

# Automated Steering Hydraulic Installation Kit

P/N: ED-MF8200

## Fits AGCO Tractor Models:

|                     |                           |
|---------------------|---------------------------|
| <b>AGCO (2001-)</b> | <b>Challenger (2001-)</b> |
| <b>DT160</b>        | <b>MT 635</b>             |
| <b>DT180</b>        | <b>MT 645</b>             |
| <b>DT200</b>        | <b>MT 655</b>             |
| <b>DT225</b>        | <b>MT 665</b>             |

## Massey Ferguson (2001-)

|             |             |
|-------------|-------------|
| <b>8245</b> | <b>8270</b> |
| <b>8260</b> | <b>8280</b> |



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

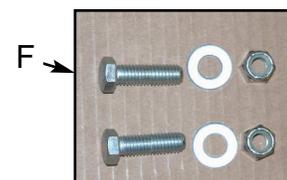
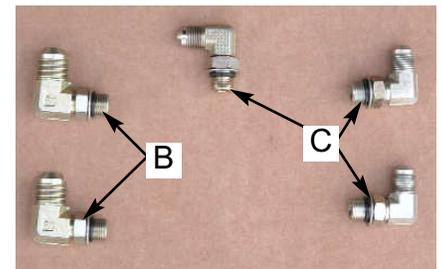
## Tractor Preparation

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

## Kit Contents

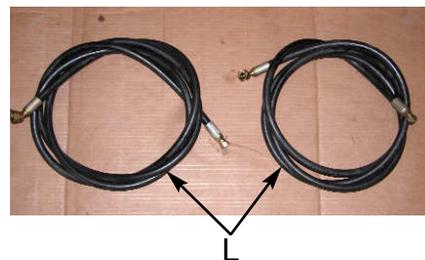
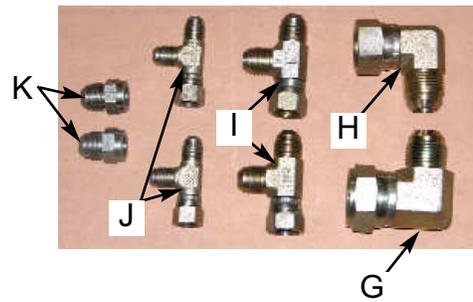
Unpack the installation kit and identify the required parts as shown.

| REF                                   | P/N      | QTY | DESCRIPTION   |
|---------------------------------------|----------|-----|---|
| A                                     | 760-0003 | 1   | Assy, Hyd. Valve Block - LS                           |
| <b>Bag #1 of 3 includes B &amp; C</b> |          |     |   |
| B                                     | 760-2074 | 2   | Adapter, Hyd. 90 Elbow - #8maleJIC x #6maleORB        |
| C                                     | 760-2058 | 3   | Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB        |
| <b>Bag #2 of 3 includes E &amp; F</b> |          |     |   |
| D                                     | 640-0036 | 1   | Hyd. Block Mnt - MF8200                               |
| 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                                |
| F                                     | 675-2004 | 2   | Bolt, 3/8NC x 1-1/4 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                                |



## Kit Contents (cont.)

| REF   | P/N      | QTY | DESCRIPTION                                     |
|---|----------|-----|---|
| <b>Bag #3 of 3 includes G, H, I, J, &amp; K</b> |          |     |   |
| G   | 760-2020 | 1   | Adapter, Hyd. 90 El - #12mJIC x #16fJIC         |
| H   | 760-2017 | 1   | Adapter, Hyd. 90 Elbow - #12maleJIC x #12femJIC |
| I   | 760-2077 | 2   | Adapter, Hyd. Run Tee - #8 JIC                  |
| J   | 760-2054 | 2   | Adapter, Hyd. Run Tee - #6 JIC                  |
| K   | 760-2039 | 2   | Adapter, Hyd. - #6femJIC x #8maleJIC            |
| L   | 760-1163 | 2   | Hose, Hyd. - 3/8x180", #6fJS x #8fJS90          |
| M   | 760-1164 | 1   | Hose, Hyd. - 1/2x17", #8fJS90 x #12fJS          |
| N   | 760-1165 | 1   | Hose, Hyd. - 1/2x24", #8fJS90 x #12fJS          |
| O   | 760-1166 | 1   | Hose, Hyd. - 1/4x22", #6fJS x #6fJS90           |
| P   | 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.

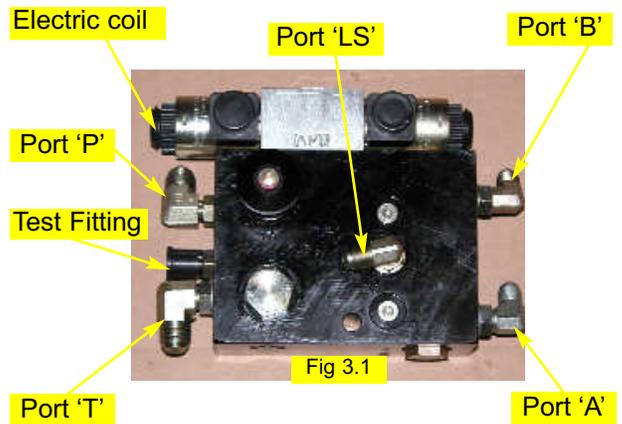
**IMPORTANT:** **PREVENT HYDRAULIC SYSTEM CONTAMINATION.** It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF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

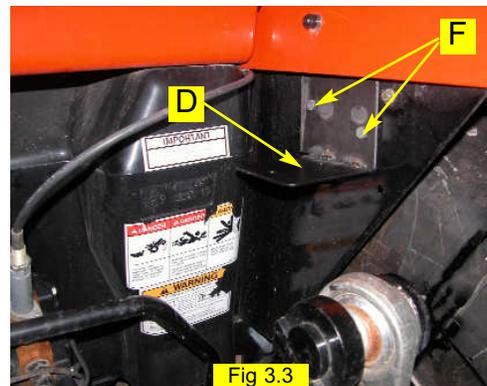
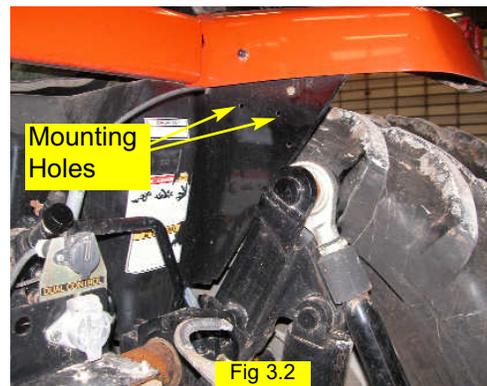
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the elbow adapters (C) in the LS, A, and B ports. Install the larger elbow adapters (B) in the P and T ports of the hydraulic control block. (Figure 3.1)

*Note:* To allow the installation of the larger elbows in the P and T ports, one end of the electric coil must be removed as well as the pressure test fitting. Unscrew the pressure test port from the block and set it aside. Unscrew the plastic retaining nut on the end of the electric coil, remove the o-ring and slide the coil off of the shaft. Install the elbows into the P and T ports. Reinstall the coil and the pressure test fitting. Do not over tighten the plastic retaining nut on the electric coil, hand tight is adequate.



## 2. Install Mounting Bracket:

Locate the holes in the right fender panel at the rear of the tractor. (Figure 3.2) Install the hydraulic bracket (D) to the holes in the fender panel using hardware group (F). (Figure 3.3)



## 3. Install Hydraulic Control Block:

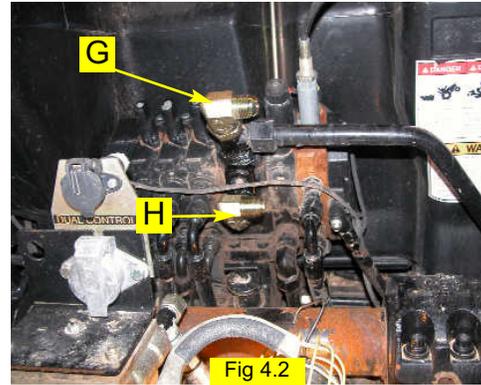
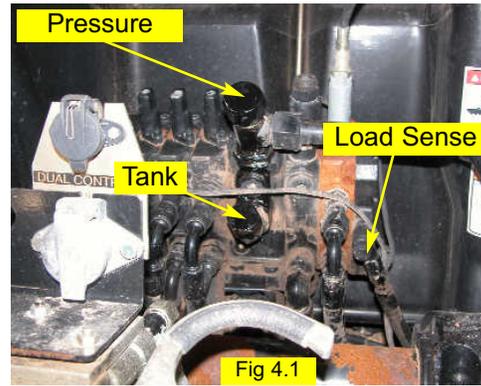
Using the provided hardware in group (E), mount the hydraulic control block to the bracket as shown. (Figure 3.4)



#### 4. Install Pressure and Tank Fittings:

Remove the SMV sign and locate the three capped ports on the valve stack at the rear of the tractor. These ports will provide the pressure, tank, and load sense connections for the hydraulic control system. (Figure 4.1)

The top port is the pressure port, the second port is the tank return, and the small port is the load sense port. Install the provided elbow adapters (**G**) to the pressure port and (**H**) to the tank port. Use the caps to prevent excess leakage during installation. (Figure 4.2)

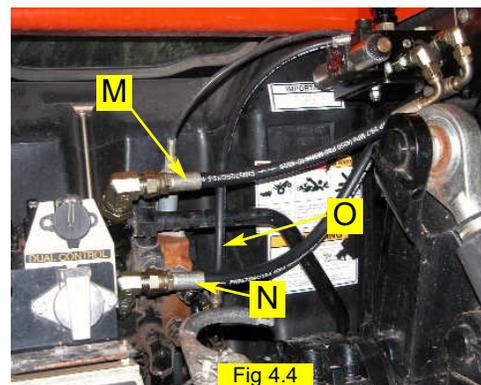
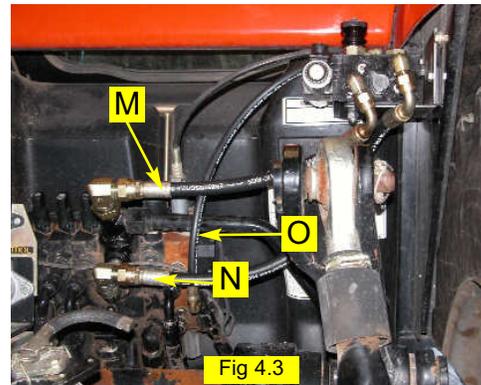


#### 5. Install Pressure, Tank, and Load Sense Hoses:

Route the pressure and tank hoses (**M** and **N**) from the respective ports on the tractor to the **P** and **T** ports on the hydraulic control block. The **pressure** port should be connected to the hydraulic block **P** port and the **tank** port should be connected to the hydraulic block **T** port. (Figure 4.3 and 4.4)

Install the load sense hose (**O**) between the tractor load sense port and the **LS** port of the hydraulic control block. (Figure 4.3 and 4.4)

Route all hoses as shown, free from entanglement, and secure with heavy tie straps (provided).

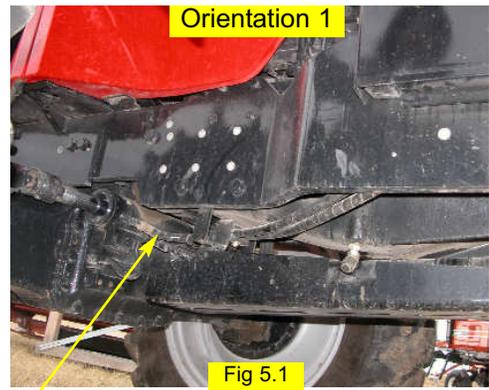


## 7. Install Steering Output Fittings:

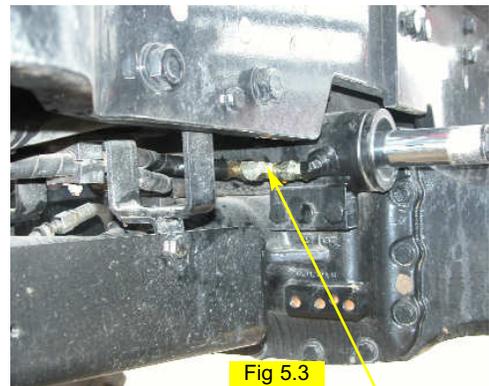
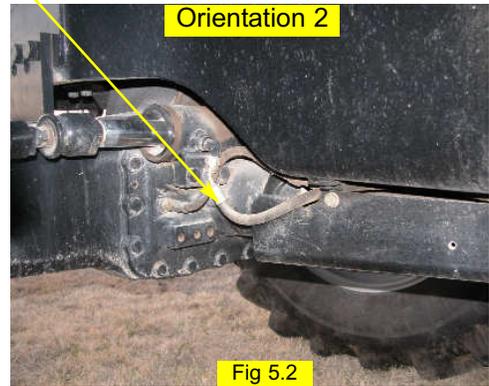
Locate the tractor steering lines at the steering cylinder on the front axle. (Figure 5.1 and 5.2) Install run-tee fittings (**I**) where the steering lines connect to the cylinder as shown. (Figure 5.3 and 5.4)

Some models will require the smaller run-tee (**J**) or may have fittings oriented in slightly different manor, however the run-tees can still be installed. (Figure 5.5)

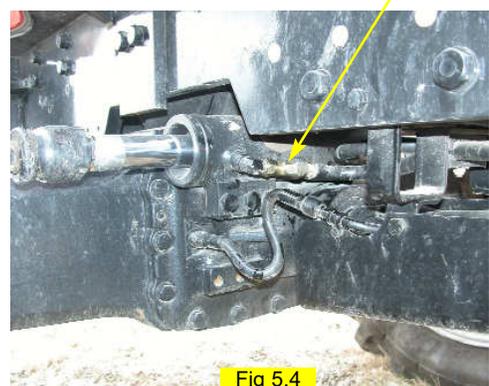
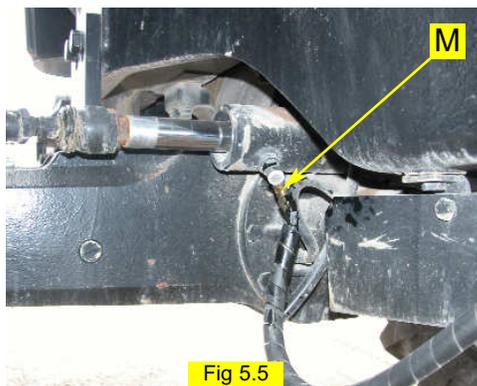
Leave run-tee fittings loose to allow for alignment when attaching hoses. Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.



Steering Lines

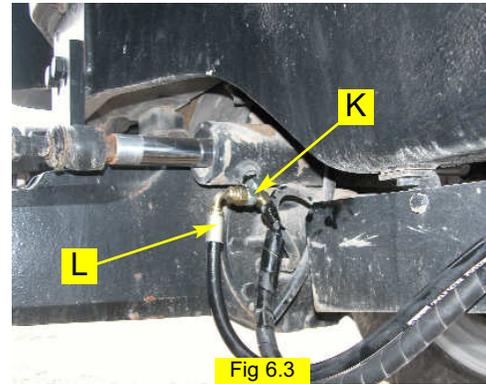
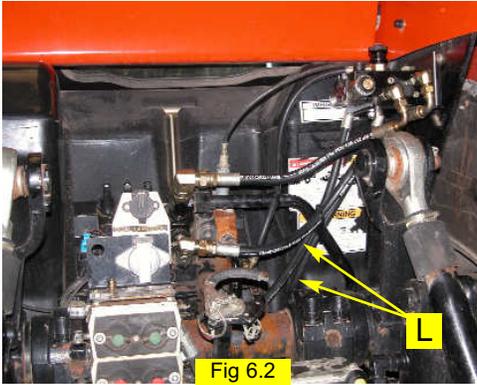
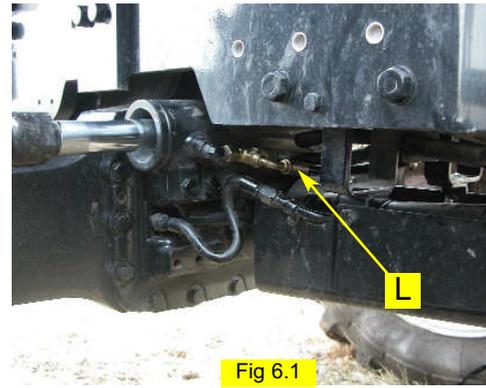


I

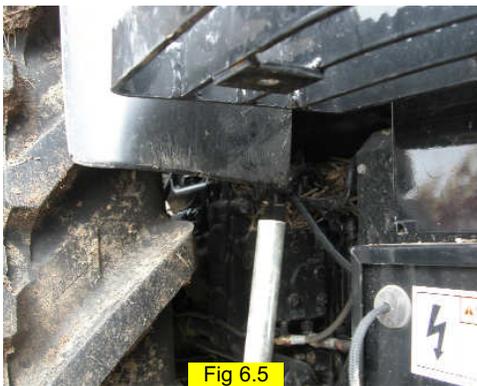


## 8. Install Steering Output Hoses:

Connect the ends of the hydraulic steering hoses (**L**) to the run-tee fittings installed in step 7. (Figure 6.1 and 6.2) On models requiring the smaller run-tee (**J**), use the adapter fitting (**K**) to attach the hydraulic steering hoses. (Figure 6.36) *(The hose ends with the larger JIC elbow fitting connect to the run-tees. The hose ends with the smaller straight JIC fitting will connect to the hydraulic control block.)*



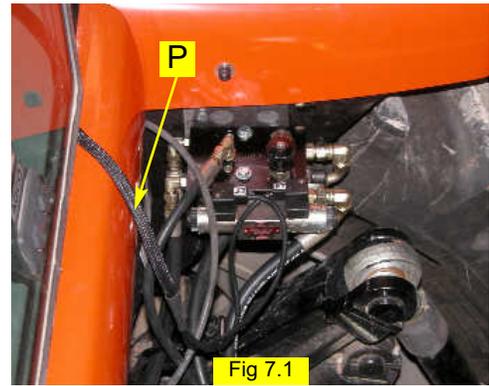
Route the steering hoses back with the tractor steering lines then under the tractor cab and back to the hydraulic control block. For easier routing, the hoses should be routed on opposite sides of the tractor frame before meeting at the hydraulic control block. (Figure 6.4, 6.5, and 6.6) The hoses should be secured with heavy tie straps (provided) to other tractor plumbing. Connect the steering hoses to the **A** and **B** ports of the hydraulic control block as shown. (Figure 6.2)



## 9. Install the Valve Control Cable:

Route the valve control cable (**P**) through the cable grommet in the tractor window seal. Route the DIN connectors down to the hydraulic control block and attach as shown. (Figure 7.1)

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



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

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

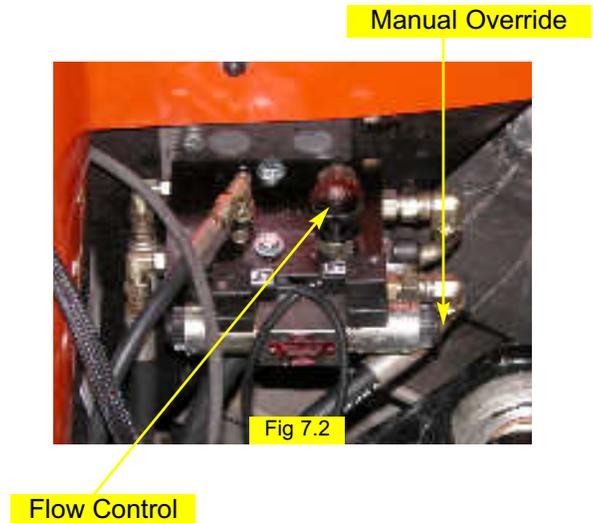
Adjust the hydraulic oil flow control knob to a starting position of **2 1/2 turns** from completely closed. To adjust the knob, lift and turn clockwise to reduce flow, counter-clockwise to increase flow.

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. 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. (Figure 7.2)

Adjust the hydraulic oil flow control 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.

