
L175, C175 REPAIR MANUAL

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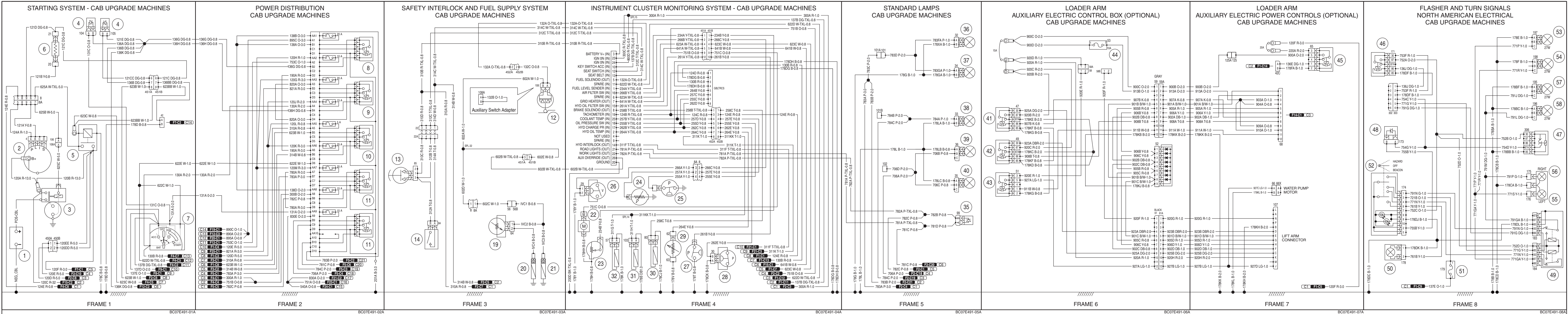
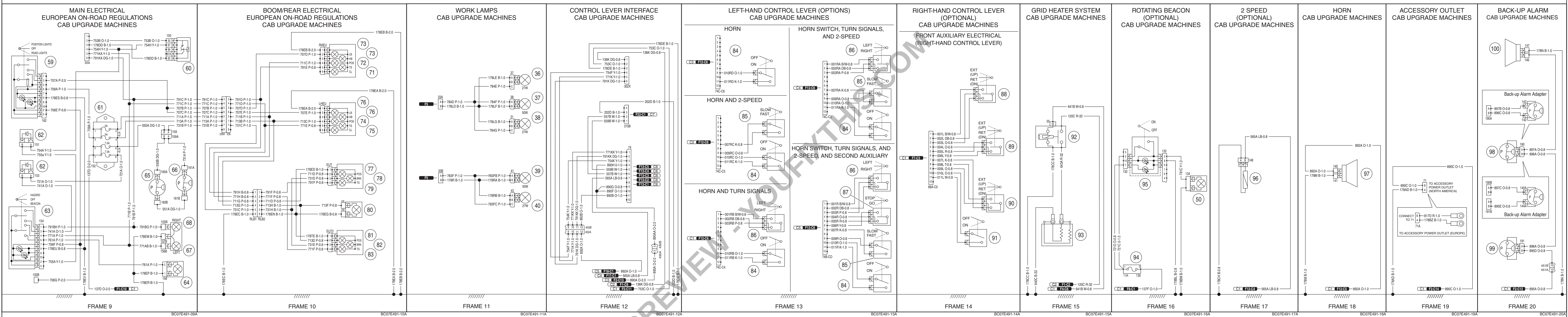
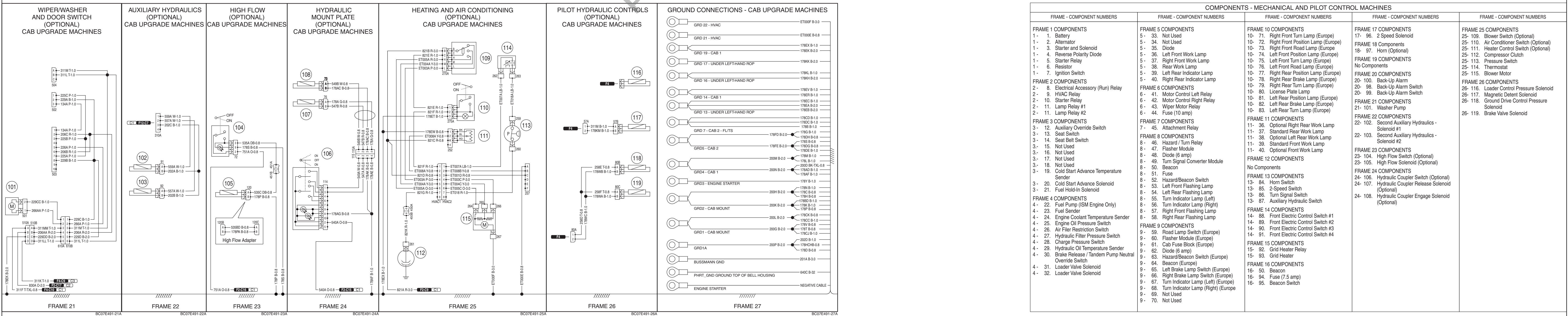
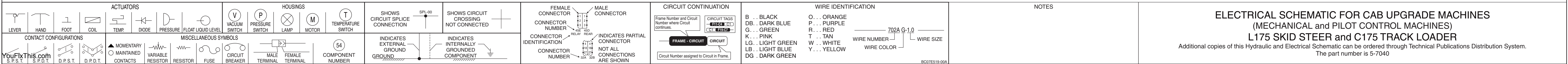
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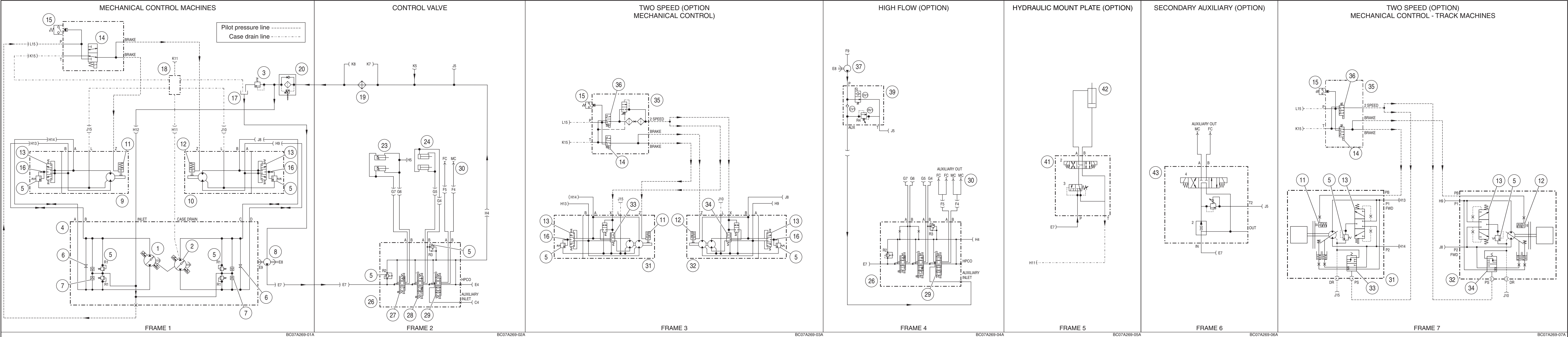
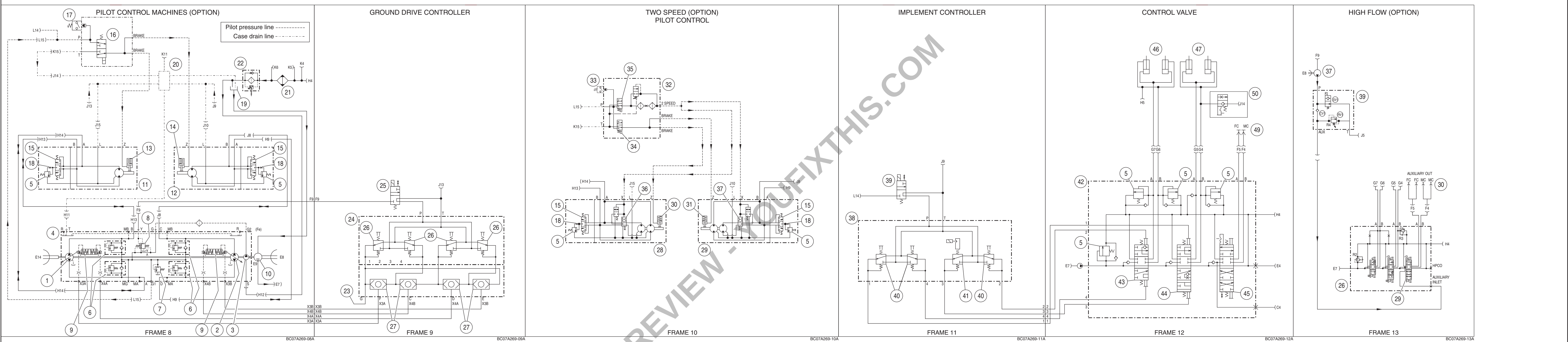
The following pages are the collation of the contents pages from each section and chapter of the L175/C175 Repair Manual. Complete Repair Manual part # 87630289.

The sections used through out all New Holland product Repair Manuals may not be used for each product. Each Repair Manual will be made up of one or several books.

Each book will be labeled as to which sections are in the overall Repair Manual and the sections that each book contains.

The sections listed above are the sections utilized for the L175 Skid Steer and C175 Track Loader.





54

COMPONENT NUMBER

Shows circuit crossing not connected

Shows circuit connected

CHECK VALVE

RESTRICTOR

FILTER OR SCREEN

OIL COOLER

DIRECTION OF FLOW

PRESSURE

CASE DRAIN

COMPONENT

PILOT PRESSURE

LINE TYPES

NOTES

HYDRAULIC SCHEMATIC (MECHANICAL and PILOT CONTROL MACHINES)

L175 SKID STEER and C175 TRACK LOADER

Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System. The part number is 5-4560

Op. 10 000**GENERAL ENGINE INFORMATION**

New Holland engines, N844LT used in the model L175 skid steer and N844LT turbocharger engine used in the model C175 skid steer.

GENERAL DESCRIPTION

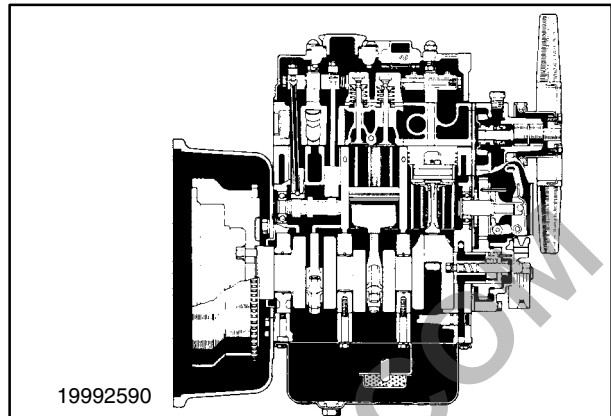
The N844LT Series are four-cylinder stroke, liquid-cooled, compression ignition engines, designed for durability, low weight and compactness. The engines are IDI (In Direct Injection). The linerless cylinder block, three-piece helical gear train, and flange-mounted fuel injection pump on the engine cam, reduce frictional power loss and engine weight. The special direct-injection or swirl chamber, along with the small bore multi-cylinder design, offers good fuel consumption, low noise, and excellent start-ability.

ENGINE COMPONENT DESCRIPTIONS**CYLINDER BLOCK**

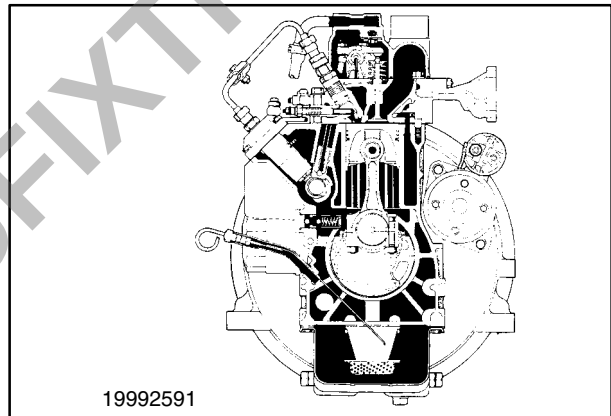
The cylinder block is made from high-grade cast iron with copper and chrome additives and is integral with the crankcase. The crankcase features five main bearings of the tunnel block design, with crankcase walls extending well below the crankshaft centerline for strength and rigidity. The cylinder's bores are plateau honed for oil retention and extended ring life. The non-machined surfaces are sealed to ensure cleanliness.

CRANKSHAFT

The crankshaft is a chrome-molybdenum steel forging, fully machined, static, and dynamically balanced with integral counterweights. All bearing surfaces are induction hardened. The axial location is by thrust washers at the number five main bearing. The five main journals run in replaceable steel-backed cast copper/lead alloy bearings. The front of the crankshaft is keyed.



1



2

MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METERS) FOR NORMAL ASSEMBLY APPLICATIONS

INCH HARDWARE AND LOCKNUTS

NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	1

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION CAP SCREWS AND CARRIAGE BOLTS



SAE GRADE 2



SAE GRADE 5



SAE GRADE 8



REGULAR NUTS



SAE GRADE 5
HEX NUTS



SAE GRADE 8
HEX NUTS

LOCKNUTS

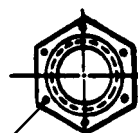


GRADE IDENTIFICATION

GRADE A NO NOTCHES

GRADE B ONE CIRCUMFERENTIAL NOTCH

GRADE C TWO CIRCUMFERENTIAL NOTCHES



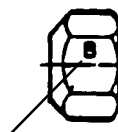
GRADE IDENTIFICATION

GRADE A NO MARKS

GRADE B THREE MARKS

GRADE C SIX MARKS

MARKS NEED NOT BE LOCATED
AT CORNERS



GRADE IDENTIFICATION

GRADE A NO MARKS

GRADE B LETTER B

GRADE C LETTER C

TROUBLESHOOTING**ENGINE WILL CRANK BUT DOES NOT START**

CAUSE	CORRECTION
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
Insufficient charging or complete discharging of the battery	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; check fuse in fuse panel; check for corroded internal components (replace pump and in-line filter if corroded)
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
No compression	Repair in a service shop

ENGINE WILL NOT CRANK OR START

CAUSE	CORRECTION
Seat belt not fastened	Buckle seat belt
Faulty key switch	Correct the connection and/or replace switch
Insufficient charging or complete discharging of the battery	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

CAUSE	CORRECTION
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

SAFETY PRECAUTIONS

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 up 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 ear plugs, 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 or 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 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.

SPECIFICATIONS**MODEL****L175**

ENGINE MANUFACTURER..... NEW HOLLAND

MODEL..... N844LT Diesel

CYLINDERS.....4

ASPIRATION..... TURBO

CYCLE..... 4 STROKE

BORE AND STROKE 84 X 100 mm (3.30 in. X 3.91 in.)

DISPLACEMENT..... 2212 cu. cm (135.0 cu. in.)

COMPRESSION RATIO..... 22 to 1

SPEEDSHigh Idle (No Load)- North American Machines..... 3050 $\pm$ 25 RPMHigh Idle (No Load)- European Machines..... 2750 $\pm$ 25 RPMLow Idle (No Load)- North American Machines 1200 $\pm$ 50 RPMLow Idle (No Load)- European Machines..... 1200 $\pm$ 50 RPM**HORSEPOWER**

(SAE Gross) - North American Machines 60 HP at 2900 RPM

(SAE Gross) - European Machines 57 HP (43 KW) at 2600 RPM

(SAE Net) - North American Machines..... 56 HP at 2900 RPM

(SAE Net) - European Machines 55 HP (41 KW) at 2600 RPM

PEAK TORQUE

(MFG. Rating) - North American Machines 173 Nm (128 ft. lbs.)

(MFG. Rating) - European Machines 173 Nm (128 ft. lbs.) at 1700 RPM

VALVE CLEARANCE

Intake (Cold)..... TBD

Exhaust (Cold) TBD

FIRING ORDER 1-3-4-2

FUEL COMSUMPTION (Approximate at Continuous Full Load) 14 LPH (3.7 GPH)

IGNITION TYPE Compression

GRADEABILITY (Intermittent Duty)..... 30 Degrees in All Directions

AIR CLEANER - Dry Type Dual Element

Primary Element..... NH - #TBD

Safety Element..... NH - #TBD

FUEL SYSTEM

Type of Fuel..... Diesel

Injection Type..... Indirect

Cleaning System Inline Filter - Replaceable - NH - #TBD

..... Inline Water Trap - NH - #TBD

CAPACITIES

Cooling System 17.0 L (18.0 qt.)

Cooling System Pressure..... Radiator Cap 89.6 kPa (13 psi)

Fuel Tank 54.5 L (14.4 gal)

Hydraulic Reservoir..... 31.8 L (8.4 gal)

Chain Case 7.95 L (3.0 qt.)

Op. 10 304 41**OIL PUMP****Disassembly**

Remove the snap ring.

Take out the collar spring and shim.

Remove the idler gear vane and oil pump cover together.

Pull out the rotor and thrust washer.

Pull out the oil pump cover from the idler gear.

Remove the spring from the idler gear.

1 Snap ring

2 Collar

3 Spring

4 Shim

5 Oil pump cover

6 Rotor

7 Spring

8 Idler gear

9 Thrust washer

Inspection

Check the oil pump cover, rotor, and vane for wear. If excessively worn or damaged, replace.

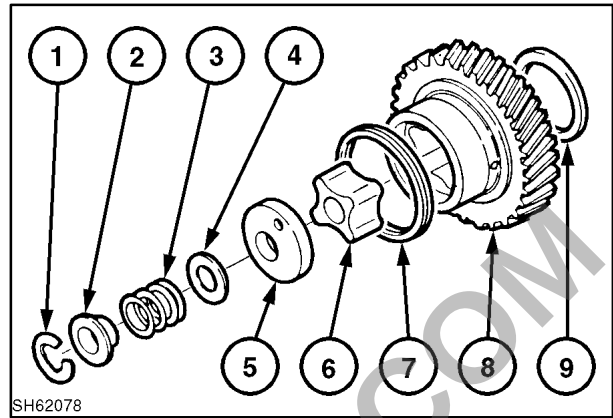
Check the clearance at 1 between the rotor and the vane.

Reassembly (see Idler Gear)

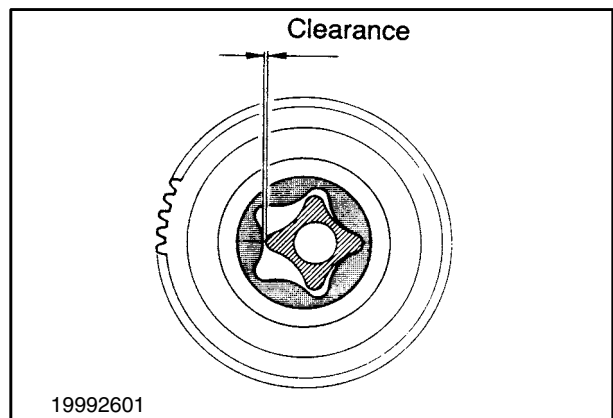
Reassemble the oil pump in the reverse order of disassembly.

Align the set marks on the crankshaft gear and idler gear to reassemble.

Make sure the tip clearance at 1, between the rotor and the vane is 0.0004" to 0.006" (0.01 mm to 0.15 mm) . Allowable limit is 0.009" (0.25 mm) .



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Engine starting with a booster battery requires extreme care as batteries produce explosive gases. The slightest spark can cause an explosion.

Follow these safety tips:

1. Always shield your eyes when charging or working near a battery. Always provide good ventilation.
2. Cover the battery with a piece of carpet or other heavy material. Do not remove the battery vent caps.
3. Connect one cable to the (+) positive terminal of the weak battery. Connect the other end of the cable to the (+) positive terminal of the stronger battery.
4. Connect the second cable to the (-) negative terminal of the stronger battery.
5. Connect the remaining (-) negative cable end to the engine block or starter ground terminal.
6. Reverse this procedure when disconnecting the booster.

USE SAFE SERVICE PROCEDURES

Wear Protective Clothing

Do not wear loose clothing.

Wear close-fitting clothing.

Wear safety glasses or face shield as required.

Wear other safety equipment appropriate to the job.

Wear earplugs or earmuffs as required.

SERVICE MACHINES SAFELY

Use caution when working around moving parts.

If servicing requires the boom to be in the raised position, support the boom on the boom locks and remove any attachment from the boom mounting

plate. If servicing requires the complete skid steer to be in the supported position, support all four wheels off the ground using adequate jack stands or blocks.

If servicing requires the engine to be operated, raise the machine and properly support the unit with adequate jack stands or blocking with all four wheels off the ground.



Before servicing the skid steer or any of its attached equipment, be sure that the attachments are lowered to the ground or the boom arms are supported by the boom lock pins.

USE PROPER TOOLS

Use tools appropriate for the job.

If tilting of the cab is required, use the proper tools and follow the procedure for tilting the cab in Section 1 of this manual.

REVIEW SAFETY EQUIPMENT, SIGNS AND SHIELDS

Replace missing or damaged safety decals.

Reinstall all shielding removed for servicing.

Replace any damaged or missing shielding.

CONTROLS

Operate unit and check machine functions for proper operation.

Check seat belt for proper operation, wear, and damage - Replace as needed.

Check operator restraint system - EIC for proper operation.

Check boom and bucket spool locks for proper operation.

Check mechanical boom locks for proper operation.

Check parking brake for proper operation and adjustment.

COMPANY POLICY

Company policy, which is one of continuous improvement, reserves the right to make changes in design and specifications at any time without notice and without obligation to modify units previously built.

All data given in this book is subject to production variations. Dimensions and weights are approximate only and the illustrations do not necessarily show skid steers in standard condition.

PARTS AND ACCESSORIES

Genuine NEW HOLLAND parts and accessories have been specifically designed for NEW HOLLAND MACHINES.

We would like to point out that "NON-GENUINE" parts and accessories have not been examined and released by NEW HOLLAND. The installation and or use of such products could have negative effects upon the design characteristics of your machine and thereby affect its safety. NEW HOLLAND is not liable for any damage caused by the use of "NON-GENUINE" NEW HOLLAND parts and accessories.

MODEL CODES

The range of Skid Steers described in this manual is identified in the text by the engine horsepower Pferdestärke. (PS). The skid steers listed below may not be available in all countries or markets.

ENGINE	PS	MODEL
N844LT	56	L175
N844LT	56	C175

SECTION 10 – ENGINE

Book 1 - 87634727

Chapter 1 – L175 - N844LT, C175 - N844LT

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LOADER MODEL**L175****Recommended Engine Fluids**

Coolant Clean soft water. Maximum antifreeze concentration 50% (ethanediol base-ethylene glycol with corrosion inhibitor to BS 6850:1985 or ASTM D3306-74 or AS 2108-1977)

Fuel Cetane number-45 minimum, Viscosity -2.5/4.5 centistokes at 104° F (40° C). Density-0.835/0.855 kg/liter, Sulfur-0.5% of mass maximum. Distillation 85% at 662° F (350° C). (Aviation fuel JP4 is not recommended; however, JP5 and JET-A are acceptable, providing 5% spindle oil is added).

Lubricating System

System Pressure feed with Trochoid pump

Oil Type API SH/CG4 SAE 10W-30
(SAE 5W30 for extended cold weather operation)

Filter Part # NH #TBD

Engine Crankcase Capacity w/Filter 8.0 L (8.4 qt.)

Dipstick Length 367 mm (14.4")

COOLING SYSTEM

SPECIFICATIONS

Capacity - 10.8 qts. (10.3 L)

Mixture - 50/50 antifreeze/water

Radiator cap - 7 PSI (48.3 kPa)

THERMOSTAT

Opening

180° F (82° C)

Fully Open

203° F (95° C)

EIC starts reading degrees at 113° F (45° C) or 32° F (0° C)

EIC signals an overheat condition at 216° F (102° C)

OPERATION

The EIC (Electronic Instrument Cluster) monitors the engine coolant temperature during operation and will signal the operator should an overheat condition occur.

The EIC will read **COLD** at start-up and will start reading in degrees at 113° F (45° C) or 32° F (0° C). The EIC will default from any other monitored function to the coolant function when a overheat condition occurs at 216° F (102° C).

The cooling system has a recovery tank, 1, for coolant expansion.

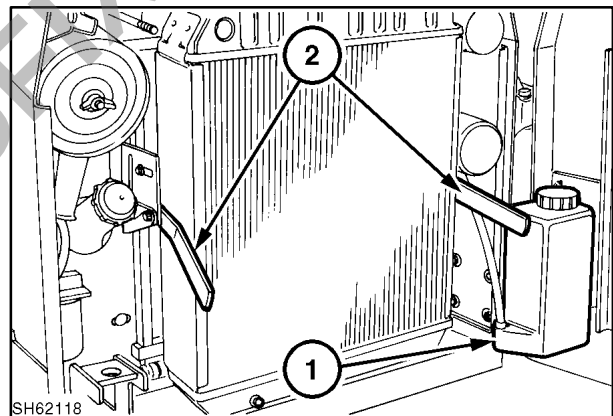
The radiator can easily be cleaned by raising up the two handles, 2, to slide the radiator to the rear and separate it from the oil cooler for cleaning.

IMPORTANT: Always reposition the radiator before closing the rear door; damage to the radiator or expansion tank may occur.

The cooling system must be filled with a 50/50 mixture of antifreeze and water for winter and summer protection.

IMPORTANT: Always top off the cooling system with a 50/50 antifreeze/water mixture. Always refill a drained cooling system with a 50/50 antifreeze/water mixture.

Add coolant to the recovery tank, not the radiator.

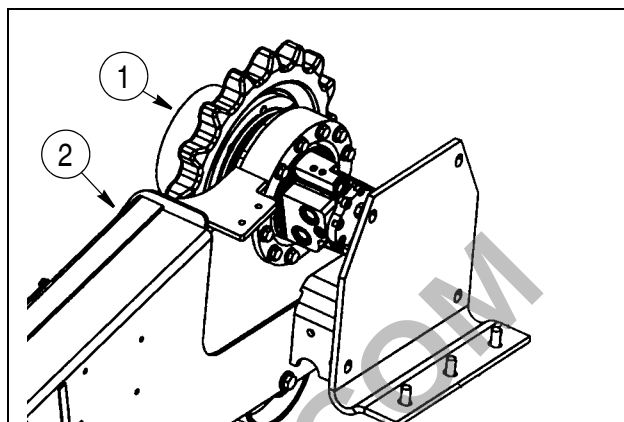


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Motor

Install

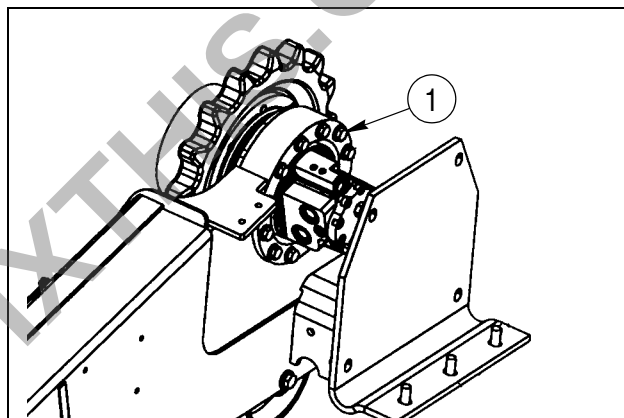
1. Slide the drive motor (1) into the main frame (2) mounting location. If the same motor is being installed, use the marks made during removal and align the drive motor in the main frame. If a new motor is being installed, transfer the reference mark from the old motor to the same location on the new motor and align the drive motor in the main frame.



BS05C164

Figure 49

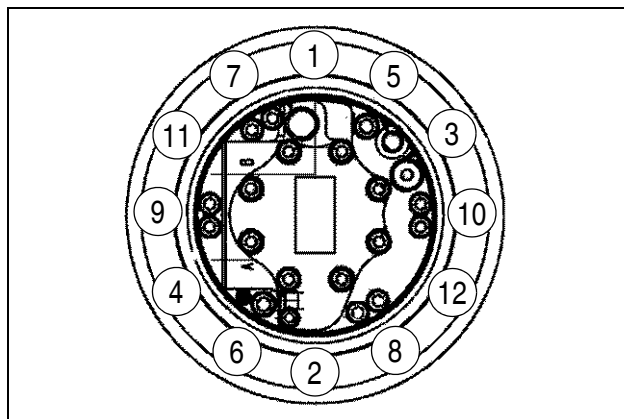
2. Install the mounting bolts (1) into the main frame.



BS05C164

Figure 50

3. Tighten the mounting bolts to a initial torque of 67 - 163 Nm (50 - 120 pound-feet) using the star tightening sequence shown.
4. After initial torque is complete, tighten the mounting bolts to a final torque of 183 - 205 Nm (136 - 153 pound-feet) using the star tightening sequence shown.



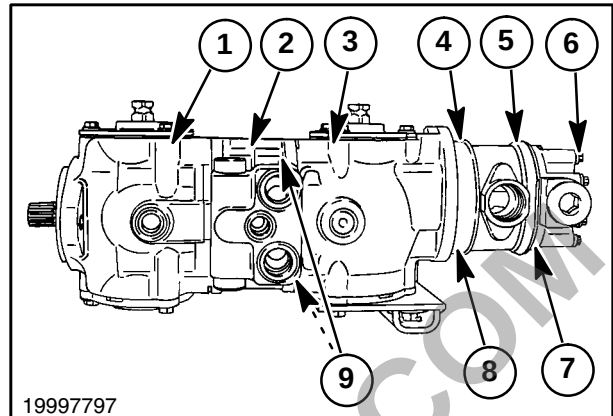
BS05C156

Figure 51

High Flow - The complete high flow pump assembly consists of:

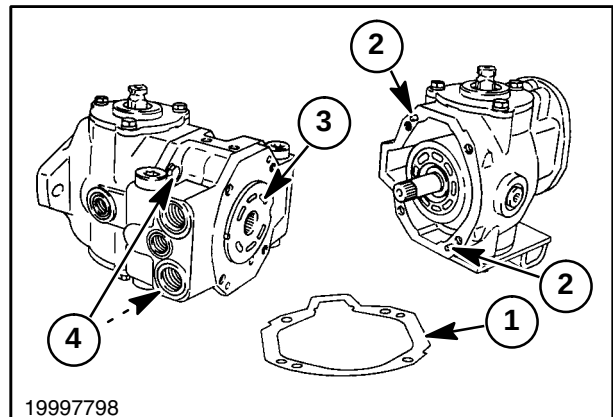
- 1 Left side pump (rear)
- 2 Dual back plate
- 3 Right side pump (front)
- 4 Hydraulic gear pump
- 5 High flow pump

The back plate carries high pressure oil from the pumps to the motors through the high pressure hoses. The low pressure return oil from the motors flows back to the pump through the back plates to complete the closed loop circuit.



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- 5. Remove the gear pump mounting bolts, 6, and tap the high flow pump body with a plastic or rubber mallet to separate the pump from the hydraulic system pump. Try not to disturb the internal gear pump seal at 7. Tap the hydraulic system pump body with a plastic or rubber mallet to separate the pump from the hydrostatic pump. Try not to disturb the internal gear pump seal at 8.
- 6. Remove the front pump mounting bolts, 9, and tap the housings with a plastic or rubber mallet to separate the pump from the dual backplate.
- 7. Discard the gasket, 1, and note the two alignment dowel pins, 2, on each side of the backplate.
- 8. Remove the replaceable bearing plate, 3, from the backplate. The two bearing plates in this assembly are not identical; the metering slots point in opposite directions. The slots toward the front pump point clockwise.
- 9. Remove the rear pump mounting bolts, 4, and tap the housings with a plastic or rubber mallet to separate the pump from the dual backplate.



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Hydraulic System Cleaning Procedure After a Hydraulic System or Transmission Overhaul

The hydraulic/hydrostatic system must be cleaned if during repair the cause was from contamination and the transmissions show wear on the pistons and shoes, rotating piston blocks, valve plate or cam plate.

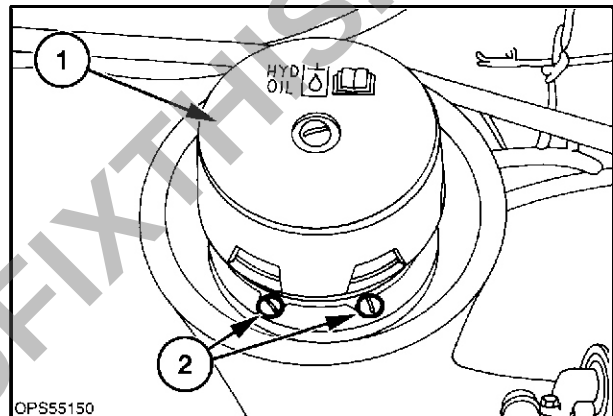
IMPORTANT: Do not use the gear pump and charge pump to flush the system with solvent. The solvent will not provide enough lubrication to protect moving parts inside the transmissions or gear pump.

1. Drain all remaining oil from the hydraulic system.
2. Remove fill cap, 1, and screen by removing the six retaining screws, 2, from the reservoir fill. Thoroughly clean the screen and fill breather cap in solvent.
3. Drain and flush the hydraulic oil reservoir.
Remove the rear engine belly pan, hardware, 1, and belly pan.

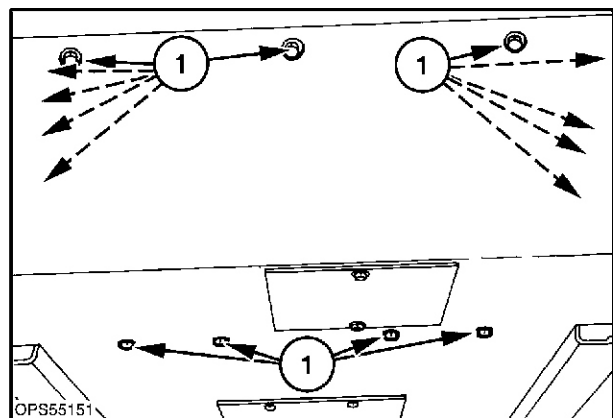


CAUTION

Use a floor jack to support the belly pan to prevent serious injury.

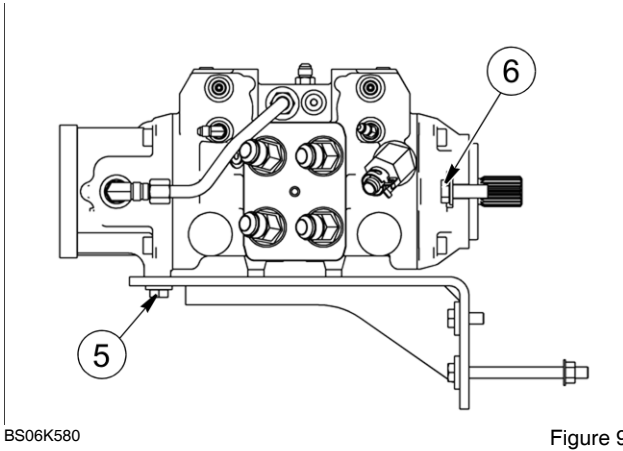


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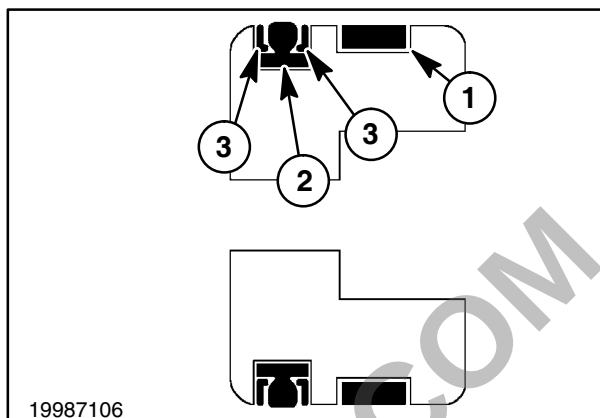
14. Connect acceptable lifting equipment to the hydrostatic pump. Support the hydrostatic pump.
15. Loosen and remove the two mount bolts, (5) from the support bracket located under the hydrostatic pump.
16. Loosen and remove the two mount bolts, (6) from the hydrostatic pump at the flywheel cover.
17. Move the hydrostatic pump away from the engine as far as possible.
18. Use the lifting equipment to remove the hydrostatic pump from the chassis.



AUXILIARY BOOM HYDRAULICS TROUBLESHOOTING

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

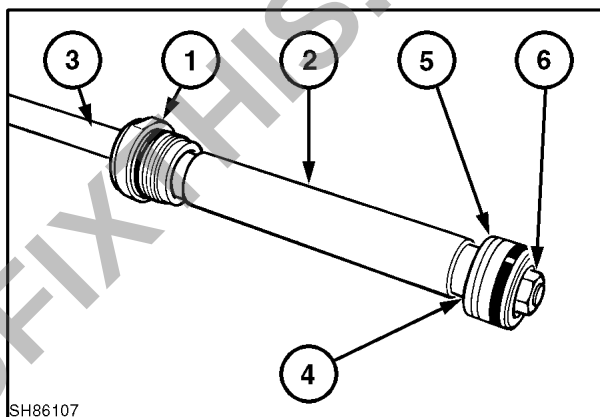
4. Examine the piston assembly prior to installation. Replace the wear ring, 1, and T-seal, 2, making sure they are firmly in their groove and snug against the piston. Insert the L shaped back-up rings, 3, on both sides of the T-seal with the short leg of the L shaped back-up rings towards the T-seal as shown.



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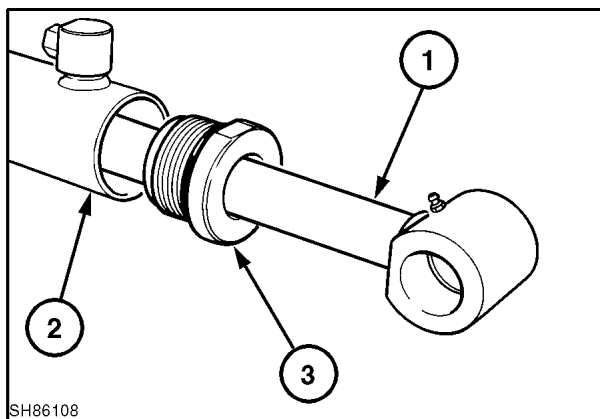
5. Install the cylinder head assembly, 1, and spacer, 2, onto the piston rod, 3.
6. Prior to installing the piston, clean and apply a bead of hydraulic sealant between the piston and piston rod at 4. Install the piston assembly, 5, and new locknut, 6. The wear ring on the piston should be toward the threaded end of the rod.

NOTE: The flat side of the piston must face the spacer, and the recessed side must face toward the end of the rod. The effective length of the piston rod must be maintained, with the locknut fitting into the recessed area of the piston.



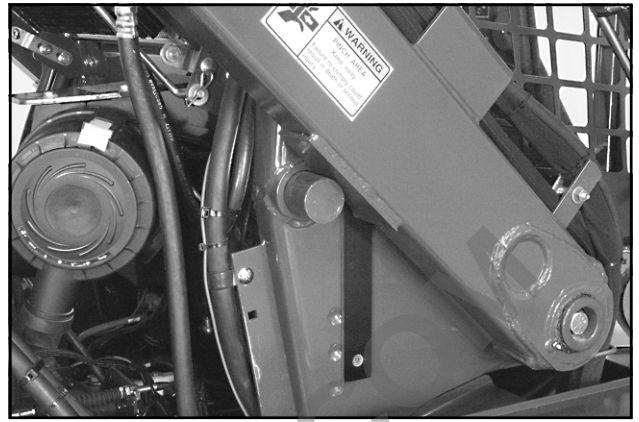
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7. Torque the locknut to 230 N·m (170 ft. lbs.).
8. Lubricate the piston and cylinder head assemblies with 10W-30 oil and install the piston rod assembly, 1, into the barrel, 2.
9. Prior to threading the cylinder head into the barrel, apply a coat of grease around the cylinder head, in the area between the backup washer and the cylinder head flange at 3.
10. Torque the cylinder head assembly to 338 N·m (250 ft. lbs.).



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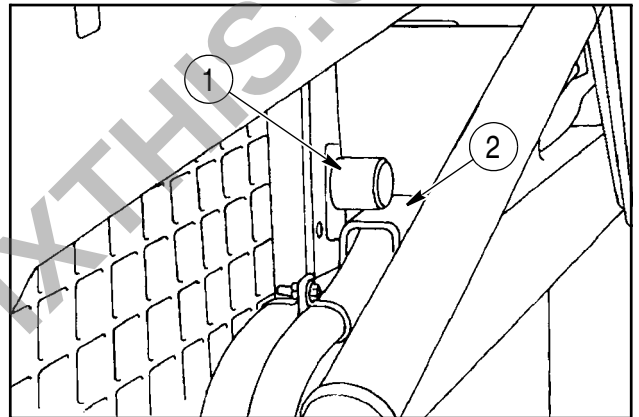
31. If the machine is equipped with air conditioning, refer to **Air-conditioning system - Discharging**, and discharge the air conditioning system. Remove the air conditioning hoses from the air conditioning assembly.



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Figure 16

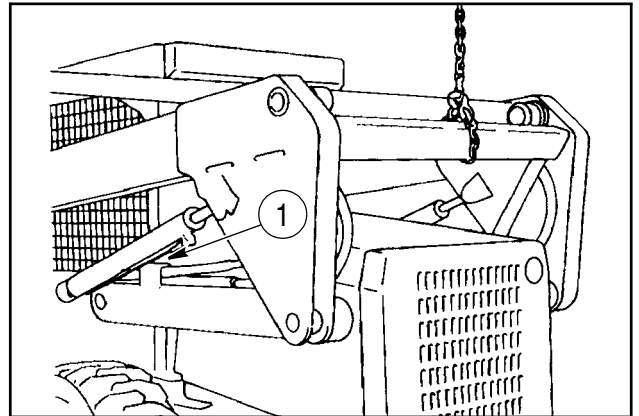
32. Rotate the boom lock pin control lever to extend (engage) the boom lock pins **(1)** above the top of the lower link, **(2)** as shown.



BS07D181

Figure 17

33. With an acceptable lifting device, support the boom at the rear, lifting the boom assembly until it contacts the boom lock pins, **(1)**.



BS07D182

Figure 18

4. Install the bearing in the pulley and install the internal snap ring.



A21267

Figure 66

5. Put the pulley and the bearing assembly on the front housing hub. Install a driver on the pulley assembly. Make sure that the tool is on the inner race of the bearing.



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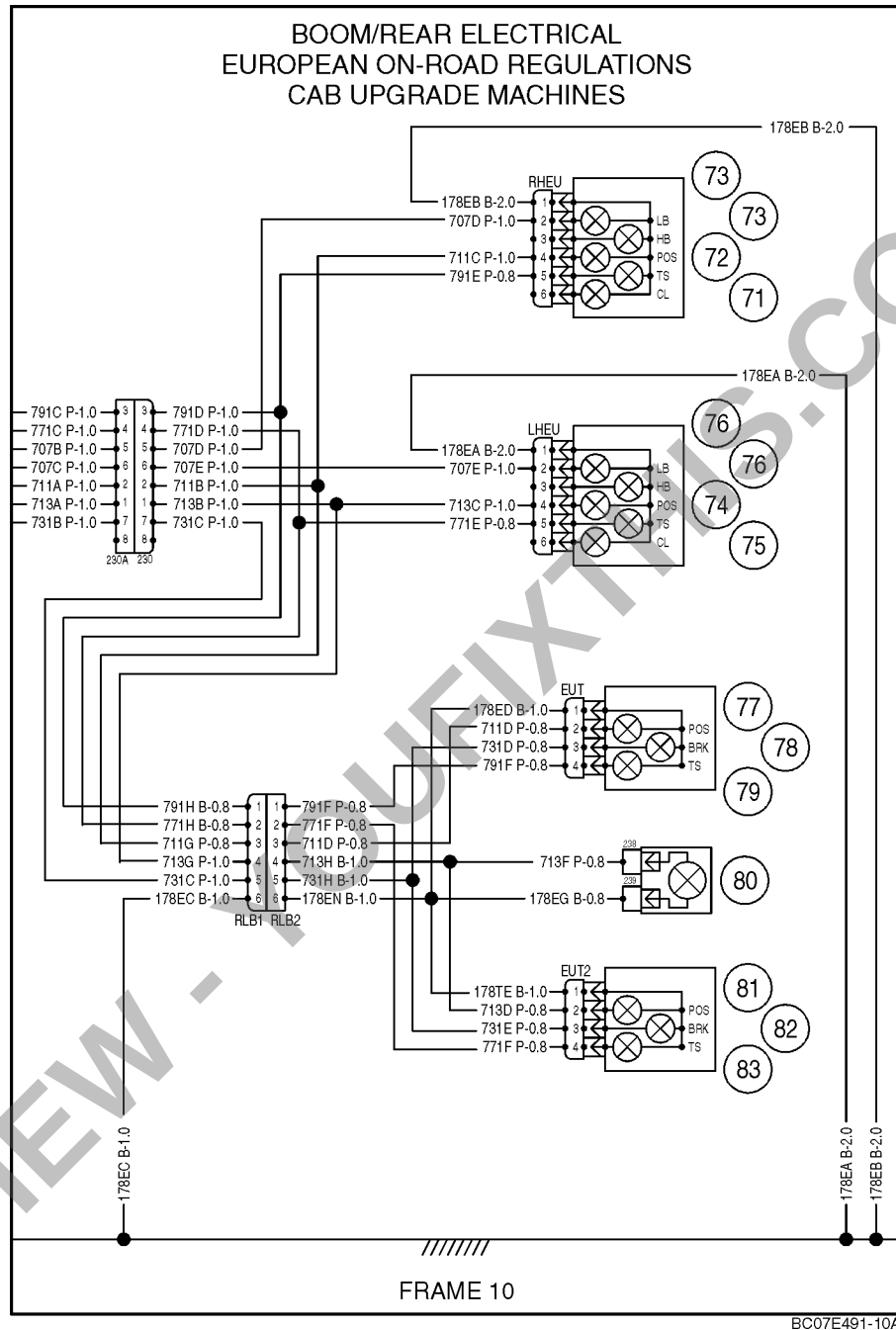
Figure 67

6. Support the compressor on the four mounting ears at the compressor rear. Use a a hammer to tap the pulley assembly onto the front housing hub. As the pulley is tapped onto the hub you can hear the difference in sound when the pulley is fully installed. Make sure the bearing is against the bottom of the hub.



A21268

Figure 68



- 69. NOT USED
- 70. NOT USED
- 71. OPTIONAL RIGHT TURN LAMP (EURO)
- 72. RIGHT FRONT POSITION LAMP (EURO)
- 73. RIGHT FRONT ROAD LAMP (EURO)
- 74. LEFT FRONT POSITION LAMP (EURO)
- 75. LEFT TURN LAMP (EURO)
- 76. LEFT FRONT ROAD LAMP (EURO)

- 77. RIGHT REAR POSITION LAMP (EURO)
- 78. RIGHT REAR BRAKE LAMP (EURO)
- 79. RIGHT REAR TURN LAMP (EURO)
- 80. LICENSE PLATE LIGHT
- 81. LEFT REAR POSITION LAMP (EURO)
- 82. LEFT REAR BRAKE LAMP (EURO)
- 83. LEFT REAR TURN LAMP (EURO)

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SERVICE PRECAUTIONS

Observe the following service precautions to avoid damage to the charging system:

- NEVER make or break any of the charging system connections, including the battery, when the engine is running.
- NEVER short any of the charging system components to ground.
- ALWAYS disconnect the battery negative cable when charging the battery in the machine with a battery charger.
- ALWAYS observe correct polarity when installing the battery or when using a booster battery to start the engine.

CONNECT POSITIVE TO POSITIVE AND NEGATIVE TO NEGATIVE.

Preliminary Checks

Prior to electrical testing, thoroughly inspect the charging and electrical system.

Check all leads for continuity and tightness.

1. Check the battery

Using a voltmeter on a sealed battery, or a hydrometer on an unsealed battery, check that the battery is at least 75% charged before further testing. The voltmeter reading should be 12.4 volts minimum. The hydrometer reading should be 1.240 minimum.

2. Check the drive belt

Inspect the alternator drive belt and pulley, ensuring that both are clean, free from oil and grease and in good condition.

The drive belt should be tightened such that a force of 1 kg (2 lbs), applied at the center of the longest span, will not deflect the belt more than 3 mm (1/8").

INITIAL TESTS

Certain initial tests may be performed without removing any of the charging components from the loader.

These allow the following items to be checked:

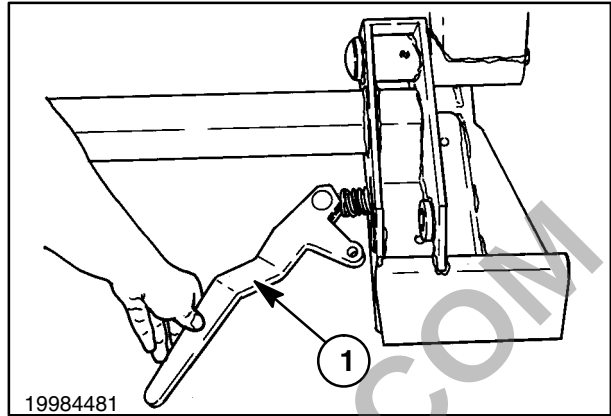
- Alternator wire connections.
- Alternator charging current and controlled voltage.
- Alternator charging circuit voltage drops.
- Alternator maximum output performance.

Test equipment required:

- Voltmeter (0-1 and 0-20 volt scales).
- Ammeter (0-60 amp minimum scale).
- Carbon pile variable load resistor.

NOTE: Most commercial test equipment incorporates several test functions in a single unit. Follow the manufacturer's instructions when using such a tester.

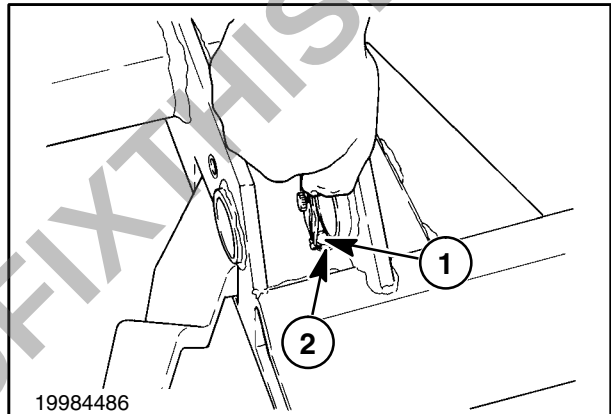
3. Slide the latch handle/spring assembly, 1, into the mounting plate, pointing the spring down.



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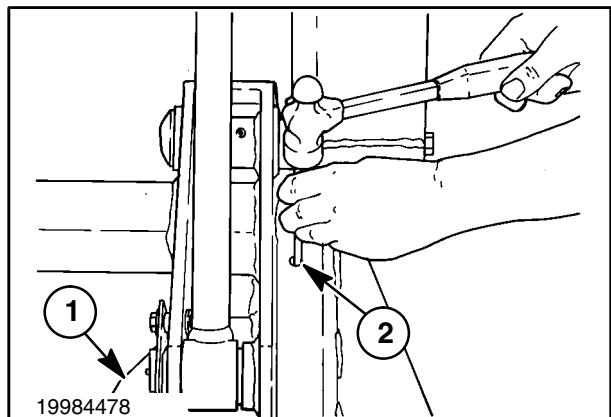
4. Install the handle pivot pin, 1, from the front of the plate and install the snap ring retaining clip, 2. The pivot pins will have a snap ring on both ends of the pins.

NOTE: The handle pivot pin should have one snap ring retaining clip already installed prior to reinstallation in the attachment plate. If the snap ring retaining clip is not present, install the clip prior to pin installation.



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5. Move the latch handle, 1, to align hole with the groove and insert the latch pin with the tapered side towards the loader boom, away from the attachment.
6. With a hammer and punch, drive the grooved pin, 2, through the lower spring guide and latch pin.



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