

# Automated Steering Hydraulic Installation Kit

P/N: ED-SPX

## Fits Sprayer Models:

**Patriot WT / 150 / XL** (1997-present)

**SPX3200-B** (-2000, SN#-JFG0003823)

**SPX3150** (-2002)

**SPX3185** (-2002, SN#-JFG0004213)



## Overview

A series of equipment specific hydraulic installation kits have 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 Tyler and CaseIH sprayer models listed above. Please read this manual thoroughly before beginning installation.



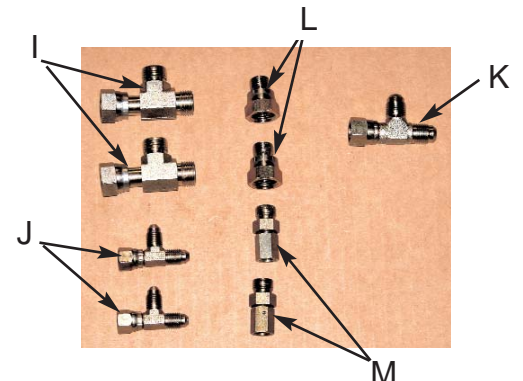
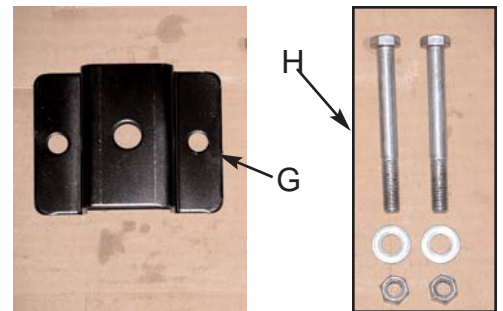
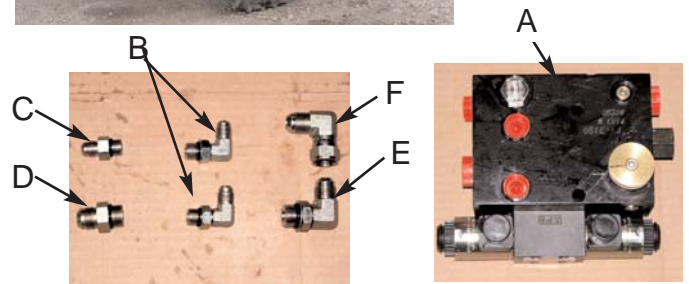
## Machine Preparation

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

## Kit Contents

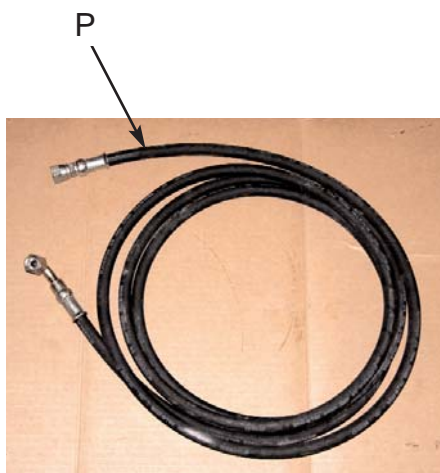
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0005	1	Assy, Hyd. Valve Block - OC
<b>Bag #1 of 3 includes B, C, D, E, &amp; F</b>			
B	760-2058	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	760-2056	1	Adapter, Hyd. - #6maleJIC x #6maleORB
D	760-2079	1	Adapter, Hyd. - #8maleJIC x #8maleORB
E	760-2080	1	Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB
F	760-2078	1	Adapter, Hyd. 90 Elbow - #8maleJIC x #8femJICswiv
G	640-0020	1	Hyd. Block Mnt - SPX3200
<b>Bag #2 of 3 includes H</b>			
H	675-2005	2	Bolt, 3/8"NC x 3-1/4" Gr5 ZP
	678-1054	2	Washer, Narrow Flat - 3/4"OD z 13/32"ID x 1/16"thk ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP
<b>Bag #3 of 3 includes I, J, K, L, &amp; M</b>			
I	760-2046	2	Adapter, Hyd Run Tee - #6 ORFF
J	760-2035	2	Adapter, Hyd Run Tee - #4 JIC
K	760-2054	1	Adapter, Hyd Run Tee - #6 JIC
L	760-2038	2	Adapter, Hyd. - #6femORFF-#4maleORFF
M	760-2031	2	Adapter, Hyd. - #4maleORFF-#4femJICswiv



## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
N	760-1045	2	Hose, Hyd. - 1/4" x 38", #6femJICswiv x #4femORFFswiv 90EL
O	760-1047	1	Hose, Hyd. - 3/8" x 29", #6femJICswiv x #6femJICswiv 90EL
P	760-1046	1	Hose, Hyd. - 3/8" x 102", #8femJICswiv x #8femJICswiv 90EL
Q	760-1048	1	Hose, Hyd. - 3/8" x 91", #8mJICswiv x #8femJICswiv
R	051-0143	1	Cable, Interface - 15 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.

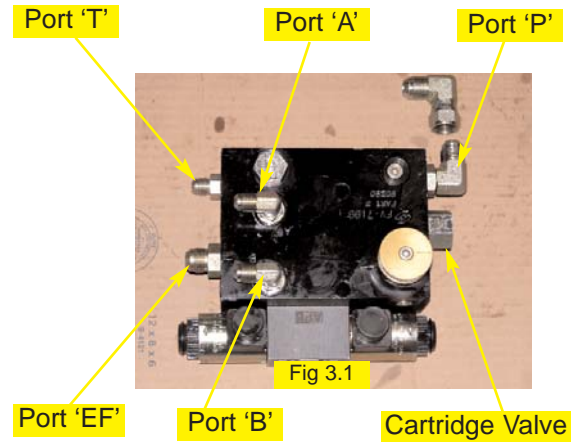
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake 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:

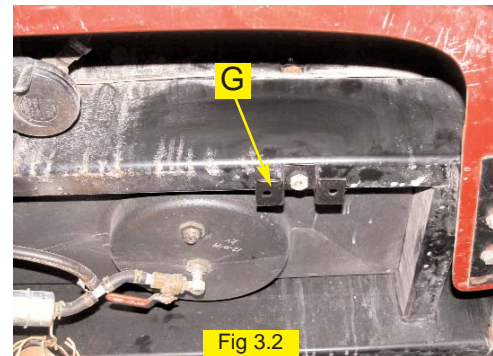
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs. Install elbow adapters (**B**) into the **A** and **B** ports and orient as shown. Install straight adapter (**C**) into the **T** port. Install straight adapter (**D**) into the **EF** port. Install elbow adapter (**E**) into the **P** port. The elbow adapter (**F**) will be installed when connecting the pressure hose in step 5. (Figure 3.1)

*Note:* To install the elbow fitting (**E**) 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.



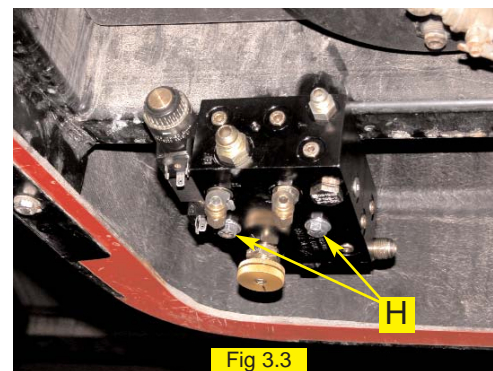
## 2. Install Mounting Bracket:

From under the hood, locate and remove the front left bolt that secures the fuel tank to the frame cross member. Install the provided mounting bracket (**G**) onto the bolt and secure the bolt into its original location as shown. (Figure 3.2)



## 3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step 1, to the mounting bracket using the mounting hardware in group (**H**). Tighten mounting bolts securely. (Figure 3.3) The hydraulic control block should be oriented with the **EF** and **T** ports pointing toward the back of the machine.

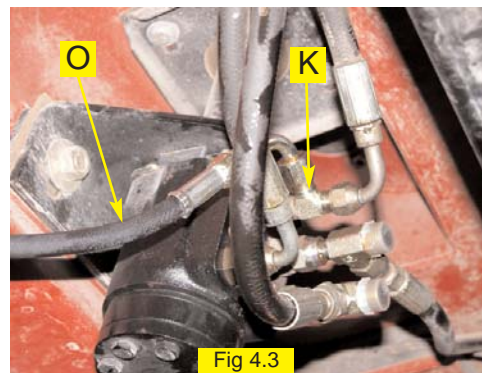
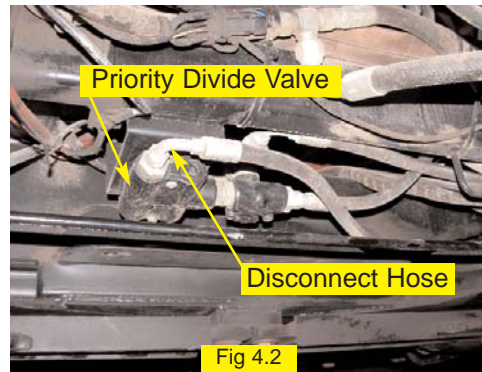
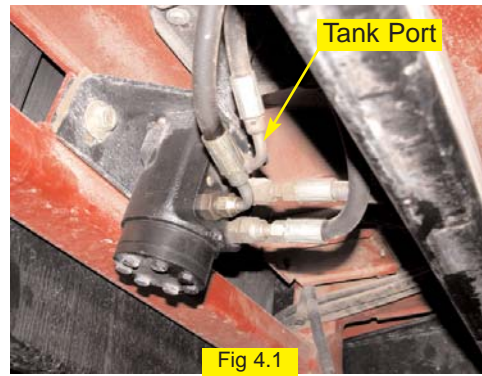


#### 4. Pressure, Tank, and Excess Flow Locations:

Locate the steering orbital under the cab. The tank return for the hydraulic control block will be relieved to the **T**(tank) port on the steering orbital. (Figure 4.1) Locate the port stamped **T** on the top left side of the steering orbital . Remove the hose, install the provided run-tee (**K**), and reattach the hose to the end of the run-tee fitting.

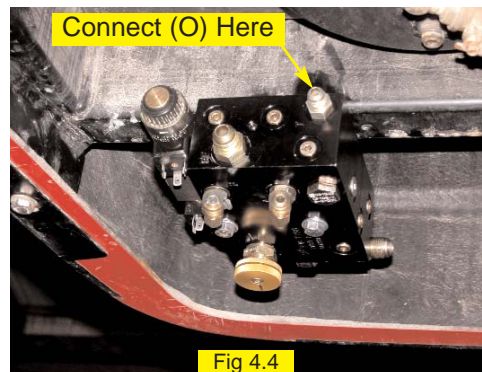
Leave the run-tee fitting (**K**) loose to allow for alignment when attaching hoses. Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.

Locate the priority valve behind the front axle member below the engine. Pressure and excess flow connections for the hydraulic control block will be accessed at this point. The excess flow port on the priority divide valve, pointing to the rear of the machine, will supply pressure to the hydraulic control block. The hydraulic control block will relieve excess flow to the hose currently attached to the excess flow port on the priority valve. (Figure 4.2)



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

Route the provided tank hose (**O**) from the hydraulic control block back to the run-tee fitting installed on the **T** port of the steering orbital. Secure the hose to the branch of the run-tee (**K**) and to the **T** port of the hydraulic control block. (Figure 4.3 and 4.4)



### 5. Continued...

Route the provided excess flow hose (Q) from the EF port of the hydraulic control block back to the excess flow hose on the priority valve. Remove the hose from the priority valve and attach it to the excess flow hose (Q). (Figure 5.1 and 5.2)

Machine hose disconnected from priority valve

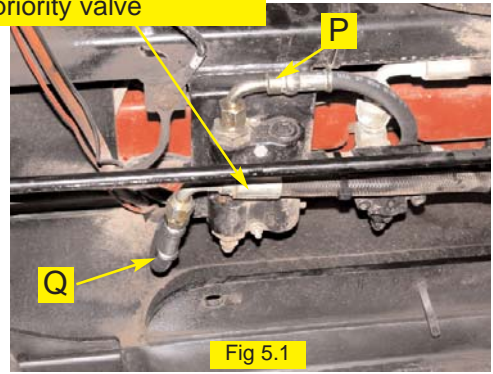


Fig 5.1

Route the provided pressure hose (P) from the P port of the hydraulic control block to the excess flow port of the priority valve. Use the provided elbow adapter (F) to attach the pressure hose to the hydraulic control block. (Figure 5.1 and 5.2)

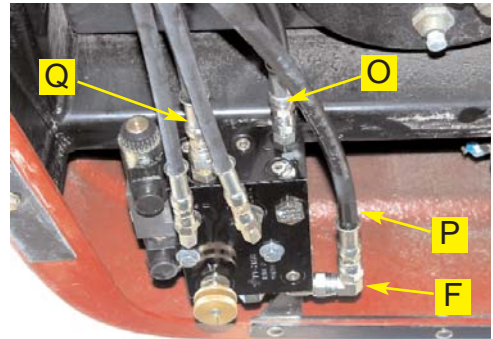


Fig 5.2

Hoses can be easily routed over the front axle and the frame cross-member near the orbital before reaching the hydraulic control block. (Figure 5.3 and 5.4) Carefully check the hose routing for clearance of moving parts and secure with heavy tie straps (included). Securely tighten all hoses and fittings at the steering orbital, priority valve, and the hydraulic control block.

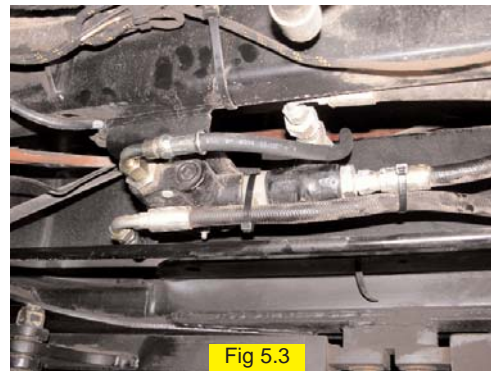


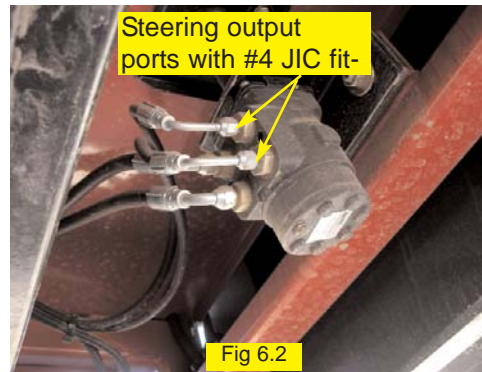
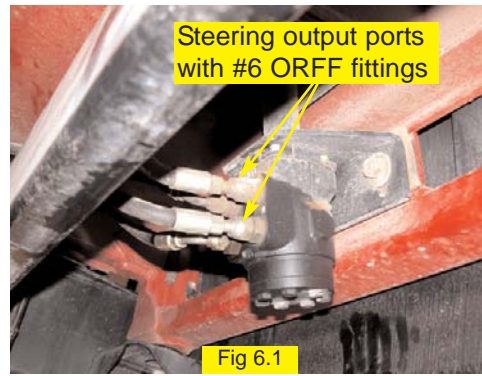
Fig 5.3



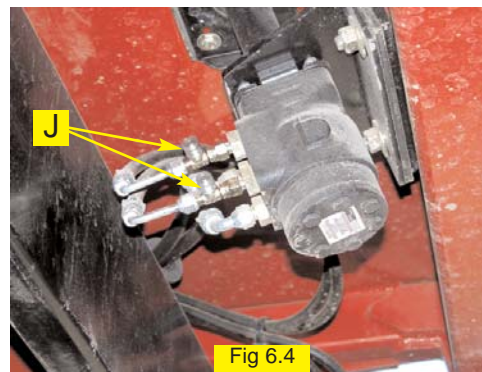
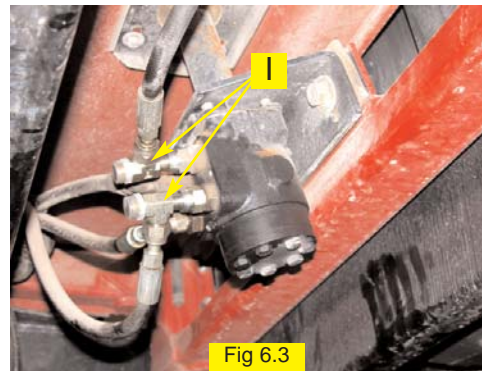
Fig 5.4

## 6. Install Steering Output Fittings:

Locate the steering output lines on the right side of the steering orbital stamped **R** and **L** on the casting. (Figure 6.1) Depending on the model of sprayer, the fittings that are used on the output ports of the steering orbital may be different. (Figure 6.2)



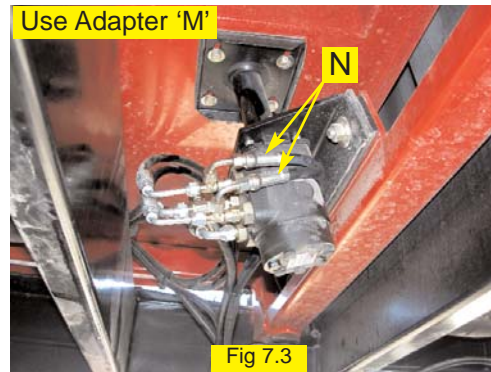
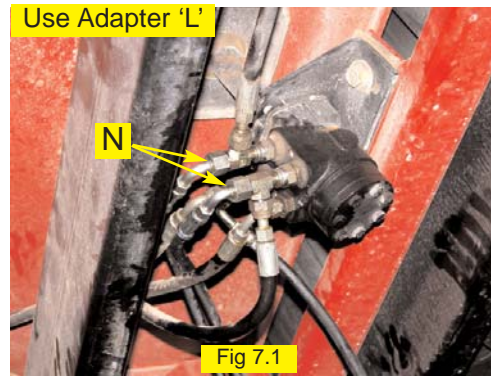
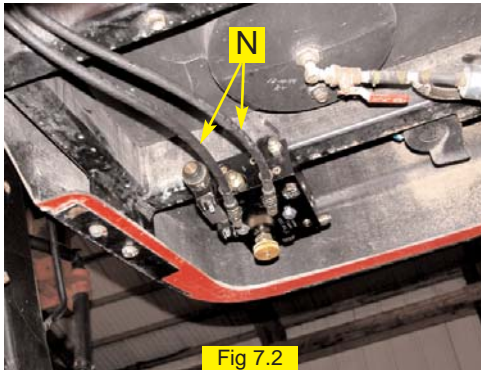
Install the appropriate run-tee fittings (**I**) or (**J**), provided, onto both steering output ports of the steering orbital. Reattach the steering hoses to the branches or ends of the respective run-tee fittings, depending on the application. (Figure 6.3 and 6.4)



## 7. Install Steering Output Hoses:

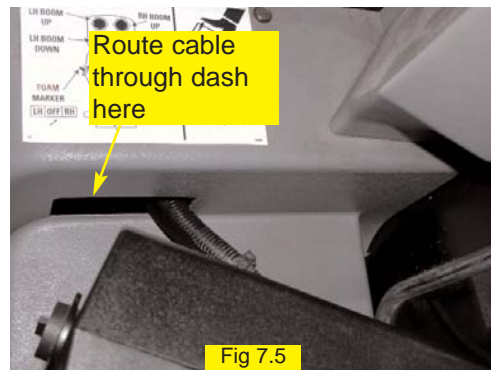
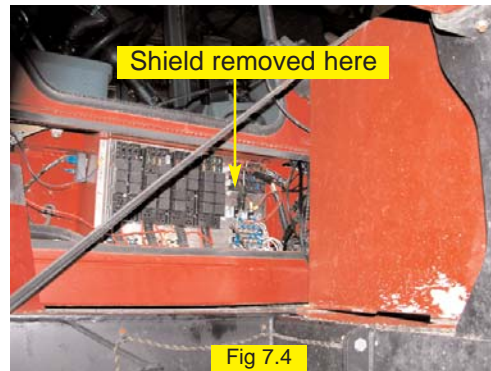
Route the provided steering output hoses (**N**) from the **A** and **B** ports of the hydraulic control block to the steering output run-tee fittings installed in the previous step. (Figure 7.2) Use the adapter fittings (**L**) or (**M**) provided to connect the hoses to the run-tee fittings. (Figure 7.1 and 7.3)

Make sure all hoses are routed properly and free from entanglement. Use heavy tie straps (included) as needed. Securely tighten all hydraulic hose fittings and adapters.



## 8. Install the Valve Control Cable:

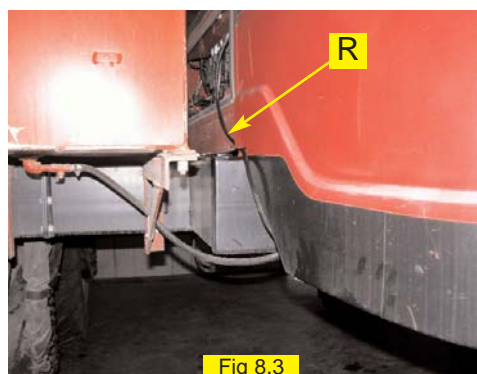
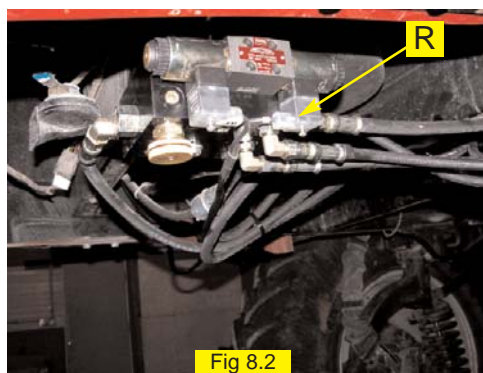
Remove the shield on the right side of the cab. (Figure 7.4) Route the valve control cable (**R**) through the dash. (Figure 7.5)



## 8. Continued...

Route the DIN connectors down and across to the hydraulic control block and attach as shown. (Figure 8.2 - 8.3)

Remove enough slack out of the cable to prevent entanglement with moving parts. Use tie straps as needed.



## 9. 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 machine and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

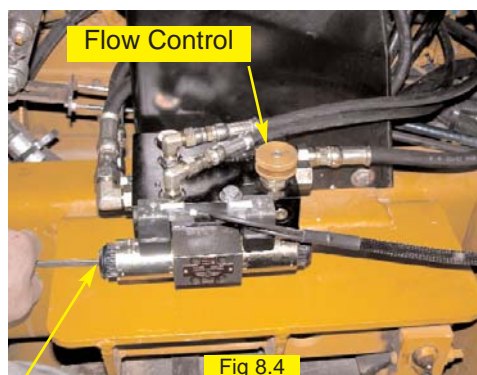
Adjust the hydraulic oil flow control knob to a starting position of **3 turns** from completely closed. To adjust the knob, turn clockwise to reduce flow, counter-clockwise to increase flow. The knurled locking nut should be tightened against the cartridge face to maintain the desired setting.

The coils on the control block have manual push button overrides. Push either manual override to move the steering tires all the way to one extreme. Count the number of seconds for the steering tires 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 **12 seconds**.

## 10. Complete Electronic Installation and Setup:

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



Manual Override

**Note:** To activate the manual overrides, a tool such as a small screw driver or allen wrench must be inserted into the end of the coil to depress the override button.



**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.