

Automated Steering Hydraulic Installation Kit

P/N: ED-CMX

Fits Case MX Magnum Tractor Models:

180 210
 200 230
 220 255
 240 285
 270

(Prior to SN #JAZ126070)



Overview

A series of equipment specific hydraulic installation kits has 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 Case MX Magnum series tractor models listed above. Please read this manual thoroughly before beginning the installation.

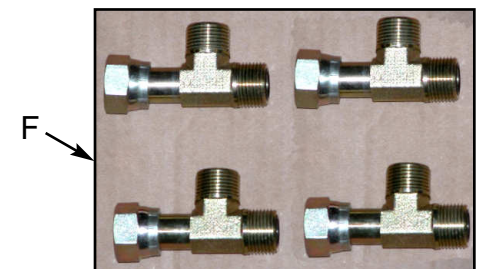
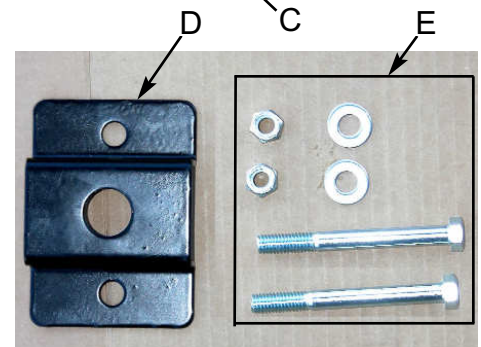
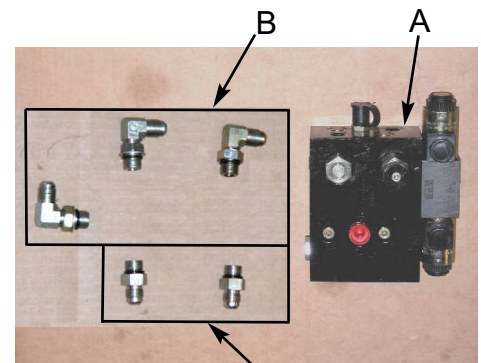
Machine Preparation

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

Kit Contents

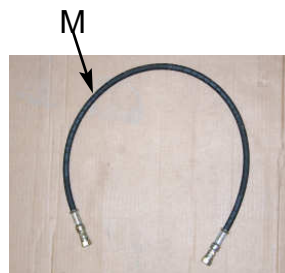
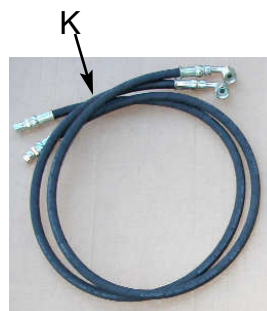
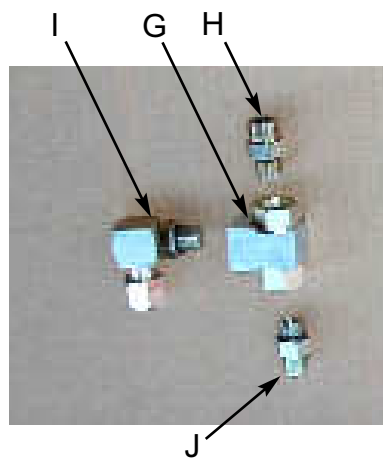
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
Bag #1 of 4 includes B & C			
B	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
D	640-0005	1	Bracket, Hyd. Block Mnt - CMX/AP780
Bag #2 of 4 includes E			
E	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 includes F			
F	760-2069	4	Adapter, Hyd Run Tee - #8 ORFF



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #4 of 4 includes G, H, I, & J			
G	760-0002	1	Hyd. Load Shuttle - #6femORB
H	760-2048	1	Adapter, Hyd. - #6maleORFF x #6maleORB
I	760-2040	1	Adapter, Hyd. 90 Elbow - #6maleORB x #6femORFFswivel
J	760-2056	1	Adapter, Hyd. - #6maleJIC x #6maleORB
K	760-1017	2	Hose, Hyd. - 3/8"x52", #6femJICswiv x #8femORFFswiv90EL
L	760-1018	2	Hose, Hyd. - 3/8"x45", #6femJICswiv x #8femORFFswiv90EL
M	760-1019	1	Hose, Hyd. - 1/4"x42", #6femJICswivel Both Ends
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



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.

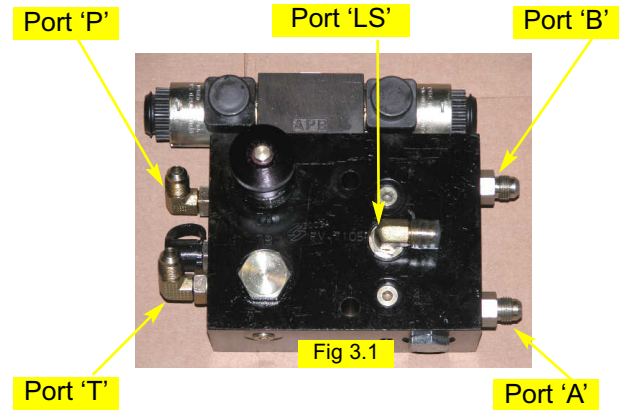
IMPORTANT: **PREVENT HYDRAULIC SYSTEM CONTAMINATION.** It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type 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 Hydraulic Control Block:

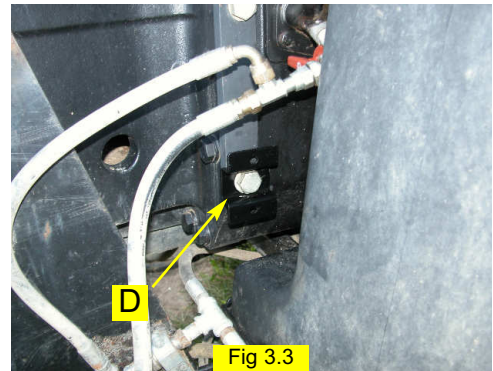
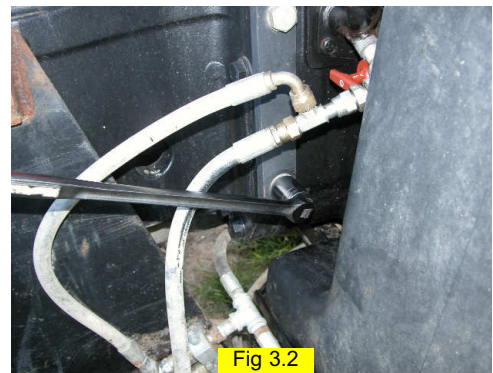
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install straight adapters (C) in the A and B ports and elbow adapters (B) in the P, T, and LS ports and orient as shown. (Figure 3.1)

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



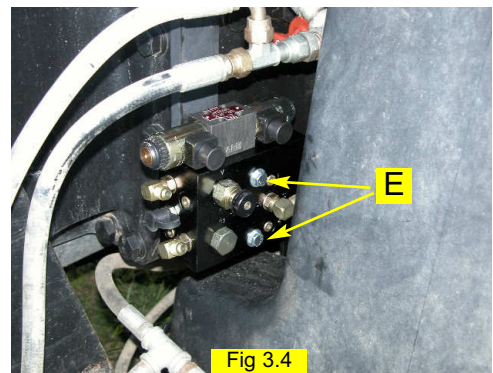
2. Install Mounting Bracket:

The hydraulic control block will be mounted to the tractor frame on the left side, below the cab, and beside the fuel tank. Locate and remove the lower of the two bolts securing the step mounting bracket to the tractor frame. (Figure 3.2) Using this bolt, secure the hydraulic mount bracket (D) to the tractor frame as shown. (Figure 3.3)



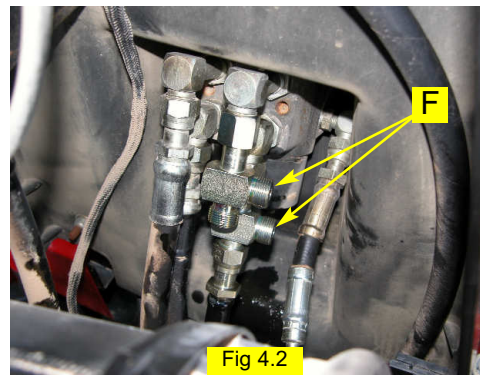
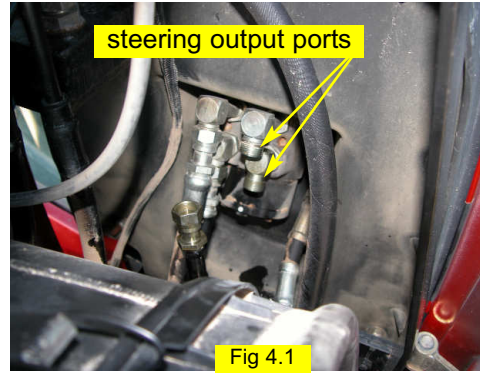
3. Install Hydraulic Control Block:

Using the provided hardware in group (E), mount the hydraulic control block, as prepared in step 1, to the bracket as shown. (Figure 3.4)



4. Install Steering Output Fittings:

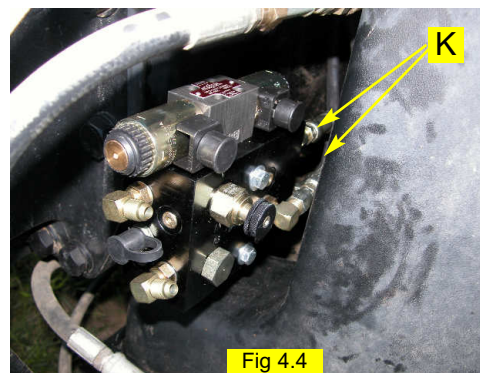
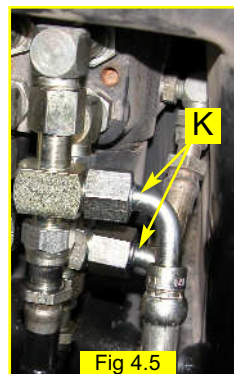
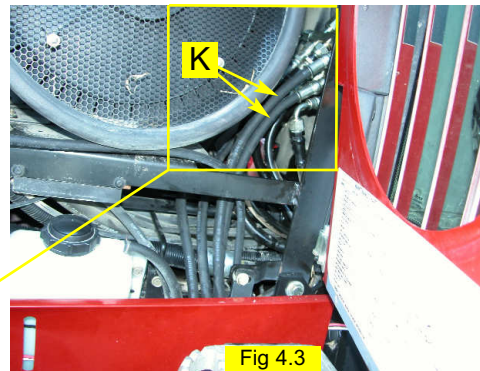
Locate the tractor steering orbital in front of the cab, just below the windshield. The two lines coming out of the steering orbital on the left side are the right and left turn output lines and will be stamped **R** and **L** on the casting. (Figure 4.1) Remove the right and left turn steering hoses and install two of the run-tee fittings (**F**). (Figure 4.3) 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.



5. Install Steering Output Hoses:

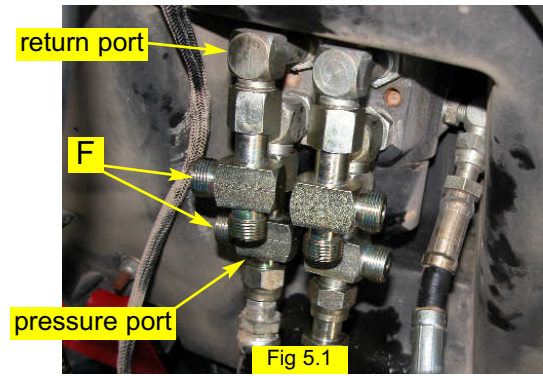
Install steering hoses (**K**) to the branches of the run-tee fittings installed in step 4. (Figure 4.2) Route hoses down to the hydraulic block as shown and connect to the **A** and **B** ports. The ends of the hoses with the large o-ring flat face elbows attach to the run-tees and the hose ends with the smaller JIC straight fittings connect to the block. (Figure 4.3, 4.4, and 4.5)

Make sure hoses are secure and routed for problem free operation. Securely tighten all connections.



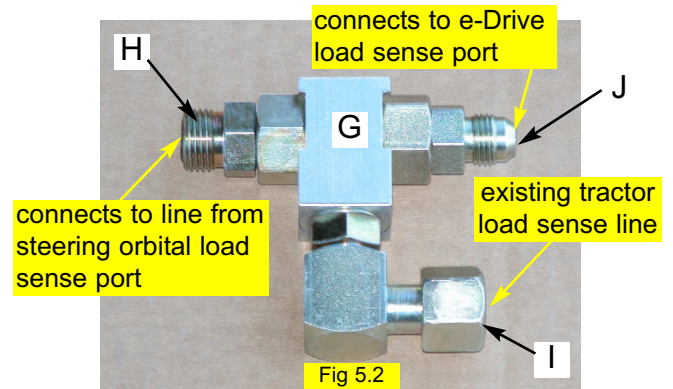
6. Install Pressure & Tank Fittings:

On the tractor steering orbital, the top right line is the tank return port and the lower right line is the pressure supply. These ports will be stamped **P** and **T** respectively on the orbital casting. Remove the hoses from these two ports on the steering orbital and install run-tee fittings (**F**) provided. (Figure 5.1) 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.

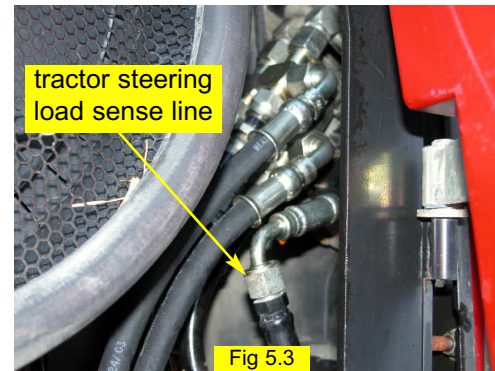


7. Install Load Sense Shuttle & Fittings:

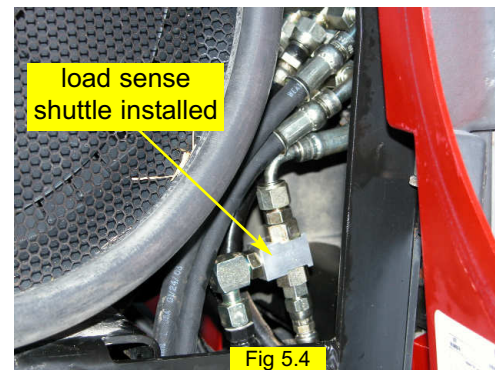
Pre-assemble the load sense shuttle (**G**) with fittings (**H**), (**I**), and (**J**) as shown at right. (Figure 5.2)



Locate the small load sense hydraulic line on the left side of the steering orbital. Disconnect the junction of the load sense hose where it makes an elbow transition. (Figure 5.3)



Attach the end of the load sense shuttle with the o-ring face adapter to the hose going back to the steering orbital. Attach the tractor load sense line to the o-ring face female elbow in the center position of the shuttle as shown. (Figure 5.4)



8. Install Pressure, Tank, & Load Sense Hoses:

Install pressure and tank hoses (**L**) to the branches of the run-tee fittings installed in step 6. (Figure 6.1)

Route hoses down to the hydraulic control block as shown. (Figure 6.2)

Connect the hose from the **P** port on the orbital to the **P** port on the hydraulic block. Connect the hose from the **T** port on the orbital to the **T** port on the hydraulic block. The ends of the hoses with the large o-ring flat face elbows attach to the run-tees and the hose ends with the smaller JIC straight fittings connect to the block. (Figure 6.2 and 6.4)

Install load sense hose (**M**) to the JIC fitting (**J**) on the end of the load sense shuttle installed in step 7. Route the hose down to the hydraulic control block as shown and connect to the **LS** port on the block. (Figure 6.3 and 6.4)

Make sure hoses are secure and routed for problem free operation. Securely tighten all connections.

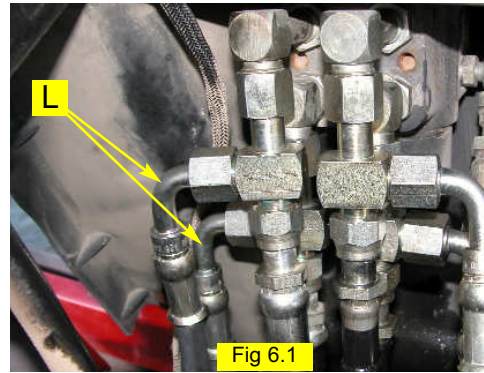


Fig 6.1

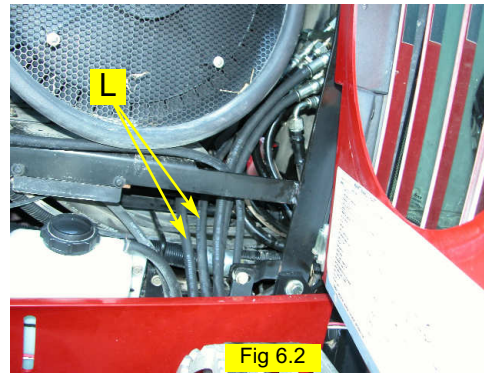


Fig 6.2

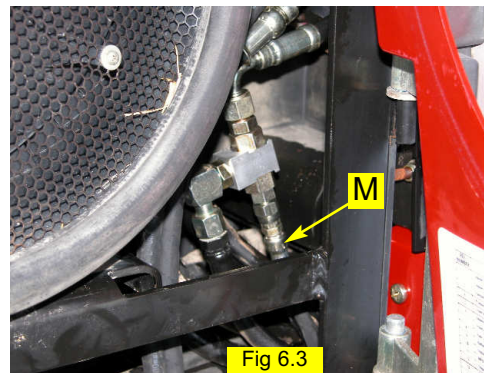


Fig 6.3

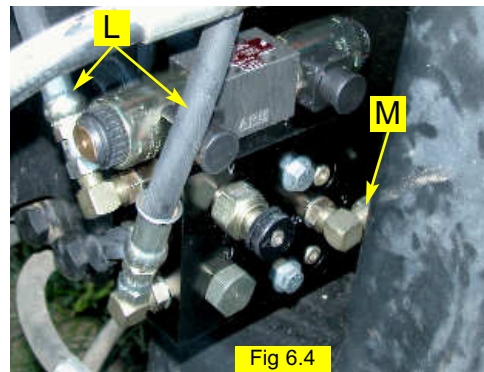
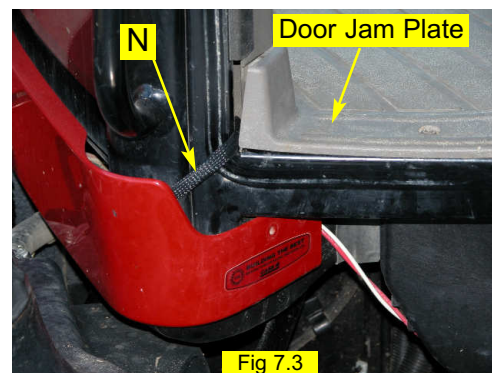
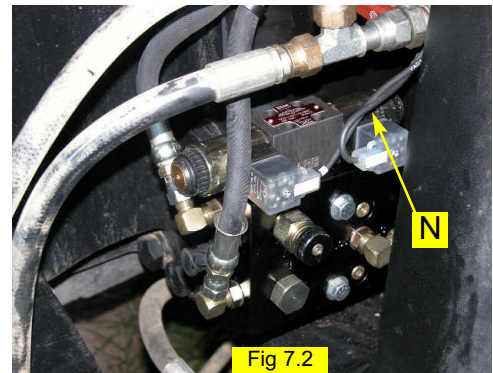
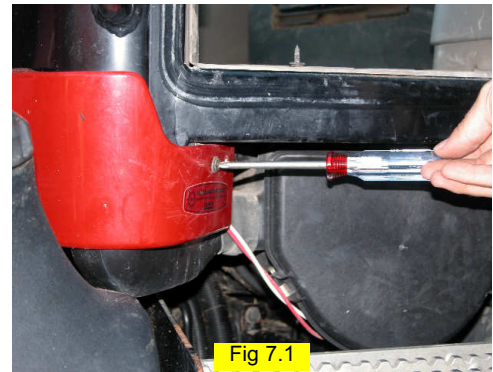


Fig 6.4

9. Install the Valve Control Cable:

Remove the red cab trim on the left side of the tractor and loosen the door jam plate. (Figure 7.1) Route the valve cable (N) from the hydraulic block, under the cab trim, and up into the cab through the door jam. (Figure 7.3) Route the cable under the floor mat to the right side of the drivers seat. Re-attach the trim and door jam plate. Attach the valve cable at the hydraulic block and secure. (Figure 7.2)

Remove enough slack out of the cable to prevent entanglement with tractor moving parts. Use tie straps as needed.



10. Verify Operation and Set Steering Control Rate:

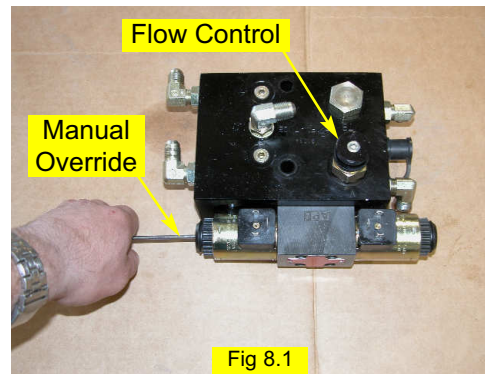
Cleanup the installation area around the tractor and make certain that it is safe to operate. Start the tractor and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

Adjust the hydraulic oil flow control knob to a starting position of **2 turns** from completely closed. To adjust the knob, lift and turn clockwise to reduce flow, counter-clockwise to increase flow. (Figure 8.1)

The coils on the control block have manual push button overrides. Push either manual override to move the tractor wheels all the way to one extreme. (Figure 8.1) 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.

Adjust the hydraulic oil flow control knob to achieve an end to end steering cycle time of approximately **18 seconds**.

11. Complete Electronic Installation and Setup: Refer to the owner's manual supplied with your automated steering system to complete the electronic installation and setup.



***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.*



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.