

# Automated Steering Hydraulic Installation Kit

P/N: ED-JD4720

Fits John Deere Sprayer Model  
4720



## 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 John Deere 4720 sprayer. Please read this manual thoroughly before beginning installation.

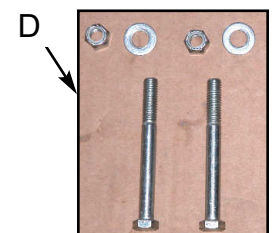
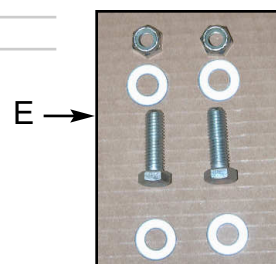
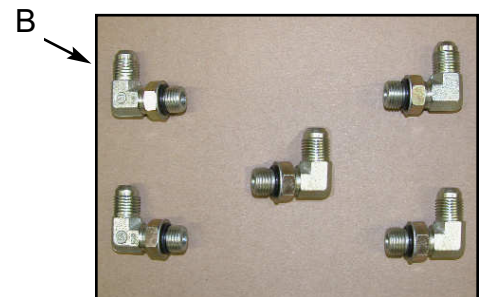
## Machine Preparation

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

## Kit Contents

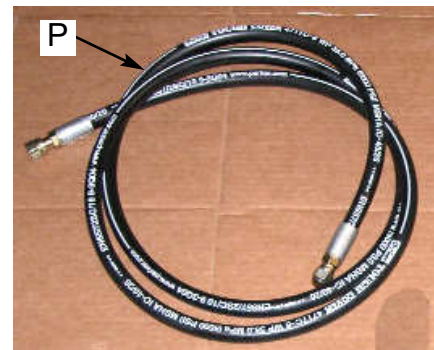
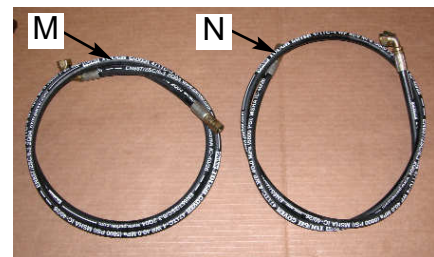
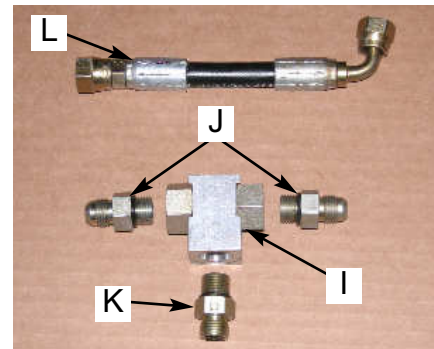
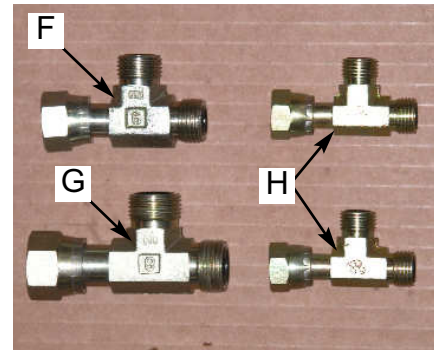
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
<b>Bag #1 of 4 includes B</b>			
B	760-2058	5	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
<b>Bag #2 of 4 includes D &amp; E</b>			
C	640-0034	1	Hyd. Block Mnt - John Deere 4920
D	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
E	675-2009	2	Bolt, 5/16NC x 1-1/4 Gr5 ZP
	678-1055	4	Washer, Flat - 5/16" ZP
	676-1036	2	Nut, Lock - 5/16NC ZP



## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
<b>Bag #3 of 4 includes F, G, &amp; H</b>			
F	760-2046	1	Adapter, Hyd. Run Tee - #6 ORFF
G	760-2069	1	Adapter, Hyd. Run Tee - #8 ORFF
H	760-2030	2	Adapter, Hyd. Run Tee - #4 ORFF
<b>Bag #4 of 4 includes I, J, &amp; K</b>			
I	760-0002	1	Assy., Hyd. Load Shuttle - #6femORB
J	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
K	760-2033	1	Adapter, Hyd. - #4 male ORFF x #6 male ORB
L	760-1144	1	Hose, Hyd. - 1/4"x6", #6femJICswiv x #4femORFFswiv 90EL
M	760-1146	1	Hose, Hyd. - 1/4"x127", #6femJICswiv x #4femORFFswiv 90EL
N	760-1147	1	Hose, Hyd. - 1/4"x138", #6femJICswiv x #4femORFFswiv 90EL
O	760-1148	1	Hose, Hyd. - 3/8"x84", #6femJICswiv x #8femORFFswiv
P	760-1149	1	Hose, Hyd. - 3/8"x69", #6femJICswiv x #6femORFFswiv
Q	760-1150	1	Hose, Hyd. - 1/4"x72", #6femJICswiv both ends
R	051-0143	1	Cable, Hyd. Valve 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.**

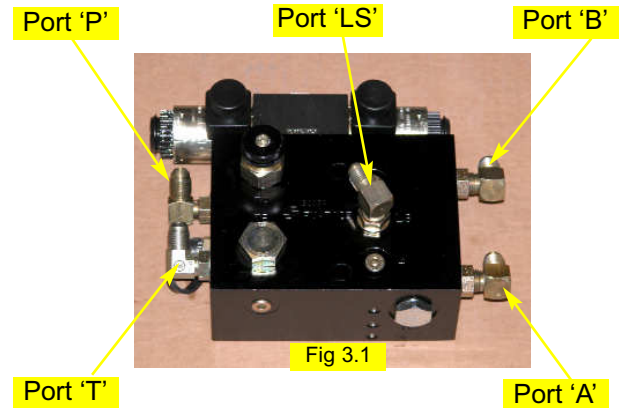
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake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

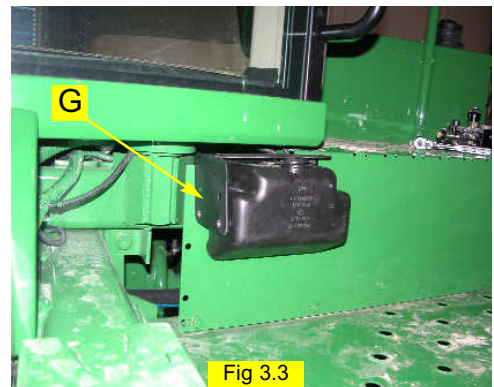
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the elbow adapters (**B**) in the **P**, **T**, **LS**, **A**, and **B** ports. (Figure 3.1)

*Note: To install the elbow fittings into the **P** and **T** ports, the pressure test port fitting must first be removed. Once the elbows are installed, reinstall the pressure test port fitting.*



## 2. Install Mounting Bracket:

Locate the windshield washer reservoir below the front of the cab on left side. (Figure 3.2) Remove the two bolts holding the windshield washer reservoir and install the hydraulic mounting bracket (**C**) using the hardware in group (**E**) as shown. (Figure 3.3)



## 3. Install Hydraulic Control Block:

Using the provided hardware in group (**D**), mount the hydraulic control block to the bracket with **P** and **T** ports pointing up as shown. (Figure 3.4)



#### 4. Install Pressure and Tank Fittings:

Locate the steering priority valve on the left side of the sprayer frame near the chemical inductor. (Figure 4.1) Remove the hose on the end of the run-tee attached to the excess flow outlet of the priority divider and install the run-tee (G) provided. (Figure 4.2) Reinstall the hose to the end of the new run-tee. This run-tee will provide the pressure connection for the hydraulic control block.

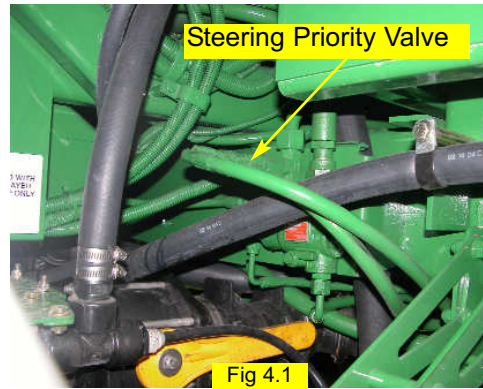


Fig 4.1

Locate the hydraulic filter under the center of the sprayer, near the transmissions. (Figure 4.3 and 4.4) Remove the indicated hose from the filter inlet and install the provided run-tee (F). (Figure 4.5 and 4.6) Reattach the hose to the end of the run-tee. This run-tee will be used as the tank return for the hydraulic control block.

*Note: On 2006 and prior models there is a loose orifice disk in the end of the hose, indicated in figure 4.3. This orifice disk must remain in the end of the hose when installed to the end of the run tee (F).*

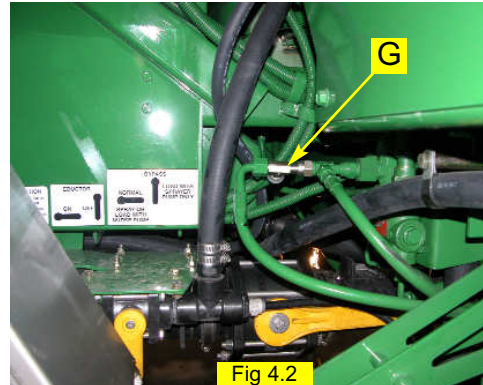


Fig 4.2

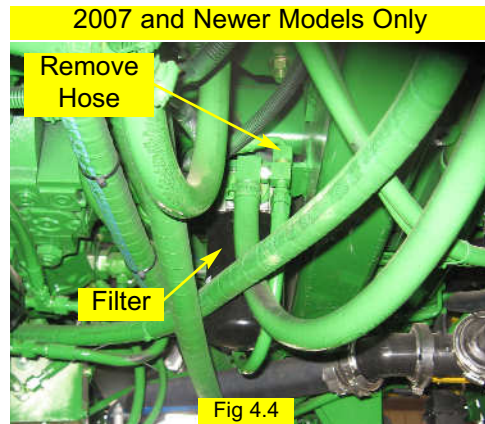


Fig 4.4

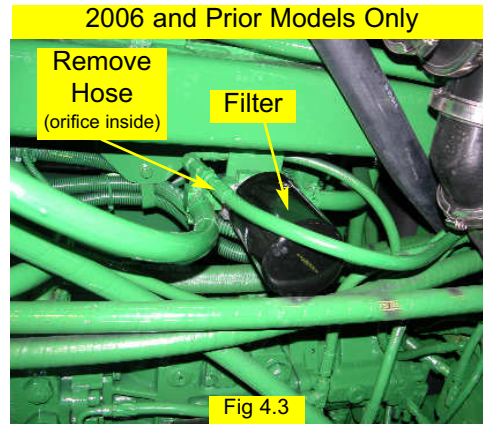


Fig 4.3

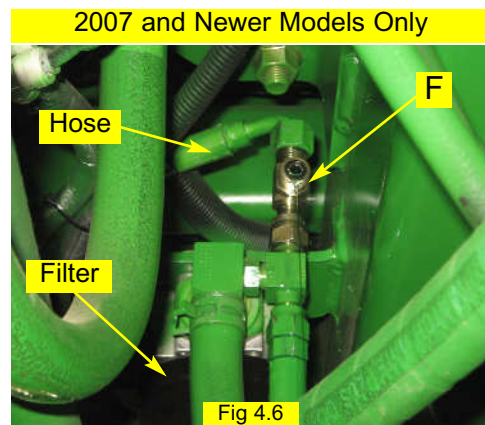


Fig 4.6

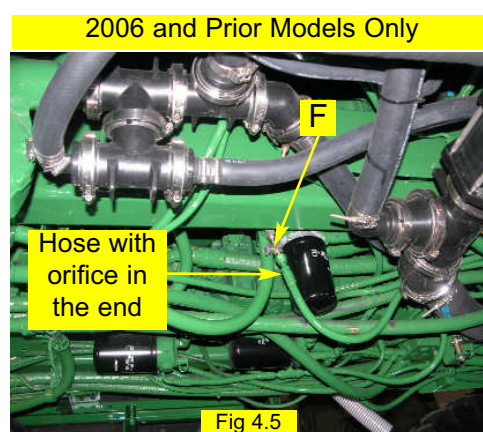


Fig 4.5

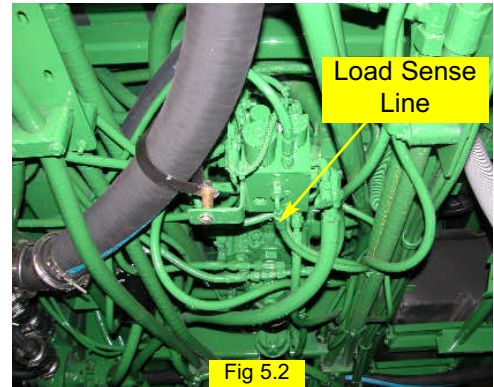
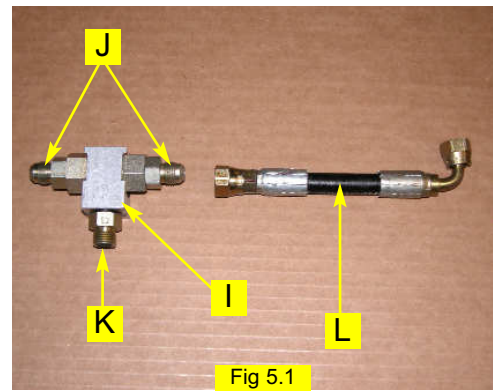
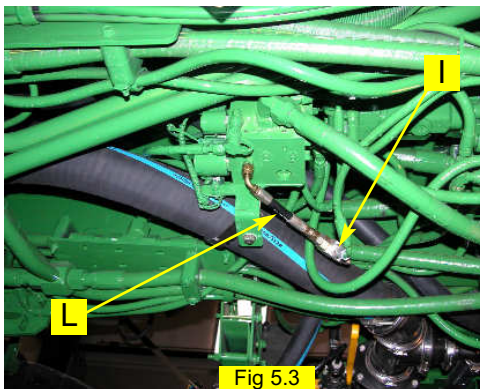
## 5. Install Load Sense Shuttle:

**Note:** Load sense shuttle installation for the 2007 and newer models is different from 2006 and prior models. See below.

### -2006 Models

Pre-assemble the load sense shuttle (I) with adapter fittings (J) and (K) as shown. (Figure 5.1)

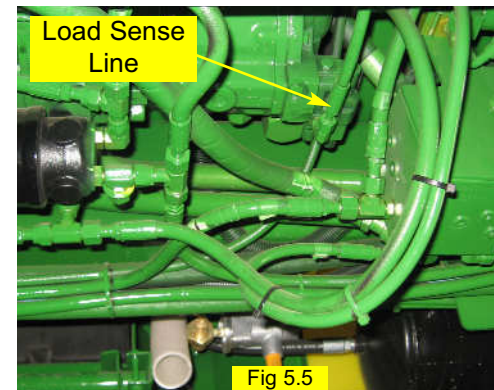
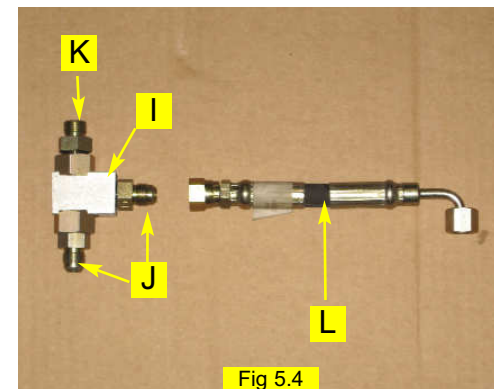
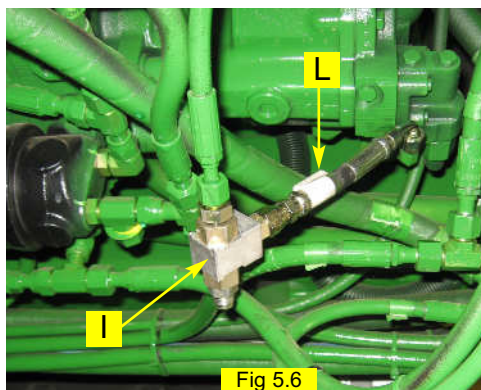
Locate the sprayer load sense line on the bottom of the hydraulic valve block, under the sprayer behind, the transmission. (Figure 5.2) Disconnect the hose from the valve block and install the prepared load sense shuttle using the extension hose (L) provided. Reconnect the sprayer load sense hose to the center position (K) of the load sense shuttle as shown. (Figure 5.3)



### 2007- Models

Pre-assemble the load sense shuttle (I) with adapter fittings (J) and (K) as shown. (Figure 5.4)

Locate the sprayer load sense line on the hydraulic pump behind the hydrostatic transmissions. (Figure 5.5) Disconnect the hose from the pump and install the prepared load sense shuttle using the extension hose (L) provided. Reconnect the sprayer load sense hose to the end position (K) of the load sense shuttle as shown. (Figure 5.6)



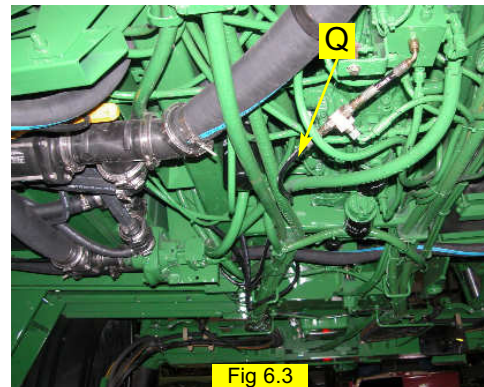
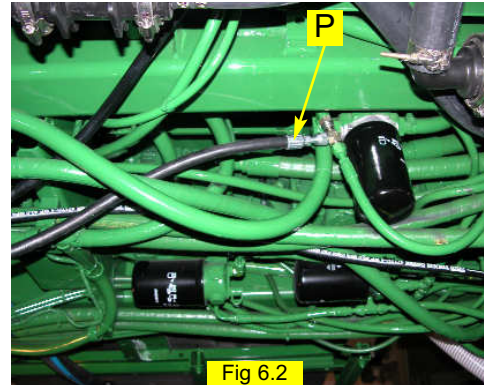
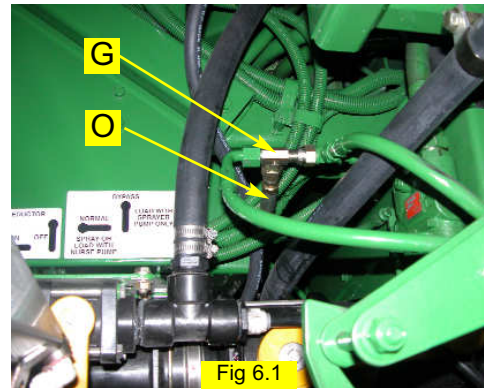
## 6. Install Pressure, Tank, and Load Sense Hoses:

Route the pressure hose (**O**) from the run-tee (**G**) installed at the priority valve, inside the sprayer frame, and connect to the **P** port of the hydraulic control block. (Figure 6.1 and 6.5) The hose should be routed with other sprayer plumbing free from entanglement and secured with heavy tie straps (provided). (Figure 6.4)

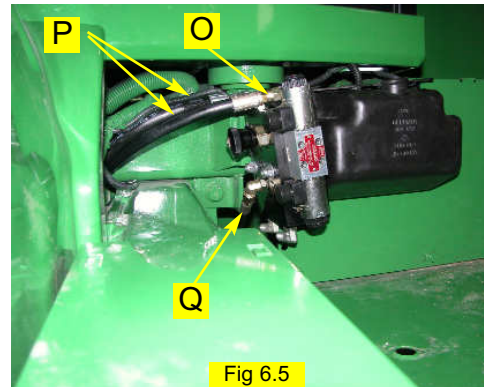
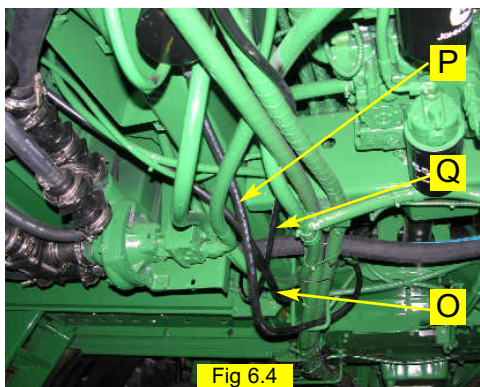
Connect the tank hose (**P**) between the **T** port of the hydraulic control block and the run-tee (**F**) installed near the hydraulic filter. (Figure 6.2 and 6.5) Route the hose similar to the pressure hose. (Figure 6.4)

Install the load sense hose (**Q**) between the open end (**J**) of the load sense shuttle and the **LS** port of the hydraulic control block. (Figure 6.3 and 6.5) Route the hose with the pressure and tank hoses and up to the hydraulic control block as shown. (Figure 6.4)

Use the heavy tie straps provide to secure the hoses to other machine plumbing prevent entanglement.

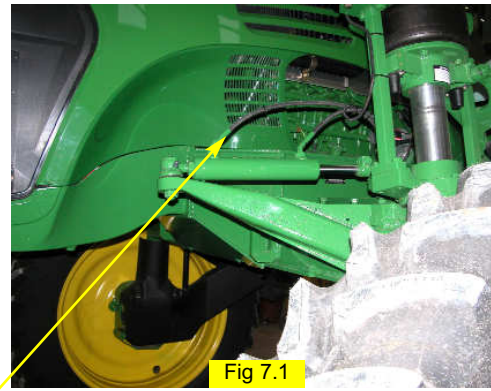


### Hose Routing

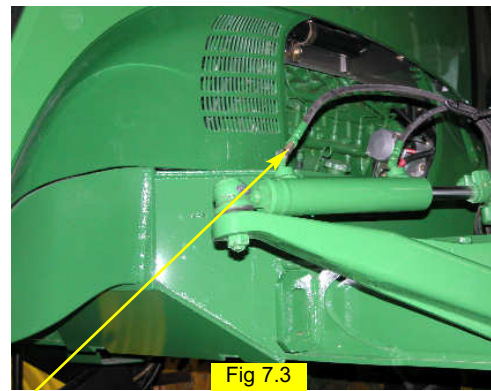


## 7. Install Steering Output Fittings:

Locate the sprayer steering lines on the head-ends of the steering cylinders as shown. (Figure 7.1 and 7.2) Install run-tee fittings (**H**), provided, where the steering lines connect to the head-ends of each steering cylinder. (Figure 7.3 and 7.4) Leave run-tee fittings 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.



Steering Lines



H



## 8. Install Steering Output Hoses:

Connect the ends of the hydraulic steering hoses (**M** and **N**) to the run-tee fittings installed in step 7 and the **A** and **B** ports of the hydraulic control block. (Figure 8.1) The longer hose (**N**) will be connected to the run-tee on the right side steering cylinder (Figure 8.4) and the shorter hose (**M**) will be connected to the run-tee on the left side steering cylinder. (Figure 8.3)

Route the steering hoses (**M** and **N**) from the hydraulic block, down inside the sprayer frame and forward to the run-tees at the cylinders. (Figure 8.2) The hoses should be routed with the sprayer steering lines to allow for suspension flex and axle adjustment. Secure the hoses to other sprayer plumbing with the heavy tie straps (provided). (Figure 8.3 and 8.4)



Fig 8.1

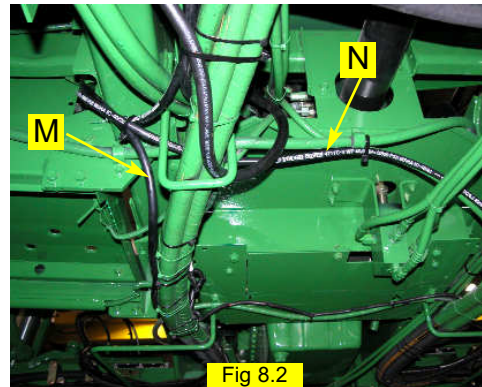


Fig 8.2



Fig 8.3



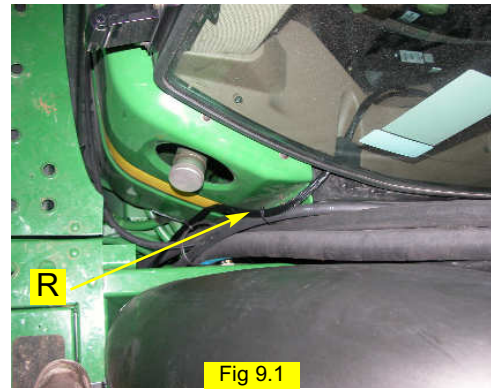
Fig 8.4



## 9. Install the Valve Control Cable:

Route the valve control cable (**R**) through the cable grommet in the rear window seal on the left side. (Figure 9.1)  
Route the DIN connectors down under the cab and forward to the hydraulic control block and attach as shown. (Figure 9.2)

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



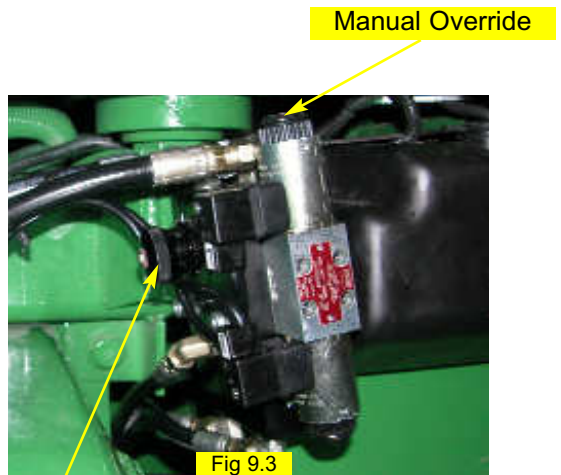
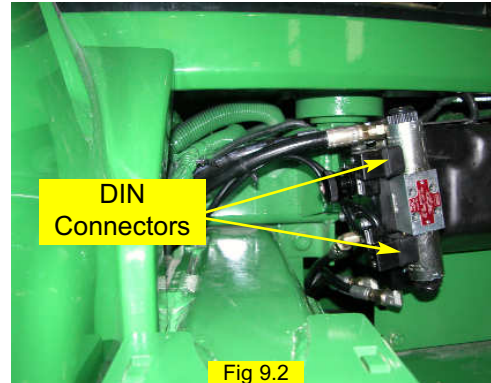
## 10. Verify Operation and Set Steering Control Rate:

Cleanup the installation area around the machine 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, lift and turn clockwise to reduce flow, counter-clockwise to increase flow.

The coils on the control block have manual push button overrides. Push either manual override to move the steering wheels all the way to one extreme. Count the number of seconds for the steering wheels to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 9.3)

Adjust the hydraulic oil flow control to achieve an end to end steering cycle time of approximately **12 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.

*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.





