

# Automated Steering Hydraulic Installation Kit

P/N: ED-STEIGER

## Fits Steiger Models:

<b>Bearcat III</b> PT-225	<b>Bearcat IV</b> ST-220	ST-225	CM-225	KM-225
<b>Cougar III</b> PT-250 ST-250 CM-250 KM-250	<b>Cougar IV</b> PT-270 ST-251 CM-280 KM-280	PTA-251 ST-270	PTA-270 ST-280	PTA-280
<b>Panther III</b> PT-350 ST-310 CM-325 KM-325	<b>Panther IV</b> PTA-296 ST-320 CM-360 KM-360	PTA-297 ST-325	PTA-310 ST-350	PTA-325

## 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 the automated steering hydraulics on the Steiger tractor models listed above. Please read this manual thoroughly before beginning the installation.



## Machine Preparation

Before attempting to install the automated steering kit, 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	PHOTOGRAPHS
A	760-0007	1	Assy, Hyd Valve Block - OC/HF Low Range	
<b>Bag #1 of 3 includes B &amp; C</b>				
B	760-2019	2	Adapter, Hyd. 90 Elbow - #12mJIC x #12mORB	

## Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
C	760-2058	3	Adapter, Hyd. 90 Elbow - #6mJIC x #6mORB	
D	640-0011	1	Hyd. Block Mnt	
<b>Bag #2 of 3 includes E &amp; F</b>				
E	675-2006	2	Bolt - 3/8NC x 3-3/4" Gr5, ZP	
	678-1054	2	Washer, Narrow Flat - 3/4" OD x 13/32" IND x 1/16" thk ZP	
	676-1035	2	Nut, NyLock - 3/8NC ZP	
F	675-2008	2	Bolt - 5/16NC x 1" Gr5, ZP	
	678-1055	2	Washer, Narrow Flat - 5/16" ZP	
	676-1036	2	Nut, Lock - 5/16NC ZP	
<b>Bag #3 of 3 includes G, H &amp; I</b>				
G	760-2077	2	Adapter, Hyd Run Tee- #8 JIC	
H	760-2016	1	Adapter, Hyd. Run Tee - #12 JIC	
I	760-2012	1	Adapter, Hyd. - #12fJIC x #8mJIC	
J	760-1257	1	Hose, Hyd-3/4" x 115", #12fJIC x #12fJIC	
K	760-1258	1	Hose, Hyd- 3/4" x 90", #12fJIC x #12fJIC90	

## Kit Contents (continued)

REF	P/N	QTY	DESCRIPTION	PHOTOGRAPHS
L	760-1259	1	Hose, Hyd-3/8" x 95", #6fJIC x #8fJIC90	
M	760-1260	1	Hose, Hyd-3/8" x 106", #6fJIC x #8fJIC	
N	760-1261	1	Hose, Hyd-3/8" x 90", #6fJIC x #8fJIC	
O	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

# WARNINGS

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## ATTENTION:

**READ** this entire installation guide **before** beginning installation. Failure to comply with warnings in this guide can result in personal injury or damage to equipment, and will void all warranties.



## 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.



## 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.

## 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 Automated Steering Block:

- a. Make sure the automated steering block is clean and dust free.
- b. Install the small elbow adapter fittings (C) into the T, A and B ports of the automated steering block. (Figure 1.)
- c. Install the larger elbow adapter fittings (B) into the P and EF ports. (Figure 1.)

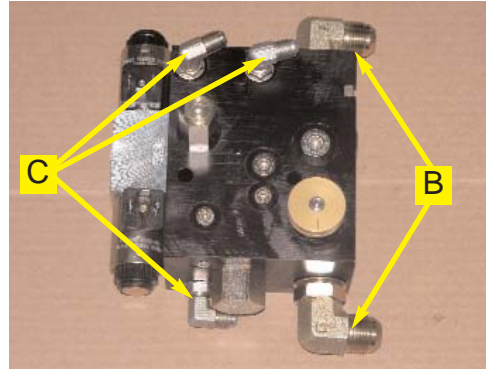


Figure 1. Prepared automated steering block.

## 2. Mount Automated Steering Block:

- a. The automated steering block will mount on the left front fender. (Figure 2a.)
- b. Use the bracket (D) as a template to drill two  $5/16$ " holes in the fender. The first hole is 8" to the left and 1.75" forward of the left front corner of the cab. Attach the bracket (D) with the provided hardware (F). (Figure 2b.)
- c. Use the provided mounting hardware in group (E) to attach the automated steering block, as prepared in step 1, to the mounting bracket (D) as shown. (Figure 2c.)



Figure 2a. Mounting location.

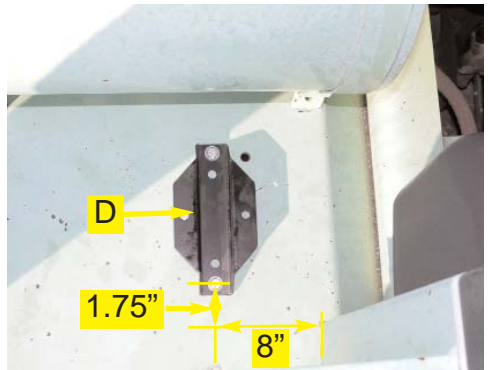


Figure 2b. Installed mounting bracket.



Figure 2c. Mounted automated steering block.



**NOTE:**

The installation procedure for the ST is different from the PT models. You must follow the correct steps in this manual to ensure proper installation on your specific model. Use the procedure for ST models when installing on CM, CS, KM and KS models.

### 3. Install Pressure, Tank and Excess Flow Fittings:

#### ST Models (Proceed to step 3d. for PT models)

- The automated steering block will receive pressure from the hydraulic flow divider behind the cab. Remove the two shields behind the cab as shown. (Figure 3a.) Excess flow from the automated steering block will return to the hydraulic valve stack. Tank flow will be relieved to the tank line exiting the valve stack. (Figure 3b.)
- Remove the rubber line between the flow divider and the valve stack. (Figure 3b., 3c. and 3d.)
- Install the provided run tee (**H**) between the steel and rubber return line from the valve stack. (Figure 3b. and 3e.)

**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. and 3e.)



Figure 3a. Shield location (ST models).

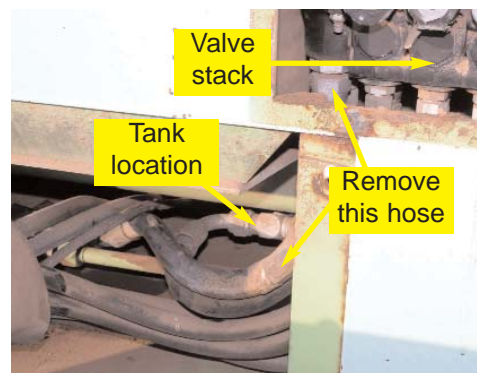


Figure 3b. Pressure, excess flow and tank location (ST models).

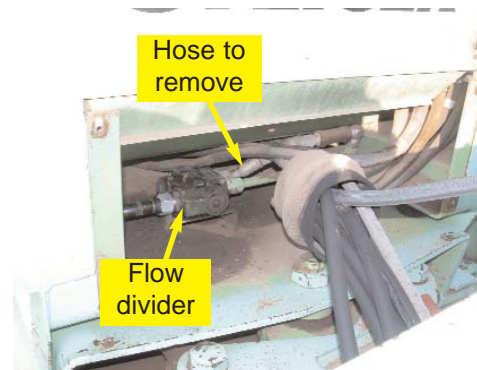


Figure 3c. Pressure, excess flow and tank location (ST models).

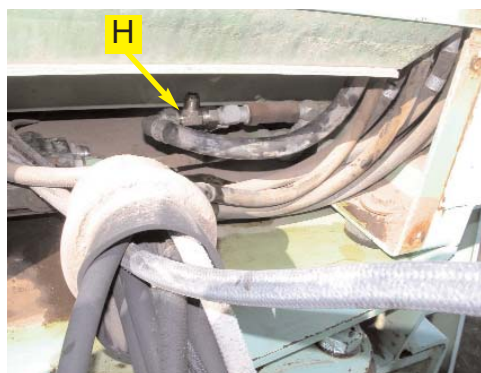


Figure 3e. Installed tank fitting (ST models).

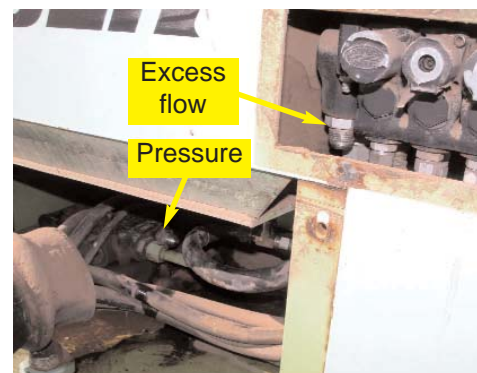


Figure 3d. Hose removed (ST models).

### 3. Install Pressure, Tank and Excess Flow Fittings (continued):

#### PT Models

- d. The automated steering block will receive pressure from the hydraulic flow divider on the right frame at the articulation joint. Excess flow from the automated steering block will return to the hydraulic valve stack. Tank flow will be relieved to the tank line exiting the valve stack. (Figure 3d.)
- e. Remove the rubber line between the flow divider and the hydraulic valve stack. (Figure 3d. and 3e.)
- f. Install the provided run tee (**H**) between the valve stack and the rubber return line. (Figure 3e.)

**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.

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

#### ST Models (Proceed to Step 4c. for PT models)

- a. Connect the pressure hose (**K**) from the **P** port on the automated steering block to the open fitting on the hydraulic flow divider. Connect the excess flow hose (**J**) from the **EF** port on the automated steering block to the open fitting on the valve stack. (Figure 4a. and 4b.)
- b. Install the hydraulic adapter fitting (**I**) to the tank run tee (**H**). Connect the tank hose (**K**) from the **T** port on the automated steering block to the adapter fitting (**I**). (Figure 4a. and 4b.)

**NOTE:** All hoses should be routed with other tractor plumbing free from entanglement and secured with heavy tie straps (provided).

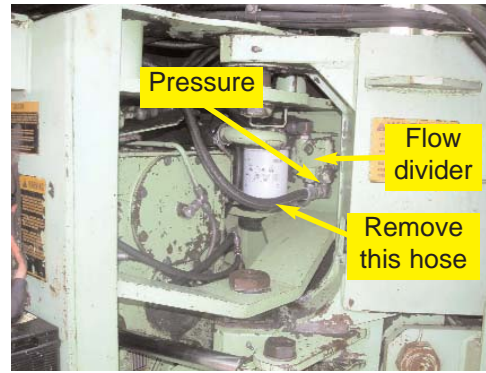


Figure 3d. Pressure locations (PT models).

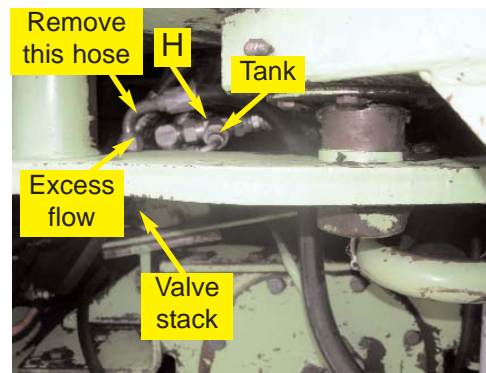


Figure 3e. Excess flow and tank locations (PT models).

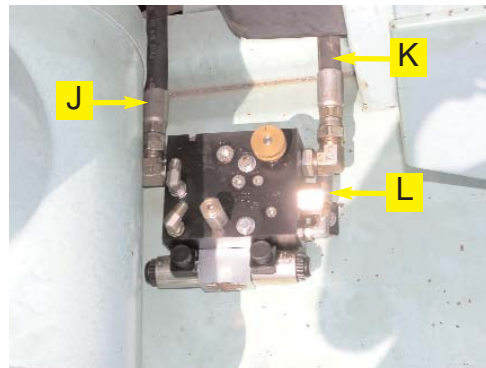


Figure 4a. Installed pressure, excess flow and tank hoses at automated steering block (ST models).

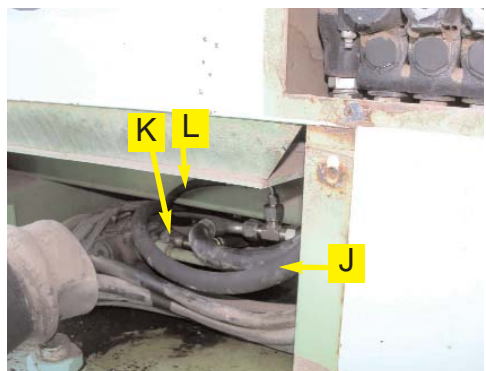


Figure 4b. Installed pressure, excess flow and tank hoses (ST models).

4. **Install Pressure, Excess Flow and Tank Hoses (continued):**

**PT Models**

- c. Connect the pressure hose (**J**) from the **P** port on the automated steering block to the open fitting on the hydraulic flow divider. Connect the excess flow hose (**K**) from the **EF** port on the automated steering block to the open port on the valve stack. (Figure 4c., 4d. and 4e.)
- d. Install the adapter fitting (**I**) to the tank run tee (**H**). Connect the tank hose (**L**) from the **T** port on the automated steering block to the tank adapter fitting (**I**). (Figure 4c. and 4e.)

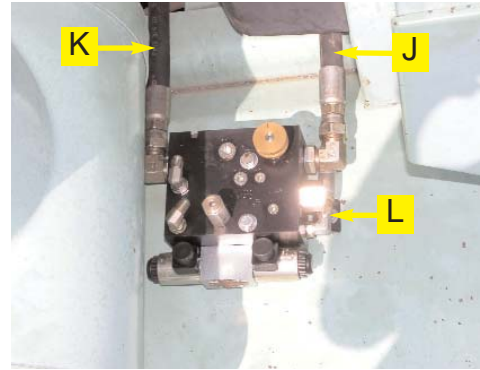


Figure 4c. Installed pressure, excess flow and tank hoses at the automated steering block (PT models).

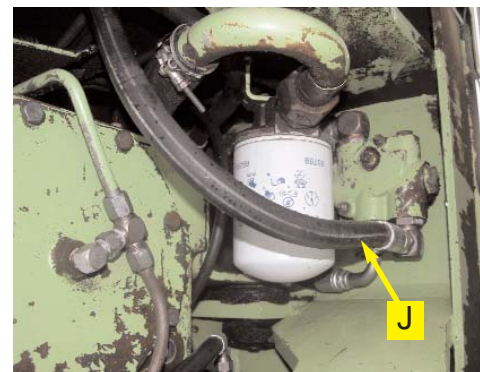


Figure 4d. Installed pressure hose (PT models).

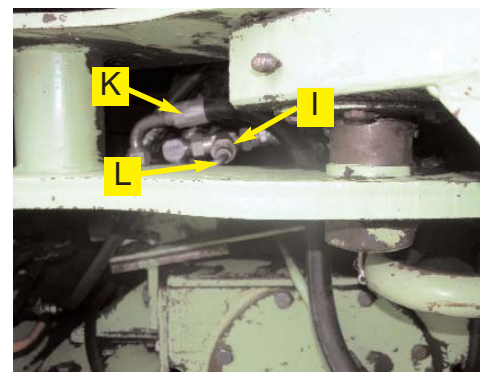


Figure 4e. Installed excess flow hose and tank hose (PT models).



**5. Install Steering Output Fittings:**

- a. Locate the steering cylinders in the middle of the tractor. (Figure 5a.)
- b. Install the run tees (G) to the steering lines as shown. (Figure 5b. and 5c.)

**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.

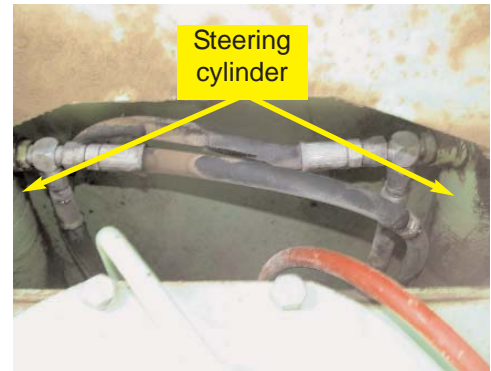


Figure 5a. Steering output location (ST models).

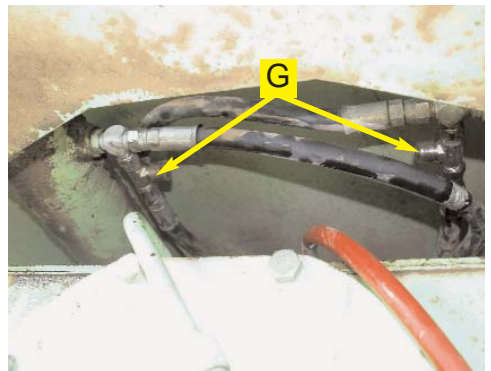


Figure 5b. Installed steering output fittings (ST models).

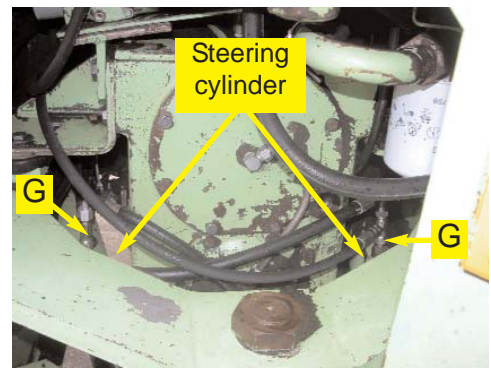


Figure 5c. Installed steering output fittings (PT models).

**6. Install Steering Output Hoses:**

- a. Connect the hydraulic steering hoses (**L** & **M**) from the **A** and **B** ports on the automated steering block to the branches on the steering cylinder run tees (**G**). (Figure 6a., 6b., 6c. and 6d.)
- b. Route the steering lines from the steering cylinders and under the cab to the automated steering block. (Figure 6b.)
- c. Install the longer hose (**M**) in the right steering cylinder on the PT models. (Figure 6c.)

**NOTE:** All hoses should be routed with other tractor plumbing free from entanglement and secured with heavy tie straps (provided).

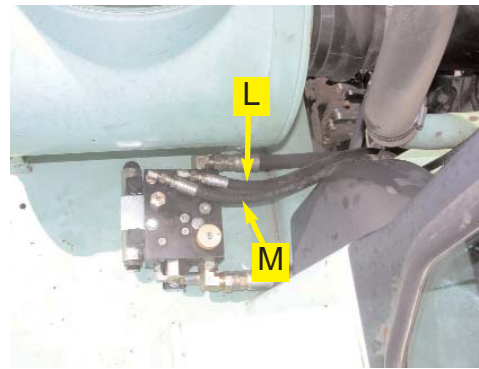


Figure 6a. Installed steering hoses at automated steering block.

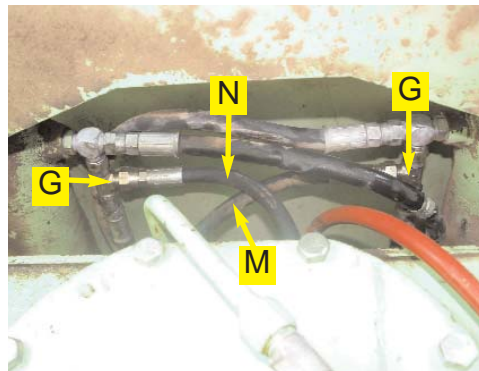


Figure 6b. Steering hoses at the steering cylinders (ST models).

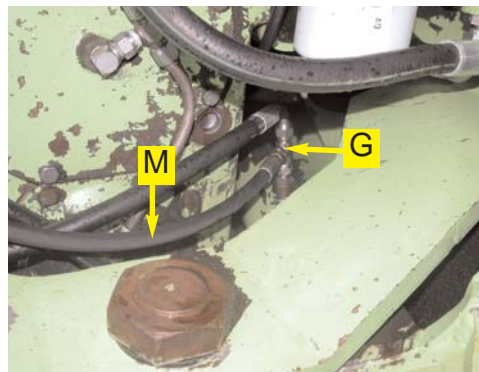


Figure 6c. Steering hose at right steering cylinder (PT models).

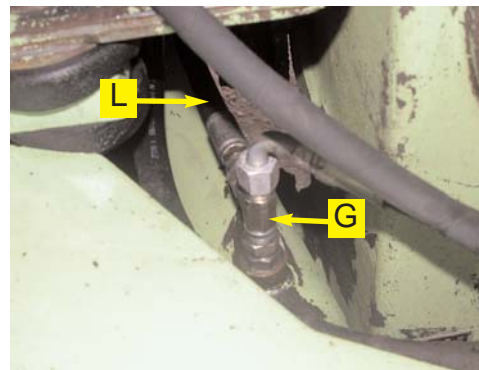


Figure 6d. Steering hose at left steering cylinder (PT models).

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

- a. Route the valve control cable (O) from the automated steering block under the cab and in through the right side door. (Figure 8a. and 8b.)

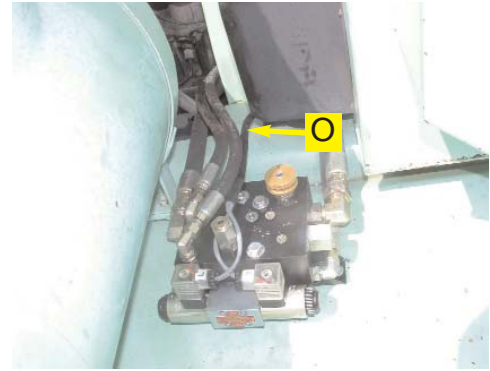


Figure 7a. Valve cable installed at automated steering block.



Figure 7b. Valve cable routed in cab.

**8. Verify Operation and Set Automated Steering Control Rate:**

- a. Clean up the installation area around the machine and make certain that it is safe to operate.
- b. Make sure all hydraulic hoses are tightened.
- c. Start the machine and check the automated steering connections for any leaks.



**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.

- d. Rotate the steering wheel from one extreme to the other and back.
- e. 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.
- f. 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.



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.

- g. Count the number of seconds for the steering wheels to move all the way in the opposite direction while pressing the manual override the other coil.
- h. Adjust the automated steering oil flow control to achieve an end-to-end steering cycle time of approximately **24** seconds. Use the knurled locking nut to secure the final flow control setting.

**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.

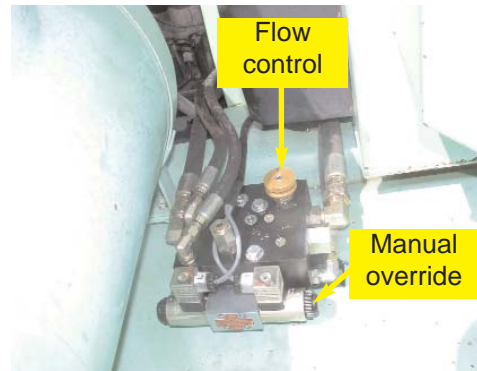


Figure 8. Automated steering flow control knob and manual override button.