

# Automated Steering Hydraulic Installation Kit

P/N: ED-CNHTMXM

Fits New Holland & Case models:

<b>120</b>	<b>130</b>
<b>140</b>	<b>155</b>
<b>175</b>	<b>190</b>



## 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 New Holland TM and Case IH MXM Tractor models listed above. Please read this manual thoroughly before beginning installation.

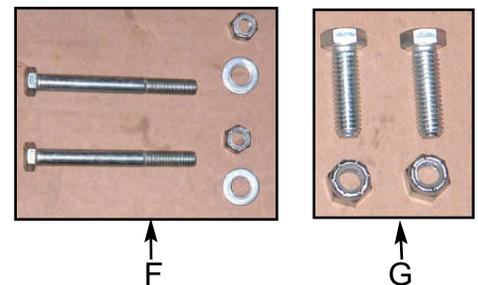
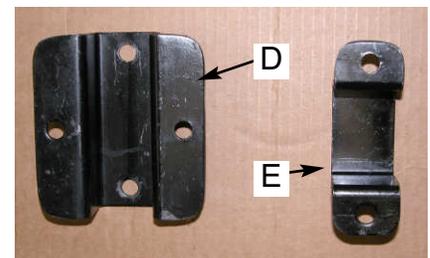
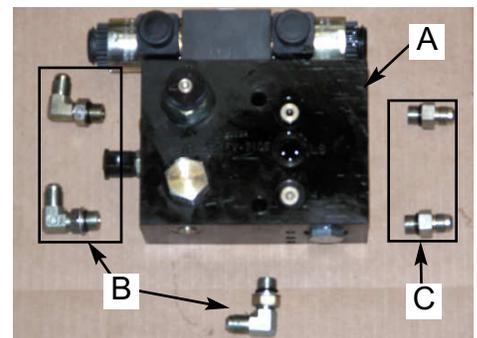
## Tractor Preparation

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

## Kit Contents

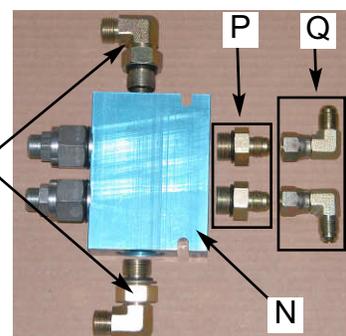
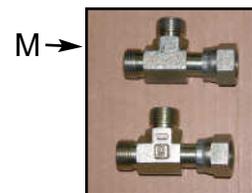
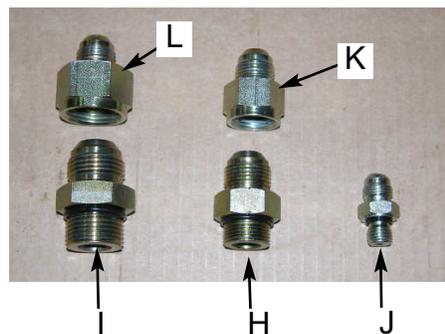
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0003	1	Assy, Hyd. Valve Block - LS
<b>Bag #1 of 4 includes B &amp; C</b>			
B	760-2058	3	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
C	760-2056	2	Adapter, Hyd. - #6maleJIC x #6maleORB
D	640-0022	1	Hyd. Block Mnt, CNH MXM/TM
E	640-0023	1	Hyd. Block Mnt Hammer Strap, CNH MXM/TM
<b>Bag #2 of 4 includes F &amp; G</b>			
F	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
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
<b>Bag #3 of 4 includes H, I, J, K, L, &amp; M</b>			
H	760-2010	1	Adapter, Hyd. - #10maleJIC x M22maleORB ISO6149 Oring Seal
I	760-2022	1	Adapter, Hyd. - #12maleJIC x M27maleORB ISO6149 Oring Seal
J	760-2062	1	Adapter, Hyd. - #6maleJIC x M12maleORB ISO 6149 O'ring Seal
K	760-2002	1	Adapter, Hyd. - #10femJIC x #8maleJIC
L	760-2012	1	Adapter, Hyd. - #12femJIC x #8maleJIC
M	760-2046	2	Adapter, Hyd. Run Tee - #6 ORFF
N	760-0001	1	Assy, Hyd. Counter Balance - Reactive Steering
<b>Bag #4 of 4 includes O, P, &amp; Q</b>			
O	760-2050	2	Adapter, Hyd 90EL - #6maleORFF x #8maleORB
P	760-2060	2	Adapter, Hyd. - #6maleJIC x #8maleORB
Q	760-2055	2	Adapter, Hyd. - 90EL - #6maleJIC x #6femJICswivel
R	760-1041	2	Hose, Hyd. - 1/4" x 36", #6femJICswiv x #6femORFFswiv90EL
S	760-1071	2	Hose, Hyd. - 3/8"x70", #6femJICswiv x #8femJICswiv 90EL
T	760-1072	1	Hose, Hyd. - 1/4"x74" - #6femJICswiv x #6femJICswiv 90EL
U	760-1073	2	Hose, Hyd. - 3/8"x8", #6femJICswiv x #6femORFFswiv
V	051-0144	1	Cable, 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.**

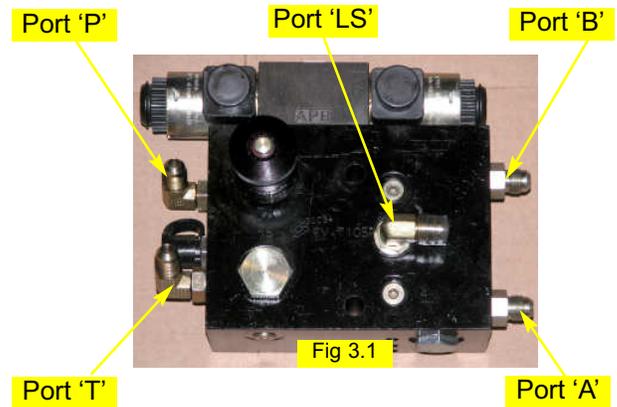
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake 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:

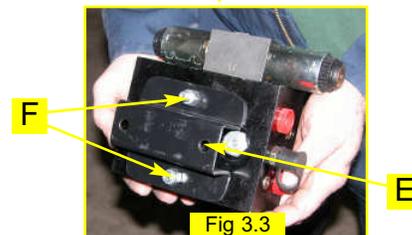
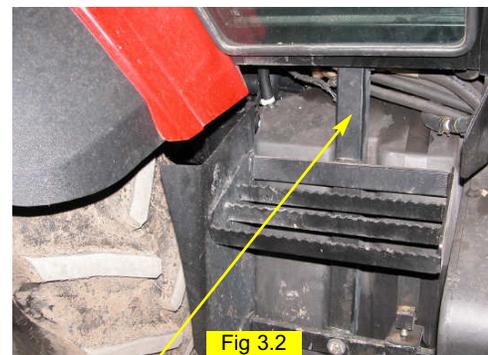
Make sure the hydraulic control block is clean and dust free. Install elbow adapters (**B**) into the **P**, **T**, and **LS** ports of the hydraulic block and orient as shown. Install the straight adapters (**C**) into the **A** and **B** ports of the hydraulic control block. (Figure 3.1)

*Note:* To install the elbow fittings into the **P** and **T** ports, the pressure test port fitting must first be removed. Once the elbows are installed, reinstall the pressure test port fitting.



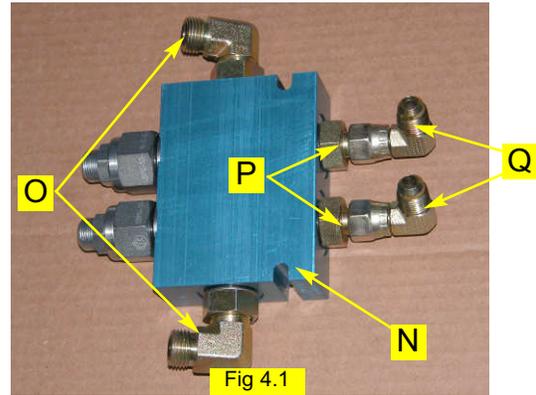
## 2. Mount Hydraulic Control Block:

Attach the prepared hydraulic control block to the mounting bracket (**D**) using the provided hardware (**F**). (Figure 3.3) Install the hydraulic block/mounting bracket assembly onto the right-side ladder using the provided hardware (**G**) and hammer strap (**E**). (Figure 3.2) The hydraulic block must be mounted above the top step of the ladder and oriented with the flow control knob in the upward position as shown. (Figure 3.4)



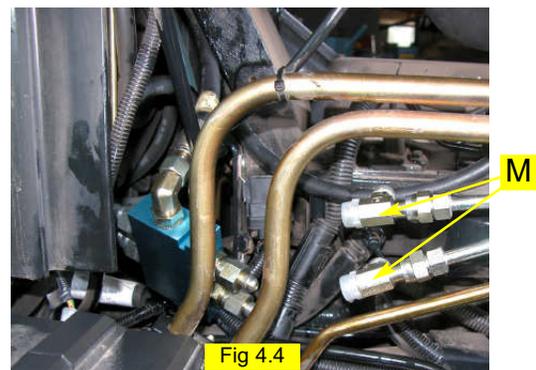
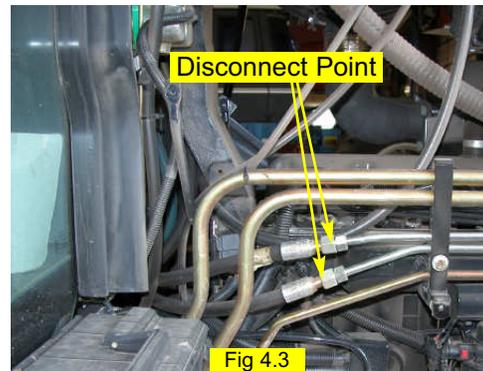
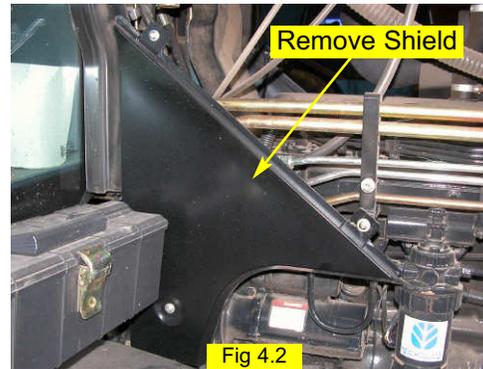
### 3. Prepare Counter-Balance-Valve Block:

Install elbow adapters (**O**) into the **V1** and **V2** ports of the counter-balance-valve block (**N**) and orient as shown. Install straight adapters (**P**) into the **C1** and **C2** ports of the counter-balance-valve block, and attach elbow adapters (**Q**). (Figure 4.1)



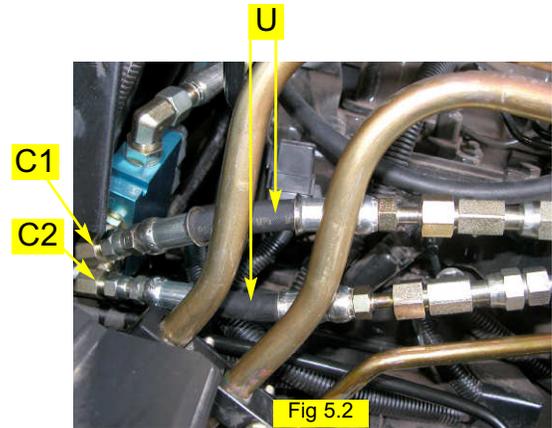
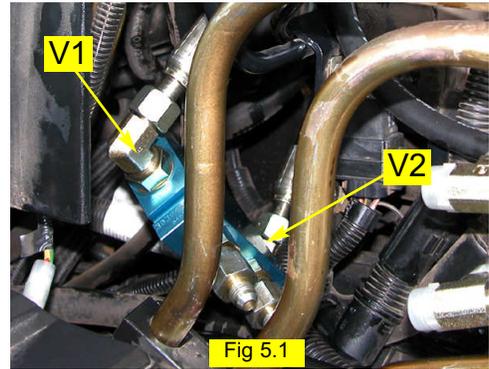
### 4. Install Steering Output Fittings:

Raise the hood on the tractor and remove the side shield on the right side of the tractor. (Figure 4.2) Locate the two rubber steering lines on the right side of the tractor and disconnect them from the steel lines. (Figure 4.3) Install the provided run-tees (**M**) onto the steel portions of the steering lines. (Figure 4.4) Use plastic caps to prevent excess hydraulic fluid leakage.



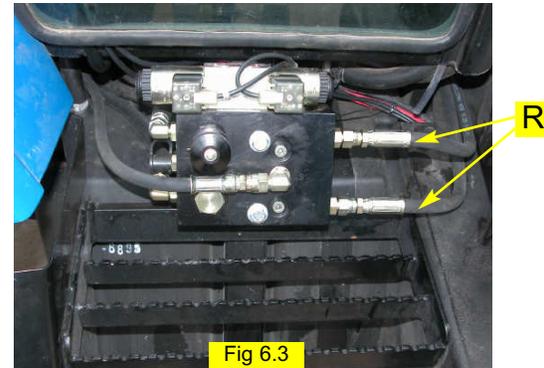
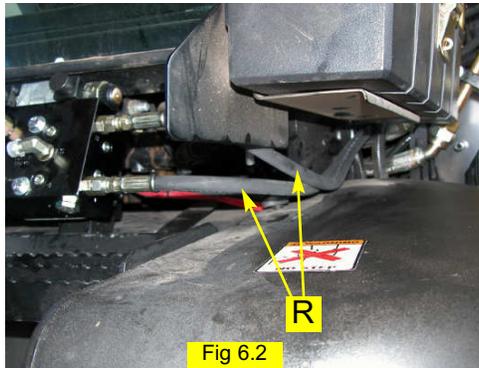
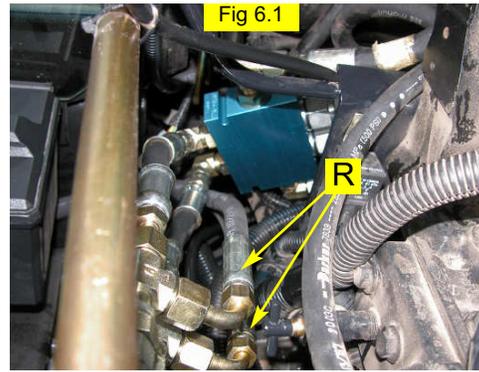
#### 4. Continued...

Connect the rubber portions of the two steering lines to the **V1** and **V2** ports of the counter-balance-valve block. (Figure 5.1) It may be necessary to create a loop in the steering lines prior to attaching to the block to allow for clearance. Use the provided hoses (**U**) to connect the **C1** and **C2** ports of the counter-balance-valve block to the ends of the corresponding run-tees. (Figure 5.2) Be sure the steering lines are ultimately connected in their original orientation to allow the tractor to steer in the appropriate direction.



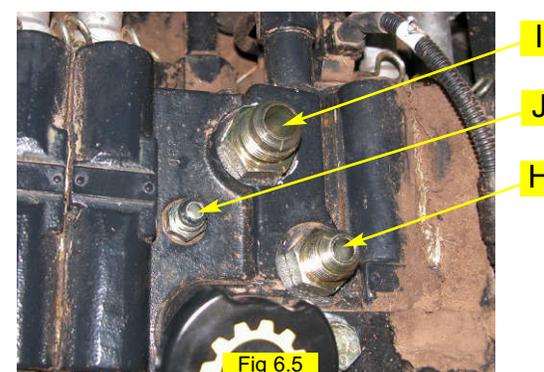
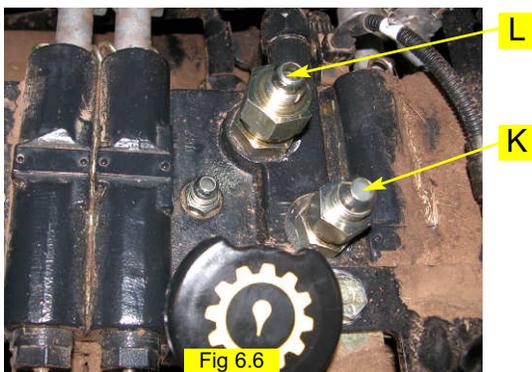
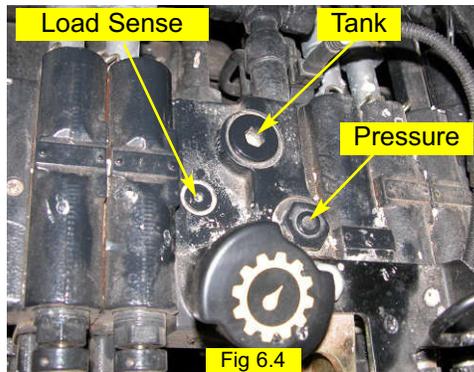
### 5. Install Steering Output Hoses:

Install steering output hoses (**R**) onto the branches of the run-tees and route back and across to the hydraulic control block. The ends of the steering output hoses (**R**) with the larger o'ring face elbows attach at the run-tees. (Figure 6.1) The ends with the smaller JIC straight connectors attach to the **A** and **B** ports of the hydraulic control block. (Figure 6.3) Be sure hoses are secure and routed for problem free operation as shown. (Figure 6.2)



### 6. Install Tractor Pressure, Tank, and Load Sense Fittings:

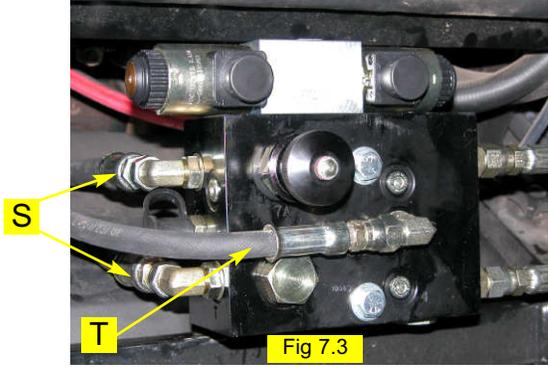
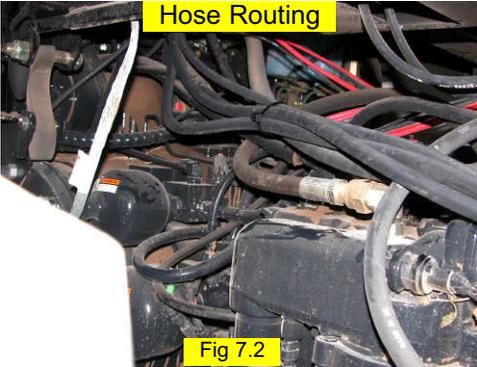
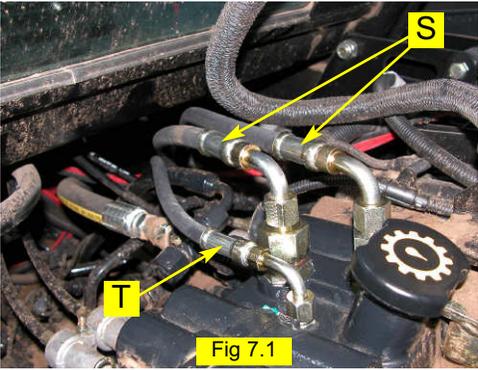
Locate the pressure, tank, and load sense ports on top of the hydraulic valve stack at the rear of the tractor. (Figure 6.4) Remove the plugs and install the provided adapters (**H, I, and J**). (Figure 6.5) Install reducer fittings (**K and L**) onto the pressure and tank adapter fittings. (Figure 6.6)



**7. Install Pressure, Tank, and Load Sense Hoses:**

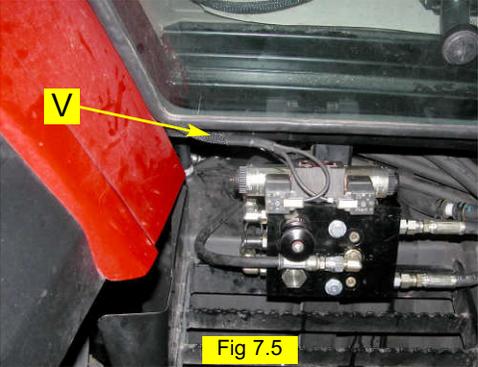
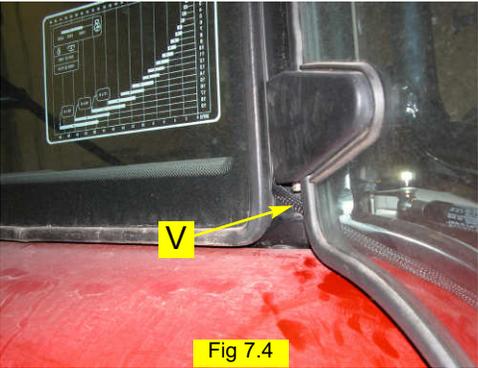
Install pressure (S), tank (S), and load sense (T) hoses between the tractor and the corresponding P, T, and LS ports of the hydraulic control block. (Figure 7.1 and 7.3)

All three hoses can be routed forward from the hydraulic valve stack under the cab and connected to the hydraulic block. (Figure 7.2 and 7.3) Be sure all hoses are routed for problem free operation. Use heavy tie straps (included) as needed.



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

Route the valve control cable (V) through the right side window and down along the door seal to hydraulic control block. (Figure 7.4) Attach the valve cable at the hydraulic block as shown. (Figure 7.5)



## 9. Verify Operation and Set Steering Control Rate:

Cleanup the installation area around the tractor and make certain that it is safe to operate. Start the tractor 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 **3 turns** from completely closed. To adjust the knob, lift and turn clockwise to reduce flow, and counter-clockwise to increase flow.

The coils on the control block have manual push button overrides. Push either manual override to move the tractor steering linkage all the way to one extreme. Count the number of seconds for the tractor steering linkage to move all the way in the opposite direction while pressing the manual override of the other coil. (Figure 8.1)

Adjust the hydraulic oil flow control knob to achieve an end to end steering cycle time of approximately **18 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.

Manual Override

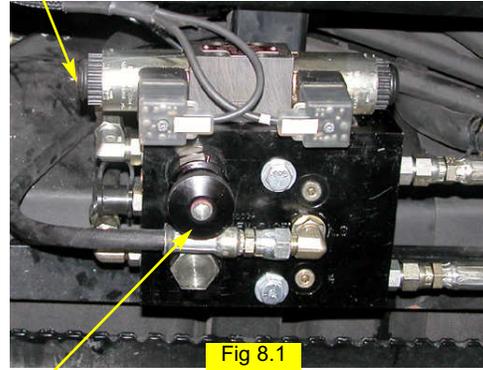


Fig 8.1

Flow Control

***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.