Automated Steering Hydraulic Installation Kit

P/N: ED-JD8030

Fits John Deere Tractor Models:

8130
8230
8330
8430
8530

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	760-0003	1	Assy, Hyd. Valve Block - LS	
	Bag #1 of 5 includes B & C			
В	760-2058	3	Adapter, Hyd 90 Elbow - #6mJIC x #6mORB	f f f
С	760-2056	2	Adapter, Hyd - #6mJIC x #6mORB	4
D	640-0021	1	Hyd Block Mnt	

January 2008

876-0097 Rev. B Rel. 2

Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS	
	Bag #2 of 5 includes	E			
E	675-2005 678-1054	2 2	Bolt - 3/8NC x 3-1/4" Gr5, ZP Washer, Narrow Flat - 3/4"OD x 13/32"ID x 1/16"thk ZP		
	676-1035	2	Nut, NyLock - 3/8NC ZP		
	Bag #3 of 5 includes H, I, J & K	F, G,			
F	760-2092	2	Adapter, Hyd Branch Tee - #8fORB		
G	760-2083	2	Adapter, Hyd - #8mORF x #8mORB	4	
Η	760-2093	2	Adapter, Hyd 90 elbow #8mORF x #8mORB		
Ι	760-2069	1	Adapter, Hyd Run Tee - #8ORF		
J	675-0084	1	#10STC Tool Release	2	
K	760-2094	2	Adapter, Hyd #8mORB x #10fSTC		
	Bag #4 of 5 includes L & M				
L	760-2063	1	Adapter, Hyd #6mJIC x M14mORB	8	
M	760-2010	1	Adapter, Hyd 10mJIC x M22mORB		
	Bag #5 of 5 includes P, Q & R	N, O,			
N	760-0002	1	Assy, Hyd Load Shuttle - #6fORB		
0	760-2056	1	Adapter, Hyd - #6mJIC x #6mORB		

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
P	760-2033	1	Adapter, Hyd #4mORF x #6mORB	
Q	760-2089	1	Adapter, Hyd 90 Elbow - #4mORB x #4fORF	
R	760-2090	1	Adapter, Hyd - #6mORB x #4fORB	*
S	760-1262	1	Hose, Hyd - 3/8" x 12", #6fJIC x #6fJIC90	
Τ	760-1263	1	Hose, Hyd - 3/8" x 60",#10fJIC x #6fJIC90	
U	760-1264	1	Hose, Hyd - 1/4" x 32", #6fJIC x #6fJIC	
V	760-1265	2	Hose, Hyd - 3/8" x 110", #6fJIC x #8fORF	00
W	760-1266	2	Hose, Hyd - 1/2" x 10.5", #8fORF x #8fORF90	e -
X	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

WARNINGS



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.



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.



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.



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.



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!

1. Prepare Automated Steering Block:

- a. Make sure the automated steering block is clean and dust free.
- b. Install the elbow adapter fitting (**B**) into the **LS**, **P** and **T** ports of the automated steering block. (Figure 1.)
- c. Install the straight adapter fittings (C) into the A and B ports. (Figure 1.)

2. Mount Automated Steering Block:

a. Locate the two bolts securing the implement-wiring bracket to the rear casting of the tractor. (Figure 2a.)

b. Use the existing bolts to install the bracket (**D**) onto the tractor casting as shown. (Figure 2b.)

c. Use the provided mounting hardware in group (E) to attach the automated steering block, as prepared in step 1, to the mounting bracket (D) The automated steering block must be mounted in the orientation shown. (Figure 2c.)



Figure 1. Prepared automated steering block.



Figure 2a. Mounting location.



Figure 2b. Installed mounting bracket.



Figure 2c. Mounted automated steering block.

3. Install Pressure and Tank Fittings:

a. The automated steering block will receive pressure from the **P** test port at the rear of the tractor. Tank flow will be relieved to the rear tractor housing in the **R** port. (Figure 3a. and 3b)



Figure 3a. Pressure fitting location.



Figure 3b. Tank fitting location.



Figure 3c. Installed pressure fitting.



Figure 3d. Installed tank fitting, with cap.

b. Remove the test port fitting labeled **P** from the top plate of the tractor hydraulic remote valves and install adapter fitting (**L**). (Figure 3c.)

c. Remove the plug labeled **R**, below the valve stack, in the rear casting and install adapter fitting (**M**). (Figure 3d.)

NOTE:

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

4. Install Load Sense Shuttle:

a. Pre-assemble the load sense shuttle (**N**) with adapter fittings **O**, **P**, **Q** and **R** as shown. (Figure 4a.)

b. Locate the tractor load sense line above the right rear axle. (Figure 4b. and 4c.)

- c. Remove the rubber hose from the adapter fitting and install the prepared load sense shuttle as shown. (Figure 4d. and 4e.)
- d Reattach the tractor load sense hose to the middle of the load sense shuttle. (Figure 4d. and 4e.)



Figure 4e. Installed load sense shuttle.



Figure 4a. Assembled load sense shuttle.



Figure 4b. Load sense line location.



Figure 4c. Load sense line location.



Figure 4d. Installed load sense shuttle.

5. Install Pressure, Tank and Load Sense Hoses:

- a. Connect the pressure hose (S) between the P port of the automated steering block and the adapter fitting (L) in the valve stack P port. (Figure 5a. and 5b.)
- b. Connect the tank hoses (T) between the T port on the automated steering block and the adapter fitting (M) in the R port of the rear tractor housing. (Figure 5a., 5b. and 5c.)
- c. Route the tank hose through the hole under the three point rocker shaft behind the valve stack and up to the automated steering block for a clean installation. (Figure 5a., 5b. and 5c.)
- U

Figure 5a. Installed pressure, tank and load sense hoses at automated steering block.



Figure 5b. Installed pressure and tank hoses.



Figure 5c. Installed tank hose.



Figure 5d. Installed load sense hose.

Connect the load sense hose (U) from the **LS** port from the automated steering block to the open end of the load sense shuttle. (Figure 5d. and 5e)



c.

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



Figure 5e. Installed load sense hose.

6. Install Steering Output Fittings:

a. Raise the hood of the tractor and remove the black shield on the left side in front of the cab and the battery box cover. (Figure 6a.)

b Remove the indicated wire clamp. The nut is recessed in the rubber so you will need to pinch the rubber around the nut with a pair of pliers to remove it. (Figure 6b.)

c. Locate the rubber steering line that connects to the flow meter. Install the run-tee (I) between the rubber hose and the flow meter. (Figure 6c.)



If your tractor is not equipped with the flow meter pictured in Figure 6c then proceed to step **d**.

- d. Assemble the branch tee (**F**) with adapter fittings **G**, **H** and **K** as shown. (Figure 6d.)
- **NOTE:** If your tractor is not equipped with the flow meter pictured in Figure 6c then you will need to assemble two branch tees (**F**) with fittings **G**, **H**, and **K**.



Figure 6a. Shields to be removed.



Figure 6b. Wire clamp.



Figure 6c. Installed steering output fitting.



Figure 6d. Assembled steering tee.

6. Install Steering Output Fittings continued:

- e. Remove the indicated steering line(s) from the steering orbital. (Figure 6e.)
- f. Remove the other end of the rubber steering line(s) using the STC release tool (**J**). (Figure 6e.)
- NOTE:

Some tractor models will have both steering lines connected using STC connections as shown in Figure 6f. In this case repeat steps **e** and **f** for both steering lines. (Figure 6f.)



Figure 6f. Steering output location.

- NOTE: To release a STC connection, the tool must be inserted behind the rubber release sleeve and the two halves of the connection can be pulled apart. (Figure 6g.)
- **NOTE:** To assemble an STC connection, simply insert the male connector into the female and push together until the connections click. Verify the STC connection has been successful by pulling on the connection.
- h. Push the STC adapter fitting (**K**) of the assembled branch tee (**F**) onto the steel steering line. (Figure 6h.)
- **NOTE:** Leave the run tee fittings loose to allow for alignment when attaching hoses. Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.
- i. Connect the provided steering hose (W) from the adapter fitting (H) on the female tee (F) to the orbital as shown. (Figure 6i.)



Figure 6e. Steering output location.



Figure 6g. STC connection cut away.



Figure 6h. Steering output location.



Figure 6i. Installed steering line.

6. Install Steering Output Fittings continued:

j. If your tractor uses STC connections on both steering lines simply repeat steps **h** and **i** for the second steering line. (Figure 6j. and 6k.)



Figure 6k. Installed steering hoses.

7. Install Steering Output Hoses:

a. Connect the hydraulic steering hoses (V) from the A and B ports on the automated steering block to the steering run tees. (Figure 7a.)



Figure 7a. Installed steering lines.

b. Route the steering hoses on top of the fuel tank, under the tractor cab and to the automated steering block. (Figure 7b., 7c., 7d. and 7e.)



Figure 6j. Installed tees.



Figure 7b. Installed steering hoses.



Figure 7c. Routed steering lines.



Figure 7d. Routed steering lines.



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

8. Install the Valve Control Cable:

Route the valve control cable (**X**) from the automated steering block into the cab through the rubber grommet in the rear window seal. (Figure 8a. and 8b.)



Figure 8a. Installed valve cable at the automated steering block.



Figure 8b. Valve cable routed in cab.

9. Verify Operation and Set Automated Steering Control Rate:

- a. Clean up the installation area around the machine and make certain that it is safe to operate.
- b. Make sure all hydraulic hoses are tightened.
- c. Start the machine and check the automated steering connections for any leaks.



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hydraulic steering circuit. Keep others away and stay clear of mechanical steering linkages.

- d. Rotate the steering wheel from one extreme to the other and back.
- e. Adjust the automated steering oil flow control knob to a starting position of 2 1/2 turns from completely closed. To adjust the knob:
 Turn clockwise to reduce flow.
 - Tulli clockwise to feduce flow.
 - Turn counter-clockwise to increase flow.
- f. The coils on the automated steering block have manual push button overrides. Push either manual override to move the steering wheels all the way to one extreme. (Figure 9.)
- g. Count the number of seconds for the steering wheels to move all the way in the opposite direction while pressing the manual override the other coil.
- NOTE:

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 to activate the manual overrides.

h. Adjust the automated steering oil flow control to achieve an end-to-end steering cycle time of approximately **16** seconds. (Figure 9.)

10. 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.



Figure 9. Automated steering flow control knob and manual override button.

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