

Automated Steering Hydraulic Installation Kit

P/N: ED-CATRC

Fits CAT Row-Crop Tractor Models:

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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 CAT Row-Crop series tractors. Please read this manual thoroughly before beginning the installation.



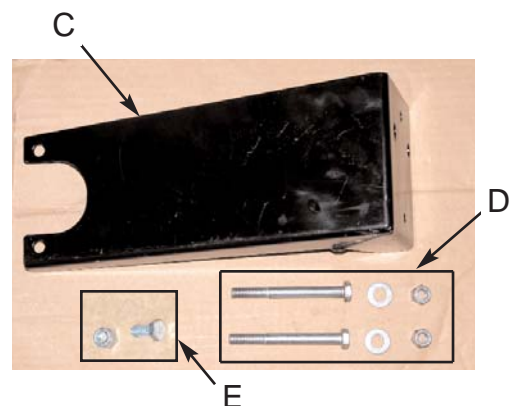
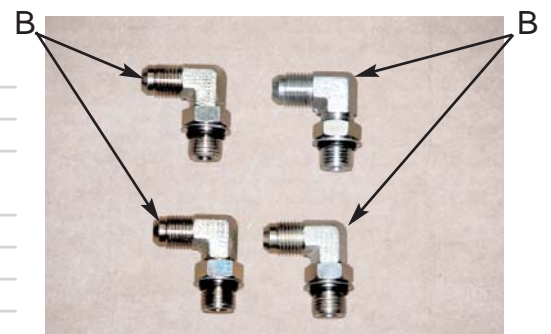
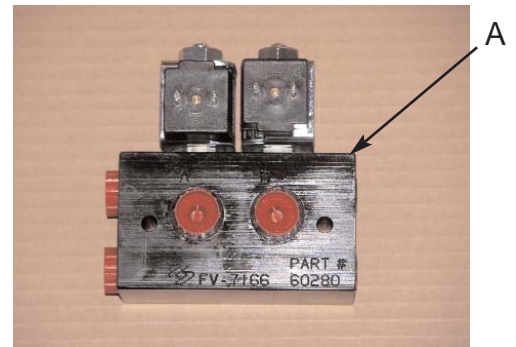
Tractor Preparation

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

Kit Contents

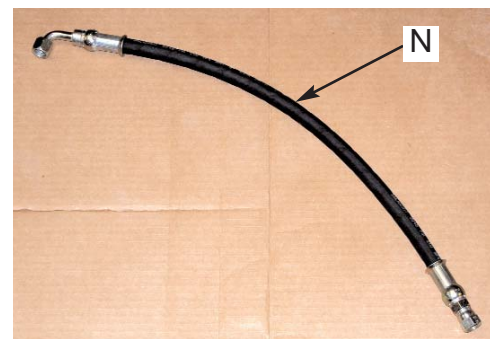
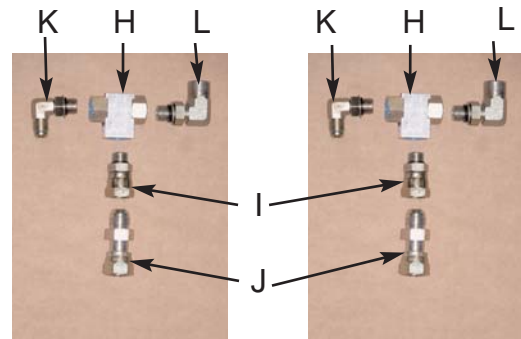
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0010	1	Assy, Hyd. Valve Block DPC-II
Bag #1 of 4 includes B			
B	760-2058	4	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	640-0007	1	Hyd. Block Mnt -NH8070, CATRC
Bag #2 of 4 includes D & E			
D	675-2002	2	Bolt, 1/4NC x 2-1/2" Gr5 ZP
	678-1053	2	Washer, Flat - 1/4" ZP
	676-1034	2	Nut, Lock - 1/4NC ZP
E	675-2010	1	Bolt, 5/16NC x 3/4" Gr5 ZP
	676-1036	1	Nut, Lock - 5/16NC ZP



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #3 of 4 includes F & G			
F	760-2069	1	Adapter, Hyd. Run Tee - #8 ORFF
G	760-2052	1	Adapter, Hyd. - #6maleJIC x #12maleORB
Bag #4 of 4 includes H, I, J, K & L			
H	760-0002	2	Assy, Hyd. Load Shuttle - #6maleORB
I	760-2044	2	Adapter, Hyd. #6maleORB x #8femJICswivel
J	760-2075	2	Adapter, Hyd. #8maleJIC x #8femORFFswiv
K	760-2058	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
L	760-2068	2	Adapter, Hyd. 90 Elbow - #8maleORFF x #6maleORB
M	760-1021	1	Hose, Hyd. - 3/8" x 75", #6femJICswiv x #8femORFFswiv 90EL
N	760-1014	1	Hose, Hyd. - 3/8" x 22", #6femJICswiv x #6femJICswiv 90EL
O	760-1020	2	Hose, Hyd. - 1/4" x 79", #6femJICswivel Both Ends
P	051-0144	1	Cable, Valve 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:

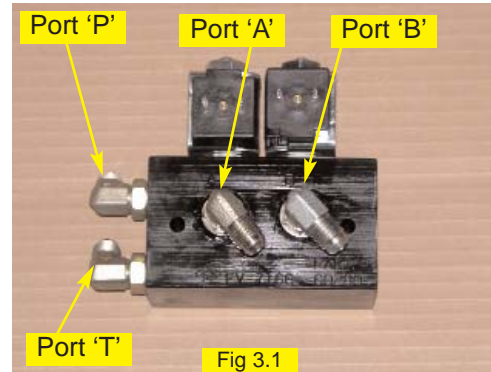
PREVENT HYDRAULIC SYSTEM CONTAMINATION.

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

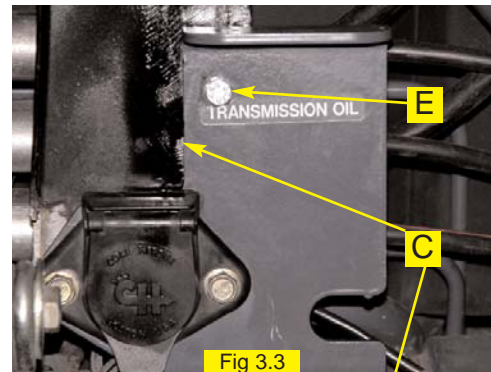
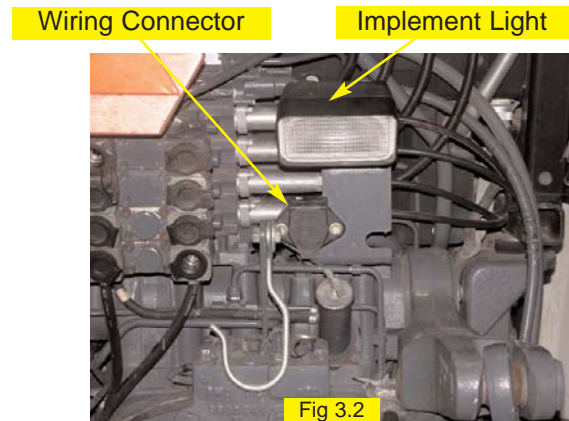
1. Prepare Hydraulic Control Block:

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



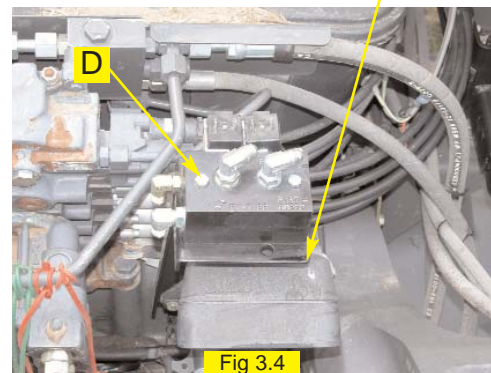
2. Install Mount Bracket:

Unbolt the implement light located above the wiring connector at the back of the tractor and lay it aside. (Figure 3.2) Remove the bolts securing the electric wiring connector and install the hydraulic mounting bracket (C) as shown. Drill a 3/8" hole through the electric wiring connector mounting plate and the hydraulic mounting bracket. Secure the two brackets together with the hardware in group (E). (Figure 3.3) Reinstall the implement light in the original location.



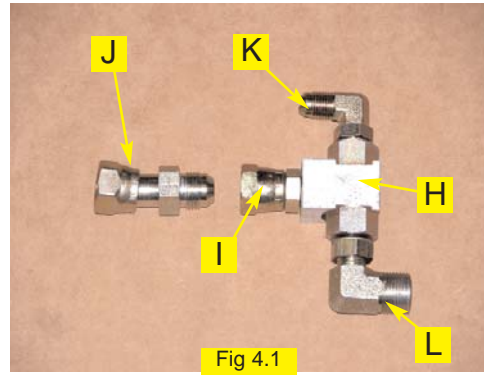
3. Install Hydraulic Control Block:

Install the hydraulic control block, as prepared in step 1, to the mounting bracket using the mounting hardware in group (D). (Figure 3.4) Tighten mounting bolts securely.



4. Install Steering Output Fittings:

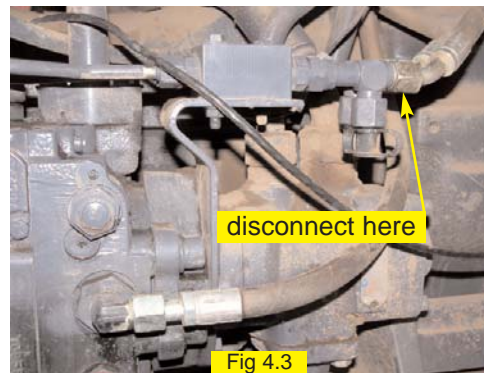
Pre-assemble the load shuttles (**H**) as shown at right. Install adapters (**I**), (**K**), and (**L**) in the each shuttle. (Figure 4.1)



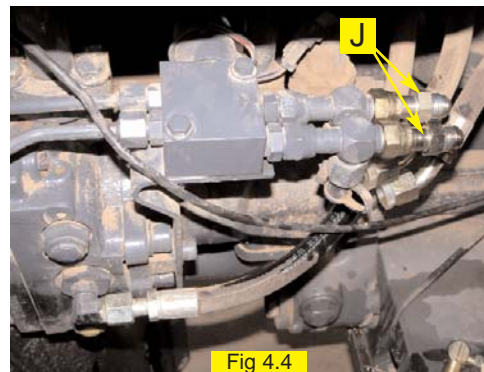
Locate and remove the right side mud shield under the cab to gain access to the hydraulic pump and plumbing. (Figure 4.2)



Remove the steering lines ahead of the test ports. (Figure 4.3)

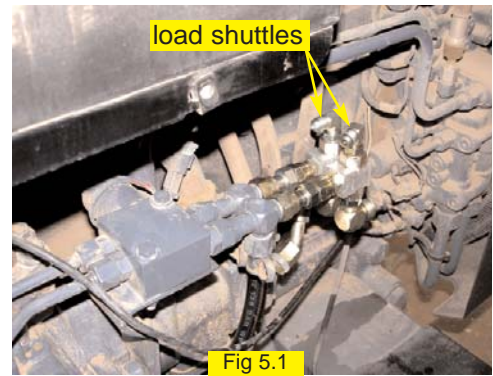


Install the provided JIC adapters (**J**). (Figure 4.4)

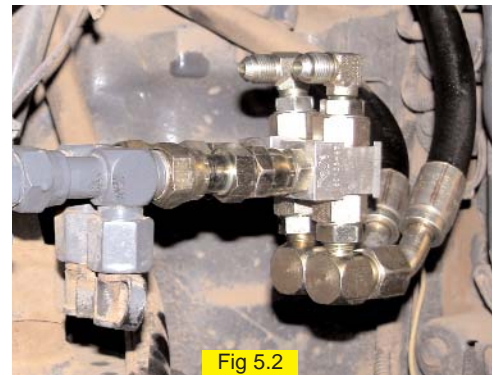


4. Continued...

Install the assembled load shuttles onto these adapters as shown. (Figure 5.1)



Reinstall the appropriate output hoses to the end of the load shuttles with the o-ring flat face elbow (L). (Figure 5.2)

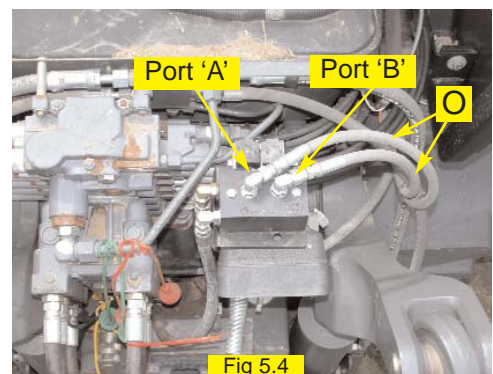
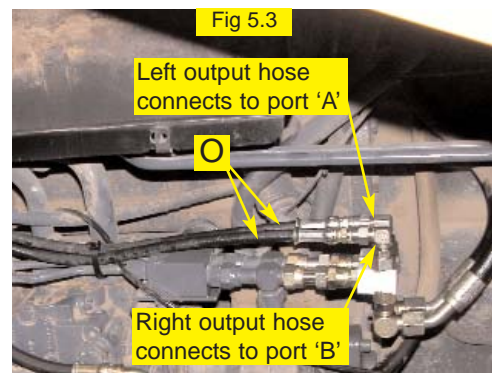


5. Install Steering Output Hoses:

Connect the steering output hoses (O) to the open ends of the load shuttles (K) installed in step 4. (Figure 5.3)

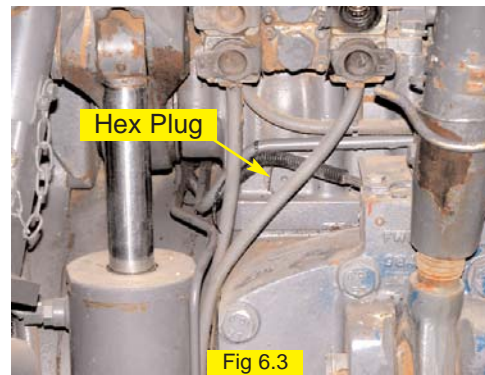
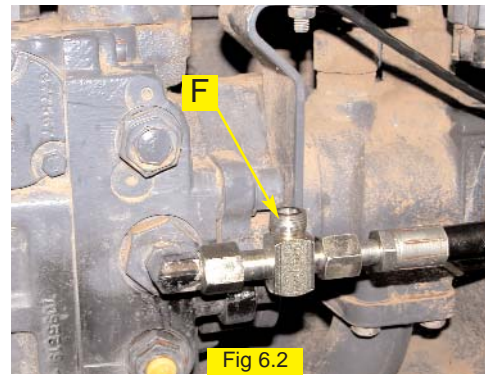
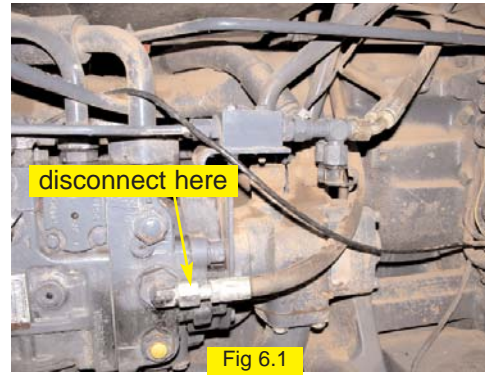
Route the hoses to the hydraulic control block installed in step 3. Connect these hoses to the **A** and **B** Ports on the block accordingly. The left output hose connects to port **A** and the right output hose connects to port **B**. (Figure 5.4)

Check hose routing for clearance to provide problem free operation and secure with tie straps. Securely tighten all steering output fittings and hoses at the load shuttles and at the hydraulic control block.

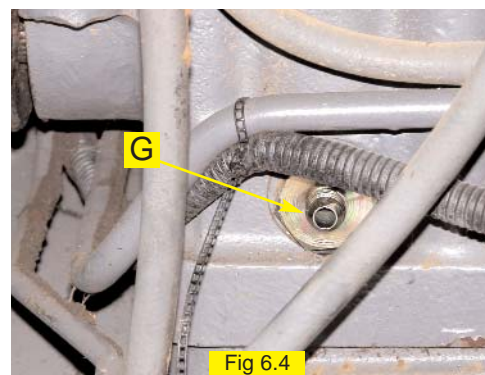


6. Install Pressure and Tank Fittings:

Locate the hydraulic pump on the right side of the tractor behind the steering output installation point. (Figure 6.1) On the side of the pump there is an elbow fitting with a hydraulic hose connected. Install the run-tee fitting (F) between the elbow fitting and the hose. (Figure 6.2) This will provide a pressure source for the hydraulic control block.

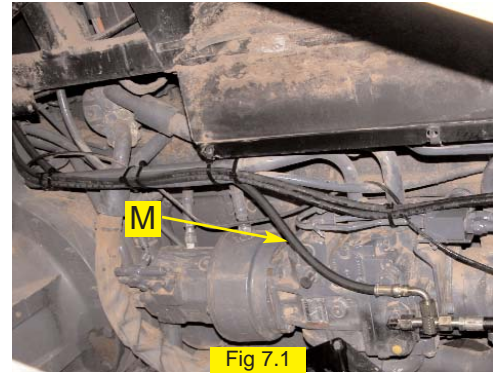


Tank drain for the hydraulic system will be relieved to the rear casing of the tractor through a port just below the hydraulic valve stack. (Figure 6.3) Remove the #12 ORB hex-plug and install the provided JIC fitting (G). (Figure 6.4)

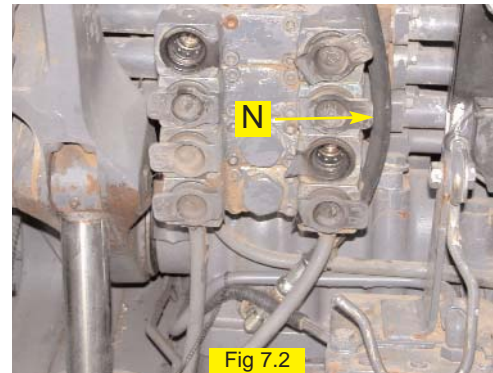


7. Install Pressure and Tank Hoses:

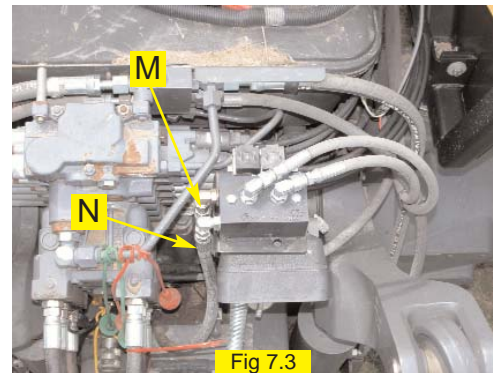
Install the provided pressure hose (M) between the run-tee (F) installed in the previous step and the P port on the hydraulic control block. (Figure 7.1)



Install the provided tank hose (N) between the fitting (G) installed in the previous step and the 'T' port on the hydraulic control block. (Figure 7.2)

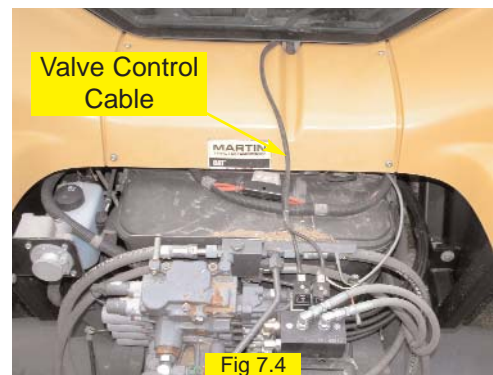


Check hose routing for clearance to provide problem free operation and secure with tie straps. Securely tighten all pressure and tank fittings and hoses. (Figure 7.3)



8. Install the Valve Control Cable:

Route the valve control cable (P) from the hydraulic control block through the cable grommet in the rear window. (Figure 7.4)



8. Verify Operation and Set Automated Steering Control Rate:

- a. Tighten all of the connections and clean up the installation area around the machine and make certain that it is safe to operate.
- b. Start the machine and check the hydraulic connections for any leaks.
- c. Rotate the steering wheel from one direction to the other and back to check manual steering function.
- d. Make sure the **Vehicle Type** in your automated steering controller is set to **Track** mode.
- e. Use the **Valve Test** function in your automated steering controller to verify that the machine steers in the proper direction, left and right.
- f. In the menu of your automated steering controller adjust the **Steering Speed** to a starting value of **35** and adjust the **Max Turn Rate** to a value of **75**.
- g. Operate the machine in an open field with the automated steering system to fine tune the **Steering Speed**. Increasing the **Steering Speed** value will cause the steering to make faster corrections, decreasing the value will cause slower corrections.
- h. The **Max Turn Rate** value should **ONLY** be adjusted lower to prevent extremely large steering movements in reaction to disturbances or aggressive line acquisition. This adjustment is secondary to the **Steering Speed**.



It is very important that the manual steering of the machine be in good working order prior to using automated steering. If the machine will not drive in a relatively straight line with no input to the steering wheel, then the manual steering must be serviced in order to achieve balanced tracking.



CRUSHING HAZARD. To prevent serious injury or death, avoid unsafe practices while operating hydraulic steering circuit on track tractors. Keep others away and stay clear of tracks. Turning the steering wheel while the vehicle is stationary causes the tracks to counter rotate. Be Alert!



The automated steering contour guidance mode is not recommended with track tractors. This automated steering system uses a constant, fixed rate steering control method. This method is extremely robust on track machines in straight guidance. In contours with track tractors, however, this method may result in aggressive corrections and poor tracking performance.

9. Complete Automated Steering Electronic Installation and Setup:

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