

Automated Steering Hydraulic Installation Kit

P/N: ED-JD7010

Fits John Deere Tractor Models:

7200	7210
7400	7410
	7510
7600	7610
7700	7710
7800	7810

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.



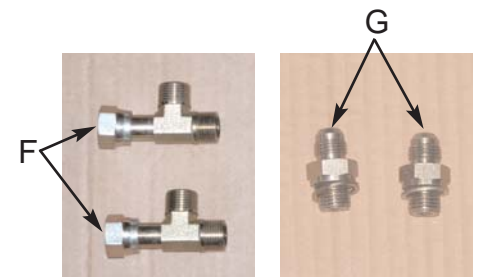
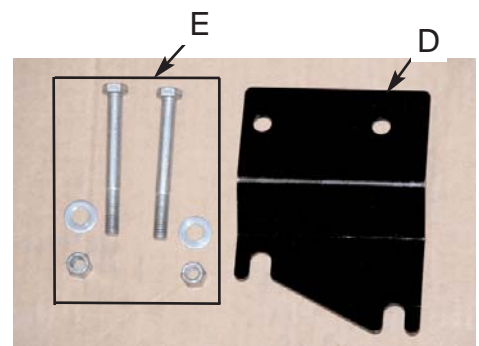
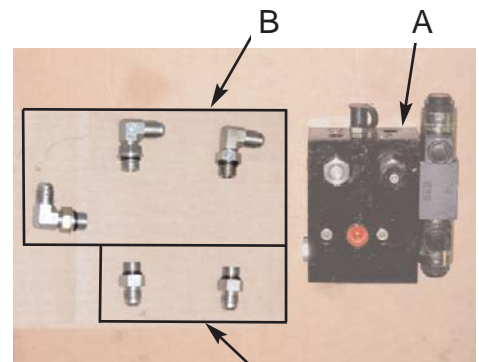
Tractor Preparation

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

Kit Contents

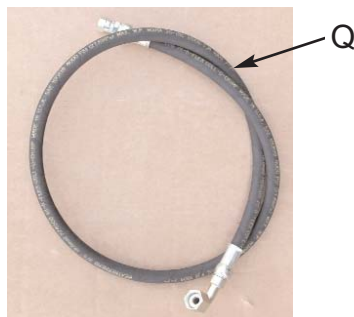
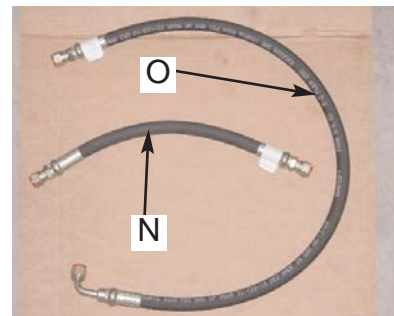
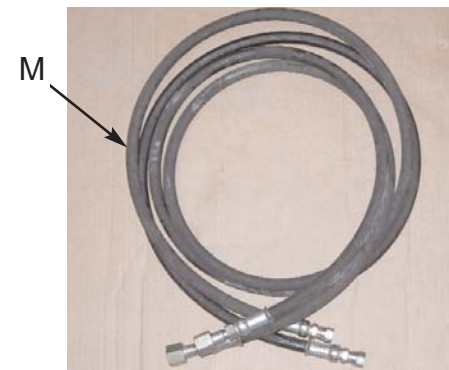
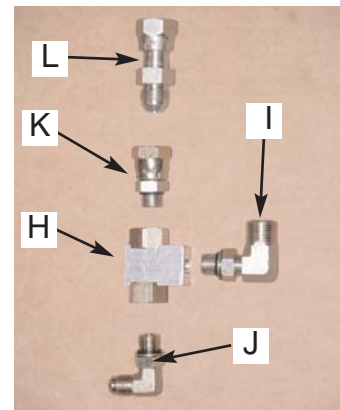
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
Bag #1 of 4 includes B & C			
B	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
D	640-0001	1	Hyd. Block Mnt - JD70
Bag #2 of 4 includes E			
E	675-2005	2	Bolt - 3/8NC x 3-1/4" Gr5, ZP
	678-1054	2	Washer, Narrow Flat - 3/8" ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP
Bag #3 of 4 includes F & G			
F	760-2069	2	Adapter, Hyd Run Tee - #8 ORFF
G	760-2063	2	Adapter, Hyd. - #6maleJIC x M14maleORB



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #4 of 4 includes H, I, J, K, & L			
H	760-0002	1	Assy, Hyd. Load Shuttle - #6femORB
I	760-2068	1	Adapter, Hyd. 90 Elbow - #8maleORFF x #6maleORB
J	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
K	760-2044	1	Adapter, Hyd. - #6maleORB x #8femJICswivel
L	760-2075	1	Adapter, Hyd. - #8maleJIC x #8femORFFswivel
M	760-1031	2	Hose, Hyd. - 3/8"x96", #6femJICswiv x #8femORFFswiv
N	760-1033	1	Hose, Hyd. - 3/8"x14", #6femJICswivel Both Ends
O	760-1034	1	Hose, Hyd. - 3/8"x36", #6femJIC x #6femJICswiv90EL
P	760-1032	1	Hose, Hyd. - 1/4"x24", #6femJICswivel Both Ends
Q	760-1123	1	Hose, Hyd. - 3/8" x 40", #6femJICswivel x #8femORFFswiv90EL
R	051-0145	1	Cable, Interface - 5 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.

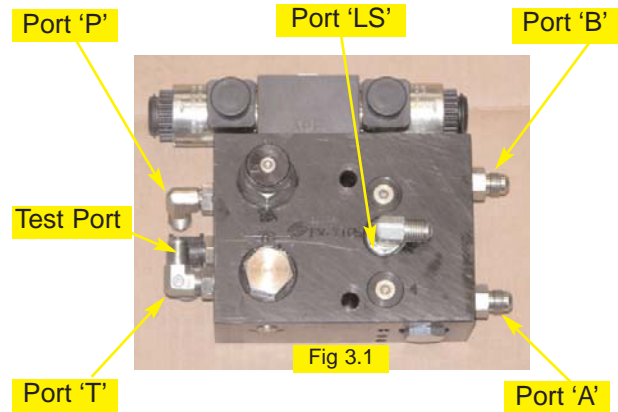
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake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

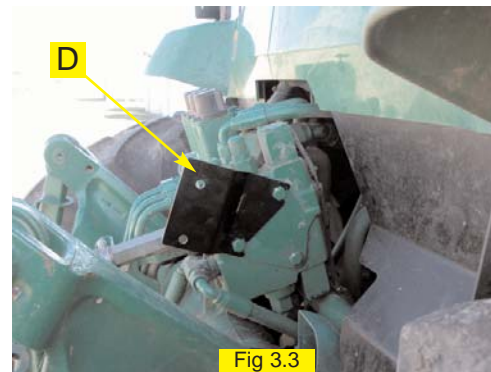
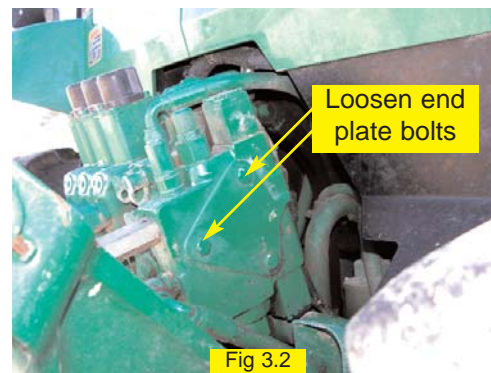
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install straight adapters (C) in the **A** and **B** ports and elbow adapters (**B**) in the **P**, **T**, and **LS** ports of the hydraulic control block. (Figure 3.1)

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.



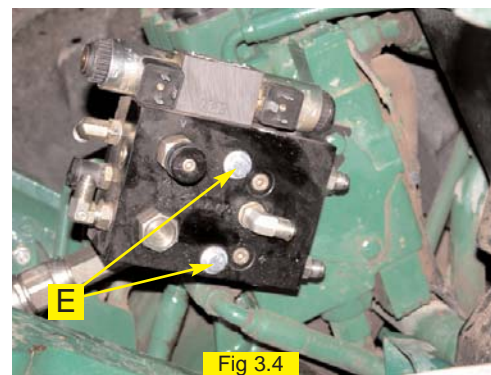
2. Install Mounting Bracket:

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 hydraulic bracket (**D**) on the loosened bolts and secure as shown. (Figure 3.3)



3. Install Hydraulic Control Block:

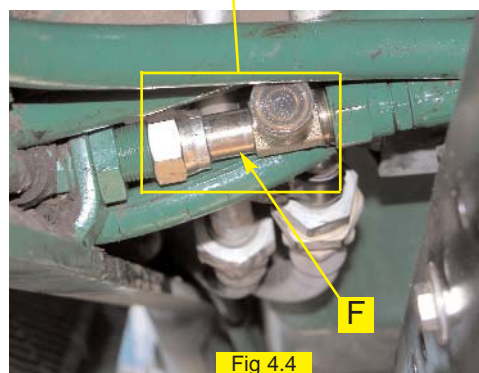
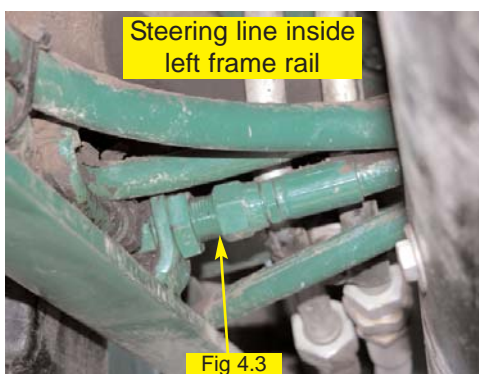
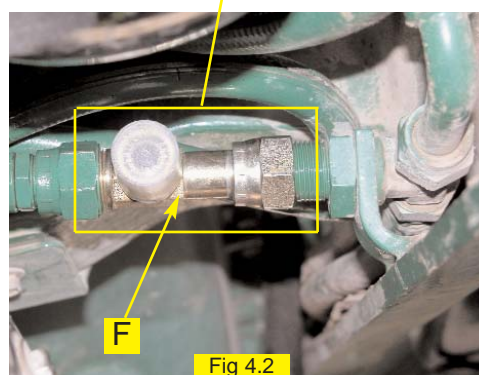
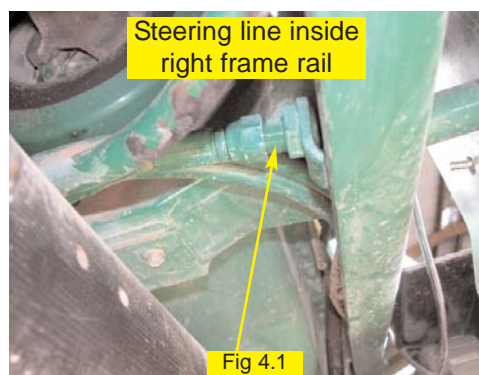
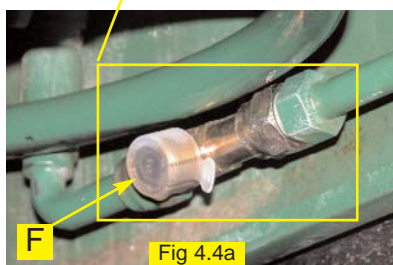
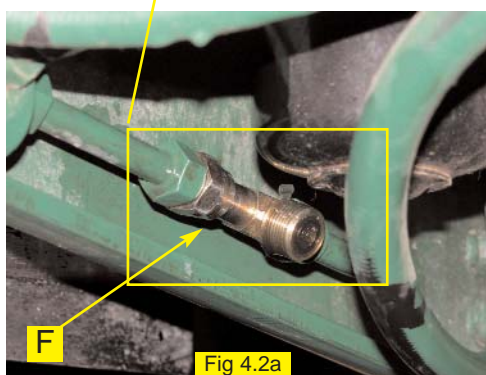
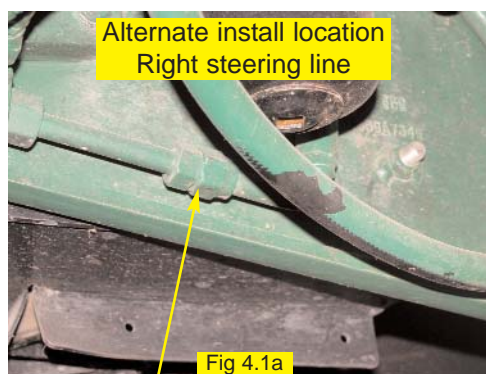
Using the provided hardware in group (**E**), mount the hydraulic control block to the bracket as shown. (Figure 3.4)



4. Install Steering Output Fittings:

Locate the steering lines under the tractor, below the cab, and inside the tractor frame. (Figure 4.1 and 4.3) Install run-tee fittings (**F**) provided, on the crossover tees of the tractor steering lines. (Figure 4.2, 4.3, and 4.4) 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.

Depending on the tractor model, the crossover tees may not be accessible for installing the run-tees (**F**). Install the run-tee fittings (**F**) into steering lines ahead of the hose elbows as shown. See figures 4.1a through 4.4a below.



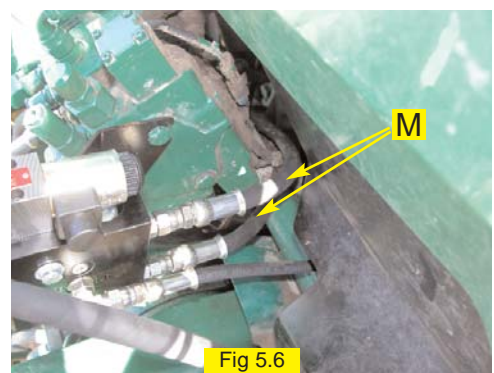
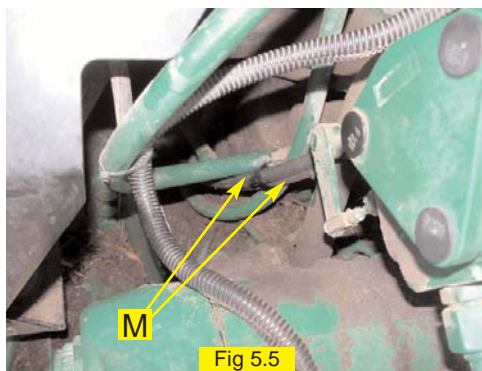
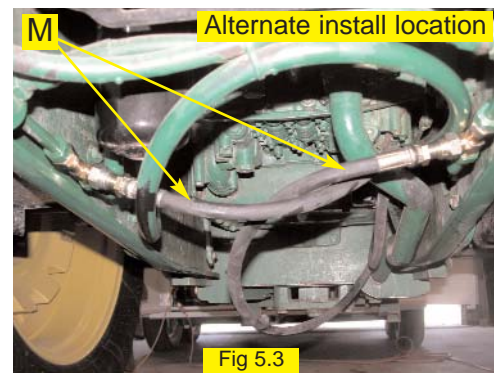
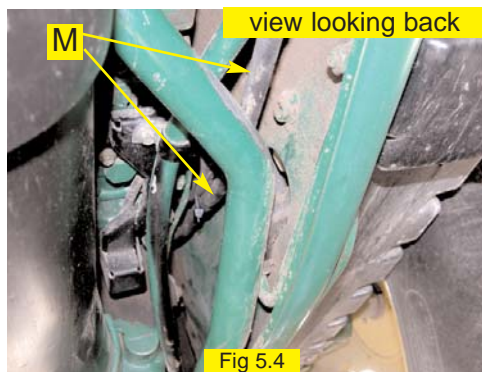
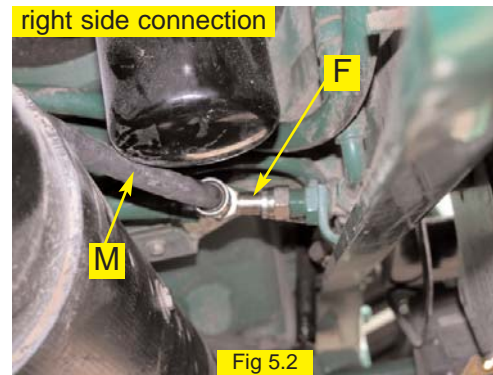
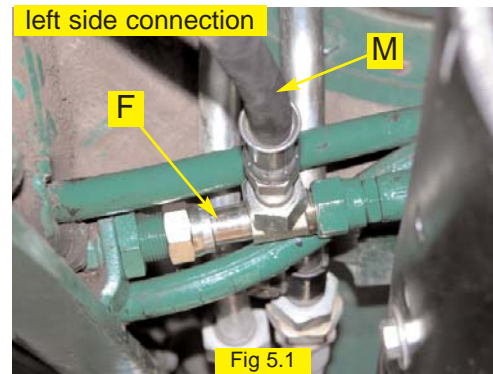
5. Install Steering Output Hoses:

Connect hoses (M) to the run-tee fittings installed in step 4. *(The hose ends with the large flat face fitting mount to the run-tee fittings. The hose ends with the smaller JIC fitting will connect to the hydraulic control block.)* (Figure 5.1 and 5.2)

Route the steering output hoses up from underneath the front of the tractor toward the back to the control block mounted in step 3. The right side steering hose should be routed over the top of the front drive line cover and proceed to the back of the tractor together with the left hose. (Figure 5.2) Route the hoses back inside the tractor frame on the left side, under the cab, and across to the hydraulic valve block. (Figure 5.3, 5.4, and 5.5)

Connect the steering output hoses to the A and B Ports on the control block.

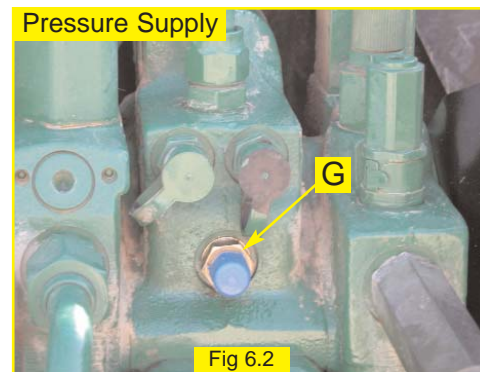
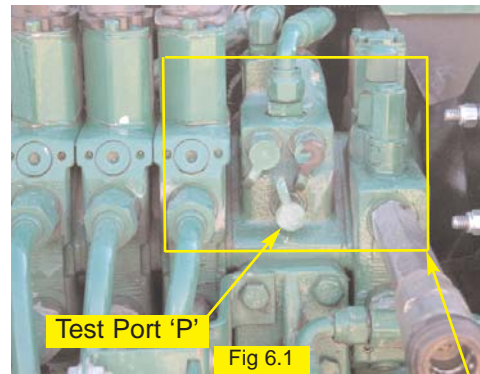
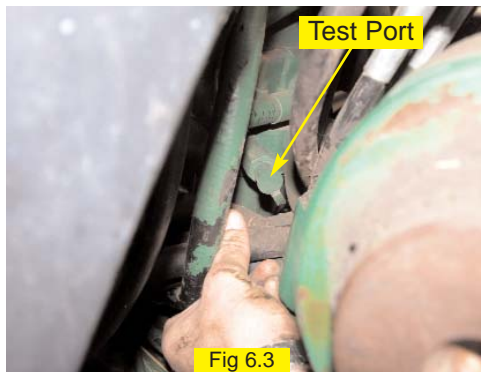
Check hose routing for clearance with all moving parts and secure in place with the provided tie straps. Securely tighten all steering output hose fittings.



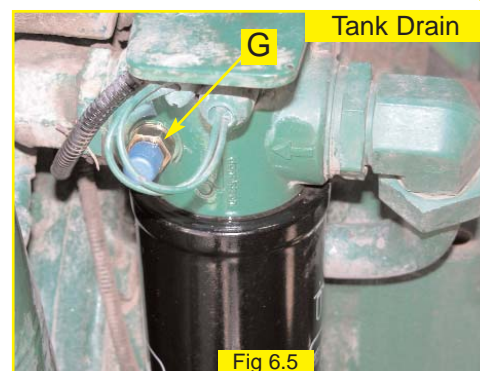
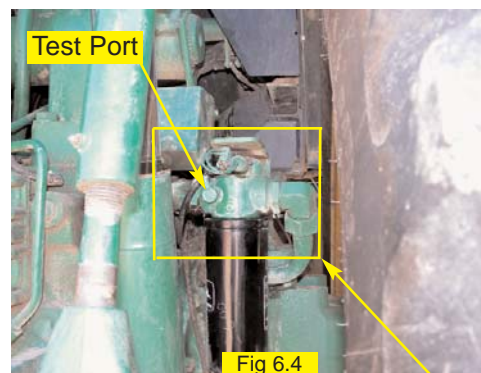
6. Install Pressure and Tank Fittings:

Remove the test port labeled **P** from the hydraulic valve stack casting at the rear of the tractor. (Figure 6.1) Install an adapter fitting (**G**) in its place. (Figure 6.2) This will be used as the pressure supply for the hydraulic system.

On older machines, the pressure port will not be available at the tractor valve stack. Locate the pressure test port under the cab on the left side near the hydraulic pump. Remove this test port to allow hose installation in step 8. (Figure 6.3) Use plastic caps on open ports to prevent excess leakage.



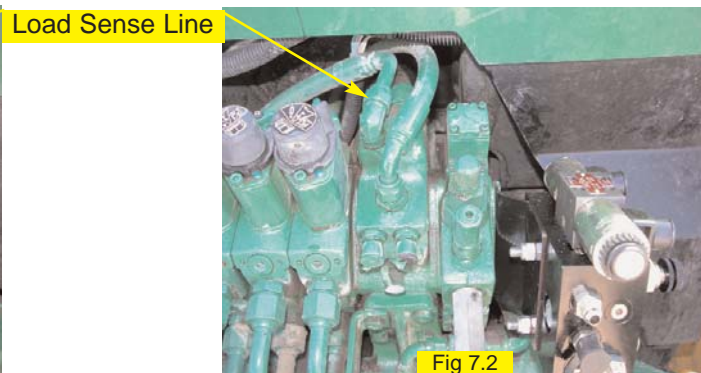
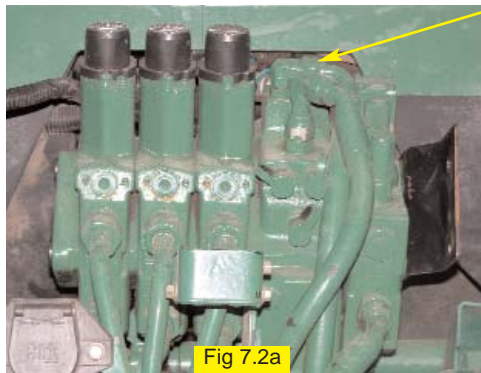
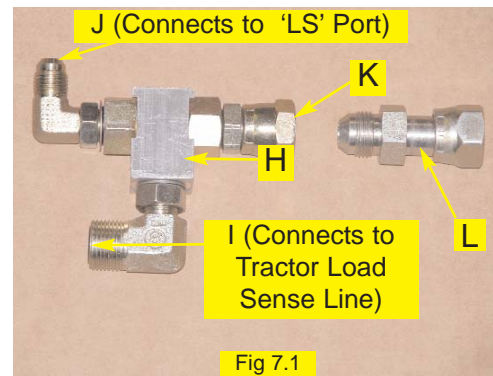
Locate the hydraulic filter on the right rear side of the tractor and remove the test port from the remote filter head. Install an adapter fitting (**G**) into the filter head. This will be used as the tank drain for the hydraulic control block. (Figure 6.5)



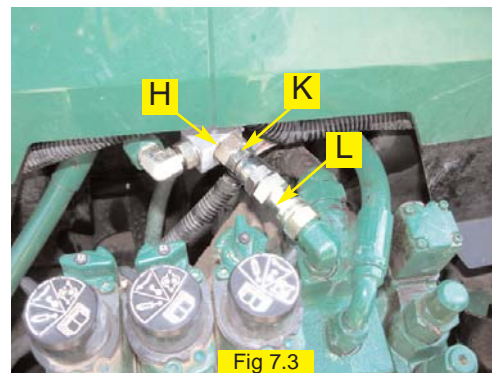
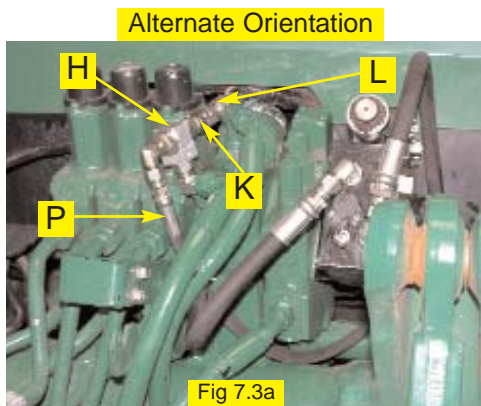
7. Install Load Sense Shuttle, Fittings, and Hose:

Pre-assemble the load sense shuttle (**H**) with adapter fittings (**I**), (**J**), and (**K**) as shown. (Figure 7.1)

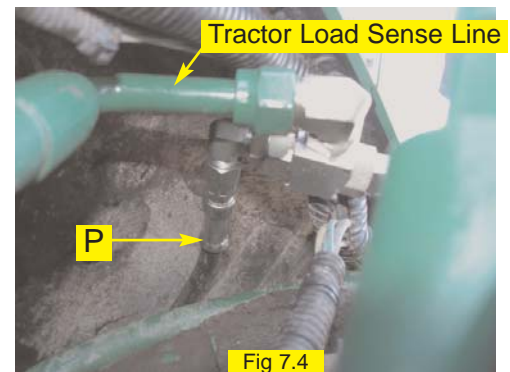
Locate the tractor load sense line on top of the hydraulic valve stack and disconnect hose from elbow fitting in the casting. (Figure 7.2) Some models may vary slightly in hose and fitting orientation. (Figure 7.2a)



Install the adapter fitting (**L**) to the load sense port on the valve stack. Connect the load sense shuttle fitting (**K**) to the installed adapter (**L**). (Figure 7.3 and 7.3a)



Reconnect the tractor load sense line to the center port (**I**) on the load sense shuttle (**H**). Connect hose (**P**) to the third port of the load sense shuttle (**J**). Route the other end of the hose (**P**) over to the hydraulic control block installed in step 3. (Figure 7.3a and 7.4)



7. Continued...

Connect the hose (**P**) to the **LS** port on the hydraulic control block as shown. (Figure 8.1)

Securely tighten all connections on the load sense lines.

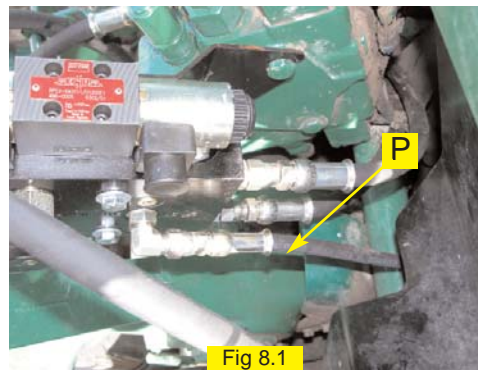


Fig 8.1

8. Install Pressure and Tank Hoses:

Install the elbow end of tank hose (**O**) to the fitting (**G**) installed on the filter head in step 6. (Figure 8.2)

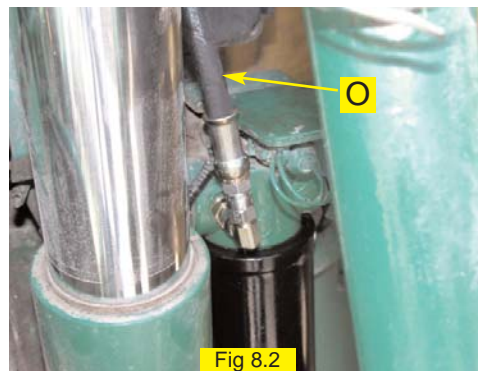


Fig 8.2

Route the other end of hose (**O**) to the control block and connect it to port **T**. (Figure 8.3)

Install hose (**N**) between port **P** on the hydraulic control block and the fitting (**G**) installed on the hydraulic valve stack in step 6. (Figure 8.3)

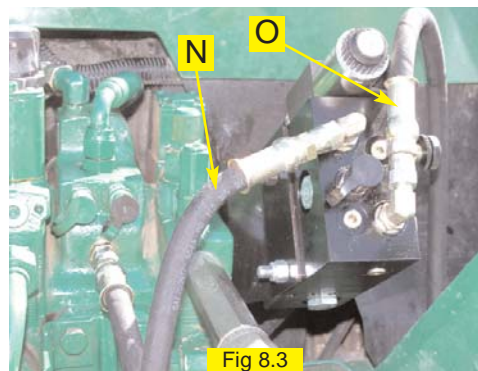


Fig 8.3

On models with the pressure connection near the hydraulic pump, as discussed in step 6, it is necessary to use pressure hose (**Q**) instead of (**N**). Attach pressure hose (**Q**) between the pressure port near the pump and the **P** port of the hydraulic control block. (Figure 8.4 and 8.5)

Securely tighten all connections on the pressure and tank lines.

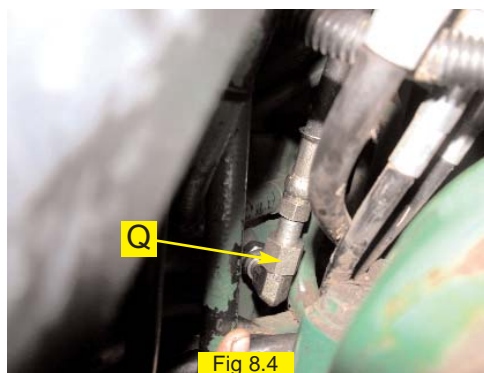


Fig 8.4

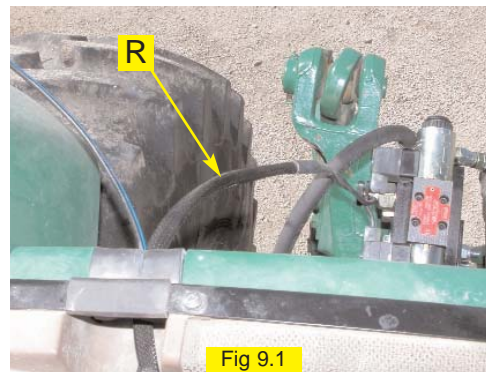


Fig 8.5

9. Install the Valve Control Cable:

Route the valve control cable (**R**) 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, such as the three-point hitch. Use tie straps as needed.



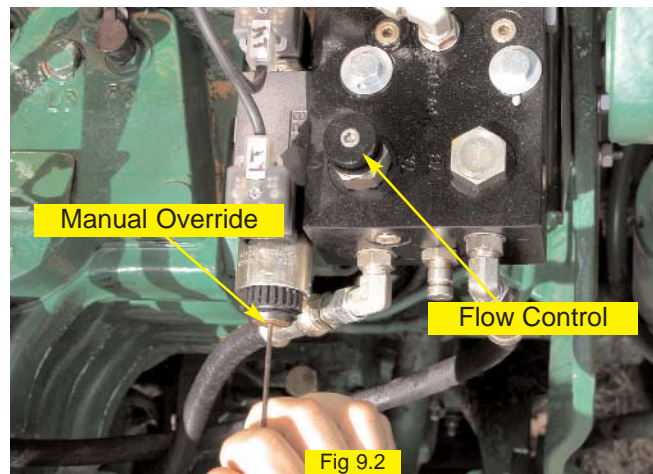
10. Verify Operation and Set Steering Control Rate:

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 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 tractor wheels all the way to one extreme. Count the number of seconds for the tractor 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**.



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.

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.

