# Hydraulic Kit Installation Guide

<table>
<thead>
<tr>
<th>Item</th>
<th>Component</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hose Assembly 3/8&quot; x 84&quot;</td>
<td>F451TC-JC06080606-84</td>
</tr>
<tr>
<td>2.</td>
<td>Hose Assembly 3/8&quot; x 84&quot;</td>
<td>F451TC-JC06060806-84</td>
</tr>
<tr>
<td>3.</td>
<td>Hose Assembly 1/4&quot; x 84&quot;</td>
<td>F451TC-JC06040404-84</td>
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<td>4.</td>
<td>Hose Assembly 1/4&quot; x 78&quot;</td>
<td>F451TC-JC03040404-78</td>
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<td>5.</td>
<td>Hose Assembly 3/8&quot; x 84&quot;</td>
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<tr>
<td>Item</td>
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<tr>
<td>7.</td>
<td>Hose Assembly 3/8” x 168”</td>
<td>F451TC-0306060606-168</td>
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<tr>
<td>8.</td>
<td>Run Tee -6 JIC</td>
<td>6 R6X-S</td>
</tr>
<tr>
<td>9.</td>
<td>Adapter Run Tee -8 JIC</td>
<td>8 R6X</td>
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<tr>
<td>10.</td>
<td>Swivel Nut Elbow -8 JIC</td>
<td>8 C6X-S</td>
</tr>
<tr>
<td>11.</td>
<td>Adapter Reducer -8F x -6M JIC</td>
<td>8-6 TRTXN-S</td>
</tr>
<tr>
<td>12.</td>
<td>Adapter Elbow -4 JIC 37 degrees</td>
<td>4 C6X-S</td>
</tr>
<tr>
<td>13.</td>
<td>Cap -4 ORFS</td>
<td>4 FNL</td>
</tr>
<tr>
<td>14.</td>
<td>Adapter Swivel Nut Elbow -6 JIC</td>
<td>6 C6X-S</td>
</tr>
<tr>
<td>15.</td>
<td>Adapter Run Tee -4 JIC</td>
<td>4 R6X-S</td>
</tr>
<tr>
<td>16.</td>
<td>Cable Ties(^1)</td>
<td>200-0467-01</td>
</tr>
<tr>
<td>17.</td>
<td>Installation Guide Rogator</td>
<td>602-0488-01</td>
</tr>
<tr>
<td>18.</td>
<td>Installation Guide Terragator</td>
<td>602-0499-01</td>
</tr>
</tbody>
</table>

\(^1\) The colored cable ties included in the kit are used to identify the hydraulic hoses. Place identical colored cable ties at the ends of each hydraulic hose to positively identify the hose.

The suggested hose color assignments are as follows:
- Pressure - Red
- Tank - Green
- LS Orbitrol - Blue
- LS Out - Gray
- Steer Right - Yellow
- Steer Left – Orange
200-0457-02 Hydraulic Valve Kit

<table>
<thead>
<tr>
<th>Item</th>
<th>Component</th>
<th>Part Number</th>
<th>Qty</th>
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<tr>
<td>1.</td>
<td>Valve Assembly</td>
<td>500-0287-02</td>
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<tr>
<td>2.</td>
<td>Harness Pressure Transducer</td>
<td>201-0404-01</td>
<td>1</td>
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<td>3.</td>
<td>Pressure Transducer</td>
<td>500-0274-02</td>
<td>1</td>
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</table>
Tools

This list consists of special tools required to complete the installation. A complete set of common installation tools is assumed.

<table>
<thead>
<tr>
<th>Allen Hex Key 1/4”</th>
<th>11/16” open wrench</th>
<th>16mm open wrench</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen Hex Key 3/16”</td>
<td>5/8” open wrench</td>
<td>17mm open wrench</td>
</tr>
<tr>
<td>Allen Key 5/32”</td>
<td>9/16” open wrench (2x)</td>
<td>18mm open wrench</td>
</tr>
<tr>
<td>Allen Hex Key 1/8”</td>
<td>1/2” open wrench</td>
<td>19mm open wrench</td>
</tr>
<tr>
<td>15/16” open wrench</td>
<td>7/16” open wrench</td>
<td>22mm open wrench</td>
</tr>
<tr>
<td>7/8” open wrench</td>
<td>1/2” 12 point ratcheting wrench</td>
<td>24mm open wrench</td>
</tr>
<tr>
<td>13/16” open wrench</td>
<td>15/16” socket wrench</td>
<td>18mm socket wrench</td>
</tr>
<tr>
<td>3/4” open wrench</td>
<td>13mm open wrench</td>
<td>22mm socket wrench</td>
</tr>
<tr>
<td>Breaker bar for 24mm socket</td>
<td>Hacksaw with steel cutting blade</td>
<td>24mm socket wrench</td>
</tr>
<tr>
<td>Torque wrench for 18/24/30mm sockets</td>
<td>Wire cutter small</td>
<td>30mm socket wrench</td>
</tr>
<tr>
<td>#1 Phillips screwdriver</td>
<td>Cleaning brush</td>
<td>5000 psi Pressure Gauge with a Short Hose and 1/8” Test Port Coupler that meets the SAE J1502 standard.</td>
</tr>
<tr>
<td>#2 Phillips screwdriver</td>
<td>Ten foot (3 meter) ladder</td>
<td>Tape measure (12ft minimum)</td>
</tr>
<tr>
<td>Cleaning rags</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supported Vehicles

The following Ag-Chem Rogator models have been confirmed to be compatible with this Hydraulic Installation Kit:

Supported Models

- 864
- 1064
- 1264
- 874, SS874
- 1074, SS1074
- 1274
- 1274C

Overview

⚠️ WARNING

High-Pressure Fluid Hazard
Read this manual before installation. Wear hand and eye protection while performing hydraulic system maintenance. Relieve hydraulic system pressure before servicing the hydraulic system.
These instructions provide the procedure for installing the Novariant hydraulic system for the supported vehicles listed below. There may be some variations in the vehicles depending on the vehicles options.

**Note:** Only technicians trained for hydraulic valve installations should perform the installation procedures in this guide. If the vehicle requires a hydraulic steering valve to be installed, ensure a trained technician is available for the installation.
Steering Valve Installation Procedure Overview

**Note:** You can use a fiberglass cable puller to make it easier to pull the hydraulic hoses and electrical cables through and around the vehicle.

1. Ensure the Steering Valve plug and orifice configuration is correct before installation.

**Note:** Refer to the Steering Valve Configuration section for Steering Valve plug and orifice configuration information.

2. Install the Steering Valve Bracket and Steering Valve on the vehicle.

3. Connect the hoses between the Steering Valve and the vehicle steering system.

4. Check for oil leaks.

5. Adjust the Pressure Relief Valve.

6. Perform a functional test to confirm correct Steering Valve operation.

---

**WARNING**

High-Pressure Fluid Hazard
Read this manual before installation. Wear hand and eye protection while performing hydraulic system maintenance. Relieve hydraulic system pressure before servicing the hydraulic system.
Assemble the Steering Valve

1. Use a 3/16” Allen key to remove the four cover screws.
2. Remove the front cover to access the hose connections, pressure transducer and relief valve.

**Note:** Figure 1 shows the Steering Valve assembly hydraulic connection functions and Table 1 describes hose adapters and fitting sizes.

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**Figure 1 Steering Valve Port Identification**

**Note:** The ports shown in Figure 1 are upside-down relative to the ports shown in the procedure.
### Table 1 Valve Functions and Fitting Sizes

<table>
<thead>
<tr>
<th>Hose Adapter</th>
<th>Fitting Type/Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESS = PUMP PRESSURE</td>
<td>-8 ORFS</td>
</tr>
<tr>
<td>TANK = TANK / RETURN</td>
<td>-6 ORFS</td>
</tr>
<tr>
<td>LS ORBITROL = LS FROM ORBITROL</td>
<td>-4 ORFS</td>
</tr>
<tr>
<td>LS OUT = LS (to Priority Valve) -S</td>
<td>-4 ORFS</td>
</tr>
<tr>
<td>LEFT = LEFT STEERING CYLINDER</td>
<td>-6 ORFS</td>
</tr>
<tr>
<td>RIGHT = RIGHT STEERING CYLINDER</td>
<td>-6 ORFS</td>
</tr>
<tr>
<td>GP = DIAGNOSTICS PORT</td>
<td>1/8” (SAE J1502)</td>
</tr>
<tr>
<td>TRANS = PRESSURE TRANSDUCER SAE</td>
<td>-4 ORB.</td>
</tr>
</tbody>
</table>

### Steering Valve Configuration

The Steering Valve does not require any special configurations or plug and orifice changes before installing on the Rogator 64/74 series when connected directly to the steering circuit as described in this manual. The Steering Valve can be installed and connected to the Orbitrol hoses with the factory default plug and orifice settings. Table 2 shows the correct internal plug configurations in positions 13A, 13B, 13C. The plug position identification are stamped on the valve block.

**Note:** Do not install this Steering Valve on other vehicles without the appropriate installation manual. Incorrect Steering Valve configuration and the wrong hose connections on other types of steering systems can cause immediate severe pump damage.

### Table 2 Plug and Orifice Configuration Summary

<table>
<thead>
<tr>
<th>Configuration</th>
<th>13A</th>
<th>13B</th>
<th>13C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory Default Configuration</td>
<td>Plug</td>
<td>Open</td>
<td>Plug</td>
</tr>
<tr>
<td>Orbitrol Hookup Installation</td>
<td>Plug</td>
<td>Open</td>
<td>Plug</td>
</tr>
</tbody>
</table>

**Note:** Valves manufactured after November 2013 do not have plug 13C.

### Steering Valve Preparation Procedure

**Note:** Valves manufactured after November 2013 do not have plug 13C.
**Note: Valves manufactured after November 2013 do not have plug 13C.**

Steering Valve Preparation Procedure

1. Remove the front valve cover using a 3/16” hex key to loosen the four screws.

2. Identify the three threaded plugs.

3. Identify the large external access plug identified in position 13B.

4. Remove the external plug in position 13B using a 1/4” hex key.

5. Confirm there is no internal plug installed in position 13B.

6. If present, remove the internal plug in the 13B position using a 1/8” hex key.

7. Re-install the large external plug in position 13B.

8. This concludes the plug and orifice verification. The valve is now ready for vehicle installation.

---

**Install the Steering Valve Bracket**

1. Locate the two holes to be used in securing the Steering Valve bracket.

**Note:** The exact mounting position may vary depending on the sprayer model and existing accessories. The Steering Valve is supplied with two universal valve brackets that fit most machines. The Steering Valve bracket shown already has the Steering Valve attached.
2. Secure the Steering Valve bracket to the sprayer frame using two bolts on existing holes.

**Note:** The bracket and bolts are provided in the installation kit.

3. Secure the Steering Valve onto the Steering Valve bracket using four 5/16” hex screws.

4. Tighten the four screws using a 1/2” ratchet wrench.

5. Examine the correctly mounted Steering Valve shown here.

---

**Identify the Priority Valve Ports**

The Pressure and Load Sense hoses are connected to the sprayer at the Priority Valve. The Priority Valve is located along the inside of the right side frame. You must identify the Priority Valve ports before connecting the hydraulic hoses. Refer to Figure 2 for Priority Valve port identification. The port ID is also cast on the Priority Valve body.

**Note:** On some sprayer models the Priority Valve is located on the transmission housing left side. This location may require different hose routing and a different Steering Valve mounting position.
Hydraulic Hose Connection Procedures

Figure 3 and Figure 4 show the hydraulic connections before and after installation. You can refer to these diagrams as you are connecting the hydraulic components. The hydraulic hose connection procedures are contained in the following sub-sections:

• Tank Hose Connection

  • Connect the Pressure Hose
  • Connect the Steering Valve Right Steering Hose
  • Connect the Steering Valve Left Steering Hose
  • Connect the Load Sense Out Hose
  • Connect the Orbitrol Load Sense Hose
Figure 3  Hydraulic Hose Connection Diagram (Before AutoSteer Installation)
Connect the Tank Hose

1. Remove the Tank hose (Hose 4 in Figure 4) from the Tank port on the filter manifold under the sprayer.
2. Install a -8 JIC Run Tee on the Tank port on the filter manifold.
3. Connect the original Tank hose to the Run Tee.
4. Connect the Tank hose (Hose 7 in Figure 4) from the TANK port on the Steering Valve to the Run Tee just installed on the Tank port.

5. Connect the Tank hose (Hose 7 in Figure 4) to the TANK port on the Steering Valve.
6. Check every hose individually and confirm that both ends are connected to the correct ports.
7. Refer to the hose diagram in Figure 4 to ensure proper connection.

**Note:** The wrong hose connections on the Tank port will prevent correct Relief Valve operation and may also damage the Steering Valve.

8. Tighten all hose fittings and adapters.
9. Check and secure all hoses using nylon cable ties.

**Note:** To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.
Connect the Pressure Hose

1. Identify the CF port (Hose 3 in Figure 4) on the Priority Valve.
2. Remove the Steering Pressure Hose (Hose 3 in Figure 4) from the Priority Valve CF port.
3. Install a -8 JIC Run Tee on the CF port.
4. Connect the original Pressure hose back on the Run Tee.
5. Install an elbow adapter and JIC reducer on the side of the Run Tee.
6. Connect the Pressure hose (Hose 6 in Figure 4) to the JIC reducer on the Run Tee.
   **Note:** A JIC reducer is required to connect the smaller -6 hose fitting to the larger -8 Run Tee.
7. Connect the Pressure hose (Hose 6 in Figure 4) to the PRESS port on the Steering Valve.
   **Note:** The Pressure port on the Steering Valve is the largest port and uses a size 8 hose adapter.
8. Check every hose individually and confirm that both ends are connected to the correct ports.
9. Refer to the hose diagram in Figure 4 to ensure proper connection.
10. Tighten all hose fittings and adapters.
11. Check and secure all hoses using nylon cable ties.
   **Note:** To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.
Connect the Steering Valve Right Steering Hose

1. Disconnect the Right Steer hose (Hose 1 in Figure 2-4) on the steering cylinder located on the left side of the sprayer.
2. Install a Run Tee and reconnect the Right Steer hose to the Run Tee.
3. Install an elbow adapter.
4. Connect the Right Steer hose (Hose 10 in Figure 4) plus the longer extender hose (Hose 12 in Figure 4).
5. Connect the Right Steer hose to the Steering Valve RIGHT port.
6. Check every hose individually and confirm that both ends are connected to the correct ports.
7. Refer to the hose diagram in Figure 4 to ensure proper connection.
8. Tighten all hose fittings and adapters.
9. Check and secure all hoses using nylon cable ties.

Note: To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.
Connect the Steering Valve Left Steering Hose

1. Disconnect the Right Steer hose (Hose 2 in Figure 4) on the steering cylinder located on the left side of the sprayer.
2. Install a Run Tee and reconnect the Left Steer hose to the Run Tee.
3. Install an elbow adapter.
4. Connect the Left Steer hose (Hose 11 in Figure 4).

Note: An extender hose (Hose 13 in Figure 4) provided in the hose kit must be installed to reach the cylinder.

5. Connect the Left Steer hose to the Steering Valve LEFT port.
Connect the Steering Valve Left Steering Hose

Note: A pair of extender hoses are provided in your hose kit to reach the right and left steering cylinders. Use the longer extender hose to reach the steering cylinder that is furthest from the Steering Valve. Route hoses along the vehicle frame in a protected position and secure using cable ties.

6. Check every hose individually and confirm that both ends are connected to the correct ports.
7. Refer to the hose diagram in Figure 4 to ensure proper connection.
8. Tighten all hose fittings and adapters.
9. Check and secure all hoses using nylon cable ties.

Note: To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.

Connect the Load Sense Out Hose

1. Disconnect the original Load Sense hose (Hose 5 in Figure 4) from the Priority Valve top.

Note: The original Load Sense hose will be connected to the Load Sense Orbitrol connection on the Steering Valve later in the installation process. Refer to the Orbitrol Load Sense Hose Connection section of this manual for the steps to connect the original Load Sense hose.
2. Loosen the Load Sense elbow adapter on the Priority Valve and rotate it towards the Steering Valve Load Sense hose for better hose routing.

3. Tighten the elbow adapter after final adjustments.

4. Connect the opposite LS OUT hose end (Hose 8 in Figure 4) to the Steering Valve LS OUT port.

5. Check every hose individually and confirm that both ends are connected to the correct ports.

6. Refer to the hose diagram in Figure 4 to ensure proper connection.

**Note:** The wrong hose connections on the Tank port will prevent correct Relief Valve operation and may damage the Steering Valve.

7. Tighten all hose fittings and adapters.

8. Check and secure all hoses using nylon cable ties.

**Note:** To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.
Connect the Orbitrol Load Sense Hose

1. Connect the LS ORBITROL (Hose 9 in Figure 4) to the machine’s original Load Sense hose (Hose 5 in Figure 4) that was previously disconnected from the Priority Valve.

   **Note:** The LS Orbitrol hose will have a male JIC fitting on one end to mate with the vehicle’s Load Sense hose.

   **Note:** Once this hose is connected, the Orbitrol Load Sense port is connected directly to the Load Sense Orbitrol port on the Steering Valve. You may confirm this important connection by following the Load Sense hose from the Orbitrol to the LS ORBITROL port on the Steering Valve.

2. Connect the LS ORBITROL hose opposite end (Hose 9 in Figure 4) to the Steering Valve LS ORBITROL port.

3. Check every hose individually and confirm that both ends are connected to the correct ports.

4. Refer to the hose diagram in Figure 4 to ensure proper connection.

5. Tighten all hose fittings and adapters.

   **Note:** To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.
Install the Pressure Transducer

1. Identify the Pressure Transducer port on the Steering Valve. It is identified as TRANS.
2. Remove the plastic plug before installing the Pressure Transducer.
3. Check if an o-ring seal is correctly installed around the top of the Pressure Transducer threads.

**Note:** Oil leakage will occur if an o-ring is not installed.

4. Install the threaded Pressure Transducer into the port identified as “TRANS.”
5. Tighten the Pressure Transducer using a 3/4” wrench. Do not over tighten.

6. Connect the short transducer adapter harness to the Pressure Transducer and to the 10-pin connector on the SA Module Harness.
7. Connect the 4-pin connector to the SA Module Harness connector.
8. Check every hose individually and confirm that both ends are connected to the correct ports.
9. Refer to the hose diagram in Figure 4 to ensure proper connection.

**Note:** The wrong hose connections on the Tank port will prevent correct Relief Valve operation and may damage the Steering Valve.

10. Tighten all hose fittings and adapters.
Install the Pressure Transducer

11. Check and secure all hoses using nylon cable ties.

Note: To avoid hose damage, hoses must not drop below the sprayer frame and must not contact moving parts or hot parts such as exhaust manifolds.

Steering Valve Installation Checklist

1. The valve bracket bolt is tight.
2. The mounting bolts that secure the valve to the bracket are tight.
3. The PRESSURE hose is connected to correct port on AutoSteer Valve and power beyond pressure port.
4. The TANK hose is connected to correct port on AutoSteer valve and power beyond tank/return port.
5. The LS-OUT hose is connected to correct port on AutoSteer valve and the power beyond load sense port.
6. The LS ORBITROL hose is connected to correct port on the AutoSteer valve and the orbitrol load sense port.
7. The RIGHT steer hose is connected to the correct port on the AutoSteer valve and teed into the steer right line.
8. The LEFT steer hose is connected to the correct port on the AutoSteer valve and teed into the steer left line.
9. The Pressure Transducer has been installed and tightened.
10. All other hose fittings are tight.
11. Checked that all hose and cables have been routed so they will not be damaged by moving parts or foreign objects.
12. SA Module Harness connected to the two Steering Valve connectors.
13. 5000psi pressure gauge is installed on the Steering Valve test port.

Post System Installation Procedures

This section provides information in the following sub-sections:

- Hydraulic Leak Test
- Create New Vehicle
- Pressure Relief Valve Adjustment Procedure

Once the entire AutoSteer system, including the Display and Display Harnesses, have been installed on the vehicle, the procedures and notes provided in this section must be followed to complete the installation and prepare the vehicle for full AutoSteer capabilities.
Note: Always perform these steps after the complete installation or system damage may occur and/or poor performance may occur. DO NOT START THE VEHICLE BEFORE PERFORMING A LEAK TEST.

Hydraulic Leak Test

On completion of installing the entire AutoSteer system including the Roof Module and Display, the system needs to be checked for leaks. Follow the procedure below to check for leaks.

**WARNING**

High-Pressure Fluid Hazard

Read and understand the vehicle’s user manual before installation. Wear hand and eye protection while performing hydraulic system maintenance. Relieve hydraulic system pressure before servicing the hydraulic system.

**WARNING**

Prior to starting the vehicle, verify all people and equipment are clear from around the vehicle and the AutoSteer system is powered down. The vehicle could move unexpectedly and cause injury or death to bystanders.

Note: The following steps need to be performed after the complete AutoSteer system has been installed, the AutoSteer System has powered up (BUT NOT THE VEHICLE), and the vehicle has been created in the AutoSteer system.

After the entire AutoSteer system installation has been completed, the system needs to be checked for leaks. Follow the procedure below to check for leaks.

Note: If an oil leak is noticed during any part of this test, immediately shut down the vehicle and repair the leak.

1. Clear any bystanders away from the vehicle.
2. Put the vehicle into Park and/or set the park brake to prevent the vehicle from moving.
3. Turn the vehicle over for a few seconds and if the vehicle starts, immediately shut it down.
4. Walk around the vehicle and check all the hydraulic fittings that were opened. Look for any oil leaks.
5. Once any leaks have been repaired, or if none are found, start the vehicle again and let it run at a low idle.
6. Take the vehicle out of Park and/or remove the parking brake. Turn the steering wheel manually to the right and left stops two or more times to get any air out of the hoses.
7. Confirm the vehicle turns in the correct direction when the steering wheel is turned manually.
8. Confirm the steering system behaves the same as it did prior to installing the AutoSteer System. Measure the times it takes to manually turn the steering wheel from full left to right and full right to left and compare to the times recorded before the installation. If the times are different, determine why there is a difference and repair.
9. Put the vehicle back into Park and/or reset the parking brake. Shut down the vehicle, walk around it again, and check for any hydraulic leaks.
10. Once any leaks have been repaired, or if none are found, start the vehicle again and let it run at a low idle.

11. Take the vehicle out of Park and/or remove the parking brake and leave the vehicle running.

12. Power up the AutoSteer system and navigate to the steering components test screen. If the safety screen requirements have been met, press the Continue or Accept button.

13. Press the Hard Right and the Hard Left buttons several times to force the Steering Valve to turn the steering wheels or steering mechanism to the full right and full left positions and get the air out of the lines.

14. Verify that the vehicle turns in the correct direction it is commanded. Measure the time it takes the AutoSteer System to turn the steering wheel from full left to right and full right to left and compare to the times recorded to the times for manual movement. It should not take more than 3 to 4 seconds to go from lock to lock.

**Note:** If the wheels turn in the wrong direction, the hoses were attached to the wrong ports on the Steering Valve or to the incorrect steer lines. The steer hoses need to be switched.

15. Power down the Display, put the vehicle into Park and/or reset the parking brake, and shutdown the vehicle.

16. Once again check the vehicle for hydraulic leaks and repair any that are found.
Load Sense Pressure Relief Valve Adjustment

Note: Do not start the vehicle until after the Hydraulic Leak Test has been performed on the vehicle.

The Steering Valve has a built-in Load Sense Pressure Relief Valve that limits the maximum pump pressure when using the AutoSteer system. The Load Sense Pressure Relief Valve must be adjusted after the entire AutoSteer system has been installed and the system has been checked for hydraulic leaks.

Note: Always shut down the vehicle prior to adjusting the Load Sense Pressure Relief Valve adjustment screw.

Load Sense Pressure Relief Valve Adjustment

1. Ensure that the vehicle is still in Park and/or the park brake is set to prevent the vehicle from moving and the engine is off.
2. Clear any bystanders from around the vehicle to prevent anyone getting injured when the steering wheels are moved in the following steps.
3. Attach a short extension hose to the diagnostics port labeled GP on the Steering Valve. Attach a 5000 psi pressure gauge to the extension hose.
4. With a 1/2” wrench and 5/32” Allen wrench, loosen the jam nut holding the pressure relief valve adjustment screw.

**Note:** This illustration shows the Steering Valve with the hoses disconnected for clarity. The Steering valve must be fully connected to the vehicle to adjust the pressure relief valve.

1. Turn the adjustment screw counter-clockwise two turns.
2. Start the vehicle and leave the engine at a low idle.
3. Check the standby pump pressure shown on the pressure gauge. The standby pressure should be around 350 PSI (24 Bar).

**Note:** If the standby pump pressure is zero or less than 100 PSI (7 Bar), the Pressure and Return/Tank hoses may have been inverted. Confirm the hoses have been attached properly before continuing.

If the standby pump pressure is above 1000 PSI (69 Bar), it is too high. Determine what is causing the pressure to spool up and repair before moving on. Two most likely causes are that some of the hoses have been inverted or an incorrect orifice or plug has been installed in the Steering Valve.

4. Record the actual standby pressure: _____ PSI (Bar).
5. Power up the Display.
6. Follow the instructions in the Display user manual to navigate to the Vehicle window from the AutoSteer Setup screen. Select Steering Components; then select Hydraulic Valve. If the safety screen requirements have been met, press the Continue button.
7. Press the Steer Right button to command the wheels to turn to the right. Allow the steering axle to reach the right stop and hold it there.
8. The maximum pump pressure allowed by the Steering Valve will be displayed on the pressure gauge.
9. Adjust the pressure relief valve with a 5/32” Allen wrench until the pressure reads 2400 PSI (165 Bar) while the AutoSteer system is commanding a Right turn.

**Note:** Turn off the engine before adjusting the pressure relief valve. Do not adjust the pressure relief valve with the engine running as there is a chance that a person could get injured if the steering wheels move while working on the valve.

**Note:** Turn the adjustment screw clockwise to increase the pressure and counter-clockwise to reduce the pressure.

10. Once the pressure relief valve has been adjusted properly, retighten the jam nut with a 1/2” wrench while holding the adjustment screw with a 5/32” Allen wrench to lock it into place.
11. Record the final maximum pressure the pressure relieve valve is set to: _____ PSI (Bar).
12. Press the Stop button and confirm that the pressure drops back to the standby pressure within a second.

**Note:** If the pump pressure remains high after pressing the Stop button, the pump is remaining stroked up. Confirm that the Orifice has been installed in port 13A and that the Orifice hole is not plugged.

13. Shut down the Display, turn off the engine, and remove the pressure gauge from the Steering Valve by sliding the sleeve on the quick release coupler.

14. Replace the Steering Valve cover on the valve and tighten the four Allen screws with 3/16” Allen wrench.