Automated Steering Hydraulic Installation Kit

P/N: ED-HSTS

Fits Hagie Sprayer Models:

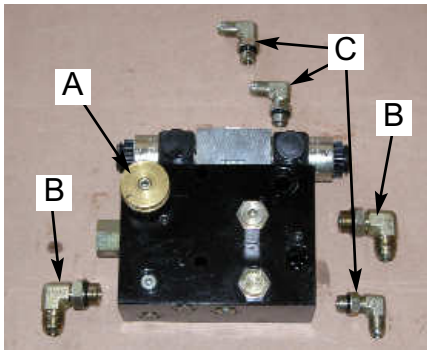
STS10
STS12

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 hydraulics on the Hagie sprayer models listed above. Please read this manual thoroughly before beginning the installation.

Sprayer Preparation

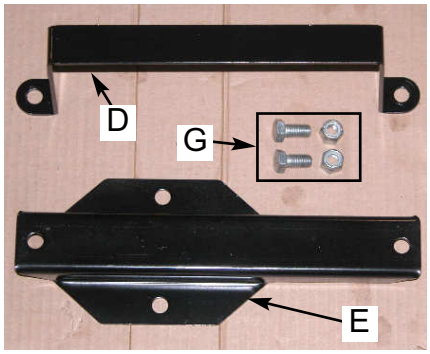
Before attempting to install hydraulics, park the sprayer on a clean level floor with adequate clearance to work all around.

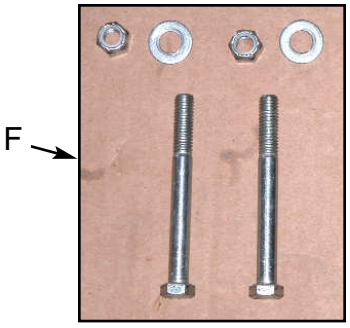


Kit Contents

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

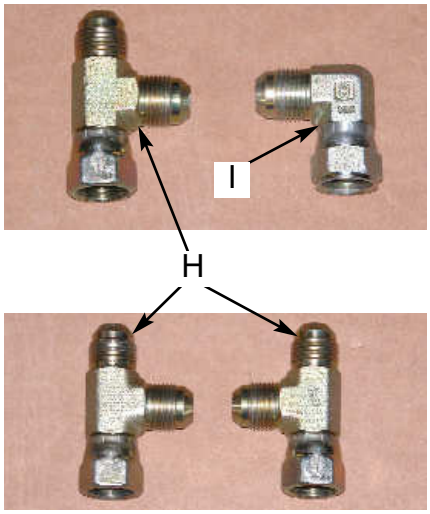
REF	P/N	QTY	DESCRIPTION
A	760-0005	1	Assy, Hyd. Valve Block - OC
	Bag #1 of 3includes B & C		
B	760-2080	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB
C	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
D	640-0015	1	Hyd. Block Mnt, JD4700/SPX4410
E	640-0014	1	Hyd. Block Mnt Hammer Strap
	Bag #2 of 3 includes F & G		
F	675-2005	2	Bolt - 3/8NC x 3-1/4" Gr5, ZP
	678-1054	2	Washer, Narrow Flat - 3/4"OD x 13/32”ID x 1/16”thk ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP
G	675-2007	2	Bolt, 3/8NC x 3/4 Gr5 ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP

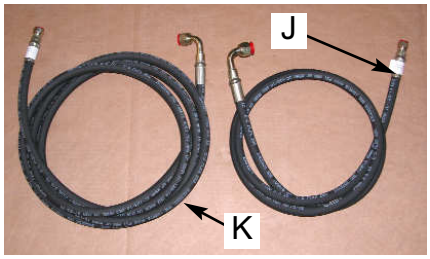


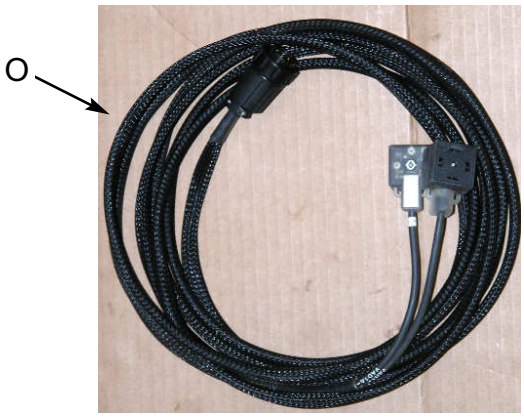


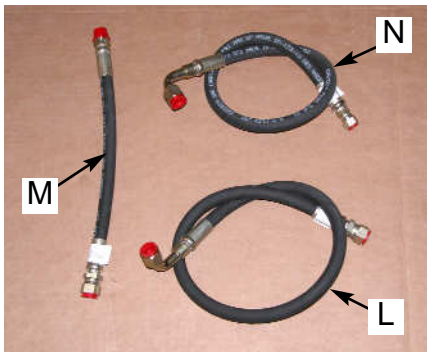
Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
	Bag #3 of 3 includes H & I		
H	760-2077	3	Adapter, Hyd. Run Tee - #8 JIC
I	760-2078	1	Adapter, Hyd. 90 Elbow - #8maleJIC x #8femJICswiv
J	760-1035	1	Hose, Hyd. - 3/8" x 92", #6femJICswiv x #8femJICswiv90EL
K	760-1174	1	Hose, Hyd. - 3/8”x152”, #6fJIC x #8fJIC90
L	760-1175	1	Hose, Hyd. - 3/8”x30”, #8fJIC x #8fJIC90
M	760-1176	1	Hose, Hyd. - 3/8”x20”, #8mJIC x #8fJIC
N	760-1124	1	Hose, Hyd. - 3/8"x30", #6femJICswiv x #8femJICswiv90EL
O	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. Remove the plastic plugs and install the elbow adapters **(C)** in the **T**, **A,** and **B** ports. Install the larger elbows **(B)** in the **P** and **EF** ports of the hydraulic control block. (Figure 3.1)

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

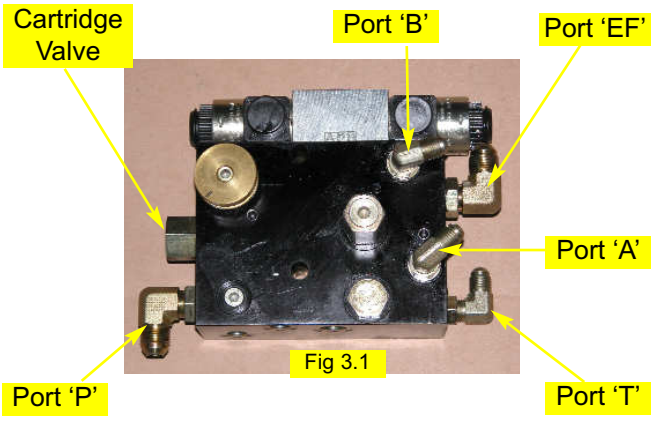


Fig 3.1

2. Mount Hydraulic Control Block:

Install the hydraulic mounting bracket **(E)**, using hammer-strap **(D)** and hardware group **(G)**, to the left frame rail under the door. (Figure 3.3)

Use the provided mounting hardware in group **(F)** to attach the prepared hydraulic control block to the mounting bracket in the orientation shown. (Figure 3.4)

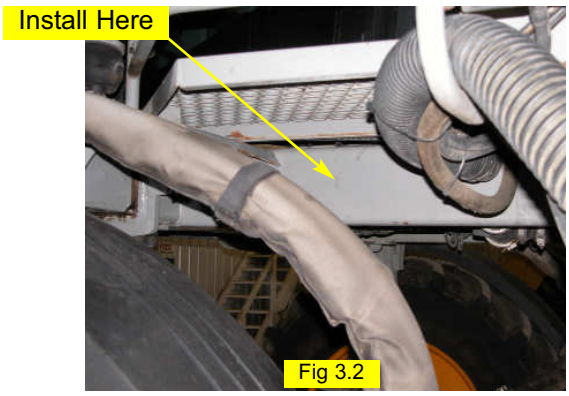


Fig 3.2

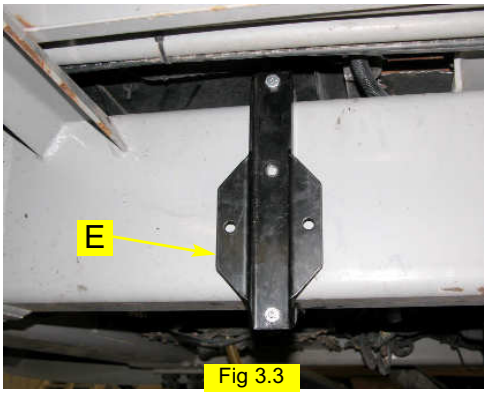


Fig 3.3

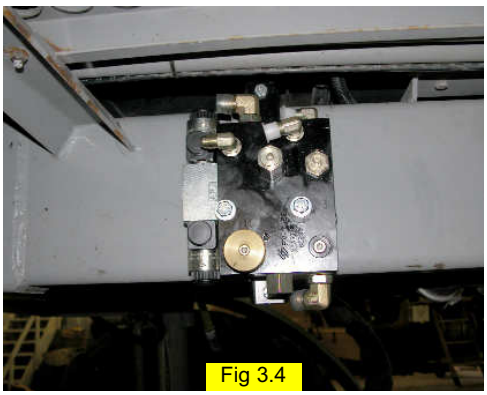


Fig 3.4

3. Pressure, Tank, and Excess Flow Connection Locations:

The hydraulic control block will receive pressure, tank, and excess flow from the hydraulic lines located under the sprayer where the front axle and left frame rail meet. Pressure will be supplied to the hydraulic control block by the line currently supplying pressure to the boom valve. The hydraulic control block will return excess flow to supply pressure to the boom valve block. (Figure 4.1)

Tank flow from the hydraulic control block will be returned to the bottom return oil line. Install the provided run-tee **(H)** in the return oil line as shown. (Figure 4.2)

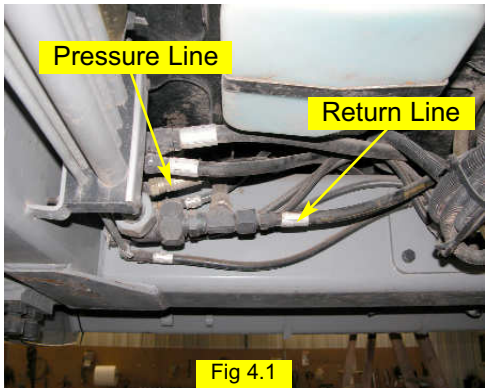


Fig 4.1

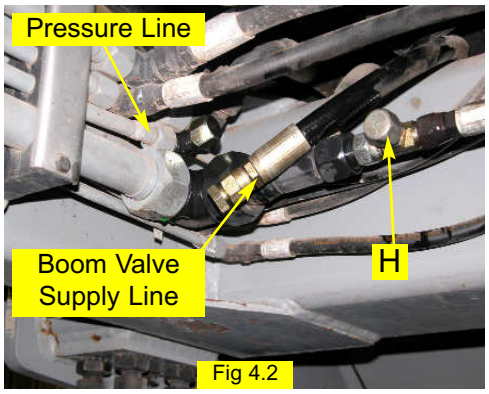


Fig 4.2

4. Install Pressure, Tank, and Excess Flow Hoses:

Install the provided tank hose **(N)** between the **T** port of the hydraulic control block and the branch of the run-tee **(H)** installed in step **3**. (Figure 4.3)

Disconnect the steel and rubber portions of the pressure supply line. Connect the hydraulic pressure hose **(L)** to the **P** port of the hydraulic control block and the steel portion of the pressure supply line. (Figure 4.4) On some models it may be necessary to use the elbow fitting **(I)** to connect the hydraulic pressure hose to the steel supply line.

Install the excess-flow hose **(M)** between the **EF** port of the hydraulic block and the boom valve supply hose. (Figure 4.3)

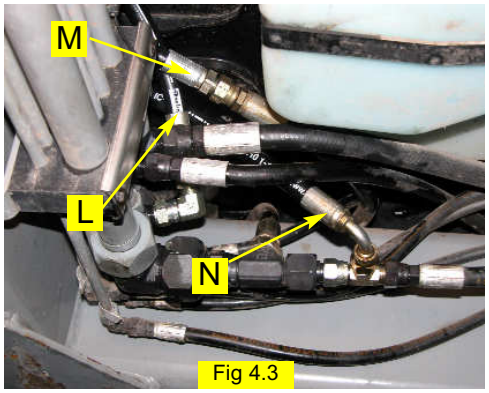


Fig 4.3

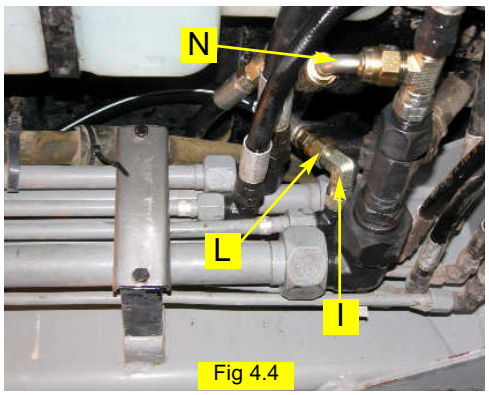


Fig 4.4

4. Install Pressure, Tank, and Excess Flow Hoses: (Continued)

The pressure, tank and excess-flow hoses are routed over the frame from the hydraulic control block to the hydraulic lines inside the frame. (Figure 5.1) Use heavy tie-straps provided to secure the hoses to the machine and frame away from moving parts. Tighten all hydraulic connections securely to prevent leaks.

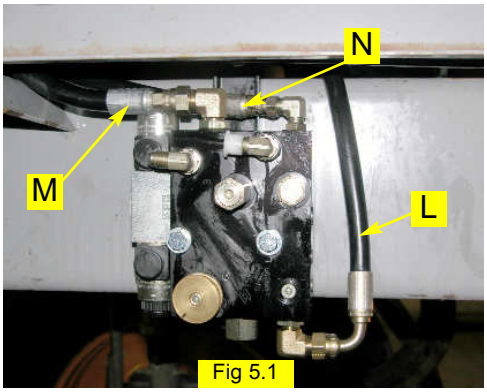


Fig 5.1

5. Install Steering Output Fittings:

Locate the steering lines on the blind end of both steering cylinders. (Figure 5.2 and 5.3) Install the provided run-tees **(H)** in the steering lines as shown. (Figure 5.4 and 5.5) Use plastic caps to prevent excess leakage from the open run-tee ports.

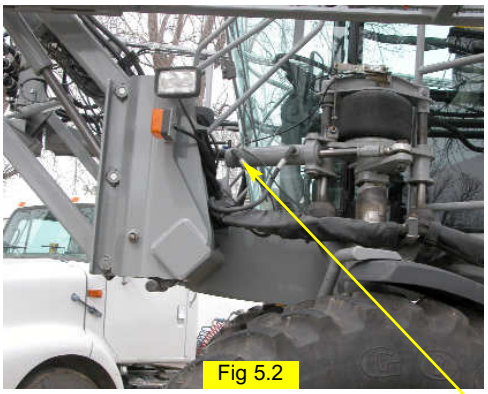


Fig 5.2

Steering Lines

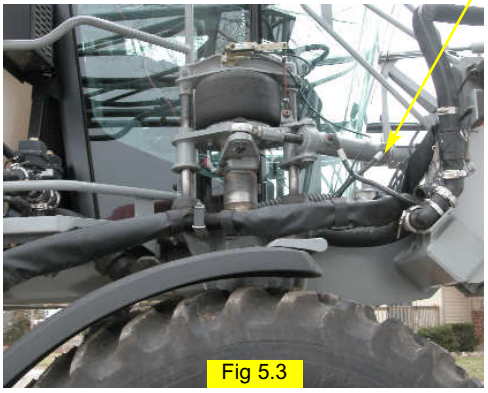


Fig 5.3

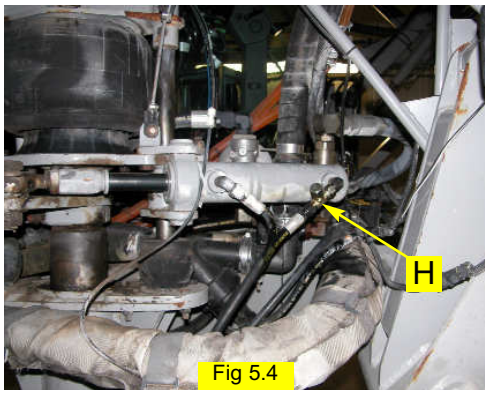


Fig 5.4

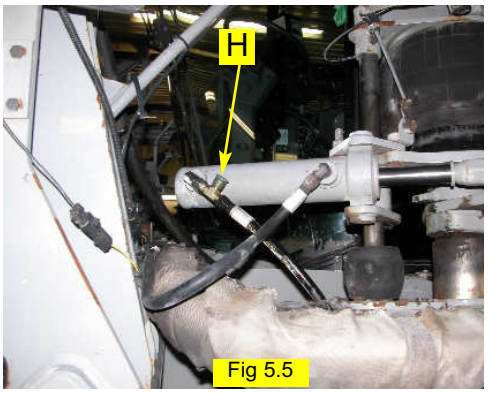


Fig 5.5

6. Install Steering Output Hoses:

Install the provided steering output hoses **(J** and **K)** between the run-tees installed in step **5** and the **A** and **B** ports of the hydraulic control block. Attach hose ends equipped with 90-degree elbows to the run-tees and attach the straight hose ends to the hydraulic control block. (Figure 6.1 and 6.2) Route hoses with existing steering lines as shown. (Figures 6.3 - 6.5) Use the heavy tie-straps provided to secure the hoses away from moving parts.

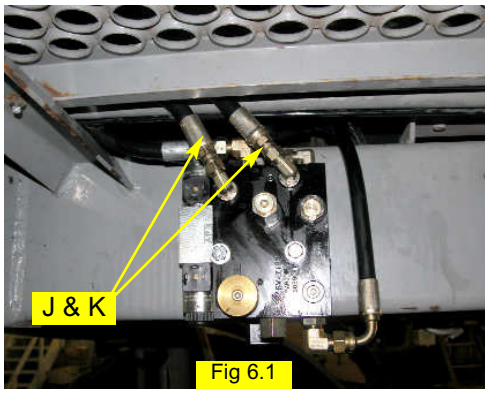


Fig 6.1

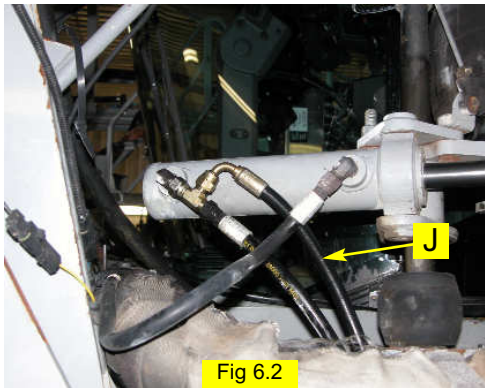


Fig 6.2

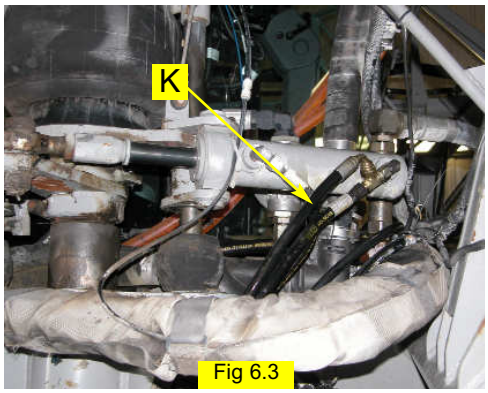


Fig 6.3

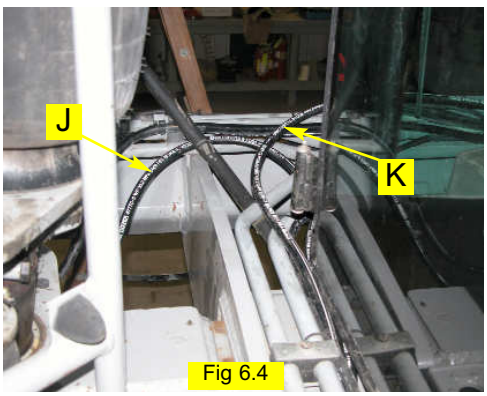


Fig 6.4

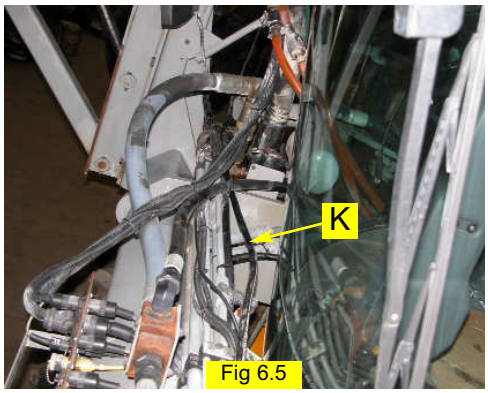


Fig 6.5

7. Install the Valve Control Cable:

Install the valve control cable **(O)** at the hydraulic block by attaching the DIN connectors to the coil. (Figure 7.1)
Route the cable under the cab, with the existing wires, and then through the right side window. Secure the cable using the provided tie straps as necessary. (Figure 7.2 and 7.3)

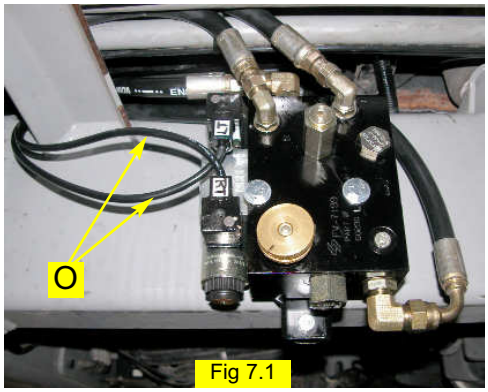


Fig 7.1

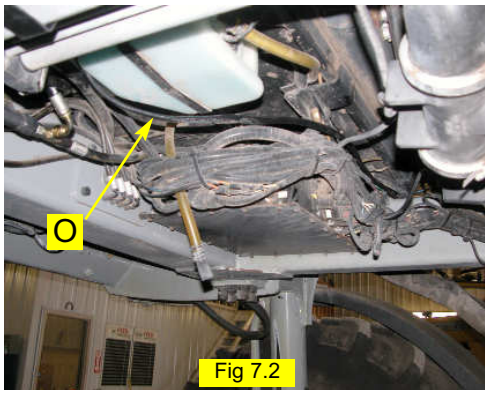


Fig 7.2

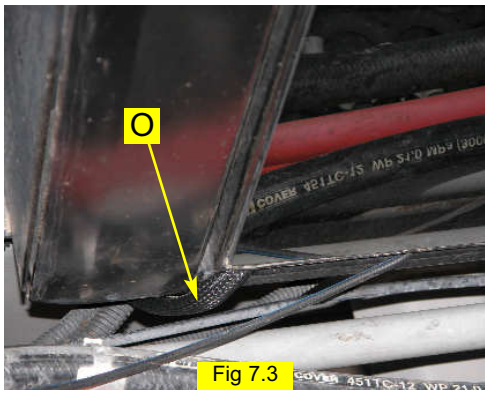


Fig 7.3

8. 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 **2.5 Turns** from completely closed. To adjust the knob, 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 sprayer wheels all the way to one extreme. Count the number of seconds for the sprayer wheels to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 8.1)

Adjust the hydraulic oil flow control to achieve an end to end steering cycle time of approximately **14 seconds**. Use the knurled locking nut to secure the final flow control setting.

9. Complete Electronic Installation and Setup:

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

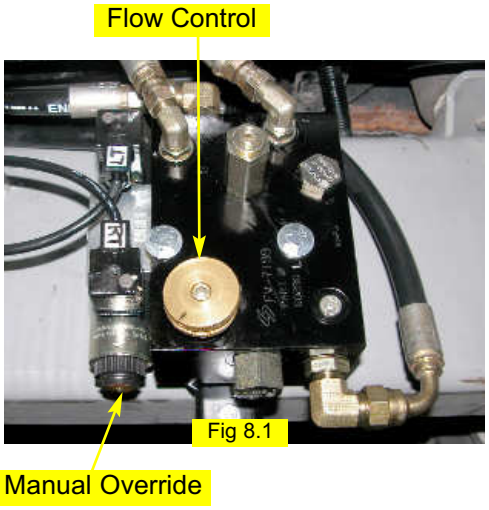


Fig 8.1

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.