

Automated Steering Hydraulic Installation Kit

P/N: ED-JD4830

Fits John Deere Sprayer

Models:

4730

4830

Overview

A series of equipment-specific kits has been developed to work in conjunction with our automated steering system. This kit contains the necessary components and instructions to install the automated steering hydraulics on the John Deere sprayer models listed above. Please read this manual thoroughly before beginning the installation.







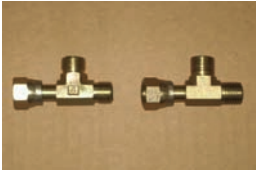






Machine Preparation








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 below.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
A	760-0003-000	1	Assy, Hyd. Valve Block - LS eDrive.	
Bag #1 of 4 includes B				
B	760-2058-000	5	Adapter, Hyd. - 90 Elbow - #6mJIC x #6mORB	
C	640-0009-000	1	PLB 60176 - eDrive Hyd. Block Mnt, C93x0	

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
Bag #2 of 4 includes D				
D	676-1035-000	2	Nut, NyLock - 3/8NC ZP	
	675-2005-000	2	Bolt, 3/8NC x 3-1/4 Gr5, ZP	
	678-1054-000	2	Washer, Narrow Flat - 3/4" OD x 13/32" ID x 1/16" ZP	
Bag #3 of 4 includes E, F, G, & H				
E	760-2030-000	2	Adapter, Hyd. Run Tee -#4 ORFF	
F	760-2014-000	1	Adapter, Hyd. Run Tee - #12 ORFF	
G	760-2103-000	1	Adapter Hyd. -#12FORFF x #8mORFF	
H	760-2046-000	1	Adapter, Hyd. Run Tee -#6 ORFF	
Bag #4 of 4 includes I, J, K & L				
I	760-2058-000	1	Adapter, Hyd. 90 Elbow - #6mJIC x #6mMB90	
J	760-2033-000	1	Adapter, Hyd. - #4mORF x #6mORB	
K	760-2056-000	1	Adapter, Hyd. - #6mJIC x #6mORB	
L	760-0002-000	1	Hyd. Load Shuttle - #6fORB	

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
M	760-1144-000	1	Hose, Hyd. - 1/4" x 6", #6fJIC x #4fORF90	
N	760-1281-000	1	Steering, Hose, Hyd - 1/4" x 230", #6fJIC x #4fORF90	
O	760-1282-000	1	Steering, Hose, Hyd - 1/4" x 190", #6fJIC x #4fORF90	
P	760-1285-000	1	Pressure, Hose, Hyd-3/8" x 60", #6fJIC x #8fORF90	
Q	760-1283-000	1	Tank, Hose, Hyd-3/8" x 69", #6fJIC x #6fORF90	
R	760-1284-000	1	LS, Hose, Hyd. - 1/4" x 64", #6fJIC x #6fJIC	
S	051-0143-000	1	Cable eDrive Interface - 15ft	
	677-2001-000	20	Tie Strap, 11" Heavy Duty	Not Shown
	710-0053-000	1	Kit, Steering Wheel Switch	Not Shown

WARNINGS



ATTENTION:

Read this entire installation guide **before** beginning the installation. Failure to comply with warnings in the 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 your 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.

INSTALLATION

1. Prepare Automated Steering Block:

- a. Make sure the Automated Steering Block is clean and dust free.
- b. Install adapter fitting (B) in the A, B, P, LS and T ports of the Automated Steering Block. (Figure 1a)

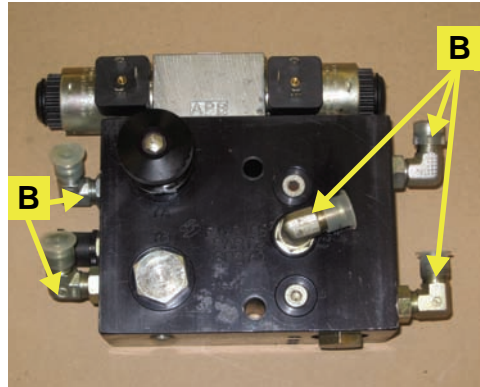


Figure 1a: Prepared automated steering block

2. Mount Automated Steering Block:

- a. The Automated Steering Block will be mounted on the left boom catwalk support, next to the chemical inductor. The bracket will be mounted on the inside of the brace. Remove the two nuts from the indicated bolts. (Figure 2a)
- b. Install the Bracket (C) as shown using the two nuts removed from step 2a. (Figure 2b).



Figure 2a: Mounting location

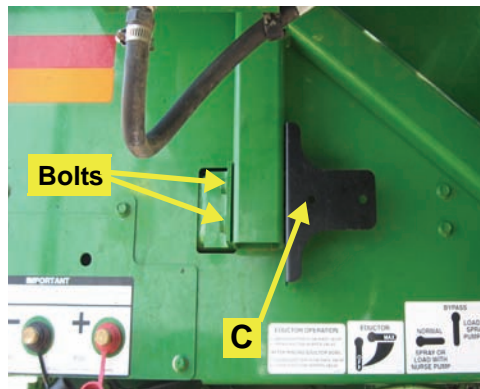


Figure 2b: Installed mounting bracket

- c. Using the provided mounting hardware in group (D), attach the Automated Steering Block, as prepared in step 1, to the mounting bracket (C). (Figure 2c)



Figure 2c: Mounted automated steering block

3. Install Pressure and Tank Fittings:

a. The Automated Steering Block will receive pressure from the hydraulic valve block located under the sprayer. (Figure 3a)

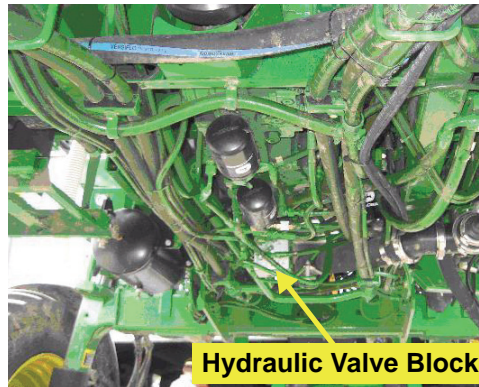


Figure 3a: Hydraulic valve block

b. Locate the pressure line on top of the hydraulic valve block. Install the run-tee adapter fitting (F) between the rubber hose and hydraulic fitting. (Figure 3b & Figure 3c)

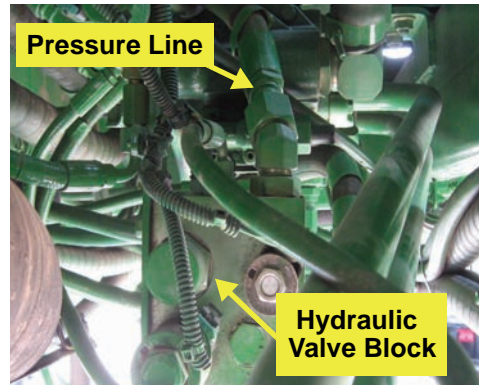


Figure 3b: Pressure location

c. Install the reducer fitting (G) to the branch of the run-tee fitting (F). (Figure 3c)

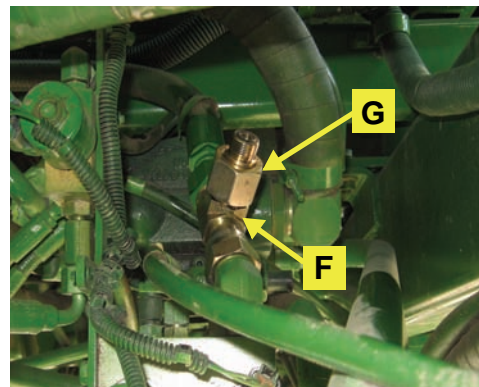


Figure 3c: Installed pressure fittings

d. Locate the hydraulic filter under the center of the sprayer, near the transmission. Remove the indicated hose from the filter inlet and install the provided run-tee (H). Reattach the hose to the end of the run-tee. This run-tee will be used as the tank return for the Automated Steering Block. (Figure 3d & Figure 3e)

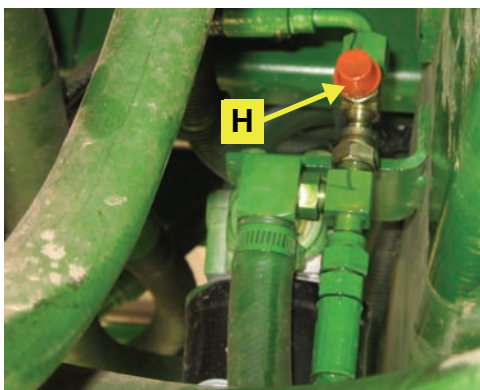


Figure 3e: Installed tank fitting

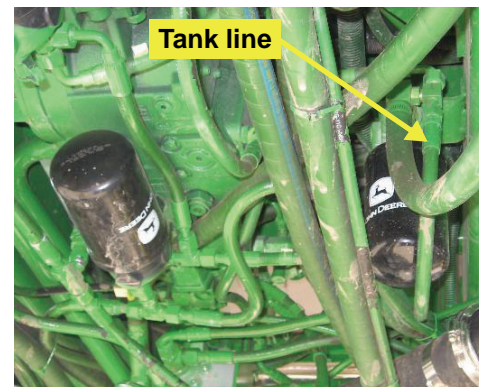


Figure 3d: Tank line

4. **Install Load Sense Shuttle:**

- a. Pre-assemble the load sense shuttle (L) with adapter fittings (I, J and K) as shown. (Figure 4a)

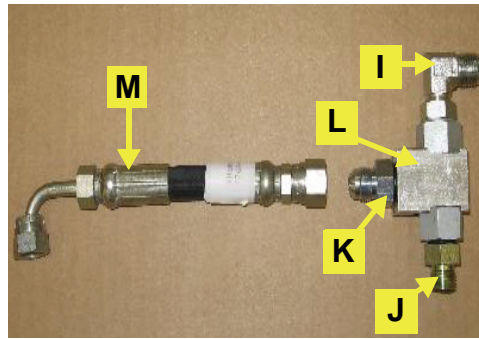


Figure 4a: Pre-assembled load sense shuttle

- b. Locate the sprayer load sense line on the bottom of the hydraulic pump. Disconnect the hose from the pump and install the prepared load sense shuttle using the extension hose (M) provided. Connect the 90 degree end of hose (M) to the load sense port on the pump. Connect the straight end of hose (M) to the (K) fitting on the load sense shuttle. Reattach the load sense line that was removed from the pump to fitting (J) on the load sense shuttle. (Figure 4b, 4c and 4d)

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

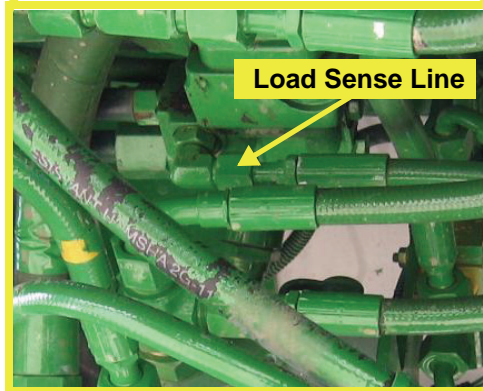
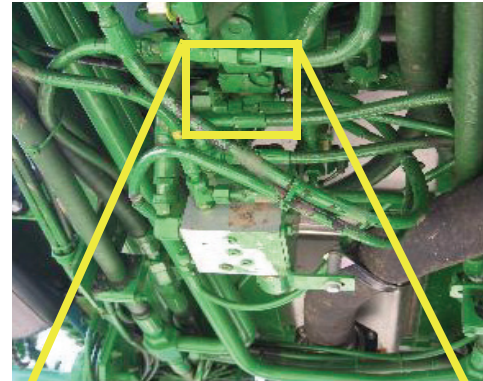


Figure 4b: Load sense location

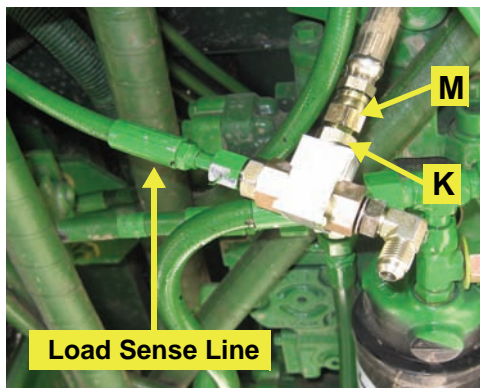


Figure 4d: Attached load sense

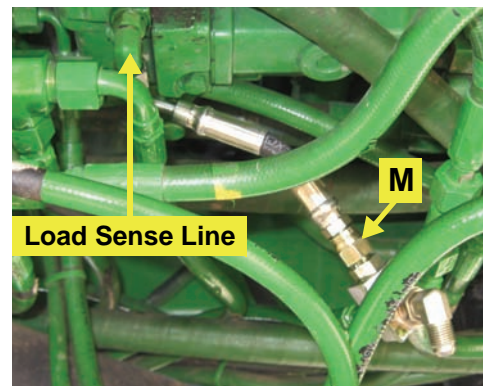


Figure 4c: Installed load sense shuttle

5. **Install Pressure, Tank, and Load Sense Hoses:**

- a. Route the pressure hose (**P**) from the run-tee installed at the hydraulic valve block to the port marked **P** on the Automated Steering Block. (Figure 5a & Figure 5d)
- b. Connect the tank hose (**Q**) between the **T** port of the Automated Steering Block and the run-tee installed near the hydraulic filter. Route the hose similar to the pressure hose. (Figure 5b & Figure 5d)
- c. Install the load sense hose (**R**) between the open end of the load sense shuttle and the LS port of the Automated Steering Block. Route the hose with the pressure and tank hoses. (Figure 5c and 5d)

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

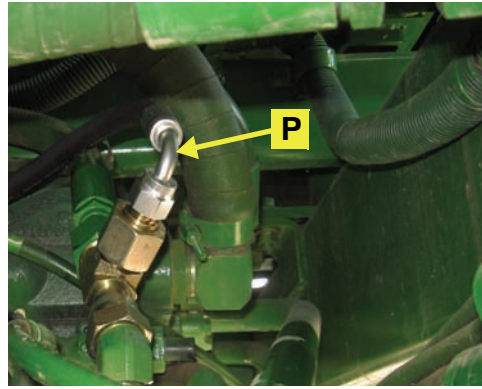


Figure 5a: Installed pressure hose.

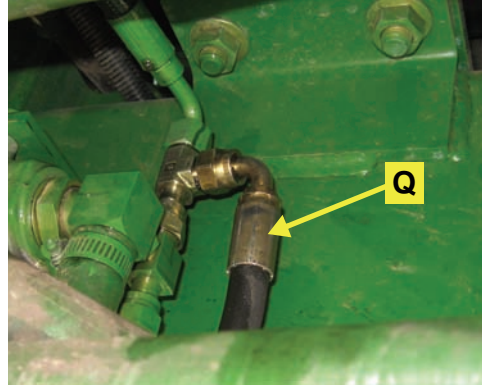


Figure 5b: Installed tank hose

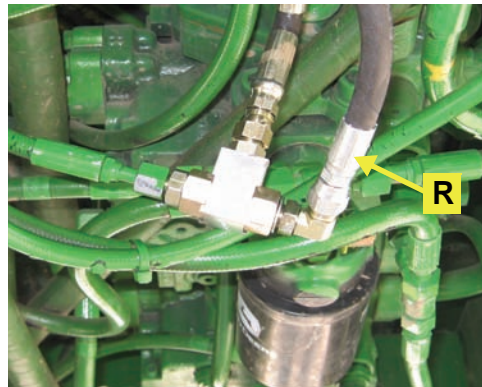


Figure 5c: Installed load sense hose

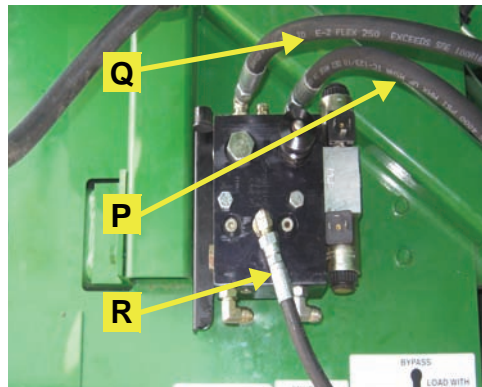


Figure 5d: Installed pressure, tank and load sense hoses at the automated steering block

6. Install Steering Output Hoses:

- a. Locate the sprayer steering lines on the head-ends of the steering cylinders as shown. Install run-tee fittings (E) provided where the steering lines connect to the head-ends of each steering cylinder. (Figure 6)

NOTE: Leave the run-tee fittings loose to allow for alignment when attaching the hoses. Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.

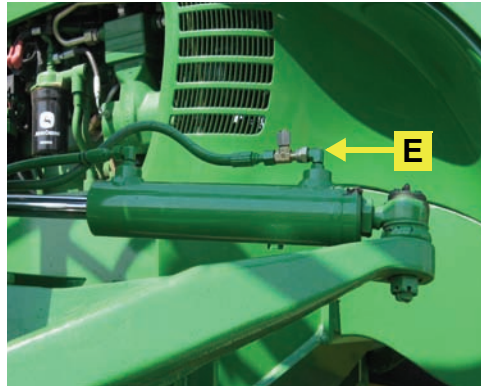


Figure 6a: Installed steering fittings, right cylinder

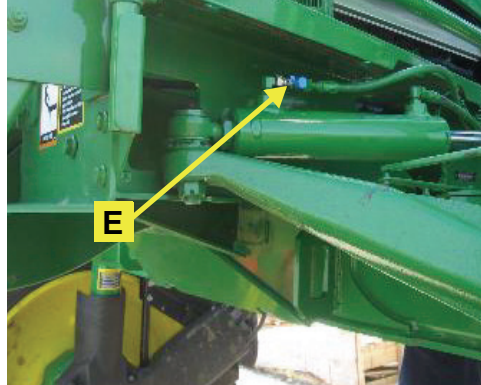


Figure 6b: Installed steering fittings, left cylinder

7. Install Steering Output Hoses:

- a. Connect steering hose (O) to the run-tee (E) on the left steering cylinder and steering hose (N) to the run-tee (E) on the right steering cylinder. Route the hoses with other machine hoses as shown. Connect the open ends of the hoses to the A and B ports on the Automated Steering Block. (Figure 7a, 7b, 7c, 7d and 7e)

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

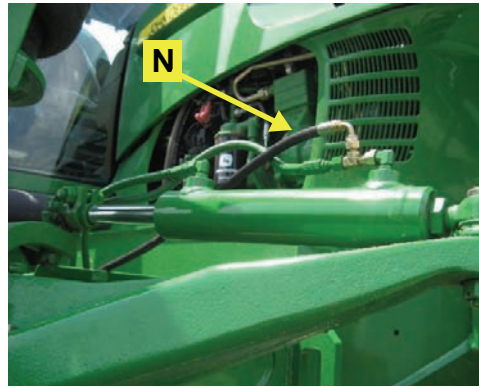


Figure 7a: Installed steering hose, right cylinder

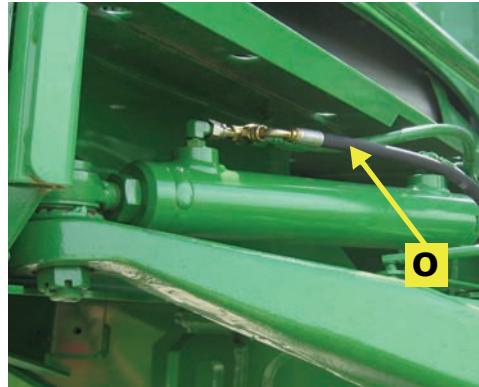


Figure 7b: Installed steering hose, left cylinder

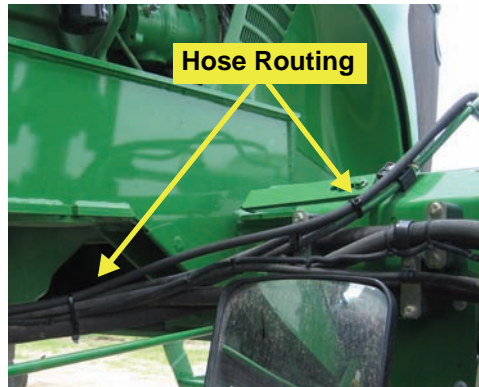


Figure 7c: Steering hose routing

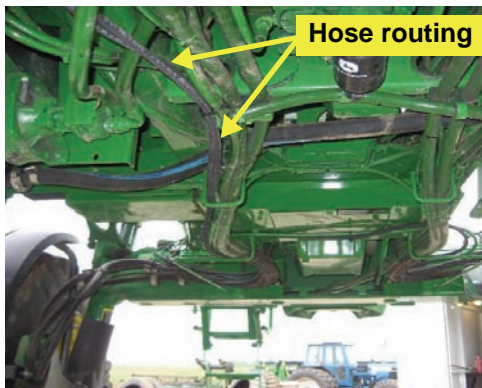


Figure 7e: Hose routing

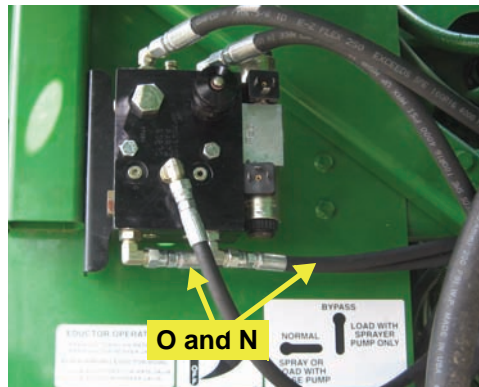


Figure 7d: Installed steering hoses at the automated steering block

- 8. Install the Valve Control Cable:**
- a. Route the valve control cable (S) from the Automated Steering Block, to the back of the cab and then through the access hole in the back window. (Figure 8a and 8b)

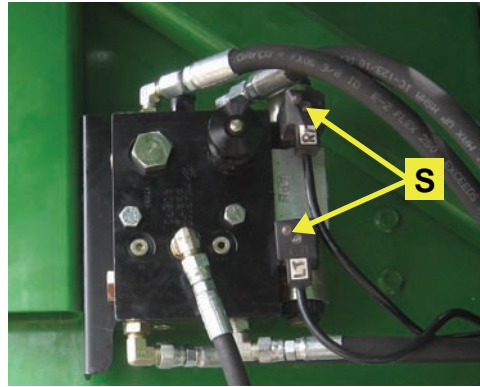


Figure 8a: Installed valve cable



Figure 8b: Cab access hole

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 fittings and hoses have been tightened.
 - c. Start the machine and check the automated steering connections for any leaks.
 - d. Rotate the steering wheel from one extreme to the other and back.



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.

- e. Adjust the Automated Steering oil flow control knob to a starting position of **2** turns from completely closed. To adjust the knob either turn the knob clockwise to reduce flow or turn the knob 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 wheel all the way to one extreme. (Figure 9)

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.

- g. Count the number of seconds for the steering wheels to move all the way in the opposite direction while pressing the manual override.
- h. Adjust the automated steering oil flow control to achieve an end-to-end steering cycle time of approximately **15** seconds. Use the knurled locking nut to secure the final flow control setting.

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.

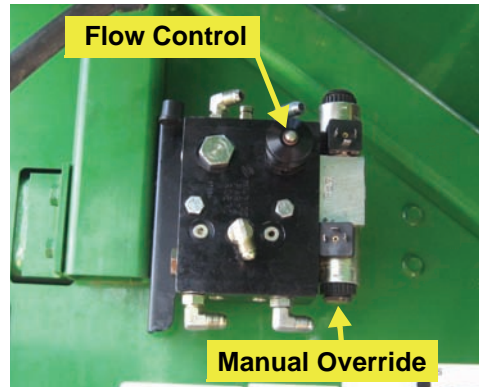


Figure 9: Manual override and flow control valve