# Automated Steering Installation Kit

## P/N: ED-JD8000T

## Fits John Deere Tractor Models:

| | | |
|---|---|---|
| 8100T | 8110T | 8120T |
| 8200T | 8210T | 8220T |
| 8300T | 8310T | 8320T |
| 8400T | 8410T | 8420T |
| | | 8520T |

### Overview

A series of equipment-specific kits have been developed to work in conjunction with your automated steering system. This kit contains the necessary components and instructions to install the automated steering hydraulics on the John Deere tractor models listed above.

### Machine Preparation

Before attempting to install the automated steering kit, 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 | PHOTOGRAPHS |
|---|---|---|---|---|
| A | 760-0013 | 1 | Assy, Hyd Vave Block - DPC-II H |  |
| | **Bag #1 of 3 includes B & C** | | | |
| B | 760-0011 | 2 | Check Valve Adapter, 6MJ-6MB |  |
| C | 760-2058 | 2 | Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB |  |
| D | 640-0054 | 1 | Brkt, Hyd Blk Mnt- JD8000T |  |

## Kit Contents (continued)

| REF | P/N | QTY | DESCRIPTION | PHOTOGRAPHS |
|---|---|---|---|---|
| | **Bag #2 of 3 includes E, F & G** | | | |
| E | 675-2015 | 2 | Bolt, Flanged - 12ml 1.75x30 Gr10.9, YZ |  |
| F | 675-2014<br>676-1038 | 2<br>2 | Bolt, Flanged - 10ml 1.5x35 Gr10.9, YZ<br>Nut, Flanged - 10ml.5, YZ |  |
| G | 675-2002<br>678-1053<br>676-1034 | 2<br>2<br>2 | Bolt - 1/4NC x 2-1/2" Gr5, ZP<br>Washer, Flat - 1/4" ZP<br>Lock Nut, 1/4NC ZP |  |
| | **Bag #3 of 3 includes H & I** | | | |
| H | 760-2056 | 2 | Adapter, Hyd. #6maleJIC x #6maleORB |  |
| I | 760-2058 | 2 | Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB |  |
| J | 760-1158 | 2 | Hose, Hyd. - 1/4" x 96 ", #6fJIC x #6 fJIC90 |  |
| K | 760-1248 | 1 | Hose, Hyd. - 3/8" x 90", #6fJIC x #6fJIC |  |
| L | 760-1155 | 1 | Hose, Hyd. - 3/8" x 84", #6fJIC x #6JIC90 |  |

## Kit Contents (continued)

| REF | P/N | QTY | DESCRIPTION | PHOTOGRAPHS |
|---|---|---|---|---|
| M | 051-0144 | 1 | Cable, Valve Interface - 10 ft. |  |
| | 677-2001 | 20 | Tie Strap, 11" Heavy Duty | Not Shown |
| | 710-0053 | 1 | Kit, Steering Wheel Switch | Not Shown |

# WARNINGS

**ATTENTION:**

**READ** this entire installation guide **before** beginning installation. Failure to comply with warnings in this guide can result in personal injury or damage to equipment, and will void all warranties.

**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.

**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.

**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.

**WARNING:**

**CRUSHING HAZARD.** To prevent serious injury or death, avoid unsafe practices while operating hydraulic steering circuit on track tractors. Keep others away and stay clear of tracks. Turning the steering wheel while the vehicle is stationary causes the tracks to counter rotate. Be Alert!

# INSTALLATION

**1. Prepare Automated Steering Block:**

a. Make sure the Automated Steering Block is clean and dust free.

b. Install the elbow adapter fittings (**C**) into the **P** and **T** ports of the Automated Steering Block. (Figure 1.)

c. Install the check valve adapter fittings (**B**) into the **A** and **B** ports. (Figure 1.)

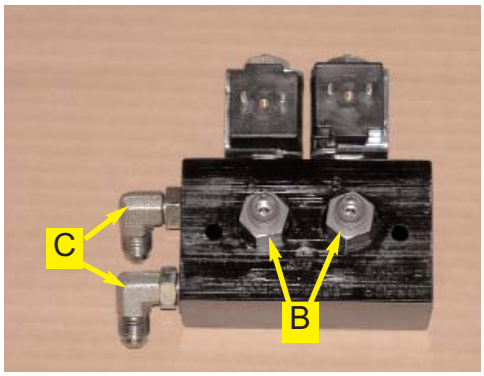

Figure 1. Prepared Automated Steering Block.

**2. Mount Automated Steering Block:**

a. Locate the two bolts in the casting, to the right of the SCV stack, at the rear of the tractor. (Figure 2a.)

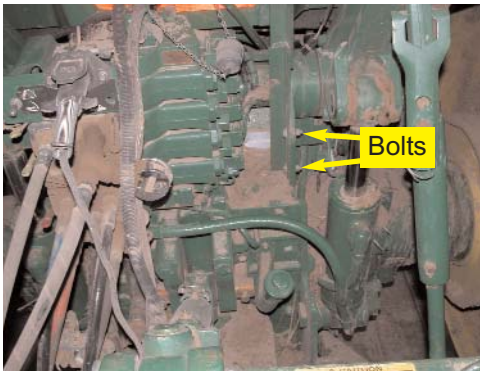

Figure 2a. Mounting location.

b. Use the provided hardware (**E**) or (**F**) to mount the bracket (**D**) to the tractor. (Figure 2b.) If the casting is threaded, use hardware group (**E**). If the casting is not threaded, use hardware group (**F**).

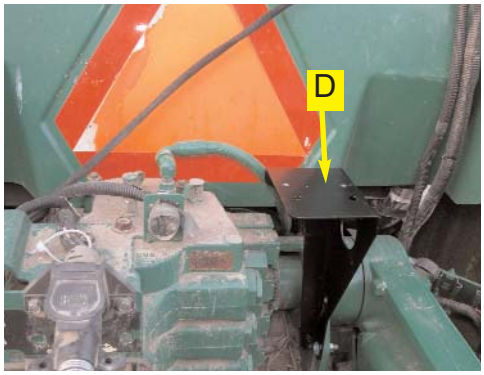

Figure 2b. Installed mounting bracket.

c. Use the provided mounting hardware (**G**) to attach the Automated Steering Block, as prepared in step **1**, to the mounting bracket (**D**). (Figure 2c.)


Figure 2c. Mounted Automated Steering Block.

**3. Install Pressure, Tank and Load Sense Fittings:**

a. The Automated Steering Block will receive pressure and tank from the hydrostatic pump located under the tractor. Remove the skid plate from under the tractor. (Figure 3a.)

**NOTE:** Use a floor jack to hold the skid plate for easier removal.

Figure 3a. Skid plate location.

b. The pressure connection is the test port at the bulk fitting on the side of the pumps. Remove the test port fitting and install the adapter fitting (**H**). The tank connection port is in the side of the pump housing. Remove the plug fitting and install the adapter fitting (**H**). ( Figure 3b. and 3c.)

**NOTE:** Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.

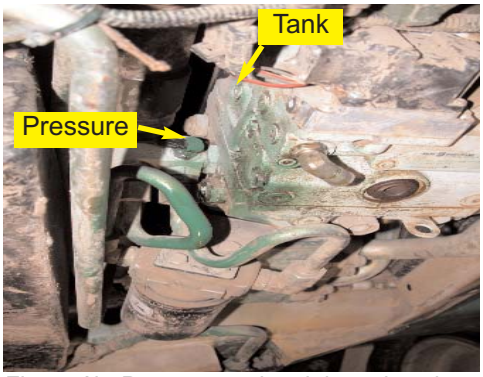

Figure 3b. Pressure and tank hose location.

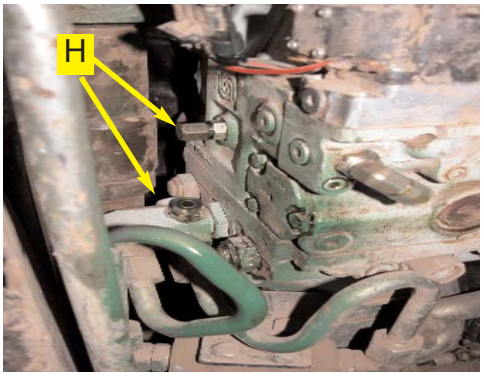

Figure 3c. Installed pressure and tank fittings.

**4. Install Pressure and Tank Hoses:**

Connect the pressure hose (**K**) from the pressure fitting installed in step **3** to the **P** port on the Automated Steering Block. Connect the tank hose (**L**) from the adapter fitting on the side of the pump, as installed in step **3** to the **T** port on the Automated Steering Block.
(Figure 4a., 4b., and 4c.)

**NOTE:** All hoses should be routed with other tractor plumbing free from entanglement and secured with heavy tie straps (provided).

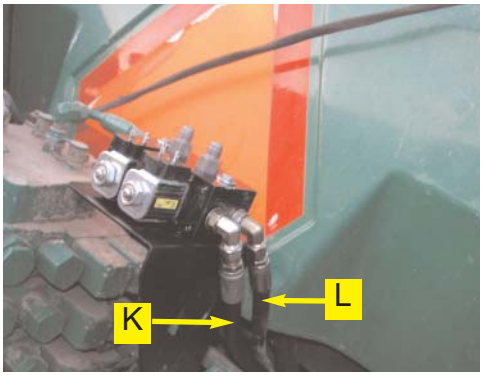

Figure 4a. Installed pressure and tank hoses at Automated Steering Block.

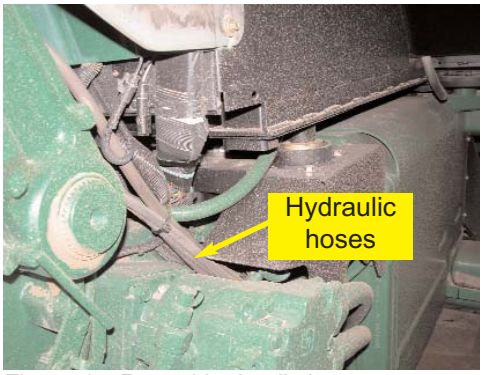

Figure 4c. Routed hydraulic hoses.

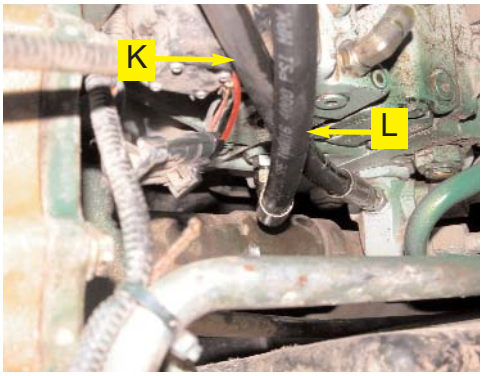

Figure 4b. Installed pressure and tank hoses at the hydrostatic pump.

**5. Install Steering Output Fittings:**

a. Locate the **X1** and **X2** ports on the bottom of hydrostatic pump. (Figure 5a.)

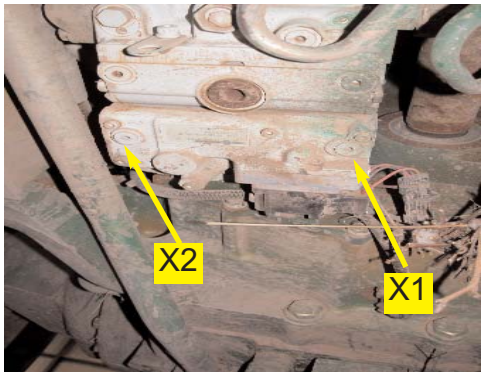

Figure 5a. Steering output location.

b. Remove the plugs and install the adapter fittings (**I**) as shown. The right fitting needs to be threaded into the hole as far as possible and then faced towards the center of the machine so the skid plate will not hit it when reinstalled.
(Figure 5b.)

**NOTE:** Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.

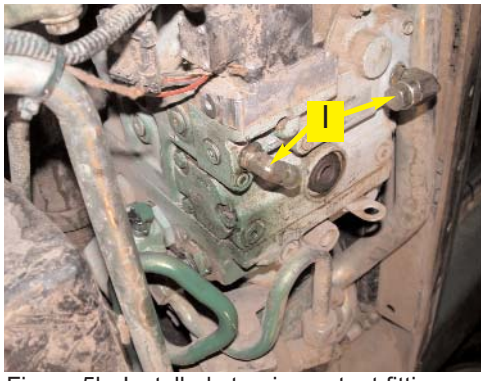

Figure 5b. Installed steering output fittings.

**6. Install Steering Output Hoses:**

Connect the automated steering hoses (**J**) from the **A** and **B** ports on the Automated Steering Block to the adapter fittings installed in step **5b**. (Figure 6a., 6b., 6c., and 6d.)

**NOTE:** All hoses should be routed with other tractor plumbing free from entanglement and secured with heavy tie straps (provided).

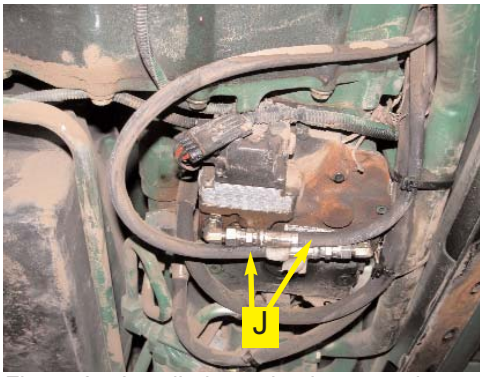

Figure 6a. Installed steering hoses at the hydrostatic pump.

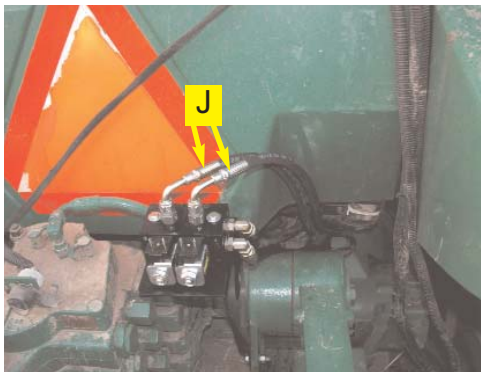

Figure 6b. Installed steering hoses at block.

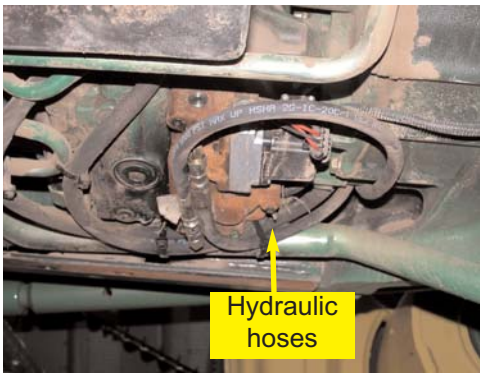

Figure 6c. Routed steering hoses.

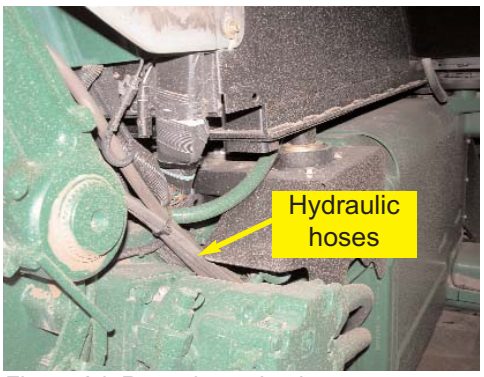

Figure 6d. Routed steering hoses.

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

Route the valve control cable (**M**) from the Automated Steering Block into the cab through the access hole by the rear window. (Figure 7a.)

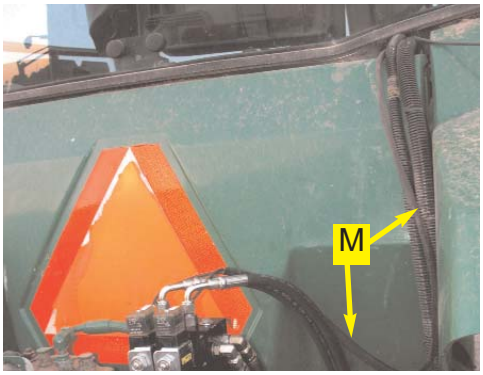

Figure 7a. Installed valve cable.

**8. Verify Operation and Set Automated Steering Control Rate:**

a. Tighten all of the connections and clean up the installation area around the machine and make certain that it is safe to operate.

b. Start the machine and check the hydraulic connections for any leaks.

c. Rotate the steering wheel from one direction to the other and back to check manual steering function.

d. Make sure the **Vehicle Type** in your automated steering controller is set to **Track** mode.

e. Use the **Valve Test** function in your automated steering controller to verify that the machine steers in the proper direction, left and right.

f. In the menu of your automated steering controller adjust the **Steering Speed** to a starting value of **35** and adjust the **Max Turn Rate** to a value of **100**.

g. Operate the machine in an open field with the automated steering system to fine tune the **Steering Speed**. Increasing the **Steering Speed** value will cause the steering to make faster corrections, decreasing the value will cause slower corrections.

h. The **Max Turn Rate** value should ONLY be adjusted lower to prevent extremely large steering movements in reaction to disturbances or aggressive line acquisition. This adjustment is secondary to the **Steering Speed**.

**IMPORTANT:** It is very important that the manual steering of the machine be in good working order prior to using automated steering. If the machine will not drive in a relatively straight line with no input to the steering wheel, then the manual steering must be serviced in order to achieve balanced tracking.

**9. Complete Automated Steering Electronic Installation and Setup:**

Refer to the owner's manual supplied with your automated steering system to complete the electronic installation and setup.

**NOTE:** The automated steering contour guidance mode is not recommended with track tractors. This automated steering system uses a constant, fixed rate steering control method. This method is extremely robust on track machines in straight guidance. In contours with track tractors, however, this method may result in aggressive corrections and poor tracking performance.