

Automated Steering Hydraulic Installation Kit

P/N: ED-JD9000T

Fits John Deere Tractor Models:

9300T 9320T
9400T 9420T
9520T
9620T

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 tractor models listed above. Please read this manual thoroughly before beginning the installation.



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, Automated Steering Block - DPC II H	
Bag #1 of 3 includes B, C, & D				
B	760-0011	2	Check Valve Adapter - #6maleJIC x #6maleORB	
C	760-2058	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB	
D	760-2055	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #6femaleJICswivel	
E	640-0053	1	Brkt, Hyd Blk Mnt - JD9000T	

Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
Bag #2 of 3 includes F				
F	675-2002	2	Bolt - 1/4NC x 2-1/2" Gr5, ZP	
	678-1053	2	Washer, Narrow Flat - 1/4" ZP	
	676-1034	2	Nut, NyLock - 1/4NC ZP	
Bag #3 of 3 includes G, H, & I				
G	760-2056	4	Adapter, Hyd. #6maleJIC x #6maleORB	
H	760-2046	1	Adapter, Hyd. Run Tee - #6 ORFF	
I	760-2053	1	Adapter, Hyd. #6maleJIC x #6femaleORFswivel	
J	760-1110	2	Hose, Hyd. 1/4" x 56", #6fJIC x #6fJIC90	
K	760-1247	1	Hose, Hyd. 3/8" x 42", #6fJIC x #6fJIC	
L	760-1062	1	Hose, Hyd. 3/8" x 40", #6fJIC x #6fJIC90	
M	051-0144	1	Cable, Interface - 10ft	
	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) in the P and T ports. (Figure 1a.)
- c. Install the check valve fittings (B) in the A and B ports. (Figure 1a.)

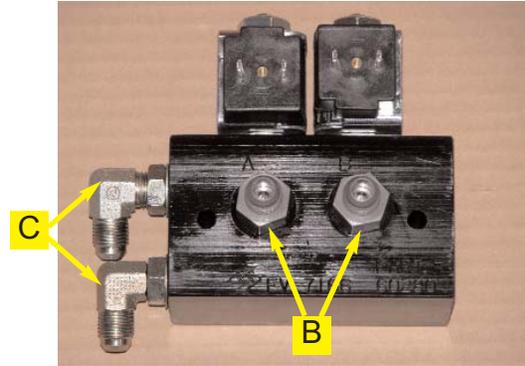


Figure 1a. Prepared Automated Steering Block.

2. Mount Automated Steering Block:

- a. Locate the two bolts at the rear of the tractor on the left side of the step bracket. (Figure 2a.)
- b. Use the existing bolts to secure the mounting bracket (E) to the tractor. (Figure 2b.)
- c. Use the provided mounting hardware in group (F) to attach the Automated Steering Block to the mounting bracket (E). (Figure 2c.)

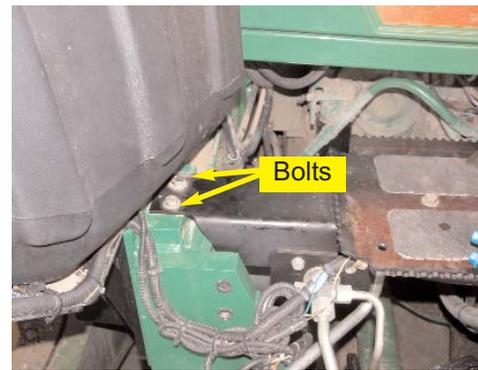


Figure 2a. Bolt location.



Figure 2b. Installed mounting bracket.



Figure 2c. Installed Automated Steering Block.

3. Install Pressure, Tank and Load Sense Fittings:

- a. The Automated Steering Block will make pressure and tank connections at the test ports on the hydrostatic steering pump under the rear of the tractor cab. (Figure 3a.)
- b. The pressure connection is the test port on the bulk fitting at the top of the pump. Remove the test port fitting and install the adapter fitting (**G**). The tank connection is the test port behind the bulk fitting on top of the pump housing. Remove the test port fitting and install the adapter fitting (**G**). (Figure 3b. and 3c.)



Figure 3a. Pressure and tank locations

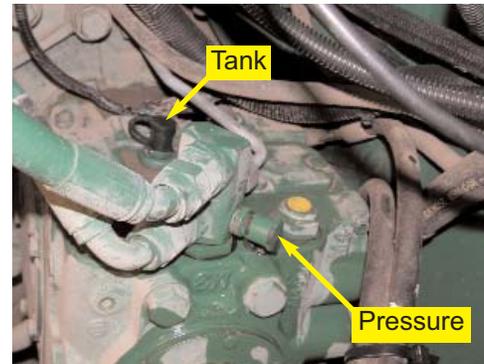


Figure 3b. Pressure and tank locations.

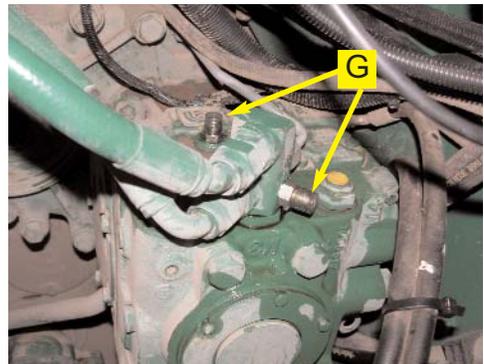


Figure 3c. Installed pressure and tank fittings.

NOTE:

Some tractors have a speed sensor in place of the tank test port. The alternate install location is on top of the rear axle housing. Remove the indicated hose, install the run tee (**H**) and the adapter fitting (**I**) on the branch of the run tee. (Figure 3d. and 3e.)

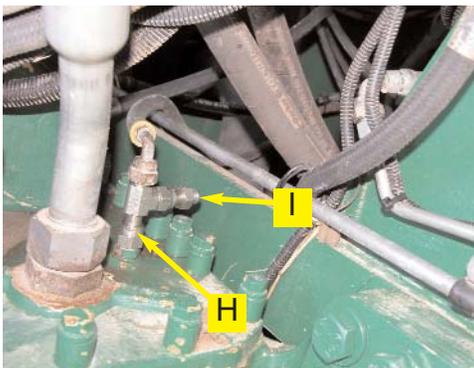


Figure 3e. Alternate tank fittings installed.



Figure 3d. Alternate tank connection.

4. Install Pressure and Tank Hoses:

- a. 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 top of the pump to the **T** port on the Automated Steering Block. (Figure 4a. and 4b.)
- b. If the alternate tank connection was used in step 3 at the tractor rear axle then connect tank hose (**L**) between the run tee fitting (**H**) and the **T** port of the Automated Steering Block. (Figure 4c.)



Figure 4a. Pressure and tank hoses installed at block.

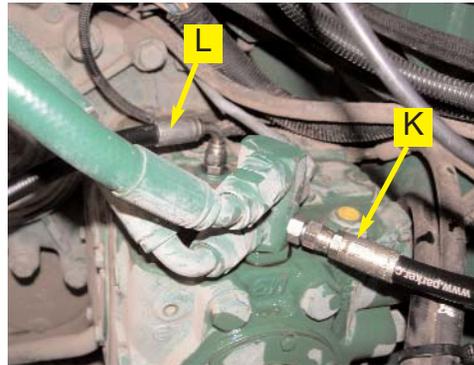


Figure 4b. Pressure and tank hoses installed at hydrostatic pump.



Figure 4c. Tank hose installed at alternate location.

5. Install Steering Output Fittings:

- a. Locate the **X1** and **X2** ports on the right side of hydrostatic steering pump. The ports can be located through the access hole in the right side of the tractor frame. (Figure 5a.)

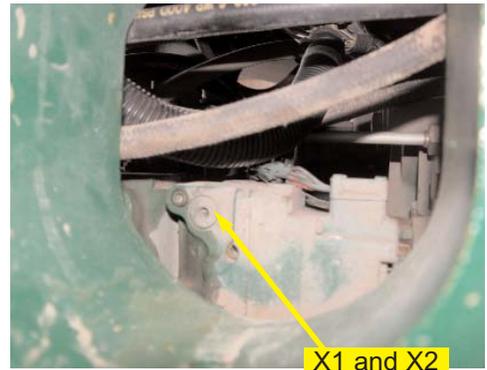


Figure 5a. Location of steering output ports.

- b. Remove the plugs and install the adapter fittings (**G**) as shown. (Figure 5b.)

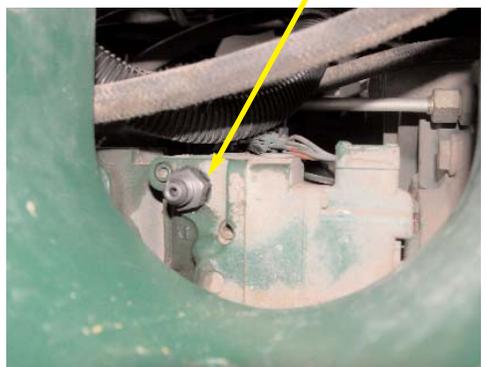
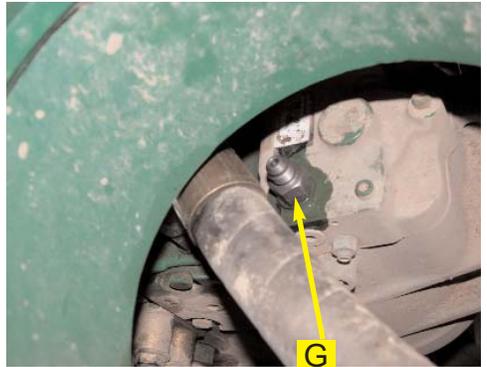


Figure 5b. Steering output fittings installed.

6. Install Steering Output Hoses:

- a. Install the adapter fittings (**D**) on the **A** and **B** ports of the Automated Steering Block. (Figure 6a.)

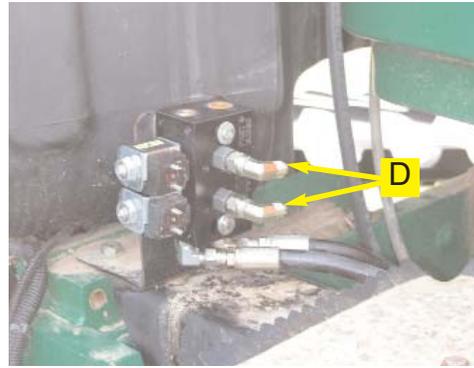


Figure 6a. Installed adapter fittings.

- b. Connect the steering hoses (**J**) from the **A** and **B** ports on the Automated Steering Block to the adapter fittings installed in the hydrostatic steering pump. (Figure 6b. and 6c.)

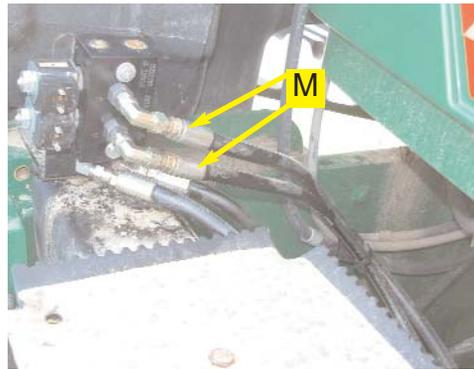


Figure 6b. Routed steering output hoses.

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

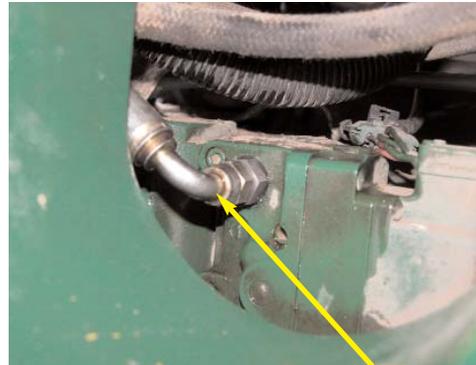


Figure 6c. Installed steering output hoses.

7. Install the Valve Control Cable:

Route the valve control cable (M) from the Automated Steering Block, into the cab, through the access hole in the rear window. (Figure 7a. and 7b.)



Figure 7a. Valve cable installed at Automated Steering Block.



Figure 7b. Valve cable routed in through window access panel.

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**.

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.

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.

