

Automated Steering Hydraulic Installation Kit

P/N: ED-NH9082-A

Fits Buhler Versatile and
New Holland Models:

2290	9184		
2335	9280	9282	9384
2360	9480	9482	9484
2375	9680	9682	9684
2425	9880	9882	9884

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 detailed instructions to install automated steering hydraulics on the tractors listed above. Please read this manual thoroughly before beginning the installation.

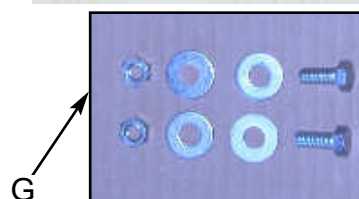
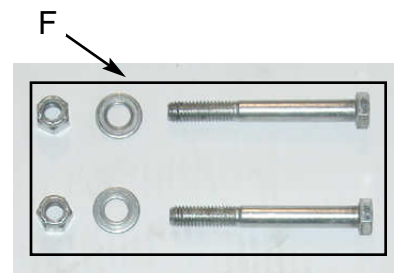
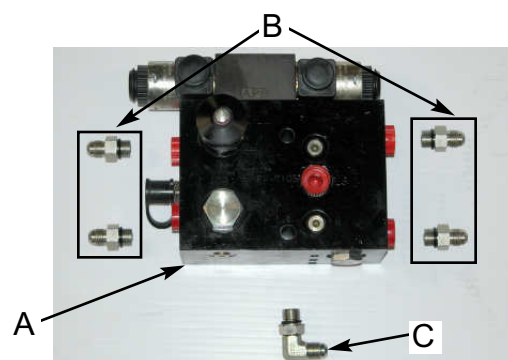
Machine Preparation

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

Kit Contents

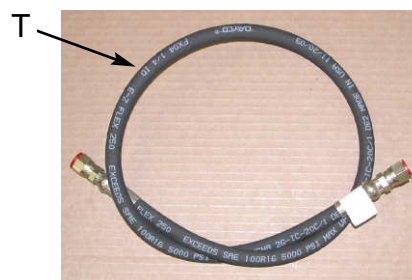
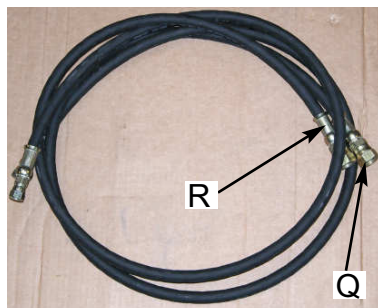
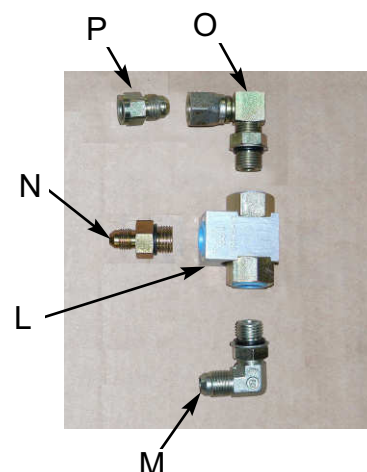
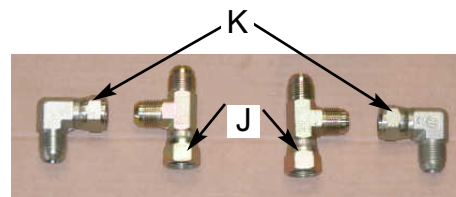
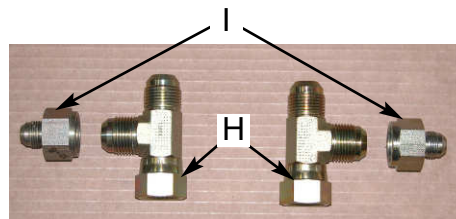
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0004	1	Assy, Hyd. Valve Block - LS, High Flow
Bag #1 of 4 includes B & C			
B	760-2056	4	Adapter, Hyd. - #6maleJIC x #6maleORB
C	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
D	640-0024	1	Hyd. Block Mnt, Versatile
E	640-0049	1	Hyd. Block Mnt, NH9082-A
Bag #2 of 4 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 13/32ID x 1/16"thk, ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP
G	675-2003	2	Bolt - 3/8NC x 1" Gr5, ZP
	678-1054	4	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 H, I, J, & K			
H	760-2027	2	Adapter, Hyd. Run Tee - #16 JIC
I	760-2026	2	Adapter, Hyd. - #16femJIC x #8maleJIC
J	760-2006	2	Adapter, Hyd. Run Tee - #10 JIC
K	760-2007	2	Adapter, Hyd. 90 Elbow - #10male JIC x #10femJICswiv
Bag #4 of 4 includes L, M, N, O, & P			
L	760-0002	1	Assy, Hyd. Load Shuttle - #6femORB
M	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
N	760-2036	1	Adapter, Hyd. - #4maleJIC x #6maleORB
O	760-2042	1	Adapter, Hyd. 90 Elbow - #6maleORB x #6femJICswiv
P	760-2029	1	Adapter, Hyd. - #4femJIC x #6maleJIC
Q	760-1074	1	Hose, Hyd. - 3/8" x 72", #6femJICswivel x #10femJICswiv
R	760-1075	1	Hose, Hyd. - 3/8" x 60", #6femJICswivel x #10femJICswiv
S	760-1076	2	Hose, Hyd. - 3/8" x 48", #6femJICswivel x #8femJICswivel
T	760-1077	1	Hose, Hyd. - 1/4" x 36", #6femJICswivel both
U	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

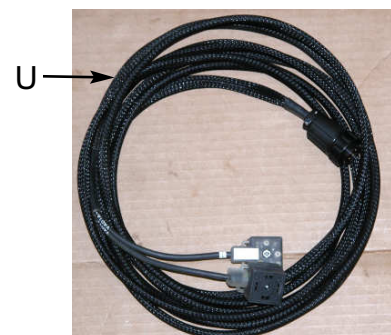


WARNING:

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.



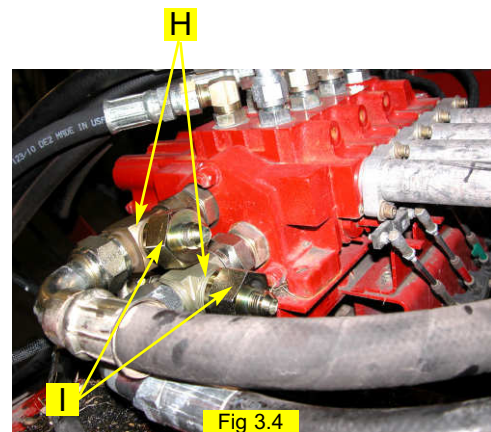
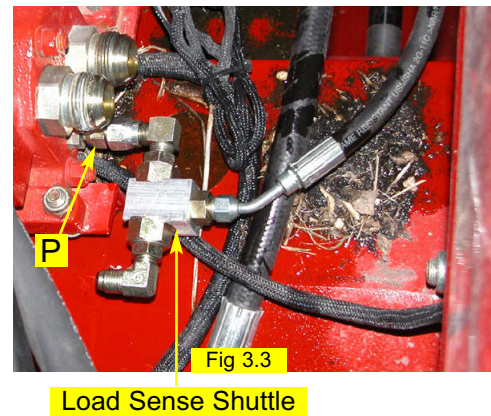
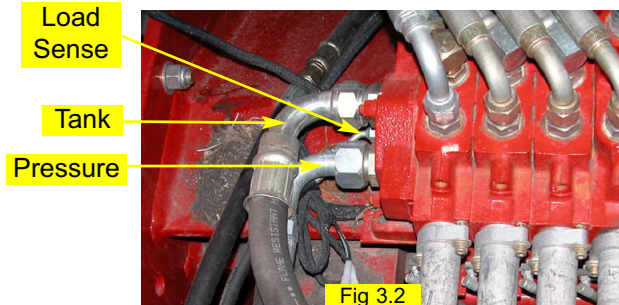
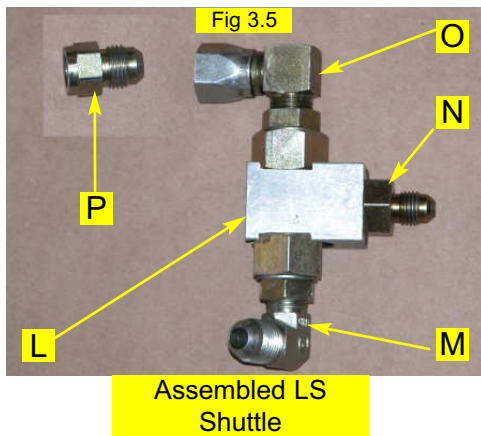
INSTALLATION

1. Install Pressure, Tank, and Load Sense Fittings:

Assemble the load sense shuttle (**L**) with the included fittings as shown below. (Figure 3.5)

If equipped, remove the hose shield at the back of the tractor to access the pressure, tank, and load sense ports on the tractor hydraulics. (Figure 3.1) Locate the pressure, tank and load sense ports on the right end of the hydraulic valve stack at the rear of the tractor. (Figure 3.2) Remove the pressure, tank and load sense lines from the end of the hydraulic valve stack.

Install the assembled load sense shuttle to the load sense port of the hydraulic valve stack using the provided expander adapter (**P**). (Figure 3.3) Reinstall the load sense hose to the center position of the load sense shuttle. Install the provided run-tees (**H**) onto the pressure and tank ports of the hydraulic valve stack and reinstall the pressure and tank hoses to the ends of the run-tees. (Figure 3.4) Install reducer fittings (**I**) onto the branches of the pressure and tank run-tees to allow for hose installation. (Figure 3.4)



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

Install the provided pressure and tank hoses (**S**) to the branches of the run-tees (**H**) attached at the tractor hydraulic valve stack. (Figure 4.1) Install the provided load sense hose (**T**) to the open end of the load sense shuttle installed at the tractor hydraulic valve stack. (Figure 4.2)

Leave the pressure and tank hoses (**S**) secured and accessible and reinstall the hose shield removed in step 5.

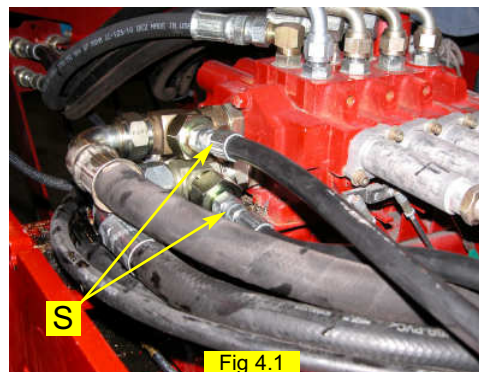


Fig 4.1

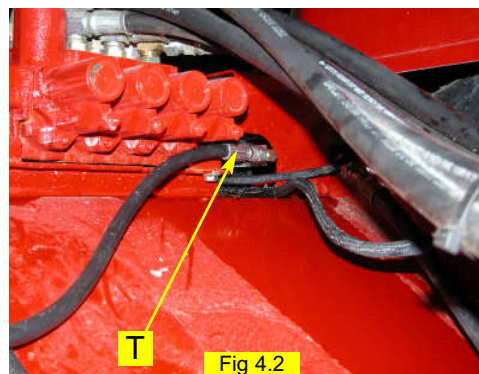


Fig 4.2

3. Prepare Hydraulic Control Block:

Make sure the hydraulic control block (**A**) is clean and dust free. Install straight adapter fittings (**B**) into the **P**, **T**, **A**, and **B** ports of the hydraulic control block (**A**). Install the elbow fitting (**C**) into the **LS** port of the hydraulic control block as shown. (Figure 4.3)

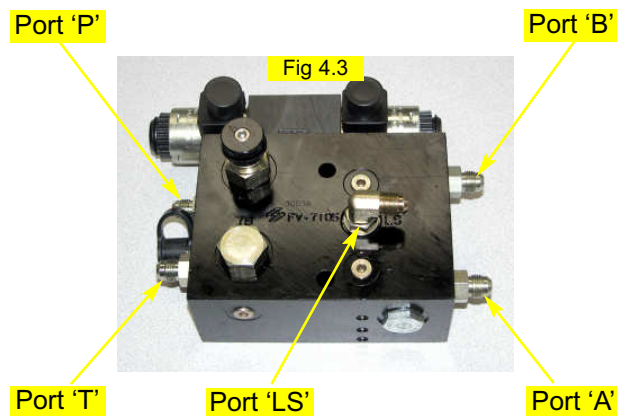


Fig 4.3

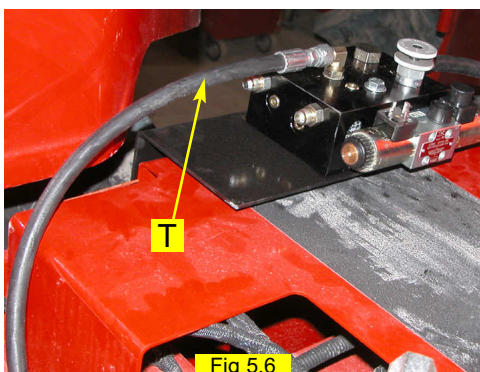
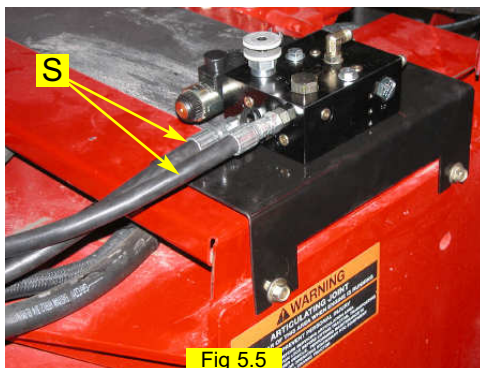
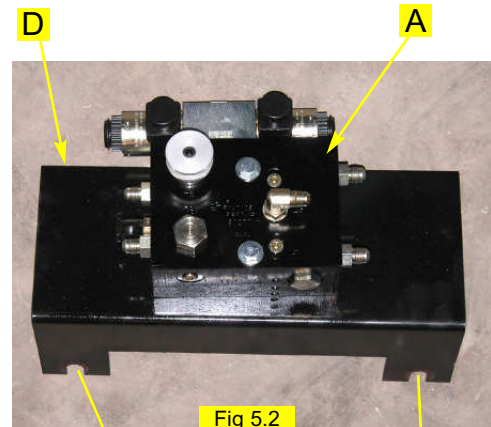
Attention:

If your tractor is equipped with the optional rear weight kit as shown at right, proceed to step **4a**. (Figure 5.1) If your tractor is not equipped with the optional weight kit, proceed to step **4**.

Optional Weight Kit**4. Mount Hydraulic Control Block:**

Secure the prepared hydraulic control block in the orientation shown to the mounting bracket (**D**) using the hardware provided in group (**F**). (Figure 5.2) Mount the hydraulic block/bracket assembly to the back left side of the tractor frame using the bracket slots and existing bolts as shown. (Figure 5.3 and 5.4)

Attach the **pressure (S)**, **tank (S)**, and **load sense (T)** hoses, installed in step **2**, to the respective **P**, **T**, and **LS** ports of the hydraulic control block. (Figure 5.5 and 5.6)

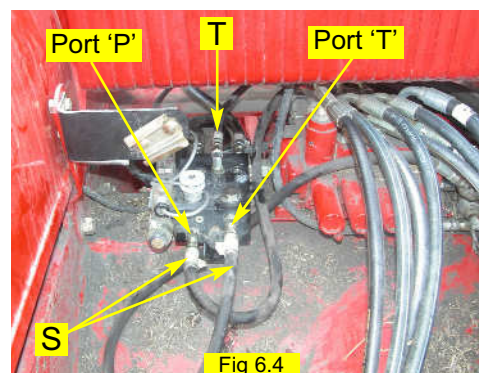
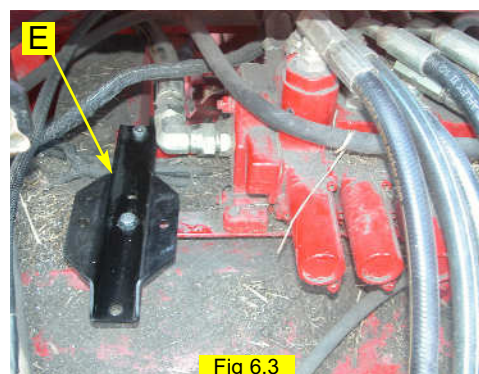
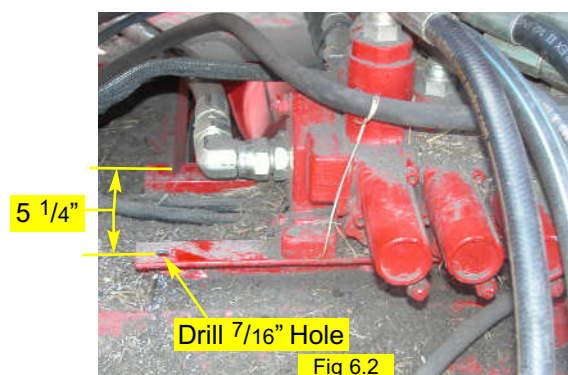


4a. Mount Hydraulic Control Block:

Locate the slot in the end of the tractor hydraulic valve stack bracket to the left side of the tractor valve stack. (Figure 6.1) Line up the bottom hole in the provided control block mounting bracket (**E**) with the slot in valve stack bracket and use the second hole in the mounting bracket (**E**) as a template to mark a drill location for a mating hole. Drill a $\frac{7}{16}$ " diameter hole in the location shown. The center to center distance between mounting holes should be 5 $\frac{1}{4}$ ". (Figure 6.2)

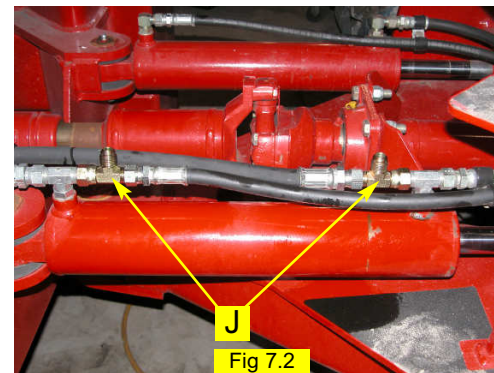
Install the control block mounting bracket using the hardware in group (**G**). (Figure 6.3) Attach the prepared hydraulic control block to the mounting bracket using hardware group (**F**). The hydraulic control block must be oriented with the **P** and **T** ports pointed toward the back of the tractor.

Attach the pressure (**S**), tank (**S**), and load sense (**T**) hoses, installed in step 2, to the respective **P**, **T**, and **LS** ports of the hydraulic control block. (Figure 6.4)



5. Install Steering Output Fittings:

Install the provided run-tees (**J**) into the lines attached to the left steering cylinder in the center of the tractor as shown. (Figure 7.2)

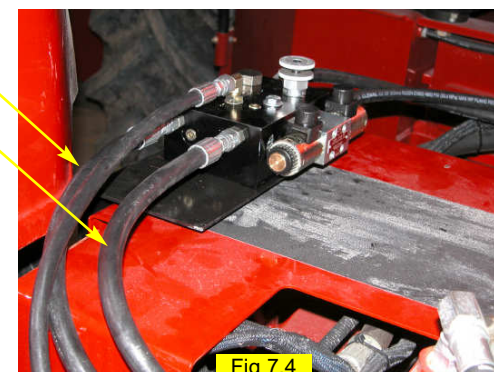
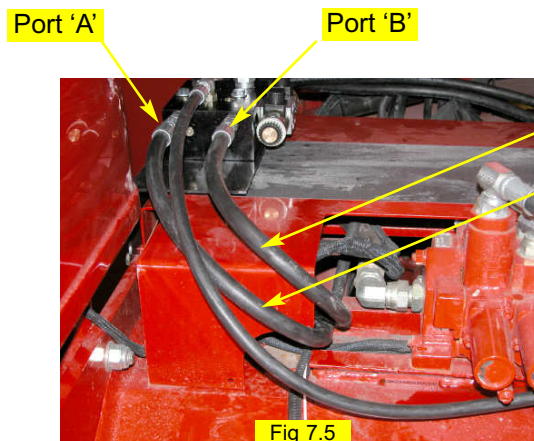
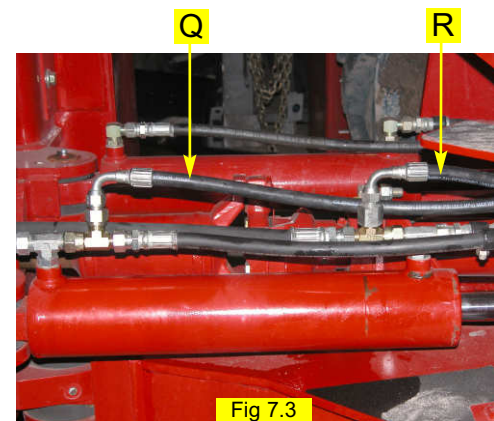


Attention:

If your tractor is equipped with the optional rear weight kit, shown in figure 5.1, proceed to step **6a**. If your tractor is not equipped with the optional weight kit, proceed to step **6**.

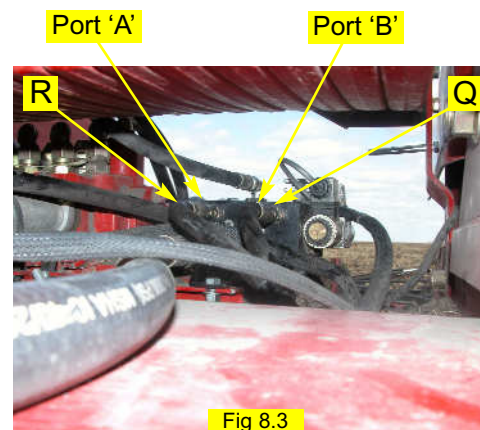
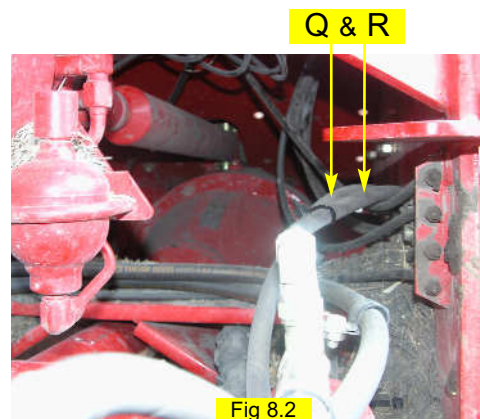
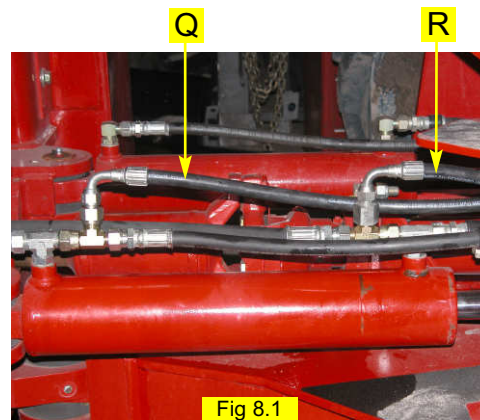
6. Install Steering Output Hoses:

Install the provided steering output hoses (**Q** and **R**) to the branches of the run-tees on the steering cylinder using the elbow adapter fittings (**K**). (Figure 7.3) Route the output hoses back and up to attach to the **A** and **B** ports of the hydraulic control block. (Figure 7.4 and 7.5)



6a. Install Steering Output Hoses:

Install the provided steering output hoses (**Q** and **R**) to the branches of the run-tees on the steering cylinder using elbow adapter fittings (**K**). (Figure 8.1) Route the output hoses back and up to attach to the **A** and **B** ports of the hydraulic control block. (Figure 8.2 and 8.3)



7. Install the Valve Control Cable:

Connect the valve control cable (U) to the hydraulic control block and route it into the cab. (Figure 9.1 and 9.2) An access panel can be removed from under the back right corner of the cab to allow routing of the valve cable. (Figure 9.3 and 9.4) Secure enough slack in the valve cable to allow for tractor articulation.

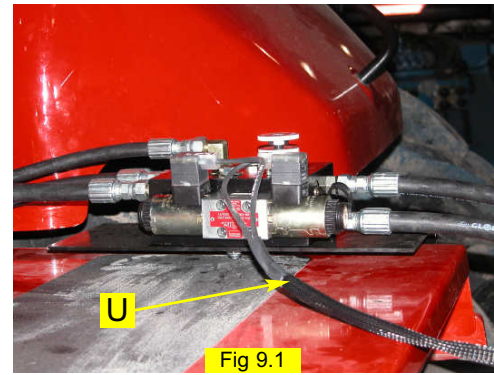


Fig 9.1

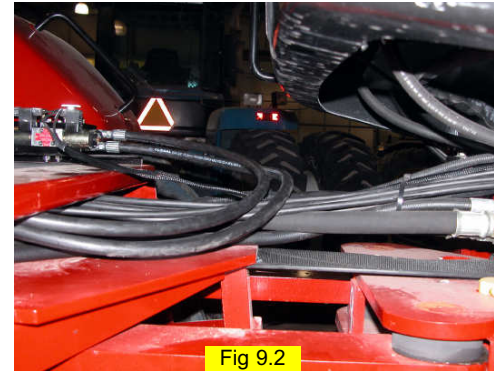


Fig 9.2

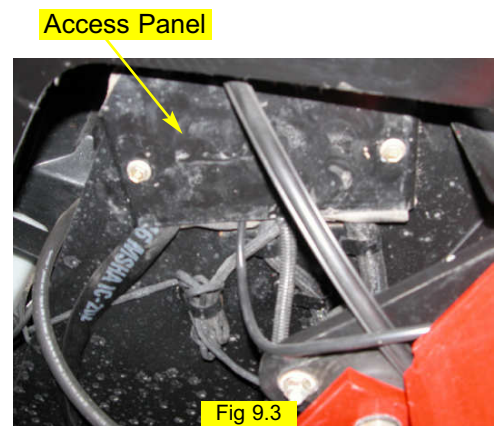


Fig 9.3

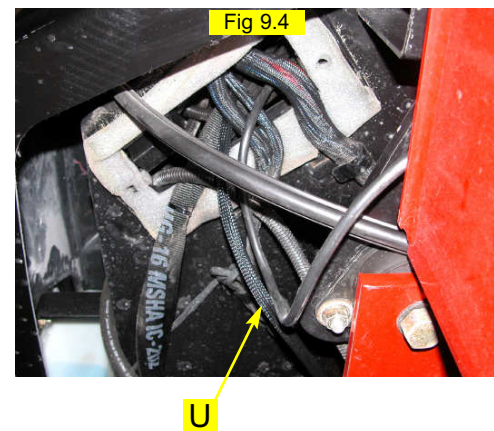


Fig 9.4

10. Verify Operation and Set Steering Control Rate:

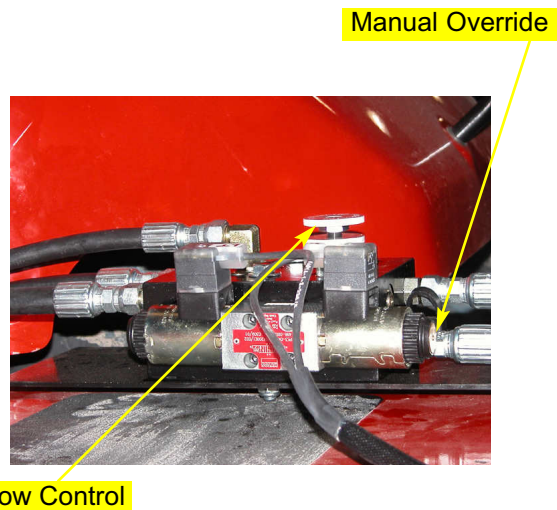
Cleanup the installation area around the tractor and make certain that it is safe to operate. Start the tractor and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

Adjust the hydraulic oil flow control knob to a starting position of **2 1/2 turns** from completely closed. To adjust the knob, turn clockwise to reduce flow, counter-clockwise to increase flow. The knurled locking nut should be tightened against the cartridge face to maintain desired setting.

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 articulation joint to move all the way in the opposite direction while pressing the manual override of the other coil.

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.



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.

