RADIATOR

Removal

NOTE: *Put caps on all fittings and plugs in all disconnected hoses.*

STEP 1

Park the machine on a level surface.

STEP 2

Lift the hood and open the rear access door on the machine.

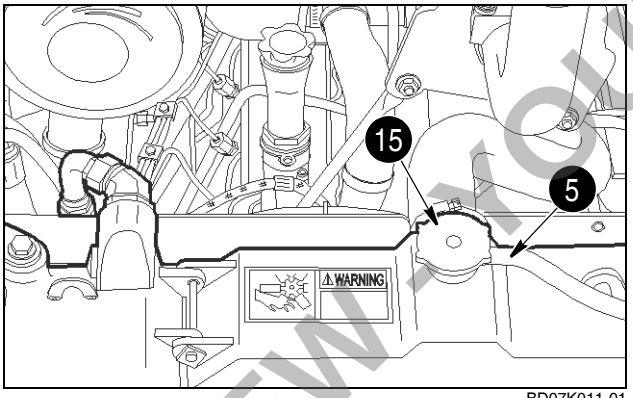
STEP 3

Turn the ignition switch and the master disconnect switch (if equipped) to the OFF position.

STEP 4

Disconnect the negative battery cable from the battery.

STEP 5

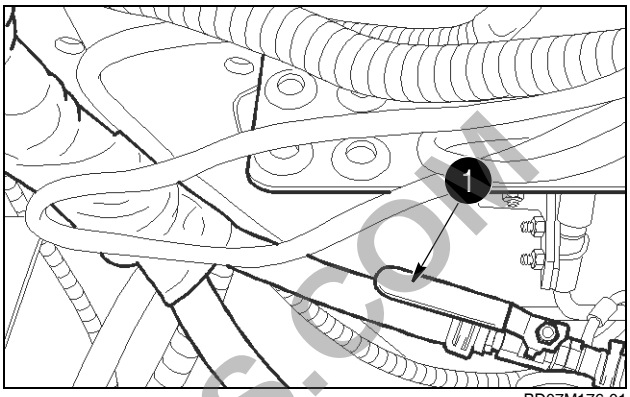


BD07K011-01

Slowly loosen the radiator cap (15). Disconnect the overflow hose (5) from the radiator neck.

NOTE: *Refer to illustration on page 5.*

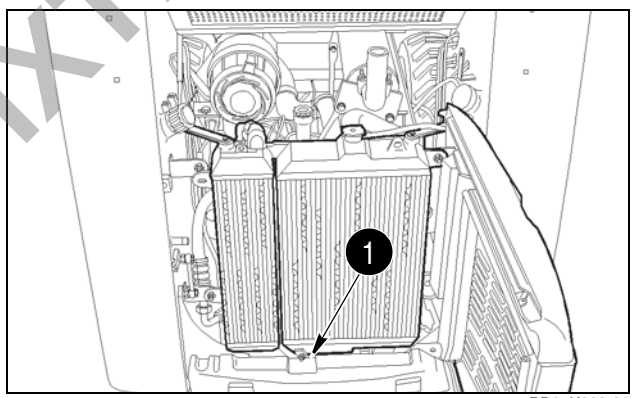
STEP 6



BD07M176-01

If equipped with a heater, open the heater coolant valve.

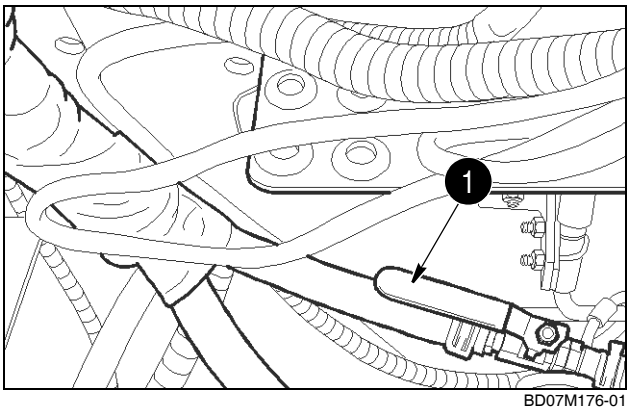
STEP 7



BD07K006-01

Install a hose on the drain valve (1) and drain the radiator into a clean container that holds approximately 17 litres (4.5 gallons).

STEP 8



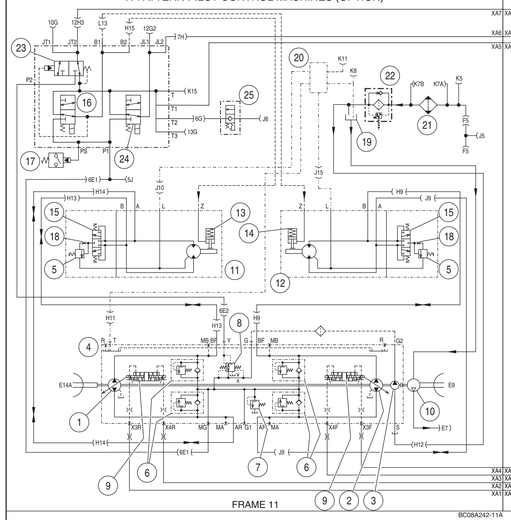
BD07M176-01

If equipped with a heater, close the heater coolant valve (1).

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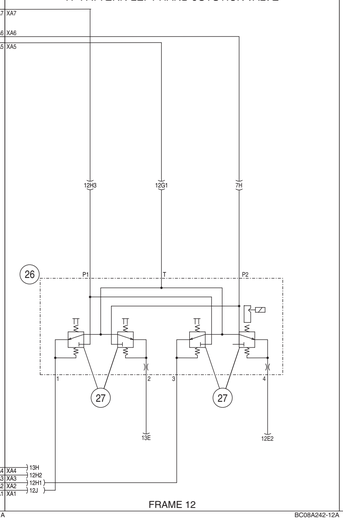
H-PATTERN PILOT CONTROL MACHINES (OPTION)



FRAME 11

BC08A242-11A

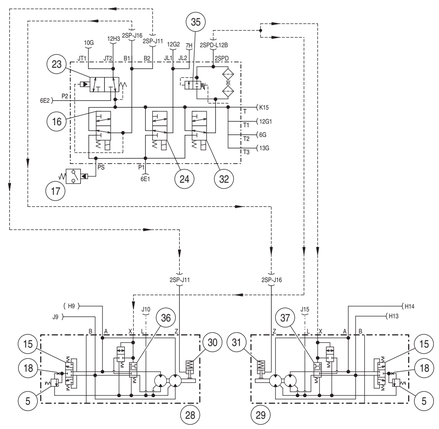
H- PATTERN LEFT-HAND JOYSTICK VALVE



FRAME 12

BC08A242-12A

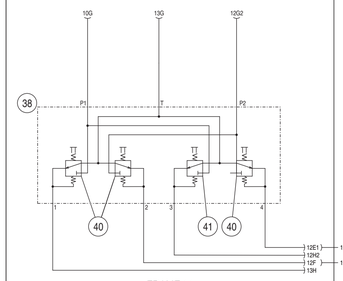
PILOT TWO SPEED (OPTION)



FRAME 13

BC08A242-13A

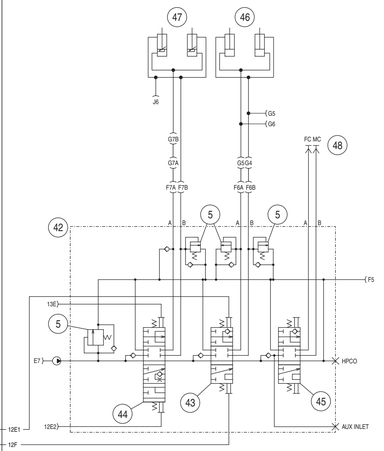
H-PATTERN RIGHT-HAND JOYSTICK VALVE



FRAME 14

BC08A242-14A

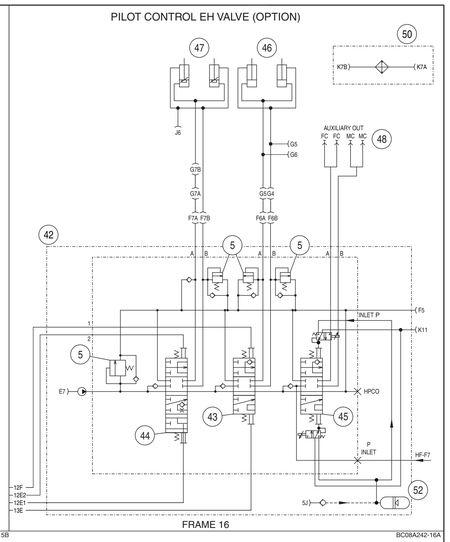
CONTROL VALVE



FRAME 15

BC08A242-15B

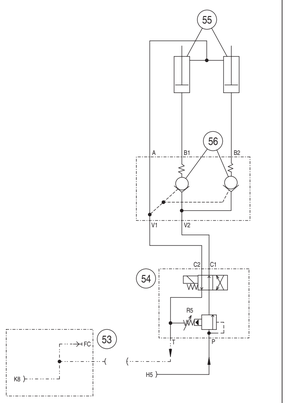
PILOT CONTROL EH VALVE (OPTION)



FRAME 16

BC08A242-16A

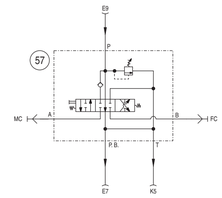
HYDRAULIC COUPLER (OPTION)



FRAME 17

BC08A242-17A

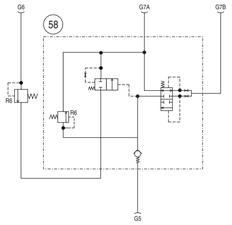
SECONDARY AUXILIARY (OPTION)



FRAME 18

BC08A242-18A

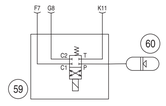
SELF-LEVEL (OPTION)



FRAME 19

BC08A242-19A

RIDE CONTROL (OPTION)



FRAME 20

BC08A242-20A

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COMPONENTS - PILOT CONTROL MACHINES

FRAME - COMPONENT NUMBERS

FRAME 11 COMPONENTS
- 11- 1. Left Piston Pump
- 11- 2. Right Piston Pump
- 11- 3. Charge Pump
- 11- 4. Hydrostatic Pump
- 11- 5. Circuit Relief Valve
- 11- 6. High Pressure Relief Valve
- 11- 7. Control Cartridge
- 11- 8. Boost Valve
- 11- 9. Servo Piston
- 11- 10. Hydraulic Pump
- 11- 11. Left Drive Motor
- 11- 12. Right Drive Motor
- 11- 13. Left Brake
- 11- 14. Right Brake
- 11- 15. Flushing Valve
- 11- 16. Brake Solenoid Valve
- 11- 17. Charge Pressure Switch
- 11- 18. Shut-Off Plug
- 11- 19. Hydraulic Reservoir
- 11- 20. Drain Manifold
- 11- 21. Oil Cooler
- 11- 22. Oil Filter Bypass Valve
- 11- 23. Ground Drive Interlock
- 11- 24. Loader Interlock
- 11- 25. Manual Boom Lowering Valve

FRAME 12 COMPONENTS
- 12- 26. Left-Hand Joystick Valve
- 12- 27. Controller Spool

FRAME 13 COMPONENTS
- 13- 5. Circuit Relief Valve
- 13- 15. Flushing Valve
- 13- 16. Brake Solenoid Valve
- 13- 17. Charge Pressure Switch
- 13- 18. Shut-off Plug
- 13- 23. Ground Drive Interlock
- 13- 24. Loader Interlock
- 13- 28. Left Two Speed Drive Motor
- 13- 29. Right Two Speed Drive Motor
- 13- 30. Left Brake
- 13- 31. Right Brake
- 13- 32. Two Speed Valve
- 13- 35. Two Speed Solenoid Valve
- 13- 36. Left Two Speed Shuttle Valve
- 13- 37. Right Two Speed Shuttle Valve

FRAME 14 COMPONENTS
- 14- 38. Right-Hand Joystick Valve
- 14- 40. Controller Spool
- 14- 41. Controller Spool

FRAME 15 COMPONENTS
- 15- 5. Circuit Relief Valve
- 15- 42. Loader Control Valve
- 15- 43. Tilt Spool
- 15- 44. Lift Spool
- 15- 45. Auxiliary Spool
- 15- 46. Tilt Cylinders
- 15- 47. Lift Cylinders
- 15- 48. Auxiliary Outlets

FRAME 16 COMPONENTS
- 16- 5. Circuit Relief Valve
- 16- 42. Loader Control Valve
- 16- 43. Tilt Spool
- 16- 44. Lift Spool
- 16- 45. Auxiliary Spool
- 16- 46. Tilt Cylinders
- 16- 47. Lift Cylinders
- 16- 48. Auxiliary Outlets
- 16- 49. High Flow Pump
- 16- 50. High Flow Filter
- 16- 51. High Flow Control Valve
- 16- 52. Accumulator

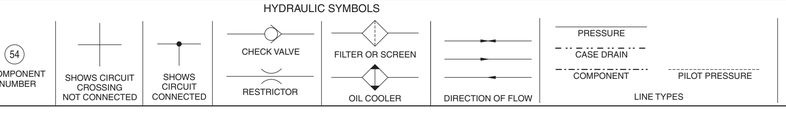
FRAME 17 COMPONENTS
- 17- 53. Attachment Case Drain
- 17- 54. Hydraulic Coupler Control Valve
- 17- 55. Hydraulic Coupler Cylinder
- 17- 56. Check Valve

FRAME 18 COMPONENTS
- 18- 57. Secondary Auxiliary Control Valve

FRAME 19 COMPONENTS
- 19- 58. Self-Level Valve

FRAME 20 COMPONENTS
- 20- 59. Ride Control Valve
- 20- 60. Ride Control Accumulator

HYDRAULIC SYMBOLS



NOTES

HYDRAULIC SCHEMATIC
H-PATTERN PILOT CONTROL MACHINES (OPTION)
410, 420 SKID STEER and 420CT TRACK LOADER

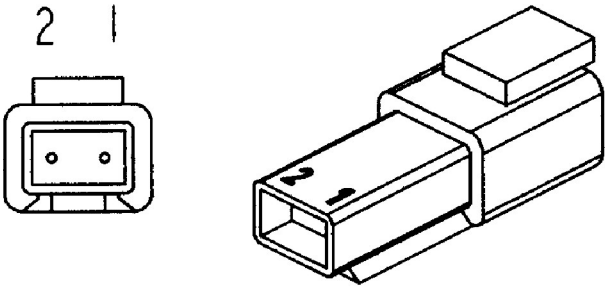
Additional copies of this Hydraulic and Electrical Schematic can be ordered through Technical Publications Distribution System.
The part number is 5-9610

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BC08A242-00A

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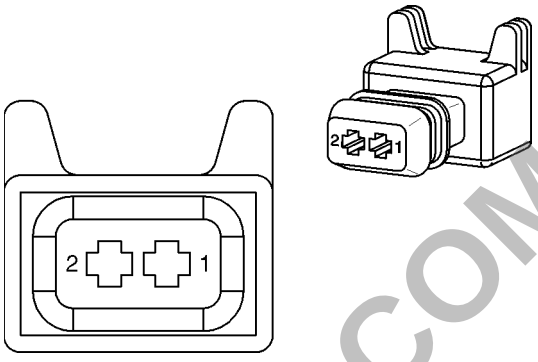
Connector 81B



225315C1

Cavity	Circuit ID	Description
1	178DA (B) 1.0	From splice
2	535D (T) 1.0	To connector 124 pin B

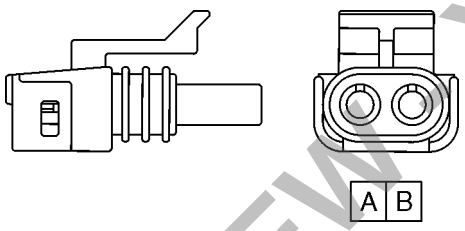
Connector 121



291718A1

Cavity	Circuit ID	Description
1	178DC (B) 1.0	From splice
2	545B (T) 1.0	To connector 123 pin A

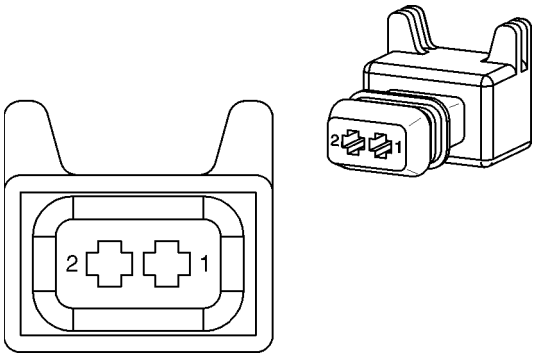
Connector 120



245482C1

Cavity	Circuit ID	Description
A	535C (T) 1.0	From connector 124 pin B
B	178D (B) 1.0	From splice

Connector 122

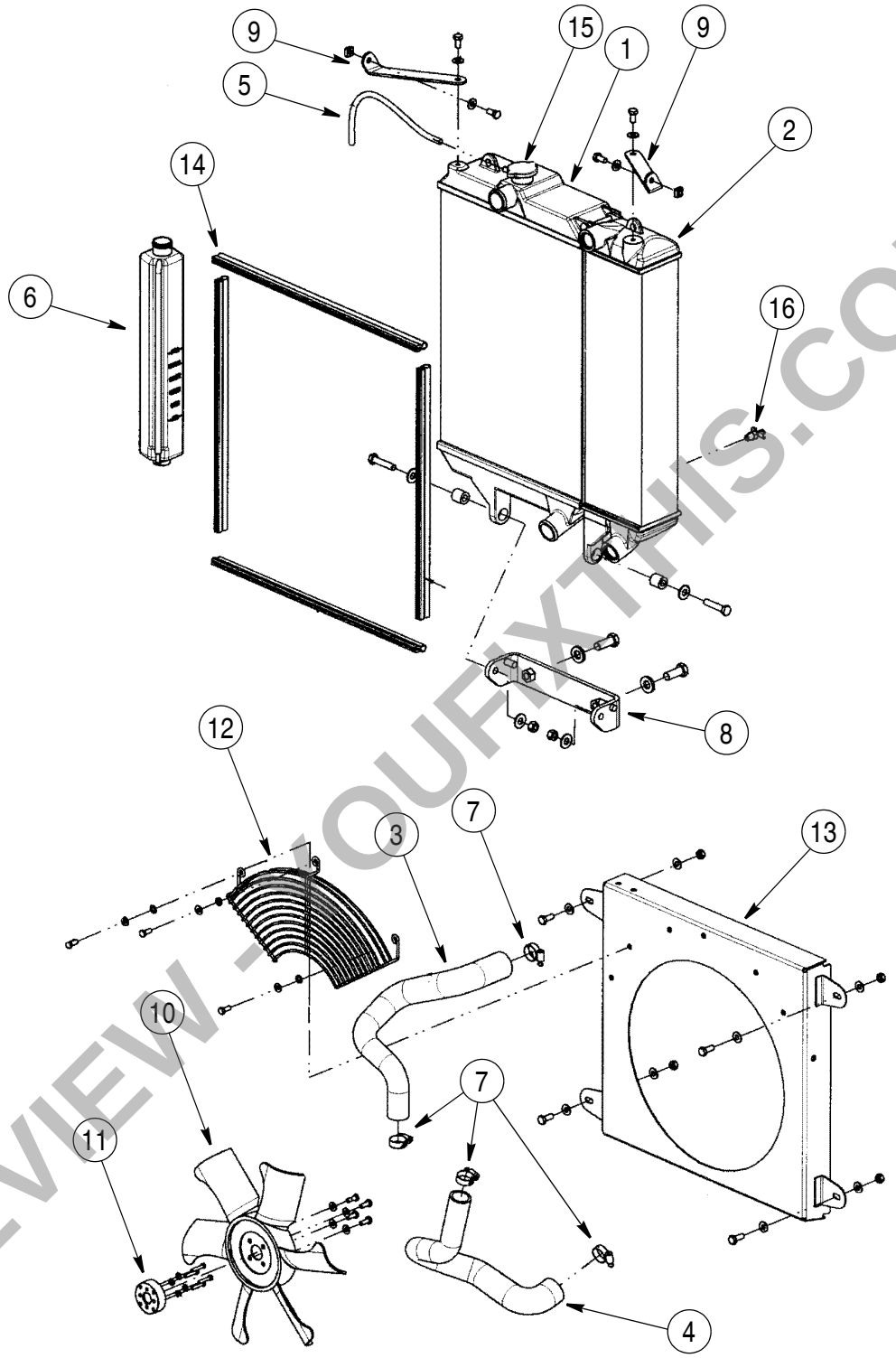


291718A1

Cavity	Circuit ID	Description
1	178DD (B) 1.0	To connector 124 pin A
2	546B (T) 1.0	From connector 123 pin B

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BS07M067

1. RADIATOR MODULE
2. OIL COOLER MODULE
3. UPPER RADIATOR HOSE
4. LOWER RADIATOR HOSE
5. COOLANT RECOVERY HOSE
6. COOLANT RECOVERY BOTTLE
7. CLAMP
8. LOWER HINGE MOUNTING BRACKET
9. UPPER MOUNTING BRACKET
10. FAN BLADE
11. FAN SPACER
12. FAN GUARD
13. FAN SHROUD
14. SEAL
15. RADIATOR CAP
16. DRAIN VALVE

410 RADIATOR MOUNTING

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TROUBLESHOOTING

1 Battery

NOTE: *The battery must be at full charge and all connections clean and tight before doing any testing of the electrical system. Use a multimeter for the following tests.*

2 Alternator

Check Points	Reading	Possible Cause of Bad Readings
Terminal for wire 120A to ground	12 volts	Check wire 120A between the alternator and the starter battery terminal. Also check the starter (3).
NOTE: *Turn the ignition switch to the RUN position.*		
Terminal for wire 121A to ground	Approximately 1.1 volts	Check the circuit from the alternator through the 50 ohm resistor to the fuse block (11) Frame 2. Also check the 50 ohm resistor and the fuse block (11) Frame 2.
NOTE: *Start the engine.*		
Terminal for wire 124A to ground	Voltage varies with engine RPM	Bad alternator.

3 Starter Motor and Solenoid

Check Points	Reading	Possible Cause of Bad Readings
Battery terminal of starter to ground	12 volts	Check the battery cable to the positive post of the battery.
NOTE: *Have another person hold the ignition switch to the START position.*		
Terminal for wire 625D to ground	12 volts	Check the circuit between the starter and starting relay. Also check the starting relay (5).

NOTE: *If the readings are good, the starter motor and solenoid should be bench tested.*

5 Starting Relay

Check Points	Reading	Possible Cause of Bad Readings
Terminal for wire 178A to ground	Continuity	Bad ground circuit.
Terminal for wire 170A to ground	12 volts	Check the circuit between the starter relay and the 40 ampere circuit breaker. Also check the 40 ampere circuit breaker and the buss bar.
NOTE: *Make sure all electrical switches except the ignition switch are in the OFF position. Have another person hold the ignition switch in the START position.*		
Terminal for wire 622D to ground	12 volts	Check the circuit between the starter relay and the ignition switch (7). Also check the ignition switch (7).
Terminal for wire 625A to ground	12 volts	Bad starter relay.

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CAPACITIES AND LUBRICANTS

FUEL TANK
- Capacity ..... 83.3 litres (22 U.S. gallons)
- Specifications ..... See diesel fuel specifications on page 5

COOLING SYSTEM
- Capacity ..... 17 litres (17.9 quarts)
- Recovery bottle capacity ..... 2 litres (2.1 quarts)
- Specifications ..... 50% water and 50% ethylene glycol

HYDRAULIC SYSTEM
- Capacity - Total System ..... 50.2 litres (13.3 gallons)
- Capacity - Reservoir ..... 32.4 litres (7.1 gallons)
- Specifications ..... Case Akcela No. 1 Engine Oil SAE 10W30

CHAIN COMPARTMENTS
- Capacity - Each Side ..... 5.7 litres (6.0 quarts)
- Specifications ..... Case Akcela No. 1 Engine Oil, SAE 10W30

FINAL DRIVE (CT MODELS)
- Capacity - Each Side ..... 0.55 L (0.58 quarts)
- Specifications ..... CASE AKCELA GEAR LUBE SSL 75W-90 (Synthetic)

BATTERY
- Quantity ..... As required
- Specifications ..... Distilled water

GREASE FITTINGS
- Quantity ..... As required
- Attachments (If equipped) ..... Quantity as required
- Specifications ..... Case molydisulfide grease

ENGINE CRANKCASE OIL (410/420 and 420CT MACHINES)
- Capacity - with filter change ..... 8.7 litres (9.2 quarts)
- Capacity - without filter change ..... 8.5 litres (9 quarts)
- Specifications ..... Case Akcela No. 1 Engine Oil SAE 10W-30 (API service CH-4)
  ..... (See Oil Viscosity/Temperature Ranges Chart on page 4)

ENGINE CRANKCASE OIL (430/440 and 440CT MACHINES)
- Capacity - with filter change ..... 12 litres (12.7 quarts)
- Specifications ..... Case Akcela No. 1 Engine Oil SAE 10W-30 (API service CH-4)
  ..... (See Oil Viscosity/Temperature Ranges Chart on page 4)

ENVIRONMENT

Before you service this machine and dispose of oil, fluids and lubricants, always remember the environment. Do not put oil or fluids into the ground or into containers that can leak. Check with your local environmental, recycling center or your Case dealer for correct disposal information.

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410/420 SKID STEER AND 420CT COMPACT TRACK LOADER
Repair Manual
Mechanical and Pilot Control Machines
(Tier 3 and Cab Up-Grade Machines)
Bur 87634765
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Bur 6-78992

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Installation

STEP 15

Installation of the radiator is the reverse procedure of removal.

STEP 16

After the radiator has been installed, fill the cooling system. See Section 1001 for the correct coolant mixture and quantity.

STEP 17

Start and run the engine until it reaches operating temperature and check for any leaks. Stop the engine. After the engine has cooled, check the level of the cooling system and add coolant as required.

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55 Rotating Beacon Switch

Check Points	Reading	Possible Cause of Bad Readings
NOTE: *Turn the ignition switch to the RUN position.*		
Terminal for wire 540C to ground	12 volts	Check the circuit between the rotating beacon switch and the 10 ampere fuse in the options fuse block (12) Frame 2. Also check the 10 ampere fuse and options fuse block (12) Frame 2.
Place the rotating beacon switch in the ON position. Terminal for wire 766A to ground	12 volts	Bad rotating beacon switch. If the readings are correct and the indicator lamp on the rotating beacon switch does not illuminate, proceed to the next test
Terminal for wire 178AJ to ground	Continuity	Bad ground circuit for rotating beacon switch indicator lamp. Bad rotating beacon switch. If the readings are correct and the indicator lamp on the rotating beacon switch does not illuminate, replace the rotating beacon switch.

NOTE: *If the readings were correct and the indicator lamp on the rotating beacon switch does not illuminate, replace the rotating beacon switch.*

56 Rotating Beacon

Check Points	Reading	Possible Cause of Bad Readings
Between the terminals of the lamp	Good	Bad bulb.
Terminal for wire 178Y to ground	Continuity	Bad ground circuit.
NOTE: *Turn the ignition switch to the RUN position. Place the rotating beacon switch in the ON position.*		
Terminal for wire 766A to ground	12 volts	Check the circuit between the rotating beacon and the rotating beacon switch (55). Also check the rotating beacon switch (55).

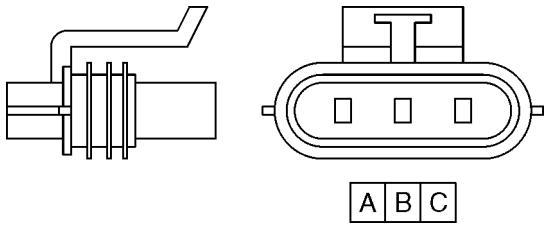
NOTE: *If the readings are good, replace the rotating beacon.*

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CONNECTORS
SCHEMATIC FRAME 21

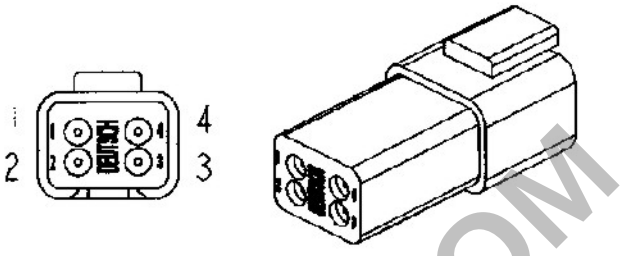
Connector 86B



256344A1

Cavity	Circuit ID	Description
C	757TC (P) 1.0	To connector 227 pin 4
B	178TE (B) 1.0	To connector 227 pin 1
A	756TC (P) 1.0	From splice T1

Connector 226

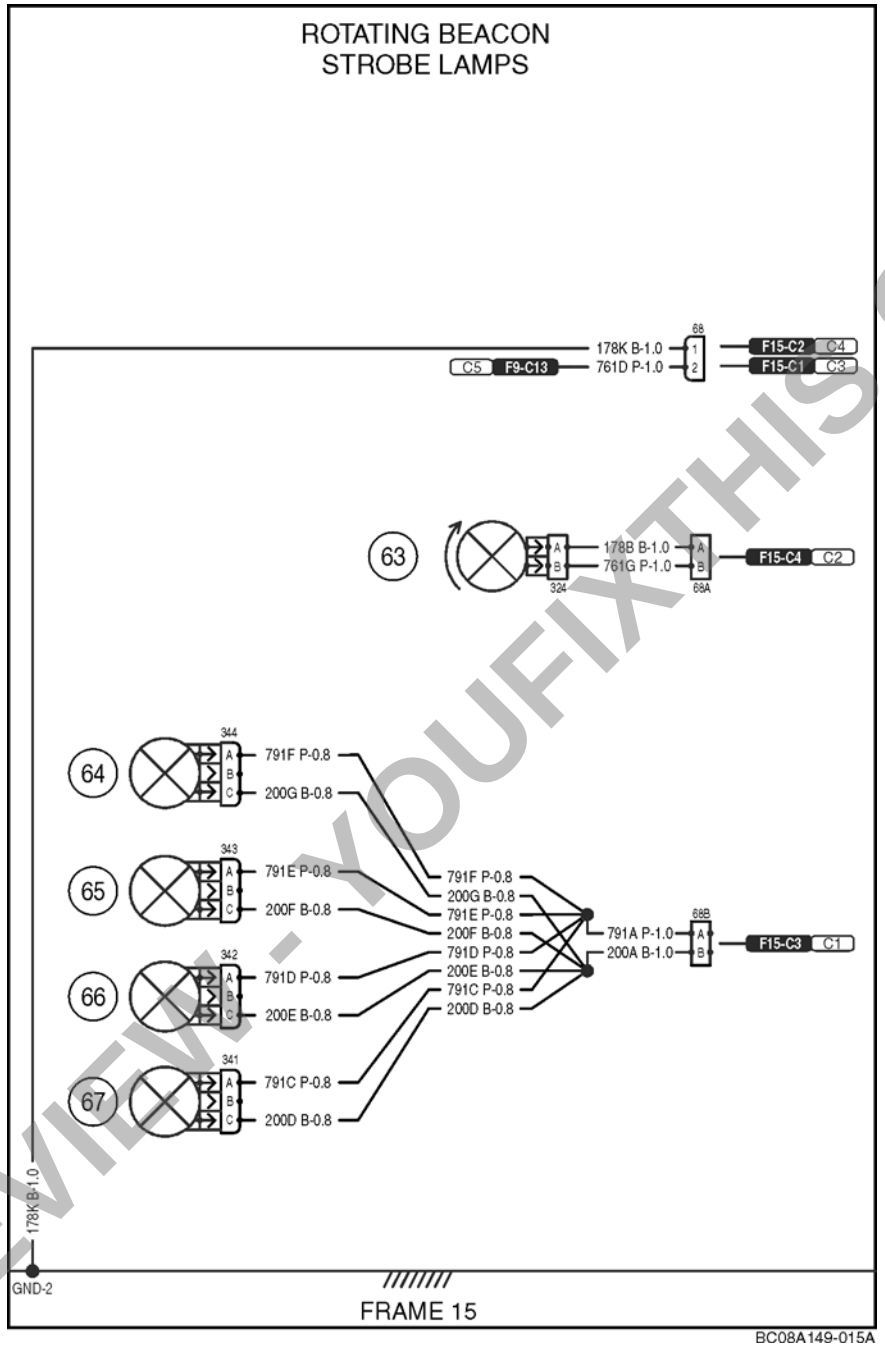


225326C1

Cavity	Circuit ID	Description
1	178TB (B) 1.0	From splice T1
2	706TB (P) 1.0	From splice T3
3	701TA (P) 1.0	To connector 250A
4	756TB (P) 1.0	From splice T1

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BC08A149-15A

63. ROTATING BEACON
64. LEFT-HAND FRONT STROBE
65. RIGHT-HAND FRONT STROBE
66. RIGHT-HAND REAR STROBE
67. LEFT-HAND REAR STROBE

410 ELECTRICAL SCHEMATIC FRAME 15 (TIER 3 AND CAB UP-GRADE MACHINES)

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77 Horn Switch

Check Points	Reading	Possible Cause of Bad Readings
NOTE: *Disconnect the horn switch connector.*		
Measure the resistance across the terminals of the switch.	Open	Bad horn switch.
Have another person push and hold the horn button down. Measure the resistance across the terminals of the switch.	Continuity	Bad horn switch.
NOTE: *Reconnect the horn switch connector. Turn the ignition switch to the ON position.*		
Have another person push and hold the horn button down. Terminal for wire 892A at the horn.	Approximately 12 volts	Check the circuit between the terminal for wire 892B and the horn button. Check the circuit between the horn button and the 10 amp fuse in the pfuse block. Also check the horn button. Also check the 10 amp fuse in the fuse block.

79 Front Electric Control Switch No. 1

Check Points	Reading	Possible Cause of Bad Readings
NOTE: *Turn the ignition switch to the ON position.*		
Terminal for wire 178BJ to ground	Continuity	Bad ground circuit.
NOTE: *Turn the ignition switch to the ON position.*		
Terminal for wire 850AA to ground	12 volts	Check the circuit between the loader lift arm auxiliary electric connector and the front electric control switch No. 1. Also check the front electric control switch No. 1.
NOTE: *Turn the ignition switch to the ON position. Place the front electric control switch No. 1 in the UP position.*		
Terminal for wire 851AA to ground	12 volts	Check the circuit between the loader lift arm auxiliary electric connector and the front electric control switch No. 1. Also check the front electric control switch No. 1.
NOTE: *Turn the ignition switch to the ON position. Place the front electric control switch No. 1 in the DOWN position.*		
Terminal for wire 129AA to ground	12 volts	Check the circuit between the loader lift arm auxiliary electric connector and the front electric control switch No. 1. Also check the front electric control switch No. 1.

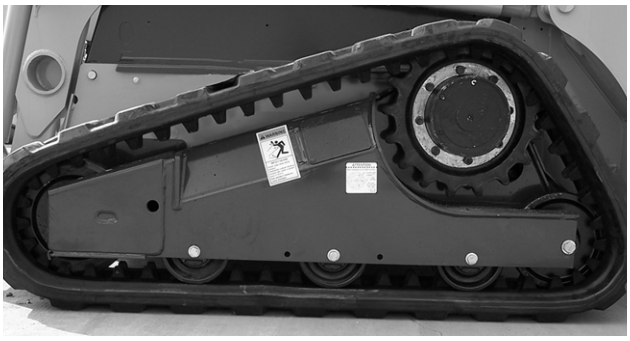
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RUBBER TRACK

Removal

STEP 1



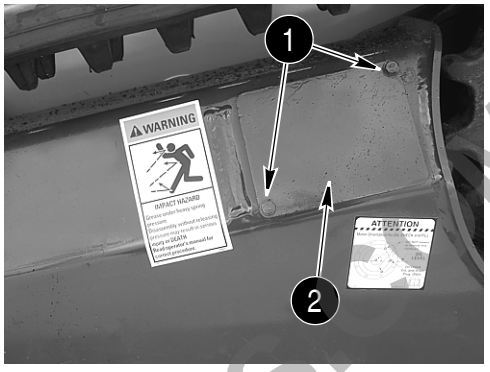
BD06A060

Park the machine on a level surface with the bucket approximately 125 mm (5 inches) off of the ground and stop the engine.

STEP 2

Place 101 mm (4 inch) blocks on the ground under the bucket. Enter the operators compartment and start the engine and lower the bucket until the front of the machine is raised off the ground. Stop the engine and exit the operators compartment. Place a floor jack under the rear of the machine and raise the rear of the machine until the tracks are completely off of the ground. Install blocks under the machine to securely block the machine in the raised position with the tracks off the ground.

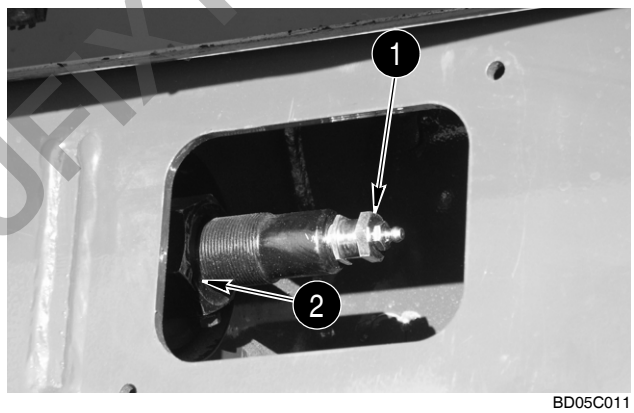
STEP 3



BD06A062

Remove the screws (1) from the adjuster cover (2) and remove the cover.

STEP 4



BD05C011

Slowly loosen the grease valve (1) on the adjuster (2) until the grease begins to discharge from the adjuster (2). Allow the grease to completely discharge from the adjuster (2) to release the tension on the track as the idler wheel moves rearward.

NOTE: *DO NOT remove the grease valve body from the adjuster. Internal parts (ball, spring, and poppet) may be lost.*

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RIGHT HAND FORWARD STEER

The hydrostatic pump displacement is infinitely variable between zero and 100%. A given swashplate position can be affected by drive system pressure, control pressure to the pilot hand control valve from the anti-stall cartridge, pilot hand control lever position, pump drive speed, as well as the servo stroking piston centering springs. Flow direction is determined by which pump servo cylinder control port is pressurized. Steering is caused by porting an opposing pressure to the servo piston causing the servo piston to return towards neutral. The slower the travel side causes the machine to steer in that direction.

There are four shuttle check valves installed in the lower section of the travel system. These shuttle check valves interconnect a number of the control spool output ports.

- One of the shuttle check valves interconnects the output from control spool number 1 to both the E and F output ports. The backup alarm switch is also actuated when this controller is activated.
- Another shuttle check valve interconnects the output from control spool number 2 to both the C and F output ports.
- Another shuttle check valve interconnects the output from control spool number 3 to both the C and D output ports.
- Another shuttle check valve interconnects the output from control spool number 4 to both the D and E output ports.

Steering to the RH Forward direction is caused by moving the lever toward the forward direction and also the right hand direction.

Actuating the travel control lever toward the forward direction causes controller number 3 to be pressurized in proportion to the distance that the lever is moved.

Actuating the travel control lever toward the right direction causes controller number 4 to be pressurized in proportion to the distance that the lever is moved.

Activating controller number 3 causes the machine to travel in the forward direction by pressurizing both the C and D Shuttle Check Valves.

Pressurized oil from the C Shuttle Check Valve is connected to the RH Forward servo piston through controller port C and pump port X4B.

Pressurized oil from the D Shuttle Check Valve is connected to the LH Forward servo piston through controller port D and pump port X4A.

Actuating the control lever to the right actuates controller number 4 which pressurizes both the D and E Shuttle Check Valves.

Because shuttle check valve D is already pressurized when controller number 3 is actuated, oil pressure from controller number 4 will not pass through it.

Pressurized oil from controller number 4 then is allowed to pass through Shuttle Check Valve E which is then connected to RH Reverse servo piston through controller port E and pump port X3B.

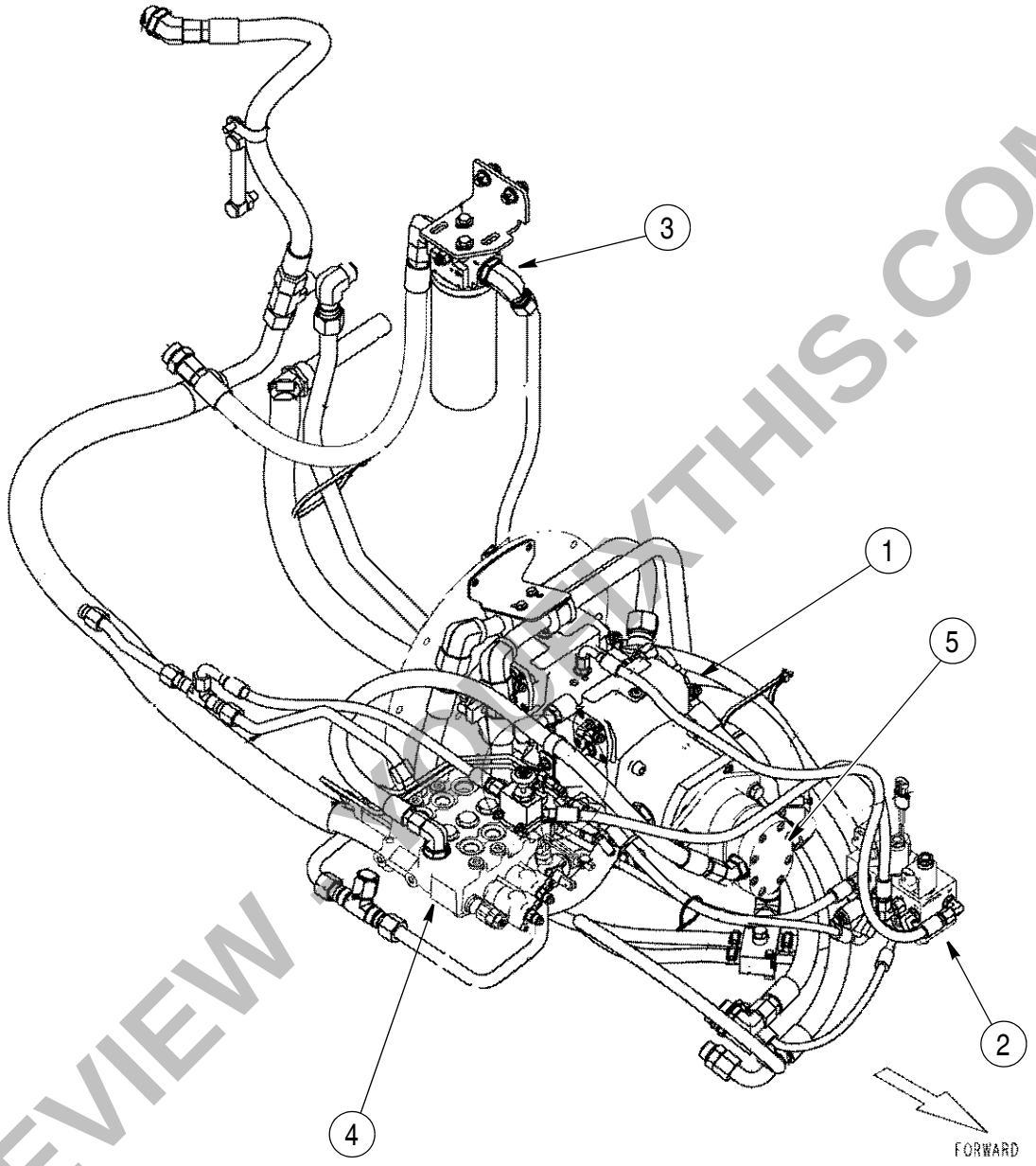
This pressurized oil ported to the RH Reverse servo piston counteracts the pressure ported to the RH Forward servo piston.

With a difference in pressure at both ends of the RH pump servo piston, the RH travel speed slows down causing the unit to steer to the right.

The amount that the unit steers to the right is proportional to the distance that the lever is moved to the right.

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BS07M402

1. HYDROSTATIC PUMP
2. MULTI-VALVE
3. FILTER
4. LOADER CONTROL VALVE
5. EQUIPMENT PUMP

420 HYDROSTATIC SYSTEM (PILOT CONTROL MACHINES)

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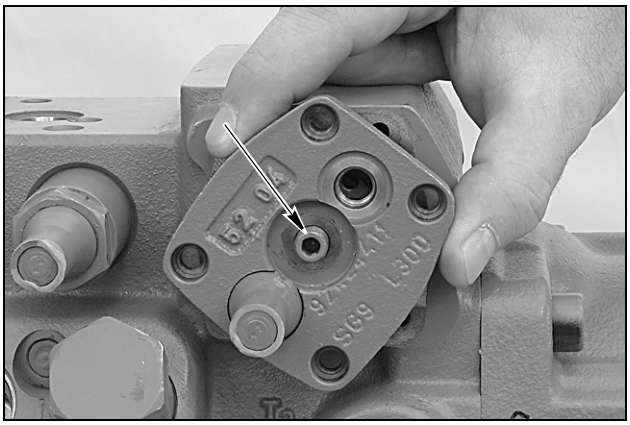
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Hydraulic Control Cover Plate

NOTE: *Maintenance procedures are the same for both hydraulic controls.*

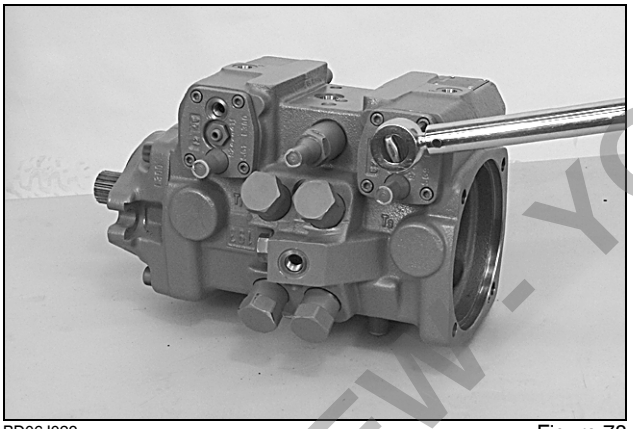
STEP 88



BD06J122 Figure 77

Use acceptable tools and hold the adjustment screw while installing the cover plate by turning clockwise.

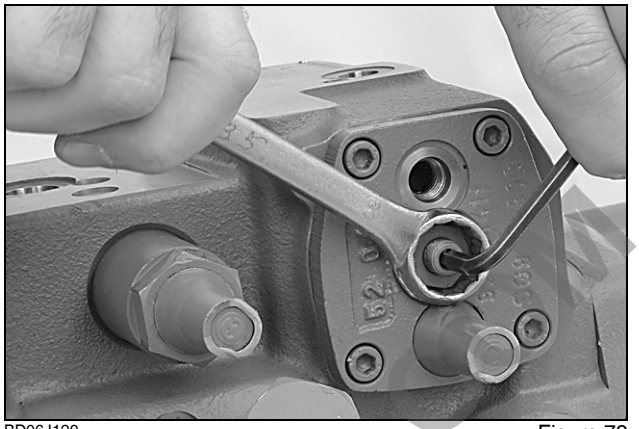
STEP 89



BD06J029 Figure 78

Use acceptable tools to install the hydraulic control mount bolts and tighten to the proper torque.

STEP 90



BD06J120 Figure 79

Use acceptable tools to hold the adjustment screw and install counter nut on adjustment screw to the measurement noted earlier.

STEP 91

Adjust the hydraulic control piston to the zero (neutral) position.

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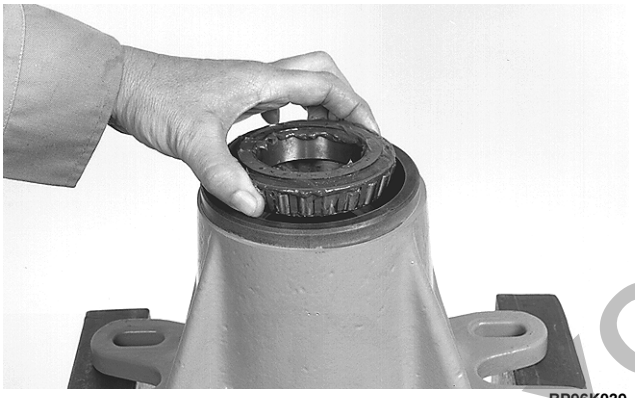
STEP 17



BP96K038

Fill the area between the outer grease disc and seal with grease.

STEP 18



BP96K039

Install the bearing into the outer bearing cup.

STEP 19



BP96K040

Lubricate the lips of a new seal with No. 2 lithium grease and start the seal into the housing.

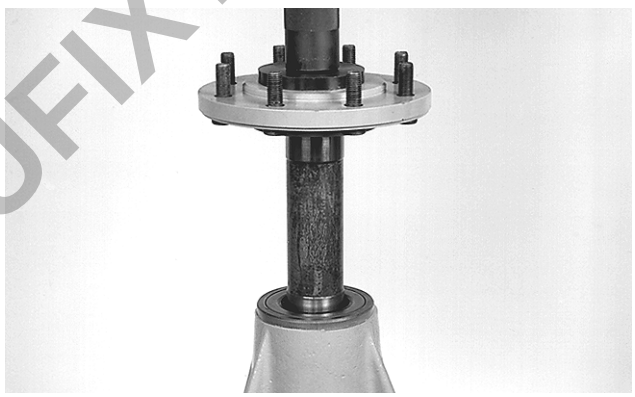
STEP 20



BP96K041

Use an acceptable driver to press the outer seal into the housing. Press the seal into the axle housing until the seal is seated against the shoulder. When properly installed, the outer face of the seal may be flush or slightly below the axle housing.

STEP 21



BP96K042

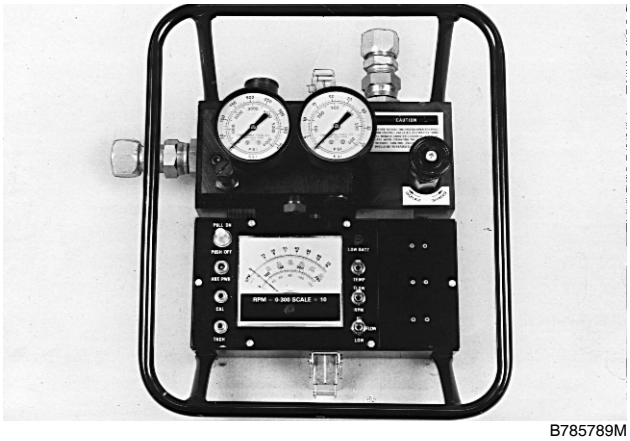
Start the axle into the outer bearing. Be careful not to damage the lips on the outer seal during this step. Install a driver on the flange and press the axle through the first press fit area of the axle.

NOTE: *Be sure to support the axle while pressing. Once the axle presses past the first press fit area the axle will drop to the second press fit area and may damage the seal.*

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SPECIAL TOOLS



B785789M

OEM-1239 (CAS-10280) FLOWMETER



B877895

CAS-100900 HAND PUMP



B797157M

CAS-1808 FLOWMETER FITTING KIT



B009638M

CAS-1804 PRESSURE TEST FITTING KIT

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NOTES

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LOADER BUCKET CYLINDER

Disassembly

NOTE: *Refer to illustration on page 9.*

1. Clean the outside of the cylinder. If the hoses were removed with the cylinder, remove the hoses.
2. Clamp the tube (1) in a vise or other holding equipment. Be careful not to damage the tube.
3. Use a gland wrench to loosen the gland (14) from the tube (1).
4. Pull the piston rod (8) straight out of the tube (1) to prevent damage to the tube.
5. Clamp the piston rod end (12) in a vise. Place a padded support below the piston rod (8) near the piston (4) to prevent damage to the piston rod.
6. Loosen and remove the bolt (3) and the washer (2) that connects the piston (4) to the piston rod (8). Use a torque multiplier for the bolts that have a high torque value.
7. Remove the piston (4) from the piston rod (8).
8. Remove the wiper seal (11) and wear ring (7) from the piston (4).
9. Remove the O-ring (13), backup ring (5), wiper seal (11), seal (10), and seal (9) from the gland.

Inspection

1. Clean the piston (4), gland (14), piston rod (8), tube (1), hardened washer (2), and bolt (3) in cleaning solvent, refer to the illustration on page 9.
2. Discard the seals, wear rings and O-rings that were removed from the piston (4) and gland (14).
3. Illuminate the inside of the tube (1). Inspect the inside of the tube (1) for deep grooves or other damage. If there is damage to the tube (1), use new parts as required.
4. Inspect the piston rod (8) to make sure it is straight. If the piston rod is damaged, use new parts as required.
5. Remove small scratches on the inside of the tube (1) with emery cloth of medium grit. Use the emery cloth with a rotary motion.
6. Inspect the bushings in the piston rod end (12) and the bushings in the tube end. If the bushing(s) are worn or damaged, use new parts as required.
7. Inspect the gland (14) for rust or corrosion. Clean and remove rust or corrosion from the gland (14). Use new parts as required.
8. Inspect the gland end of the tube (1) for sharp edges that may cut the gland O-ring (13). Remove sharp edges.

Assembly

NOTE: *If a new gland (14) is being installed, put the part number of the cylinder on the new gland (14), refer to the illustration on page 9.*

1. Lubricate all components with hydraulic oil.
2. Lubricate seal (9) with clean hydraulic oil and install in the gland (14).
3. Lubricate seal (10) with clean hydraulic oil and install in the gland (14). Install the seal is so that the lips are toward the small end of the gland.
4. Lubricate a new wiper seal (11) with clean hydraulic oil and install in the gland (14). The wiper lips must be toward the large end of the gland.
5. Lubricate a new backup ring (5) with clean hydraulic oil and install in the groove on the outside of the gland (14). Install the ring with the flat side toward the large end if the gland.
6. Lubricate a new O-ring (13) with clean hydraulic oil and install in the groove next to the backup ring (5) on the outside of the gland (14).
7. Fasten the piston rod end (12) in the vise.
8. Remove any marks and sharp edges on the chamfer at the end of the piston rod (8).
9. Lubricate the bore of the gland (14) with clean hydraulic oil.
10. Push the gland (14) onto the piston rod (8). If the gland will not slide easily onto the piston rod (8), a soft hammer may be used.
11. Place a support below and near the end of the piston rod (8). Use a shop cloth between the support and the piston rod to prevent damage to the piston rod.
12. Install the piston (4) onto the end of the piston rod (8).
13. Install the washer (2) onto the bolt (3).

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STEP 7
Connect a vacuum pump to the hydraulic reservoir.

STEP 8
Start the vacuum pump.

STEP 9

BD06N005

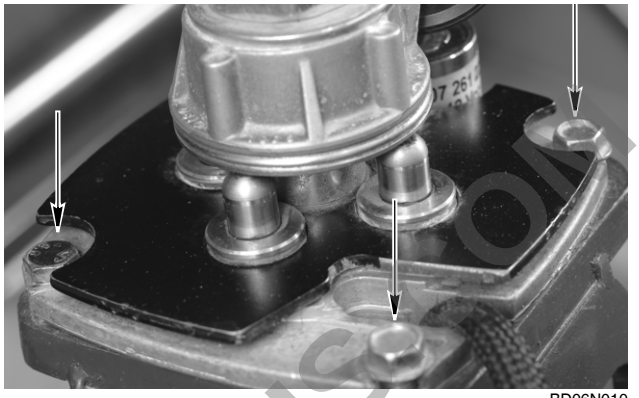
Disconnect the magnetic detent electrical harness at the connector.

STEP 10

BD06N005

Tag and disconnect all the hoses from the controller. Install caps and plugs on all fittings and hoses.

STEP 11
Stop the vacuum pump.

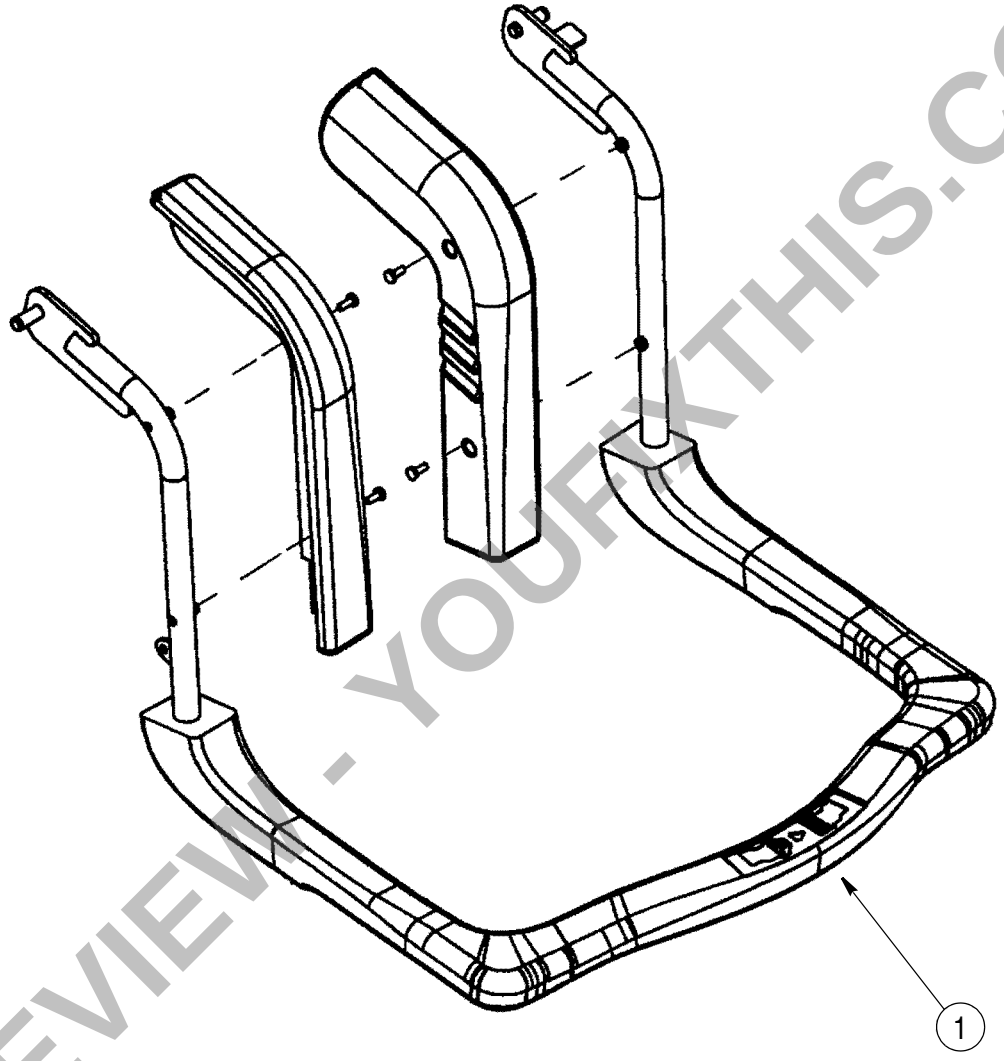
STEP 12

BD06N010

Remove the bolts securing the controller to the mount.

STEP 13
Remove the pilot controller.

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BS07M576

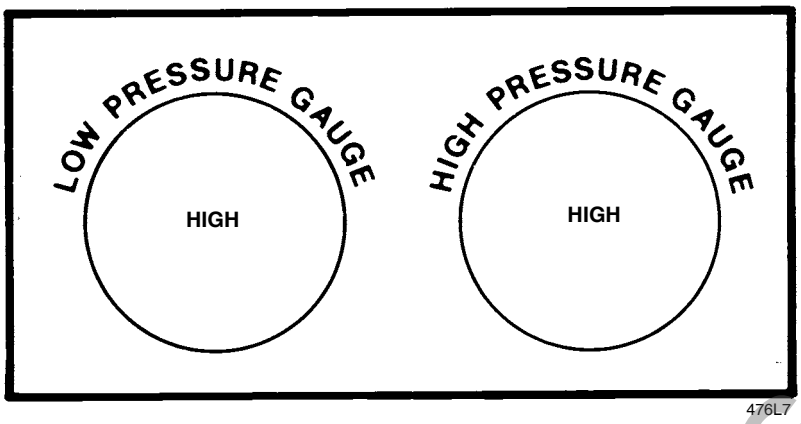
1. SEAT BAR

SEAT BAR

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PROBLEM - NO COOLING



See Pressure - Temperature Chart on page 4.

Condenser Malfunctioning - Indications:

Liquid line very hot.

Discharge air from evaporator warm.

Yes →

1. Check for loose or worn compressor belt and proper engine fan operation.
2. Check to see that condenser, radiator, and grille screen are clean and that hood and radiator seals are in place.
3. Remove and check condenser for oil.
   A. Remove refrigerant from the system. See Section 9013 in this manual.
   B. Check compressor for proper oil level.
   C. Replace receiver-drier.
   D. Remove moisture and charge the system. See Section 9013 in this manual.
4. Continue the performance test for other possible problems.

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