

# Automated Steering Hydraulic Installation Kit

P/N: ED-JD60CW

## Fits John Deere Combine Models:

<b>9500</b>	<b>9510</b>	<b>9550</b>	<b>9560</b>
<b>9500SH</b>	<b>9510SH</b>		
<b>9550SH</b>	<b>9560SH</b>		
<b>9600</b>	<b>9610</b>	<b>9650</b>	<b>9660</b>
<b>9600CTS</b>	<b>9610CTS</b>		
<b>9650CTS</b>	<b>9660CTS</b>		



## 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 on the John Deere combine models listed above. Please read this manual thoroughly before beginning the installation.

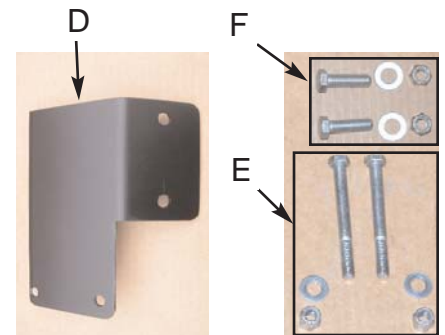
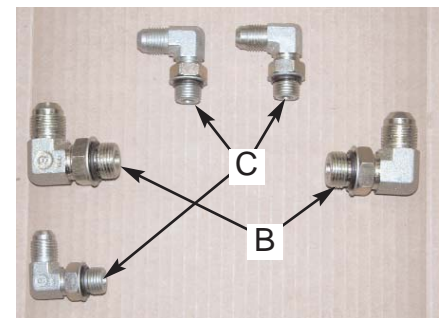
## Combine Preparation

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

## Kit Contents

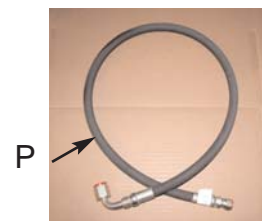
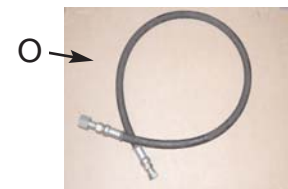
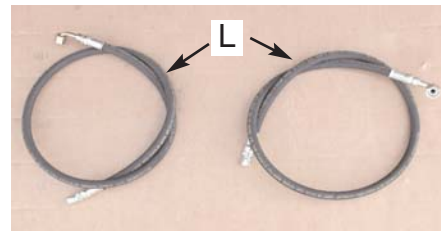
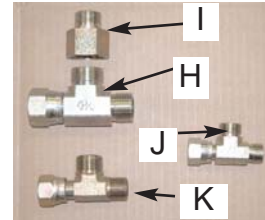
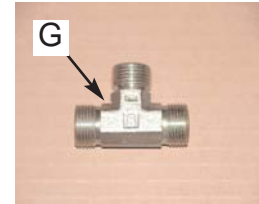
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0005	1	Assy, Hyd. Valve Block - OC
<b>Bag #1 of 3 includes B &amp; C</b>			
B	760-2080	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB
C	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
<b>Bag #2 of 3 includes E &amp; F</b>			
D	640-0029	1	Hyd. Block Mnt - John Deere 9x10, 9x50, 9x60 combines
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	675-2008	2	Bolt, 5/16NC x 1" Gr5 ZP
	678-1055	2	Washer, Flat - 5/16" ZP
	676-1036	2	Nut, Lock - 5/16NC ZP



## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
<b>Bag #3 of 3 includes G, H, I, J, K, &amp; L</b>			
G	760-2071	1	Adapter, Hyd. Union Tee - #8 ORFF
H	760-2004	1	Adapter, Hyd. Run Tee - #10 ORFF
I	760-2001	1	Adapter, Hyd. Reducing - #10femORFF x #8maleORFF
J	760-2046	1	Adapter, Hyd. Run Tee - #6 ORFF
K	760-2069	1	Adapter, Hyd. Run Tee - #8 ORFF
L	760-1131	2	Hose, Hyd. - 3/8"x38", #6femJICswiv x #8femORFFswiv 90EL
M	760-1130	1	Hose, Hyd. - 3/8"x38", #6femJICswiv x #6femORFFswiv 90EL
N	760-1128	1	Hose, Hyd. - 1/2"x38", #8femJICswiv x #8femORFFswiv
O	760-1129	1	Hose, Hyd. - 3/8"x24", #6femJICswiv x #8femORFFswiv
P	760-1127	1	Hose, Hyd. - 1/2"x22", #8femJICswiv x #8femORFFswiv 90EL
Q	760-1286-000	1	Hose, Hyd 3/8"x22", #8fJIC x #8fORF90
R	760-1287-000	1	Hose, Hyd 3/8"x38", #8fJIC x #8fORF
S	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.**

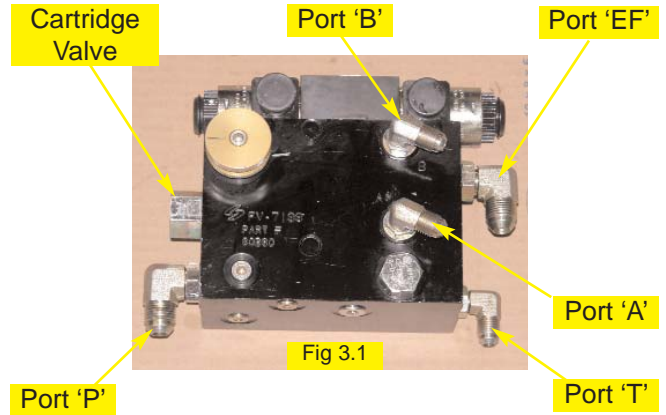
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake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

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

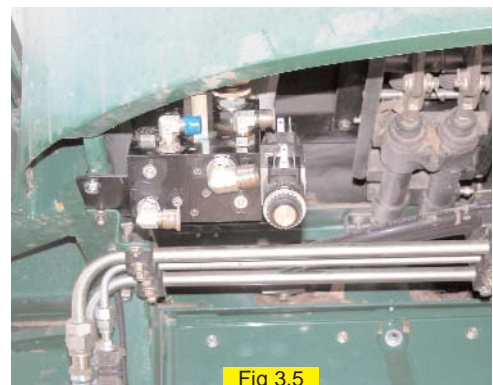
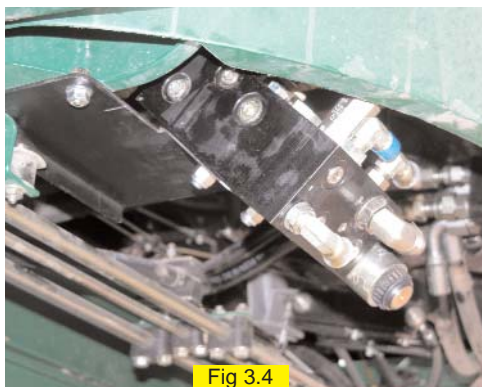
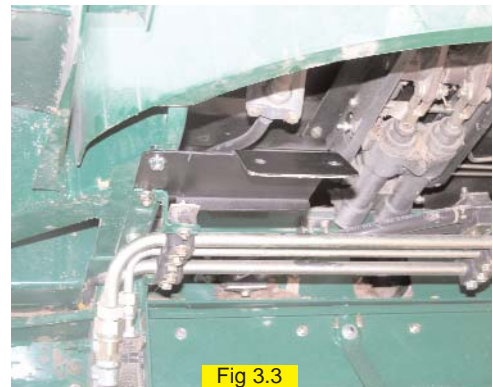
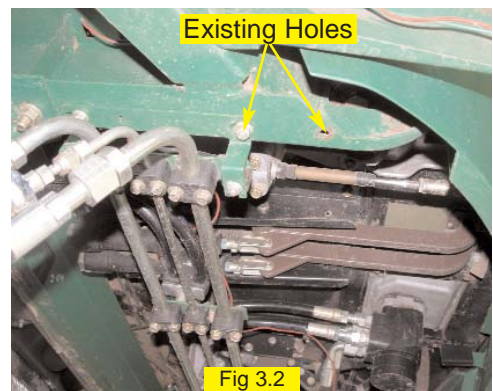
**Note:** To install the elbow fitting (B) into the P port of the hydraulic control block, the cartridge valve must be removed from the end of the block. Remove the cartridge, install the elbow, and reinstall the cartridge.



## 2. Mount Hydraulic Control Block:

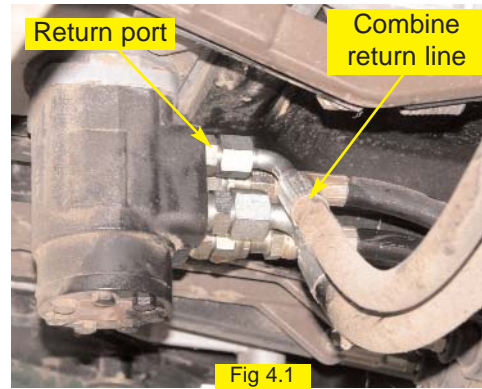
Install the hydraulic mounting bracket (D) to the support member under the right side of the cab using the existing holes and the hardware provided in group (F) as needed. (Figure 3.2)

Use the provided mounting hardware in group (E) to attach the prepared hydraulic block to the mounting bracket in the orientation shown. (Figures 3.3 - 3.5)



### 3. Install Pressure, Tank, and Excess Flow Fittings or Note Connection Locations:

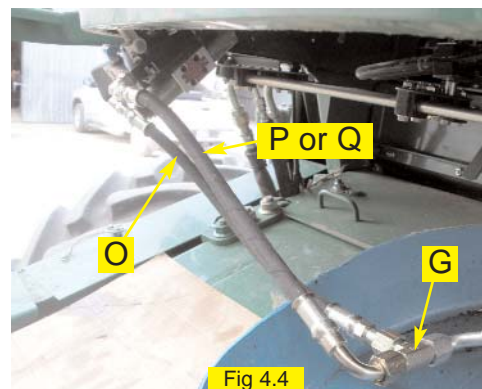
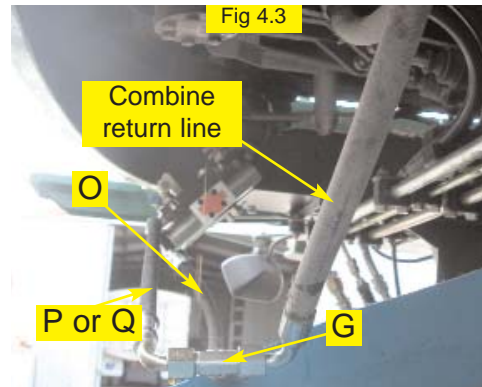
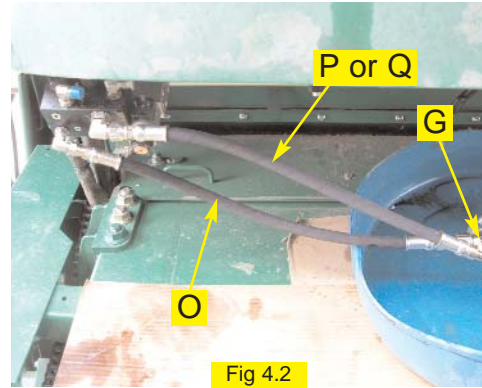
The hydraulic control block will receive pressure from the return port at the combine steering orbital. Excess flow and tank flow from the hydraulic control block will be returned to the return line originally connected at the steering orbital. (Figure 4.1)



### 4. Install Pressure, Tank, and Excess Flow Hoses:

**Note:** Models, 9500, 9510, 9500SH, 9510SH, 9600, 9610, 9600CTS and 9610CTS will use the smaller hydraulic hoses for excess flow and pressure. These models will use the 3/8" hose (Q) in place of (P) and the 3/8" hose (R) in place of (N). When the installation is complete, two hoses will be left over.

Install the provided tank hose (O) between the T port of the hydraulic control block and the center of the provided union-tee (G). Install the excess-flow hose (P) between the EF port of the hydraulic block and right end of the union-tee (G). (Figure 4.2) Remove the return line from the combine steering orbital and connect it to the left end of the union-tee (G). (Figure 4.3) Leave connections loose to allow for easier installation and hose routing. Install plastic caps on open ports to prevent excess leakage.



#### 4. Continued...

Connect the provided pressure hose (N) between the P port of the hydraulic control block and the return port of the combine steering orbital as shown. (Figure 5.1 and 5.2)

Use the heavy tie-straps provided to secure the hoses to the machine and frame away from moving parts. (Figure 5.3)  
Tighten all hydraulic connections securely to prevent leaks.

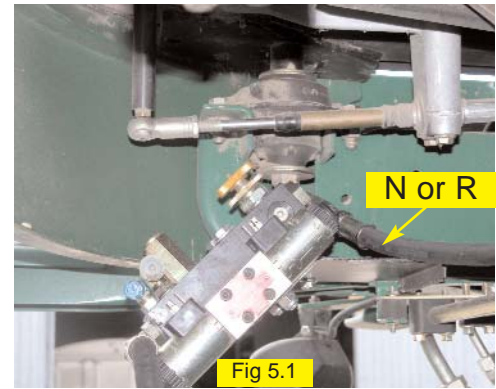


Fig 5.1



Fig 5.3

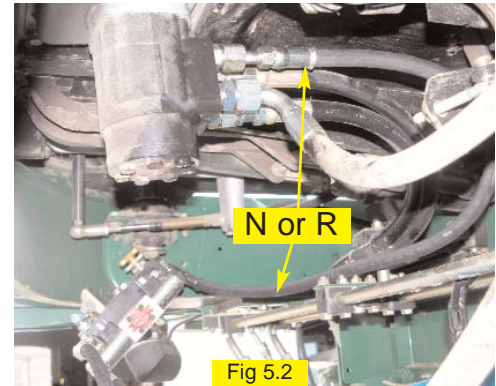


Fig 5.2

#### 5. Install Steering Output Fittings:

Locate the steering lines on the right side of the steering orbital and install the provided run-tees (H and K). (Figure 5.4 and 5.5) Use plastic caps to prevent excess leakage from the open run-tee ports. On newer models it is necessary to use the smaller run-tee (J) for the bottom steering line in place of the larger run-tee (H).

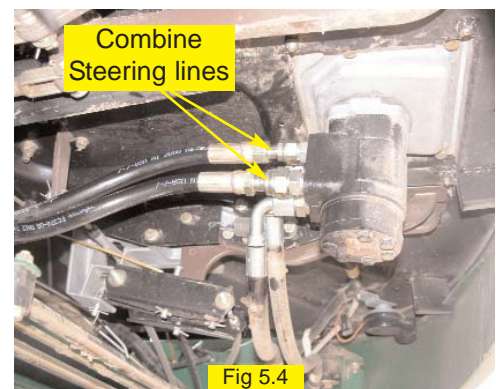


Fig 5.4

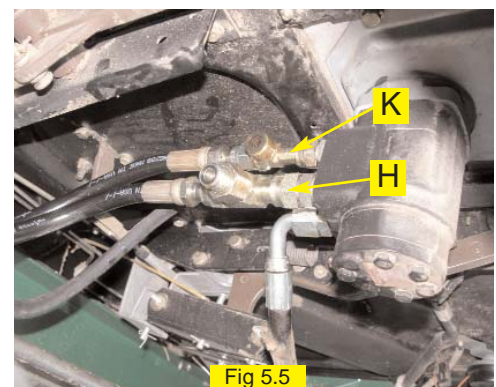
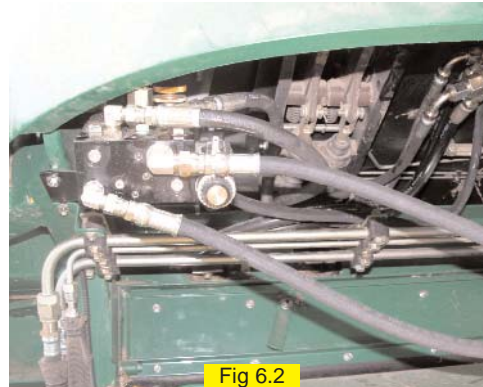
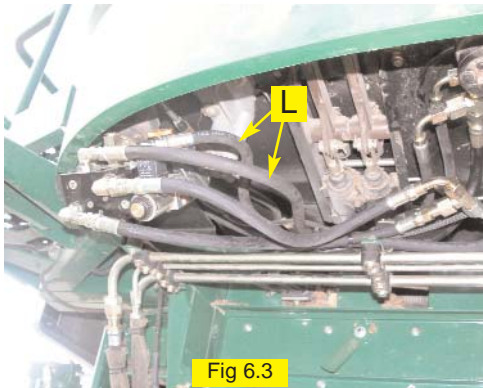
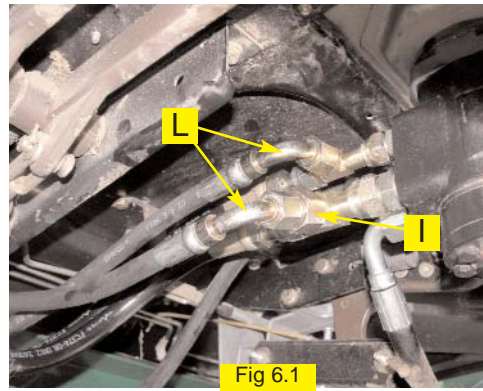


Fig 5.5

## 6. Install Steering Output Hoses:

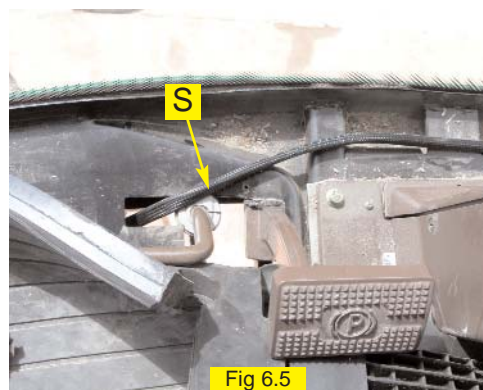
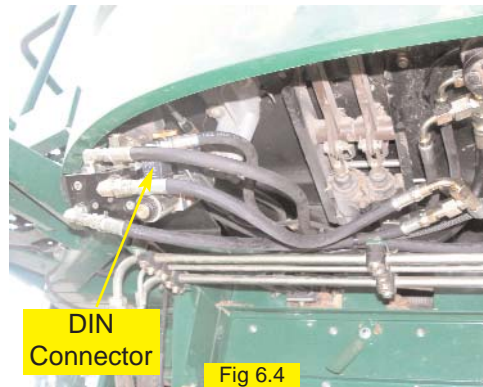
Install the provided steering output hoses (**L**) between the run-tees at the steering orbital and the **A** and **B** ports of the hydraulic control block. (Figure 6.1 and 6.2) Attach hose ends equipped with 90-degree elbows to the branches of the run-tees for convenient hose routing. Use the reducer fitting (**I**) to attach output hose (**L**) to the larger run-tee (**H**). (Figure 6.1) Newer model combines that require the smaller run-tee (**J**) noted in step 5 will require output hose (**M**) to attach to the run-tee installed on the bottom steering line.

Route hoses with other machine plumbing as shown. Use the heavy tie-straps provided to secure the hoses away from moving parts.



## 7. Install the Valve Control Cable:

Install the valve control cable (**S**) at the hydraulic block by attaching the DIN connectors to the coil. (Figure 6.4) Route the cable into the cab through the removable plate in the floor near the parking brake pedal. (Figure 6.5) Secure the cable using the provided tie straps as necessary.



## 8. Verify Operation and Set Steering Control Rate:

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

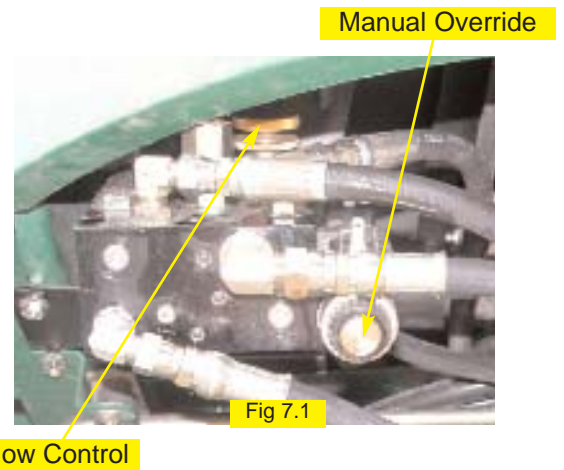
Adjust the hydraulic oil flow control knob to a starting position of **2 turns** from completely closed. To adjust the knob, turn clockwise to reduce flow, counter-clockwise to increase flow.

The coils on the control block have manual push button overrides. Push either manual override to move the combine steering wheels all the way to one extreme. Count the number of seconds for the steering wheels to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 7.1)

Adjust the hydraulic oil flow control to achieve an end to end steering cycle time of approximately **16 seconds**.

## 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.

