

Automated Steering Hydraulic Installation Kit

P/N: ED-JD7020

Fits John Deere Tractor Models:

	7630
7720	7730
7820	7830
7920	7930



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 John Deere tractor models listed above. Please read this manual thoroughly before beginning the installation.

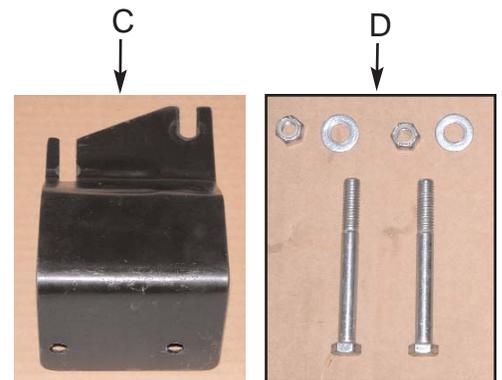
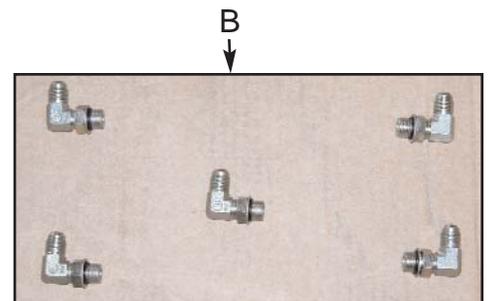
Tractor Preparation

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

Kit Contents

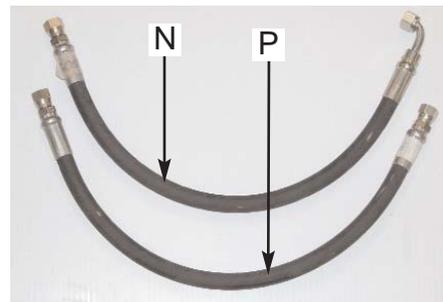
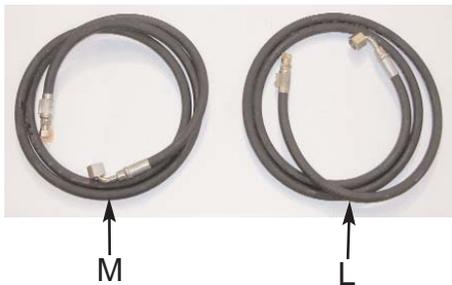
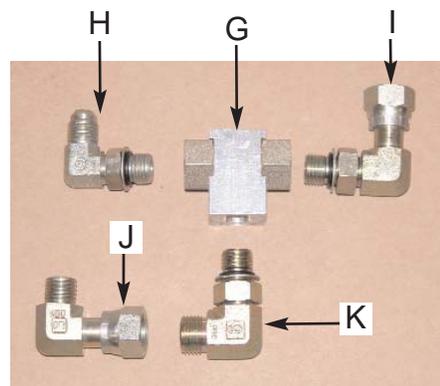
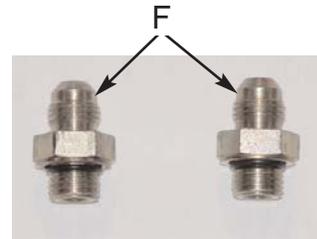
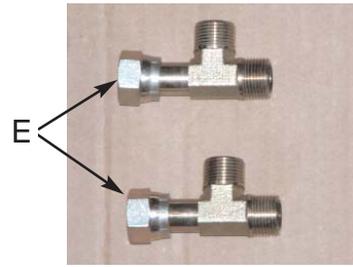
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
Bag #1 of 4 includes B			
B	760-2058	5	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
Bag #2 of 4 includes D			
C	640-0031	1	Hyd. Block Mount - John Deere 7020
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



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #3 of 4 includes E & F			
E	760-2069	2	Adapter, Hyd. Run Tee - #8 ORFF
F	760-2063	2	Adapter, Hyd. - #6maleJIC x M14maleORB
Bag #4 of 4 includes G, H, I, J, & K			
G	760-0002	1	Assy, Hyd. Load Shuttle - #6femORB
H	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
I	760-2040	1	Adapter, Hyd. 90 Elbow - #6maleORB x #6femORFFswiv
J	760-2047	1	Adapter, Hyd. 90 Elbow - #6maleORFF x #6femORFFswiv
K	760-2049	1	Adapter, Hyd. 90 Elbow - #6maleORFF x #6maleORB
L	760-1010	1	Hose, Hyd. - 3/8" x 162", #6femJICswiv x #8femORFFswiv90EL
M	760-1101	1	Hose, Hyd. - 3/8" x 154", #6femJICswiv x #8femORFFswiv90EL
N	760-1050	1	Hose, Hyd. - 3/8" x 32", #6femJICswiv x #6femJICswiv90EL
O	760-1102	1	Hose, Hyd. - 3/8" x 114", #6femJICswivel Both Ends
P	760-1011	1	Hose, Hyd. - 1/4" x 14", #6femJICswivel Both Ends
Q	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.

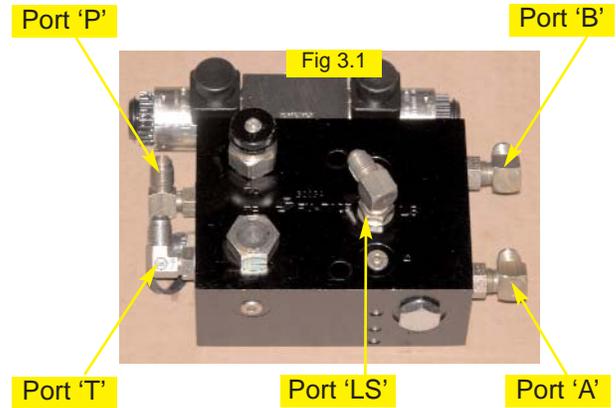
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake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

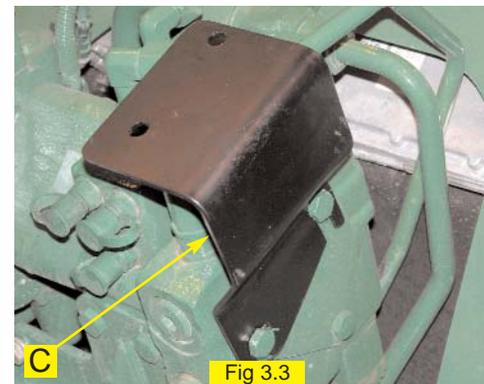
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the elbow adapters (**B**) in the **P**, **T**, **LS**, **A** and **B** ports. (Figure 3.1)

*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 right end plate on the hydraulic valve stack at the rear of the tractor and loosen the top two bolts of the end plate. (Figure 3.2) Install the slotted mounting bracket (**C**) on the loosened bolts and secure as shown. (Figure 3.3)

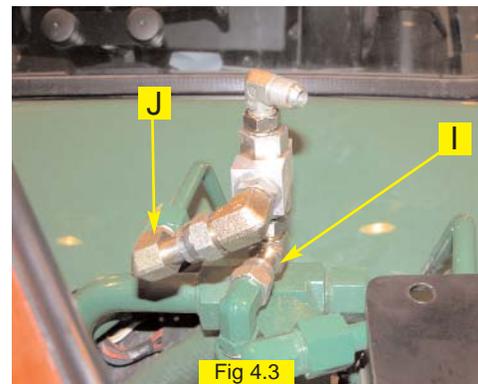
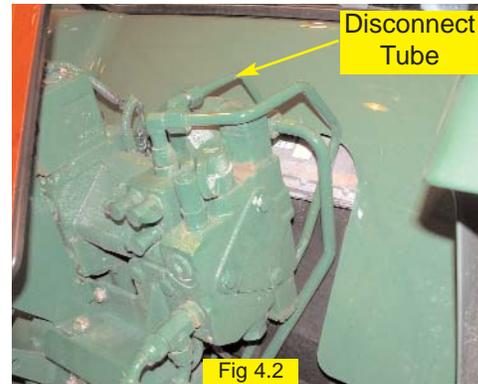
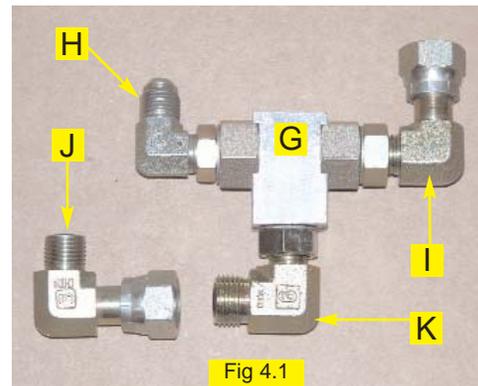


3. Install Load Sense Shuttle:

Pre-assemble the load sense shuttle (**G**) with adapter fittings (**H**), (**I**), and (**K**) as shown. (Figure 4.1)

Locate the tractor load sense line on top of the hydraulic valve stack and disconnect the tube from the elbow fitting in the casting. (Figure 4.2)

Loosen the elbow fitting in the casting to allow rotation for easier installation. Install the end of the load sense shuttle with fitting (**I**) onto the elbow fitting in the tractor casting. Attach the tractor load sense tube to the center position of the load sense shuttle containing fitting (**K**), using the elbow adapter (**J**). (Figure 4.3) It will be necessary to bend the tractor load sense tube slightly to allow for connection. Leave the load sense shuttle connections loose to allow for easier installation, and secure after all connections are made.



4. Install Hydraulic Control Block:

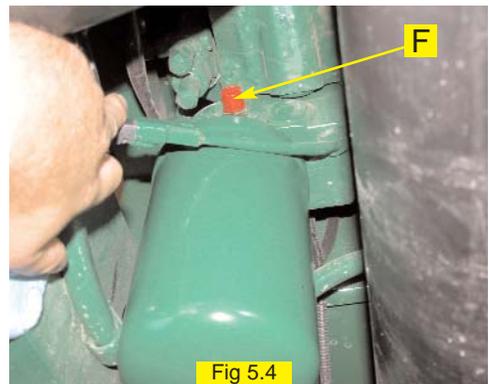
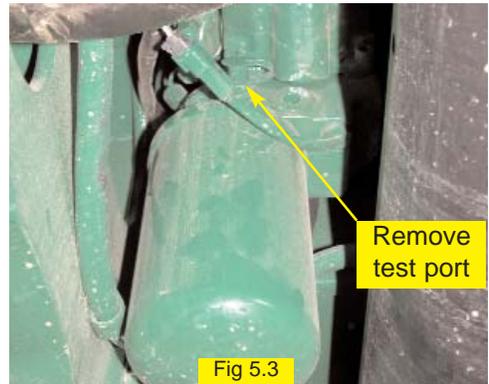
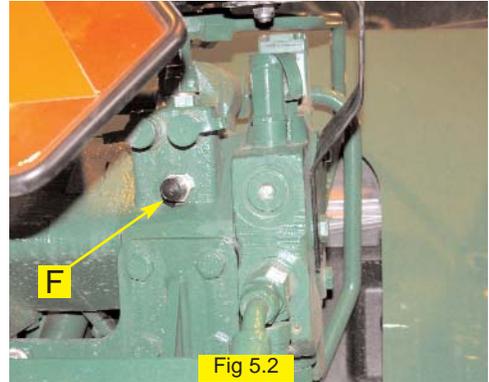
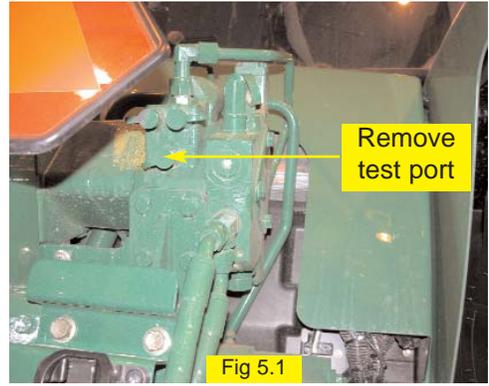
Using the provided hardware in group (**D**), mount the hydraulic control block to the bracket as shown. (Figure 4.4)



5. Install Pressure and Tank Fittings:

Remove the lower test port from the hydraulic valve stack casting at the rear of the tractor as indicated. (Figure 5.1) Install the adapter fitting (F) in place of the test port. (Figure 5.2) This will be used as the pressure supply for the automated steering system.

Locate the hydraulic filter under the left side of the tractor, below the cab. (Figure 5.3) Remove the test port from the filter head and install the adapter fitting (F) in place of the test port. (Figure 5.4) This will be used as the tank return for the automated steering system.

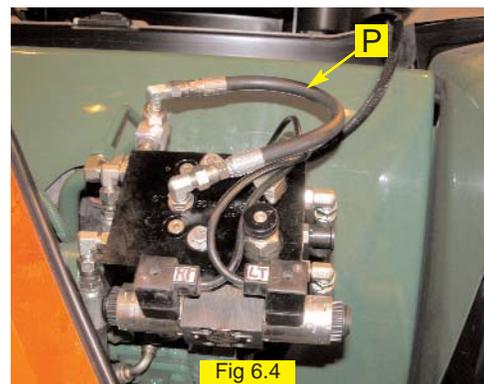
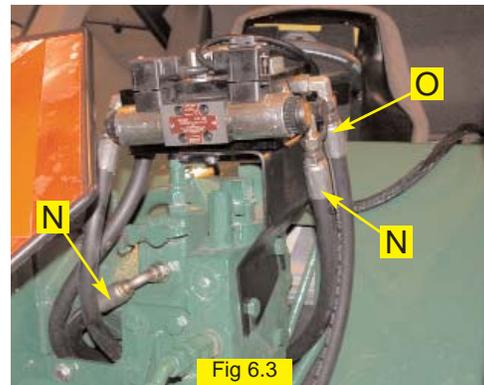
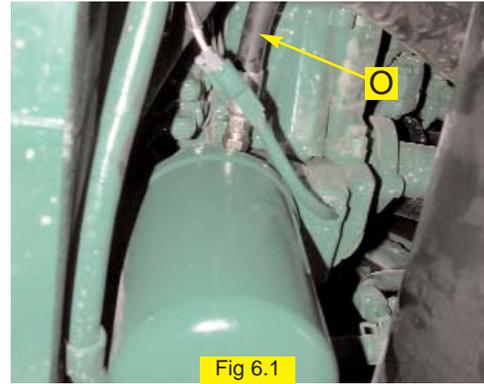


6. Install Pressure, Tank, and Load Sense Hoses:

Route the tank hose (**O**) from the adapter fitting installed at the hydraulic filter across and back along the right side of the tractor frame and connect to the **T** port of the hydraulic control block. (Figure 6.1) The hose should be routed with other tractor plumbing free from entanglement and secured with heavy tie straps (provided). (Figure 6.2)

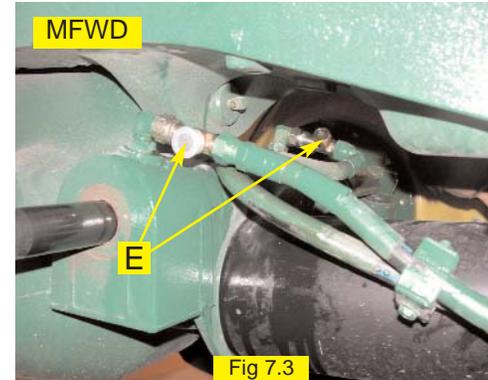
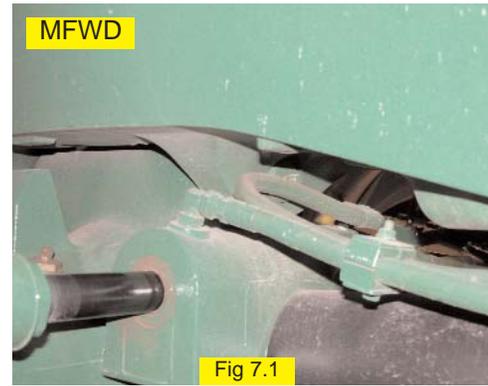
Connect the pressure hose (**N**) between the **P** port of the hydraulic control block and the adapter fitting installed in the hydraulic valve stack at the rear of the tractor as shown. (Figure 6.3)

Install the load sense hose (**P**) between the open end of the load sense shuttle and the **LS** port of the hydraulic control block. (Figure 6.4)



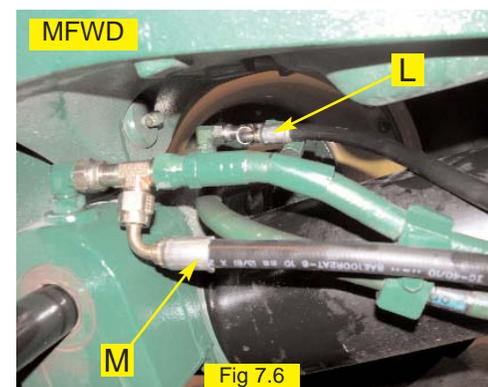
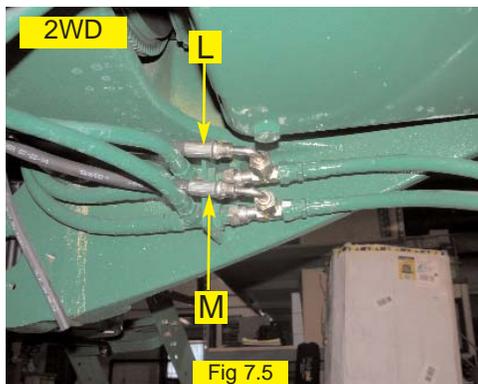
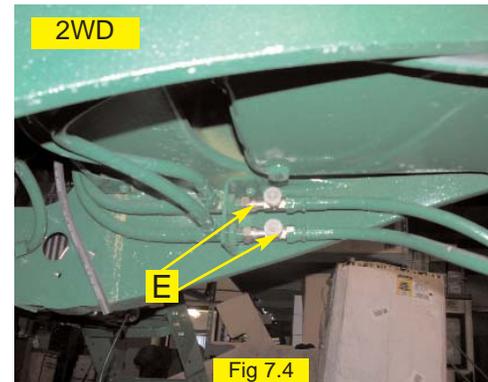
7. Install Steering Output Fittings:

Locate the tractor steering lines at the steering cylinder on the front axle of MFWD models or inside the left tractor frame of 2WD models. (Figure 7.1 and 7.2) Install run-tee fittings (E) provided into the steering lines as shown. (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.



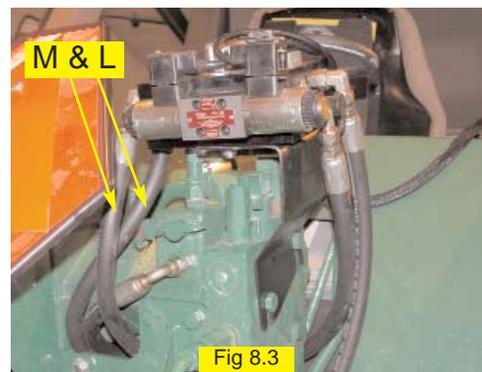
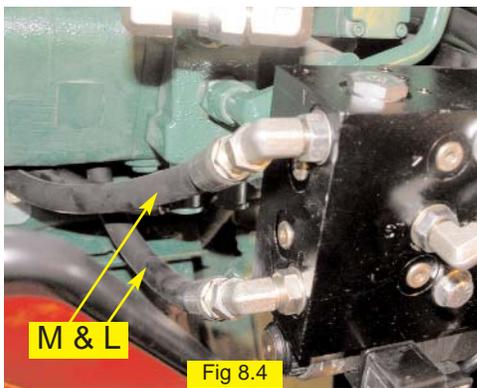
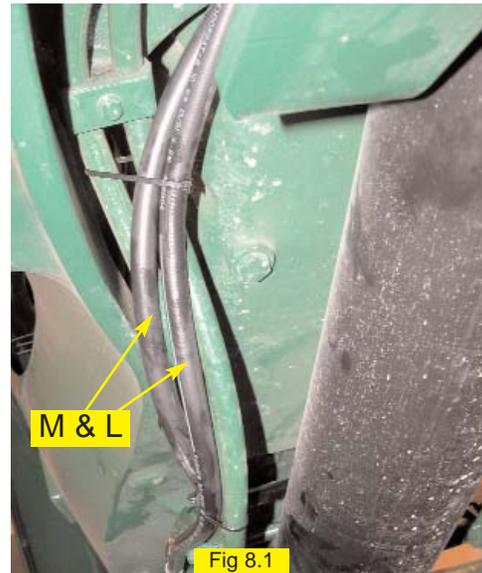
8. Install Steering Output Hoses:

Connect the ends of the steering hoses (M and L) to the run-tee fittings installed in step 7. (Figure 7.4 and 7.5) *(The hose ends with the large flat face elbow fitting connect to the run-tees. The hose ends with the smaller JIC fitting will connect to the hydraulic control block.)* The steering hoses (M and L) will have excess length when used on 2WD models. Use heavy tie straps to secure an excess length to prevent entanglement.



8. Continued...

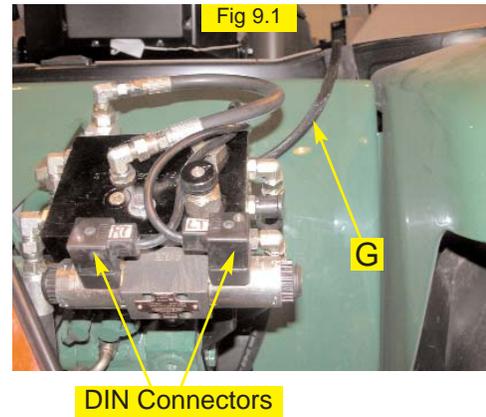
Route the steering hoses (**M** and **L**) back with the tractor steering lines then across to the right side of the tractor and back to the hydraulic controlblock. The hoses should be secured with heavy tie straps (provided) to other tractor plumbing. (Figure 8.1 and 8.2) Connect the steering hoses to the **A** and **B** ports of the hydraulic control block as shown. (Figure 8.3 and 8.4)



9. Install the Valve Control Cable:

Route the valve control cable (**G**) through the cable grommet in the tractor window seal. Route the DIN connectors down to the hydraulic control block and attach as shown. (Figure 9.1)

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



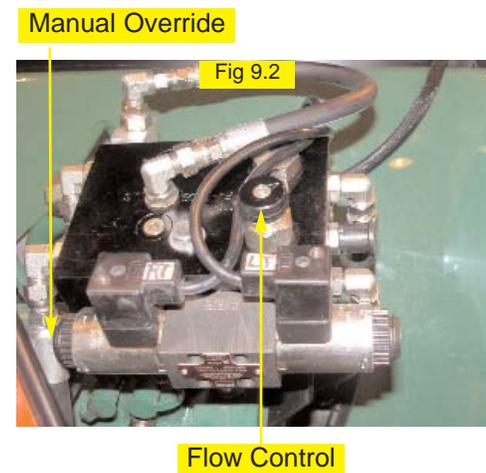
10. Verify Operation and Set Steering Control Rate:

Cleanup the installation area around the tractor and make certain that it is safe to operate. Start the tractor 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 1/2 turns** from completely closed. To adjust the knob, lift and turn clockwise to reduce flow, counter-clockwise to increase flow. (Figure 9.2)

The coils on the control block have manual push button overrides. Push either manual override to move the tractor articulation joint all the way to one extreme. Count the number of seconds for the tractor steering wheels to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 9.2)

Adjust the hydraulic oil flow control knob to achieve an end to end steering cycle time of approximately **18 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.

