

# Automated Steering Hydraulic Installation Kit

P/N: ED-JD4040

## Fits John Deere Tractor Models:

	4050	4055
	4250	4255
4440	4450	4455
		4555
4640	4650	4755
4840	4850	4955



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

## Machine Preparation








Before attempting to install the 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	Photograph
A	760-0006	1	Assy, Hyd. Valve Block - PC/CL	
<b>Bag 1 of 3 includes B</b>				
B	760-2058	4	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB	

## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPH
C	640-0055	1	Brkt., Hyd. Blk Mnt. - JD4040/4060	
<b>Bag 2 of 3 includes D &amp; E</b>				
D	675-2005	2	Bolt - 3/8NC x 3-1/4" Gr5, ZP	
	678-1054	2	Washer, Narrow Flat - 3/4"OD x 13/32" ID x 1/16"thk, ZP	
	676-1035	2	Nut, NyLock - 3/8NC ZP	
E	675-2022	1	Bolt, Carriage - 5/8NC x 1-1/2" Gr5 ZP	
	678-1056	1	Washer, Narrow Flat - 5/8", ZP	
	676-1037	1	Nut, Lock - 5/8" NC ZP	
<b>Bag 3 of 3 includes F</b>				
F	760-2054	4	Adapter, Hyd. Run Tee - #6 JIC	
G	760-1047	2	Hoses, Hyd. - 3/8" x 29", #6femJICswiv x #6femJICswiv90EL	
H	760-1137	1	Hose, Hyd. - 3/8"x26", #6femJICswivel both ends	
I	760-1139	1	Hose, Hyd. - 3/8"x63", #6femJICswivel both ends	

## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPH
J	760-1138	1	Hose, Hyd. 3/8"x28", #6femJICswivel both ends	
K	760-1143	2	Hoses, Hyd. - 1/4"x88", #6femJICswiv x #6femJICswiv 90EL	
L	760-1132	1	Hose, Hyd. - 3/8"x91", #6femJICswiv x #6femJICswiv 90EL	
M	760-1133	1	Hose, Hyd. - 3/8"x86", #6femJICswiv x #6femJICswiv 90EL	
N	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

---



## 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.



## 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 the 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:

**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:

**INSTALLATION LOCATIONS** will be referred to in the instructions with reference to the operator's position when the machine is operating in the forward direction of travel. For example, an installation location on the right side of the machine should be interpreted as being on the operator's right side when facing forward in the operator's station.

# INSTALLATION

## 1. Prepare Automated Steering Block:

Make sure the Automated Steering Block is clean and dust free. Remove the plastic plugs and install the elbow adapters (**B**) in the **P**, **T**, **A** and **B** ports. (Figure 1.)

**NOTE:** To install the elbow fittings into the **P** and **T** ports, the pressure test port fitting must first be removed. Once the elbows are installed, reinstall the pressure test port fitting.

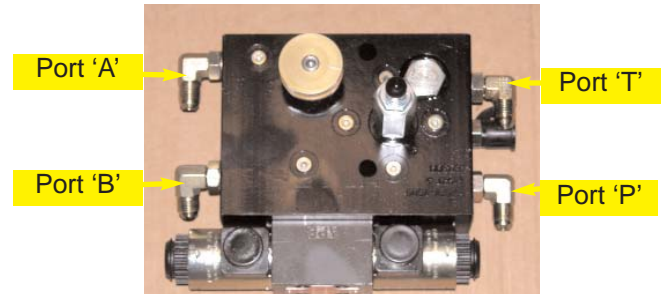


Figure 1. Automated Steering Block.

## 2. Install Mounting Bracket:

a. Locate the rectangular or square hole on the right side of the tractor frame as shown. (Figure 2a.)

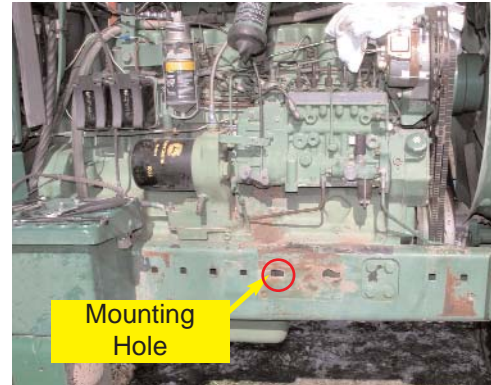


Figure 2a. Tractor mounting location.

b. Use the hardware in group (**E**) to install the mounting bracket (**C**) to the tractor frame. (Figure 2b.)

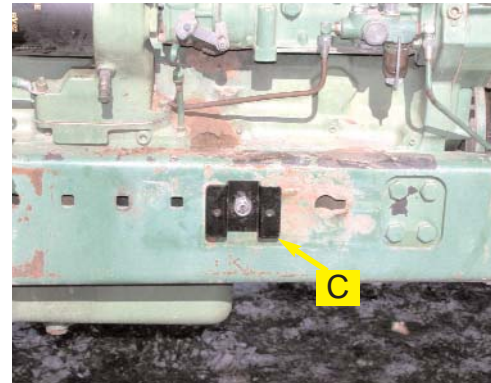


Figure 2b. Mounting bracket (installed).

c. Mount the Automated Steering Block to the bracket using the provided hardware in group (**D**). Be sure the Automated Steering Block is mounted with the **A** and **B** ports pointing up as shown. (Figure 2c.)

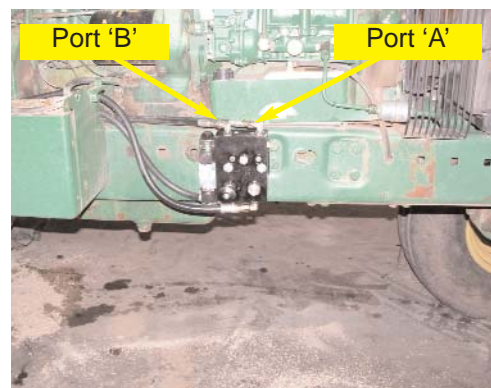


Figure 2c. Automated Steering Block (installed).

### 3. Install Machine Fittings:

- a. Locate pressure, return, left, and right input connections at the Tractor Steering Valve above the engine. (Figure 3a.)

**NOTE:** On top of the Tractor Steering Valve are the pressure, right, and left input connections. (Figure 3a.) Below the valve is the return connection (Figure 3b.)

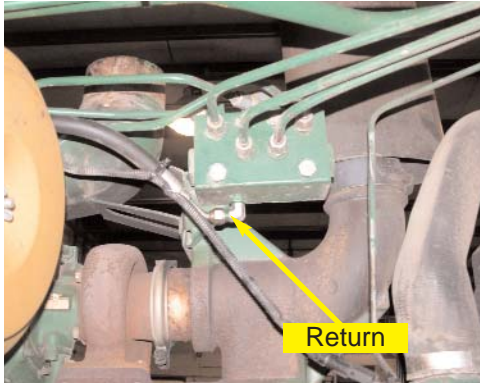


Figure 3b. Tractor Steering Valve - return connection.

- b. Replace the pressure, right, and left input lines with rubber hoses (G and H) and install the runtees (F). (Figure 3d and 3e.)

**NOTE:** Install the elbow end of the replacement hose (G) at the steering valve and the straight end at the tractor fire-wall (Figure 3d and 3e.)

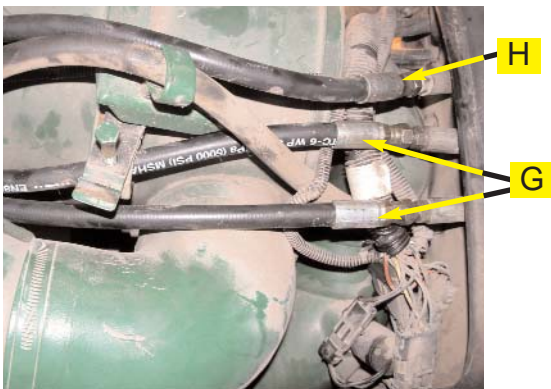


Figure 3e. Steel lines replaced by rubber hoses, connected at the fire-wall.

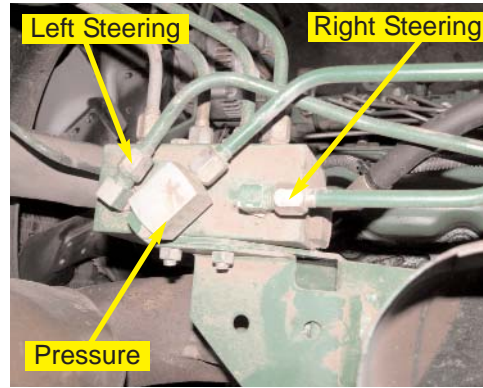


Figure 3a. Tractor Steering Valve - left, right, and pressure connection.

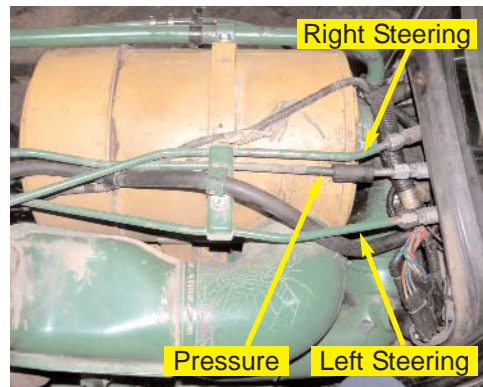


Figure 3c. Pressure, left, and right tractor lines at the fire-wall.

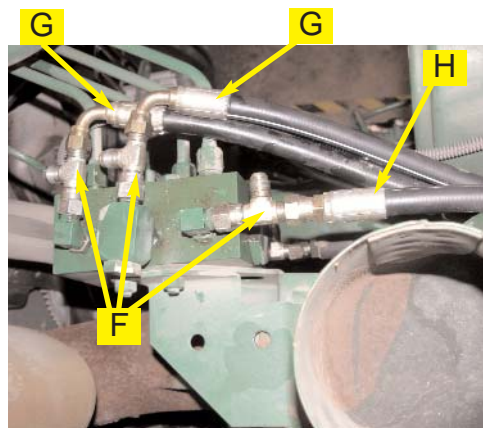


Figure 3d. Tractor Steering Valve - pressure, right, and left lines replaced.

### 3. Install Machine Fittings: (Continued)

- c. Install the provided run-tee (**F**) into the return line as shown. (Figure 3f.)

**NOTE:** On some models the return line must also be replaced with a rubber hose. If necessary, replace the return line with hose (**J**) and install the run-tree (**F**) as shown. (Figure 3f.)

**NOTE:** On some tractor models, the pressure line is routed toward the front of the tractor instead of the back. In this case, the steering line must be replaced with hose (**I**) in place of hose (**G**). (Figure 3g.)

**TIP!** Loosen and rotate the port fittings on the Tractor Steering Valve to allow for proper hose installation and routing. Leave all connections loose to allow for the following installation steps.

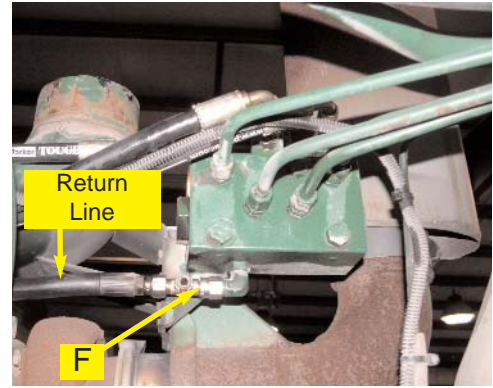


Figure 3f. Run-tee installed with rubber return line.



Figure 3g. Tractor Steering Valve with replacement pressure hose (**I**) routed to the front of the tractor.

#### 4. Connect Automated Steering Hoses:

- a. Connect the left and right steering hoses (**K**) between the **A** and **B** ports of the Automated Steering Block and the run-tees installed in the right and left steering lines in **step 3**. (Figure 4a, 4b, and 4c.)
- b. Connect the automated steering pressure and return hoses (**L** and **M**) between the **P** and **T** ports of the Automated Steering Block and the respective run-tees installed in **step 3**. (Figure 4a, 4b, and 4c.)
- c. Route the hoses as indicated in Figure 4d. on the next page.

**NOTE:** The hose ends with the 90-degree elbows will be installed at the run-tees as shown. (Figure 4b.)

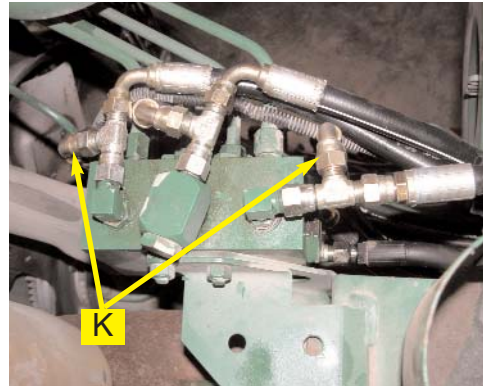


Figure 4a. Tractor Steering Valve.

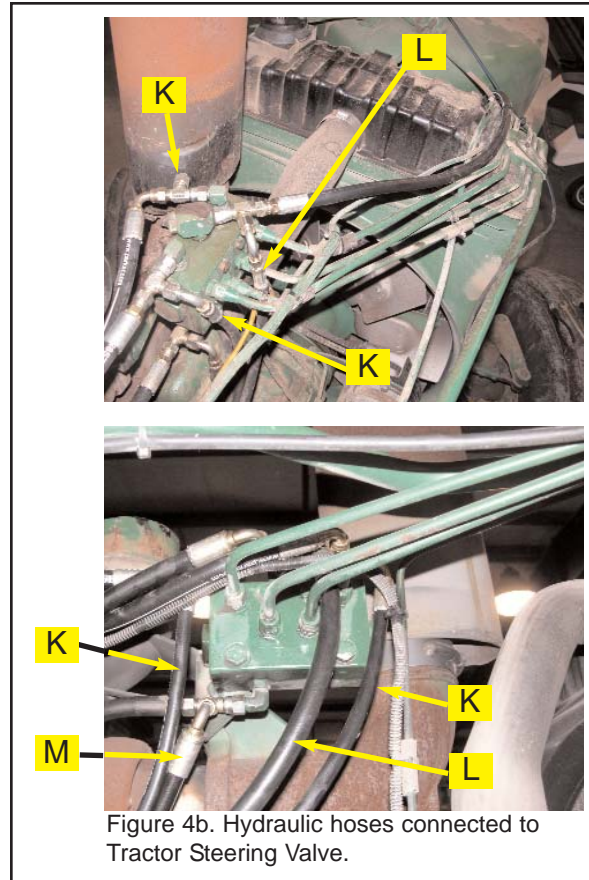


Figure 4b. Hydraulic hoses connected to Tractor Steering Valve.

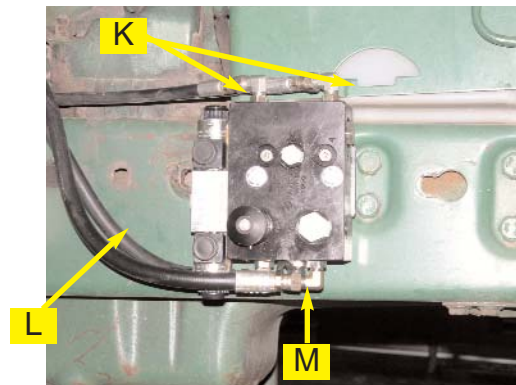
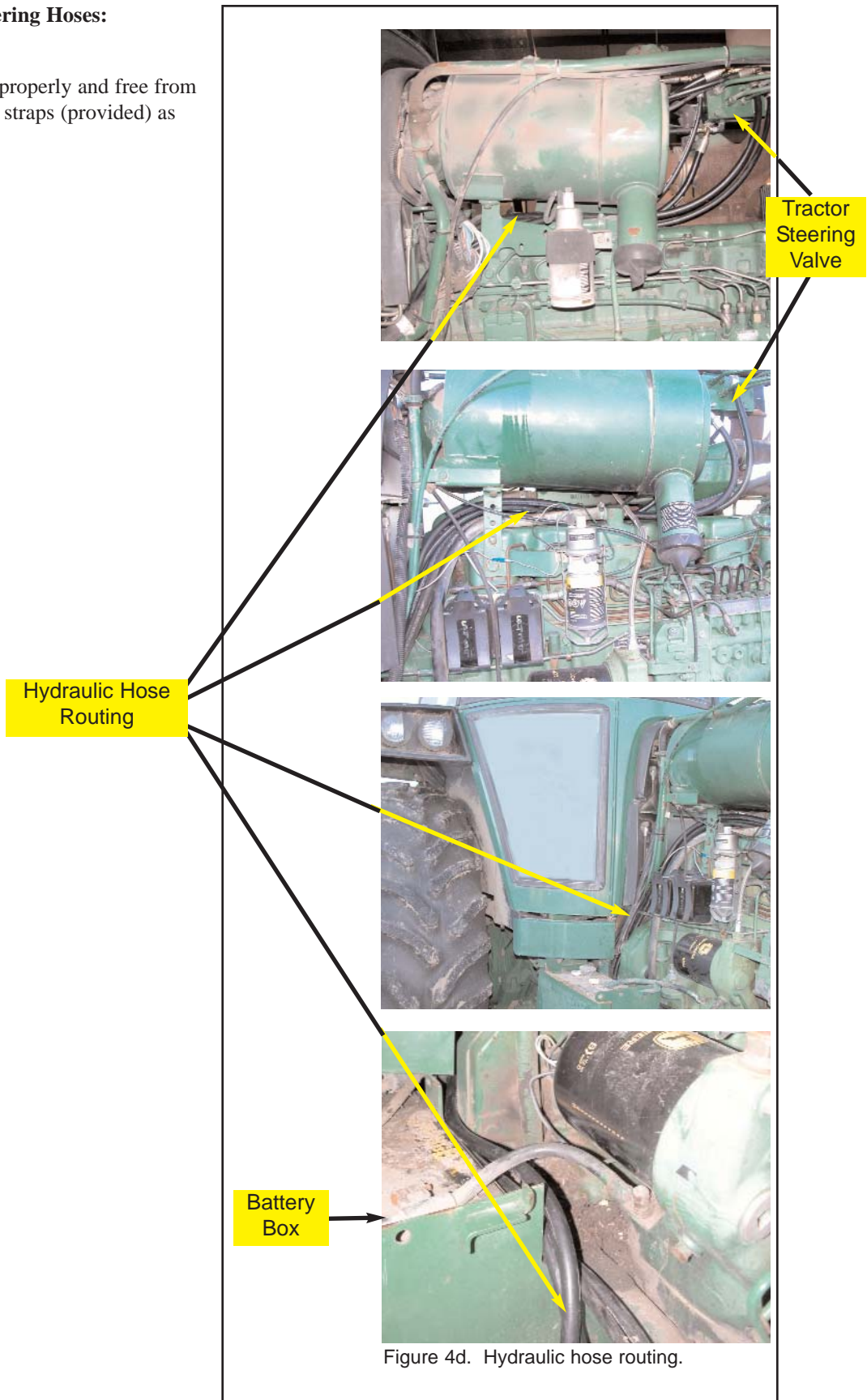


Figure 4c. Hydraulic hoses connected to Automated Steering Block.



**4. Connect Automated Steering Hoses:  
(Continued)**

Be sure all hoses are routed properly and free from entanglement. Use heavy tie straps (provided) as needed.



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

- a. Route the Valve Control Cable (N) from the Automated Steering Bock through the cab access window in the lower front corner of the cab. (Figure 5.)
- b. Remove enough slack out of the cable to prevent entanglement with the tractor's moving parts. Use tie straps as needed.

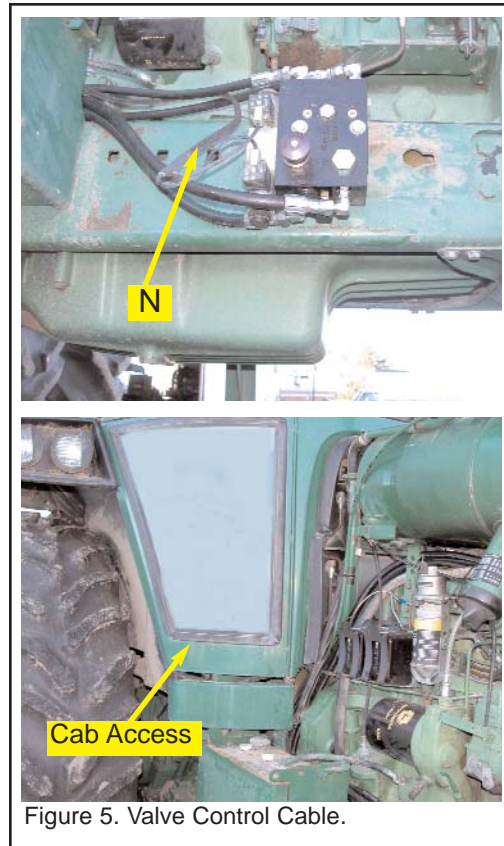


Figure 5. Valve Control Cable.

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

**CHECK!** Are all hydraulic connections tight?

- a. Clean up the installation area around the machine and make certain that it is safe to operate.
- b. Start the machine and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.
- c. Open (turn counter clockwise) the automated steering flow control knob to a starting position of **2 turns** from completely closed.

- d. The coils on the Automated Steering Block have manual push button overrides. Push either manual override to move the tractor wheels all the way to one extreme. (Figure 6.)
- e. Count the number of seconds for the tractor wheels to move all the way in the opposite direction while pressing the manual override of the other coil.
- f. Unlock the jam-nut. Using a 3/16" Allen wrench, adjust the **PRV** to achieve an end-to-end steering cycle time of approximately **17 seconds**.
  - To increase the cycle time, turn the **PRV counter-clockwise**.
  - To reduce the cycle time, turn the **PRV clockwise**.

**NOTE:** Adjust the PRV in ¼ turn increments or smaller to achieve the correct cycletime. Lock the jam-nut to secure the **PRV** setting.

- g. Use the flow control valve to fine tune the automated steering hydraulics as needed.
  - To reduce steering speed, turn knob **clockwise**.
  - To increase steering speed, turn knob **counter-clockwise**.
- h. Use the knurled locking nut to secure the final flow control setting.

## 7. Complete Automated Steering Electronic Installation and Setup:

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

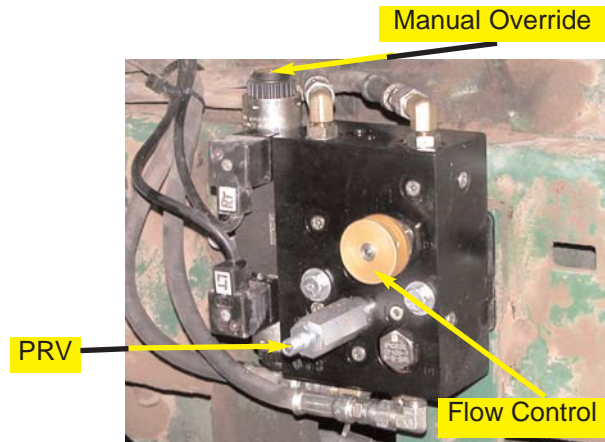


Figure 6. Automated Steering Block control.



**ATTENTION:**

Before setting Automated Steering hydraulics, be sure the machine hydraulic oil has reached stable operating temperature.

**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.

**NOTE:**

The Automated Steering Block has a fine and a coarse adjustment.

- To make a fine adjustment, use the flow control valve.
- To make a coarse adjustment, use the pressure reducing valve (PRV).

