

Automated Steering Hydraulic Installation Kit

P/N: ED-NHTSA

Fits Case IH and New Holland Models:

MXU100 TS100A
MXU110 TS110A
MXU115 TS115A
MXU125 TS125A
MXU130 TS130A
MXU135 TS135A



Overview






A series of equipment-specific kits has 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 Case IH and New Holland tractor models listed above. Please read this manual thoroughly before beginning the installation.

Machine Preparation








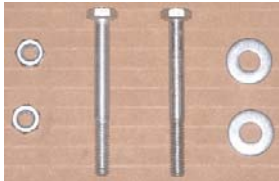





Before attempting to install the automated steering kit, park the machine on a clean, level floor with adequate clearance to work all around.

Kit Contents








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

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
A	760-0005	1	Assy, Hyd Valve Block - OC	
Bag #1 of 4 includes B, C, D & E				
B	760-2058	2	Adapter, Hyd. 90 Elbow - #6mJIC x #6mORB	
C	760-2056	1	Adapter, Hyd. - #6mJIC x #6mORB	
D	760-2080	1	Adapter, Hyd. 90 Elbow - #8mJIC x #8mORB	
E	760-2079	1	Adapter, Hyd. - #8mJIC x #8mORB	


Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
F	640-0056	1	Brkt, Hyd Blk Mnt	
Bag #2 of 4 includes G, H, I, J, K, L & M				
G	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	NyLock - 3/8NC ZP	
H	675-2024	2	Bolt, Flanged - 10m1.5 x 25, Gr8.8ZP	
I	675-2025	1	Bolt, Flanged - 10m1.5 x 50 Gr8.8ZP	
J	676-1038	1	Nut, Flanged - 10m1.5, YZ	
K	678-1056	2	Washer, Narrow Flat - 5/8" nominal	
L	680-1053	1	Spcr - 0.438ID, 0.875OD, 1LNG, ZP	
M	675-2023	2	Bolt - 1/4NC x 3-1/2" Gr5, ZP	
	678-1053	2	Washer, Narrow Flat - 1/4" ZP	
	676-1034	2	Nut, Lock - 1/4NC ZP	
Bag #3 of 4 includes N, O, P, Q & R				
N	760-2054	2	Adapter, Hyd. Run Tee - #6JIC	
O	760-2050	2	Adapter, Hyd. 90 Elbow - #6mORF x #8mORB	
P	760-2060	1	Adapter, Hyd - #6mJIC x #8mORB	
Q	760-2061	1	Adapter, Hyd. 90 Elbow - #6mJIC x #8mORB	
R	760-2055	1	Adapter, Hyd. 90 Elbow - #6mJIC x #6fJIC	

Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
S	760-0001	1	Assy, Hyd. Counter Balance - Reactive	
Bag #4 of 4 includes T				
T	760-2069	1	Adapter, Hyd. Run Tee - #8ORF	
U	760-1268	1	Hose, Hyd-1/2" x 25", #8fJIC90 x #8mORF	
V	760-1269	1	Hose, Hyd-3/8" x 35", #6fJIC x #8fORF90	
W	760-1270	1	Hose, Hyd-1/2" x 30", #8fJIC x #8fORF90	
X	760-1271	2	Hose, Hyd-3/8" x 30", #6fJIC x #6fORF	
Y	760-1005	2	Hose, Hyd-3/8" x 54", #6fJIC x #6fJIC90	

Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
Z	051-0143	1	Cable, Interface - 15 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.



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 the small elbow adapter fitting (**B**) into the **A** and **B** ports of the automated steering block and the large elbow adapter fitting (**D**) into the **EF** port. (Figure 1.)
- c. Install the small straight adapter fitting (**C**) into the **T** port of the automated steering block and the large straight adapter fitting (**E**) into the **P** port. (Figure 1.)

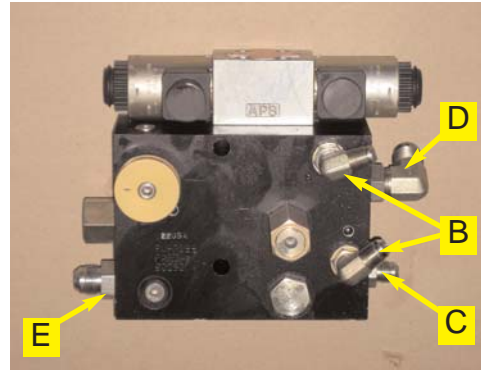


Figure 1. Prepared automated steering block.

2. Mount Automated Steering Block:

- a. Locate the two bolts on the right side of the tractor that attach the entrance step to the machine. (Figure 2a.)
- b. Use the provided bolts (**H**) to mount the bracket (**F**) to the tractor step. (Figure 2b.)
- c. Use the provided mounting hardware in group (**G**) to attach the automated steering block, as prepared in step 1, to the mounting bracket (**F**). (Figure 2c.)
- d. If your tractor has a joystick valve that interferes with the automated steering block installation use the longer bolt (**I**) with the spacer (**L**) under the bracket (**F**). Move the right step bolt to the outer hole by using the two washers (**K**) as spacers and the nut (**J**). (Figure 2d.)

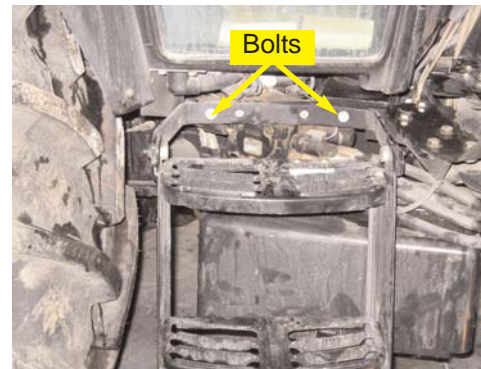


Figure 2a. Mounting location.

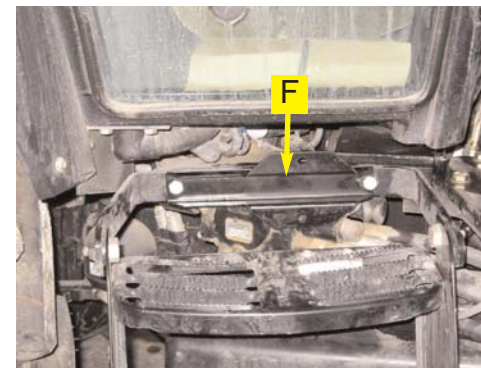


Figure 2b. Installed mounting bracket.

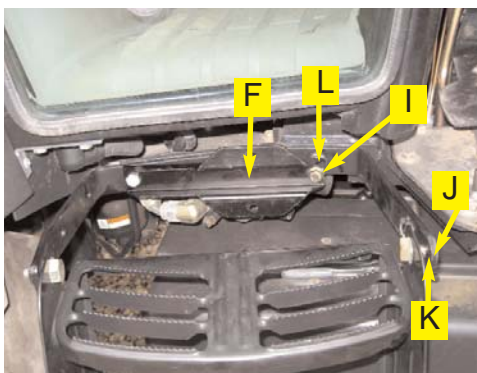


Figure 2d. Installed mounting bracket with spacer.



Figure 2c. Mounted automated steering block.

3. Install Pressure, Tank and Excess Flow Fittings:

a. The automated steering block will receive pressure and return excess flow in the return line from the steering orbital. Locate the steering orbital return line on the right side of the tractor behind the battery box. (Figure 3a. and 3b.)



Figure 3a. Pressure and excess flow location.

b. Disconnect the steering return line where the rubber line is connected to the steel line. (Figure 3c.)



Figure 3b. Pressure and excess flow location.

c. Tank flow will be relieved to the cooler line. (Figure 3d.)

d. Locate the cooler lines along the right side of the tractor in front of the battery box. Install the run tee fitting (T) in the upper cooler line between the rubber line and steel line. (Figure 3e.)



Figure 3c. Disconnected steering return line.

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.

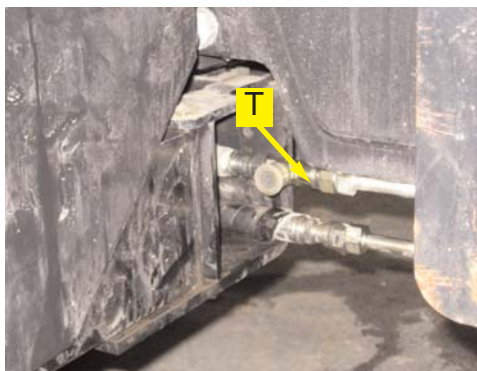


Figure 3e. Installed tank fitting.

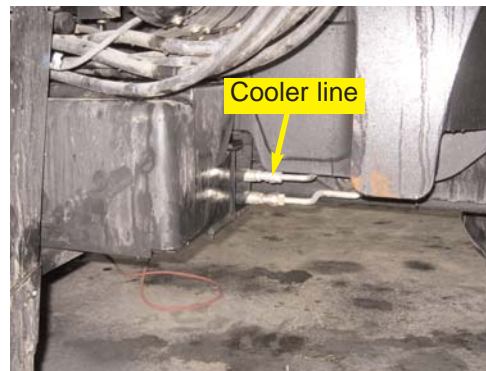


Figure 3d. Tank location.

4. **Install Pressure, Excess Flow and Tank Hoses:**

- a. Connect the pressure hoses (**U**) from the **P** port on the automated steering block to the rubber return line disconnected in step **3b**. Connect the excess flow hose (**W**) from the **EF** port on the automated steering block to the steel line disconnected in step **3b**. (Figure 4a. and Figure 4b.)
- b. Connect the tank hose (**V**) from the **T** port on the automated steering block to the run tee fitting (**T**) installed in step **3d**. (Figure 4a. and 4c.)

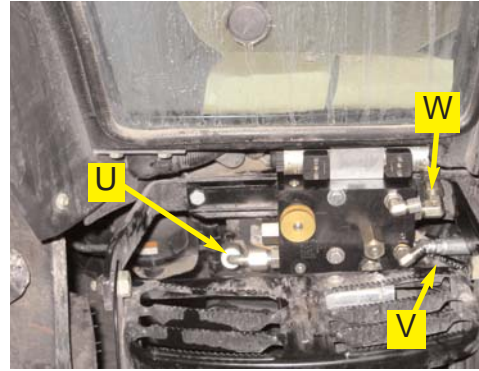


Figure 4a. Installed pressure, excess flow and tank hoses at the automated steering block.

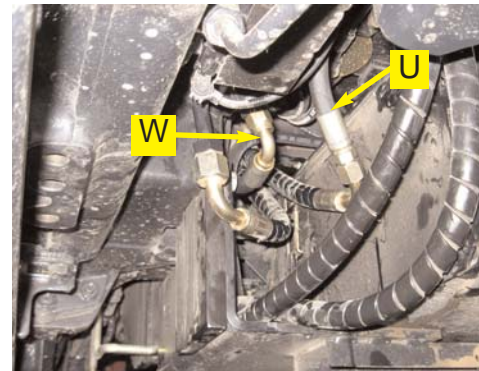


Figure 4b. Installed pressure and excess flow hoses.

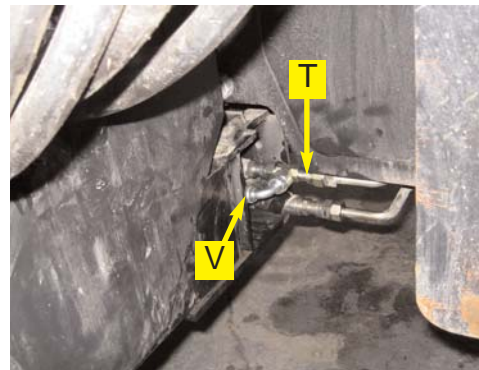


Figure 4c. Installed tank hose.

5. Assemble Counter-Balance Valve:

- a. Install the elbow fitting (O) into the V1 and V2 ports and adapter fitting (P) and (Q) into the C1 and C2 ports of the counter-balance valve (S). (Figure 5a.)
- b. Install the adapter fitting (R) on adapter fitting (P). (Figure 5a.)
- c. Install the run tees (N) to the adapter fittings (Q) and adapter fitting (R). (Figure 5a.)

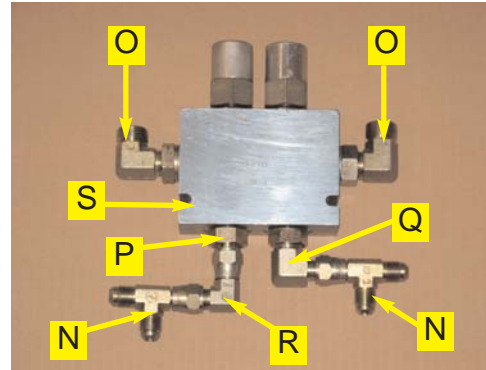


Figure 5a. Assembled counter-balance valve.

6. Install Counter-Balance Valve:

- a. The counter-balance valve (S) will be installed outside of the left hood support. (Figure 6a.)
- b. Use the counter-balance valve as a template to drill two 5/16 holes in the left hood support. (Figure 6a.)
- c. Use the provided hardware in group (M) to secure the counter-balance valve. (Figure 6a.)
- d. Locate the two steering lines on the left side of the engine. (Figure 6b.)

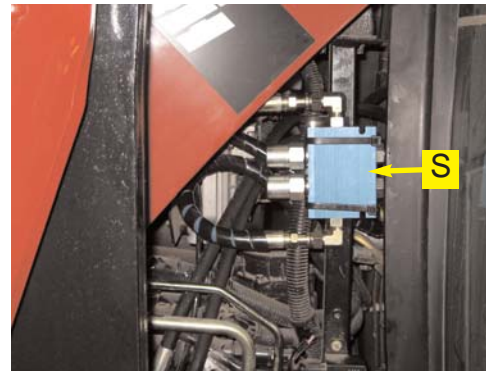


Figure 6a. Installed counter-balance valve.

- e. Remove the steering lines. (Figure 6c.)
- f. Connect the steering lines to the adapter fittings (O) in the V1 and V2 ports of the counter balance valve. (Figure 6c.)

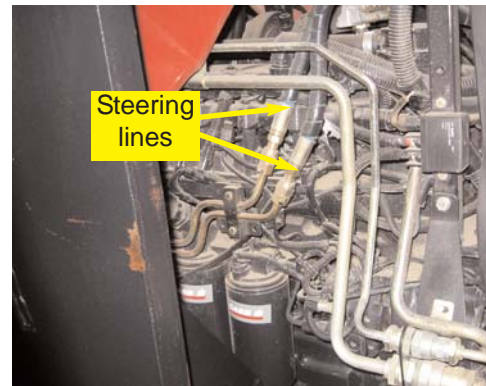


Figure 6b. Steering lines.

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

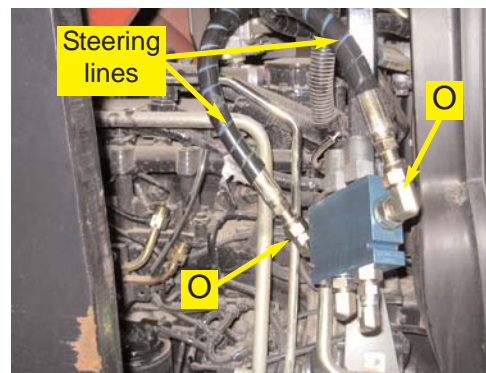


Figure 6c. Steering lines connected at counter-balance valve block.

7. Install Steering Output Hoses:

a. Connect the hydraulic steering hoses (**X**) from the steel steering lines to the run tee (**N**) on the **C1** and **C2** ports on the counter balance valve. (Figure 7a.)

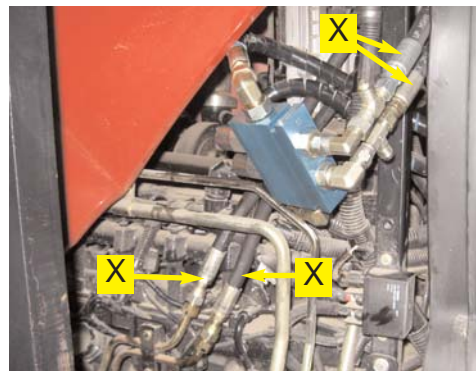


Figure 7a. Connected steering lines.

b. Connect the hydraulic steering hoses (**Y**) from the **A** and **B** ports on the automated steering block to the branch of the counter-balance valve run tees (**N**). (Figure 7b. and 7c.)

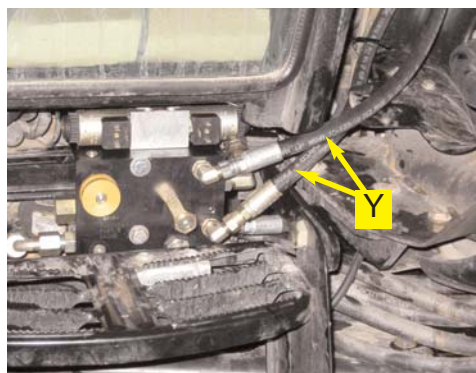


Figure 7b. Steering lines at the automated steering block.

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

NOTE: Do not cross hose connections when installing hoses onto the counter-balance valve. The steering hose connected to the **V1** port will apply pressure to the cylinder port connected to the **C1** port. The same is true for the **V2** and **C2** ports.

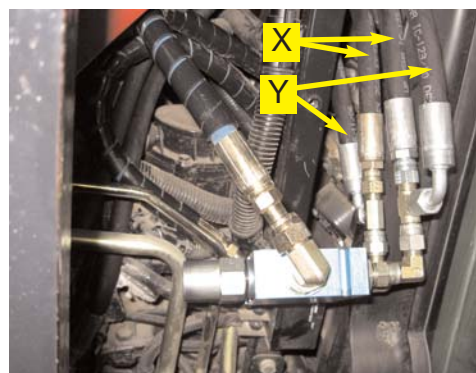


Figure 7c. Steering lines at the counter balance valve.

8. Install the Valve Control Cable:

Route the valve control cable (**Z**) from the automated steering block under the cab and in through the rear window access panel. (Figure 8a. and 8b.)

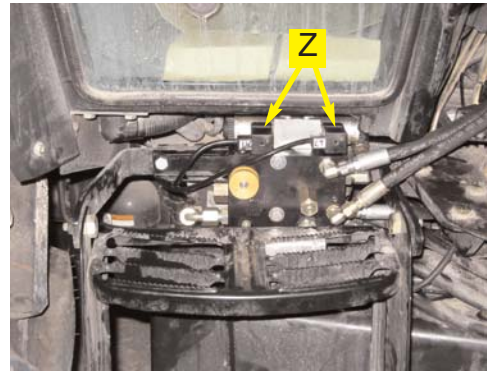


Figure 8a. Valve cable installed at the automated steering block.

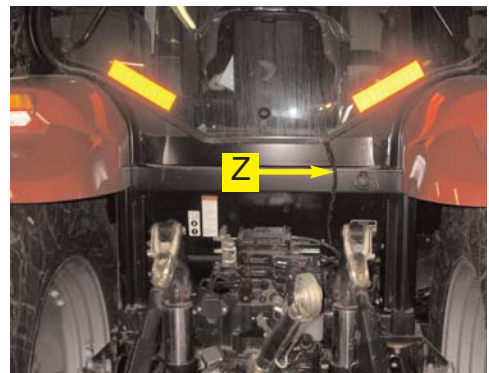




Figure 8b. Valve cable routed in cab.

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.

 **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.

- 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** turns from completely closed. To adjust the knob:
 - Turn clockwise to reduce 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.

 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 the other coil.
- h. Adjust the Automated Steering oil flow control to achieve an end-to-end steering cycle time of approximately **16** 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.

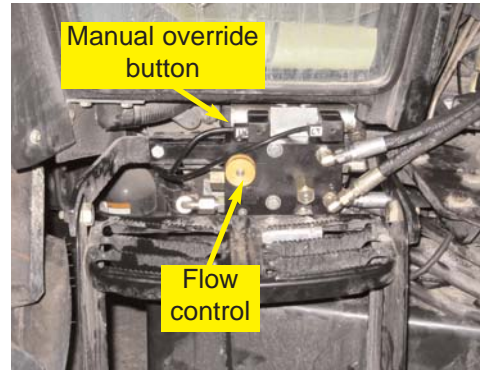


Figure 9. Valve cable routed in cab.