

# Automated Steering Hydraulic Installation Kit

P/N: ED-NHTR

Fits New Holland Combine Models:

TR86	TR87	TR88	TR89
TR96	TR97	TR98	TR99



## 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 detailed instructions to install automated steering hydraulics on the New Holland TR Series combines. Please read this manual thoroughly before beginning the installation.

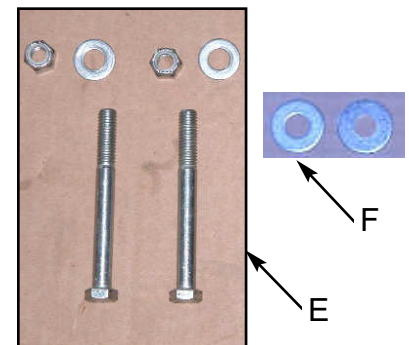
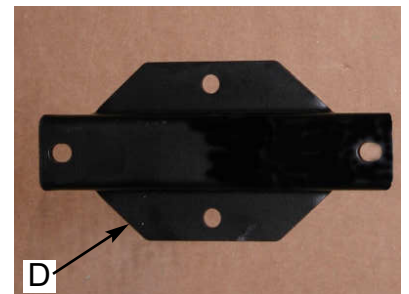
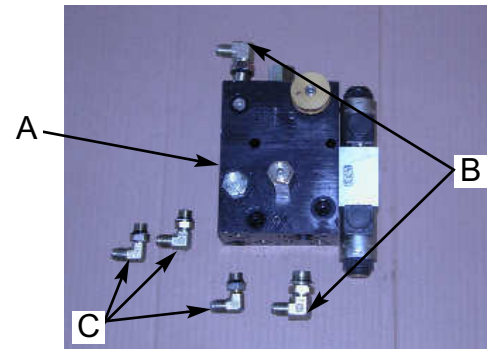
## Machine Preparation

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

## Kit Contents

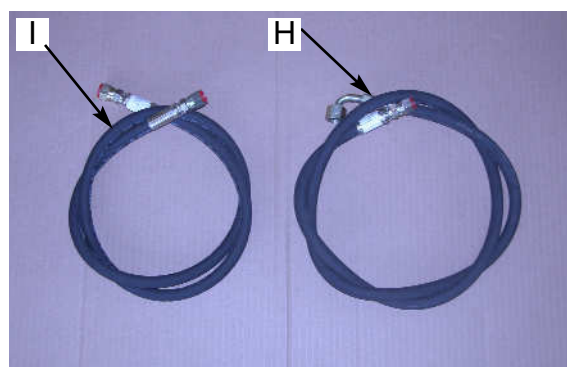
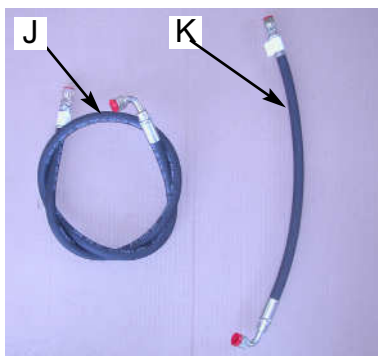
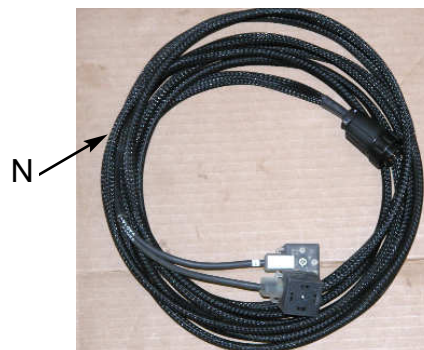
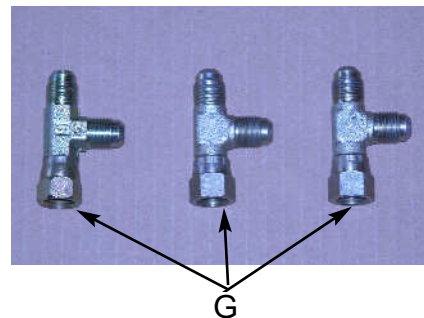
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0005	1	Assy, Hyd. Valve Block - OC
<b>Bag #1 of 3 includes B &amp; C</b>			
B	760-2061	2	Adapter, Hyd. 90 Elbow - #6maleJIC x #8maleORB
C	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
D	640-0048	1	Hyd. Block Mount - NHTR
<b>Bag #2 of 3 includes E &amp; F</b>			
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
F	678-1054	2	Washer, Narrow Flat - 3/4"OD x 13/32ID x 1/16"thk, ZP



## Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
<b>Bag #3 of 3 includes I</b>			
G	760-2054	3	Adapter, Hyd. Run Tee - #6 JIC
H	760-1211	1	Hose, Hyd. - 1/4" x 54", #6femJICswiv x #6femJICswiv90EL
I	760-1141	1	Hose, Hyd. - 1/4" x 53", #6femJICswiv Both Ends
J	760-1053	1	Hose, Hyd. - 3/8" x 50", #6femJICswiv x #6femJICswiv 90EL
K	760-1014	1	Hose, Hyd. - 3/8" x 22", #6femJICswiv x #6femJICswiv90EL
L	760-1210	1	Hose, Hyd. - 3/8" x 24", #6femJICswiv x #6maleJIC
N	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.

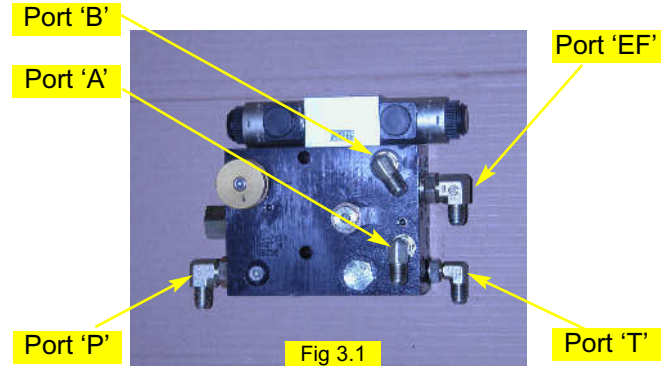
**IMPORTANT:**

**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

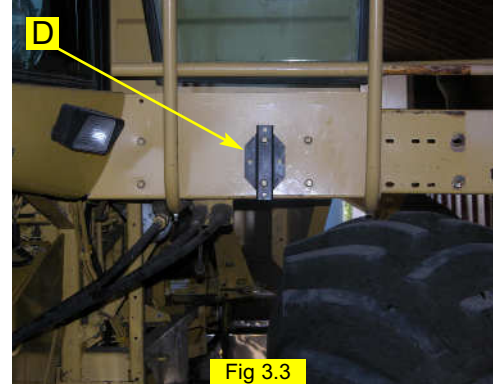
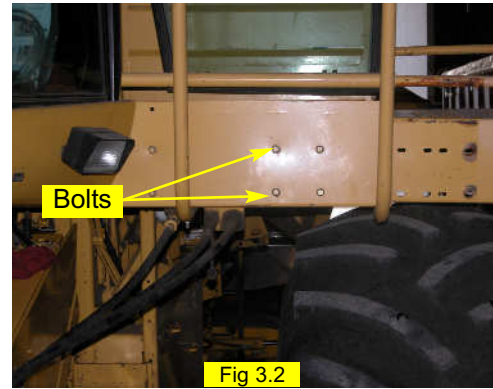
## 1. Prepare Hydraulic Control Block:

Make sure the 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 elbow adapters (B) in the P and EF ports of the hydraulic block. (Figure 3.1)

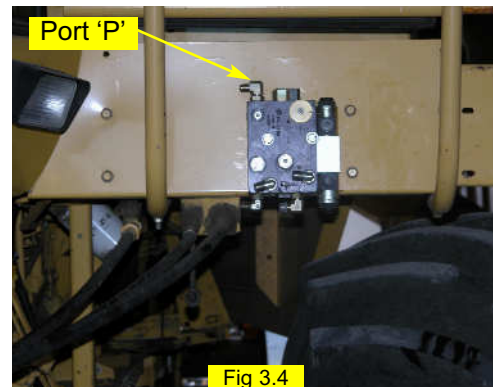


## 2. Mount Hydraulic Control Block:

Install the hydraulic block mounting bracket (D) to the existing bolts on the front side of the ladder platform as indicated. Use the existing hardware in addition to the washers in group (F) to secure the bracket to the machine. (Figure 3.2 and 3.3)

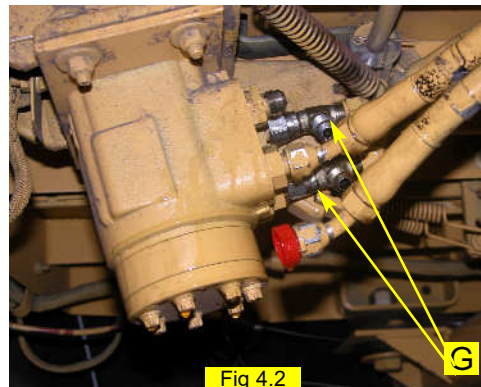
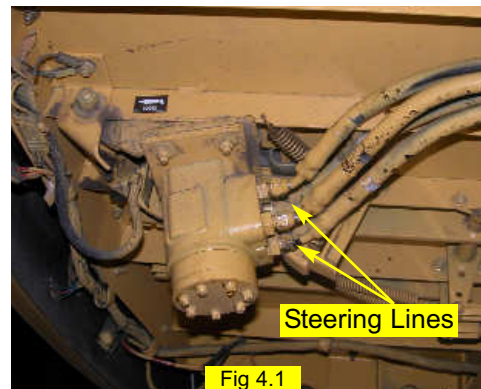


Install the hydraulic control block, as prepared in step 1, to the mounting bracket using the mounting hardware in group (E). Be sure the hydraulic block is oriented with the P port pointed up, and tighten the mounting bolts securely. (Figure 3.4)



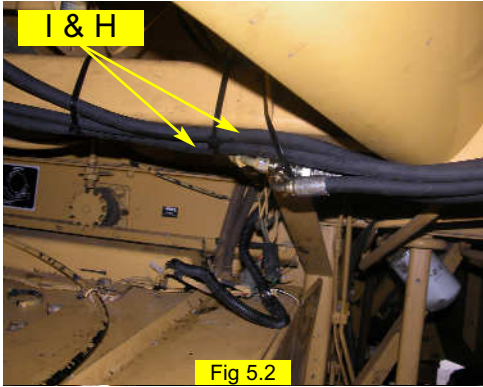
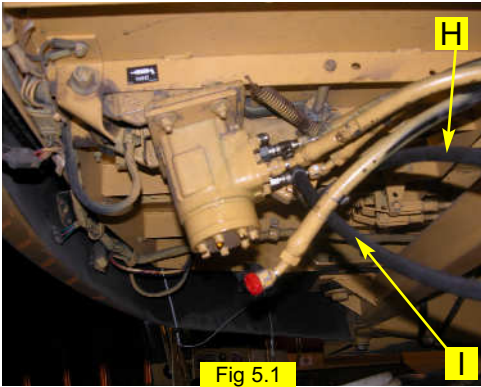
### 3. Install Steering Output Fittings:

Locate the combine steering lines on the right side of the steering orbital, under the cab. (Figure 4.1) Install the provided run-tees (**G**) in the steering lines as shown. (Figure 4.2) Use plastic caps to prevent excess leakage from the open run-tee ports.



**4. Install Steering Output Hoses:**

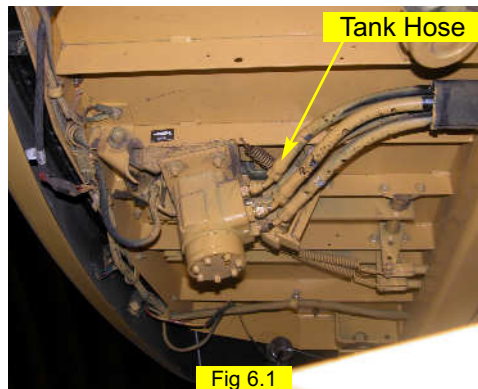
Install the provided steering output hoses (**I** and **H**) between the run-tees (**G**) installed in step 3 and the **A** and **B** ports of the hydraulic control block. (Figure 5.1 and 5.2) The hose with two straight ends is connected to the top run-tee and the hose with one elbow end is connected to the bottom run-tee. Use the heavy tie-straps provided to secure the hoses away from moving parts.



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

The hydraulic control block will be connected in series with the return line of the combine steering orbital. Pressure will be supplied to the hydraulic control block from the top left port on the steering orbital. (Figure 6.1 and 6.2)

Excess flow and tank flow from the hydraulic control block will be returned to the rubber tank hose originally connected at the orbital. (Figure 6.2)

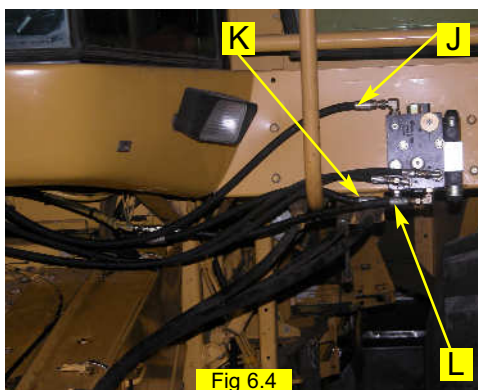
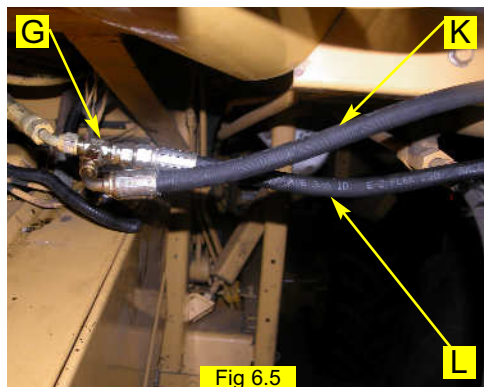
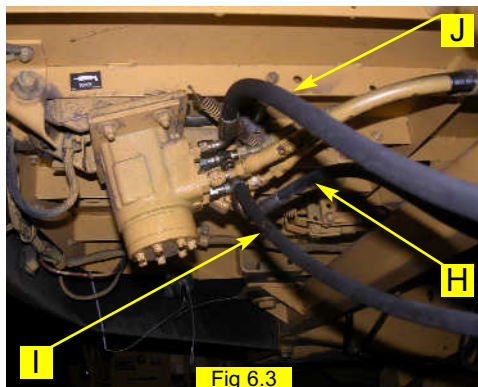
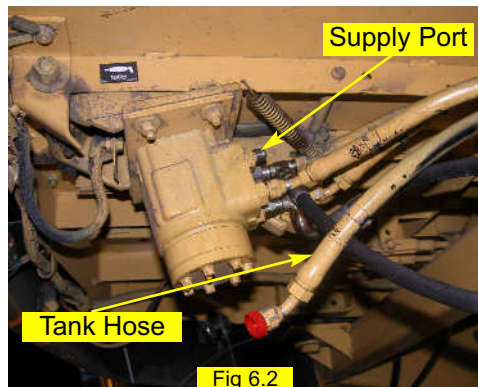


### 6. Install Pressure, Tank, and Excess Flow Hoses:

Disconnect the tank line from the combine steering orbital. (Figure 6.2) Connect the provided pressure hose (J) between the supply port on the orbital and the P port on the hydraulic control block (Figure 6.3 and 6.4) The hose end with the 90-degree elbow will be connected at the orbital and the straight end will be connected at the hydraulic control block.

Install the provided run-tee (G) to the end of the combine tank hose. (Figure 6.2) Connect the provided excess-flow hose (L) between the end of the run-tee (G) and the EF port of the hydraulic control block. Connect the provided tank hose (K) between the branch of the run-tee (G) and the T port on the hydraulic control block as shown. (Figure 6.4 and 6.5)

Route hoses as shown and secure with the provided tie straps. (Figure 6.4) Tighten all connections securely.



**7. Install the Valve Control Cable:**

Install the valve control cable (**M**) at the hydraulic control block by attaching the DIN connectors to the coils. (Figure 7.1) Route the cable under the cab and through the access hole on the back of the cab or through the side entry door. (Figure 7.2 and 7.3) Secure the cable using the provided tie straps as necessary.

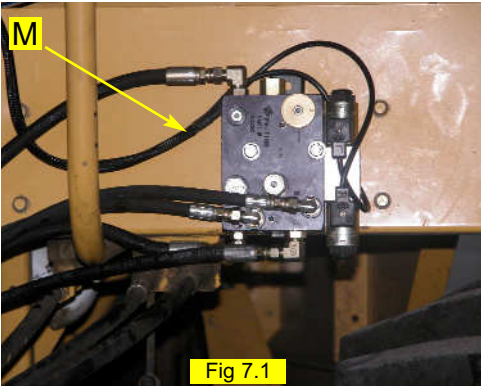


Fig 7.1

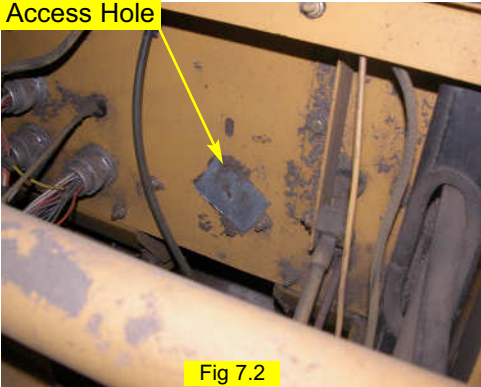


Fig 7.2

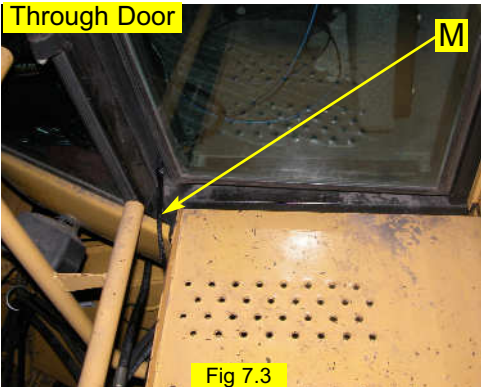


Fig 7.3

### 8. 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.

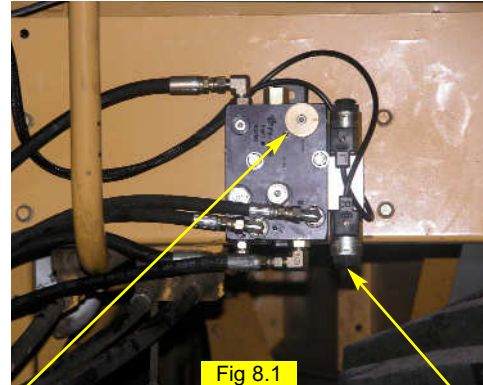
On the hydraulic control block, adjust the oil flow control knob to a starting position of **1 1/2 turns** from completely closed. To adjust the knob, turn clockwise to reduce flow, counter-clockwise to increase flow. The knurled locking nut should be tightened against the cartridge face to maintain desired setting. (Figure 8.1)

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 steering 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 **13 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.



Flow Control

Manual Override

***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.