

Automated Steering Hydraulic Installation Kit

P/N: ED-CL900

**Fits CLAAS Forage Harvester Models:
Series 491**


820 840 860 880

Series 492, 493

830 850 870 890 900



Read and Follow Safety Messages

In these instructions, you will see the heading, WARNING, and the safety alert symbol .

They indicate a hazardous situation that, if not avoided, could result in death or serious injury. The safety messages provide information to identify a hazard associated with potential injury.

Read and understand the Automated Steering Hydraulic Installation Kit instructions and all of the safety information before installing, operating, or performing maintenance or service on the hydraulic system. Before installing the Automated Steering Hydraulic Installation Kit, read and understand the Automated Steering System User Guide. Do not allow anyone to operate without instruction. If you have a question or need assistance, contact your local dealer or distributor.

Keep these instructions and all related safety information with the manuals for your machine and other implements.

Overview

A series of equipment-specific 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 CLAAS Forager Harvester models listed above.

WARNING:

To avoid serious injury or death during machine operation, install the appropriate kit for your machine make and model.

Machine Preparation

WARNING:

Inspect the machine and perform any needed maintenance (for example, contaminated hydraulic fluid) before installing the Automated Steering Hydraulic Installation Kit. This kit cannot perform as intended on a machine that is not maintained properly. Errors in performance increase the risk of operator and bystander injury or death.

Failure to maintain clean hydraulic fluid and operational hydraulic components can cause loss of directional control resulting in serious injury or death.

To avoid serious injury, wear hand and eye protection and use wood or cardboard when checking for leaks.





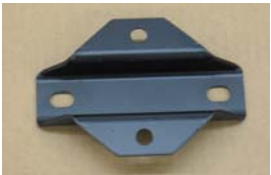


Turn off the machine and power off the automated steering controller when installing or performing maintenance.

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

To 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, referred to in the Kit Contents section, 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.

Kit Contents


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

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
A	760-0007	1	Assy, Hyd. Valve Block - OC HF Low Range	
Bag 1 of 3 includes B, C, and D				
B	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6m	
C	760-2009	1	Adapter, Hyd. 90 EL - #10mJIC x #12mB	
D	760-2008	1	Adapter, Hyd. - #10maleJIC x #12maleORB	
E	640-0048	1	Brkt, Hyd. Block Mnt - NH TR Combine	
Bag 2 of 3 contains F and G				
F	675-2003	2	Bolt, 3/8NC x 1Gr5ZP	
	678-1054	4	Washer, Narrow Flat - 3/4"OD x 13/32ID x	
	676-1035	2	Nut, NyLock - 3/8NC ZP	
G	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	
	676-1035	2	Nut, NyLock - 3/8NC ZP	

Kit Contents (continued)

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
Bag 3 of 3 contains H, I, and J				
H	760-2028	1	Adapter, Hyd. Run Tee - #18L EO	
I	760-2104-000	1	Adapter, Hyd. 18fLEO x 12mLEO	
J	760-2003	2	Adapter, Hyd. Run Tee - #10L EO	
K	760-1299-000	1	Hose, Hyd-1/2 x 28", #15mMLE x #10fJIC90	
L	760-1300-000	1	Hose, Hyd-1/2 x 22", #15fMLE x #10fJIC90	
M	760-1301-000	1	Hose, Hyd-3/8" x 32", #6fJIC x #12fMLE90	
N	760-1298-000	2	Hose, Hyd-3/8 x 110", # 6fJIC x #10fMLE90	

Kit Contents *(continued)*

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
O	051-0143	1	Cable, E-Drive Interface - 15 ft.	
	677-2001	20	Tie straps, 11" Heavy Duty	Not shown
	710-0053	1	Kit, Steering Wheel Switch	Not shown

INSTALLATION

WARNING:

Before installing, disconnecting or repairing the hydraulic hoses and components, turn off the machine and relieve all pressure from the hydraulic system by turning the steering wheel left and right. Failure to remove the pressure can result in serious injury or death from unexpected machine movement.

To avoid burn injury when installing, disconnecting or repairing the hydraulic hoses and components, turn off the machine and allow the system to cool down prior to touching the parts of the machine that are heated.

To avoid burn or electric shock injury when installing or removing the kit, do not touch parts of the machine that are heated or electrically energized.

1. Prepare the automated steering block.

- a. Make sure the automated steering block **A** is clean and dust free.
- b. Install adapter fitting **B** in the **A**, **B** and **T** ports, adapter fitting **C** in the **P** port and adapter fitting **D** in the **EF** port of the automated steering block (Figure 1a).

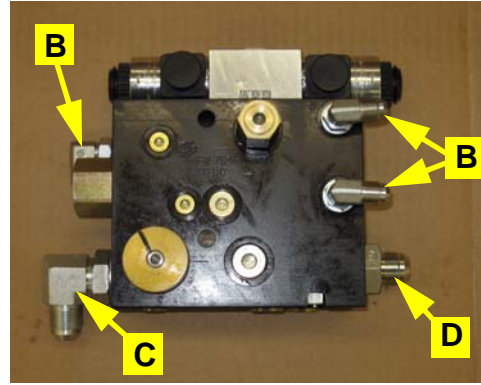


Figure 1: Prepared automated steering block

2. Mount the automated steering block for 491, 492 and 493 series models.

- a. The automated steering block will be mounted on the left side of the machine behind the first access door. Mount the bracket **E** 8 inches from the right edge of the sheet metal and 8 inches down from the top. Using bracket **E** as a pattern drill two 3/8 holes in the sheet metal (Figures 2a and 2b).
- b. Mount the bracket **E** as shown using the hardware **F** (Figure 2b).

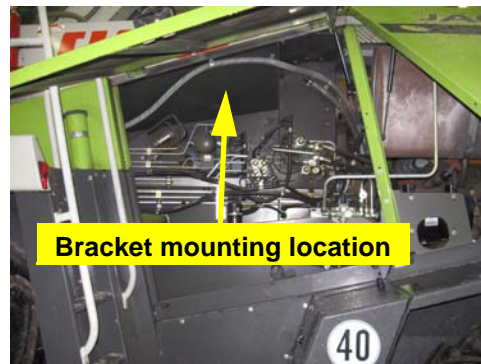


Figure 2a: Bracket mounting location

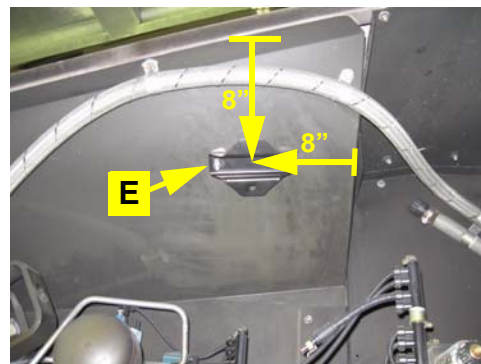


Figure 2b: Mounted bracket

2. **Mount the automated steering block for 491, 492 and 493 series models (continued).**
- c. Use the provided mounting hardware in group **G** to attach the automated steering block, you prepared in **step 1**, to the mounting bracket **E** (Figure 2c).

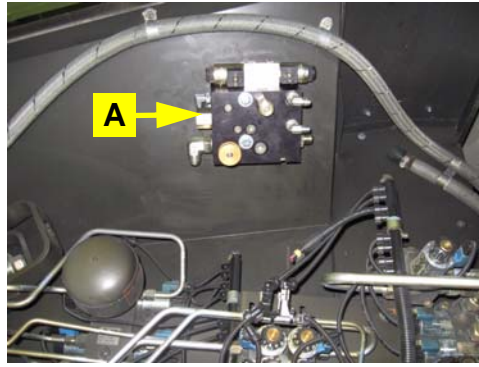


Figure 2c: Mounted automated steering block

3. **Install the tank fittings.**

To install on 492 and 493 series models, please refer to figures 3a and 3b. To install on 491 series models, please refer to figure 3c.

- a. The automated steering block will return tank flow via the tank hose located at the circulation shut-off valve (Figure 3a).

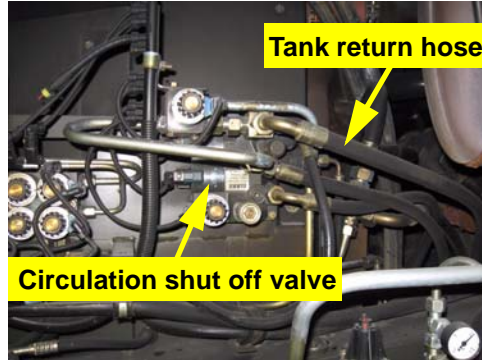


Figure 3a: Tank location

- b. Disconnect the rubber tank return hose from the circulation shut-off valve. Install run-tee fitting **H** and reducer fitting **I** onto the disconnected tank return hose and circulation shut-off valve (Figure 3b).

NOTE: Leave the run tee fittings loose to allow for alignment when attaching hoses. Plastic caps placed on the open ends of the fittings will prevent excessive leakage prior to hose installation.

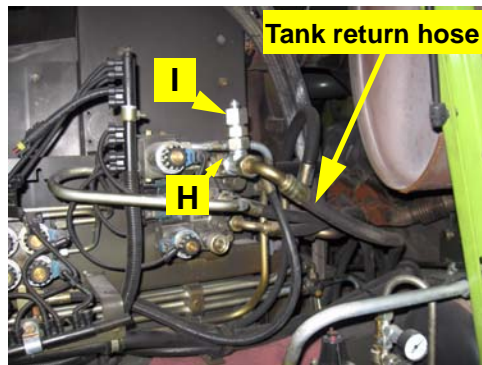


Figure 3b: Installed tank fitting

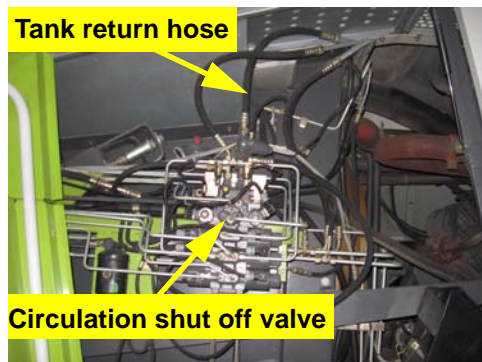


Figure 3c: Tank location for 491 series models

4. Install the pressure and excess flow hoses.

If you have a 492 or 493 series model, please follow steps 4a through 4d.

- a. Locate the pressure hose connected to the run-tee at the circulation shut-off valve (Figure 4a).
- b. Disconnect the rubber pressure hose from the run-tee fitting. Attach pressure hose **K** to the disconnected pressure hose and the **P** port on the automated steering block (Figure 4a and 4b).
- c. Loosen the pressure run-tee connected to the circulation shut-off valve and turn it towards the front of the machine.
- d. Attach excess flow hose **L** to the turned run-tee and the **EF** port on the automated steering block (Figure 4b).

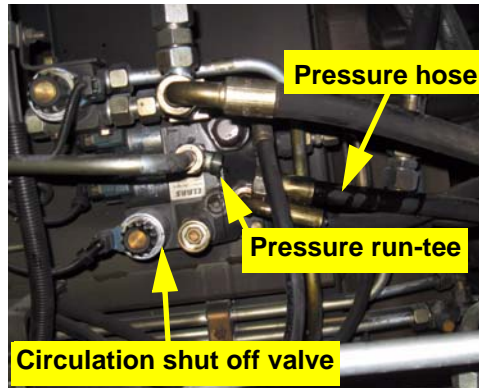


Figure 4a: Tank location

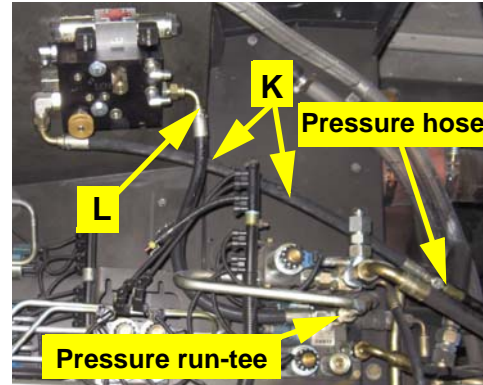


Figure 4b: Installed tank fitting

If you have a 492 series model, please follow **steps 4e through 4g**.

- e. Locate the pressure hose connected to the run-tee at the circulation shut-off valve (Figure 4c).
- f. Completely remove the pressure hose and replace it with pressure hose **K**. Attach pressure hose **K** to the **P** port on the automated steering block (Figure 4c).
- g. Attach the excess flow hose **L** from the **EF** port on the automated steering block to the open run-tee connection on the circulation shut-off valve (Figure 4c).

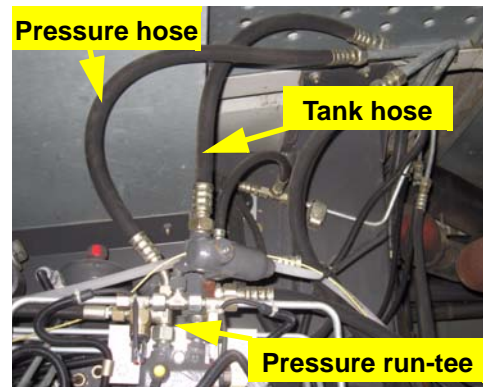


Figure 4c: Tank line fitting installed

5. Install the tank hose.

To install on 492 and 493 series models, please refer to figure 5a. To install on 491 series models, please refer to figure 5b.

Connect the tank hose **M** from the **T** port of the automated steering block to the reducer fitting **I** installed on the circulation shut-off valve tank return (Figure 5a).

NOTE: Route all installation kit hoses with the machine's hoses to keep them free from entanglement. Secure the hoses together with the provided heavy tie straps.

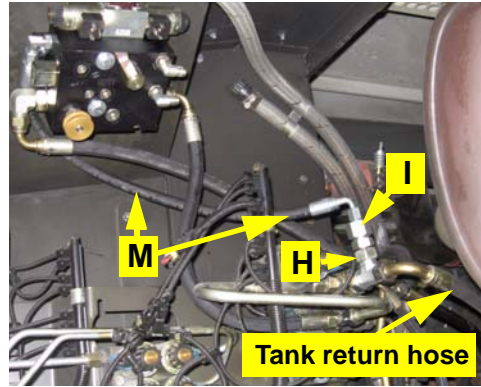


Figure 5a: Installed tank hose for 492 and 493 series models



Figure 5b: Installed tank hose for 491 series models

6. Install the steering fittings.

If you have a 492 or 493 series model, please follow **steps 6a** and **6b**.

- a. Locate the two steering lines located near the back steer axle (Figure 6a).
- b. Install run-tee fittings **J** between the steel and rubber steering hoses (Figure 6b).



Figure 6a: Steering line location

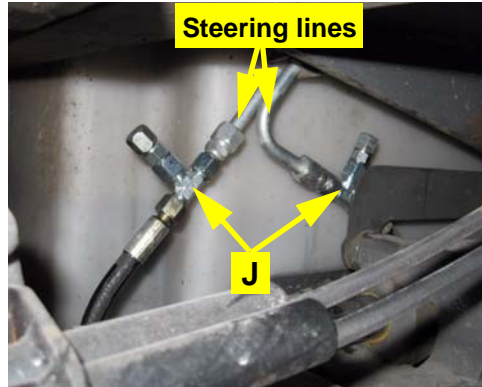


Figure 6b: Installed steering fittings

If you have a 492 series model, please follow **step 5c**.

- c. Locate the steering cylinder on the rear axle. Disconnect the two rubber steering lines from the steering cylinder and install run-tee fittings **J** (Figure 6c).

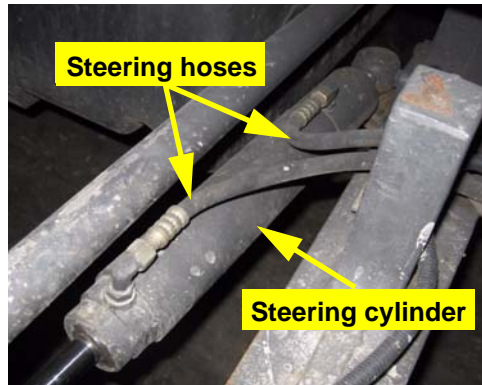


Figure 6c: Tank line fitting installed

7. **Install the steering output hoses.**

- a. Connect the two steering hoses **N** from the automated steering block to the installed run-tee fittings **J** located near the back steer axle (Figures 7a and 7b).

NOTE:

Note: Route all installation kit hoses with the machine's hoses to keep them free from entanglement. Secure the hoses together with the provided heavy tie straps.

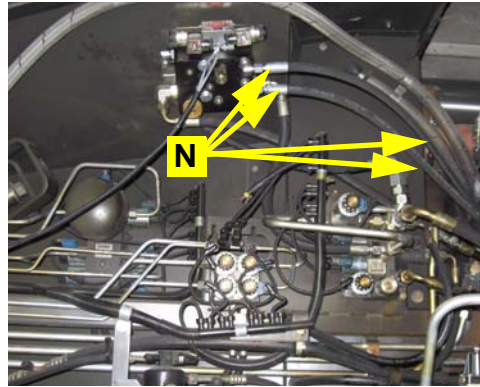


Figure 7a: Install steering hoses

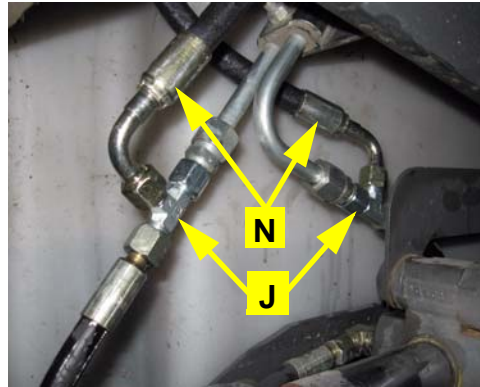


Figure 7b: Installed steering hoses

8. Install the valve control cable.

Route the valve control cable **O** from the automated steering block, to the back of the cab and then through the cab door (Figures 8a, 8b and 8c).

9. Verify operation and set the automated steering control rate.

⚠ WARNING: During tests of the hydraulic response, the tractor may move unexpectedly. Be prepared for machine movement to avoid injury.

Keep others away and stay clear of mechanical steering linkages to prevent serious injury or death from pinch point hazards while manually operating the hydraulic steering circuit.

- a. Tighten all 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 Automated Steering connections for leaks.
- c. Rotate the steering wheel from one extreme to the other and back.
- d. Adjust the Automated Steering oil flow control knob to a starting position of **2** turns from completely closed. To adjust the knob:
 - Turn clockwise to reduce flow.
 - Turn counter clockwise to increase flow. (Figure 9).
- e. The coils on the Automated Steering Block have manual push button overrides. Push either manual override to move the steering wheels all the way to one extreme (Figure 9).

NOTE: To activate the manual overrides, a tool such as a small screwdriver or allen wrench must be inserted into the end of the coil to depress the override button.

- f. While pressing the override button of the other coil, count the number of seconds for the steering wheels to move all the way in the opposite direction (Figure 9).
- g. Adjust the automated steering oil flow control to achieve an end-to-end steering cycle time of approximately **13** seconds. Use the knurled locking nut to secure the final flow control setting.

10. 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.

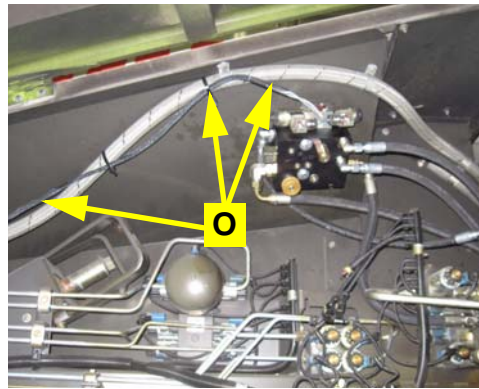


Figure 8a: Install valve cable

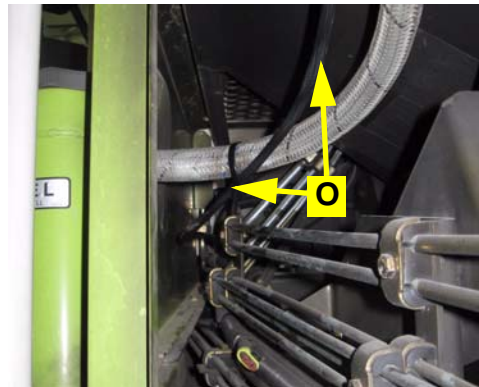


Figure 8b: Install valve cable

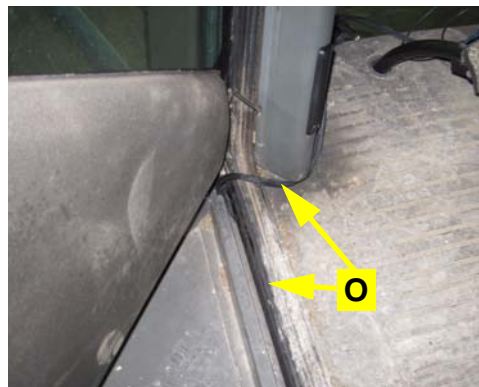


Figure 8c: Install valve cable

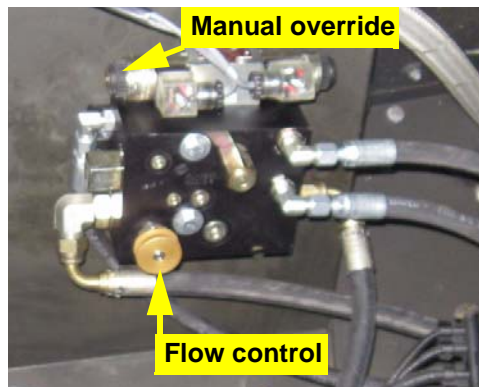


Figure 9: Steering block manual override and flow control

