

# Automated Steering Hydraulic Installation Kit

P/N: ED-JD8070

Fits John Deere Tractor Models:

8560	8570
8760	8770
	8870
8960	8970



## 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.

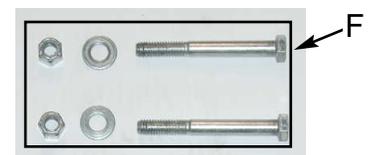
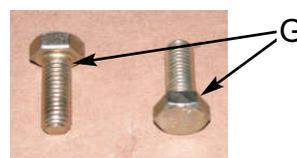
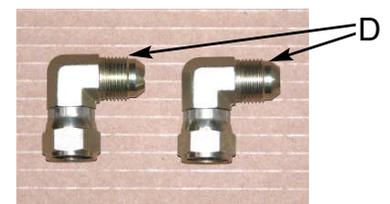
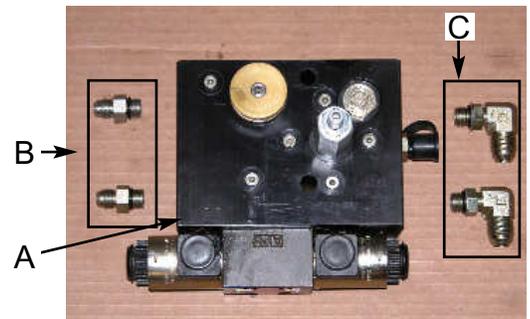
## Tractor Preparation

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

## Kit Contents

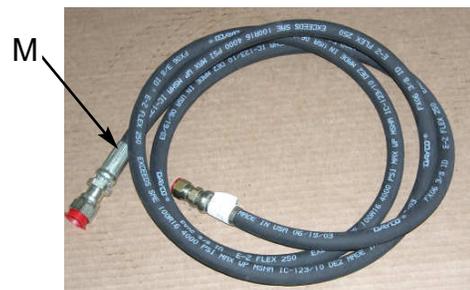
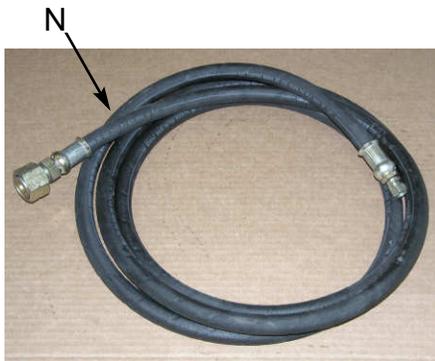
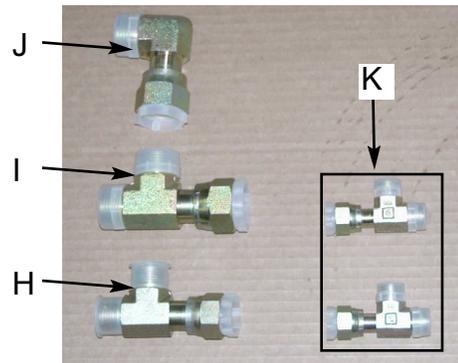
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0006	1	Assy, Hyd. Valve Block - PC/CL
<b>Bag #1 of 3 includes B, C, &amp; D</b>			
B	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
C	760-2074	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #6maleORB
D	760-2078	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #8femJICswiv
E	640-0025	1	Hyd. Block Mnt, JD8x7
<b>Bag #2 of 3 includes F &amp; G</b>			
F	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
G	675-2013	2	Bolt, 10m1.5 x 20", Gr8.8 YZ



## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
<b>Bag #3 of 3 includes H, I, J, &amp; K</b>			
H	760-2004	1	Adapter, Hyd. Run Tee - #10 ORFF
I	760-2014	1	Adapter, Hyd. Run Tee - #12 ORFF
J	760-2015	1	Adapter, Hyd. 90 Elbow - #12maleORFF x #12femORFFswivel
K	760-2046	2	Adapter, Hyd. Run Tee - #6 ORFF
L	760-1079	2	Hose, Hyd. - 1/4" x 30", #6femJICswiv x #6femORFFswiv
M	760-1080	1	Hose, Hyd. - 1/2" x 85", #8femJICswiv x #10femORFFswiv
N	760-1081	1	Hose, Hyd. - 1/2" x 85", #8femJICswiv x #12femORFFswiv
O	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:**

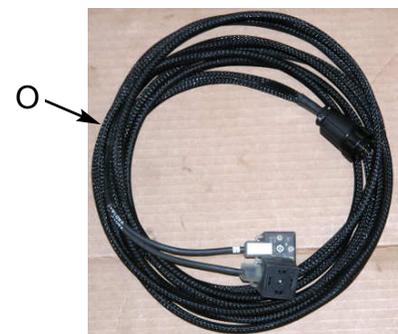
**HIGH-PRESSURE FLUID HAZARD.** Hydraulic oil may be hot and under high pressure. To prevent serious injury or death: Relieve system pressure and allow to cool

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.

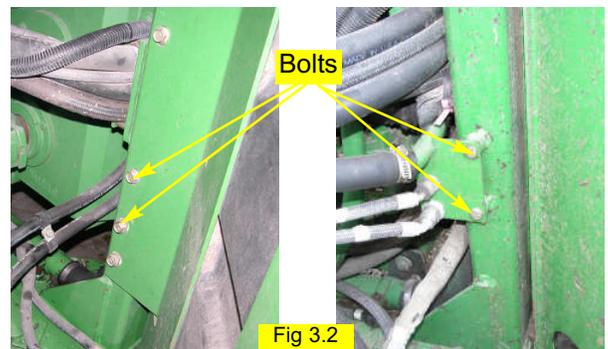
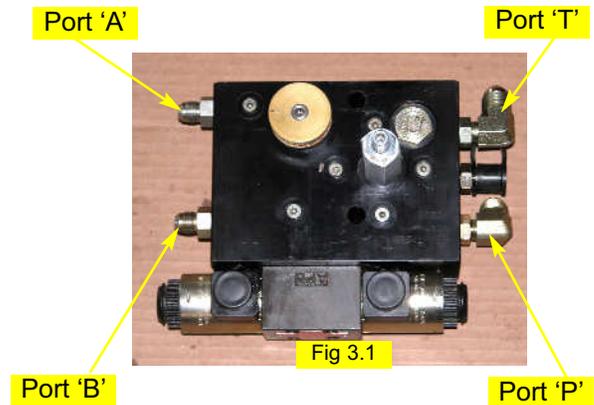


# INSTALLATION

## 1. Prepare Hydraulic Control Block:

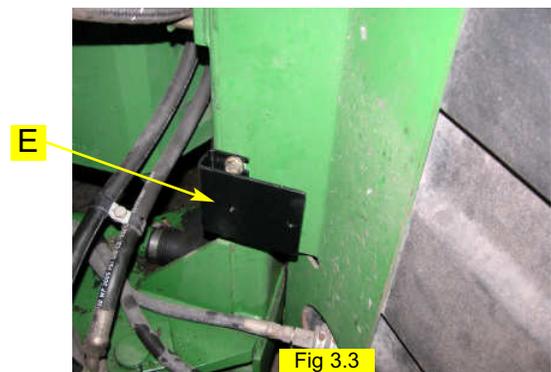
Install elbow fittings (C) into the P and T ports of the hydraulic control block. Install straight adapter fittings (B) into the A and B ports. (Figure 3.1)

**Note:** To install the elbow fittings (C) into the P and T ports, the pressure test port fitting must first be removed. Install the elbows into the P and T ports, and reinstall the pressure test port fitting.



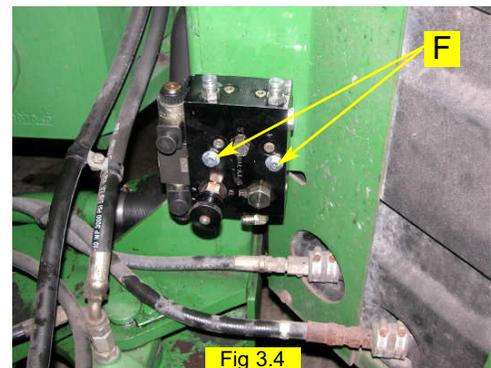
## 2. Install Mounting Bracket:

Locate two bolts along the vertical frame member on the right side in the center of the tractor. (Figure 3.2) The tractor may have threaded weldments on the frame instead of bolts. Using the bolts on the tractor or those provided in hardware group (G) secure the hydraulic mounting bracket (E) to the tractor frame. (Figure 3.3)



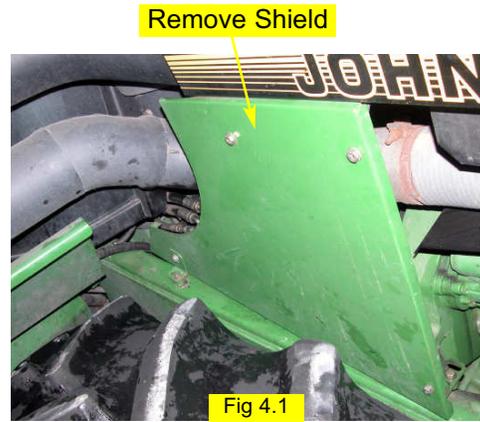
## 3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step 1, to the mounting bracket as shown using the mounting hardware in group (F). (Figure 3.4) Tighten mounting bolts securely.

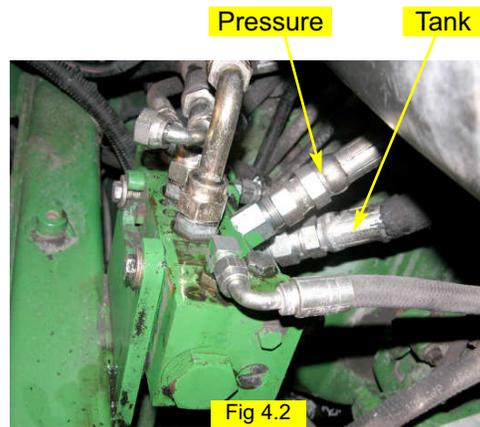


#### 4. Install Pressure and Tank Fittings:

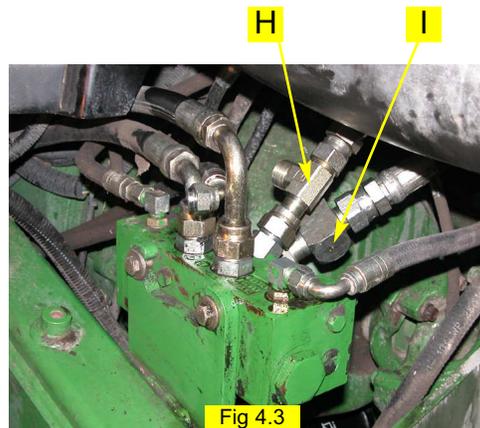
Remove the right side panel from the tractor to access the steering valve. (Figure 4.1)



Locate and remove the pressure and tank lines on the tractor steering valve. (Figure 4.2)

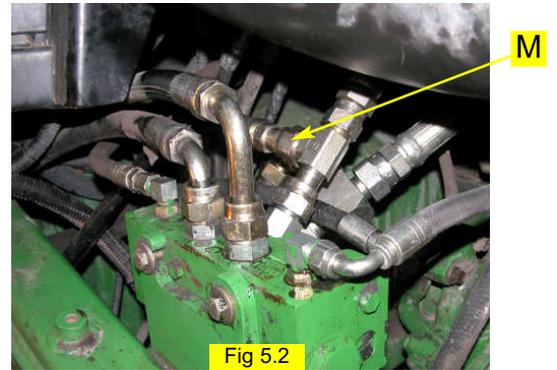
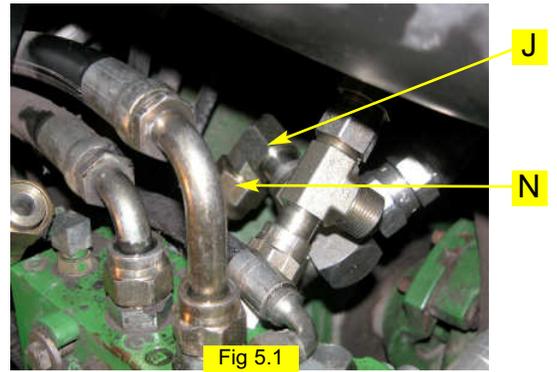


Install the provided run-tee (**I**) onto the tank port of the steering valve and reattach the tank line to the end of the run-tee. Install the provided run-tee (**H**) onto the pressure port of the steering valve and reattach the pressure line to the end of the run-tee. (Figure 4.3) It may be necessary to remove other hoses from the tractor steering valve to simplify the run-tee installation.

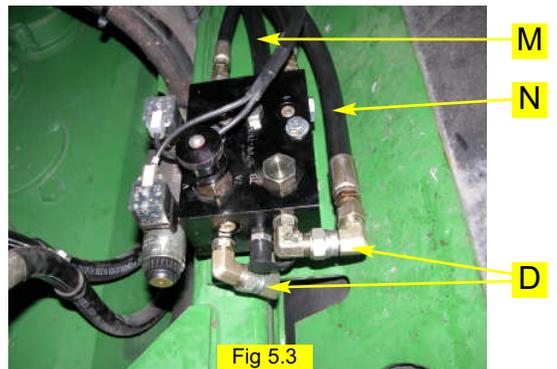


## 5. Install Pressure and Tank Hoses:

Attach the pressure and tank hoses to the appropriate run-tees and to the corresponding **P** and **T** ports on the hydraulic control block. (Figure 5.1, 5.2, and 5.3) The elbow adapter fitting (**J**) may be needed to attach the tank hose (**N**) to the run-tee (**I**) for proper hose routing. (Figure 5.1)



Use the provided elbow adapters (**D**) to attach the pressure and tank hoses to the hydraulic control block for smoother hose routing. (Figure 5.3)



Route the hydraulic pressure and tank hoses (**M & N**) from the hydraulic control block forward to the tractor steering valve along the right side of the tractor frame. (Figure 5.4)



## 6. Install Steering Output Fittings:

Locate the small steering feedback cylinder on the right side, in the center of the tractor. (Figure 6.1) Install the provided run-tees (**K**) to the rod and head end of the steering feedback cylinder as shown. (Figure 6.2)



Fig 6.1

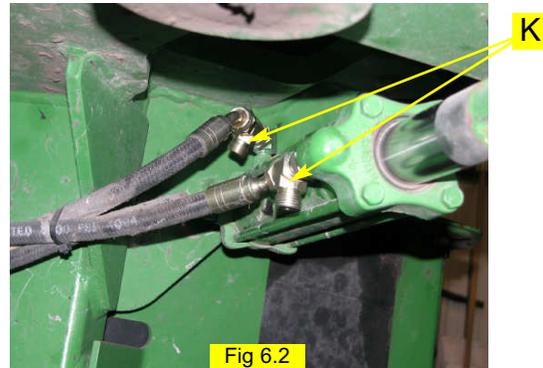


Fig 6.2

## 7. Install Steering Output Hoses:

Install the hydraulic steering output hoses (**L**) to the branches of the run-tees at the steering feedback cylinder and to the **A** and **B** ports of the hydraulic control block. (Figure 6.3 and 6.4) Secure all hoses for problem free operation.

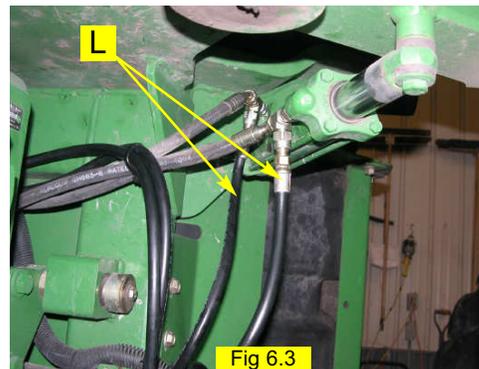


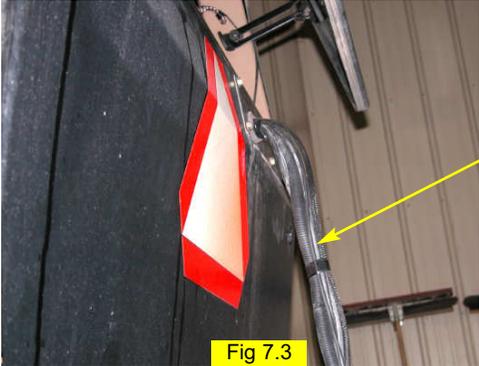
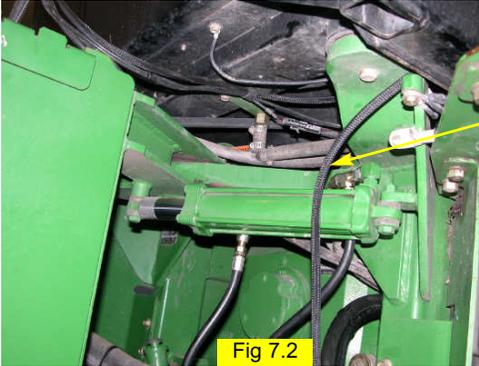
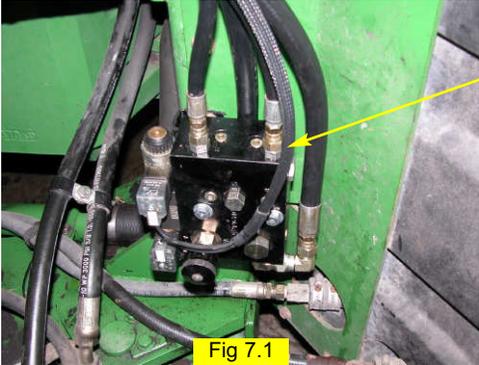
Fig 6.3



Fig 6.4

**8. Install the Valve Control Cable:**

Attach the valve control cable (O) at the hydraulic control block and route it up and into the tractor through the cable grommet in the cab.



## 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.

## 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.

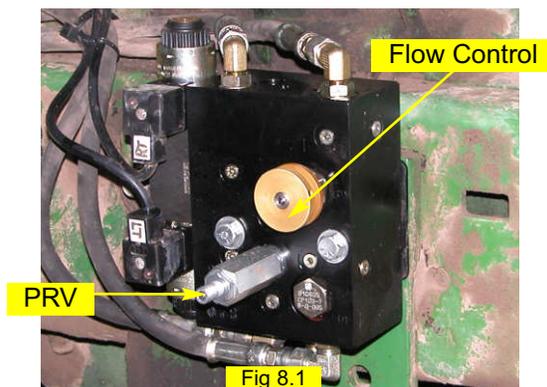
Before setting the automated steering hydraulics, be sure the machine hydraulic oil has reached stable operating temperature. The hydraulic control block has a fine and a coarse adjustment. The fine adjustment is done by the flow control valve and the coarse adjustment is achieved by the pressure reducing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

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

Your automated steering electronic system is equipped with a **Steering Adjust** (Valve Test) function. Use the **Steering Adjust** (Valve Test) function in your automated steering system 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 using the **Steering Adjust** (Valve Test).

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 ¼ 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.



**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.