

Automated Steering Hydraulic Installation Kit

P/N: ED-JD4060

Fits John Deere Tractor Models:

4560

4760

4960



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 4060 series tractors. Please read this manual thoroughly before beginning the installation.

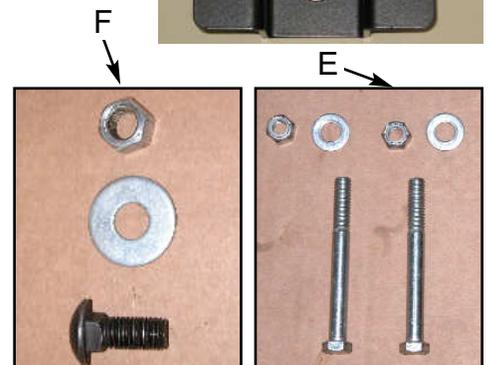
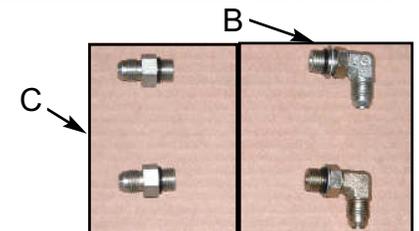
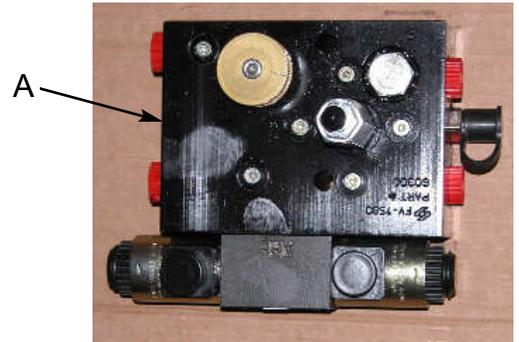
Tractor Preparation

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

Kit Contents

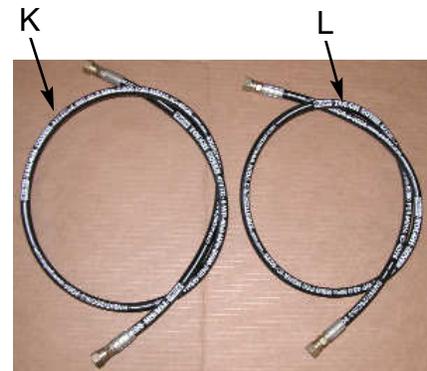
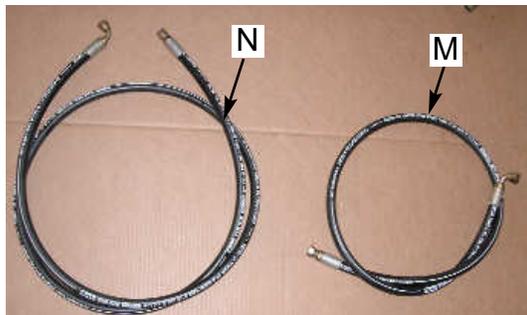
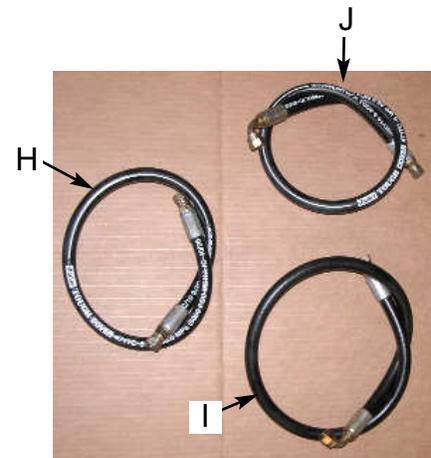
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0006	1	Assy, Hyd. Valve Block - PC/CL
Bag #1 of 3 includes B & C			
B	760-2058	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
Bag 2 of 3 includes E & F			
D	640-0055	1	Brkt, Hyd. Block Mnt, JD4040/4060
E	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
F	675-2022	1	Bolt, Carriage - 5/8NC x 1-1/2 Gr5 ZP
	678-1056	1	Washer, Narrow Flat - 5/8", nominal
	676-1037	1	Nut, Lock - 5/8NC ZP



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag 3 of 3 includes G			
G	760-2054	4	Adapter, Hyd. Run Tee - #6 JIC
H	760-1140	1	Hose, Hyd. - 3/8"x32", #6femJICswivel both ends
I	760-1136	1	Hose, Hyd. - 3/8"x38", #6femJICswiv x #6femJICswiv 90EL
J	760-1050	1	Hose, Hyd. - 3/8"x32", #6femJICswiv x #6femJICswiv90EL
K	760-1142	1	Hose, Hyd. - 1/4"x56", #6femJICswivel both ends
L	760-1141	1	Hose, Hyd. - 1/4"x53", #6femJICswivel both ends
M	760-1134	1	Hose, Hyd. - 3/8"x61", #6femJICswiv x #6femJICswiv 90EL
N	760-1135	1	Hose, Hyd. - 3/8"x101", #6femJICswiv x #6femJICswiv 90EL
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.

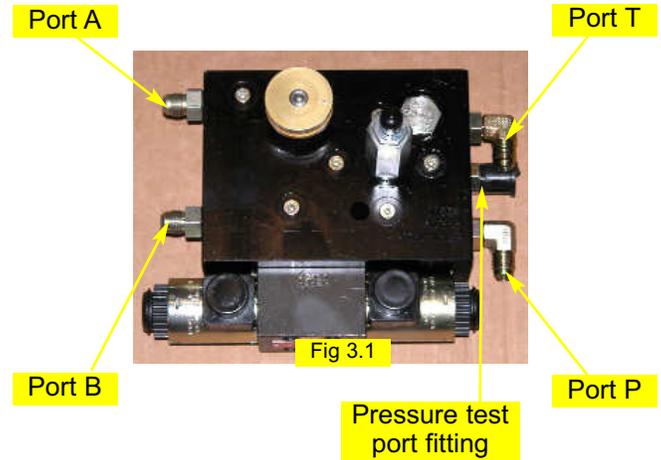


INSTALLATION

1. Prepare Hydraulic Control Block:

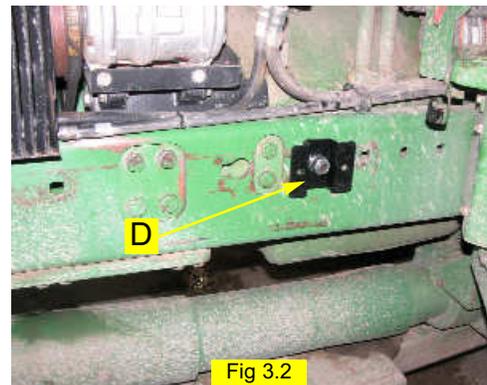
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the elbow adapters (**B**) in the **P** and **T** ports. Install the straight adapters (**C**) into the **A** and **B** ports of the hydraulic control block. (Figure 3.1)

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.



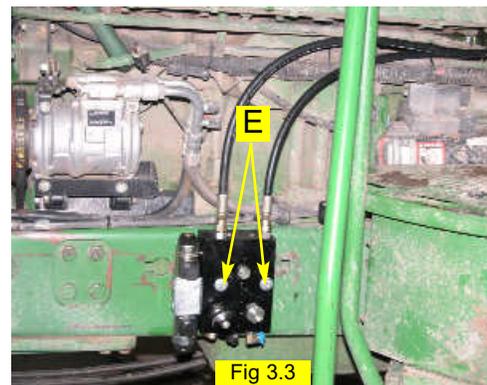
2. Install Mounting Bracket:

Locate the rectangular slotted hole on the left side of the tractor frame. Use the hardware in group (**F**) to install the Hydraulic block mounting bracket (**D**) to the tractor frame as shown. (Figure 3.2)



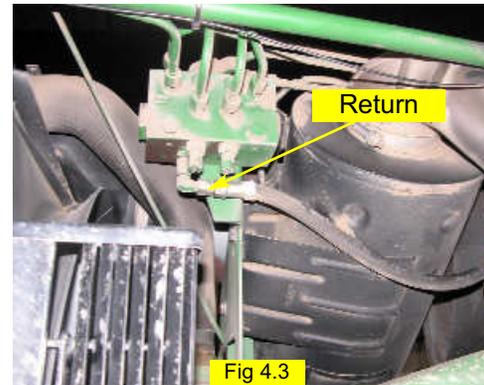
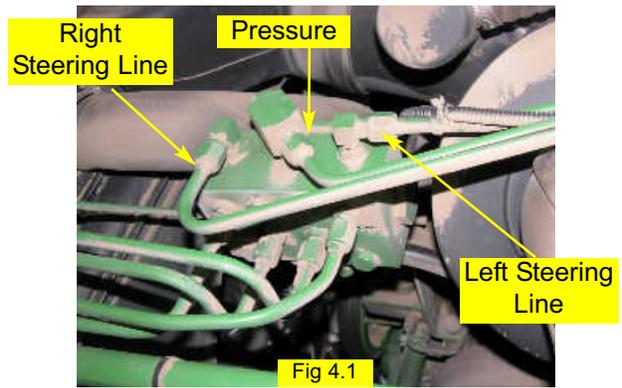
3. Install Hydraulic Control Block:

Mount the hydraulic control block to the bracket using the provided hardware in group (**E**). Be sure the hydraulic control block is mounted with **A** and **B** ports pointing up as shown. (Figure 3.3)

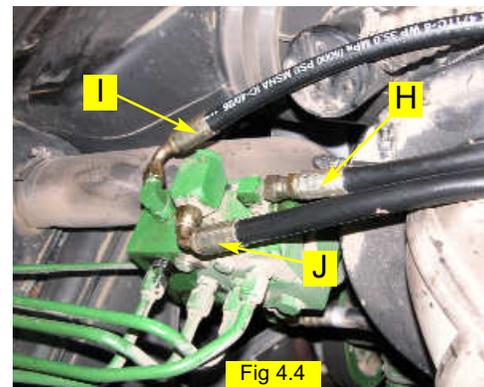


4. Install Hydraulic Output Fittings:

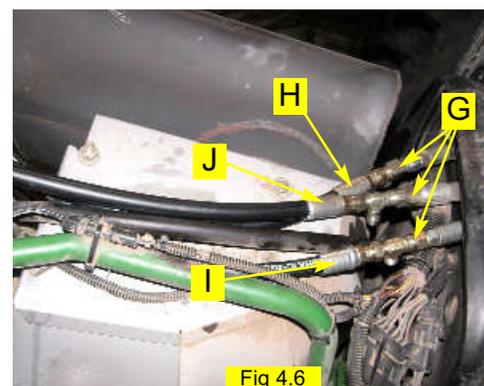
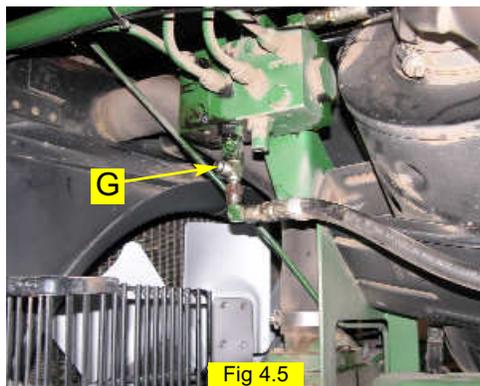
Locate pressure, return, left, and right input connections at the tractor steering valve above the engine. (Figure 4.1) On top of the tractor steering valve are the pressure, right, and left input connections. Below the valve is the return connection. (Figure 4.3) The pressure, right, and left input lines must be replaced with rubber hoses (**H**, **I**, & **J**) in order to allow for the insertion of the run-tees (**G**). (Figure 4.4)



Remove the three steel lines as noted above. Install hose (**J**) in place of the steel pressure line and insert run-tee (**G**) near the cab as shown. Install hose (**H** and **I**) in place of the steel right and left turn lines and insert run-tees (**G**) near the cab as shown. (Figure 4.6) It will be necessary to loosen and rotate port fittings in the tractor steering valve to allow for proper hose installation and routing. (Figure 4.4)

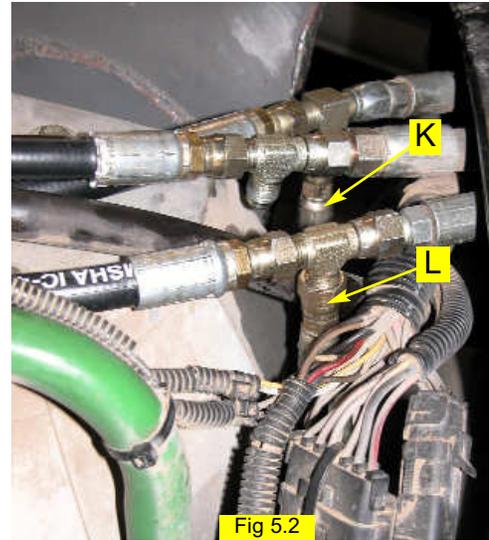
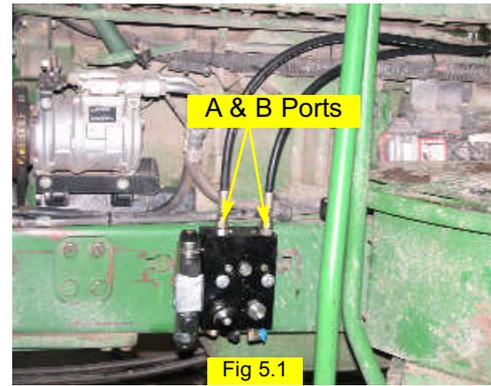


Install the run-tee (**G**) in the return line below the tractor steering valve. Leave all connections loose to allow for the following installation steps. (Figure 4.5)



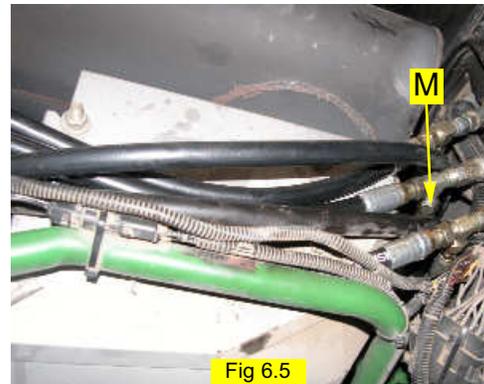
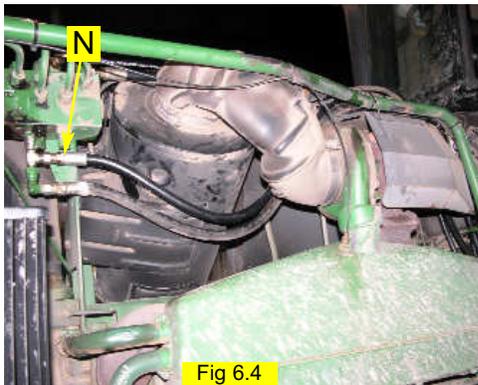
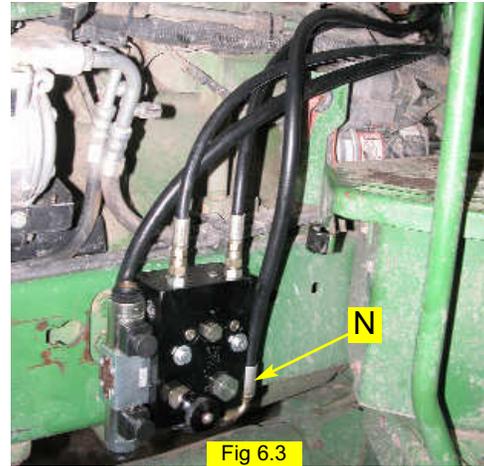
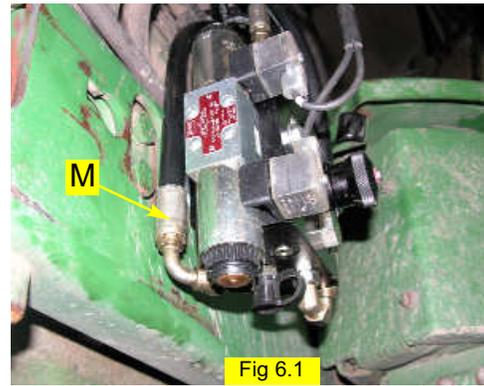
5. Install Hydraulic Hoses:

Connect the left and right steering hoses (**K** and **L**) between the **A** and **B** ports of the hydraulic control block and the run-tees installed in the right and left steering lines in step 4. (Figure 5.1 and 5.2) Route the hoses as indicated in the pictures. (Figure 5.3)



6. Install Hydraulic Hoses: (Continued)

Connect the pressure and return hoses (N and M) between the respective run-tees installed in step 5 and the P and T ports of the hydraulic control block. (Figure 6.1, 6.3, 6.4 and 6.5) Route the hoses as indicated. (Figure 6.2 and 6.6) The hose ends with the 90 degree elbows will be installed at the hydraulic control block as shown. (Figure 6.1)

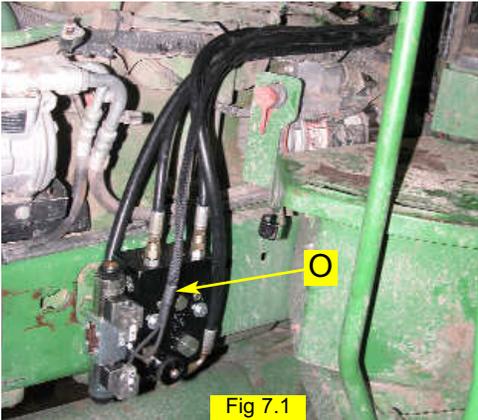


Tighten all connections and use heavy tie straps to secure hoses as needed.



7. Install the Valve Control Cable:

Route the valve control cable (O) from the hydraulic control block back behind the engine and across to the right side of the tractor. (Figure 7.1) Route the cable through the cab access window in the lower front corner of the cab. Remove enough slack out of the cable to prevent entanglement with tractor moving parts. Use tie straps as needed.



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.

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 a pressure reducing valve (PRV).

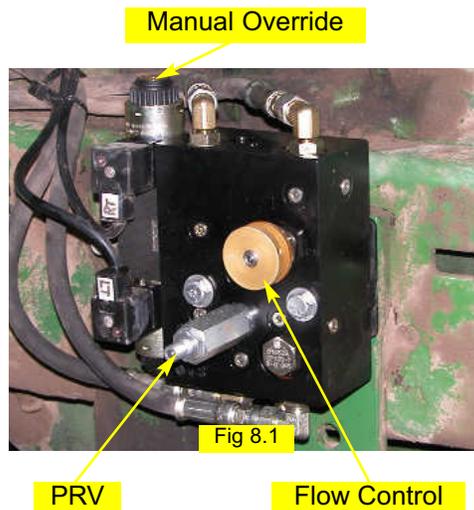
Adjust the hydraulic flow control knob to a starting position of **2 turns** from completely closed.

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.

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 **17 seconds**. To reduce the cycle time, turn the PRV **clockwise**. Turn **counter-clockwise** to increase cycle time. Only make $\frac{1}{4}$ **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.

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.



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.