

Automated Steering Hydraulic Installation Guide

Kit: ED-C9300SF


Fits Case IH Models*:

9110	9210	9310
9130	9230	9330
9150	9250	9350

(* Note: On row crop special models, you must lock the front axle for eDrive to provide accurate guidance.)



Read and Follow Safety Messages

- In these instructions, you will see the heading **WARNING** and the safety alert symbol . They indicate a hazardous situation that, if not avoided, could result in death or serious injury. The safety messages provide information to identify a hazard associated with potential injury.
- Before installing, operating, or performing maintenance or service on any part of the system:
 - Read and understand this installation guide and all of the safety information.
 - Read and understand the Automated Steering System User Guide.
- Do not allow anyone to operate without instruction.
- Keep these instructions and all related safety information with the manual for your machine and other implements.

If you have any questions or need assistance, contact your local dealer or distributor.

Overview

A series of equipment specific kits has been developed to work in conjunction with your automated steering system. This kit contains the components and instructions to install automated steering hydraulics on the machine models listed above.

Please read this manual thoroughly before beginning the installation.

WARNING:

To avoid serious injury or death during machine operation, install the appropriate kit for your machine make and model.

Machine Preparation

WARNING:

Inspect the machine and perform any needed maintenance (for example, contaminated hydraulic fluid) before installing the automated steering kit. This kit cannot perform as intended on a machine that is not maintained properly. Errors in performance increase the risk of operator and bystander injury or death.

Failure to maintain clean hydraulic fluid and operational hydraulic components can cause loss of directional control resulting in serious injury or death.

To avoid serious injury, wear hand and eye protection and use wood or cardboard when checking for leaks.

Turn off the machine and power off the eDrive when installing or performing maintenance.





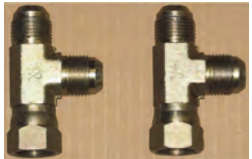
Before attempting to install hydraulics, park the machine on a clean level floor with adequate clearance to work all around.

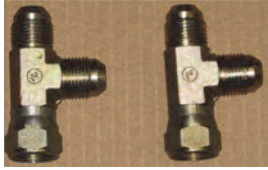



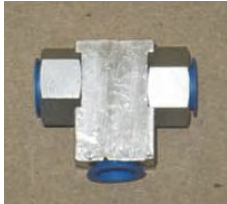



Before you perform any drilling, cutting or fastening, ensure that no other machine components, such as hydraulic hoses or electrical wiring, will be damaged. Failure to follow this warning may cause physical injury and/or damage to the machine.





To prevent hydraulic system contamination, it is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a degreasing solvent spray cleaner such as a brake cleaner to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings, referred to in the Kit Contents section, may be damaged by degreasing solvent cleaners. If a fitting is to be cleaned internally, the o-ring should first be removed and cleaned with a fiberless cloth.

Kit Contents

Unpack the installation kit and identify the required parts as shown.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
A	760-0004	1	Assy, hyd valve block - LS high flow	
Bag #1 of 4 contains B				
B	760-2058	5	Adapter, hyd 90 elbow - #6mJIC x #6mORB	
C	640-0056	1	Hydraulic steering block mounting bracket - C9300SF	
Bag #2 of 4 contains D				
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	
Bag #3 of 4 contains E, F, G, H and I				
E	760-2077	2	Adapter, hyd run-tee - #8JIC	

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
F	760-2006	2	Adapter, hyd run-tee - #10JIC	
G	760-2016	2	Adapter, hyd run-tee - #12JIC	
H	760-2097	2	Adapter, hyd elbow - #10mJIC x #12fJIC	
I	760-2007	2	Adapter, hyd 90 elbow - #10mJIC x #10fJIC	
Bag #4 of 4 contains J, K, L, M and N				
J	760-0002	1	Assy, hyd load shuttle - #6fORB	
K	760-0029	1	Adapter, hyd - #4fJIC x #6mJIC	
L	760-2058	1	Adapter, hyd 90 elbow - #6mJIC x #6mORB	
M	760-2036	1	Adapter, hyd - #4mJIC x #6mORB	
N	760-2042	1	Adapter, hyd 90 elbow - #6mORB x #6fJIC	

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
O	760-1126	2	Hose, hyd - 3/8" x 35", #6fJIC x #10fJIC	
P	760-1004	1	Hose, hyd - 1/4" x 30", #6fJIC x #6fJIC	
Q	760-1125	2	Hose, hyd - 3/8" x 36", #6fJIC x #8fJIC90	
R	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

Installation

⚠ WARNING:

Before installing, disconnecting or repairing the hydraulic hoses and components, turn off the machine and relieve all pressure from the hydraulic system by turning the steering wheel left and right. Failure to remove the pressure can result in serious injury or death from unexpected machine movement.

To avoid burn injury when installing, disconnecting or repairing the hydraulic hoses and components, turn off the machine and allow the system to cool down prior to touching the parts of the machine that are heated.

1. Prepare the automated steering block.

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

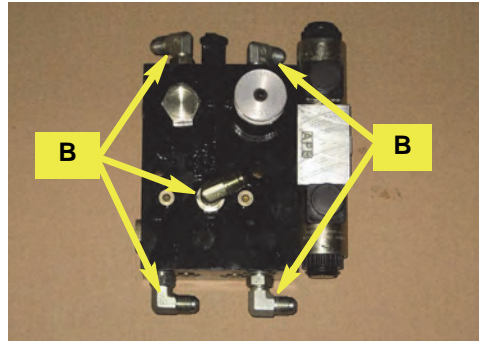


Figure 1: Prepared automated steering block

2. Mount automated steering block.

- a. Locate the two bolts on the left hood brace (Figures 2a and 2b).

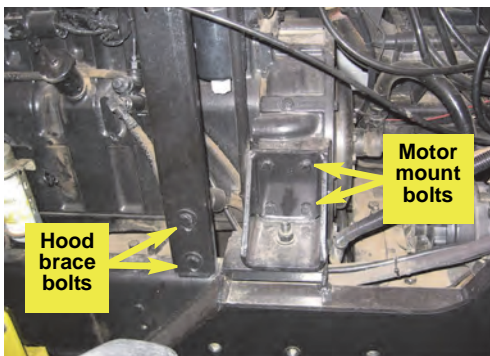


Figure 2a: Mounting location, row crop special models

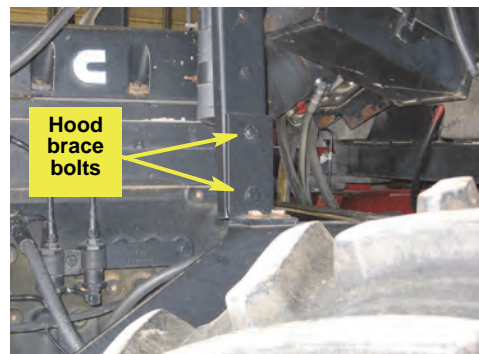


Figure 2b: Mounting location, standard, non-row crop models

- b. Use the existing bolts to mount the bracket (**C**) onto the hood brace (Figures 2c and 2d).

NOTE: *If tire clearance is an issue you can use the motor mount bolts, as shown in Figure 2a, to mount the automated steering block. The hood brace bolts are the preferred location.*

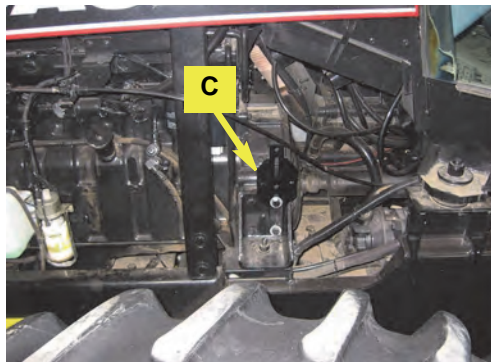


Figure 2c: Installed mounting bracket on motor mounting bolts

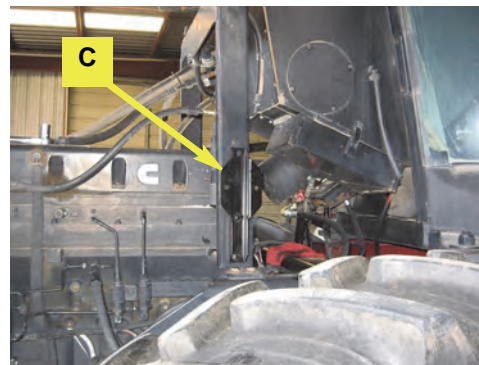


Figure 2d: Installed mounting bracket on hood brace

- c. Use the provided mounting hardware in group (D) to attach the automated steering block, as prepared in step 1, to the mounting bracket (C) (Figure 2e).

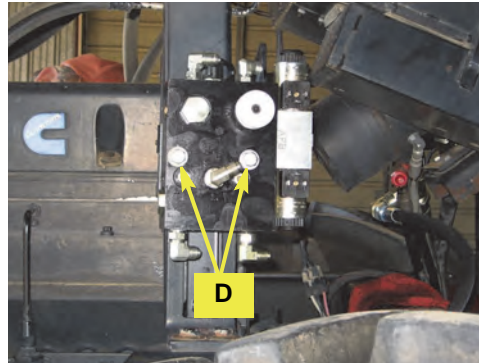


Figure 2e: Mounted automated steering block

3. Install pressure and tank fittings.

- a. The automated steering block will receive pressure from the bottom right port on the steering orbital. Tank flow will be relieved to the bottom left port of the steering orbital (Figures 3a and 3b).



Figure 3a: Steering orbital

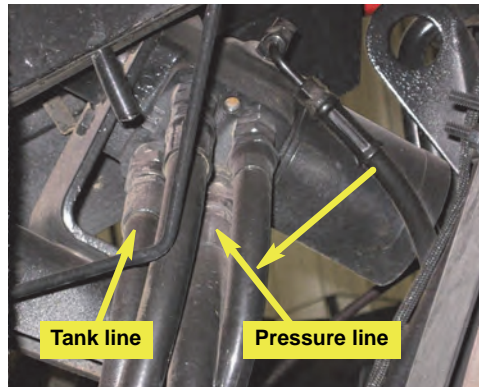


Figure 3b: Pressure and tank location

- b. Remove the bottom two lines from the orbital and install the provided run-tee fittings (F or G - see note following). Reattach the pressure and tank hoses to the ends of the run-tees on their original ports as shown (Figure 3c).

NOTE: Depending on your tractor model, the larger run-tees fitting (G) may be required. Other models will require the smaller run-tees (F).

NOTE: For easier access to the bottom port on the orbital, the top two steering hoses can be removed - see step 6a, page 9).

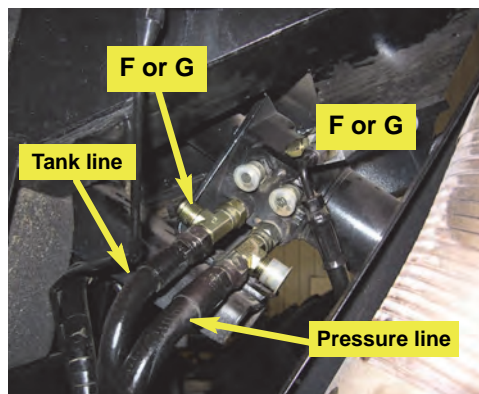


Figure 3c: Installed pressure and tank fittings

4. Install load sense shuttle.

a. Assemble the load sense shuttle (**J**) with adapter fittings **K**, **L**, **M** and **N** as shown (Figure 4a).

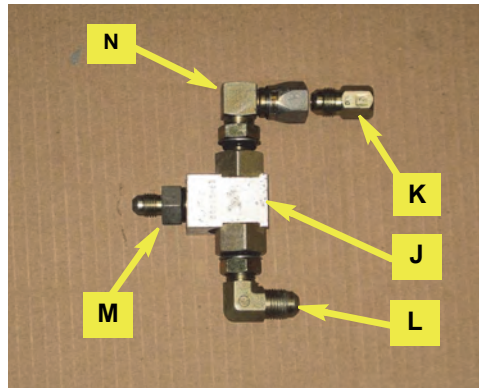


Figure 4a: Load sense shuttle

b. Locate the load sense line on the steering orbital. On some models the load sense line is on the bottom of the orbital instead of the top (Figures 4b and 4c).

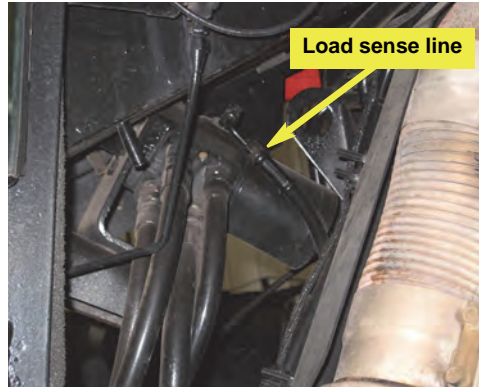


Figure 4b: Load sense line location - top

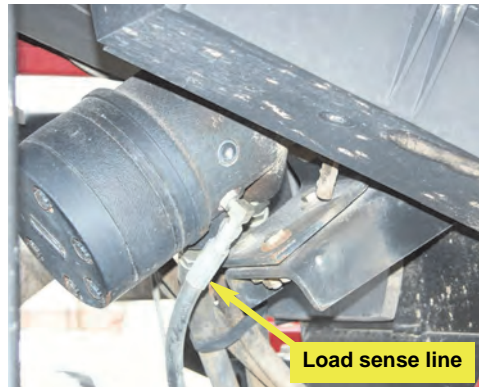


Figure 4c: Load sense line location - bottom

c. Remove the load sense line from the orbital and install the prepared load sense shuttle (**J**) as shown. Reattach the orbital load sense hose to the end of the load sense shuttle as shown (Figure 4d).

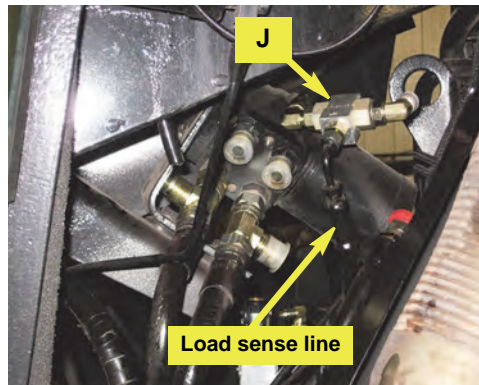


Figure 4d: Installed load sense shuttle

5. **Install pressure, tank and load sense hoses.**

- a. Connect the pressure hose (**O**) between the **P** port of the automated steering block and the pressure run-tee fitting (**F** or **G**) on the steering orbital. Use the provided elbow adapter (**H** or **I**) to connect the pressure hose (**O**) to the steering orbital. The pressure port of the steering orbital is the lower right hand port (Figures 5a and 5b).

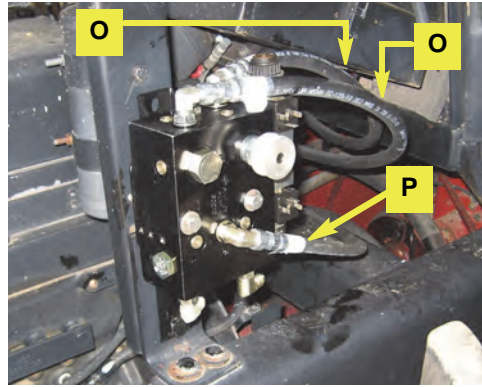


Figure 5a: Installed pressure, tank and load sense hoses at the automated steering block

- b. Connect the tank hoses (**O**) between the **T** port on the automated steering block and the tank run-tee fitting (**F** or **G**) on the steering orbital. Use the provided elbow adapter (**H** or **I** - see note following) to connect the tank hose (**O**) to the steering orbital. The tank port of the steering orbital is the lower left hand port (Figures 5a and 5b).

NOTE: *The use of elbow adapters **H** or **I** is dependent on which size run-tee is used, **F** or **G**, according to the connector sizes on your specific model.*

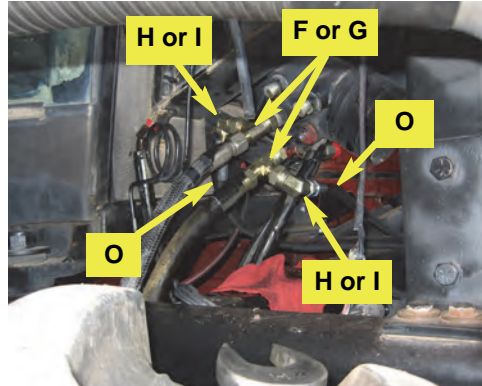


Figure 5b: Installed pressure and tank hoses

- c. Connect the load sense hose (**P**) from the **LS** port on the automated steering block to the open end of the load sense shuttle (Figure 5c).

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

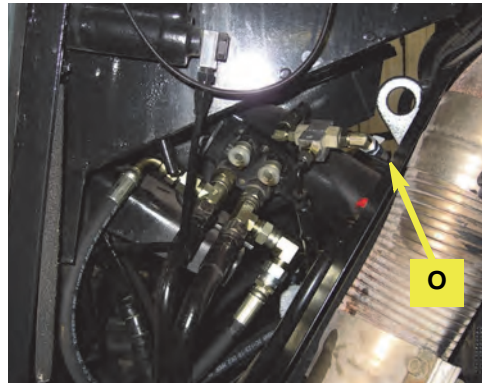


Figure 5c: Installed load sense hose

6. Install steering output fittings.

a. Locate the top two lines on the steering orbital (Figure 6a).

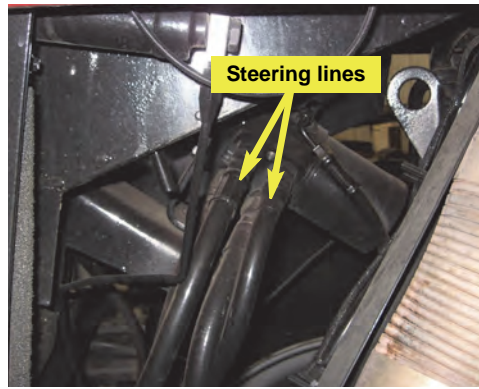


Figure 6a: Steering output location

b. Install the run-tee fittings (E) between the rubber steering lines and orbital as shown (Figure 6b).

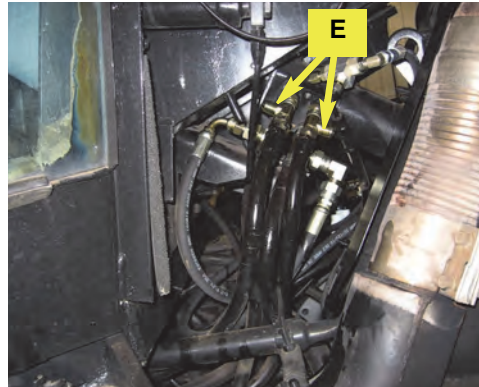


Figure 6b: Installed steering output fittings

7. Install steering output hoses.

Connect the hydraulic steering hoses (Q) from the A and B ports on the automated steering block to the steering run-tees (E) (Figures 7a and 7b).

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

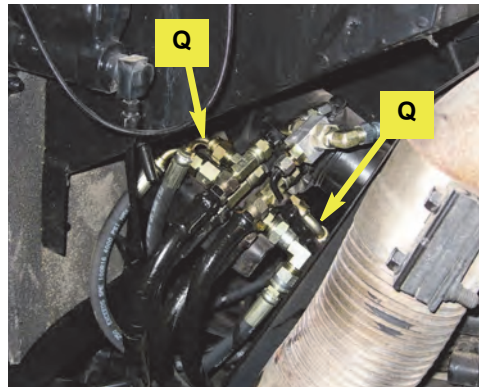


Figure 7a: Installed steering hoses

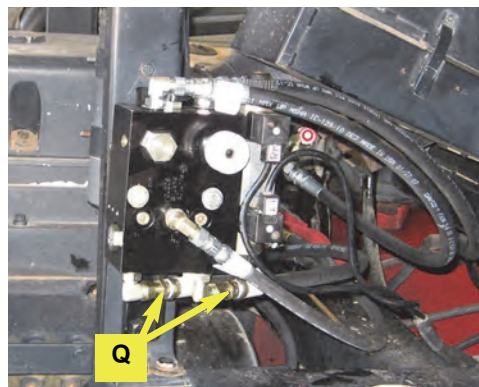


Figure 7b: Installed steering hoses at automated steering block

8. Install the valve control cable.

Route the valve control cable (**R**) from the automated steering block into the cab through the cable grommet in the right rear corner of the tractor cab floor (Figures 8a and 8b).

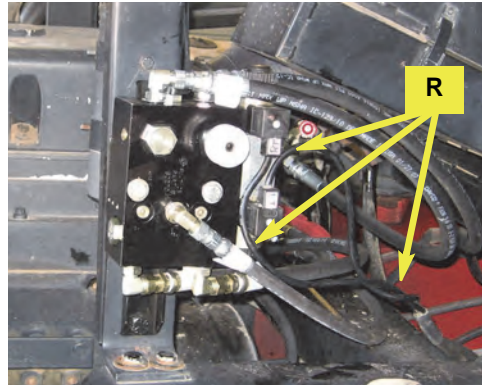


Figure 8a: Installed valve cable at the automated steering block

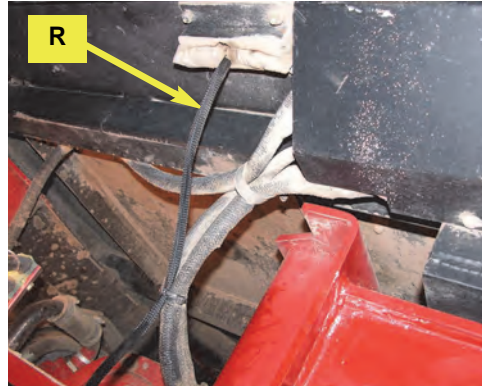


Figure 8b: Valve cable routed in cab

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. Start the machine and check the automated steering connections for any leaks.

⚠ WARNING: *During tests of the hydraulic system, the machine may move unexpectedly. Be prepared for machine movement to avoid injury.*

Keep others away and stay clear of mechanical steering linkages to prevent serious injury or death from pinch point hazards while manually operating the hydraulic steering circuit.

- c. Rotate the steering wheel from one extreme to the other and back.
- d. 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
 - Turn counter-clockwise to increase flow
- e. 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.

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.*

- f. 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.
- g. Adjust the automated steering oil flow control to achieve an end-to-end steering cycle time of approximately **20** 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.

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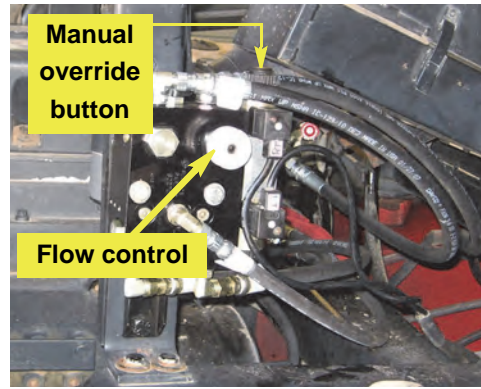


Figure 9: Automated steering flow control knob and manual override button