

Automated Steering Hydraulic Installation Kit

P/N: ED-JD8050

Fits John Deere Tractor Models:

8430	8440	8450
8630	8640	8650
	8850	

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 4WD tractor models listed above. Please read this manual thoroughly before beginning the installation.



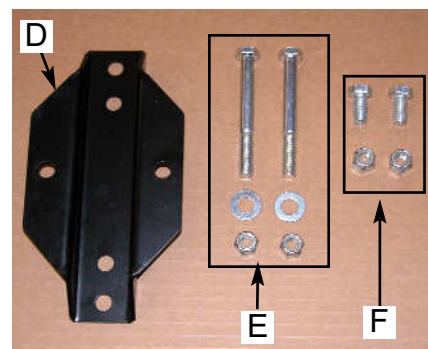
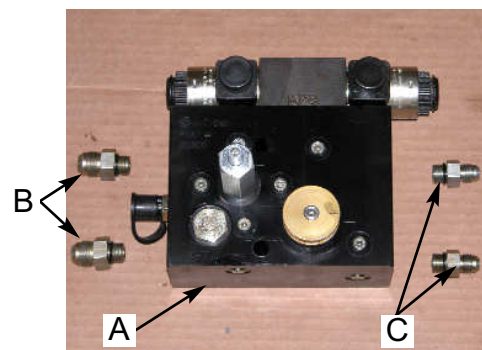
Tractor Preparation

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

Kit Contents

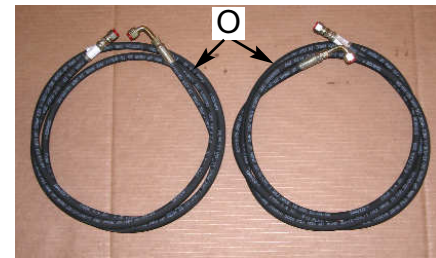
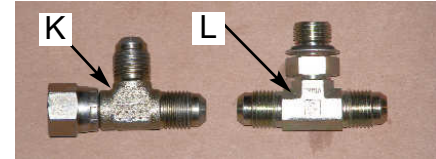
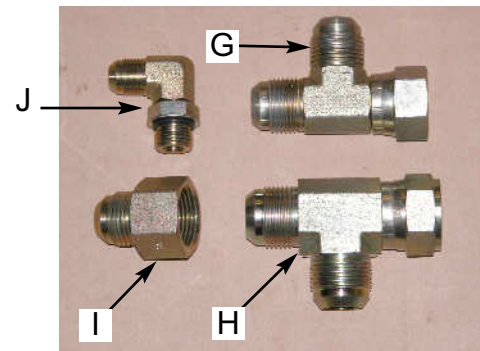
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0006	1	Assy, Hyd. Valve Block - PC/CL
Bag #1 of 4 includes B & C			
B	760-2073	2	Adapter, Hyd. - #8maleJIC x #6maleORB
C	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
D	640-0011	1	Hyd. Block Mnt
Bag #2 of 4 includes E & F			
E	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
F	675-2004	2	Bolt, 3/8NC x 1-1/4 Gr5 ZP
	678-1054	4	Washer, Narrow Flat - 3/4"OD x 13/32"ID 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 G, H, I, & J			
G	760-2016	1	Adapter, Hyd. Run Tee - #12 JIC
H	760-2024	1	Adapter, Hyd. Run Tee - #14 JIC
I	760-2023	1	Adapter, Hyd. - #14femJIC x #12maleJIC
J	760-2080	1	Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB
Bag #4 of 4 includes K & L			
K	760-2054	1	Adapter, Hyd. Run Tee - #6 JIC
L	760-2059	1	Adapter, Hyd. Branch Tee - #6MJx#6MB
M	760-1156	1	Hose, Hyd. - 1/2"x21", #10fJS x #12fJS
N	760-1157	1	Hose, Hyd. - 3/4"x19", #14fJS both ends
O	760-1158	2	Hose, Hyd. - 1/4"x96", #6fJS x #6fJS90
P	760-1159	1	Hose, Hyd. - 1/2"x108", #8fJS x #12fJS90
Q	760-1160	1	Hose, Hyd. - 1/2"x35", #8fJS both ends
R	051-0144	1	Cable, Interface - 10 ft.
	677-2001	20	Tie Strap, 11" Heavy Duty, Not Shown
	710-0053	1	Kti, 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.

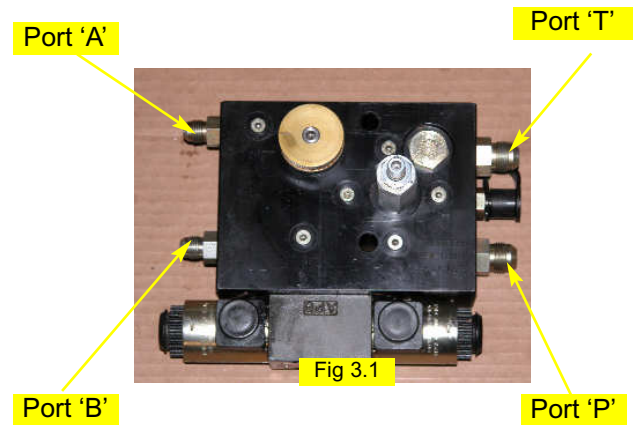
IMPORTANT:

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

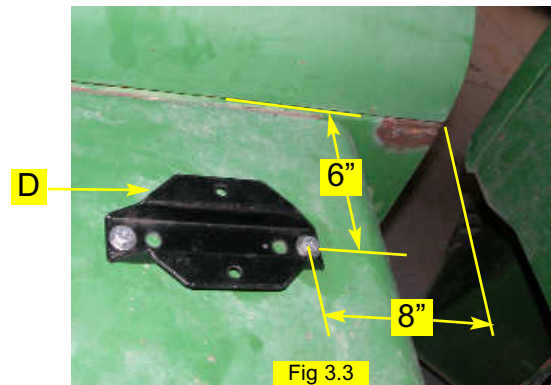
1. Prepare Hydraulic Control Block:

Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the straight adapter fittings (**B**) into the **P** and **T** ports, and install the straight adapter fittings (**C**) into the **A** and **B** ports of the hydraulic block.



2. Install Mounting Bracket:

To install the hydraulic mounting bracket, drill two $\frac{7}{16}$ " holes in the center shield near the left rear fender as shown. (Figure 3.2) The first hole will be located **8"** back from the leading edge of the rear fender and **6"** to the right as shown. (Figure 3.3) Use the mounting bracket (**D**) as a template to mark the second hole. Use the hardware in group (**F**) to secure the mounting bracket to the shield.



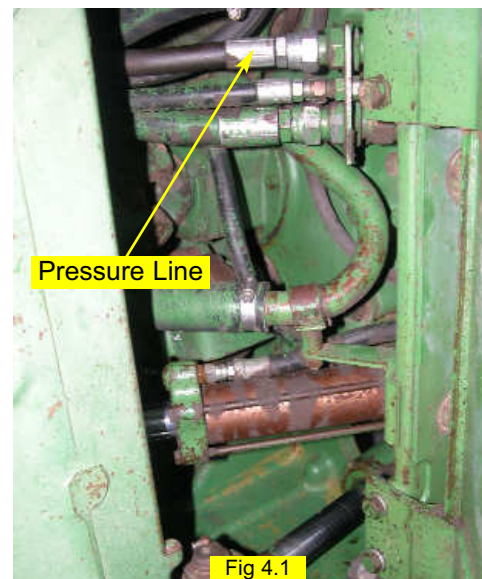
3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step 1, to the mounting bracket as shown using the mounting hardware in group (**E**). Be sure the hydraulic block is oriented with the **A** and **B** ports pointed toward the front of the machine, and tighten the mounting bolts securely. (Figure 3.4)

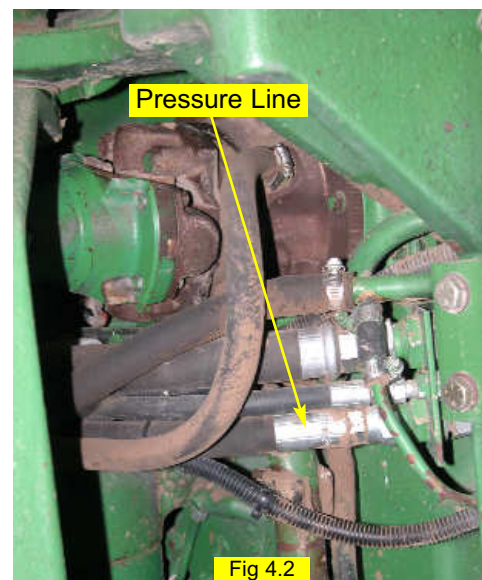


4. Install Pressure and Tank Fittings:

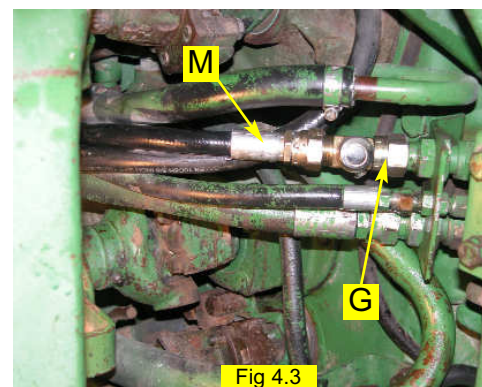
Locate the large pressure supply hose on right side of tractor in the articulation joint. (Figure 4.1 and 4.2) Remove this hose and install the provided run-tee (**G**) and the replacement hose (**M**) as shown. (Figure 4.3) On some tractor models, run-tee (**H**) and replacement hose (**N**) will be required due to different fitting sizes. (Figure 5.1)



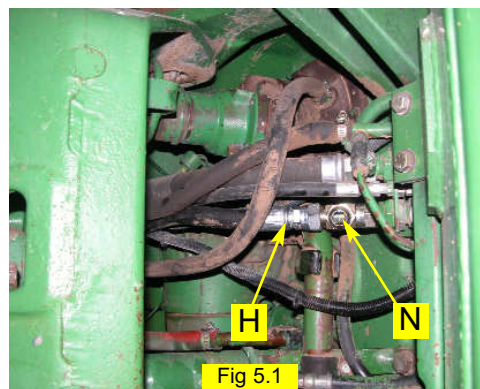
8x30 & 8x40 Pressure Line



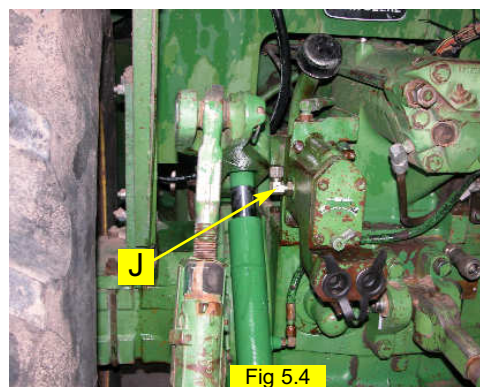
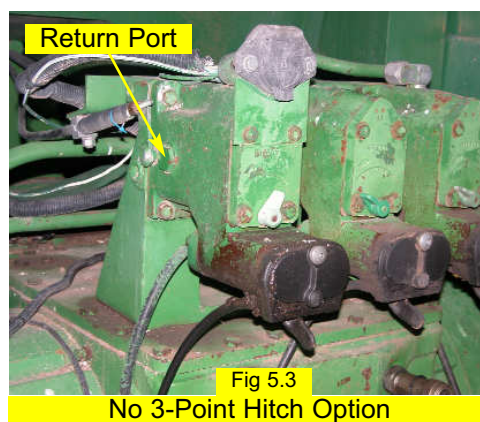
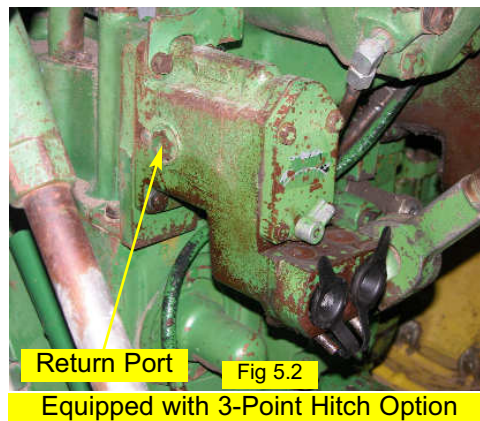
8x50 Pressure Line



4. Install Pressure and Tank Fittings: (Continued)



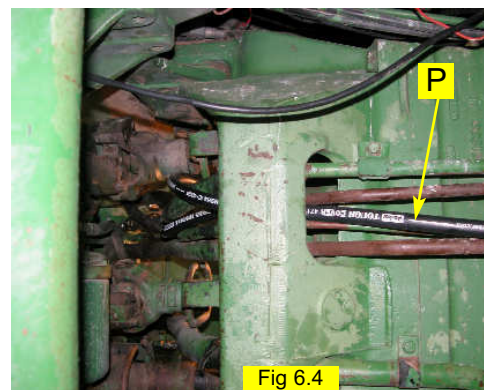
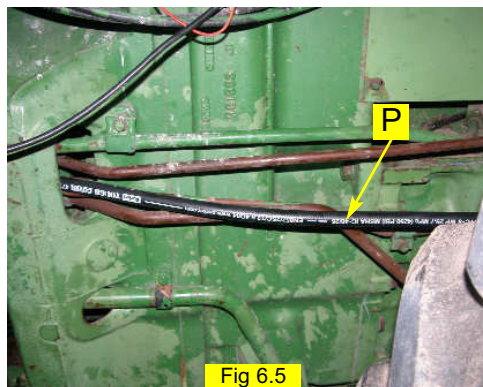
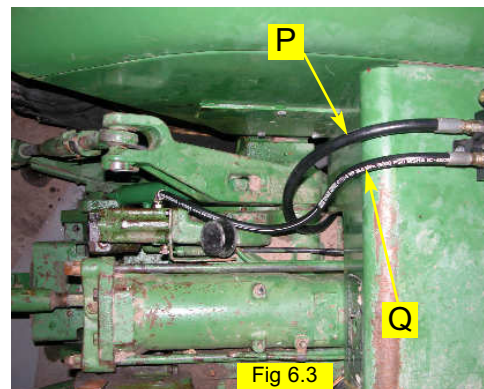
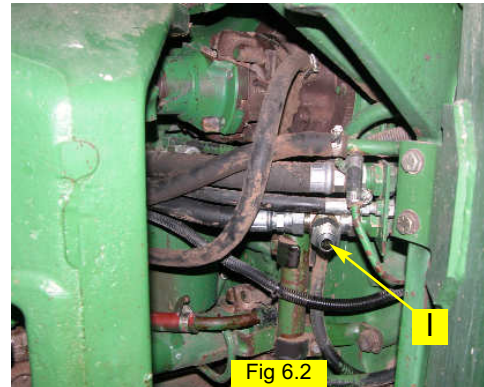
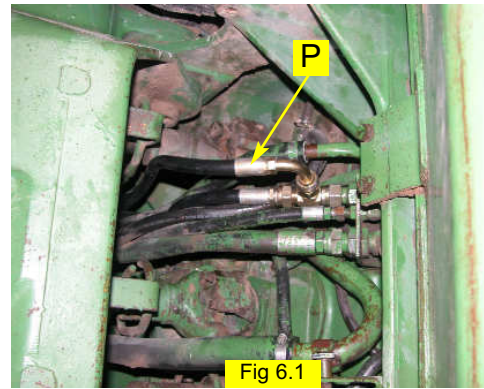
Locate the return port on the left side of the left remote selective control valve at the back of the tractor. (Figure 5.2 and 5.3) Remove the plug, and install the elbow fitting **(J)** provided. (Figure 5.4) It will be necessary to cap this elbow to prevent excessive leakage during installation.



5. Install Pressure and Tank Hoses:

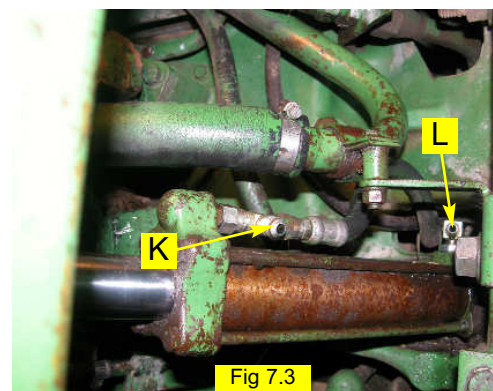
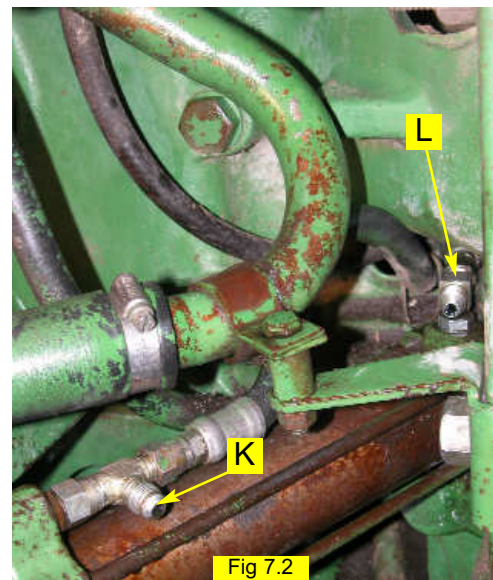
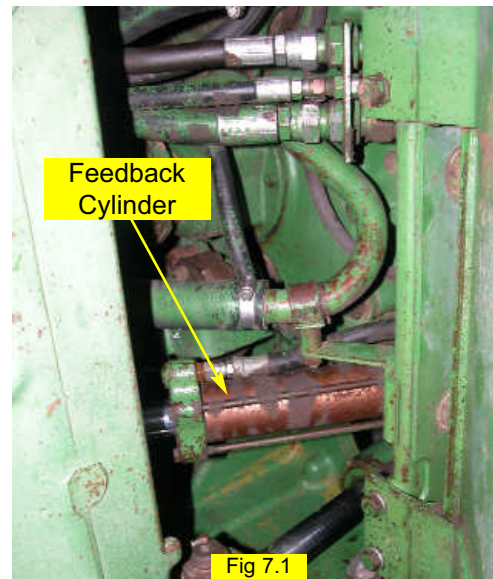
Install the pressure hose (**P**) between the run-tee (**G**) installed in step 4 and the **P** (pressure) port of the hydraulic control block. (Figure 6.1) On models that required the larger run-tee (**H**) in step 4, it will be necessary to use the reducer fitting (**I**) to install the provided pressure hose (**P**). (Figure 6.2) Install the tank hose (**Q**) between the elbow (**J**) installed at the remote valve and the **T** (tank) port of the hydraulic control block. (Figure 6.3)

The hoses should be routed cleanly along with other hydraulic plumbing. Make sure all hoses are routed free from entanglement and with enough flex to allow for tractor movements. (Figure 6.3, 6.4, and 6.5) Use heavy tie straps (included) as needed.



6. Install Steering Output Fittings:

Locate the steering lines at the feedback cylinder on the right side of the tractor in the articulation joint. (Figure 7.1) Remove both steering hoses from the cylinder. Remove the elbow in the head-end of the cylinder and install the provided branch-tee (**L**). (Figure 7.2) Install the run-tee fitting (**K**) to the elbow in the rod-end of the cylinder. (Figure 7.3) Reconnect both steering hoses. Use plastic caps to prevent excess leakage from the tees during installation.



7. Install Steering Output Hoses:

Install the steering hoses (O) to the open ends of the tees installed in **step 6** and to the **A** and **B** ports of the hydraulic control block. (Figure 8.1)

The hoses should be routed securely with other tractor plumbing securely and free from entanglement. Use heavy tie straps (included) as needed.



Fig 8.1



Fig 8.2

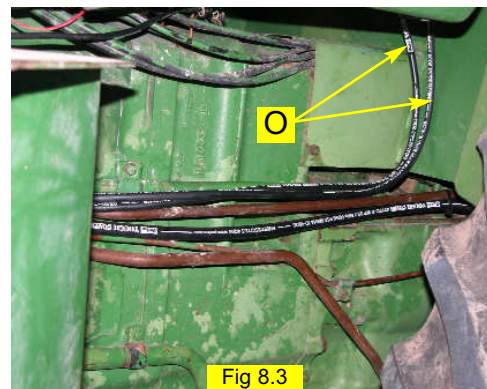


Fig 8.3



Fig 8.4

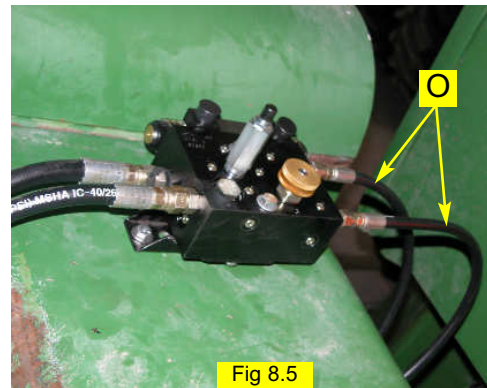


Fig 8.5

9. Install the Valve Control Cable:

Attach the hydraulic valve cable (**R**) to the hydraulic control block and route it into cab through the access panel as shown. (Figure 9.1)

Be sure the cable is routed securely and free from entanglement. Leave enough slack for tractor articulation and other movement. Use tie straps (included) 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.

Before setting the hydraulics, be sure the machine hydraulic oil has reached stable operating temperature. The hydraulic valve has a fine and a coarse adjustment. The fine adjustment is done by the flow control valve and the coarse adjustment is achieved by the pressure reducing valve (**PRV**). (Figure 9.2)

Adjust the hydraulic flow control knob to a starting position of **2 turns** from completely closed.

The coils on the hydraulic 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 articulation joint to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 9.2)

Unlock the jam-nut, and using a 3/16" allen wrench, adjust the **PRV** to achieve an end to end steering cycle time of approximately **15 seconds**. To reduce the cycle time, turn the **PRV clockwise**. Turn **counter-clockwise** to increase cycle time. Only make 1/4 turn adjustments, or smaller, to the **PRV** to close-in on the correct cycle time. Lock the jam-nut to secure the **PRV** setting.

Use the flow control valve to fine tune the hydraulics as needed. To adjust the knob, turn **clockwise** to reduce steering speed, **counter-clockwise** to increase steering speed. Use the knurled locking nut to secure the final flow control setting.

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.

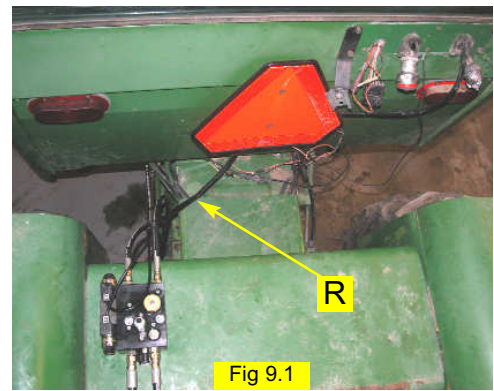
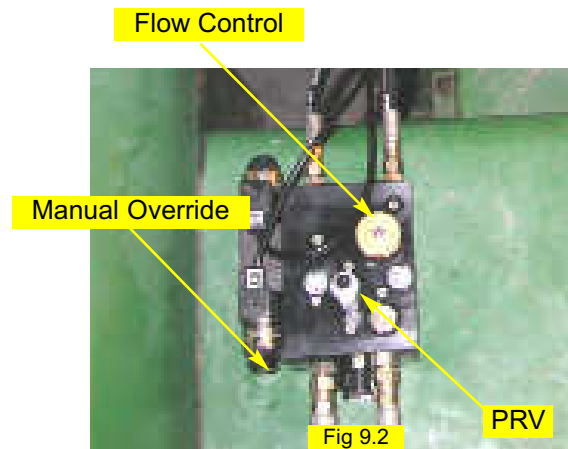


Fig 9.1



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.

