

# Automated Steering Hydraulic Installation Kit

P/N: ED-MF8400

Fits AGCO, Challenger, & Massey Ferguson Tractor Models:

DT180A	MT635B	8450
DT200A	MT645B	8460
DT220A	MT655B	8470
DT240A	MT665B	8480



## 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 tractor models listed above. Please read this manual thoroughly before beginning the installation.

## Machine Preparation

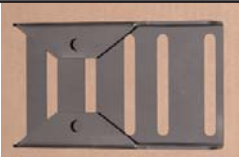







Before attempting to install hydraulics, park the machine on a clean, level floor with adequate clearance to work all around it.

## Kit Contents


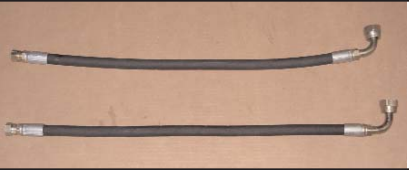


Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
A	760-0003	1	Assy, Hyd Valve - LS	
Bag #1 of 3 includes B, C, D, & E				
B	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB	
C	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB	
D	760-2074	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #6maleORB	
E	760-2078	2	Adapter, Hyd. 90 Elbow - #8maleJIC x #8femaleJICswivel	

## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
F	640-0052	1	Hyd, Block Mnt - MF8400	
<b>Bag #2 of 3 includes G &amp; H</b>				
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	Nut, NyLock - 3/8NC ZP	
H	678-1055	2	Washer, Flat - 5/16" ZP	
<b>Bag #3 of 3 includes I, J, K, &amp; L</b>				
I	760-2028	2	Adapter, Hyd. Run Tee - #18 LEO	
J	760-2013	2	Adapter, Hyd. Run Tee - #12 LEO	
K	760-2021	2	Adapter, Hyd. #12maleJIC x #18femaleLEOswivel	
L	760-2051		Adapter, Hyd. #6maleJIC x #10femaleLEOswivel	
M	760-2095		Adapter, Hyd. #12 LEO Nut	
	760-2096		Adapter, Hyd. #12 LEO Plug	

## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
N	760-1243	2	Hose, Hyd. - 3/8" x 150", #6fJIC x #12fMLE90	
O	760-1244	2	Hose, Hyd. - 1/2" x 28", #8fJICx #12fJIC90	
P	760-1245	1	Hose, Hyd. - 1/4" x 18", #6fJIC x #6fJIC90	
Q	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

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## 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 (**C**) in the **LS** port and the larger elbow adapter fittings (**D**) in the **P** and **T** ports. (Figure 1a.)
- c. Install the straight adapter fittings (**B**) in the **A** and **B** ports. (Figure 1a.)

**NOTE:**

The pressure test port fitting and valve coil must first be removed to install the elbow fittings (**D**) in the **P** and **T** ports. To remove the coil, unscrew the plastic retaining nut on the end of the coil, remove the o-ring and slide the coil off of the shaft. (Figure 1b.) Reinstall the coil and the pressure test port fitting. Do not over tighten the plastic retaining nut on the electric coil, hand tight is sufficient.

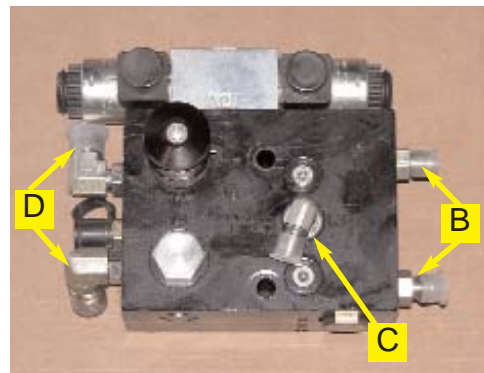


Figure 1a. Prepared Automated Steering Block.

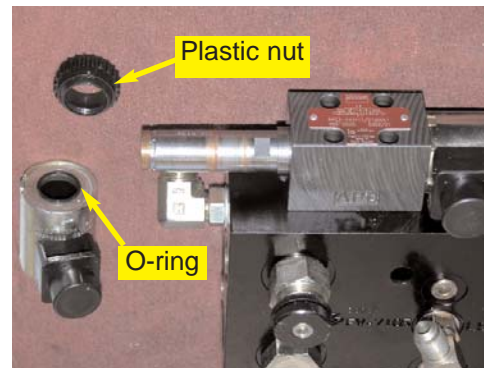


Figure 1b. Coil removed to install fitting.

## 2. Mount Automated Steering Block:

- a. Locate the two bolts at the rear of the tractor that attach the three point top link retainer. (Figure 2a.)
- b. Use the existing bolts with provided flat washers (**H**) to secure mounting bracket (**F**) to the tractor. (Figure 2b.)

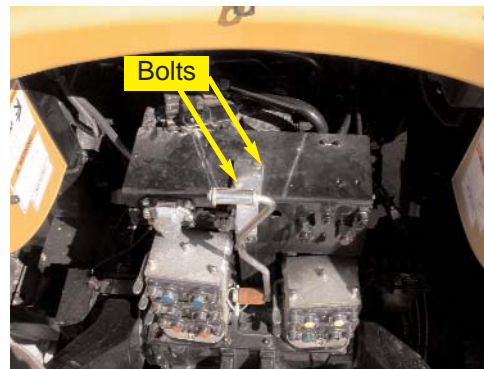


Figure 2a. Automated Steering Block mounting location.



Figure 2b. Installed mounting bracket.

## 2. Mount Automated Steering Block (continued):

- 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.)



Figure 2c. Installed Automated Steering Block.

## 3. Install Pressure, Tank, and Load Sense Fittings:

- a. The Automated Steering Block will receive pressure, tank, and load sense connections from the capped ports at the rear of the tractor, above the hydraulic remote valves. (Figure 3a.)
- b. The bottom left port is the pressure port, the bottom right port is the tank port and the top right port is the load sense port. (Figure 3a.)
- c. Install the provided run tee (I) to the pressure and tank ports and reinstall the caps to the ends of the run-tees. Install the adapter fitting (K) onto the branches of the run-tees to allow for hose installations. Install the adapter fitting (L) to the load sense port as shown. (Figure 3b)

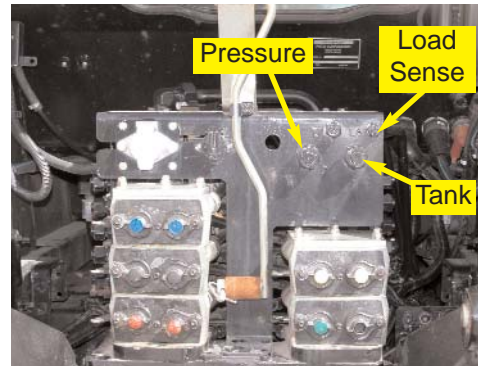


Figure 3a. Pressure, tank and load sense locations.

- NOTE:** If your tractor is equipped with a tee connection between the load sense port and the drain port (not used with automated steering), then use the provided plug/nut (M) to cap the exposed drain port once the tee is removed.

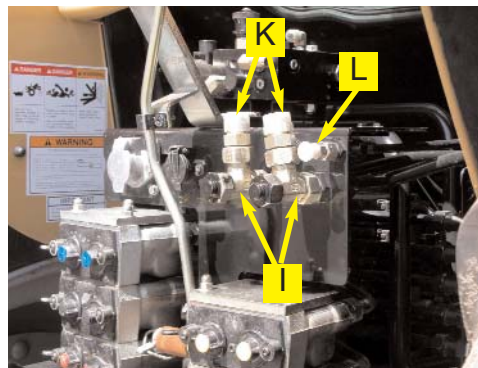


Figure 3b. Installed pressure, tank, and load sense fittings.



#### 4. Install Pressure, Tank, and Load Sense Hoses:

- a. Install the provided elbow adapter (**E**) to the **P** and **T** ports on the Automated Steering Block. (Figure 4a.)
- b. Connect the pressure and tank hoses (**O**) between the pressure and tank ports on the tractor and the respective **P** and **T** ports on the Automated Steering Block. The pressure port should be connected to the **P** port and the tank port should be connected to the **T** port. (Figure 4b and 4c.)
- c. Connect the load sense hose (**P**) between the **LS** port of the Automated Steering Block and the load sense port on the tractor. (Figure 4b and 4c.)

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

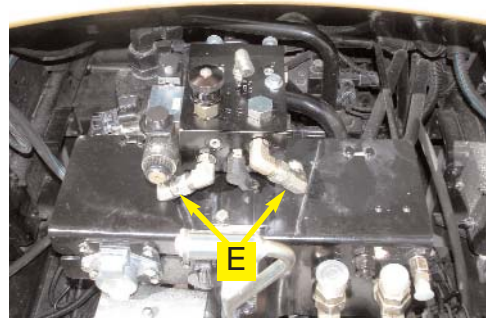


Figure 4a. Installed elbow adapter fittings.

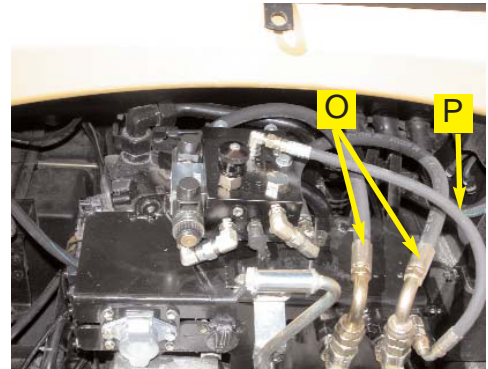


Figure 4b. Pressure, tank, and load sense hoses installed.

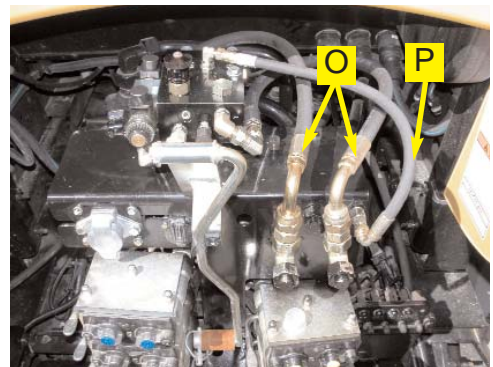


Figure 4c. Pressure, tank, and load sense hoses installed.

## 5. Install Steering Output Fittings:

- a. Locate the steering lines at the steering cylinder on the front axle. (Figure 5a.)

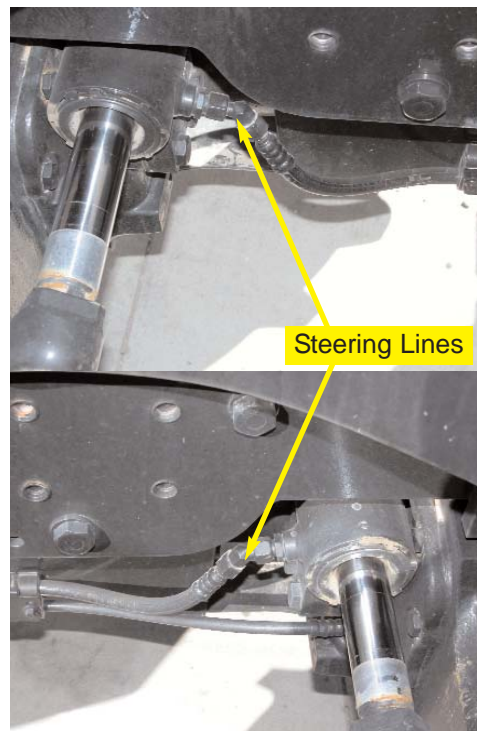


Figure 5a. Location of steering lines.

- b. Install the run tees (**J**) between the rubber and steel hydraulic lines as shown. (Figure 5b.)

### 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.

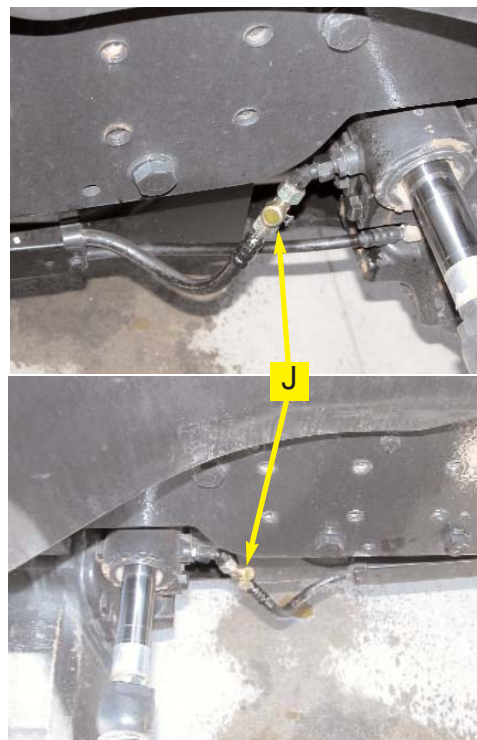


Figure 5b. Steering output fittings installed.



**6. Install Steering Output Hoses:**

- a. Connect the steering output hoses (**N**) between the **A** and **B** ports of the Automated Steering Block and the branches on the steering run tees (**J**). (Figure 6a and 6b.)
- b. Route the steering hoses with the existing steering lines, under the tractor cab, and to the Automated Steering Block. (Figure 6c.)

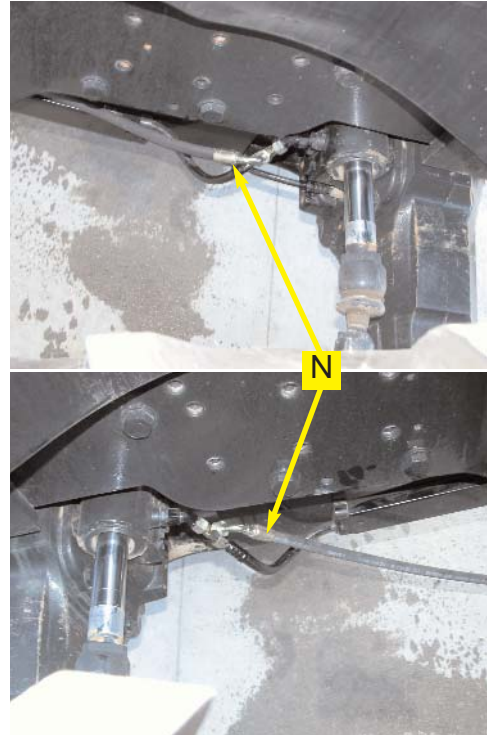


Figure 6a. Installed steering output hoses.

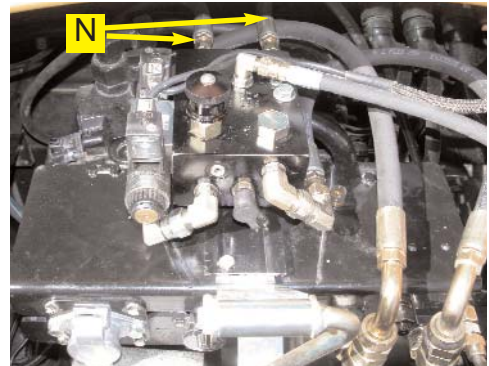


Figure 6b. Installed steering output hoses.

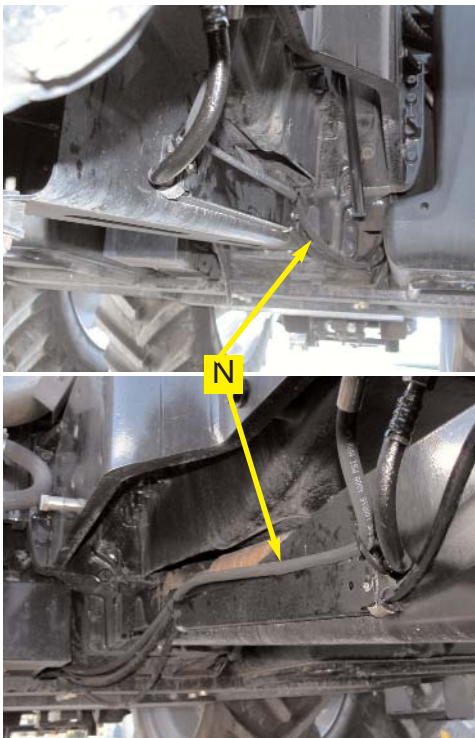


Figure 7c. Routed steering output hoses.

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

## 7. Install the Valve Control Cable:

- a. Route the valve control cable (**Q**) from the Automated Steering Block and into the cab through the access panel by the rear window. (Figure 7a and 7b.)

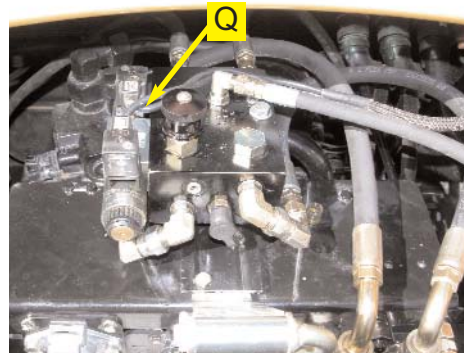


Figure 7a. Valve cable installed at Automated Steering Block.

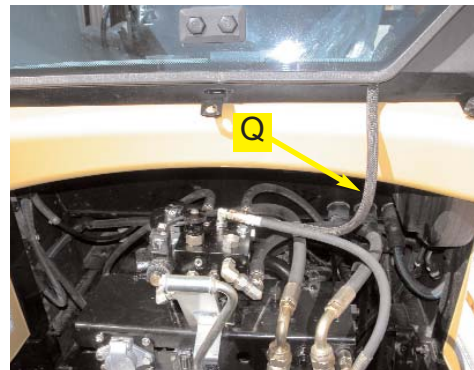


Figure 7b. Valve cable routed in through window access panel.

## 8. Verify Operation and Set Automated Steering Control Rate:

- a. Tighten all of the connections and 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.
  - 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 turns** from completely closed. To adjust the knob:
    - Turn clockwise to reduce flow.
    - Turn counter-clockwise to increase flow.(Figure 8.)
  - 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. (Figure 8.)
- 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 of the other coil. (Figure 8.)
  - g. Adjust the Automated Steering oil flow control to achieve an end-to-end steering cycle time of approximately **15 seconds**. (Figure 8.)

## 12. 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.

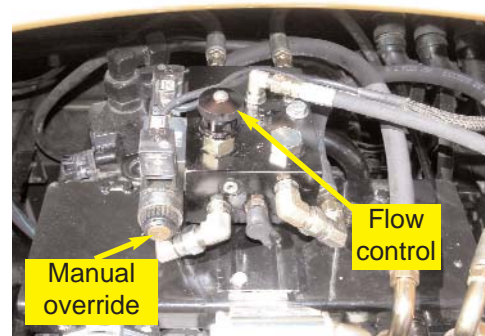


Figure 8. Automated Steering flow control knob and manual override button.

