

# FIELDPILOT<sup>®</sup>

## USER MANUAL

Assisted Steering Hydraulic Installation Manual for  
Vehicle Kit Number 91-02337

Fits Only AGRO RoGator 1254



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.

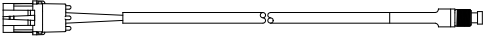



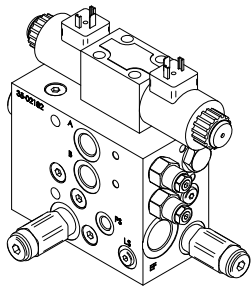
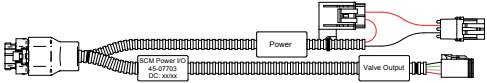
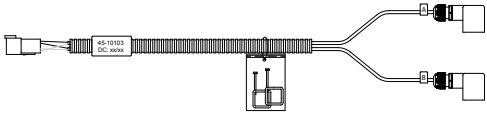
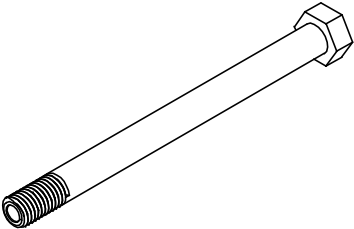

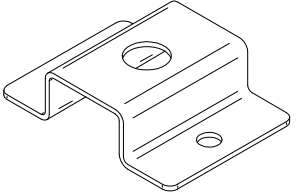
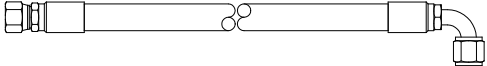
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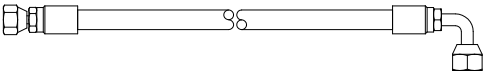
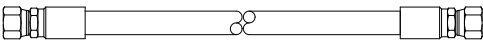
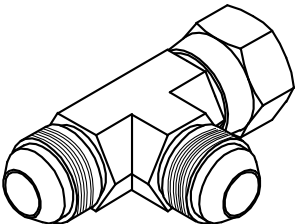
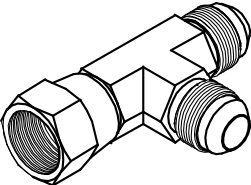
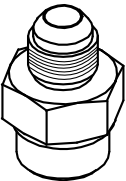
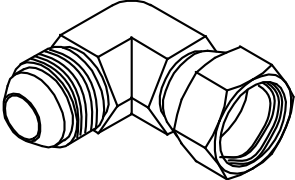
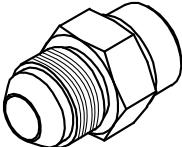
## KIT CONTENTS

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	35-02182	Valve, FieldPilot PWM, 4.0GPM, 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	65-05134	Bracket, Hyd. Block Mount .....	1
I	68-01098	Hose, Hyd. - 1/2" x 64", #8FJIC x #8FJIC 90° .....	1
J	68-01127	Hose, Hyd. - 3/8" x 49", #6FJIC x #6FJIC 90° .....	2
K	68-01176	Hose, Hyd. - 1/2" x 60", #8FJIC x #8FJIC.....	1
L	68-02009	Adapter, Hyd. Run Tee - #8 JIC .....	1
M	68-02022	Adapter, Hyd. Run Tee - #6 JIC .....	2
N	68-02082	Adapter, Hyd. - #6MJIC x #8MORB.....	2
O	68-02093	Adapter, Hyd. 90° - #8MJIC x #8FJIC.....	2
P	68-02094	Adapter, Hyd. - #8MJIC x #8MORB .....	1
Q	68-02122	Adapter, Hyd. - #8MJIC x #12MORB.....	2
R	90-50013	Cable Tie Kit, 15 .....	1
S	91-07011	Steering Wheel Switch Kit .....	1
T	98-05216	Installation Manual FPIII, Rogator 1254 .....	1

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

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C	35-02182	Valve, FieldPilot PWM, 4.0GPM, OC	
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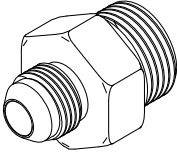
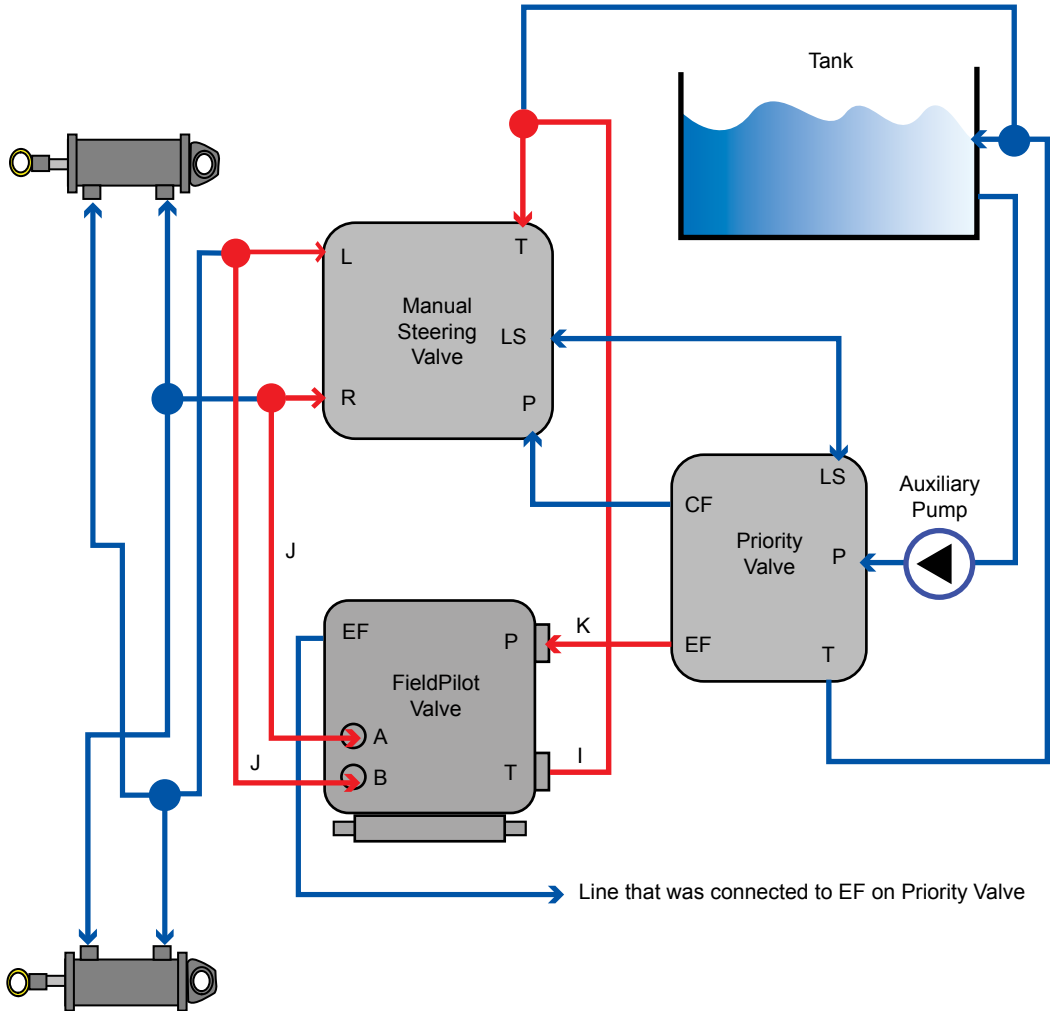
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T	98-05216	Installation Manual FPIII, Rogator 1254	

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.

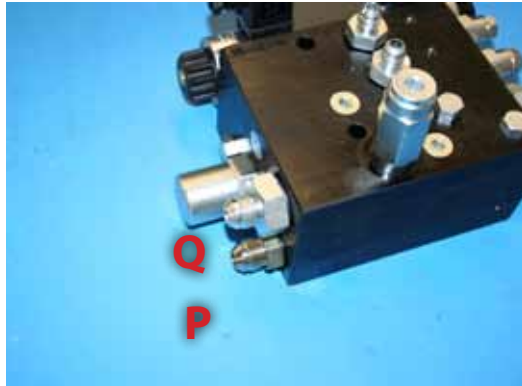
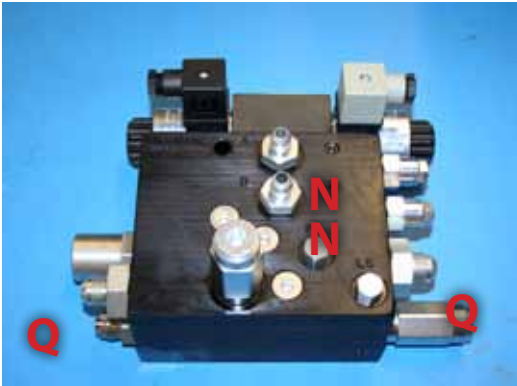
**NOTE: BE VERY CAREFUL TO ABSOLUTELY SECURE ALL CABLES AND HOSES SO THAT THEY DON'T INTERFERE WITH THE MANY MOVING PARTS OF THE MACHINE!**

The RoGator 1254 priority valve is mounted on the left main frame support just to the front of the cab. The FieldPilot valve P port will get oil from the EF line of the priority valve. The remaining lines will tee at the orbital.

### 1. PREPARE THE FIELDPILOT VALVE

Install adapters (**N**) in the A & B ports. Install adapters (**Q**) in the EF & P ports, and install adapter (**P**) in the T port of the FieldPilot valve.

*Figure 1-2: Prepare the FieldPilot Valve*



## 2. INSTALL THE FIELDPILOT VALVE BRACKET

The valve bracket will mount on the right side of the vehicle using the top bolt from the support gusset. Remove the top gusset support bolt and attach the bracket **(H)** with the original gusset support bolt.

*Figure 1-3: Install Mounting Bracket for FieldPilot Valve*



## 3. MOUNT THE FIELDPILOT VALVE

Mount the FieldPilot Valve **(C)** to the bracket using parts **(B, F & G)**. Mount the FieldPilot Valve so that the EF port faces toward the rear of the machine.

*Figure 1-4: Mount the FieldPilot Valve*



## 4. INSTALL THE EXCESS FLOW HOSE

Disconnect the existing EF hose from the priority valve. Reroute this hose to the EF port on the FieldPilot Valve.

*Figure 1-5: Install the Excess Flow Hose*



## 5. INSTALL PRESSURE HOSE

Connect one end of hose (K) to the P port on the FieldPilot Valve. Route the other end to the EF port of the Priority Valve. This end will connect where the previously mentioned Excess Flow hose was disconnected from the Priority Valve.

*Figure 1-6: Install Pressure Hose*



## 6. INSTALL THE TANK HOSE AND ADAPTERS

On the orbital, disconnect the hose from the T port. Attach the run tee (L) to the T port of the orbital. Reattach the original hose to the run of the tee. Connect the straight end of the hose (I) to the branch of the run tee coming out of the T port on the orbital and route the 90° end of the hose to the T port of the FieldPilot Valve.

*Figure 1-7: Install The Tank Hose and adapters*



## 7. INSTALL THE LEFT AND RIGHT STEER HOSES AND ADAPTERS

On the orbital, disconnect the hose from the L port. Attach a run tee (**M**) to the L port on the orbital. Reattach the original hose to the run of the tee. Connect the 90° elbow end of hose (**J**) to the B port of the FieldPilot valve. Route the other end to the branch of the tee connected to the L port on the orbital. On the orbital, disconnect the hose from the R port. Attach a run tee (**M**) to the R port on the orbital. Reattach the original hose to the run of the tee. Connect the 90° elbow end of hose (**J**) to the A port of the FieldPilot valve. Route the other hose end to the branch of the tee connected to the L port on the orbital..

*Figure 1-8: Install the Left and Right Steer Hoses and adapters*



## 8. INSTALL THE FIELDPILOT VALVE HARNESS

Connect the FieldPilot valve control cable (**E**) to the coils on the FieldPilot valve and route the cable into the cab. Connect it to the SCM harness. Do not be concerned at this time about which connector is connected to which solenoid coil.

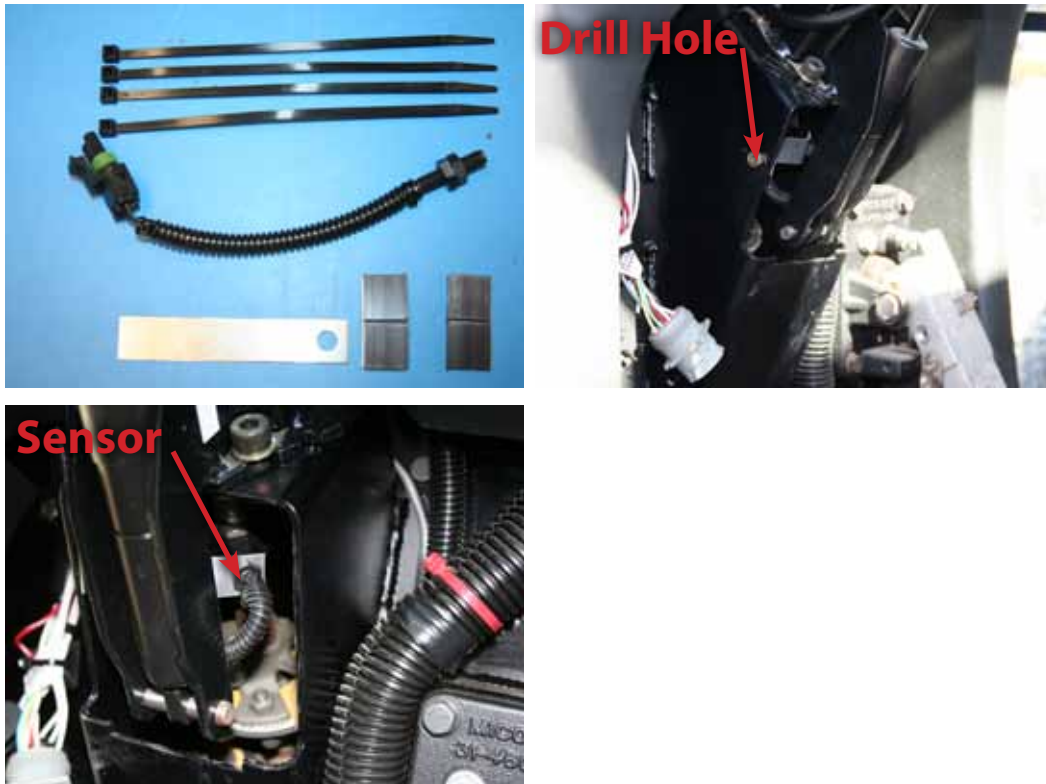
## 9. INSTALL STEERING DISENGAGE SWITCH (KIT 91-07011)

The steering disengage kit (**S**) is used to automatically disengage FieldPilot when the steering wheel is turned. Drill a 5/16" hole for a 1/4" bolt on the left side of the steering column mounting bracket. Using the aluminum bracket for the Steering Wheel Switch Kit (**S**), drill a 5/16" hole in the bracket opposite of the existing hole. Bend one end of the bracket in 90° and bend the other end roughly 45° in the opposite direction. The shape should resemble a "Z." Attach the 90° end to the steering column mounting bracket with a 1/4" bolt and nut (hardware not included). Attach magnets to the shaft directly under the 5/16" hole. Set the clearance between the sensor and magnets to 1/8" and rotate the steering wheel in both directions to be sure that the sensor does not contact the magnets or the shaft. Route the cable down the steering column to ensure it will not get tangled in any moving components. Connect the sensor to the SCM harness.

*NOTE: If the vehicle automatically steers the wrong way when it is tested, exchange the connector positions at the valve.*

*NOTE: After all cables and wires have been wired into the cab, ensure the knockout is resealed.*

Figure 1-9: Install Steering Disengage Switch (Kit 91-07011)



## 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 1-10: Engage/Disengage Switch*



## 11. 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 on top of the cab on a metal surface of at least 4" square.

*Figure 1-11: Recommended Electronics Installation*



## 12. 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 final oil flow rate adjustment is accomplished through the Matrix console. The target lock to lock time is 6 seconds and the valve frequency is 175. Refer to the Matrix manual for further instructions.**

Use the Matrix console to perform the left to right steering test, counting 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.

## 13. 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 AGRO RoGator 1254. Please review this manual thoroughly before beginning the installation process.



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