

Automated Steering Hydraulic Installation Kit

P/N: ED-WM8650

Fits Willmar Eagle 8650 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 8650 sprayer. Please read this manual thoroughly before beginning the installation.

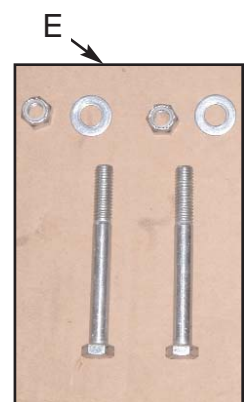
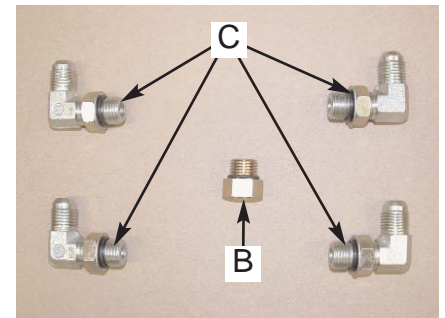
Sprayer Preparation

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

Kit Contents

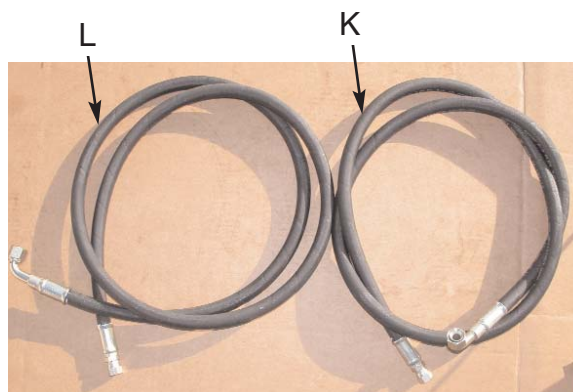
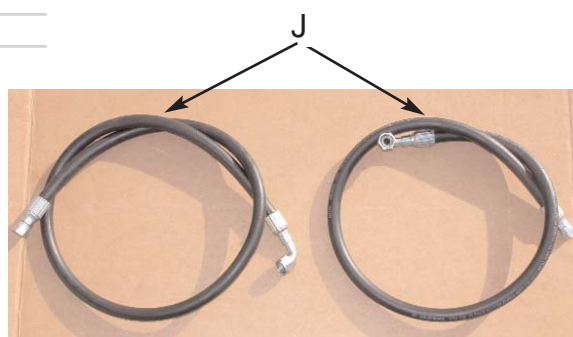
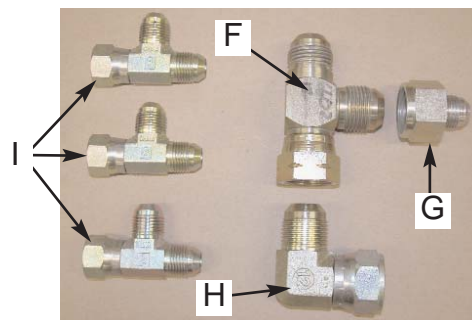
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
Bag #1 of 3 includes B, C			
B	760-2045	1	Adapter, Hyd. Plug - #6maleORB
C	760-2058	4	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
Bag #2 of 3 includes E			
D	640-0005	1	Hyd. Block Mnt, CMX/AP780
Bag #3 of 3 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 13/32ID 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 F, G, H, & I			
F	760-2016	1	Adapter, Hyd. Run Tee - #12 JIC
G	760-2012	1	Adapter, Hyd. - #12femJIC x #8maleJIC
H	760-2017	1	Adapter, Hyd. 90 Elbow - #12maleJIC x #12femJICswiv
I	760-2077	3	Adapter, Hyd. Run Tee - #8 JIC
J	760-1116	2	Hose Hyd. - 3/8" x 40", #6femJICswiv x #8femJICswiv 90EL
K	760-1118	1	Hose Hyd. - 3/8" x 48", #6femJICswiv x #8femJICswiv 90EL
L	760-1115	1	Hose Hyd. - 3/8" x 57", #6femJICswiv x #8femJICswiv 90EL
M	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:

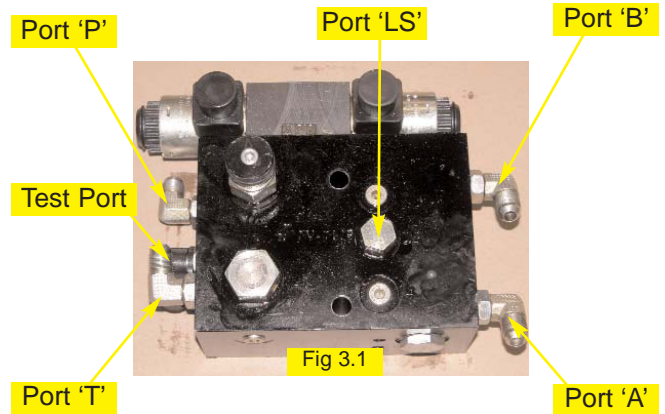
PREVENT HYDRAULIC SYSTEM CONTAMINATION. It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may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

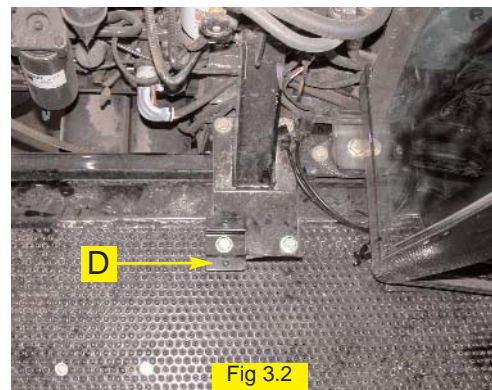
Make sure the hydraulic control block is clean and dust free. Remove the plastic plugs and install the elbow adapter fittings (C) in the P, T, A, and B ports. Install the ORB plug (B) into the LS port of the hydraulic block. (Figure 3.1)

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



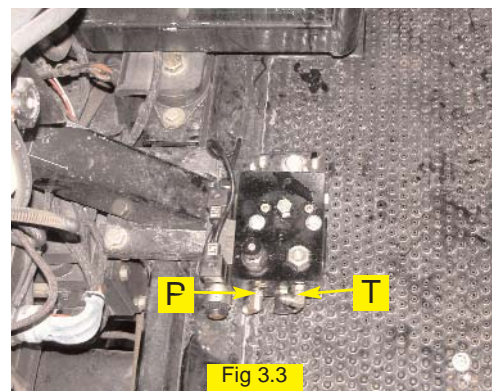
2. Mount Hydraulic Control Block:

Install the hydraulic block mounting bracket (D) 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 as shown using the mounting hardware in group (E). Be sure the hydraulic block is oriented with the P and T ports pointed toward the front of the machine, and tighten the mounting bolts securely. (Figure 3.3)



4. Install Pressure and Tank Fittings

Locate the priority valve under the machine just behind the front axle. Remove the test-point fitting from the end of the run-tee at the pressure inlet of the priority valve. (Figure 4.1) Install the provided run-tee (**F**) using the elbow adapter (**H**) to the end of the pressure inlet run-tee as shown. (Figure 4.2) Re-install the test-point fitting to the end of the new run-tee.

Locate the return-oil manifold under the left side of the machine, near the cat-walk. (Figure 4.3) Remove the return line from the side of the manifold, as indicated, and install the provided run-tee (**I**). (Figure 4.4)

Use plastic caps to prevent excess leakage from the run-tees during installation.

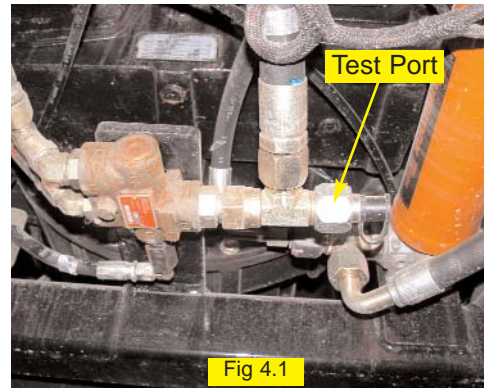


Fig 4.1

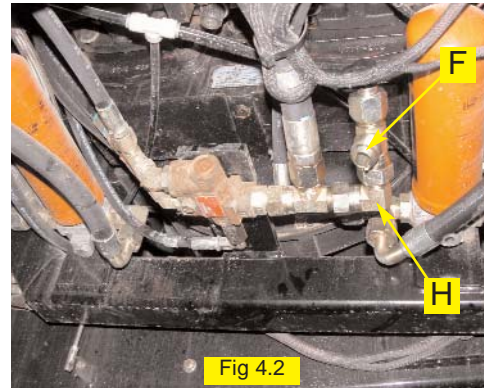


Fig 4.2

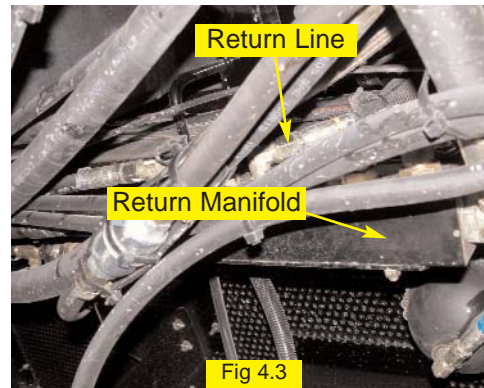


Fig 4.3

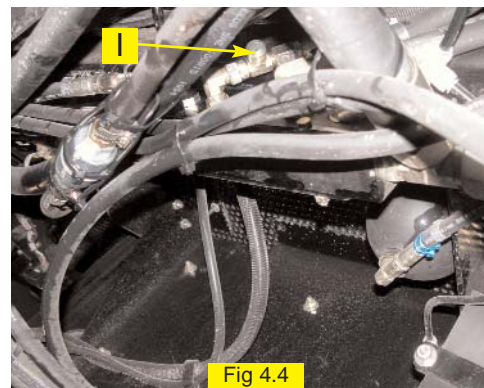
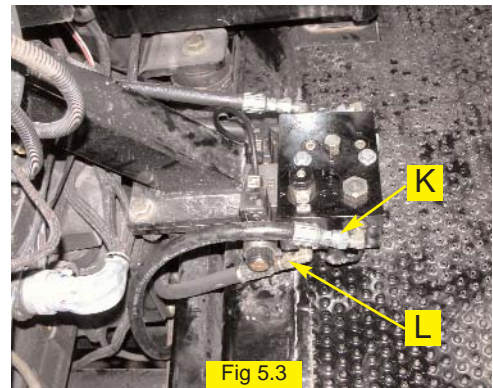
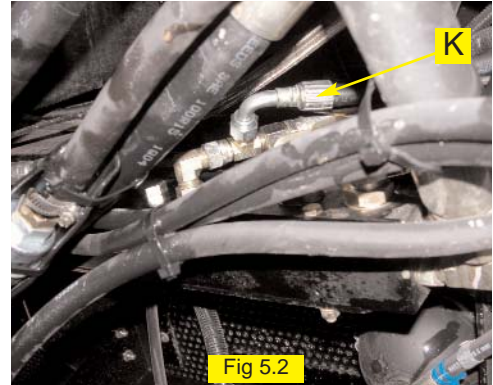
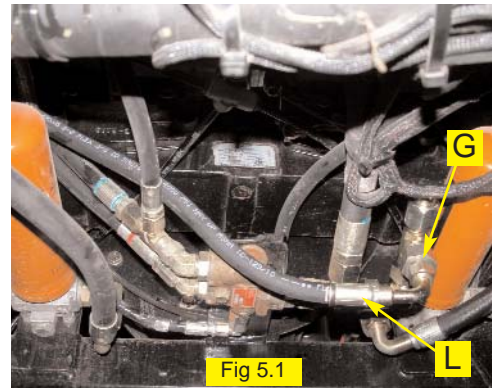


Fig 4.4

5. Install Pressure and Tank Hoses:

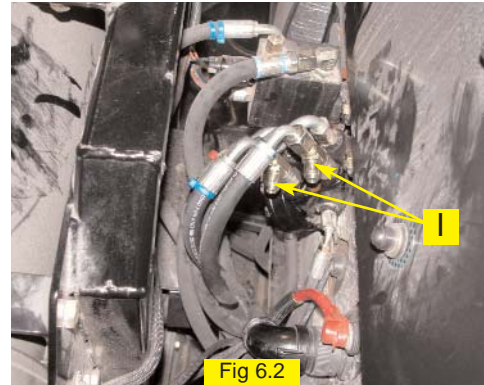
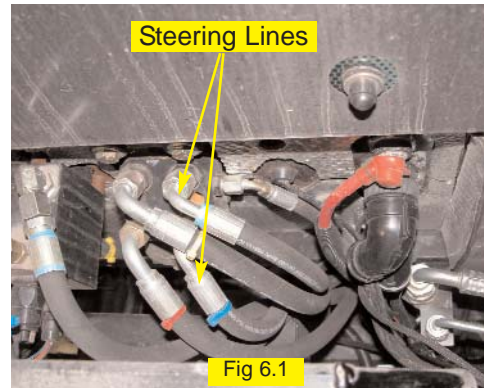
Install the pressure and tank hoses (**L** and **K**) between the run-tees installed in step 4 and the **P** (pressure) and **T** (tank) ports of the hydraulic control block respectively. (Figure 5.3) The pressure hose (**L**) will be attached to the run-tee installed at the priority valve using the provided adapter fitting (**G**). (Figure 5.1) The tank hose (**K**) will be attached to the run-tee installed at the return-oil manifold. (Figure 5.2)

The hoses should be routed inside the sprayer frame along with other hydraulic plumbing. Make sure all hoses are routed securely and free from entanglement. Use heavy tie straps (included) as needed.



6. Install Steering Output Fittings:

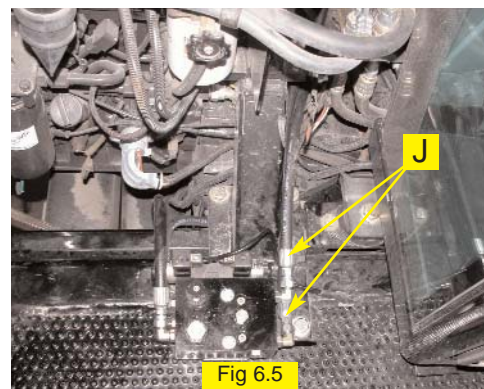
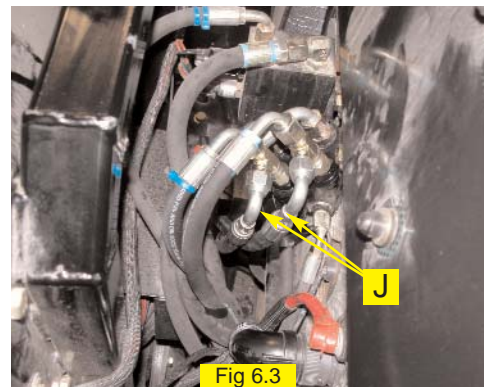
Locate the steering lines on the left side of the steering orbital in front of the cab. Install run-tee fittings (**I**) where the steering lines connect to the orbital. Use plastic caps to prevent excess leakage from the run-tees during installation. (Figure 6.1 and 6.2)



7. Install Steering Output Hoses:

Install the steering hoses (**J**) to the branches of the run-tees installed in step 6 and to the **A** and **B** ports of the hydraulic control block. (Figure 6.3, 6.4, and 6.5)

Make sure all hoses are routed securely and free from entanglement. Use heavy tie straps (included) as needed.



8. Install the Valve Control Cable:

Attach the hydraulic valve control cable (M) to the hydraulic control block and route it back under the sprayer cab along the left side. (Figure 7.1) The cable can be routed into the cab through a grommet in the back right corner of the cab, near the lower window. (Figure 7.2) 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.

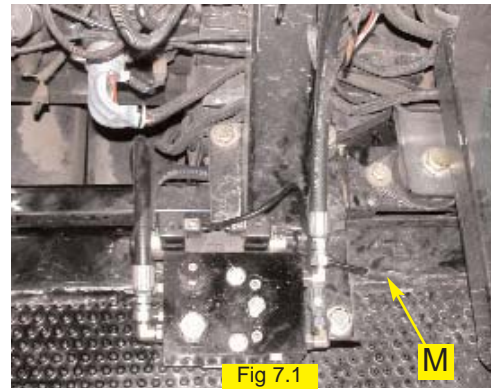


Fig 7.1

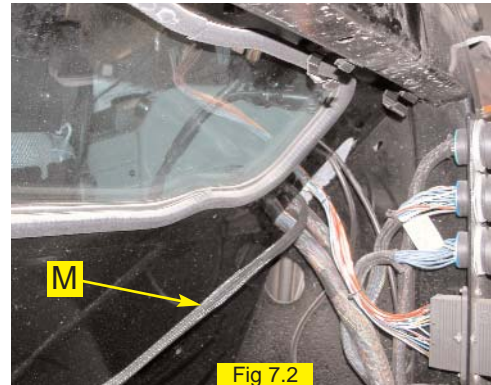


Fig 7.2

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 $2 \frac{1}{2}$ 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 sprayer 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 7.3)

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

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.

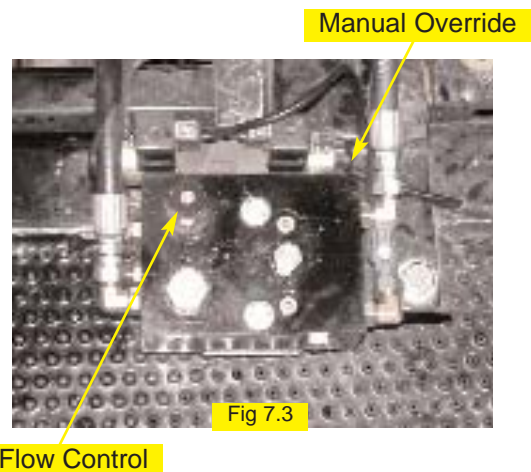


Fig 7.3

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.



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.

