

# FIELDPILOT<sup>®</sup>

## USER MANUAL

Assisted Steering Hydraulic Installation Manual for  
Vehicle Kit Number 91-02323  
Fits only RoGator 854 (1997-2002) Models



A Subsidiary of  Spraying Systems Co.<sup>®</sup>

## FIELDPILOT®

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## PREPARATION

1. Before beginning the installation, thoroughly clean the vehicle to remove dirt and contaminants that might get into the hydraulic circuit.
2. Park the vehicle on a clean, level floor with adequate clearance to work around.
3. Do not attempt to loosen any hydraulic fittings while the engine is running.
4. Allow the motor and the hydraulics to cool until it is no more than warm to the touch before proceeding.
5. Prior to loosening any hydraulic fittings, be sure to have the appropriate plugs and caps available in order to limit loss of hydraulic fluid from the open fittings.



**PREVENT HYDRAULIC SYSTEM CONTAMINATION.** It is essential to thoroughly clean hydraulic system fittings and hose connections prior to disconnecting or removing them. 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.

### **IMPORTANT!**

**TO AVOID EXCESS LEAKAGE, DO NOT TURN THE STEERING WHEEL WHILE THE FITTINGS ON THE MANUAL STEERING VALVE ARE DISCONNECTED.**



**WARNING: HOT, HIGH PRESSURE FLUID HAZARD.** Hydraulic oil may be hot and under extreme pressure. To prevent serious injury or death, relieve system pressure and allow the system 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.



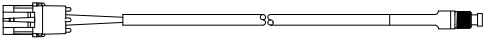

**WARNING: PINCH POINT HAZARD!** To prevent serious injury or death, avoid unsafe practice while manually operating hydraulic steering circuits. Keep others away and stay clear of mechanical steering linkages.

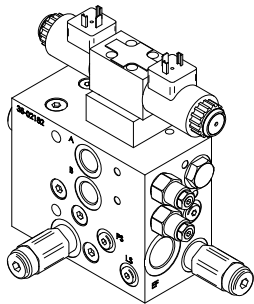
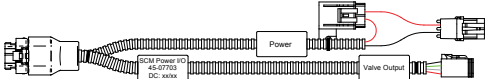
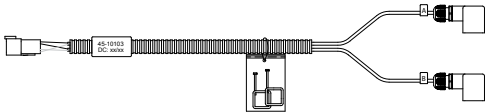
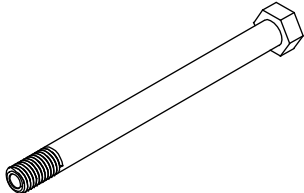

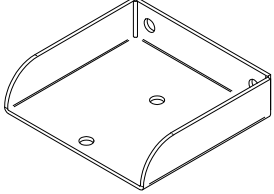
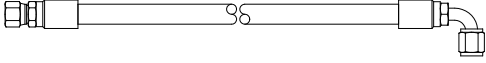
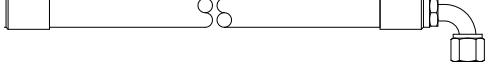


**KIT CONTENTS**

Unpack the installation kit and identify the required parts.

Item	Part Number	Description	Quantity
A	32-04040	Switch, Engage/Disengage.....	1
B	350-0037	Washer, Flat - 3/8" SST .....	2
C	35-02185	Valve, FieldPilot, PWM, 2.1GPM, OC.....	1
D	45-07703	Harness, SCM .....	1
E	45-10103	Harness, Valve.....	1
F	60-04089	Bolt, Hex- 3/8-16 x 3-3/4" SST.....	2
G	60-07027	Nut, NyLock 3/8-16, SST .....	2
H	65-05133	Bracket, Hyd. Block Mnt - AC854 .....	1
I	68-01039	Hose, Hyd - 3/8" x 40", #6FJIC x #6FJIC 90° .....	3
J	68-01135	Hose, Hyd - 1/2" x 35", #8FJIC x #8FJIC 90° .....	1
K	68-01225	Hose, Hyd - 1/2" x 32", #8FJIC x #8MJIC.....	1
M	68-02022	Adapter, Hyd. Run Tee - #6 JIC .....	3
N	68-02078	Adapter, Hyd. 90° Elbow - #6MJIC x #6FJIC.....	2
O	68-02082	Adapter, Hyd. - #6MJIC x #8MORB.....	3
P	68-02093	Adapter, Hyd. 90° Elbow - #8maleJIC x #8femJIC .....	2
Q	68-02122	Adapter, Hyd. - #8MJIC x #12MORB .....	2
R	90-50013	Cable Tie Kit, 15 .....	2
S	91-07011	Steering Wheel Switch Kit .....	1
T	98-05110	Installation Manual, FieldPilot Rogator 854 .....	1

Item	Part #	Description	Illustration
A	32-04040	Switch, Engage/Disengage, Momentary	
B	350-0037	Washer, Flat - 3/8" SST	

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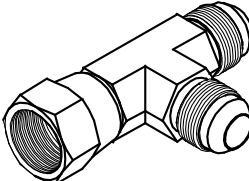
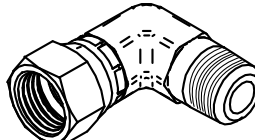
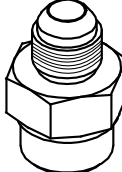
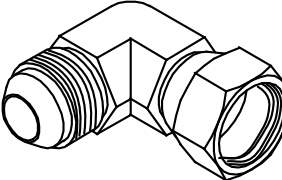
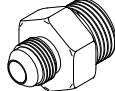
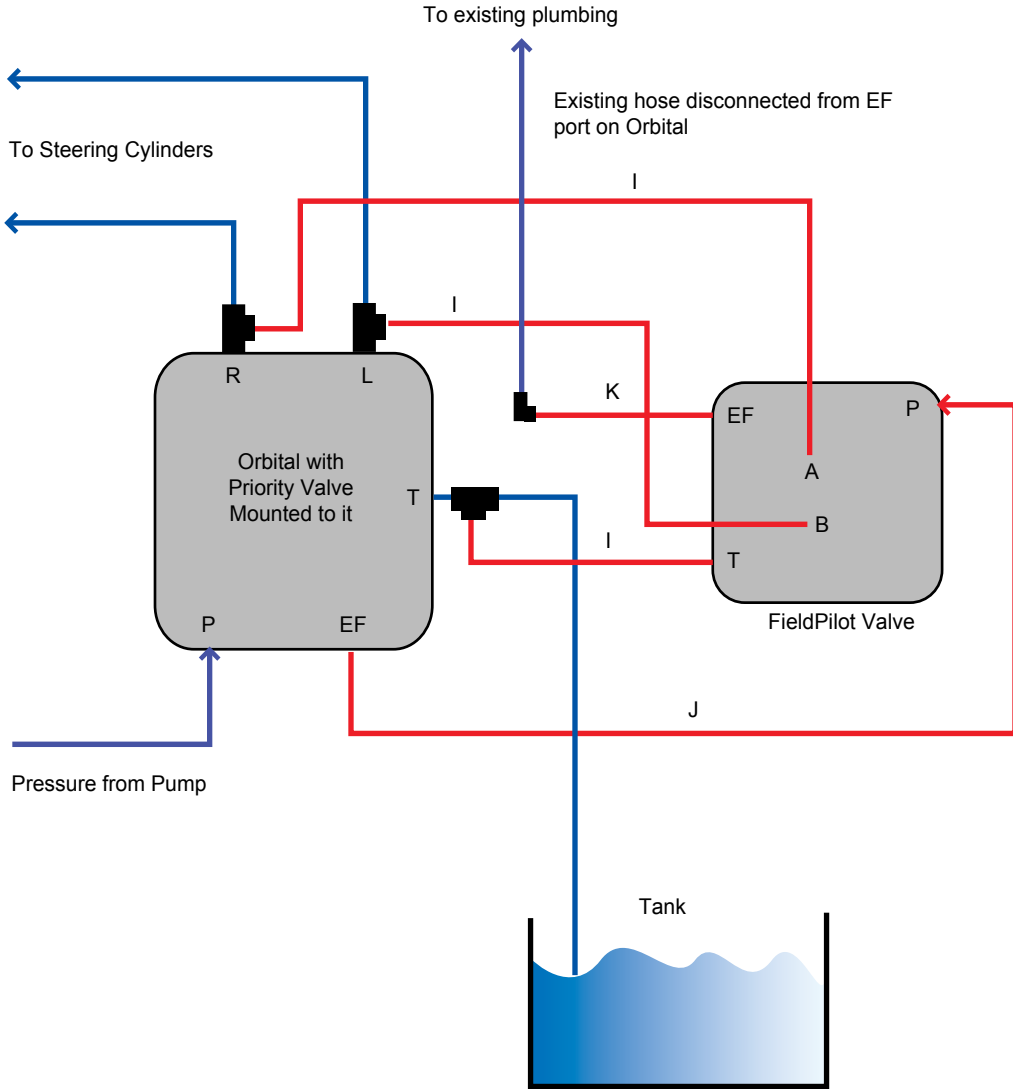
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R	90-50013	Cable Tie Kit, 15	
S	91-07011	Steering Wheel Switch Kit	
T	98-05110	Installation Manual, FieldPilot Rogator 854	

Figure 1-1: Hydraulic Diagram



Existing Hoses —————

Hoses From Kit —————

## INSTALLATION



If there are questions concerning the installation of the FieldPilot system on this vehicle, or due to the changes in component specifications the parts supplied in the kit are not exactly as presented in this document, please contact your dealer or TeeJet Customer service representative for clarification before installation. TeeJet Technologies is not responsible for misuse or incorrect installation of the system.

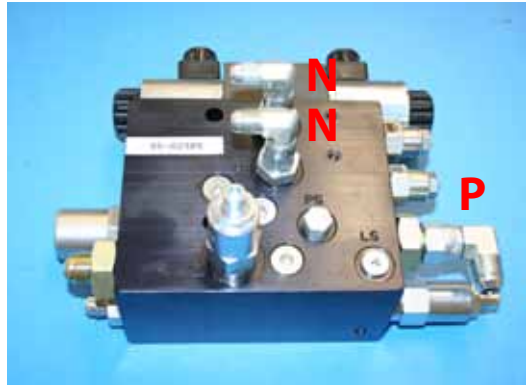
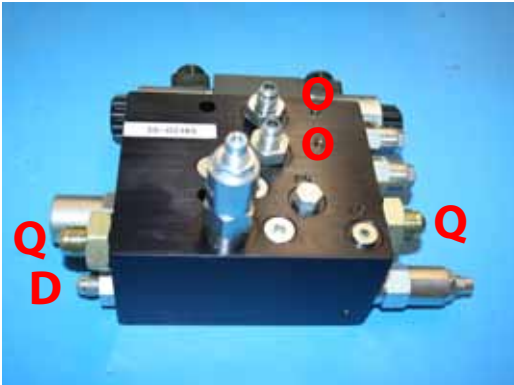
**NOTE: BE VERY CAREFUL TO ABSOLUTELY SECURE ALL CABLES AND HOSES SO THAT THEY DON'T INTERFERE WITH THE MANY MOVING PARTS OF THE MACHINE!**

### 1. PREPARE THE FIELDPILOT VALVE

Install adapters **(Q)** in the P and EF ports. Attach adapter **(P)** onto **(Q)** in the EF port. Install adapters **(O)** in the A, B, and T ports. Then attach adapter **(N)** onto **(Q)** in the A & B ports.

**NOTE:** All references to left and right are stated as if the user is seated in the driver's seat.

*Figure 1-2: Preparing Electric-Hydraulic Control Block*



## 2. INSTALL THE VALVE BRACKET

The valve bracket will mount on the left side of the vehicle with two bolts that fasten sheet metal to the frame. Remove the two bolts and attach the bracket **(H)** with the original bolts.

*Figure 1-3: Install the Valve Bracket*



## 3. MOUNT THE FIELDPILOT VALVE

Mount the FieldPilot Valve to the bracket using parts **(B, F, & G)**. Mount it so that the P port is pointed at the cab and the EF and T ports are pointed forward.

*Figure 1-4: Mount FieldPilot Valve*



#### 4. PREPARE TO INSTALL HOSES

Before installing any hoses it is beneficial to disconnect the existing Left and Right steering hoses from the orbital and tie them aside until later. Be sure to label them before disconnecting.

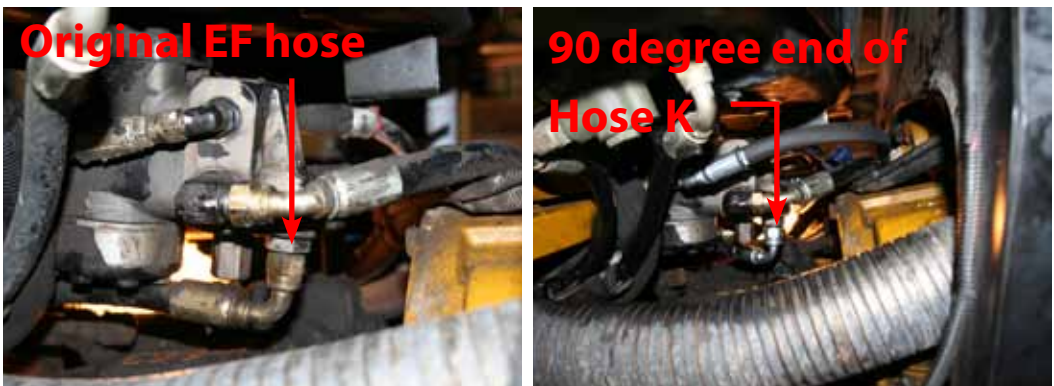
Figure 1-5: Removing Left and Right Steering Hoses



#### 5. INSTALL PRESSURE HOSE

The FieldPilot Valve will get its pressure from the EF port on the orbital. Disconnect the hose from the EF port on the orbital. Attach the 90° end of hose (J) to the EF port on the Orbital and route it to the P port of the FieldPilot Valve.

Figure 1-6: Install Pressure Hose



## 6. INSTALL THE EF HOSE

Oil will exit the FieldPilot valve through hose (K) which will be connected to the original EF hose removed from the orbital in Step 5. Install the 90° adapter (P) on the hose that was disconnected from the EF port of the Orbital. Connect hose (K) to the adapter (P) just installed. Route this hose to the EF port on the FieldPilot Valve. It will route behind the sheet metal and frame.

Figure 1-7: Install the EF Hose



## 7. INSTALL THE TANK HOSE

The tank fitting is on the right side of the orbital. Disconnect the hose and install run tee (M). Reconnect the original hose to the run of the tee and connect the 90° end of hose (I) to the branch of the run tee and route it to the T port of the FieldPilot Valve.

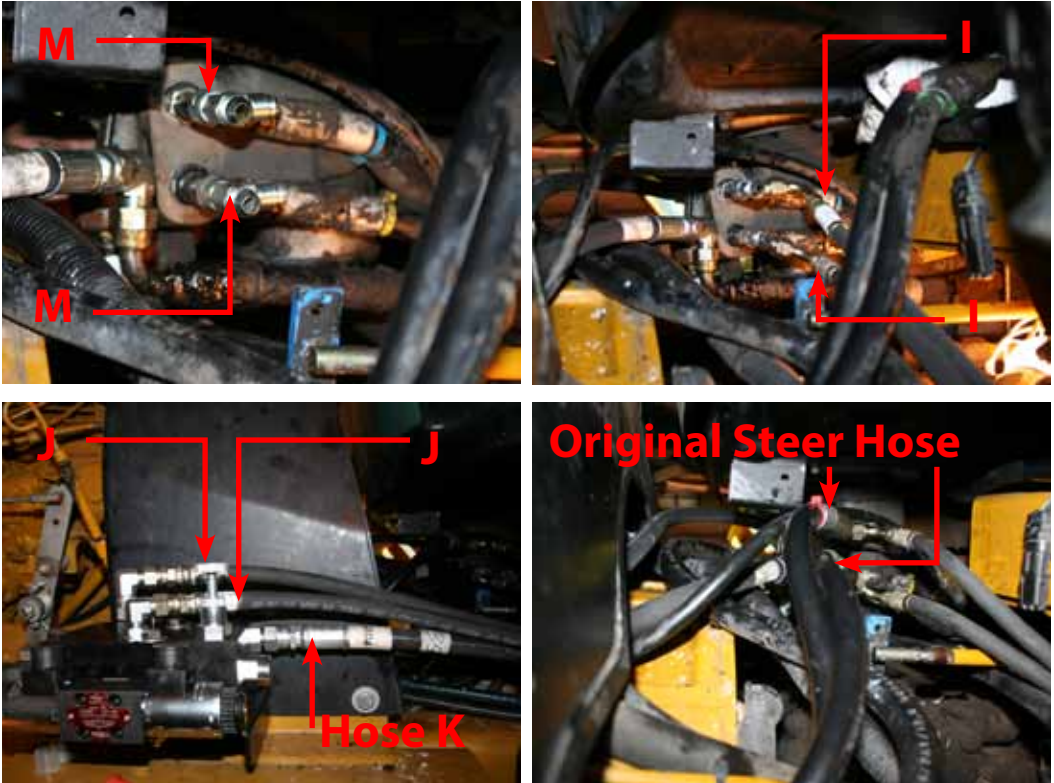
Figure 1-8: Install Tank Hose



## 8. INSTALL LEFT AND RIGHT STEER HOSES

The steer hoses will connect to run tees installed at the orbital. In step 4 the left and right steer hoses were disconnected. Now, install run tees (**M**) on the open ports on the orbital. Connect the 90° end of hoses (**I**) to the branch of the run tees and route the hoses to the A and B ports of the FieldPilot Valve. Reconnect the original steer hoses to the run of the tees.

Figure 1-9: Install Left and Right Steer Hoses



## 9. INSTALL STEERING DISENGAGE SENSOR

The steering disengage kit (**S**) is used to automatically disengage FieldPilot when the steering wheel is turned. The magnets mount on the steering shaft or other rotating part of the steering wheel and the sensor mounts so that there is a 1/8" clearance between the sensor and magnet.

*Figure 1-10: Steering Disengage Sensor*



## 10. INSTALLATION OF ENGAGE/DISENGAGE SWITCH

Connect item (**A**) to the connector on the SCM harness labeled Remote Engage/Disengage. Install the push button in a location that is easily accessible during operation of the machine. This switch (**A**) is not required if the optional foot switch 32-04020 is used.

*Figure 1-11: Engage/Disengage Switch*



## 11. INSTALL VALVE CONTROL CABLE

The valve control cable (**E**) will connect to the solenoids on the FieldPilot valve. Route it into the cab. Use zip ties to secure it so that it doesn't interfere with any moving parts.

*Figure 1-12: Valve Control Cable*



## 12. RECOMMENDED ELECTRONICS INSTALLATION

The Steering Control Module (SCM) should be mounted securely to the floor of the cab. The control console can be mounted to the operator's preference. The GPS antenna should be mounted as far forward as possible on top of the cab on a metal surface of at least 4" square.

*Figure 1-13: Recommended Electronics Installation*



## 14. VERIFY OPERATION OF HYDRAULICS AND SET THE STEERING CONTROL RATE

Clean and pick up the area around the vehicle and make certain that it is safe to operate. Start the engine and check hydraulic connections for leaks. Rotate the steering wheel from one extreme to the other and back to center, check for leaks. While steering through the extremes of movement, check the cables and hoses for wear points and strain, adjust as necessary.

**The oil flow rate adjustment is accomplished through the Matrix console. The target lock to lock time is 6 seconds. Refer to the Matrix manual for further instructions.**

Use the electronic steering control console to perform the left to right steering test. Count the seconds to move the wheels from full left to full right and also in the opposite direction. The vehicle should be moving forward very slowly during these tests so there is not excessive side pressure on the tires. If you find that the machine steers in the opposite direction from that being commanded in this steering test sequence, switch the valve connectors at the FieldPilot valve.

*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.*



**WARNING: PINCH POINT HAZARD!** To prevent serious injury or death, avoid unsafe practice while manually operating hydraulic steering circuits. Keep others away and stay clear of mechanical steering linkages.

## 14. COMPLETE ELECTRONIC INSTALLATION

Refer to the owner's manual supplied with the automated steering system to complete the electronic installation and setup.

# FIELDPILOT®


## USER MANUAL

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A series of equipment-specific hydraulic installation kits have been developed to work in conjunction with your assisted steering system. This kit contains the necessary components and instructions to install assisted steering hydraulics on the RoGator 854 (1997-2002) models. Please review this manual thoroughly before beginning the installation process.



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