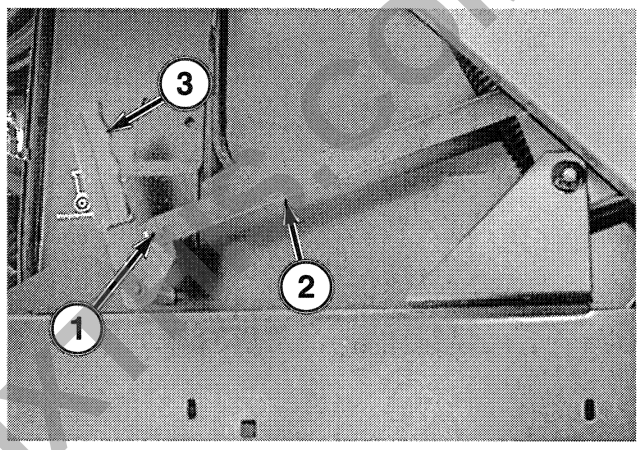


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1. Fuel Shutoff Valve

5. Open the hood for the engine compartment.

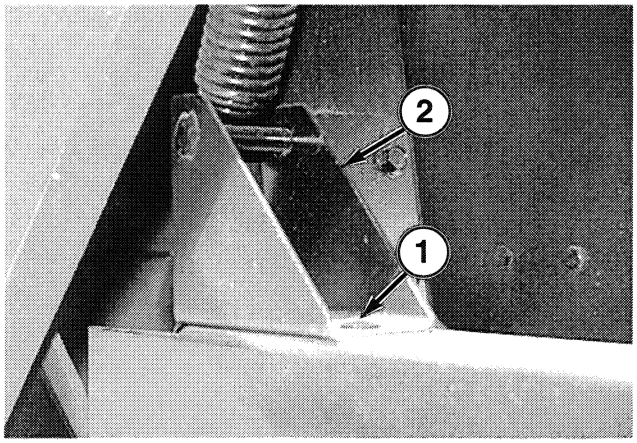
6. Support the hood using a lifting equipment. Remove the bolt and the nut holding the link to the handle.



825WT-99H24

1. Nut and Bolt
2. Link
3. Handle

7. Remove the carriage bolts and nuts for the spring mounts from the mainframe.



825WT-99H23

1. Carriage Bolts and Nuts (4)
2. Spring Mounts (2)

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Section 2001

ENGINE REMOVAL AND INSTALLATION, AND RADIATOR REMOVAL AND INSTALLATION

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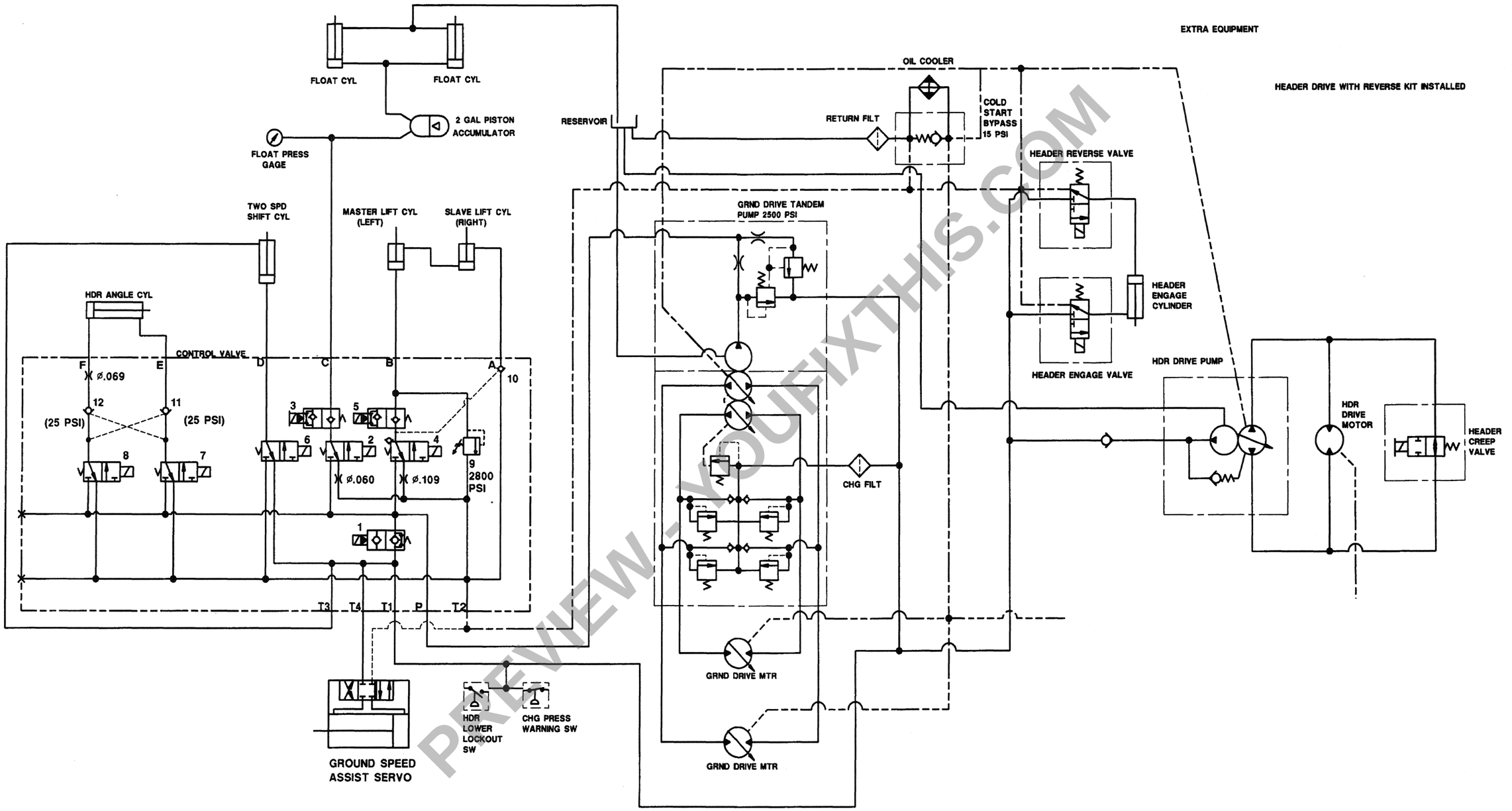
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L98A-022b

HYDRAULIC SCHEMATIC - 8870 WITHOUT HEADER REVERSE

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TROUBLESHOOTING CHARTS

See the safety warnings at the beginning of this section and follow the procedures.

Batteries

PROBLEM	POSSIBLE CAUSE	CORRECTION
Discharged battery(ies).	Low electrolyte level in battery(ies).	Fill battery to correct level with clean water.
	Dirty battery top.	Clean battery top.
	Loose or dirty connections for battery cables.	Clean clamps on battery cables and clean battery posts.
	Damaged battery cell or cells.	Replace battery.
	Low or no output from alternator.	Do Troubleshooting the Charging Circuit in this section.
Battery(ies) needs water frequently.	Battery malfunction.	Replace battery.
	Bad wire connections between alternator and battery.	Clean battery and tighten connections.
	Bad voltage regulator.	Do the Alternator and Voltage Regulator Test in this section.

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STANDARD TORQUE SPECIFICATIONS

U.S. Standard 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	Newton metres (N·m)	Pound-Feet (LB·FT)
1/4-20	11	8.4
1/4-28	13	9.7
5/16-18	24	19
5/16-24	26	19
3/8-16	42	31
3/8-24	47	35
7/16-14	67	49
7/16-20	75	55
1/2-13	105	76
1/2-20	115	85
9/16-12	150	110
9/16-18	165	120
5/8-11	205	150
5/8-18	230	170
3/4-10	360	265
3/4-16	405	295
7/8-9	585	430
7/8-14	640	475
1-8	875	645
1-12	955	705
1-1/8-7	1080	795
1-1/8-12	1210	890
1-1/4-7	1520	1120
1-1/4-12	1680	1240
1-3/8-6	1990	1470
1-3/8-12	2270	1670
1-1/2-6	2640	1950
1-1/2-12	2970	2190

Grade 8 Bolts, Nuts, and Studs



Size	Newton metres (N·m)	Pound-Feet (LB·FT)
1/4-20	16	12
1/4-28	18	14
5/16-18	33	25
5/16-24	37	27
3/8-16	59	44
3/8-24	67	49
7/16-14	95	70
7/16-20	105	78
1/2-13	145	105
1/2-20	165	120
9/16-12	210	155
9/16-18	235	170
5/8-11	285	210
5/8-18	325	240
3/4-10	510	375
3/4-16	570	420
7/8-9	820	605
7/8-14	905	670
1-8	1230	910
1-12	1350	995
1-1/8-7	1750	1290
1-1/8-12	1960	1440
1-1/4-7	2460	1820
1-1/4-12	2730	2010
1-3/8-6	3230	2380
1-3/8-12	3680	2710
1-1/2-6	4290	3160
1-1/2-12	4820	3560

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SAFETY RULES

The manufacturer of this product is concerned about your safety and is committed to the prevention of accidents. A major factor in prevention of accidents is safe and proper use of the equipment. Be sure you or anyone who does any maintenance or service work on this machine reads and understands this manual before doing any maintenance or service work on this machine.

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. Read and understand all operating instructions and precautions before attempting to operate or service the machine.

Caution others, especially children, about climbing on the machine or being too close while the machine is operating.

Emphasize the importance of safety when working around and operating the machine.

Always remain seated and have the seat belt fastened while operating the machine.

Make sure all safety shields are in place before operating the machine.

Place all control levers in neutral. Engage the parking lock control lever, center and lock the steering wheel, and shut off the engine before:

1. **Leaving the operator's seat**
2. **Refueling**
3. **Lubricating**
4. **Cleaning the reel or hay conditioner**
5. **Adjusting the machine**

Never stand behind the tractor while the header is running.

Do not ride on the machine at any time.

Never carry riders unless the machine is equipped with an optional factory instruction seat. The operator can carry one rider in the optional factory instruction seat.

Never operate the machine at high speeds in crowded places.

Never suddenly reverse the wheels to stop or backup.

Before working around or under the header, insert safety stops in cylinders.

Drop header to ground when parking.

Always apply the parking lock after parking the machine.

Always travel with the header as low as possible.

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Section 1001

INTRODUCTION

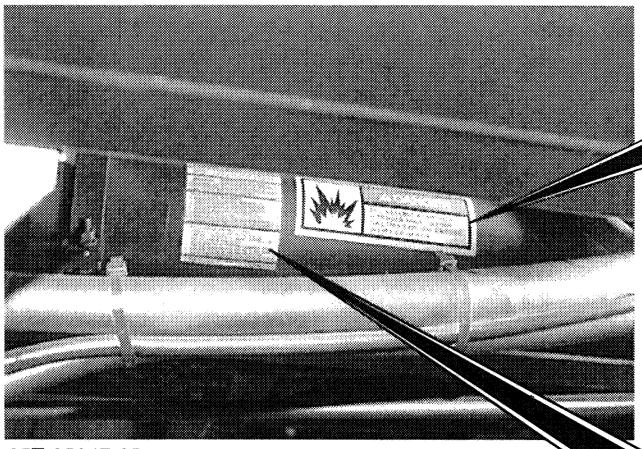
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85T-95047-05

ACCUMULATOR

⚠ DANGER

FILL ACCUMULATOR WITH NITROGEN ONLY. OTHER GAS MAY EXPLODE CAUSING INJURY OR DEATH.

700713550 A

CAUTION: DISCHARGE ALL GAS AND HYDRAULIC PRESSURE BEFORE DISCONNECTING THE SUPPLY LINE OR DISASSEMBLING. PRECHARGE ONLY WITH DRY INERT GAS SUCH AS HIGH PURITY NITROGEN.

PRECHARGE WARNING:

ACCUMULATORS REQUIRE PRECHARGE TO OPERATE. REFER TO SIZING INSTRUCTIONS. OPERATING MODEL AB (BLADDER) TYPES WITH IMPROPER PRECHARGE WILL RESULT IN SHORTENED SERVICE LIFE.
MODEL AB (BLADDER) TYPES SHOULD BE APPROX. 10% FULL OF SYSTEM FLUID PRIOR TO PRECHARGE.

⚠ WARNING

TO PREVENT SERIOUS INJURY OR DEATH:

1. Read the Operator's Manual before operating machine.
2. Keep all shields in place.
3. No Riders.
4. Make certain everyone is clear of machine before starting engine or operation.
5. Stop engine and operation before adjusting, lubricating, cleaning, or unclogging.
6. Use the flashing warning lights and slow moving vehicle emblem when transporting on highways.

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STEPS



825WT-98E22

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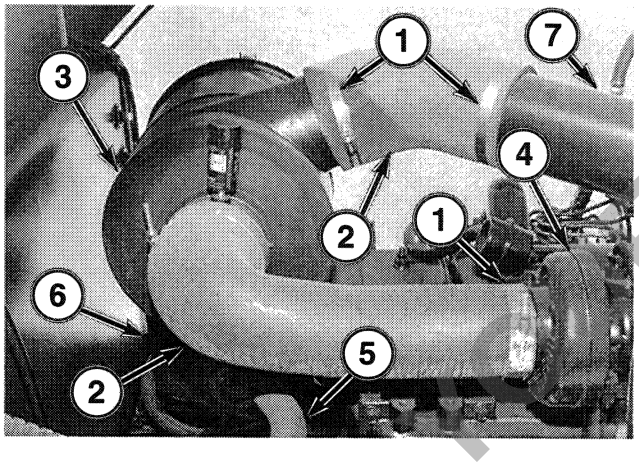
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5. Remove the cover over the openings for the turbocharger. Install the exhaust tube on the turbocharger. Tighten the clamp on the exhaust tube to fasten the exhaust tube to the turbocharger.

NOTE: Machines with an 80 horsepower engine do not have a turbocharger. Remove the cover over the openings for the exhaust manifold. The exhaust tube must be installed on the exhaust manifold using the clamp.

6. Install the air cleaner and the air cleaner mounting bracket on the rear of the engine block.

7. Install the extension tube in the fan shroud. Use a good grade of silicone to seal the extension tube on each side of the fan shroud.

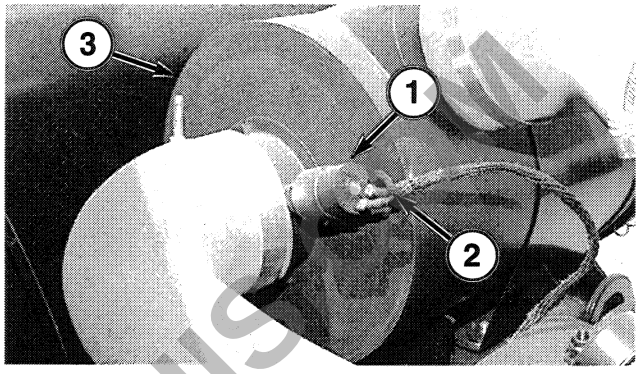


825WT-99H11

1. Clamps
2. Large Air Cleaner Hoses (2)
3. Air Cleaner
4. Turbocharger
5. Aspirator Hose
6. Air Cleaner Mounting Bracket
7. Extension Tube

8. Install large air cleaner hoses on the air cleaner. Install the air cleaner hose on the turbocharger. Tighten the clamps on the large air cleaner hoses.

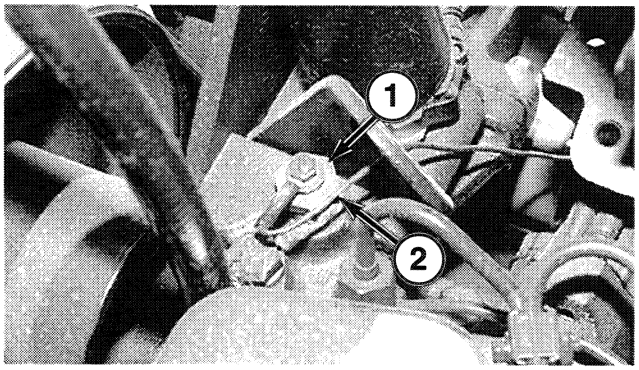
9. If the machine is equipped with a display monitor, then the two wires on the air intake restriction indicator must be installed. The air intake restriction indicator is located on the side of the air cleaner.



825WT-99H21

1. Air Intake Restriction Indicator
2. Indicator Wires
3. Air Cleaner

10. Install the two wires and the nut on the coolant temperature sender. The coolant temperature sender is located on the top of the engine.



825WT-99H19

1. Coolant Temperature Sender
2. Sender Wires (2)

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LOW ENGINE IDLE ADJUSTMENT

See the safety warnings at the beginning of this section and follow the procedures.

1. Park the machine on a solid level surface.

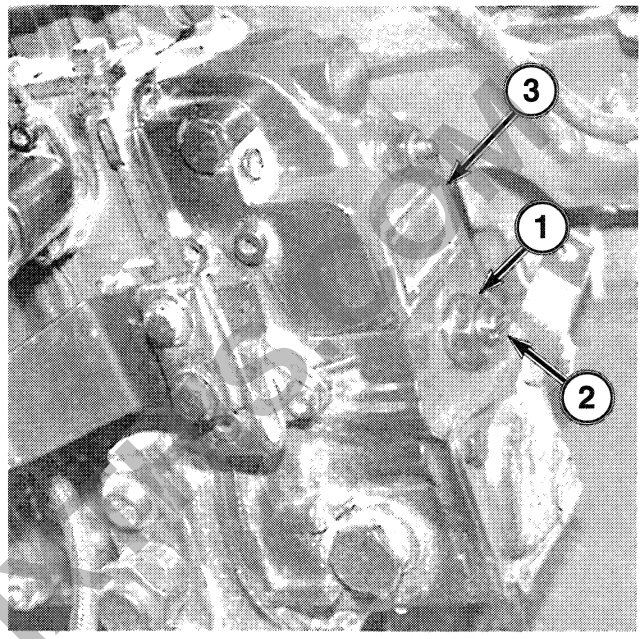
2. Turn the key switch to the ON position to start the engine.

3. With the throttle control lever to the rear, for low idle, check the engine speed. The engine speed must be 900 to 1000 r/min (rpm).

If the engine speed is correct, then the low idle does not need to be adjusted.

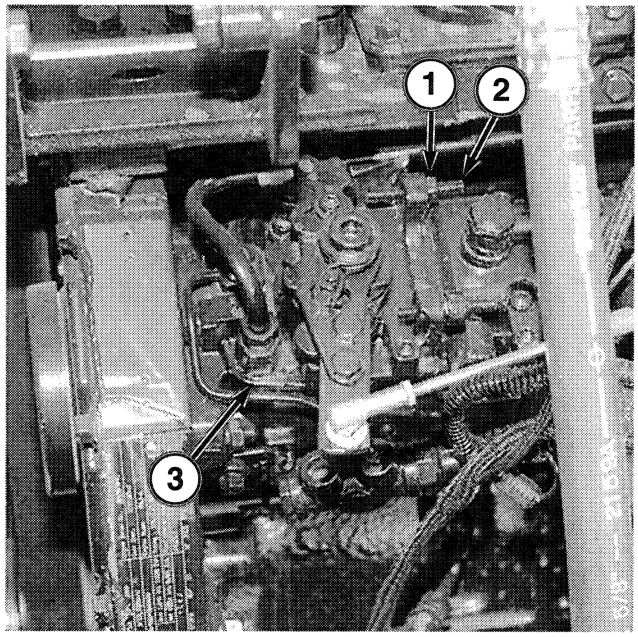
If the engine speed is not correct, then the low idle must be adjusted. Do the next step to adjust the low idle.

4. Loosen the jam nut on the low idle adjustment stud on the rear of the injection pump. Hold the jam nut and rotate the low idle adjustment screw. Rotate out the lower the low idle. Rotate the adjustment screw in to raise the idle.



845W-98L10

110 AND 152 HORSEPOWER ENGINES



825WT-99L01

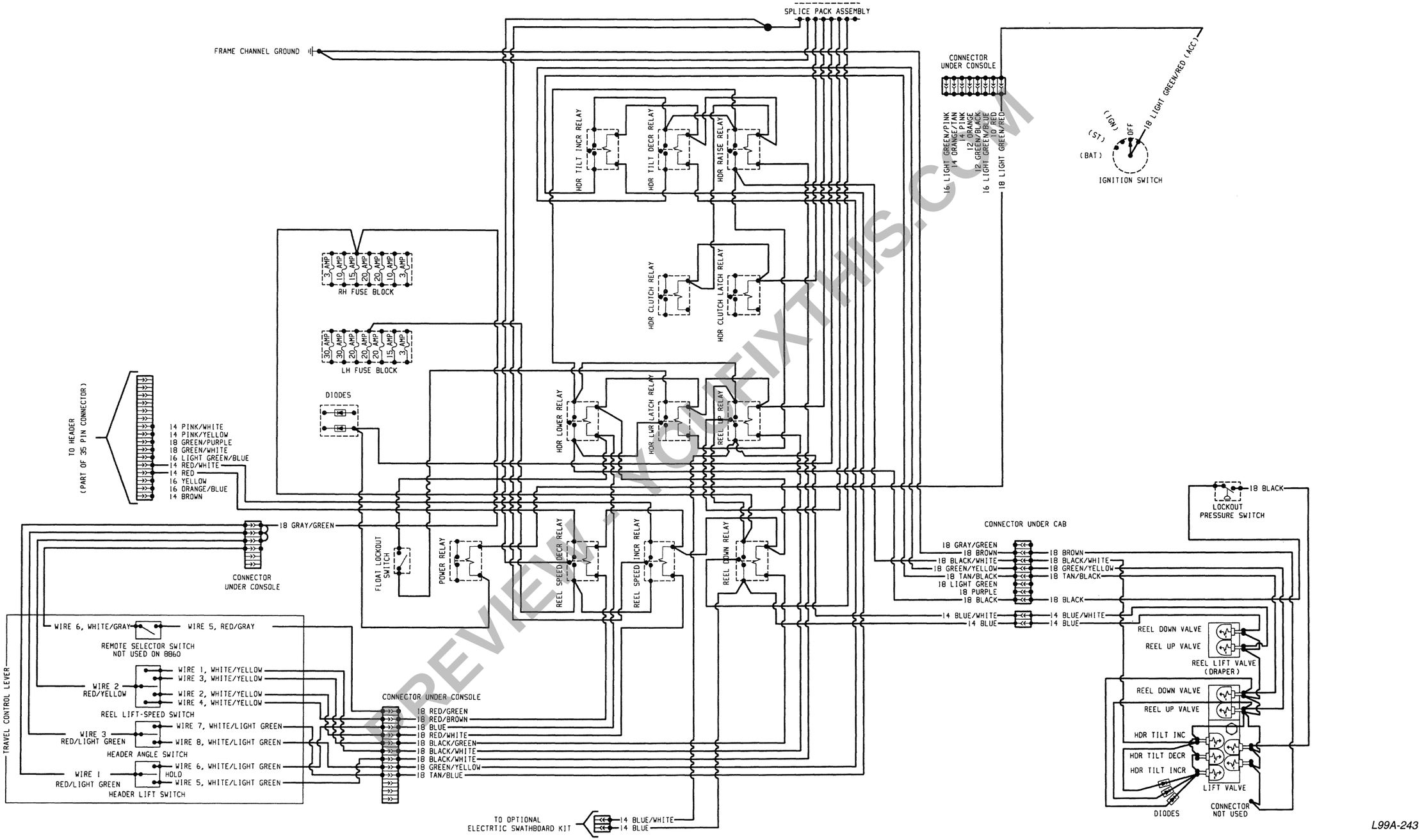
80 HORSEPOWER ENGINES

1. Jam Nut
2. Low Idle Adjustment Screw
3. Injection Pump

5. Hold the adjustment screw and tighten the jam nut.

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L99A-243

TRAVEL CONTORL LEVER CIRCUIT-
MACHINES WITH A GAUGE CONSOLE

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CHECKING A GAUGE

Water Temperature, Oil Pressure, or Fuel Level-Monitor

See the safety warnings at the beginning of this section and follow the procedures.

The following function is used only with tractors that have a monitor.

1. If the gauge does not work correctly:
   a. Check the fuse. The fuse is located under the control panel.
   b. Disconnect the wire from the sender.
   c. Turn the key switch to the ON position.
   d. Hold the end of the wire against the frame or engine to make a ground connection.
   e. Have another person look at the gauge. The needle must move all the way to the right-hand side of the gauge.

      If the needle moved go to next step.

      If the needle did not move, the problem is in the wire for the gauge or in the gauge. If the needle moved, install a new sender.
   g. Use an ohmmeter to check the continuity of the circuit for the sender. See the Electrical Schematics in Section 4010.
   h. If the wire is good, install a new gauge.
2. If the gauge works part of the time:
   a. Check for loose connections at the sender and the connector at the back of the gauge. Also check for corrosion at the connections.
   b. Check for a short circuit between the wire and a ground.
   c. If the wire is good, install a new sender. If the new sender does not correct the problem, install a new gauge.

Water Temperature, Oil Pressure, or Fuel Level-Gauge Console

See the safety warnings at the beginning of this section and follow the procedures.

1. Disconnect the wire from the sender.
2. Turn the key switch to the ON position.
3. Hold the end of the wire against the frame or engine to make a ground connection.
4. Have another person look at the monitor or gauge. The gauge must move all the way to the maximum limit.
5. If the gauge moved, then the circuit is good and a new sender must be installed. Install a new sender. If the gauge did not move, the problem is in the circuit, the ground for the sender, or in the gauge. Do the next step.
6. Check the ground for the sender. The senders must have a good ground to function properly. The senders are grounded as follows:
   a. The coolant temperature switch uses the engine block as a grounding source.
   b. The fuel level sensor uses a brown wire connected to the engine rear mounting plate as a ground.
   c. The oil pressure sender uses the flexible hose connected to the engine block as a ground.

If the sender has a good ground, do the next step. If the sender has a ground problem, fix or repair the ground.

7. Pull up the control console and set the control console out of the way.
8. Remove the 37 pin connector from the back of the monitor gauge console.

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Section 5010

STEERING CONTROL LINKAGE TROUBLESHOOTING AND ADJUSTMENT

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SPECIFICATIONS

Manufacturer	John S. Barnes Corporation
Model	W900
Type	Gear
Total Output	58.67 L/min (15.5 gpm)
Output to Header lift and Flotation Circuit	22.5 L/min (6 gpm)
Relief Valve Pressure Setting	17237 kPa (2500 psi)

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7. Inspect the support (26) for wear, cracks, and scoring.

8. Inspect the center of the guide (25) for wear, cracks, and scoring.

9. Inspect the bronze face of the wear plate (2) for wear, scoring, and grooves. Also check for cracks.

10. Inspect the bearing cup (30) in the valve plate (1) and the bearing cone (4) from the rear of the shaft (5). Check for flat areas, scoring, pitting, and other damage. If either part is to be replaced, both parts must be new. If the bearing cup (30) must be replaced, use a puller to remove the bearing cup (30) from the valve plate (1). Press the new bearing cup (30) into the valve plate (1) until the bearing cup (30) is seated against the shoulder in the valve plate (1).

11. Inspect the bearing cup (29) in the housing (11) and the bearing cone (31) on the front of the shaft (5). Check for flat areas, scoring, pitting, and other damage. If either part is to be replaced, both parts must be new. If the bearing cup (29) must be replaced, press the bearing cup (31) from the housing (11). Press the new bearing cup (31) into the housing (11) until the bearing cup (31) is seated against the shoulder in the housing (11). If the bearing cone (29) must be replaced, press the shaft (5) from the bearing cone (29). Press the new bearing cone (29) onto the shaft (5) until the bearing cone (29) is seated against the shoulder on the shaft (5).

12. Inspect the bearing cups (18,21) and the bearing cones (19, 20) for the swash plate (17). Check for flat areas, scoring, pitting, and other damage. If either part is to be replaced, both parts must be new.

13. Inspect the swash plate (17) for wear, pitting, and damage.

14. Inspect the seal in the cover (13). If the seal is damaged, replace the cover (13).

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10. Remove the yoke from the cross.



49BB-90030-04

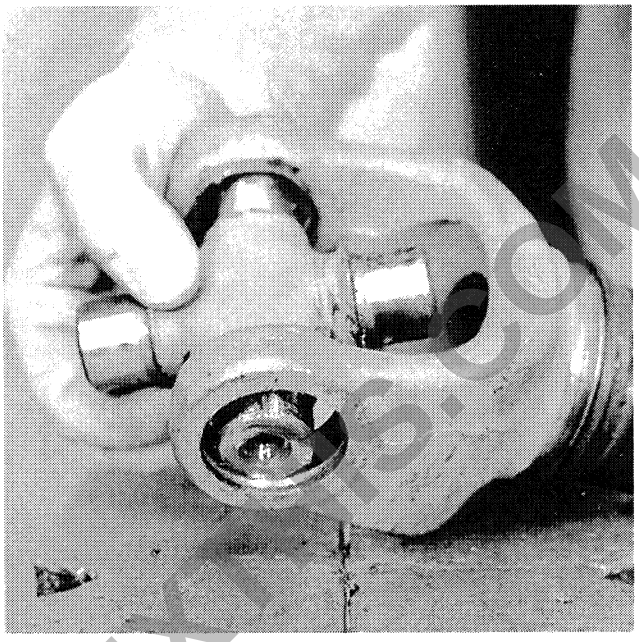
11. Remove the bearing caps from the new yoke.

12. Press a bearing cap into the yoke approximately half the length of the bearing cap.



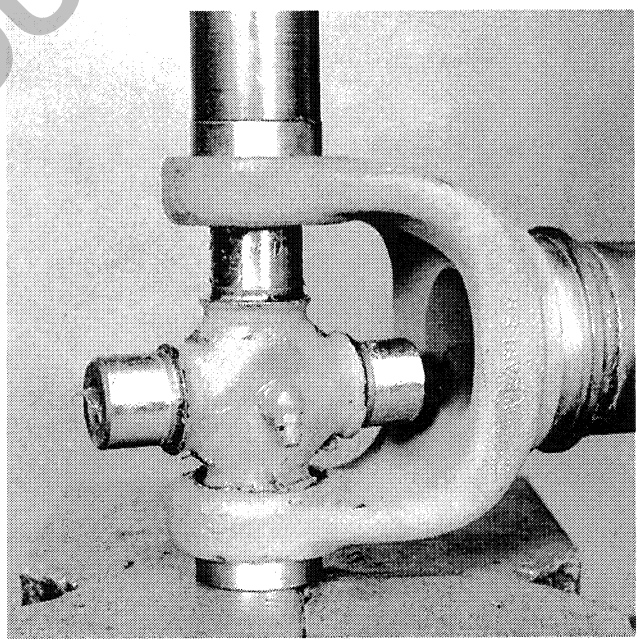
49BB-90030-05

13. Carefully install the cross into the bearing cap.



49BB-90030-06

14. Press the opposite bearing cap into the yoke approximately half the length of the bearing cap.



49BB-90030-07

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Installation

See the safety warnings at the beginning of this section and follow the procedures.

1. Clean the mounting surface where the axle hub assembly (12) mounts to the chaincase (3).

2. Apply Loctite 5900 or an equivelant sealant to the mounting surface of the axle hub assembly (12) and under the heads of the twenty four HFS (13).

3. Connect lifting equipment to the axle hub assembly (12).

3. Install the axle hub assembly (12) on the chaincase (3). Use the twenty four HFS (13) to fasten the axle hub assembly (12) to the chaincase (3). Tighten the twenty four HFS (13) to 47 N·m (35 LB·FT).

4. Disconnect lifting equipment from the axle housing assembly (12).

5. Install the lower drive chain (14) on the axle sprocket (15).

6. Adjust the upper drive chain (9) and the lower drive chain (14). See Drive Chain Adjustment-Machines with Dual Drive Chains in this section.

7. Clean the surface where the upper access cover (1) and lower access cover (2) mount to the outside of the chaincase (3).

8. Apply Loctite 5900 or an equivalent sealant to the chaincase (3), where the upper access cover (1) and the lower access cover (2) mount.

10. Install the upper access cover (1) and the lower access cover (2) to the outside of the chaincase (3). Use the mounting hardware to fasten the cover. Tighten the mounting hardware to 24 N·m (17 LB·FT).

12. Clean the surface where the lower access cover (4) mounts to the inside of the chaincase (3).

13. Apply Loctite 5900 or an equivalent sealant where the lower access cover (4) mounts to the inside of the chaincase (3).

14. Install the lower access cover (4) to the inside of the chaincase (3). Use the mounting hardware to fasten the cover. Tighten the mounting hardware to 24 N·m (17 LB·FT).

15. Check the level of the oil in the chaincase. See Lubrication Chaincase in this section.

16. Install the drive wheel. See Installing a Drive Wheel in Section 6060.

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Description

The header drive system consists of a header drive pump and a header drive motor. The header drive pump is a variable displacement piston pump. The header drive pump is mounted at the rear of the mainframe and is driven by a drive shaft connected to the engine flywheel. The header drive motor is a fixed displacement piston motor. The header drive motor is mounted on the header and drives the header.

Operation

The pump and the motor operate as a closed loop system. Oil from the pump flows through one of the loop lines to the motor. When the oil leaves the motor, the oil is returned to the pump through the low pressure loop line, forming a closed loop system.

Oil is lost in the high pressure side of the system by internal leakage in the pump and the motor. The internal leakage in the pump and the motor is removed from the housings by case drain lines. The oil that is lost on the high pressure side of the system is replaced by oil from the low pressure side of the system. The oil in the low pressure side of the system is supplied by the charge pump. The charge pump is a 38 L/min (10 gpm) gerotor pump which is a part of the header drive pump.

A charge pressure relief valve keeps the pressure in the low pressure side of the closed loop system at approximately 1034 kPa (150 psi), and 517 kPa (75 psi) return pressure. When the charge pressure relief valve opens, the extra oil flow from the charge pump flows through the case drain system in the header drive pump and into the case drain line. The oil then flows through the bypass valve, the return filter, and on to the reservoir. The oil does not flow through the oil cooler.

A high pressure relief valve is used to protect the pump and the motor. If pressure on the high pressure side of the system raises above 34 475 kPa (5000 psi), the high pressure relief valve opens to let oil enter the low pressure side of the system.

The low pressure side of the system in the header drive pump is also connected to the charge pump for the ground drive system. Under some low engine speed conditions, the charge pump on the ground drive pump cannot supply the required amount of charge pressure. When the charge pressure in the ground drive pump is 103 kPa (15 psi) less than the pressure in the header drive pump, the check valve on the header drive pump opens. Oil from the charge circuit of the header drive pump flows to the charge circuit of the ground drive pump.

The oil that is lost by internal leakage in the motor flows through the housing of the motor and into the case drain line. The oil then flows through the bypass valve and through the oil cooler. The oil then enters the opposite end of the bypass valve, flows through the filter, and on to the reservoir. If the pressure in the oil cooler is 103 kPa (15 psi) more than pressure in the return line, the bypass valve opens and the case drain oil from the motor flows directly through the bypass valve to the filter.

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Section 8006

CLEANING THE HYDRAULIC SYSTEM

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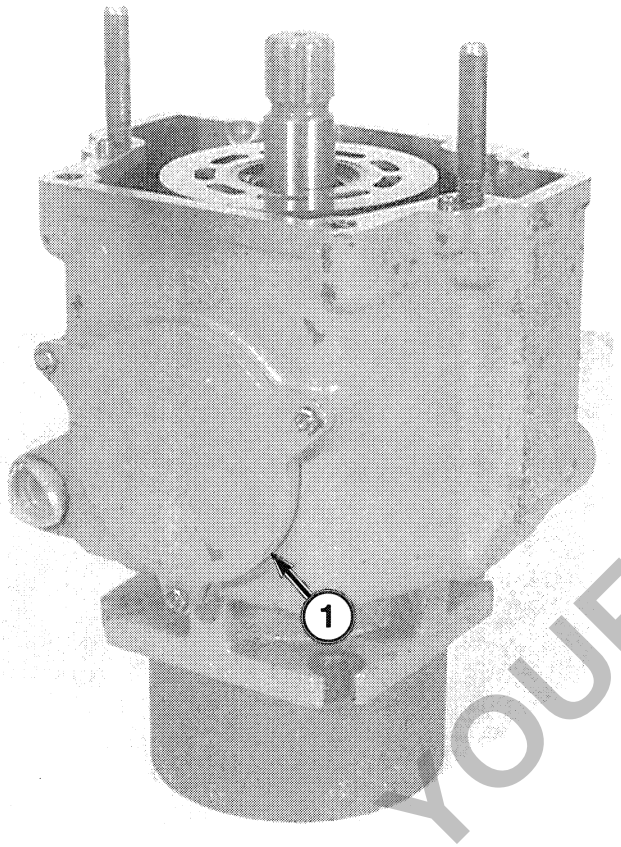
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12. Remove the cap screws that fasten the yoke retainer cap to the pump housing. Remove the yoke retainer cap. Remove and discard the O-ring.



85WT-96084-16

1. Yoke Retainer Cap

13. Remove the yoke retainer plug from the pump housing. Remove and discard the O-ring from the yoke retainer plug.



85WT-96084-08

1. Yoke Retainer Plug

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INSTALLATION

See the safety warnings at the beginning of this section and follow the procedures.

1. If the header drive motor is being replaced because of damage, the header drive pump must be removed and inspected for damage. The closed loop lines must be flushed and cleaned. The hydraulic oil in the closed loop lines flows between the pump and the motor so contamination will be present in the pump, the motor, and the closed loop lines.

2. If a new header drive motor is being installed, remove the fittings from the old header drive motor. Install a new O-ring on the fitting that requires an O-ring. Install the fittings in the new header drive motor.

3. Install the key in the shaft of the header drive motor.

4. Raise the shield for the header drive motor mount.

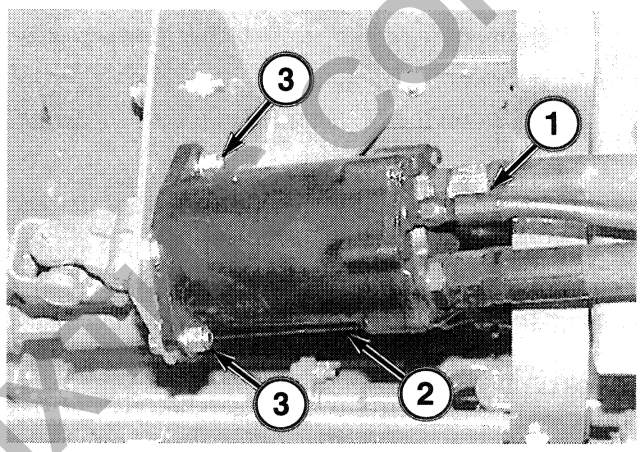
5. Start the vacuum pump, if used.

6. Using the identification tags from the removal procedure, install the hoses on the header drive motor.

7. Apply multi purpose grease to the shaft of the header drive motor.

8. Align the key on the shaft with the keyway in the coupling. Install the header drive motor. Make sure the key stays in the keyway.

9. Position the header drive motor, on the motor mount so the drain line is on the top side.Install the header drive motor on the motor mount. Use the two, the two washers, and the nuts to fasten the header drive motor.



845AH-97004-51

1. Drain Line
2. Header Drive Motor
3. Cap Screws, Washers, and Nuts

10. Disconnect the vacuum pump, if used.

11. Loosen the fittings for the two closed loop lines to the header drive motor. The closed loop lines are the two large hoses. Loosen the fittings just enough to let oil flow from the fittings.

12. Make sure the header engage switch is in the neutral position. Start the engine. When there is no air in the oil flowing from the fittings, stop the engine.

⚠ WARNING

Make sure all persons are clear of the moving parts of the header.

13. Tighten the fittings.

14. Start the engine and engage the header. Increase the engine speed to high idle. Make sure that the header is running at the correct speed. See the Specifications in Section 1002 for the correct header speed.

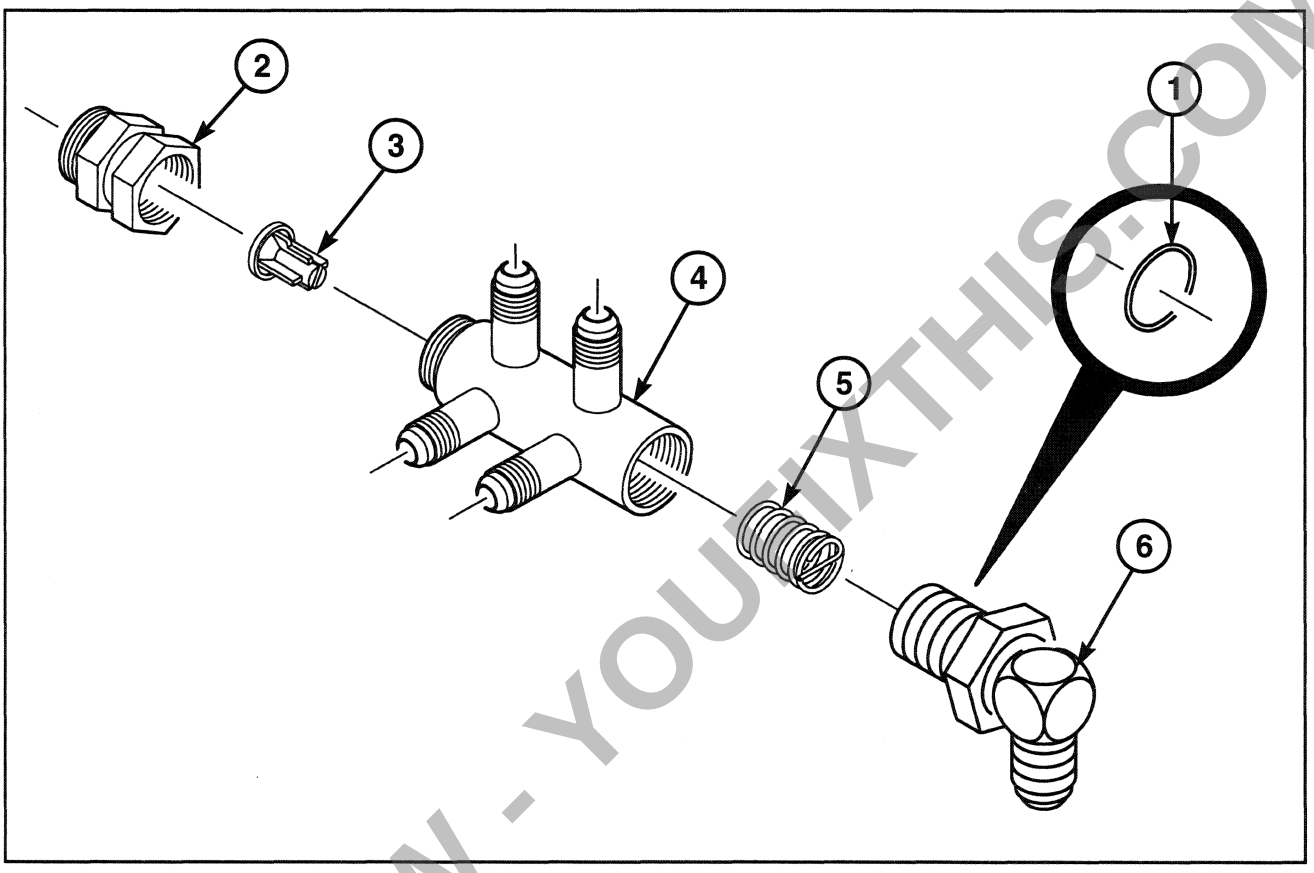
If the header is not running at the correct speed, then the header drive pump must be adjusted. See Header Speed and Linkage Adjustment in Section 8010.

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Disassembly

1. Remove the elbow from the reducer.
2. Remove the reducer from the body.
3. Remove the spring.
4. Remove the adapter from the body.
5. Remove the poppet.



L99A-244

BYPASS VALVE

1. O-Ring
2. Adapter
3. Poppet
4. Body
5. Spring
6. Elbow

Inspection

See the safety warnings at the beginning of this section and follow the procedures.

1. Wash all of the parts in cleaning solvent.

NOTE: It is important to keep all of the components clean. Small particles of dirt or lint can prevent the baler control valve from working correctly. Put the parts on clean wax paper and use only lint free paper towels to wipe the parts.

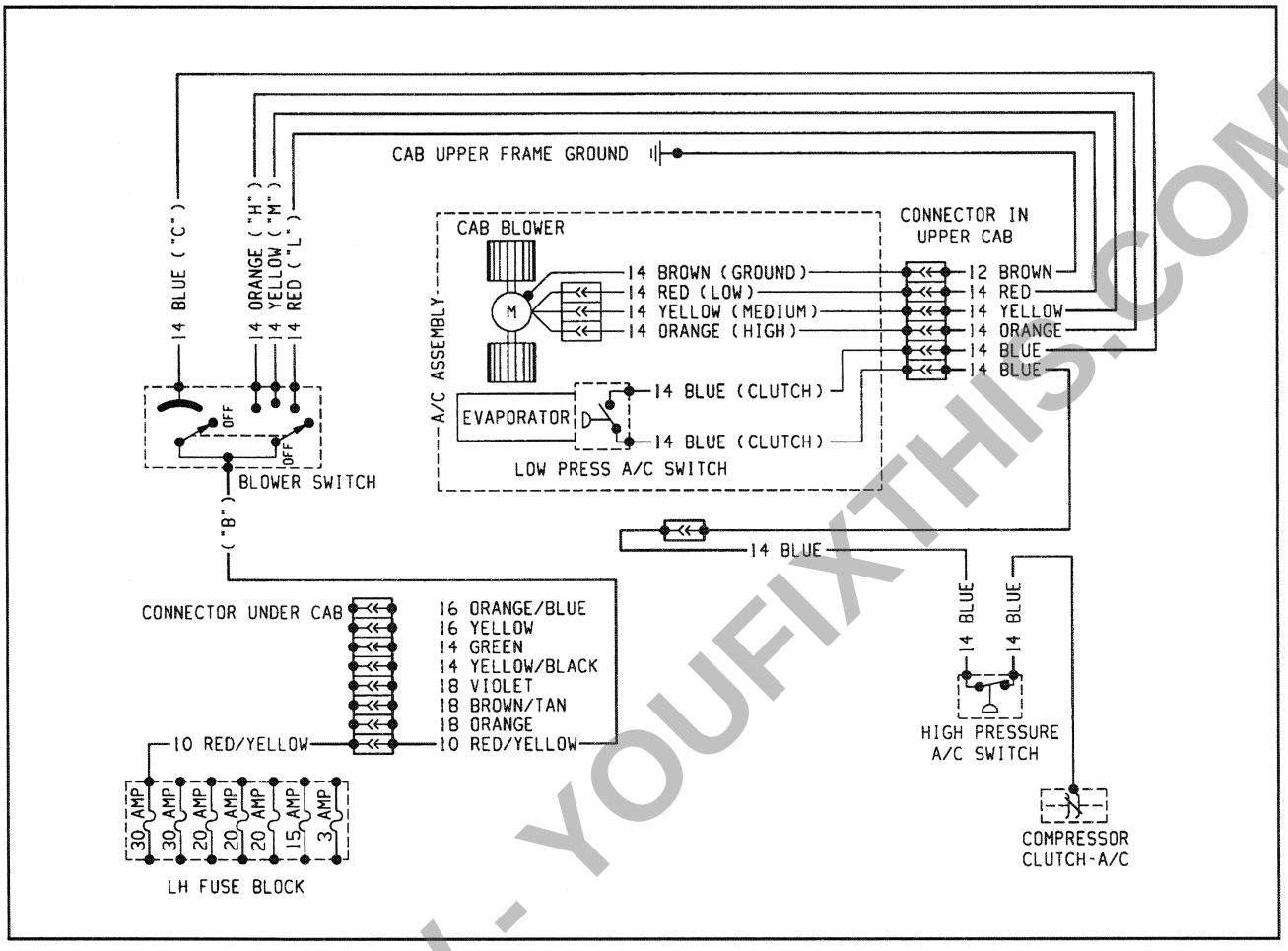
2. Remove and discard the O-rings.

3. Make sure the poppet moves freely in the body. Check the poppet and the body for wear and damage. Replace the parts as necessary.

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ELECTRICAL SCHEMATIC



L98A-401

AIR CONDITIONER AND HEATER CIRCUIT

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OPERATION

The air conditioning system includes five major components: condenser, evaporator, compressor, expansion valve, and receiver-drier. These components are connected by tubes and hoses to operate as a closed system. R-134a is used in the system as a cooling agent.

The compressor receives the refrigerant in gas form. The compressor then compresses the refrigerant and sends the refrigerant, still in gas form, to the condenser. The condenser uses air flow from the radiator fan to remove heat from the refrigerant. As heat is removed, the refrigerant changes into a high pressure liquid.

The liquid refrigerant flows from the condenser to the receiver-drier. The receiver-drier is a container filled with a drying material which removes moisture that has entered the air conditioning system. Moisture must be removed in order to prevent corrosion of internal components of the air conditioning system. The receiver-drier is also a refrigerant reservoir for the air conditioning system.

The refrigerant, still in a high pressure liquid form, flows to the expansion valve. The expansion valve causes a restriction in the flow of refrigerant to the evaporator. Because of this restriction, the refrigerant flowing out of the expansion valve is under less pressure than the refrigerant flowing in . As refrigerant flows through the evaporator, the refrigerant takes heat from the air around the evaporator. The combination of increased heat and decreased pressure causes evaporation of the refrigerant. The evaporation causes the refrigerant to change from a liquid to a gas. The air flowing over the evaporation coil to become very cool. The cooled air is then used to keep the operators cab cool.

The refrigerant, in a gas form again, flows back to the compressor, and the cycle is repeated. The air conditioning system is controlled by the cab fresh air blower control switch and the thermostatic control switch. The blower control switch must be put in one of the three operating positions to provide power to the thermostatic control switch. The thermostatic control switch must be put in the COOL position to provide power to the compressor clutch.

The thermostatic control switch has a temperature sensing tube that is next to the evaporator coils. When the temperature lowers to that set by the switch the compressor stops. The system has a high pressure switch and a low pressure switch for protection of the system. The high pressure switch will stop the compressor when system pressure exceeds 2069 kPa (300 psi). The low pressure switch will stop the compressor when the system pressure drops below 34.5 kPa (5 psi). On early production machines, the low pressure switch will stop the compressor when system pressure drops below 207 kPa (30 psi).

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