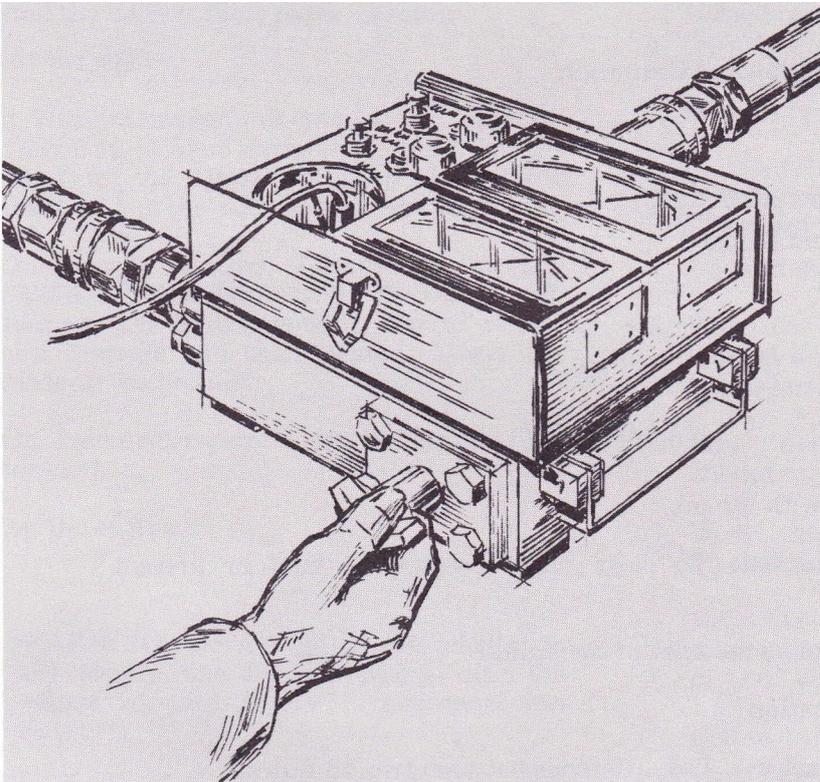


**FORM NO. REG01193-02**

FOR USE IN SERVICE MANUALS:  
528 SKIDDER. REG01133  
613B TRACTOR-SCRAPER, SENR7302  
621 B TRACTOR-SCRAPER, REG01532  
623B TRACTOR-SCRAPER, REG01607  
627B TRACTOR-SCRAPER, REG01609  
631 D TRACTOR-SCRAPER, SENR7252  
6330 TRACTOR-SCRAPER, SENR7272  
637D TRACTOR-SCRAPER, SENR7280  
814 TRACTOR, 815 & 816  
COMPACTORS. REG00786  
920 & 930 WHEEL LOADERS,  
REG00514  
966C WHEEL LOADER, REG00484  
980C WHEEL LOADER, SENR7750  
988 WHEEL LOADER, REG00550  
988B WHEEL LOADER, SENR7318  
992C WHEEL LOADER, SENR7651  
TESTING HYDRAULIC SYSTEMS  
AND COMPONENTS, REG00791



# STEERING TEE TEST PROCEDURE-I

## STEERING TEE TEST PROCEDURE - 1

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### GLOSSARY

aeration: Air mixed with the oil.

block, blocking, blocked: To close off a passage; to stop or prevent movement.

cavitation: Air present at the inlet of the pump,

data: Specific information.

flow differential (flow loss): The difference between two oil flows.

stick, sticking, stuck: To prevent free movement; keep open or closed.

tip, tipping, tipped: To move from a vertical position; to slope.

viscosity: The property of a fluid that resists internal flow by releasing counteracting forces.

**NOTE: The "C" is an indication of a change from the former issue.**

## STEERING TEE TEST PROCEDURE - 1

### INTRODUCTION

When making an analysis of the hydraulic system, a standard procedure of checking must be used. This method of checking the system will follow these steps in order:

1. Visual checks.
2. Performance tests.
3. Instrument tests.

The procedures for following each of these steps are given in the TESTING AND ADJUSTING Section of the Service Manual for each machine.

### EQUIPMENT INSTALLATION

1. Remove the cap for the hydraulic tank to release any pressure and tighten the cap again.
2. If the machine is not already so equipped, install the correct filter cover assembly.
3. Start the engine.
4. On Wheel Loaders: lift the bucket approximately 5 ft. (1.52 m) from the ground. Put the bucket in the DUMP position. Lower the bucket to put the cutting edge on the ground.
- 4A. On Wheel Tractors, Compactors or Log Skidders with bulldozers: lift the blade fully. Remove the hydraulic tank cap to release any pressure and then tighten. Lower the blade to the ground.
- 4B. On Tractor-Scrapers: move the ejector fully forward.
5. Stop the engine.

**A** WARNING: Do not install the adapter in the supply line for the pump with the engine running. Injury to personnel can result.

6. Remove the plug for the tee test from the supply line for the pump. Install the correct adapter.

NOTE: Install the adapter as rapidly as possible to keep the oil loss at a minimum.

7. Install the return line assembly. Connect the return line assembly and the adapter for the pump supply line to the flow meter with the correct connecting hose assemblies. (See the Tee Test Insert for the machine under test.)

NOTE: A plain coupler will not open valve in the

adapter for the supply line or return line assembly.

8. On Wheel Loaders: lower the bucket to the ground.  
On Tractor-Scrapers: return the ejector to the rear position.
9. Install the tachometer generator with the correct drive. Install the cable between the generator and the input connection for the tachometer (rpm) on the flow meter.
10. Connect the safety link (if equipped) to hold the articulated frames rigid.

### PREPARATION OF SYSTEM FOR TEST

1. Open the manual load valve fully (turn counterclockwise).
2. Hold the steering wheel in the RIGHT TURN position. (On machines equipped with flow  $\sigma$  amplified steering, the steering wheel must be turned constantly.)
3. With the engine at test rpm, slowly turn the manual load valve clockwise until the pressure goes up to 1000 psi.

**A** WARNING: On Tractor-Scrapers, tractor will articulate (turn) to the right until it is against the stop.

4. Look at the oil temperature.
5. When the oil temperature is 100° F, turn the manual load valve clockwise until the pressure is 1500 psi.
6. When the temperature is 160° F, disconnect the safety link (if equipped).
7. Move the steering cylinders several times through full cylinder travel.
8. Move the cylinders through their cycles as long as necessary to get the desired oil temperature of 150° F all through the system.
9. Connect the safety link (if equipped).

### SYSTEM TEST (CHART A)

#### Write Down The Basic Test Data

NOTE: Conditions in the hydraulic system must be constant before writing down the test data. The steering wheel must be held in the full turn position. (On machines equipped with flow amplified steering, the steering wheel must be  $\wedge$  turned constantly.) Best results are found when the oil temperature is  $150 \pm 5^\circ$  F. On larger machines, make sure the brake accumulator is not operating while taking test data.

1. Open the manual load valve fully.

## STEERING TEE TEST PROCEDURE - 1

2. Hold the steering wheel in the RIGHT TURN position.
3. With the engine at test rpm, slowly close the manual load valve until the oil flow through the flow meter stops (0 gpm).
4. Write down the pressure.

The setting of the relief valve for maximum pressure must be according to the Service Manual.

**CAUTION:** When the pressures are higher than 1000 psi, slowly open the manual load valve before turning the steering wheel back to center. This will prevent possible damage to the pressure gauge.

### Test 2: System Oil Temperature

1. Open the manual load valve fully.
2. Turn the steering wheel to the RIGHT TURN position.
3. Write down the oil temperature.

### Test 3: System Base Flow Rate

1. Open the manual load valve fully.
2. Turn the steering wheel to the RIGHT TURN position.
3. Run the engine at test rpm.
4. Check pressure to make sure it is at a minimum valve of approximately 100 psi.
5. Write down the flow rate (gpm).

The base flow rate of the system will be the same as the low pressure flow of the hydraulic pump. Because there will be minimum leakage in the control valves, lines and cylinder packings at 100 psi, the base flow rate can be used to find the flow differential in Tests 4 and 5.

**NOTE:** If the base flow rate (Test 3) is less than the flow rate in Test 4, do Test 4 first and then Test 3. For vane pumps only, this takes place when the vanes in the pump do not have full extension at low pressure.

### Tests 4 and 5: Leakage Rates

These two tests are similar. Each test is done as follows:

1. Move the steering wheel to the respective TURN positions.
2. Run the engine at test rpm.
3. Make an adjustment to the manual load valve

to get 1000 psi pressure.

4. Make the system constant with these conditions.
5. Write down the flow rate (gpm) for each test.

The flow differential for each test (4 and 5) is found by taking the flow rate for each test away from the base flow rate (Test 3). The percent of flow loss for each test (4 and 5) is found by dividing the flow differential for each test by the base flow rate (Test 3).

### Test 10: System Oil Temperature

1. Open the manual load valve fully.
2. Turn the steering wheel to the RIGHT TURN position.
3. Write down the oil temperature.

Make a comparison of the oil temperature from Tests 2 and 10. Test 2 must be  $150 \pm 5^\circ \text{F}$  and Test 10 must be inside of (within)  $10^\circ \text{F}$  of Test 2. For each  $10^\circ \text{F}$  higher difference (Test 10 higher than Test 2), take away .5 gallon per pump cartridge from the leakage rate. For each  $10^\circ \text{F}$  lower difference, add .5 gallon per pump cartridge to the leakage rate.

### Is It Necessary To Make More Tests? If so, Which Circuit(s)?

Make a comparison of the test data with the data on Chart A for the specific machine under test. The percent of flow loss on Chart A is maximum for best performance.

Components that are worn, or not working correctly, are found by their flow differential and percent of flow loss or lower system efficiency. System values for new and rebuilt machines must not be more than the percent of flow loss in the system tests shown on Chart A for the specific machine. The permissible flow differential is a function of machine application. For applications with low travel speeds, the permissible flow differential can be more than for applications with high travel speeds.

If the percent of flow loss is acceptable, the Tee Test is completed.

If the percent of flow loss is not acceptable, the tests for the pump and/or the blocked cylinders must be done.

### Troubleshooting

The following examples are a list of problems and probable reasons. They will aid in finding the

## STEERING TEE TEST PROCEDURE - 1

location of the components that are worn, or not working correctly. Not all probable reasons have an application to all machines.

**PROBLEM:** Setting of the relief valve is higher or lower than given in Test 1. Percent of flow loss for Tests 4 and 5 is 15% to 50% (20% to 50% for 920 and 930 Wheel Loaders).

**PROBABLE REASON:**

Setting for relief valve is not correct and leakage is too high.

**RECOMMENDATION FOR ACTION:**

Make adjustments to the relief valve to get the correct pressure. See the Service Manual for the machine under test. Make a test for leakage in the following problems.

**PROBLEM:** Percent of flow loss for Tests 4 and 5 is 15% or MORE (20% or MORE for 920 and 930 Wheel Loaders).

**PROBABLE REASON:**

- A. Bad pump.
- B. Leakage in the relief valve.
- C. Leakage in one or both of the piston seals for the steering cylinders.
- D. Wear or damage in the valve body or valve spool.
- E. Hand metering pump, unloading valve, selector valve or diverter valve is worn or not working correctly (if so equipped).

**RECOMMENDATION FOR ACTION:**

- A. Do the Pump Test.
- B. If the extra percent of flow loss is not caused by a bad pump, the problem is in the control valve or cylinders. Do the Blocked Cylinder Tests 26, 27 and 28. If the leakage is still too high, the problem is in the control valve. Inspect its components.

**PROBLEM:** Percent of flow loss for Test 4 is 15% or MORE; for Test 5 it is 0 to 15%. (For 920 and 930 Wheel Loaders the percent of flow loss for Test 4 is 20% or MORE; for Test 5 it is 0 to 20%.)

**PROBABLE REASON:**

- A. Wear or damage in the valve body or valve spool.
- B. Adjustment of follow-up linkage is not correct (if so equipped).
- C. Unloading valve or relief valve does not move freely (if so equipped).

**RECOMMENDATION FOR ACTION:**

The problem is in the control valve or linkage. Inspect these components.

**PROBLEM:** Percent of flow loss for Test 5 is 15% or MORE; for Test 4 it is 0 to 15%. (For 920 and 930 Wheel Loaders the percent of flow loss for Test 5 is 20% or MORE; for Test 4 it is 0 to 20%.)

**PROBABLE REASON:**

- A. Wear or damage in the valve body or valve spool.
- B. Adjustment of follow-up linkage is not correct (if so equipped).
- C. Unloading valve or relief valve does not move freely (if so equipped).

**RECOMMENDATION FOR ACTION:**

The problem is in the control valve or linkage. Inspect these components.

### PUMP TEST (CHART B)

This test is used to find the efficiency of the hydraulic pump. Install a Blocking Plate Assembly in the pressure line from the hydraulic pump, or in the return line on the control valve on larger machines. This prevents oil from going through the system. All pump flow now goes through the flow meter.

**NOTE:** On some smaller machines with supplemental steering, the Blocking Plate Assembly is installed on the other side of the diverter valve. Data for the Pump Test will show any leakage in this valve. On larger machines, make sure the brake accumulator is not operating while taking test data.

**WARNING:** Open the manual load valve on the flow meter fully before starting the diesel engine. The relief valve is not part of the circuit for the Pump Test. If the pressure gets too high, it is possible to cause injury to personnel or damage to equipment.

#### Test 14: Pump Flow at Low Pressure (test rpm)

1. Open the manual load valve fully.
2. Start the diesel engine.
3. Run the engine at test rpm.
4. Slowly close the manual load valve to get 100 psi pressure.
5. Write down the oil temperature and flow rate (gpm).

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### Test 15: Pump Flow at High Pressure (test rpm)

1. Run the engine at test rpm.
2. Slowly close the load valve to get 1000 psi pressure.
3. Write down the oil temperature and flow rate (gpm).

### Test 16: Pump Flow at Low Pressure (A test rpm)

1. Run the engine at test rpm.
2. Open the load valve to get 100 psi pressure.
3. Write down the oil temperature and flow rate (gpm).

### Test 17: Pump Flow at High Pressure (A test rpm)

1. Run the engine at Vs test rpm.
2. Slowly close the load valve to get 1000 psi pressure.
3. Write down the oil temperature and flow rate (gpm).

Make a comparison of the test data with the data on Chart B for the specific machine under test. The information on Chart B is the maximum for best performance.

### Troubleshooting

**PROBLEM:** Percent of flow loss for Test 15 is 10% or MORE; for Tests 4 and 5 it is 15% or MORE. (For 920 and 930 Wheel Loaders the percent of flow loss for Test 15 is 15% or MORE; for Test 4 and 5 it is 20% or MORE.)

#### PROBABLE REASON:

Pump is worn and there is leakage in control valve and/or cylinder.

#### RECOMMENDATION FOR ACTION:

Do the Blocked Cylinder Tests to find leakage rate in control valve and/or cylinder. Install a new or rebuilt pump.

**PROBLEM:** Percent of flow loss for Test 15 is 0 to 10%; for Tests 4 and 5 it is 15% or MORE. (For 920 and 930 Wheel Loaders the percent of flow loss for Test 15 is 0 to 15%; for Tests 4 and 5 it is 20% or MORE.)

#### PROBABLE REASON:

Pump is in good condition, but there is leakage in control valve and/or cylinder.

#### RECOMMENDATION FOR ACTION:

Do the Blocked Cylinder Tests to find leakage rate in control valve and/or cylinder.

**PROBLEM:** For vane pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 15 is higher than the flow differential for Test 17 by 0 to 2 gpm.

#### PROBABLE REASON:

Pump is worn.

#### RECOMMENDATION FOR ACTION:

If flow loss is found to be too high for machine application, install a new or rebuilt pump.

**PROBLEM:** For vane pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 15 is higher than the flow differential for Test 17 by 2 gpm or MORE.

#### PROBABLE REASON:

- A. Oil aeration (low oil level, hydraulic oil that is not the correct type, air leak in the suction line for the pump, oil leaks in the tank such as failure of seals or loose connections).
- B. Pump cavitation (restriction in the suction line for the pump, oil viscosity that is not correct).

#### RECOMMENDATION FOR ACTION:

Do Tests 18 through 25 to find if the reason is aeration or cavitation.

**PROBLEM:** For gear pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 17 is higher than the flow differential for Test 15 by 0 gpm or MORE.

#### PROBABLE REASON:

Pump is worn.

#### RECOMMENDATION FOR ACTION:

If flow loss is found to be too high for machine application, install a new or rebuilt pump.

**PROBLEM:** For gear pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 15 is higher than the flow differential for Test 17 by 0 gpm or MORE.

#### PROBABLE REASON:

- A. Oil aeration (low oil level, hydraulic oil that is not the correct type, air leak in the suction line for the pump, oil leaks in the tank such as failure of seals or loose connections).
- B. Pump cavitation (restriction in the suction line for the pump, oil viscosity that is not correct).

#### RECOMMENDATION FOR ACTION:

## STEERING TEE TEST PROCEDURE - 1

Do Tests 18 through 25 to find if the reason is aeration or cavitation.

### Pump Test for Aeration and Cavitation

#### Tests 18 through 25: Aeration and Cavitation Tests

These eight tests are similar. Do the tests as follows:

1. Open the manual load valve fully before starting the diesel engine.
2. Run the engine at rpm indication shown on Chart B.
3. Slowly close the manual load valve to get 1000 psi pressure.
4. Write down the flow rate (gpm) and the oil temperature.
5. Then run the engine at the next rpm indication shown on Chart B (Test 20: rpm indication on Chart, Test 21: rpm indication on Chart, etc.) while keeping the adjustment of the manual load valve at 1000 psi pressure.
6. Write down the flow rate (gpm) and oil temperature for each test.

**CAUTION:** Immediately after stopping the diesel engine, remove the Blocking Plate Assembly from the pressure line for the pump or the return line on the control valve on larger machines. This will prevent any possible damage later.

#### Troubleshooting

**PROBLEM:** For vane pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 15 is 2 gpm or MORE than flow differential for Test 17. Tests 18 through 25 have the same flow differential.

#### PROBABLE REASON:

Oil aeration (low oil level, hydraulic oil that is not the correct type, air leak in the suction line for the pump, oil leaks in the tank such as failure of seals, loose connections or pump cartridge is not installed correctly in pump body).

#### RECOMMENDATION FOR ACTION:

- A. Check oil level and type of hydraulic oil being used.
- B. Check suction line for air leaks [Put foam (like shaving cream) on all connections. The foam will be pulled into the line at any point of leakage.]
- C. Remove cover from hydraulic tank and inspect for oil leak (check above the oil level first).

- D. Disassemble pump and check for correct assembly.

**PROBLEM:** For gear pumps only, the percent of flow loss for Test 15 is 10% or MORE (15% or MORE for 920 and 930 Wheel Loaders). Flow differential for Test 15 is more than 0 gpm higher than the flow differential for Test 17. Tests 18 through 25 have the same flow differential.

#### PROBABLE REASON:

Oil aeration (low oil level, hydraulic oil that is not the correct type, air leak in the suction line for the pump, oil leaks in the tank such as failure of seals, loose connections or pump cartridge is not installed correctly in pump body).

#### RECOMMENDATION FOR ACTION:

- A. Check oil level and type of hydraulic oil being used.
- B. Check suction line for air leaks [Put foam (like shaving cream) on all connections. The foam will be pulled into the line at any point of leakage.]
- C. Remove cover from hydraulic tank and inspect for oil leak (check above the oil level first).
- D. Disassemble pump and check for correct assembly.

**PROBLEM:** Flow differential between each of the Tests 18 through 25 suddenly becomes lower at one test and the flow rate is the same for the remainder of the tests at higher engine speed (rpm). Example: 8 gpm differential between Tests 18 and 19, 19 and 20, 20 and 21, but 1 gpm differential between 21 and 22 and flow rates for Tests 23, 24 and 25 are the same as 22.

#### PROBABLE REASON:

Pump cavitation (restriction in the suction line for the pump).

#### RECOMMENDATION FOR ACTION:

Inspect suction line and tank.

#### BLOCKED CYLINDER TESTS (CHART C)

If the System Tests and Pump Test give an indication of leakage in the control valves and/or cylinders that is not acceptable, do the Blocked Cylinder Tests.

Blocking Plate Assemblies or Caps and Plugs can be put in each of the cylinder lines. For best accuracy, do these tests with the oil temperature approximately 150° F (near the oil temperature for the System Tests and Pump Test).

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**A** WARNING: Install the safety link. Lower all implements to the ground. Move the steering wheel from RIGHT TURN to LEFT TURN several times to release any pressure oil in the cylinder lines. All pressure in the lines must be released or injury to personnel and damage to equipment can result while loosening the lines to install or remove the plate assemblies.

### All Cylinders Blocked

1. Put control levers in HOLD position.
2. Open the manual load valve fully.
3. Start the diesel engine.

### Test 26: System Oil Temperature

1. Turn the steering wheel to the RIGHT TURN position.
2. Run the engine at any rpm with the system pressure at 0 to 100 psi.
3. Write down the oil temperature.

### Test 27 and 28: Leakage Rates

These two tests are similar. Do the tests as follows:

1. With the manual load valve fully open, turn the steering wheel to the RIGHT TURN position.
2. Run the engine at test rpm.
3. Slowly close the manual load valve to get 1000 psi pressure.
4. Write down the flow rate (gpm).
5. Do this procedure again in the LEFT TURN position.

### Test 33: System Oil Temperature

1. Turn the steering wheel to the RIGHT TURN position.
2. Run the engine at any rpm with the system pressure at 0 to 100 psi.
3. Write down the oil temperature.

Find the leakage rate of the cylinders and the leakage rate of the control valves. Use the test information from the System Tests, Pump Test and Blocked Cylinder Tests.

Example: Find the leakage rates in the RIGHT TURN position.

Test 15: flow rate of the pump only.

Test 27: flow rate of pump and control valve.

Test 4: flow rate of pump, control valve and cylinders.

The system components tested in Tests 15 and 27 are the same except for the control valve. Then the difference in flow rates must be the leakage in the control valve (take the test information for Test 27 away from the test information for Test 15).

The system components tested in Tests 27 and 4 are the same except for the cylinders. Then the difference in flow rates must be the leakage in the cylinders (take the test information for Test 4 away from the test information for Test 27).

Make a comparison of the test data with the data on Chart C for the specific machine under test. The information on Chart C is the maximum for best performance.

### Troubleshooting

**PROBLEM:** Tests 27 and 28 give an indication of leakage in one or more of the cylinders.

#### PROBABLE REASON:

- A. Leakage in only one of the cylinders.
- B. Leakage in both cylinders.

#### RECOMMENDATION FOR ACTION:

Do the Blocked Cylinder Test for cylinders on the right side.

**PROBLEM:** Test 27 and 28 give an indication of leakage in the valves.

#### PROBABLE REASON:

- A. Leakage in the relief valve.
- B. Wear or damage in the valve body or valve spool.
- C. Hand metering pump, unloading valve, selector valve or diverter valve is worn or not working correctly (if so equipped).

#### RECOMMENDATION FOR ACTION:

- A. To find the leakage on machines with supplemental steering, use a Blocking Plate Assembly between the diverter valve and the control valve for steering.
- B. Inspect the components of these valves to find the problem.

### Right Side Cylinders Blocked

## STEERING TEE TEST PROCEDURE - 1

If the Blocked Cylinder Tests gives an indication of leakage that is too high in one or more of the cylinders, do the Blocked Cylinder Tests for the Right Side. For best accuracy, turn the steering wheel through several cycles to get the temperature of the oil in the cylinders the same as the temperature of the oil in the hydraulic tank. Make the temperature of the complete system 150° F.

1. Install the safety link.
2. Lower all implements to the ground.
3. Stop the engine.
4. Move the steering wheel from RIGHT TURN to LEFT TURN several times to release any pressure oil in the cylinder lines.
5. Move the steering wheel back to center.
6. Remove the cap for the hydraulic tank to release any pressure and tighten the cap again.
7. Put a Blocking Plate Assembly in the rod end of the right steering cylinder.

### Test 34: System Oil Temperature

1. Open the manual load valve fully.
2. Start the diesel engine.
3. Run the engine at any rpm with the system pressure at 0 to 100 psi.
4. Move the steering wheel to the RIGHT TURN position.
5. Write down the oil temperature.

### Test 35: STEER RIGHT Flow Rate

1. With the manual load valve fully open, move the steering wheel to the RIGHT TURN position.
2. Run the engine at test rpm.
3. Slowly close the manual load valve to get 1000 psi pressure.
4. Write down the flow rate (gpm).

### Test 38: System Oil Temperature

1. Open the manual load valve fully.
2. Run the engine at any rpm with the system pressures at 0 to 100 psi.
3. Move the steering wheel to the RIGHT TURN position.
4. Write down the oil temperature.

**A** WARNING: All pressure in the lines must be released or injury to personnel and damage to equipment can result while loosening the lines to install or remove the plate assemblies.

Find the leakage rates for the right and left cylinders. Use the test information from System Test, Pump Test and Blocked Cylinder Tests.

Example: Find the leakage rate for the steering cylinders.

Test 27: flow rate of pump and control valve.

Test 35: flow rate of pump, control valve and left side cylinder.

Test 4: flow rate of pump, control valve and both cylinders.

The system components tested in Tests 27 and 35 are the same except for the left side cylinder. Then the difference in flow rates must be the leakage in the left side cylinder (take the test information for Test 35 away from the test information for Test 27).

The system components tested in Tests 35 and 4 are the same except for the right side cylinder. Then the difference in flow rates must be the leakage in the right side cylinder (take the test information for Test 4 away from the test information for Test 35). Make a comparison of the test values with the values on Chart C.

### Troubleshooting

**PROBLEM: Leakage is in right steering cylinder.**

**PROBABLE REASON:**

- A. Piston seals are worn.
- B. Loose piston nut.
- C. Damage in cylinder assembly.

**RECOMMENDATION FOR ACTION:**

Disassemble and make repairs to the right steering cylinder.

**PROBLEM: Leakage is in left steering cylinder.**

**PROBABLE REASON:**

- A. Piston seals are worn.
- B. Loose piston nut.
- C. Damage in cylinder assembly.

**RECOMMENDATION FOR ACTION:**

Disassemble and make repairs to the left steering cylinder.



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