

Automated Steering Hydraulic Installation Kit

P/N: ED-JD9000

Fits John Deere Tractor Models:

9100	9120	
9200	9220	9230
9300	9320	9330
9400	9420	9430
	9520	9530
	9620	9630



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 John Deere tractors listed above. Please read this manual thoroughly before beginning the installation.

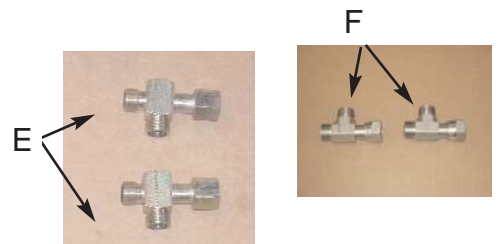
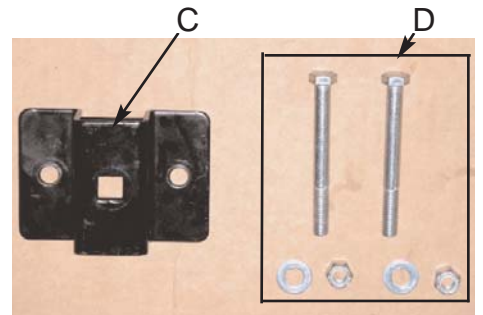
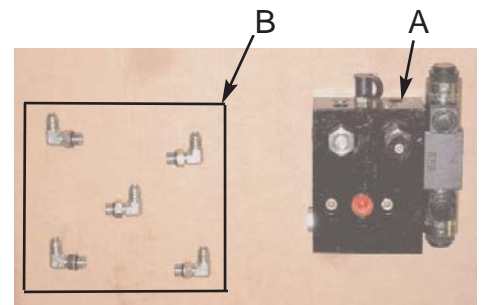
Machine Preparation

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

Kit Contents

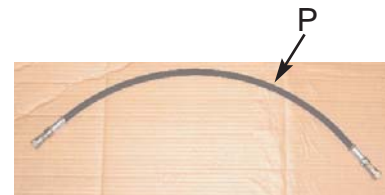
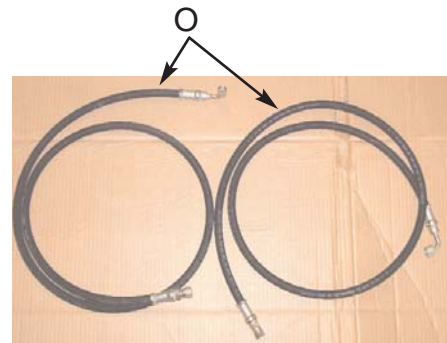
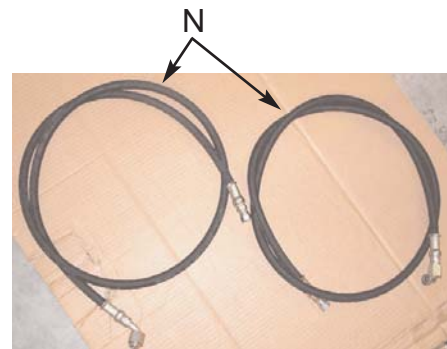
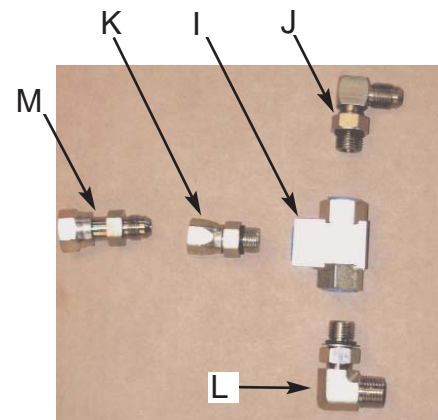
Unpack the installation kit and identify the required parts as shown.

REF	P/N	QTY	DESCRIPTION
A	760-0004	1	Assy, Hyd. Valve Block - LS High Flow
Bag #1 of 4 includes B			
B	760-2058	5	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
<hr/>			
C	640-0003	1	Hyd. Block Mnt - JD9000
Bag #2 of 4 includes D			
D	675-2005	2	Bolt, 3/8NC x 3-1/4 Gr5 ZP
	678-1054	2	Washer, Narrow Flat - 3/48"OD x 13/32"ID x 1/16"thk ZP
	676-1035	2	Nut, NyLock - 3/8NC ZP
Bag #3 of 4 includes E, F, G, & H			
E	760-2069	2	Adapter, Hyd Run Tee - #8 ORFF
F	760-2004	2	Adapter, Hyd Run Tee-#10ORF
G	760-2001	2	Adapter, Hyd #10fORF x #8mORF
H	760-2063	2	Adapter, Hyd. - #6maleJIC x M14maleORB



Kit Contents (cont.)

REF	P/N	QTY	DESCRIPTION
Bag #4 of 4 includes I, J, K, L, & M			
I	760-0002	1	Assy, Hyd. Load Shuttle - #6maleORB
J	760-2058	1	Adapter, Hyd. 90 Elbow - #6maleJIC x #6maleORB
K	760-2041	1	Adapter, Hyd. #6maleORB x #6femJICswivel
L	760-2049	1	Adapter, Hyd. 90 Elbow - #6maleORFF x #6maleORB
M	760-2053	1	Adapter, Hyd. - #6maleJIC x #6femORFFswivel
N	760-1007	2	Hose, Hyd. - 3/8" x 82", #6femJICswiv x #8femORFFswiv 90EL
O	760-1008	2	Hose, Hyd. - 3/8" x 80", #6femJICswiv x #6femJICswiv 90EL
P	760-1026	1	Hose, Hyd. - 1/4" x 43", #6femJICswivel Both Ends
Q	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.

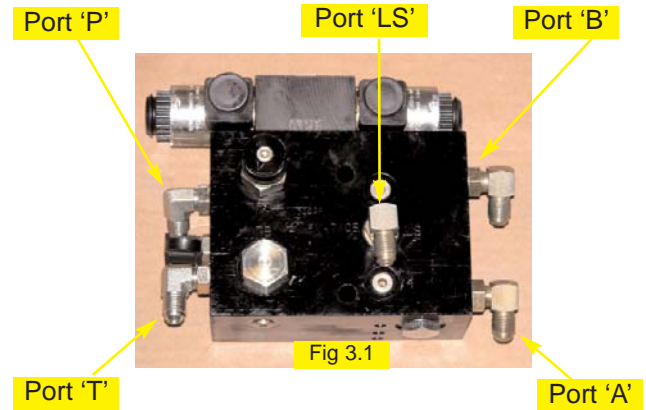
It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing. Use a spray cleaner such as 'Brake Clean' to prevent hydraulic system contamination. Note that o-rings used on ORB and ORFF type fittings may be damaged by solvent cleaners such as 'Brake 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 hydraulic control block is clean and dust free. Remove the plastic plugs and install elbow adapters (**B**) in the **P**, **T**, **LS**, **A**, and **B** ports and orient as shown. (Figure 3.1)

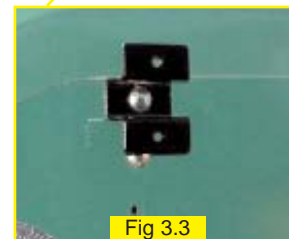
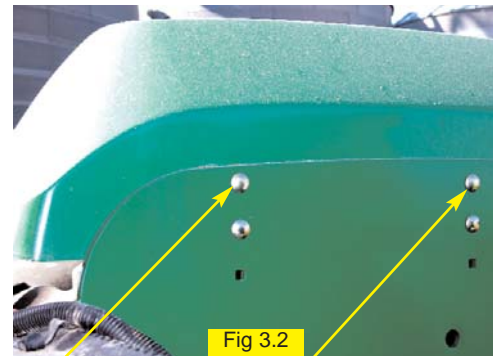
Note: To install the elbow fittings into the **P** and **T** ports, the pressure test port fitting must first be removed. Once the elbows are installed, reinstall the pressure test port fitting.



2. Install Mounting Bracket:

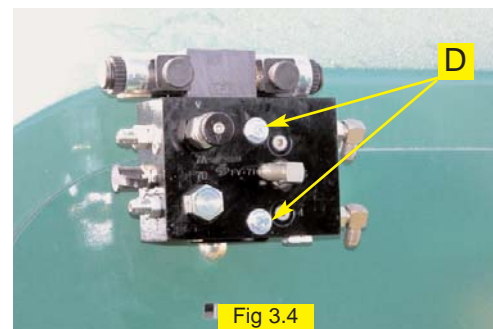
Locate carriage bolts in the right rear fender of the tractor. Remove the top front carriage bolt. (Figure 3.2) Install the mounting bracket (**C**) onto the fender with the carriage bolt. (Figure 3.3) Orient bracket as shown and re-tighten carriage bolt. If tractor is equipped with a weight carrier bracket, it may be necessary to install the hydraulic block mount bracket onto the second top carriage bolt.

Some models are equipped with weights on the rear fender of the tractor. If so locate the bolt holes under the carriage bolts and mount the bracket.



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**) as shown. (Figure 3.4) Tighten mounting bolts securely.



4. Install Steering Output Fittings:

00 and 20 Series Tractors:

Locate steering lines on the right side of the tractor on the center section above the right steering cylinder. (Figure 4.1) Install run-tees (E) at the junction of the steel and rubber portions of the steering lines as shown. (Figure 4.2)

Leave the run-tee fittings (E) 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.

30 Series Tractor:

Locate steering lines on the right side of the tractor on the center section above the right steering cylinder. (Figure 4.1) Install run-tees (F) and fitting (G) at the junction of the steel and rubber portions of the steering lines as shown. (Figure 4.3)

Leave the run-tee fittings (F) 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.

5. Install Steering Output Hoses:

00 and 20 Series Tractors:

Install steering output hoses (N) on the run-tee fittings (E) and route adjacent to other tractor plumbing to prevent entanglement with articulating portions of the tractor. Attach the free ends of the steering output hoses to the A and B ports of the hydraulic control block. (Figure 4.5)

Carefully check the hose routing for clearance of moving parts and secure with heavy tie straps (included). (Figure 4.4) Securely tighten all steering output hose fittings, both at the run-tees and at the hydraulic block.

30 Series Tractors:

Install steering output hoses (N) on the reducer fittings (G) and route adjacent to other tractor plumbing to prevent entanglement with articulating portions of the tractor. Attach the free ends of the steering output hoses to the A and B ports of the hydraulic control block. (Figure 4.5)

Carefully check the hose routing for clearance of moving parts and secure with heavy tie straps (included). (Figure 4.4) Securely tighten all steering output hose fittings, both at the run-tees and at the hydraulic block.

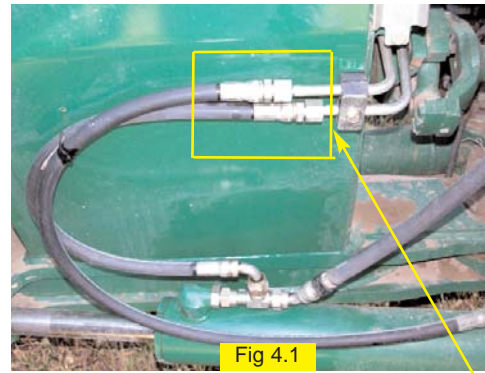


Fig 4.1

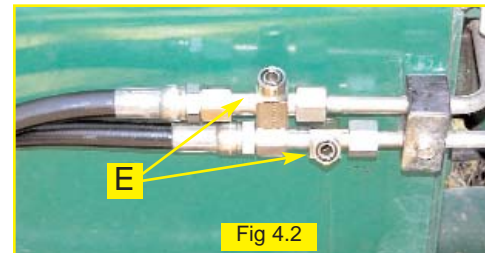


Fig 4.2

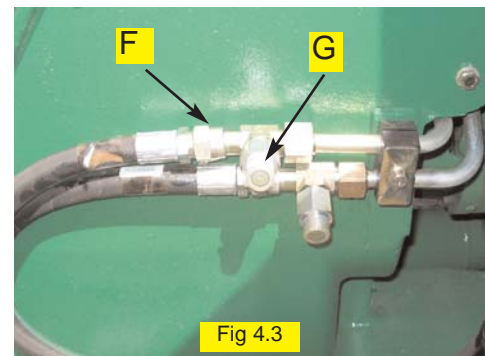


Fig 4.3

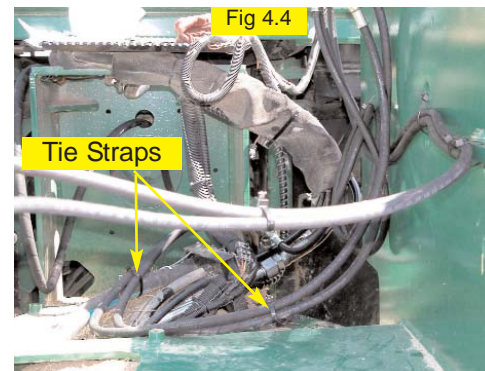


Fig 4.4

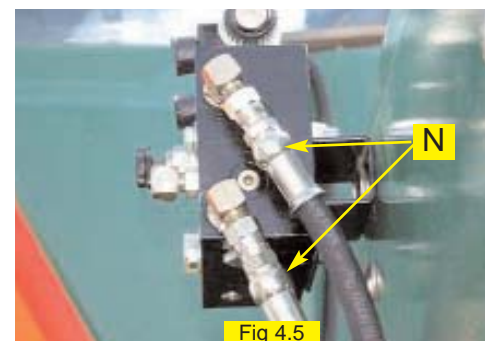


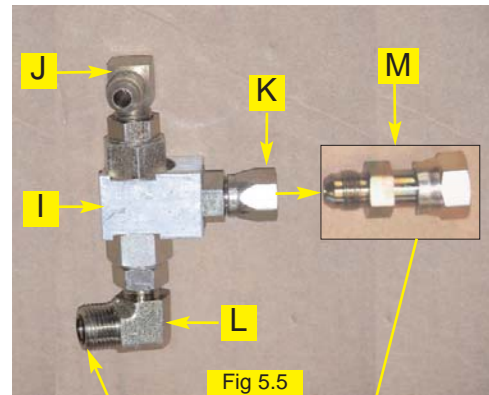
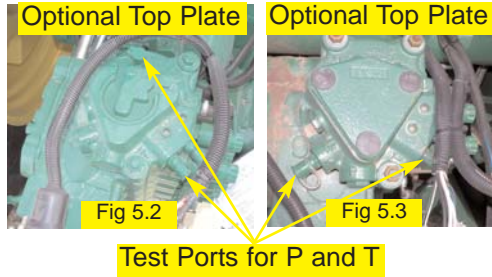
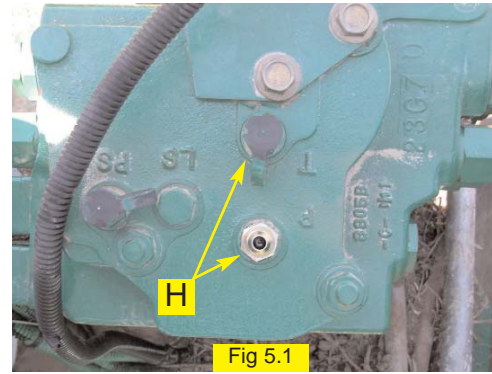
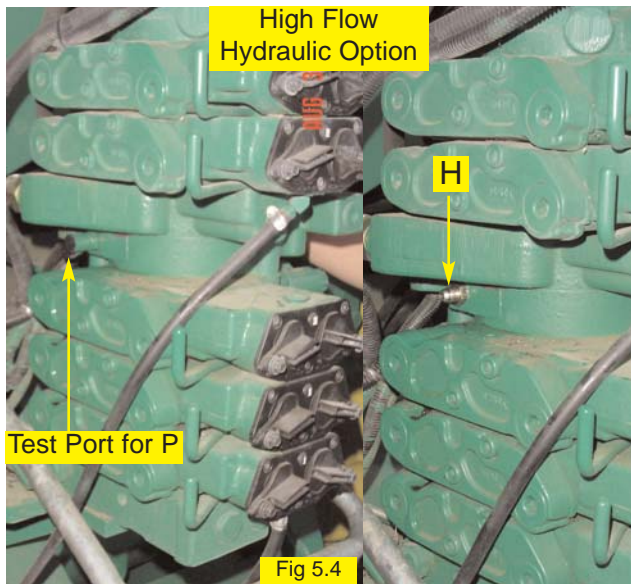
Fig 4.5

6. Install Tractor Pressure and Tank Fittings:

Remove test port fittings labeled **P** and **T** from the top plate of the tractor hydraulic remote valves and install adapter fittings (**H**) in both locations. (Figure 5.1)

Note: The picture (Figure 5.1) only shows one fitting installed in port **P**. The second fitting should also be installed in port **T**.

If your tractor is equipped with the high-flow hydraulic option (5-remote valve stack) the test port on the left side of the valve stack must be replaced with adapter fitting (**H**) to supply pressure to the automated steering system. (Figure 5.4) When equipped with the high-flow hydraulic system, the **P** port on top of the valve stack will not function for this application. The **T** port on top of the valve stack is still used and must be replaced with adapter fitting (**H**).

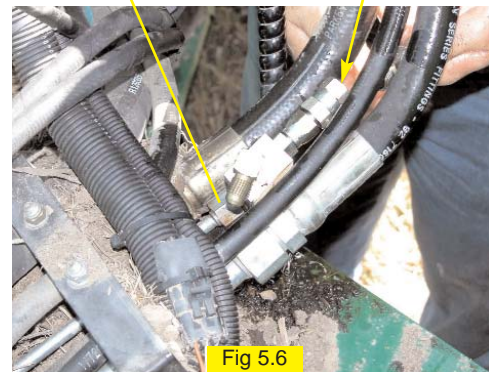


7. Install Tractor Load Sense Shuttle/Fittings:

Pre-assemble the load sense shuttle (**I**) with the included fittings (**J**), (**K**), and (**L**) as shown. (Figure 5.5)

Locate the tractor load sense line toward the front of the rear section as shown in the picture. Loosen the fitting at the junction of the steel line and the hydraulic hose. Insert the load sense shuttle assembly, together with adapter fitting (**M**), between the steel line and the mating hydraulic hose. (Figure 5.6)

Be careful not to allow grease and dirt to enter the fittings.

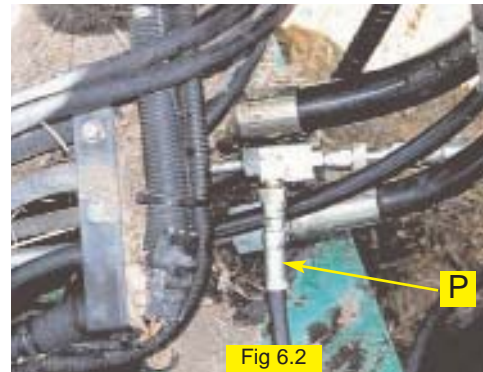
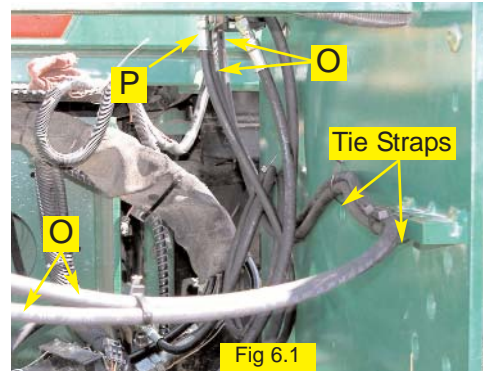


8. Install Pressure, Tank, and Load Sense Hoses:

Install the pressure and tank hoses (**O**) between the tractor **P** and **T** ports and corresponding **P** and **T** ports of the hydraulic control block. (Figure 6.1)

Install the load sense hose (**P**) between the **LS** port of the hydraulic control block and the open end of the load sense shuttle installed in step 7. (Figure 6.2)

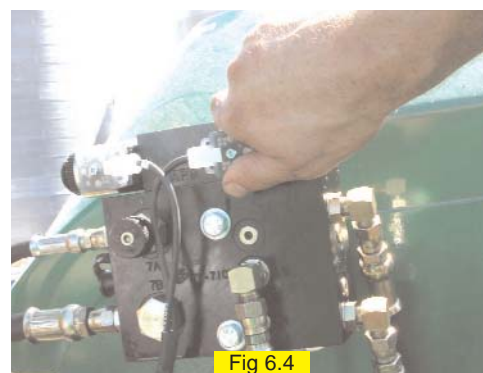
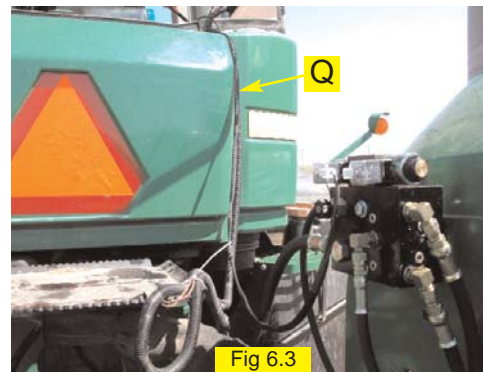
Make sure all hoses are routed properly and free from entanglement. Use heavy tie straps (included) as needed. Securely tighten all hydraulic hose fittings and adapters.



9. Install the Valve Control Cable:

Route the valve control cable (**Q**) through the cable grommet in the tractor window seal and run the DIN connectors down to the hydraulic control block and attach as shown. (Figure 6.3 and 6.4)

Remove enough slack out of the cable to prevent entanglement with tractor moving parts such as the articulating joint. Use tie straps as needed.



10. Verify Operation and Set Steering Control Rate:

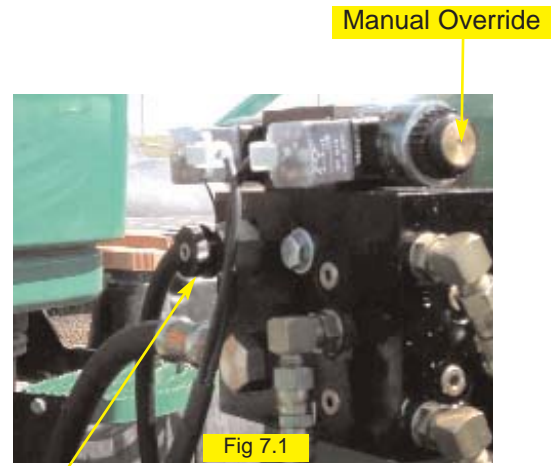
Cleanup the installation area around the tractor and make certain that it is safe to operate. Start the tractor and check hydraulic connections for any leaks. Rotate the steering wheel from one extreme to the other, and back.

Adjust the hydraulic oil flow control knob to a starting position of **3 turns** from completely closed. To adjust the knob, 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 7.1)

The coils on the control block have manual push button overrides. Push either manual override to move the tractor articulation joint all the way to one extreme. Count the number of seconds for the tractor articulation joint 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 **20** seconds.

11. 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

***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.

