Automated Steering Hydraulic Installation Kit

P/N: ED-WM8100

Fits Willmar Eagle 8100 Sprayer

Overview

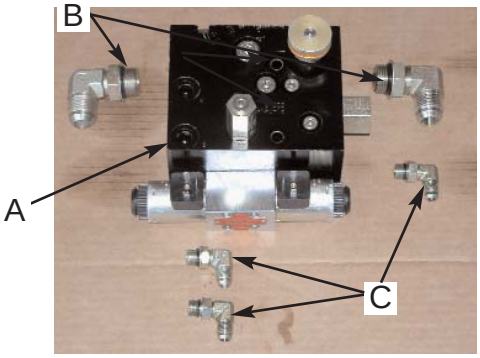
A series of equipment specific hydraulic installation kits have been developed to work in conjunction with your assisted steering system. This kit contains the necessary components and detailed instructions to install automated steering hydraulics on the Willmar Eagle 8100 sprayer. Please read this manual thoroughly before beginning the installation.

Machine Preparation

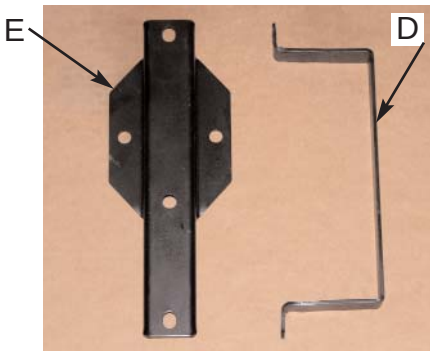
Before attempting to install hydraulics, park the machine on a clean level floor with adequate clearance to work all around.

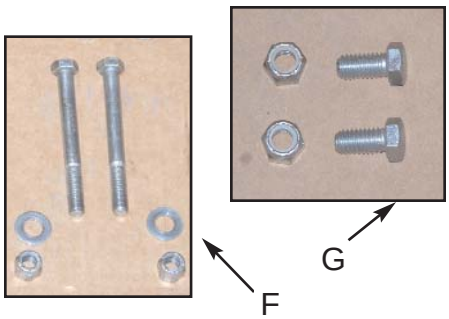
Kit Contents

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



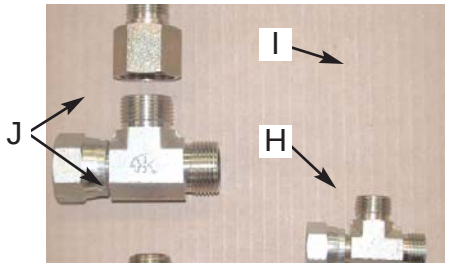
REF	P/N	QTY	DESCRIPTION
A	760-0007	1	Assy, Hyd. Valve Block - OC/HF Low Range
	Bag #1 of 3 includes B & C		
B	760-2019	2	Adapter, Hyd. 90 Elbow - #12maleJIC x #12maleORB
C	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
D	640-0046	1	Hyd. Block Hammer Strap Mnt
E	640-0015	1	Hyd. Block Mount - JD 4700/SPX4410
	Bag #2 of 3 includes F & G		
F	675-2006	2	Bolt - 3/8NC x 3-3/4" 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
G	675-2007	2	Bolt - 3/8NC x 3/4" Gr5, ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP

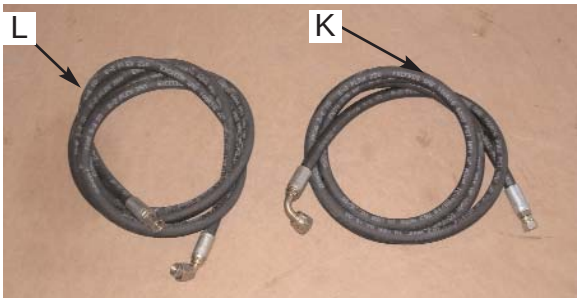


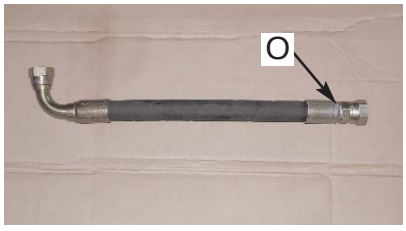


Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
	Bag #3 of 3 includes H, I, & J		
H	760-2016	1	Adapter, Hyd. Run Tee - #12 JIC
I	760-2012	1	Adapter, Hyd. - #12femJIC x #8maleJIC
J	760-2077	2	Adapter, Hyd. Run Tee - #8 JIC
K	760-1201	1	Hose, Hyd. - 3/8” x 137”, #6femJICswiv x #8femJICswiv 90EL
L	760-1202	1	Hose, Hyd. - 3/8” x 147”, #6femJICswiv x #8femJICswiv 90EL
M	760-1203	1	Hose, Hyd. - 3/8” x 46”, #6femJICswiv x #8femJICswiv90EL
N	760-1204	1	Hose, Hyd. - 3/4" x 40", #12femJICswiv x #12maleJIC
O	760-1205	1	Hose, Hyd. - 3/4” x 30” #12femJICswiv x #12femJICswiv90EL
P	051-0143	1	Cable, Valve 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 steering hydraulic control block **(A)** is clean and dust free. Remove the plastic plugs and install the elbow adapters **(C)** in the **T**, **A**, and **B** ports. Install the larger elbows **(B)** in the **P** and **EF** ports of the hydraulic block. (Figure 3.1)

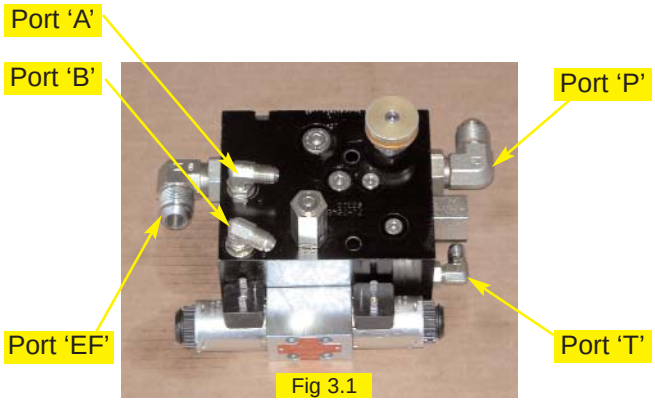


Fig 3.1

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 hammer strap **(D)** and hardware group **(G)**. (Figure 3.2)

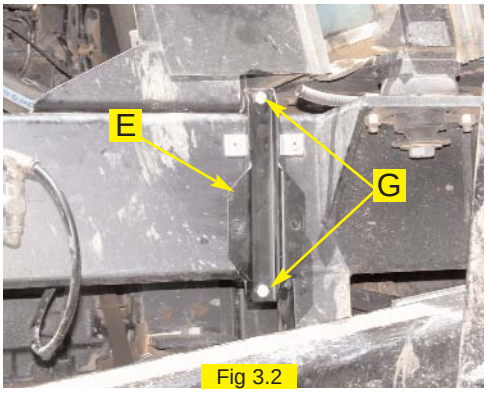


Fig 3.2

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

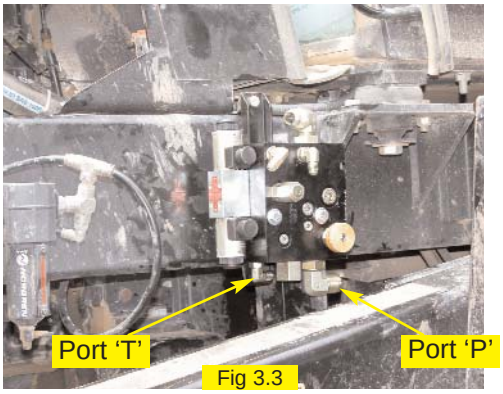


Fig 3.3

3. Install Pressure, Tank, and Excess Flow Fittings and/or Note Connection Locations:

The hydraulic control block will receive pressure from the excess-flow port on the priority valve. The priority valve is located on the inside of the left frame rail, beside the hydrostat. Excess-flow from the hydraulic block will be connected to the line previously attached at the priority valve. (Figure 4.1) Tank flow from the hydraulic block will be returned to the return-oil manifold under the left side of the machine.(Figure 4.2)

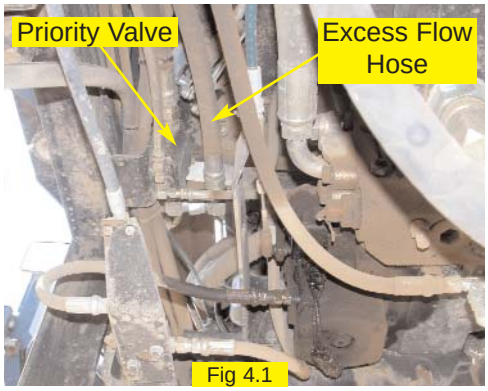


Fig 4.1

Remove the tank line from the return-oil manifold and install the run-tee fitting **(H)**. 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.

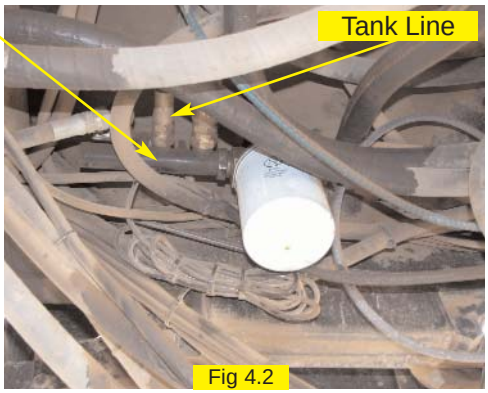


Fig 4.2

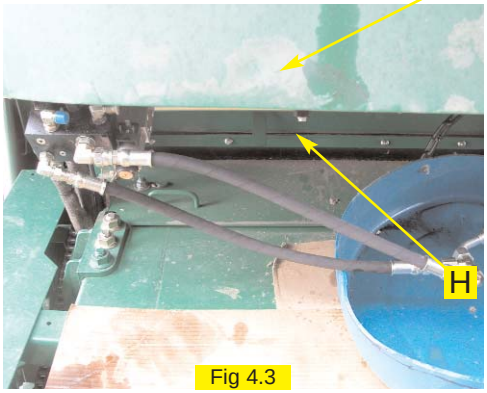


Fig 4.3

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

Install the provided excess-flow hose **(N)** to the **EF** port of the hydraulic control block and route it down near the priority valve. Remove the excess-flow line from the priority valve and re-route the hose to connect to the excess-flow hose **(N)** from the hydraulic block. (Figure 4.4) Connect the provided pressure hose **(O)** between the **P** port of the hydraulic block and the excess-flow port of the priority valve as shown. (Figure 4.5)

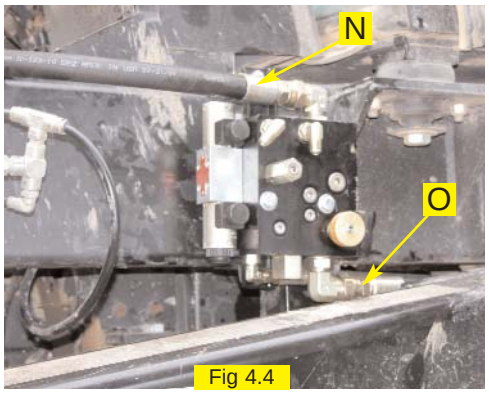


Fig 4.4

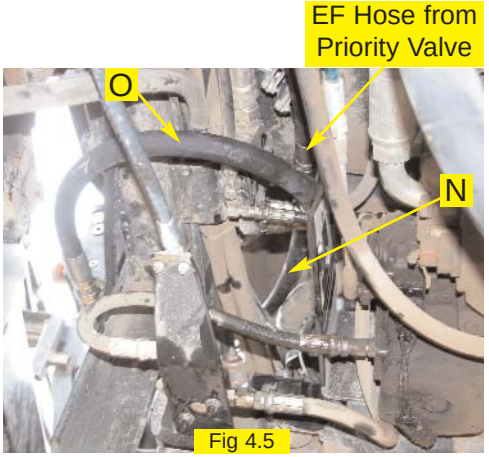


Fig 4.5

4. Continued ...

Connect the tank hose **(M)** between the **T** port of the hydraulic control block and the branch of the run-tee **(H)** installed at the return-oil manifold using the provided adapter **(I)**. (Figure 5.1and 5.2)

Hoses should be routed inside the sprayer frame with other machine plumbing. Use the heavy tie-straps provided to secure the hoses to other machine plumbing and away from moving parts.

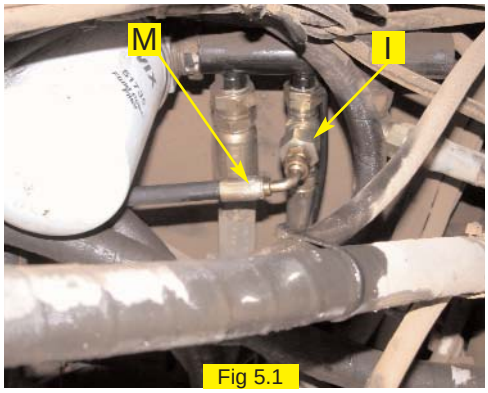


Fig 5.1

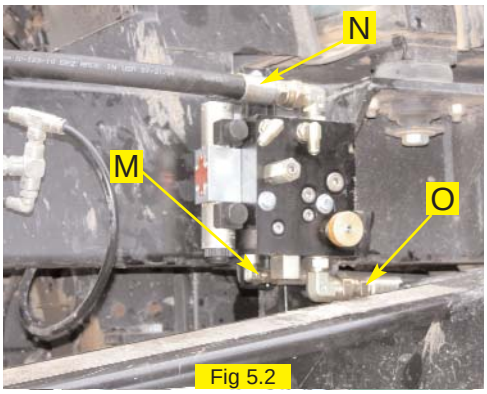


Fig 5.2

5. Install Steering Output Fittings:

Locate the steering lines on the steering cylinder on the right side of the machine. Install the provided run-tees **(J)** as shown. (Figure 6.1 and 6.2) Use plastic caps to prevent excess leakage from the open run-tees.

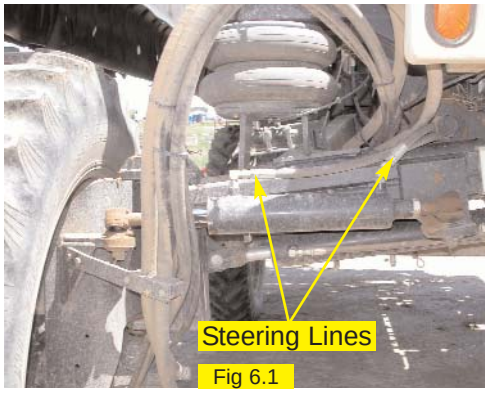


Fig 6.1

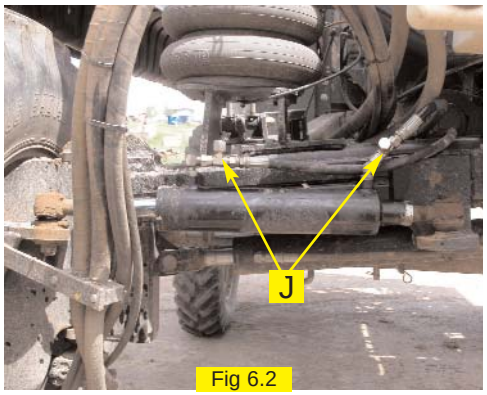


Fig 6.2

6. Install Steering Output Hoses:

Install the provided steering output hoses **(K** and **L)** between the run-tees at the steering cylinder and the **A** and **B** ports of the hydraulic control block. Attach hose ends equipped with 90-degree elbows to the branches of the run-tees for convenient hose routing. (Figure 7.1 and 7.2)

Be sure hoses are routed with enough slack to allow for suspension movements and vibrations. Use the heavy tie-straps provided to secure the hose away from moving parts. (Figure 7.3)

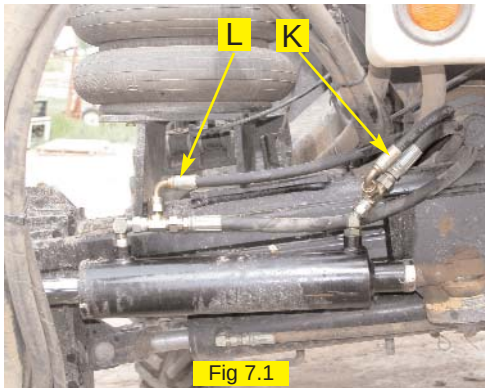


Fig 7.1

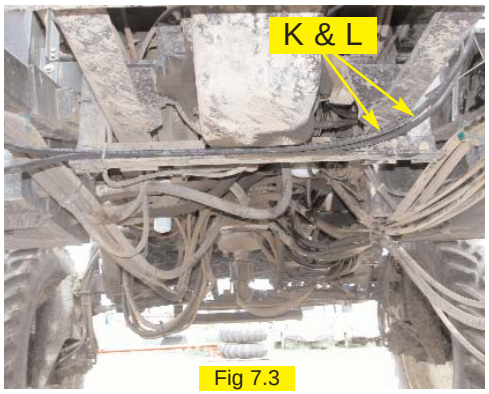


Fig 7.3

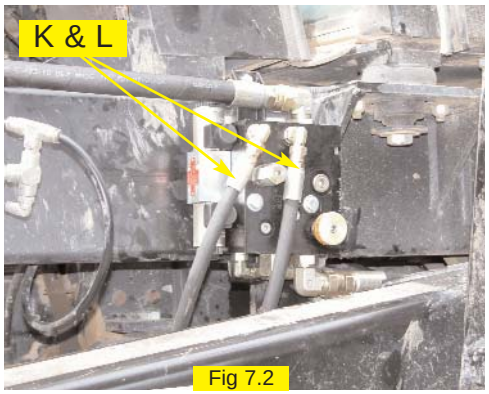


Fig 7.2

8. Install the Valve Control Cable:

Attach the valve cable **(P)** to the hydraulic control block and route it back under the sprayer cab and across to the right side. (Figure 8.1) The cable can be routed into the cab through a grommet in the right side floor of the cab, directly to the right of the operator seat. (Figure 8.2)

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

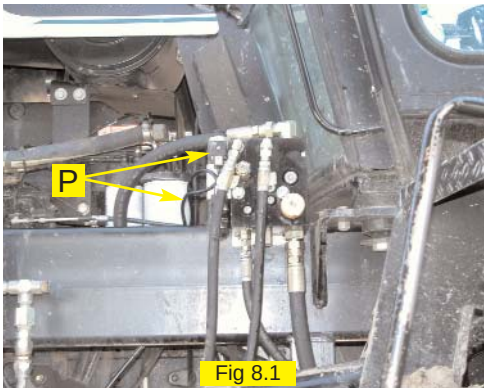


Fig 8.1

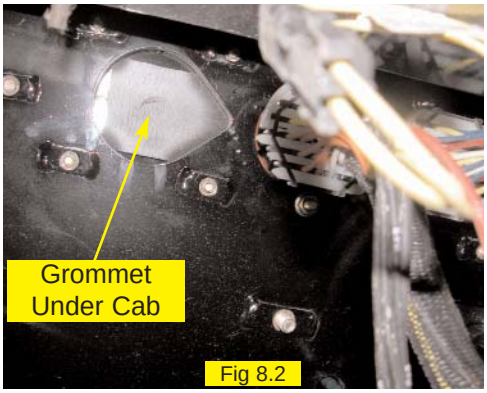


Fig 8.2

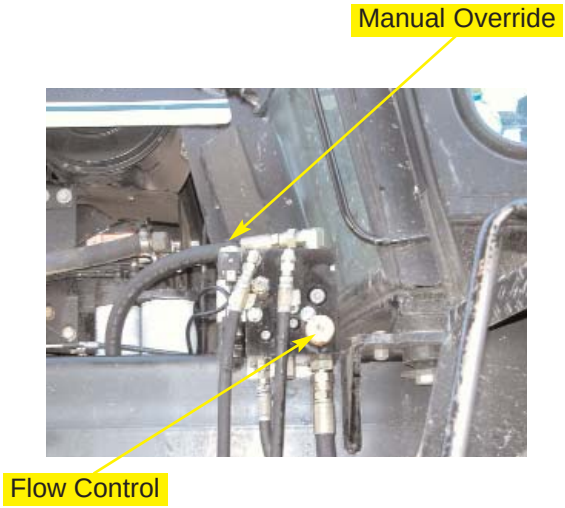
9. Verify Operation and Set Steering Control Rate: Cleanup the installation area around the sprayer and make certain that it is safe to operate. Start the sprayer and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

On the hydraulic control block, adjust the 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 sprayer wheels all the way to one extreme. Count the number of seconds for the sprayer 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 **16** seconds.

9. 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.