

RAVEN



SMARTRAX SUPPLEMENT
INSTALLATION MANUAL
GVM PREDATOR

117-0190-035

SmarTrax 
Straight shot to easy steering

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WHAT IS COVERED?

This warranty covers all defects in workmanship or materials in your Raven Flow Control Product under normal use, maintenance, and service.

HOW LONG IS THE COVERAGE PERIOD?

This warranty coverage runs for 12 months from the purchase date of your Raven Flow Control Product. This warranty coverage applies only to the original owner and is not transferrable.

HOW CAN YOU GET SERVICE?

Bring the defective part, and proof of date of purchase, to your local dealer. If your dealer agrees with the warranty claim, he will send the part, and proof of purchase to his distributor or to Raven for final approval.

WHAT WILL RAVEN INDUSTRIES DO?

When our inspection proves the warranty claim, we will, at our option, repair or replace the defective part and pay for return freight.

WHAT DOES THIS WARRANTY NOT COVER?

Raven Industries will not assume any expense or liability for repairs made outside our plant without written consent. We are not responsible for damage to any associated equipment or product and will not be liable for loss of profit or other special damages. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person is authorized to assume for us any liability. Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.



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MOUNTING THE UNIVERSAL BRACKET and STEERING POSITION SENSOR

Attach the universal mounting bracket on the right side of the machine using the provided 1/2" hex-head bolts. Drill holes to fit the mounting bracket pattern and the air filter support hole pattern in a steel plate. Figure 1 shows the bracket mounted to the machine with the valve attached and the steering position sensor band-clamped to the right steering cylinder and the steering control arm.



FIGURE 1

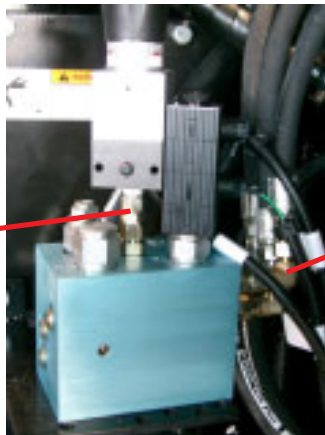
Control valve is mounted to a steel plate that must be made to fit 3 existing holes on the machine's air filter support bracket.

Steering Position Sensor mounted to right side steering cylinder and the control arm of the wheel. Cables for the sensor are run along the axle with enough extra cable to accommodate for different axle widths.

MOUNTING THE HYDRAULIC VALVE and PRESSURE SWITCH

Position the hydraulic valve on the universal bracket over the top of the proper hole pattern. Secure the valve to the bracket using the provided metric bolts and lock washers. **Note: It may be necessary to drill additional holes in the mounting bracket if the valve is not in an accessible position.**

Remove the elbow fitting from the pressure switch and attach the switch to the PS-port on the valve by turning the solenoid connection so the switch just fits on the valve. Secure the switch by tightening the remaining swivel fitting on the valve. (Shown in Figure 2)



Pressure switch and solenoid connections may need to be turned to fit on the valve as shown.

Elbow fittings route the hoses upward.

FIGURE 2

HOSE CONNECTIONS and ROUTING

New hoses should be run so they follow the approximate routing of the old hoses. This keeps crops and debris from dragging on the hoses during operation. Run the new hoses from the valve upward using supplied 90-degree elbow fittings and route the hoses underneath the cab toward the steering orbital. (Shown in Figures 2, 3 and 4)



FIGURE 3

Valve control cable is routed into the cab through the electrical connection bulk head.

Hoses from the valve are run upwards from the valve and underneath the cab.

Cables for the steering position sensor are secured to existing hoses on the right side of the machine.



FIGURE 4

All tees are placed on the steering orbital. Existing tank, boom lock, right and left steering lines are attached to one side of their respective tees.

PRESSURE HOSE

Remove the existing pump to orbital hose and connect the provided pressure line with the 90-degree elbow end to the pump. Route the hose along the frame underneath the cab to the P-port on the hydraulic valve. Attach a 3/4" jic 90-degree adapter fitting to the P-port on the hydraulic valve and connect to the Pressure hose. (Shown in Figure 5)

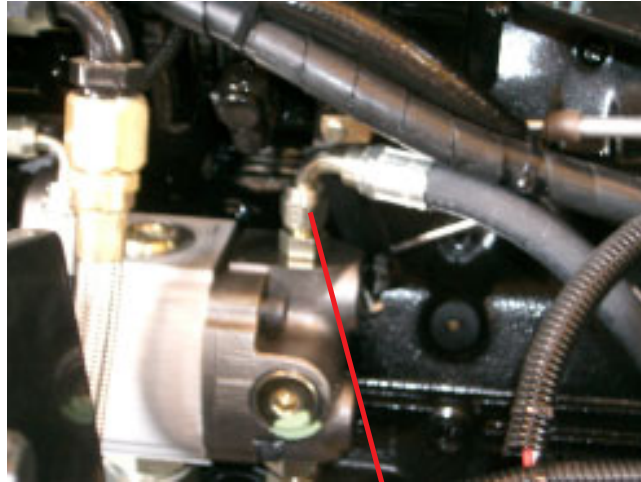


FIGURE 5

New pressure hose connects to the pump using the 90° swivel end.

EXCESS FLOW HOSE

Attach a 90-degree elbow adapter fitting to the valve and connect the 3/4" JIC straight end of the Excess flow hose to the hydraulic valve. Connect the 9/16" JIC straight end of the hose to the open pressure port on the steering orbital. **NOTE:** The machine may have a boom lock function attached to a tee on the pressure port of the orbital. If a tee is on the orbital, attach the Excess flow hose to the tee, leaving the boom lock hose connected to the other side of the tee. (Shown in Figure 6)

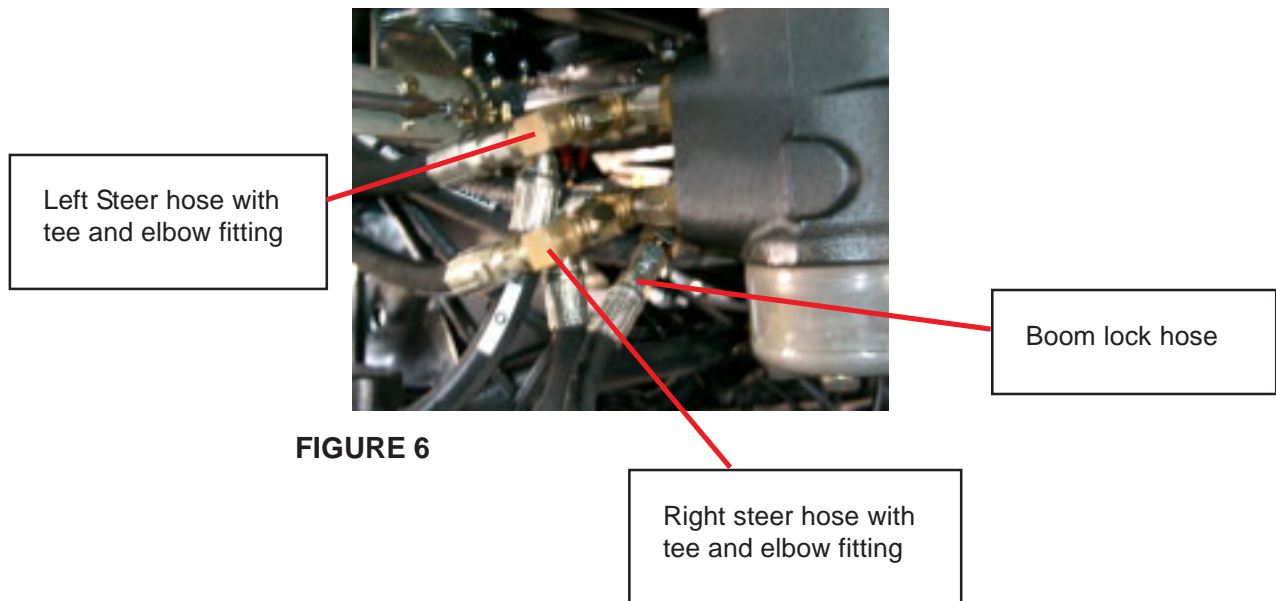


FIGURE 6

TANK PORT TO ORBITAL HOSE

Disconnect the existing line from the orbital to the tank. On the orbital, attach a tee fitting and a 9/16" JIC fitting end of the Tank Port to Orbital hose. Re-connect the existing tank line. Attach a new Tank Port to Orbital line to the open port on the tee fitting. On the hydraulic valve, attach a 90-degree 9/16" JIC fitting and connect the remaining loose end of the Tank to Orbital hose to the elbow fitting.

A-PORT TO LEFT STEER HOSE

Remove the hose attached to the left steer port of the orbital. Install a 9/16" JIC tee fitting on the orbital and re-attach the original left steer hose. On the open port of the tee fitting, attach a 90-degree 9/16" JIC elbow. Connect one end of the "A-Port to Left Steer" hose to the elbow. Attach another 90-degree 9/16" JIC elbow to the B-Port on the Steering Control Valve. Connect the remaining loose end of the "A-Port to Left Steer" hose to the elbow fitting. (Shown in Figure 6)

B-PORT TO RIGHT STEER HOSE

Remove the hose attached to the right steer port of the orbital. Install a 9/16" JIC tee fitting on the orbital and re-attach the right steer hose. On the open port of the tee fitting, attach a 90-degree 9/16" JIC elbow. Connect one end of the B-Port to Right Steer to the elbow. Attach another 90-degree 9/16" JIC elbow to the B-Port on the Steering Control Valve. Connect the remaining loose end of the B-Port to Right Steer hose to the elbow fitting.

NOTE: It is important to trace the hoses so that the pressure and tank hoses are not accidentally swapped for each other. This will cause valve failure. If the Left and Right Steer hoses are swapped, the machine will steer in opposite direction. If the machine does steer in opposite directions, the DIN connectors on the left/right coil stack can be switched to correct the steering.