

# Automated Steering Hydraulic Installation Kit

P/N: ED-SC4640

Fits Spra Coupe Models:

**3440**

**3640**

**4440**

**4640**

**4450**

**4650**



## Overview

A series of equipment specific hydraulic installation kits has been developed to work in conjunction with your automated steering system. This kit contains the necessary components and instructions to install automated steering on the Spra Coupe models listed above. Please read this manual thoroughly before beginning installation.

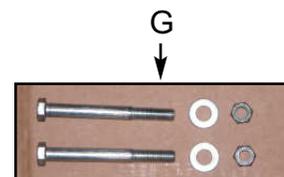
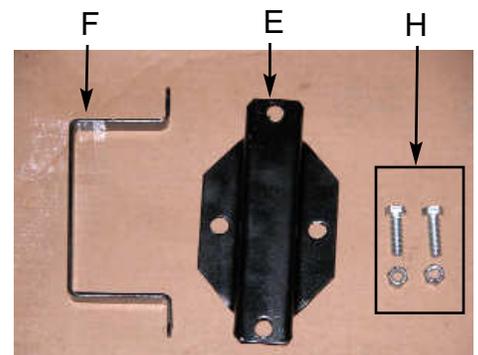
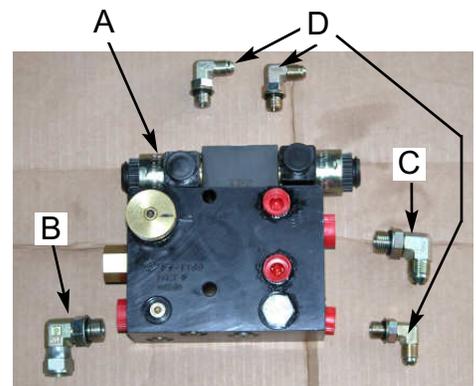
## Sprayer Preparation

Before attempting to install hydraulics, park the sprayer on a clean level floor with adequate clearance to work all around.

## Kit Contents

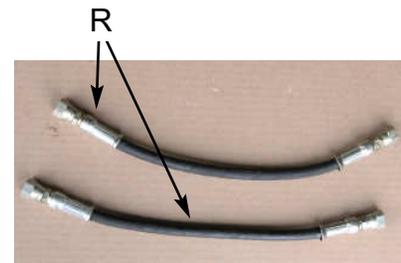
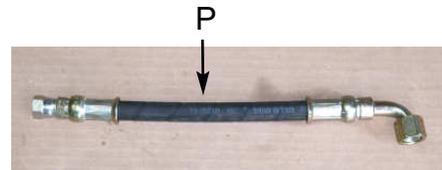
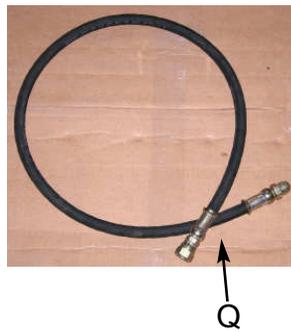
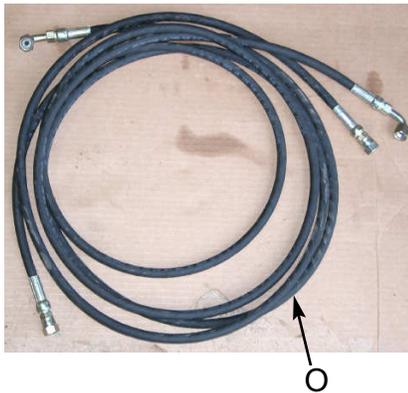
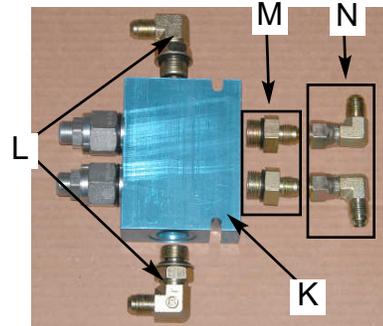
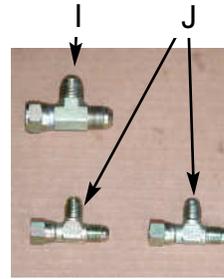
Unpack the installation kit and identify the required parts as shown.

| REF                                       | P/N      | QTY | DESCRIPTION   |
|---|----------|-----|---|
| A   | 760-0005 | 1   | Assy, Hyd. Valve Block - OC                           |
| <b>Bag #1 of 4 includes B, C, &amp; D</b> |          |     |   |
| B   | 760-2066 | 1   | Adapter, Hyd. 90 Elbow - #8maleORB x #8femJICswivel   |
| C   | 760-2080 | 1   | Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB        |
| D   | 760-2058 | 3   | Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB        |
| E   | 640-0011 | 1   | Hyd. Block Mnt  |
| F   | 640-0012 | 1   | Hyd. Block Mnt Hammer Strap                           |
| <b>Bag #2 of 4 includes G &amp; H</b>     |          |     |   |
| G   | 675-2005 | 2   | Bolt - 3/8NC x 3-1/4" Gr5, ZP                         |
|   | 678-1054 | 2   | Washer, Narrow Flat - 3/4"OD x 13/32ID x 1/16"thk, ZP |
|   | 676-1035 | 2   | Nut, NyLock - 3/8NC ZP                                |
| H   | 675-2007 | 2   | Bolt, 3/8NC x 3/4" Gr5 ZP                             |
|   | 676-1035 | 2   | Nut, NyLock - 3/8NC ZP                                |



## Kit Contents (cont.)

| REF                                       | P/N      | QTY | DESCRIPTION  |
|---|----------|-----|--|
| <b>Bag #3 of 4 includes I &amp; J</b>     |          |     |  |
| I   | 760-2077 | 1   | Adapter, Hyd. Run Tee - #8 JIC                             |
| J   | 760-2054 | 2   | Adapter, Hyd. Run Tee - #6 JIC                             |
| <b>Bag #4 of 4 includes L, M, &amp; N</b> |          |     |  |
| L   | 760-2061 | 2   | Adapter, Hyd. 90 Elbow - #6maleJIC x #8maleORB             |
| M   | 760-2060 | 2   | Adapter, Hyd. - #6maleJIC x #8maleORB                      |
| N   | 760-2055 | 2   | Adapter, Hyd. 90 Elbow - #6maleJIC x #6femJICswivel        |
| O   | 760-1082 | 2   | Hose, Hyd. - 1/4" x 116", #6femJICswiv x #6femJICswiv 90EL |
| P   | 760-1083 | 1   | Hose, Hyd. - 3/8" x 12", #6femJICswiv x #8femJICswiv 90EL  |
| Q   | 760-1084 | 1   | Hose, Hyd. - 3/8" x 42", #8femJICswiv x #8maleJIC          |
| R   | 760-1011 | 2   | Hose, Hyd. - 1/4" x 14", #6femJICswivel Both Ends          |
| S   | 051-0144 | 1   | Cable, Interface - 10 ft.                                  |
|   | 677-2001 | 20  | Tie Strap, 11" Heavy Duty, Not Shown                       |
|   | 710-0053 | 1   | Kit, Steering Wheel Switch, Not Shown                      |



**WARNING:**

**HIGH-PRESSURE FLUID HAZARD.** Hydraulic oil may be hot and under high pressure. To prevent serious injury or death: Relieve system pressure and allow to cool

before repairing or disconnecting. Wear proper hand and eye protection when searching for leaks, using wood or cardboard instead of hands. Keep all hydraulic components in good repair.

**IMPORTANT:**

**PREVENT HYDRAULIC SYSTEM CONTAMINATION.**

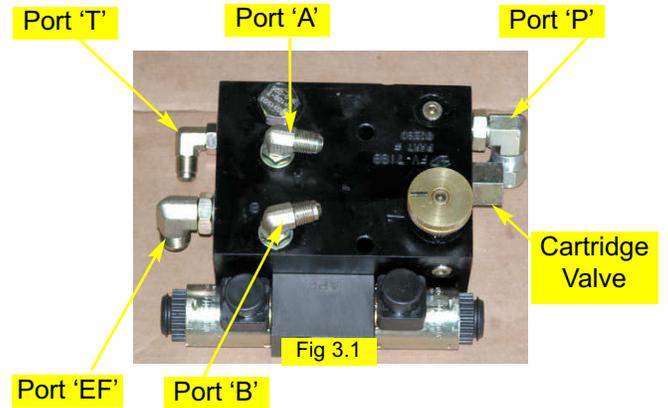
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake Clean'. If a fitting is to be cleaned internally, the o-ring should first be removed and cleaned with a fiberless cloth.

# INSTALLATION

## 1. Prepare Hydraulic Control Block:

Make sure the hydraulic control block is clean and dust free. Install elbows (**D**) into the **T**, **A**, and **B** ports of the hydraulic control block. Install elbow fitting (**C**) into the **EF** port of the hydraulic control block and elbow fitting (**B**) into the **P** port. (Figure 3.1)

**Note:** To install the elbow fitting (**B**) into the **P** port of the hydraulic control block, the cartridge valve must be removed from the end of the block. Remove the cartridge, install the elbow, and reinstall the cartridge.



## 2. Mount Hydraulic Control Block:

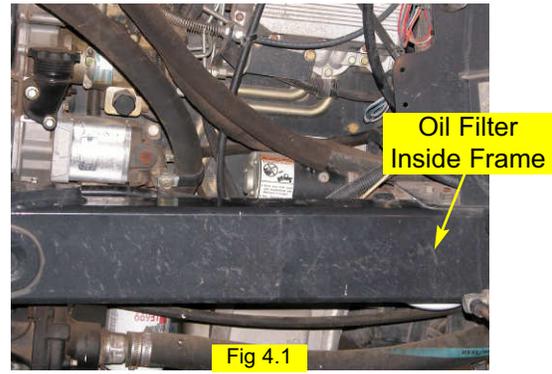
Install the hydraulic mounting bracket (**E**) to the machine frame on the left side in front of the cab using hardware group (**H**) and hammerstrap (**F**). Using the provided mounting hardware in group (**G**) attach the prepared hydraulic control block to the mounting bracket in the orientation shown. (Figure 3.2)



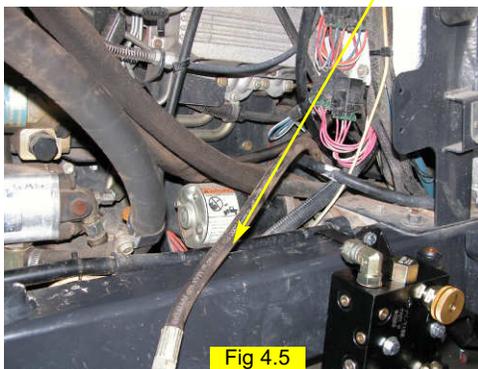
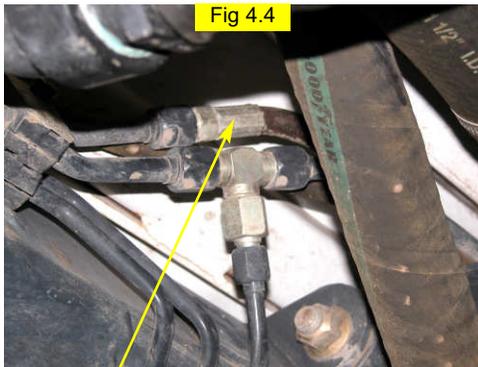
#### 4. Install Pressure, Tank, and Excess Flow Fittings:

The hydraulic control block will return oil to tank via the hydraulic oil filter body on the left side of the machine. (Figure 4.1) Locate the rubber line attached to the hydraulic filter body near the starter. (Figure 4.2) Remove this line and install the provided run-tee (**I**) as shown. (Figure 4.3)

From underneath the left side of the machine, locate the pressure supply line for the boom hydraulics. (Figure 4.4) Remove the rubber portion of the pressure line and re-route it forward to attach to the **P** port of the hydraulic control block. (Figure 4.5)



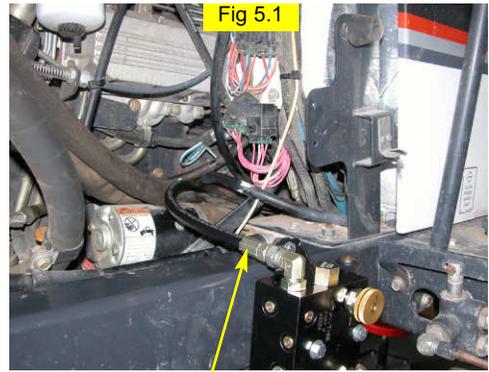
Tank Installation Location



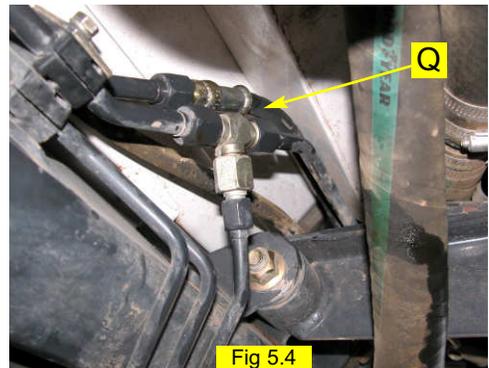
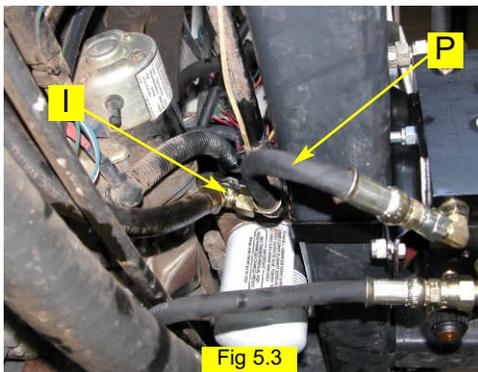
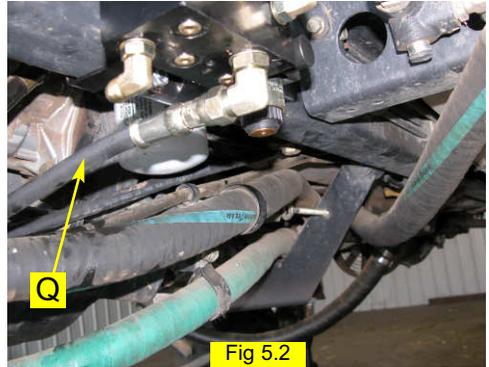
### 5. Install Pressure, Tank, and Excess Flow Hoses:

Attach the re-routed pressure supply line from the machine to the hydraulic control block. (Figure 5.1). Install the supplied hose (Q) from the EF port of the hydraulic control block to the steel pressure supply line underneath the machine. (Figure 5.2 and 5.4) Install the supplied hose (P) between the T port of the hydraulic control block to the branch of the run-tee (I) installed at the hydraulic filter body. (Figure 5.3)

Tighten all hydraulic connections and use the provided heavy tie straps to secure all hoses for problem free operation.

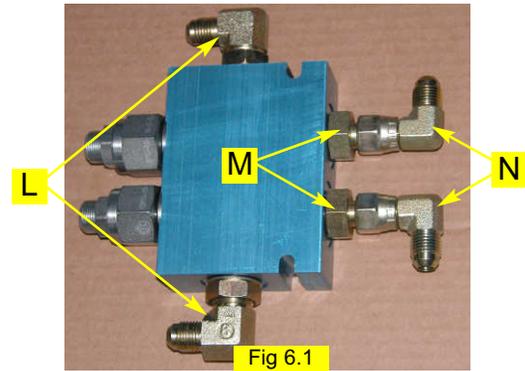


Pressure Supply Line



**Assemble the Counter-Balance Valve block:**

Install elbow fittings (L) into V1 and V2 ports of the counter-balance valve block (K) as shown. Install straight adapter fittings (M) into C1 and C2 ports of the counter-balance valve block (K) and attach elbow fittings (N). (Figure 6.1)



**6. Install Steering Output Fittings and Hoses:**

Locate the steering lines in front of the machine under the hood. (Figure 6.2) Remove the steering lines and insert the provided run-tees (J). Use plastic caps on hose ends to prevent excess leakage.

Route the provided output hoses (O) up from the A and B ports of the hydraulic control block and attach the elbow hose ends to the branches of the run-tees (J). (Figure 6.3 - 6.7)

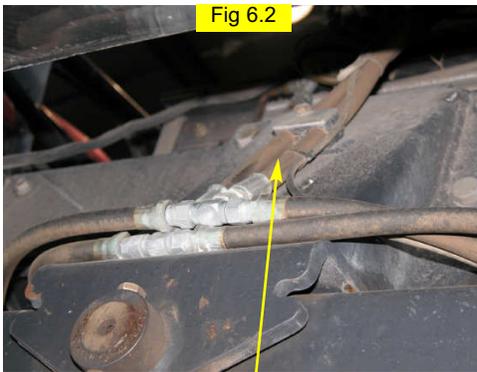


Fig 6.2

Machine Steering Lines

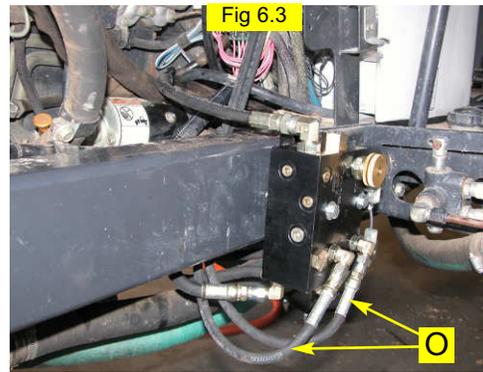


Fig 6.3

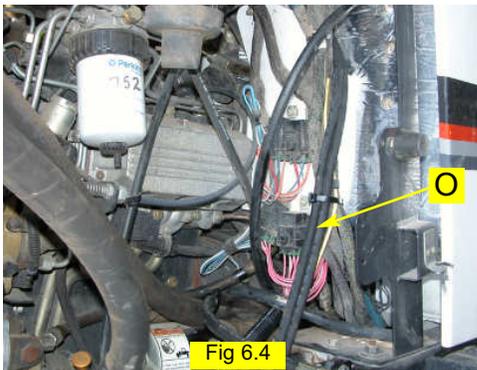


Fig 6.4

Hose Routing

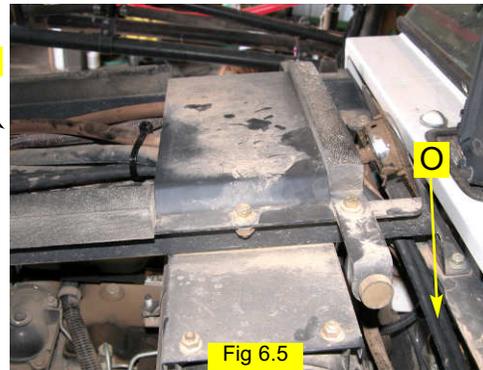


Fig 6.5

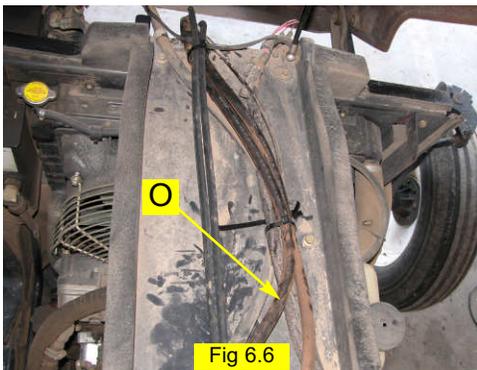


Fig 6.6

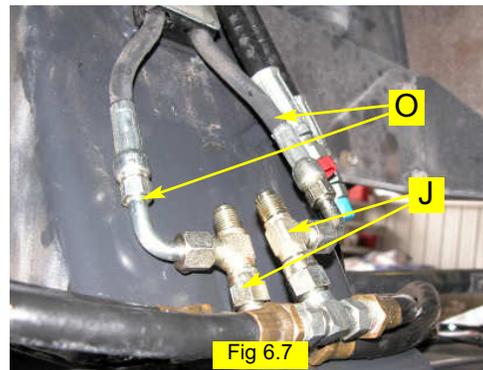
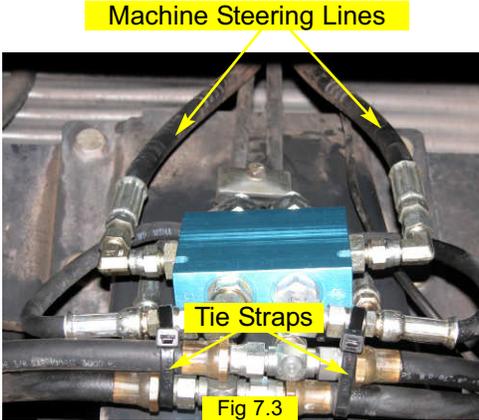
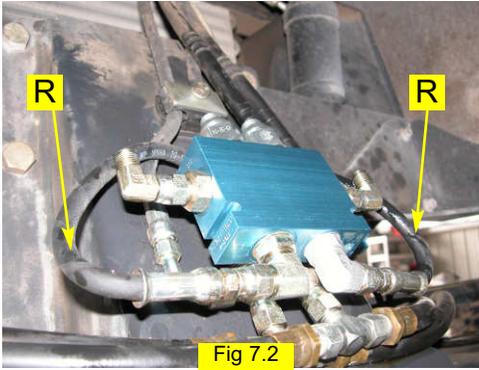
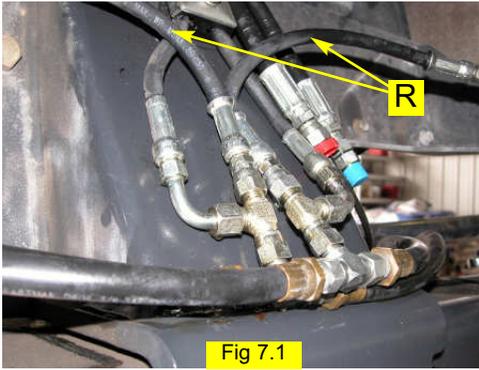


Fig 6.7

**6. Continued...**

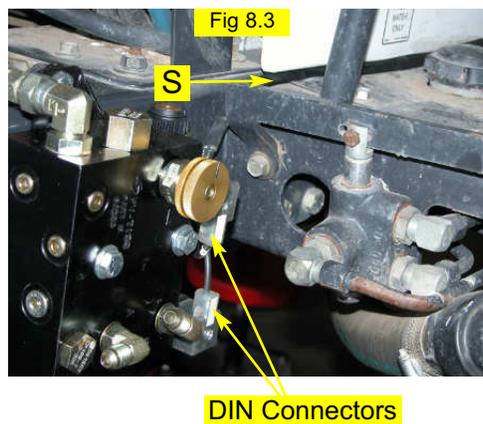
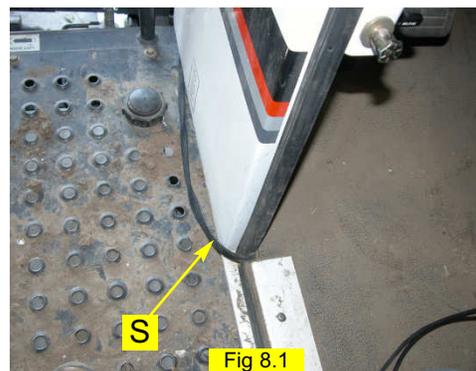
Attach the provided hoses (**R**) between the ends of the run-tees and the **C1** and **C2** ports of the counter-balance valve block. (Figure 7.1 and 7.2) Attach the machine steering lines to the **V1** and **V2** ports of the assembled counter-balance valve block. (Figure 7.3) Be sure the ports, **C1** and **C2**, are attached to the corresponding run-tee installed in place of the machine steering lines attached at **V1** and **V2**. (Figure 7.3)

Tighten all hydraulic connections. Use the heavy tie straps provided to secure all hoses and the counter-balance valve block for problem free operation.



## 7. Install the Valve Control Cable:

Route the hydraulic valve control cable (**S**) into the cab under the door seal plate. (Figure 8.1) The valve cable can be routed across the cab under the floor mat to the desired location. (Figure 8.2) Attach the DIN connectors to the hydraulic control block as shown. (Figure 8.3)



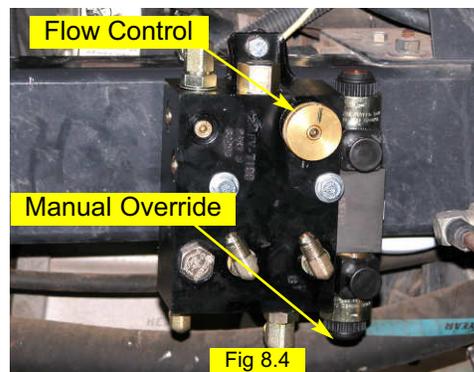
## 8. Verify Operation and Set Steering Control Rate:

Cleanup the installation area around the sprayer and make certain that it is safe to operate. Start the sprayer and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

Adjust the hydraulic oil flow control knob to a starting position of **3 turns** from completely closed. To adjust the knob, turn clockwise to reduce flow, counter-clockwise to increase flow. The knurled locking nut should be tightened against the cartridge face to maintain desired setting.

The coils on the control block have manual push button overrides. Push either manual override to move the sprayer steering linkage all the way to one extreme. Count the number of seconds for the sprayer steering linkage to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 8.4)

Adjust the hydraulic oil flow control knob to achieve an end to end steering cycle time of approximately **15 seconds**.



## 11. Complete Electronic Installation and Setup:

Refer to the owner's manual supplied with your automated steering system to complete the electronic installation and setup.



**WARNING:**

**PINCH POINT HAZARD.** To prevent serious injury or death, avoid unsafe practices while manually operating hydraulic steering circuit. Keep others away and stay clear of mechanical steering linkages.