

RAVEN

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SmarTrax™ Installation Manual



GVM Predator 8245

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CHAPTER

1

INTRODUCTION

Congratulations on your purchase of the Raven SmarTrax system! This system is designed to provide cutting-edge, hands-free steering of your machine via GPS coordinates.



Basic Kit Contents

Below you will see the kit contents that you should have received with this SmarTrax kit.

GVM Predator 8245 SmarTrax Kit Contents

Quantity	Item Description	Part Number
1	SENSOR ASSY., LINEAR STEERING POSITION, 300mm	063-0181-001
4	HOSE, HYD., 9/16" JIC (F) 90° TO 9/16" JIC (F), 48"	214-1000-499
2	HOSE, HYD., 9/16" JIC (F) 90° TO 9/16" JIC (F), 36"	214-1000-438
1	VALVE, HYD. MOTOR MOUNT, DUAL CB, W/FITTINGS	334-0003-026
1	SWITCH, PRESSURE, MICRO, HD, 15-100 BAR ADJUSTABLE	422-0000-073
1	VALVE, HYD., OPEN CENTER, PWM	334-0003-064
3	FTG., ADAPTER, SWIVEL RUN TEE, 9/16" JIC M/M/F	333-0012-043
2	FTG -10 SAE O-RING (M) TO -6 JIC (M)	333-0012-106
4	BOLT, 5/16-18 x 7/8" HEX	311-0052-104
4	WASHER, LOCK, 5/16"	313-1000-019
1	MANUAL, INSTALLATION	016-0190-086
1	MANUAL, INSTALLATION, SMARTRAX	016-9001-012
1	LABEL, WARNING, DO NOT STEP	041-0159-688
1	LABEL, WARNING, TAMPERING	041-0159-689
1	CABLE, HYDRAULIC SOLENOID / OVERRIDE	115-0171-466

CHAPTER

2

SAFETY

Hydraulic Safety Requirements



Important: Hydraulics are under pressure. Never attempt to open or work on a hydraulic system with the equipment running. Care should always be taken when first opening a system that was previously pressurized.

When disconnecting the hydraulic hoses or when purging is required, be aware that the hydraulic oil within the machine system may be extremely hot and under high pressure. Caution must be exercised. Any work carried out on the hydraulic system must be performed in accordance with the machine manufacturer's approved maintenance instructions. Raven Industries recommends that appropriate protective equipment be worn when working on the hydraulic system. Objects or materials that are able to bypass the machine's hydraulic filtration system will adversely reduce performance and possibly damage the hydraulic valves.

Electrical Safety Requirements

Do not reverse the power leads. Doing so will cause severe damage to the equipment. Always check to make sure that the power leads are connected to the right polarity as marked. Ensure that the power cable is the last cable to be connected.

Contacting Raven Industries

We welcome your feedback about this manual. If you have any comments or suggestions for improvement, please let us know by contacting our Customer Support Center by any of the following methods:

- ◆ **Via phone:** 1-800-243-5435

- ◆ **Via mail:**
Raven Industries
Flow Control Division
205 E. 6th St.
Sioux Falls, SD 57104

- ◆ **Via email:** fcinfo@ravenind.com

CHAPTER

3

MOUNTING THE VALVES

Mount the valve on the left side of the machine under step platform. Drill holes in support beam for platform, mount valve.



Mounting the Counterbalance Valve and Pressure Switch

Position the counterbalance valve on a bracket over the top of the hole pattern on the front left cab support. Secure the valve to the bracket using the provided bolts and nuts.

Remove the elbow fitting from the pressure switch and attach the switch to the brake port on the valve. Secure the switch by tightening the remaining swivel fitting on the valve.



CHAPTER

4

HYDRAULICS

Hose Routing & Connections

New hoses should be run so they follow the routing of the old hoses.

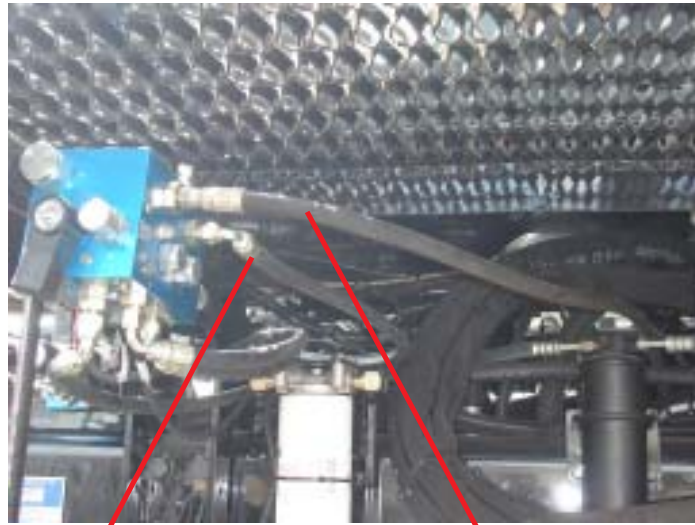


Pressure Hose

Remove the existing pump to orbital hose and connect to the P-Port on the Raven Steering Control Valve. (See picture below)

Excess Flow Hose

Attach the 90° hose end to the Raven Steering Control Valve and connect the straight end of the Excess Flow hose (P/N 214-1000-499) to the steering orbital. (See picture below)



Excess flow to P
port on orbital

Pressure hose from
pump



Tank Port to Orbital Hose

Disconnect the existing hose from the orbital to the hydraulic tank manifold. On the orbital, attach the tee fitting and hose (P/N 214-1000-499). On the Raven Steering Control Valve, attach 90° hose end to the tee fitting. (See picture below)



Right Steer and Left Steer Hoses

Disconnect the original right and left steering hoses from the orbital. Connect tees to the original hoses and attach to the CB valve opposite side the pressure switch is on. Attach hoses (214-1000-499) to the open tee ports, then to A and B ports on the Raven Steering Control Valve. Connect hoses (214-1000-438) to the pressure switch side A, B ports and route back to the orbital and connect to the A and B ports. (See picture below)



Notes:

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STEERING POSITION SENSOR INSTALLATION

Linear Steering Position Sensor Mounting

*See Installation sheet found in the S.P.S. box for further mounting instructions.



The wired end of the wheel angle sensor is attached to the rod end of the right steering cylinder. Drill and tap pins or weld brackets to pins holding the cylinder.



With the wheels straight, mount sensor securely when the sensor is half way between fully compressed and fully extended.

Notes:

CHAPTER

6

START-UP PROCEDURES

After installing the SmarTrax on your machine, always follow these start-up procedures.

- ◆ Make sure the Steering Position Sensor does not over-extend or over-compress when turning the wheels.
- ◆ Turn the wheels fully from side to side numerous times to remove air from the hydraulic system.



Important: Time the wheels for a full left to right and right to left time of approximately 6 seconds. Refer to the Universal Kit Manual for additional instructions on this.

Notes:

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Limited Warranty

What Does this Warranty Cover?

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

How Long is the Coverage Period?

Raven Applied Technology Products are covered by this warranty for 12 months after the date of purchase. This warranty coverage applies only to the original owner and is nontransferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven Dealer. If your Dealer agrees with the warranty claim, the Dealer will send the part and proof of purchase to their distributor or to Raven Industries for final approval.

What Will Raven Industries Do?

Upon confirmation of the warranty claim, Raven Industries will, at our discretion, repair or replace the defective part and pay for return freight.

What is not Covered by this Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products 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 or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.

R A V E N

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