Automated Steering Hydraulic Installation Kit

P/N: ED-WM8600

Fits Willmar Eagle 8600 Sprayer

Overview

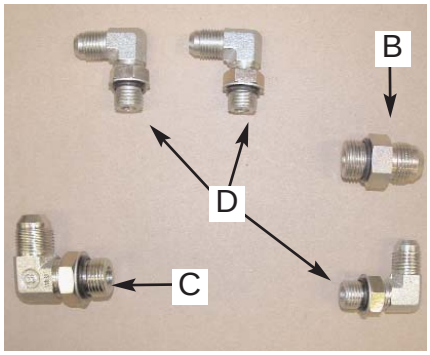
A series of equipment specific hydraulic installation kits have been developed to work in conjunction with your automated steering system. This kit contains the necessary components and instructions to install automated steering hydraulics on the Willmar Eagle 8600 sprayer. Please read this manual thoroughly before beginning theinstallation.

Tractor Preparation

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

Kit Contents

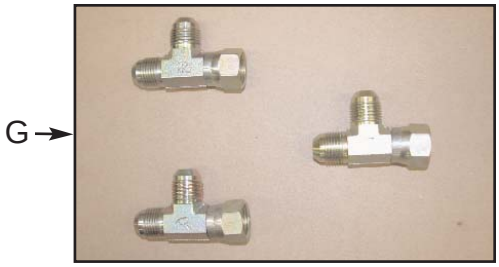
Unpack the installation kit and identify the required parts as shown.

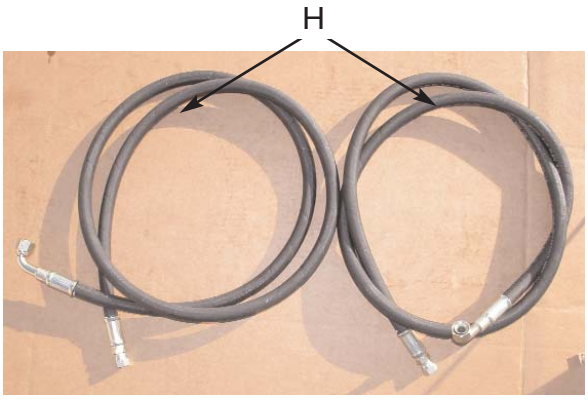


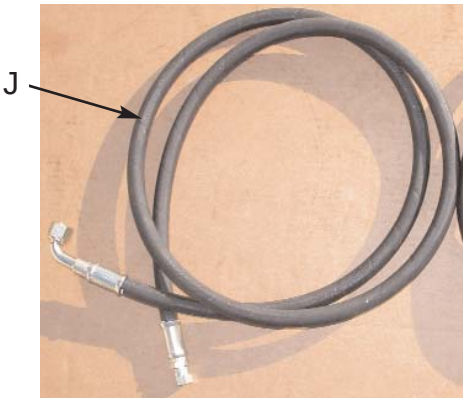
REF	P/N	QTY	DESCRIPTION
A	760-0005	1	Assy, Hyd. Valve Block - OC
	Bag #1 of 3 includes B, C, & D		
B	760-2079	1	Adapter, Hyd. - #8maleJIC x #8maleORB
C	760-2080	1	Adapter, Hyd. 90 Elbow - #8maleJIC x #8maleORB
D	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
E	640-0005	1	Hyd. Block Mnt, CMX/AP780
	Bag #2 of 3 includes F		
F	675-2005	2	Bolt - 3/8NC x 3-1/4" Gr5, ZP
	678-1054	2	Washer, Narrow Flat - 3/4"OD x 13/32ID x 1/16"thk, ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP

Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
	Bag #3 of 3 includes G		
G	760-2077	3	Adapter, Hyd. Run Tee - #8 JIC
H	760-1114	2	Hose Hyd. - 3/8” x 38”, #6femJICswiv x #8femJICswiv 90EL
I	760-1119	1	Hose Hyd. - 1/2” x 34”, #8femJICswiv x #8femJICswiv 90EL
J	760-1117	1	Hose Hyd. - 3/8” x 44”, #6femJICswiv x #8femJICswiv 90EL
K	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



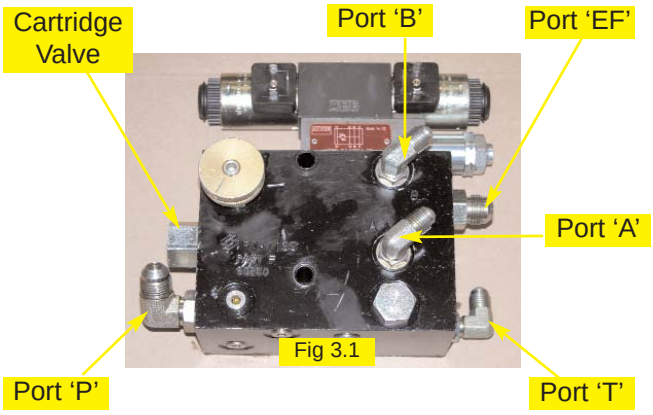




WARNING: **HIGH-PRESSURE FLUID HAZARD.** Hydraulic oil may be hot and under high pressure. To prevent serious injury or death: Relieve system pressure and allow to cool before repairing or disconnecting. Wear proper hand and eye protection when searching for leaks, using wood or cardboard instead of 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



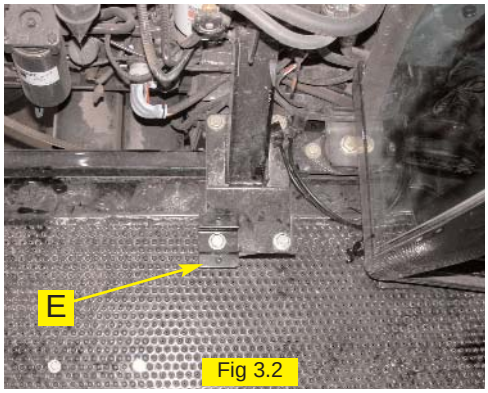
1. Prepare Hydraulic Control Block:

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

Note: *To install the elbow fitting **(B)** into the **P** port of the hydraulic control block, the cartridge valve must be removed from the end of the block. Remove the cartridge, install the elbow, and reinstall the cartridge.*

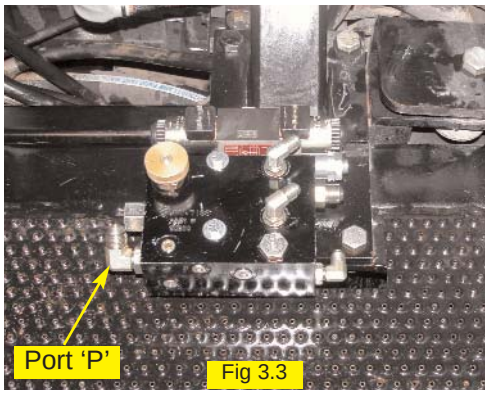
2. Mount Hydraulic Control Block:

Install the hydraulic block mounting bracket **(E)** on the left side of the sprayer frame, in front of the cab, using the existing bolt as shown. (Figure 3.2)



3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step **1**, to the mounting bracket using the mounting hardware in group **(F)**. (Figure 3.3) Be sure the hydraulic block is oriented with the **P** port pointed toward the front of the machine, and tighten the mounting bolts securely.



4. Pressure, Tank, and Excess Flow Fittings and Connection Locations:

The hydraulic control block will receive pressure from the run-tee installed at the excess-flow port on the hydraulic pump priority valve. Excess flow from the hydraulic control block will be connected to the supply line for the brake control valve, previously attached to the run-tee at the priority valve. (Figure 4.1) Tank flow from the hydraulic control block will be returned to the tank port at the steering orbital. (Figure 4.2)

Remove the tank line from the sprayer steering orbital and install the run-tee fitting **(G)**. Re-attach the tank line to the end of the run-tee. (Figure 4.3) Use plastic caps to prevent excess leakage from open ports.

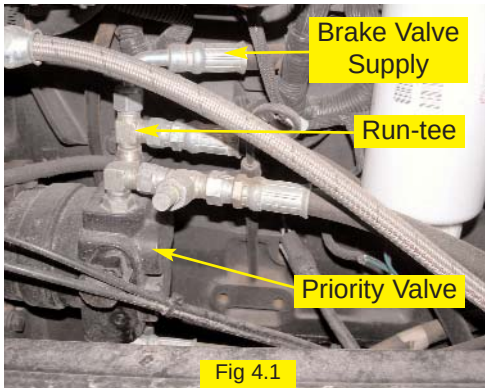


Fig 4.1

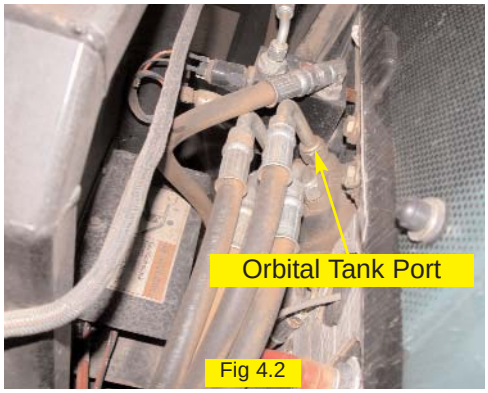


Fig 4.2

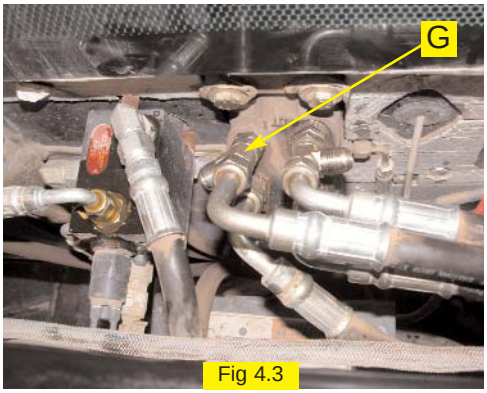


Fig 4.3

5. Install Pressure, Tank, and Excess Flow Hoses:

Remove the brake valve supply line from the priority valve and re-route the hose to connect at the **EF** port of the hydraulic control block. (Figure 5.1)

Connect the provided pressure hose **(I)** between the **P** port of the hydraulic control block and the end of the run-tee at the excess-flow port of the priority valve as shown. (Figure 5.1 and 5.2)

Connect the hydraulic tank hose **(J)** between the **T** port of the hydraulic control block and the branch of the run-tee installed at the steering orbital. (Figure 5.3 and 5.4)

Use the heavy tie-straps provided to secure the hoses to other machine plumbing and away from moving parts.

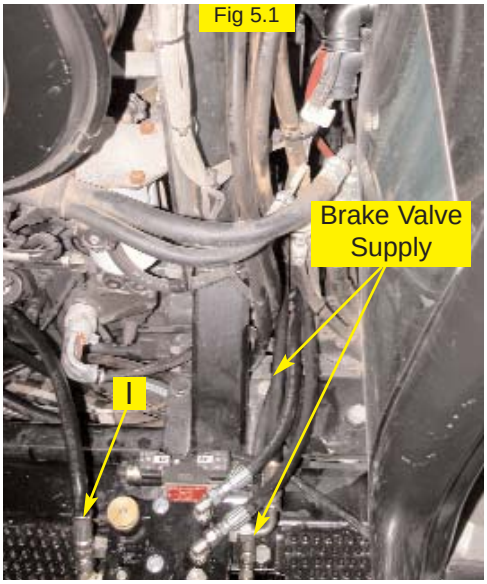


Fig 5.1

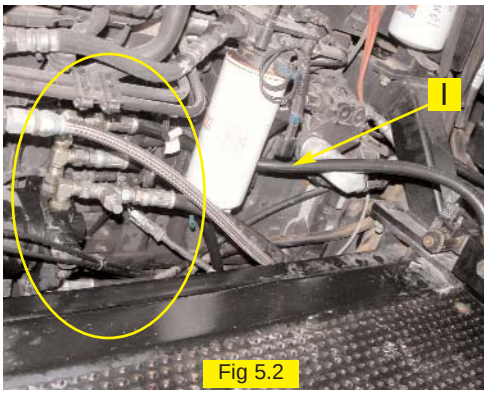


Fig 5.2

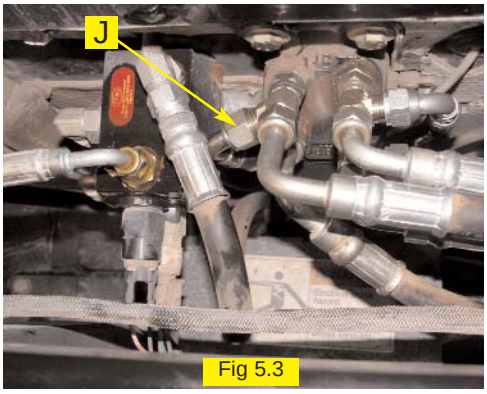


Fig 5.3

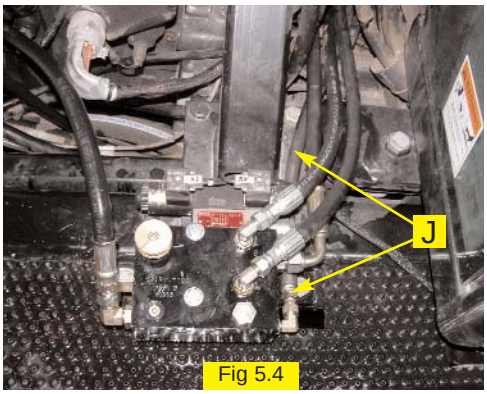


Fig 5.4

6. Install Steering Output Fittings:

Locate the steering lines on the left side of the steering orbital and install the provided run-tees **(G)**. Use plastic caps to prevent excess leakage from the open run-tees. (Figure 6.1 and 6.2)

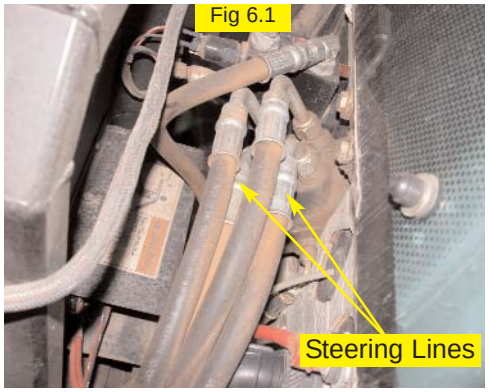


Fig 6.1

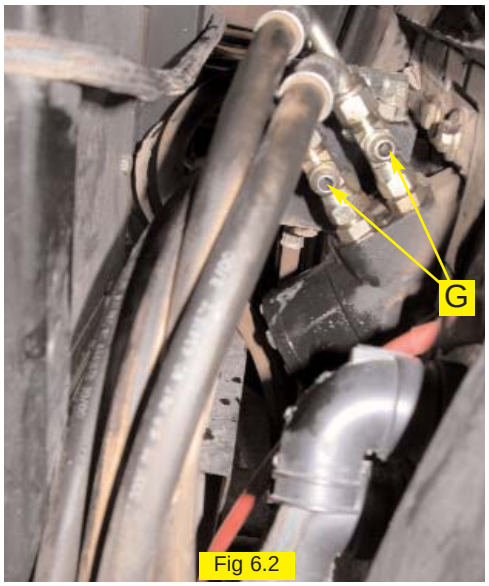


Fig 6.2

7. Install Steering Output Hoses:

Install the provided steering output hoses **(H)** between the run-tees at the steering orbital and the **A** and **B** ports of the hydraulic control block. (Figure 7.1) Attach hose ends equipped with 90-degree elbows to the branches of the run-tees for convenient hose routing. (Figure 7.2) Use the heavy tie-straps provided to secure the hose to the combine frame away from moving parts. (Figure 7.3)

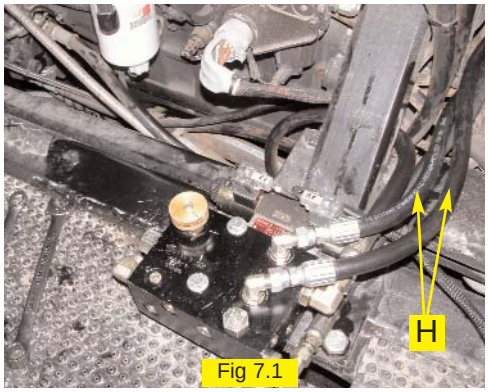


Fig 7.1

Fig 7.2

Fig 7.3

8. Install the Valve Control Cable:

Attach the hydraulic valve control cable **(O)** to the hydraulic control block and route it back under the sprayer cab along the left side. (Figure 8.1) The cable can be routed into the cab through a grommet in the back right corner of the cab, near the lower window. (Figure 8.2) To access this grommet from inside the cab it is necessary to remove the console in the back right corner.

Be sure the cable is routed securely and free from entanglement. Use tie straps (included) as needed.

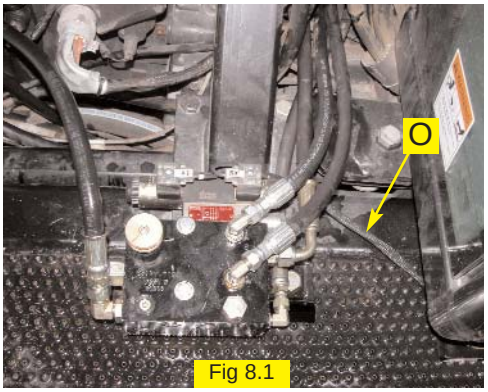
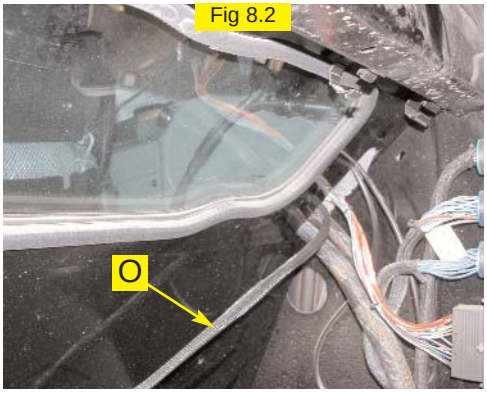


Fig 8.1

Fig 8.2



9. Verify Operation and Set Steering Control Rate:

Cleanup the installation area around the sprayer and make certain that it is safe to operate. Start the sprayer 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, turn clockwise to reduce flow, counter-clockwise to increase flow. The knurled locking nut should be tightened against the cartridge face to maintain desired setting.

The coils on the control block have manual push button overrides. Push either manual override to move the steering wheels all the way to one extreme. 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 8.3)

Adjust the hydraulic oil flow control to achieve an end to end steering cycle time of approximately **16** seconds.

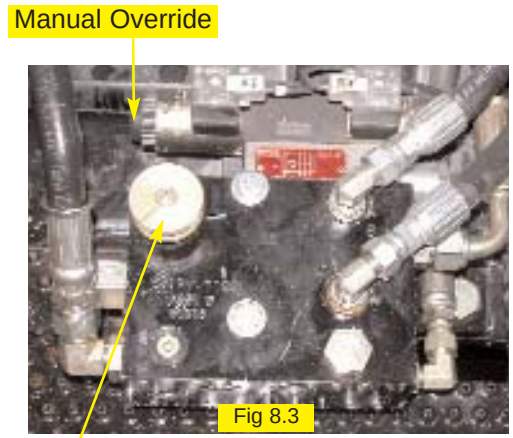


Fig 8.3

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.*

10. Complete Electronic Installation and Setup:

Refer to the owner's manual supplied with your automated steering system to complete the electronic installation and setup.

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.