

Automated Steering Hydraulic Installation Kit

P/N: ED-AP1200

Fits Apache Sprayer Models:

890 Plus

1000

1200

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 Apache sprayer models listed above. Please read this manual thoroughly before beginning the installation.



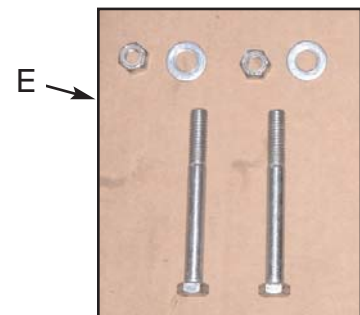
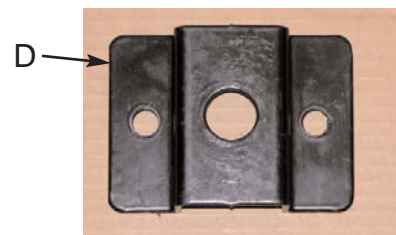
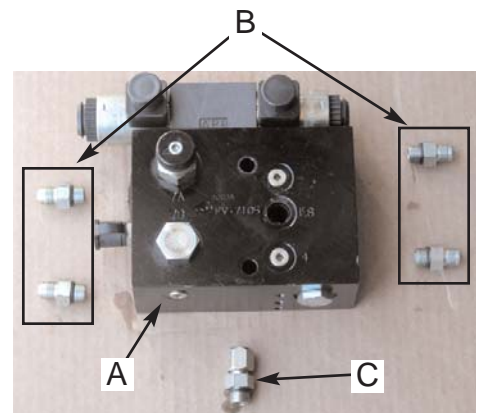
Machine Preparation

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

Kit Contents

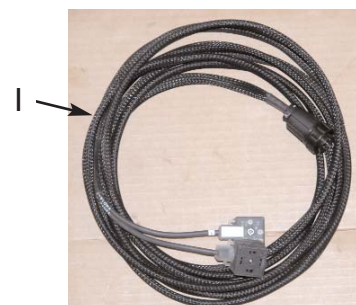
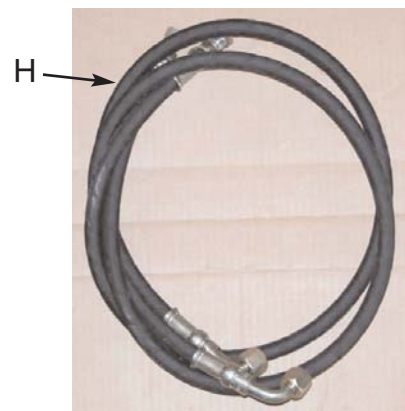
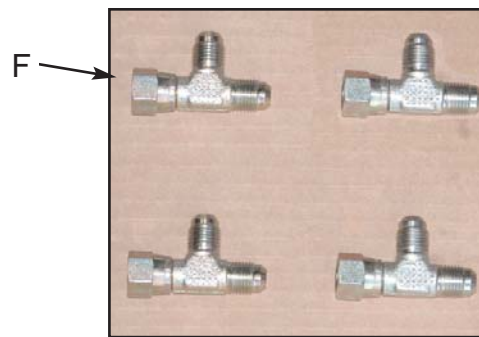
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
Bag #1 of 3 includes B & C			
B	760-2056	4	Adapter, Hyd. - #6maleJIC x #6maleORB
C	760-2045	1	Adapter, Hyd. Plug - #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			
F	760-2054	4	Adapter, Hyd. Run Tee - #6 JIC
G	760-1097	2	Hose, Hyd. - 1/4" x 62", #6femJICswiv x #6femJICswiv90EL
H	760-1005	2	Hose, Hyd. - 3/8" x 54", #6femJICswiv x #6femJICswiv90EL
I	051-0144	1	Cable, Hyd. Interface - 10 ft.
	677-2001	20	Tie Strap, 11" Heavy Duty, Not Shown
	710-0053	1	Kit, Steering Wheel Switch, Not Shown



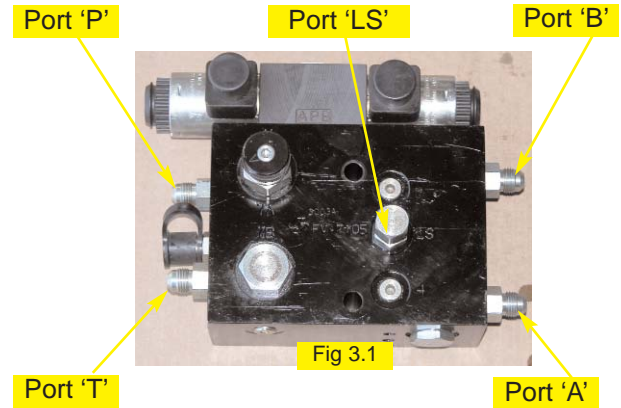
WARNING: **HIGH-PRESSURE FLUID HAZARD.** Hydraulic oil may be hot and under high pressure. To prevent serious injury or death: Relieve system pressure and allow to cool before repairing or disconnecting. Wear proper hand and eye protection when searching for leaks, using wood or cardboard instead of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

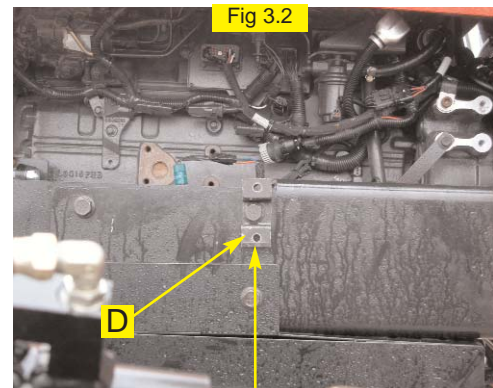
1. Prepare Hydraulic Control Block:

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



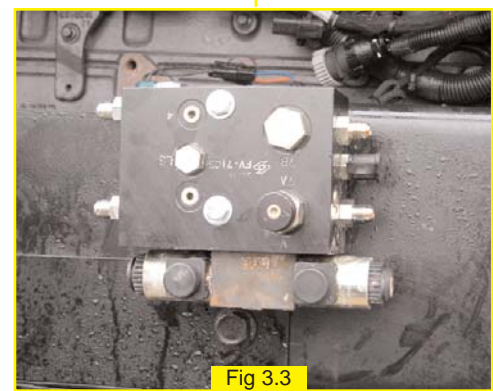
2. Install Mounting Bracket:

Install the hydraulic block mounting bracket (**D**) on the left side of the sprayer frame using the existing bolt as shown. (Figure 3.2)



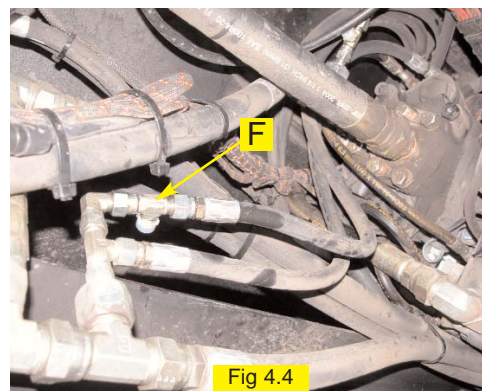
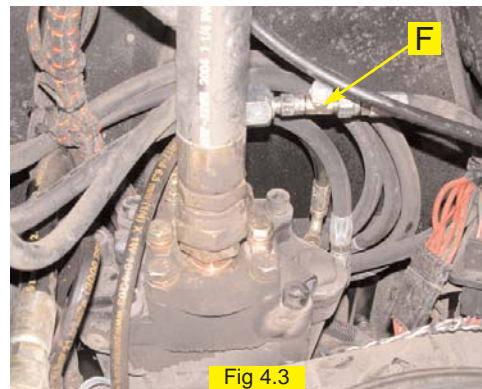
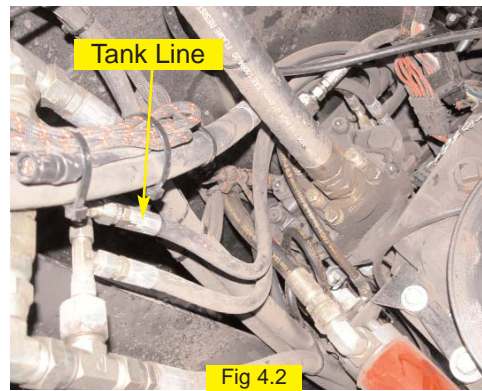
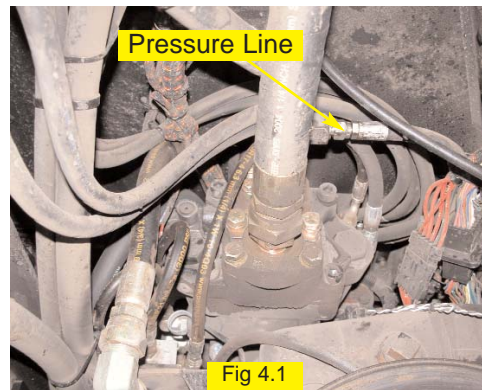
3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step 2, to the mounting bracket using the mounting hardware in group (**E**). Be sure the hydraulic block is oriented with the **A** and **B** ports pointed toward the front of the machine, and tighten the mounting bolts securely. (Figure 3.3)



4. Install Pressure and Tank Fittings:

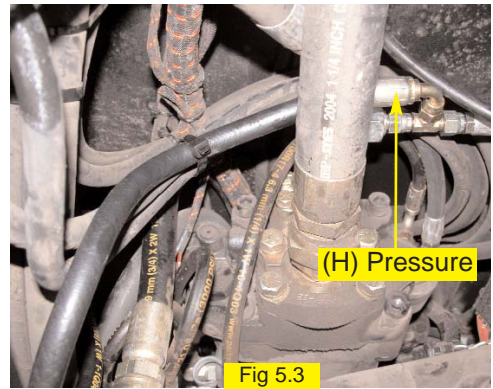
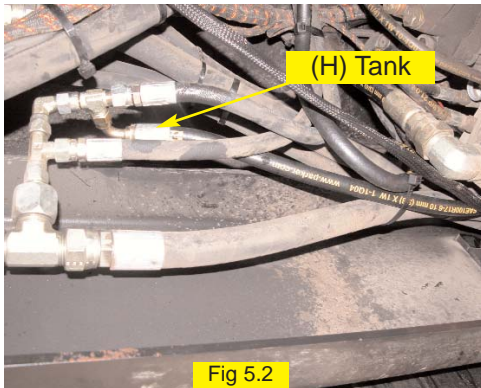
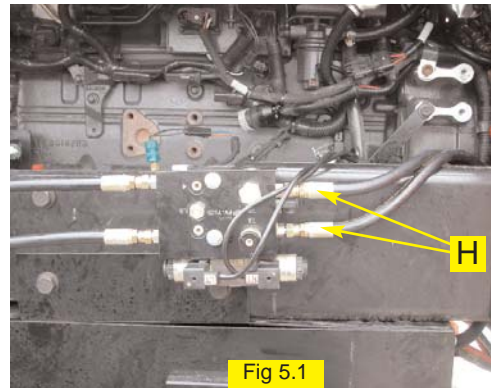
Locate the pressure and tank lines from the steering orbital attached near the hydraulic pump under the sprayer. (Figure 4.1 and 4.2) Remove the pressure and tank lines and install the run-tee fittings (**F**) in each location as shown. Use plastic caps to prevent excess leakage from the run-tees during installation. (Figure 4.3 and 4.4)



5. Install Pressure and Tank Hoses:

Install the pressure and tank hoses (**H**) between the run-tees installed in step 4 and the **P** (pressure) and **T** (tank) ports of the hydraulic control block respectively. (Figure 5.1, 5.2, and 5.3)

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



6. Install Steering Output Fittings:

Locate the two steering lines on the left side of the sprayer frame near the front axle. Install run-tee fittings (**F**) where the steering line unions are attached to the frame. Use plastic caps to prevent excess leakage from the run-tees during installation. (Figure 5.4)



7. Install Steering Output Fittings:

Install the steering hoses (**G**) to the branches of the runtees installed in step 6 and to the **A** and **B** ports of the hydraulic control block. (Figure 6.1)

The hoses should be routed in the same manner as the sprayer steering lines to allow for suspension flex at the front axle as shown.

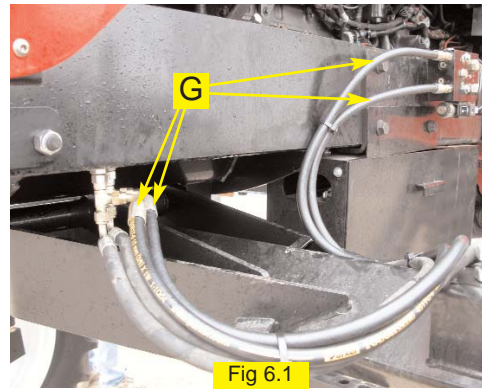


Fig 6.1

8. Install the Valve Control Cable:

Attach the hydraulic valve cable (**I**) to the hydraulic control block and route it back under the sprayer cab. The cable can be routed into the cab through a grommet in the back right corner of the cab floor. (Figure 6.2, 6.3, and 6.4)

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

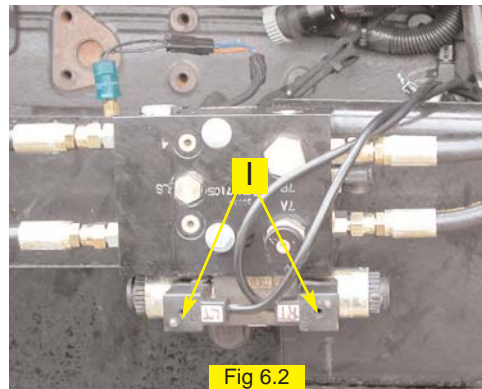


Fig 6.2

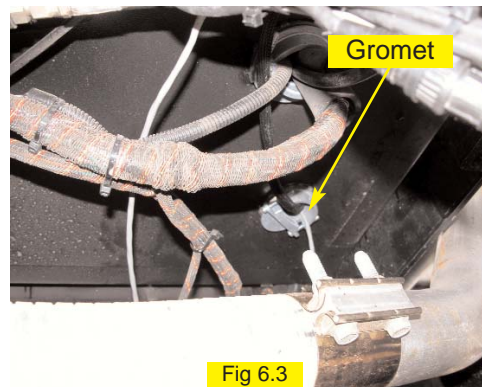


Fig 6.3

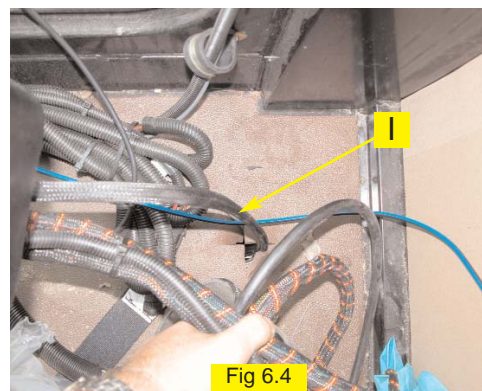


Fig 6.4

9. 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.

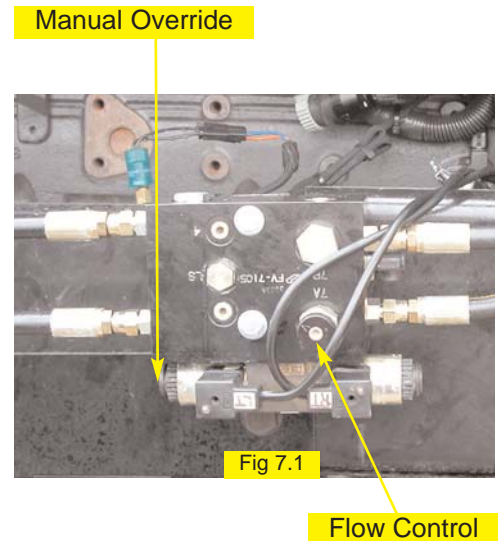
Adjust the hydraulic oil flow control knob to a starting position of **2 turns** from completely closed. To adjust the knob, lift and turn clockwise to reduce flow, counter-clockwise to increase flow.

The coils on the control block have manual push button overrides. Push either manual override to move the sprayer steering linkage all the way to one extreme. Count the number of seconds for the sprayer steering linkage to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 7.1)

Adjust the hydraulic oil flow control knob to achieve an end to end steering cycle time of approximately **14 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.



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.

