

SmarTrax»»»

Straight shot to easy steering



Supplement & Installation Manual

Redball 7830

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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.



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

Basic Kit Contents

Redball 7830 SmarTrax Kit Contents

Quantity	Item Description	Part Number
1	Mod. Universal Mounting Bracket	019-0159-541
1	Yaw Sensor	063-0172-684
1	Cable, Hydraulic Solenoid/Override	115-0171-775
1	Switch, Pressure, Micro, HD, 15-100 Bar Adj. W/Ftgs.	422-0000-074
4	Bolt, 5/16"-18 x 7/8" Hex Head	311-0052-104
2	Bolt, Hex, 3/8"-16 UNC x 1 1/4"	311-0054-106
2	Bolt, 5/8-11 x 1 1/2" Hex Head	311-0060-087
2	Nut, 5/8-11, Zinc	312-1001-049
2	Nut, Flanged, Lock, 3/8-16	312-1001-164
4	Washer, Lock, 5/16"	313-1000-019
2	Washer, Flat, 3/8"	313-2300-013
1	Valve, Hyd., Closed Center LS W/Relief	334-0003-066
1	Manual, Installation	016-0190-088
1	Manual, Installation, Smartrax	016-9001-008
1	Label, Warning, Tampering	041-0159-689
2	Ftg., Adapter, Swivel Run Tee, -8 JIC M/MF	333-0012-039
6	Ftg., Elbow, 90° Swivel, -6 JIC M/F	333-0012-042
2	Ftg., Adapter, Swivel Run Tee, -6 JIC M/MF	333-0012-043
2	Ftg., Elbow, 90° Swivel, -8JIC M/F	333-0012-064
3	Ftg., Elbow, 45°, Swivel, -6 JIC M/F	333-0012-066
1	Ftg., Adapter, -6 JIC (F) to -4 JIC (M)	333-0012-159
2	Hose, Hyd., 6JF90S -6 72" 6JF	214-1000-520
1	Hose, Hyd., 8JF -6 36" 6JF90M	214-1000-521
1	Hose, Hyd., 4JF90S -6 40" 6JF	214-1000-522
1	Hose, Hyd., 8JF90S -6 40" 6JF	214-1000-523

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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:** fcdinfo@ravenind.com

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MOUNTING THE UNIVERSAL BRACKET AND VALVE

1. Mount the valve to the frame on the right side of the machine in front of the hydraulic tank and cab support using the supplied bolts and bracket.



Notes:

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HYDRAULICS

Steering
Pressure Line



Disconnect the original pressure hose that runs from the pump located on the right side of the engine on the back of the air compressor. Install a supplied tee fitting and reconnect the original pressure hose.

Attach new hose (214-1000-523) to the tee fitting and to the “P” port on the Smartrax valve.

Disconnect tank hose from the filter assembly attached to the hydraulic tank. Install the supplied -8 JIC tee fitting and reinstall original hose.

Attach hose (P/N 214-1000-521) to the “T” port on the Smartrax valve using a 90° fitting and 90° hose end. Then attach to the tee in the tank line.

Tank Connection



Tee Right hose (P/N 214-1000-520) and Left hose (P/N 214-1000-520) into the base end of the steering cylinders. Attach right steer hose to “B” port on the Smartrax valve and the left steer hose to the “A” port.

Right Steer Connection



Disconnect Load Sense hose from the bottom of the steering hydraulic pump. Route hose to the Smartrax valve and connect to the LS Steer Port using the supplied adapter.

Attach hose (P/N 214-1000-522) to the open load sense port on the hyd. pump and then to the "LS-PV" port on the Smartrax valve.

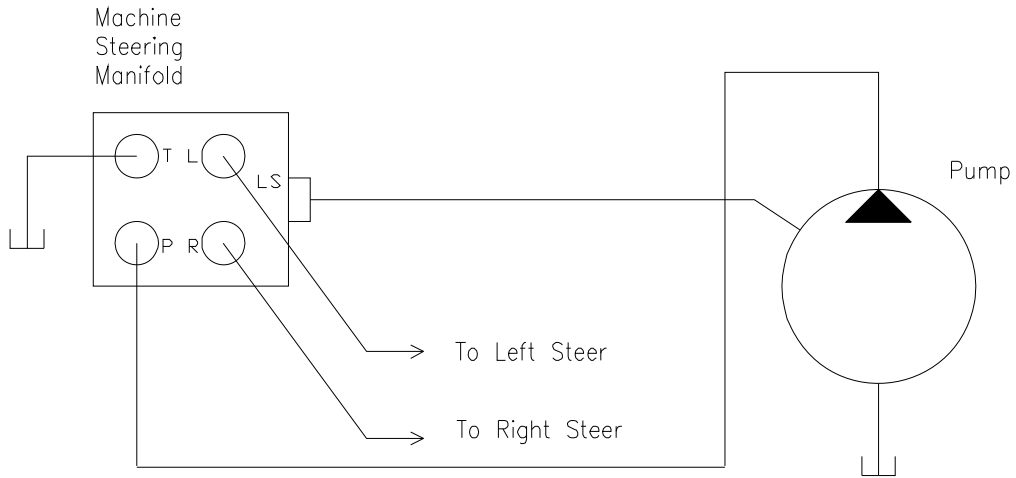


Load Sense
Connection

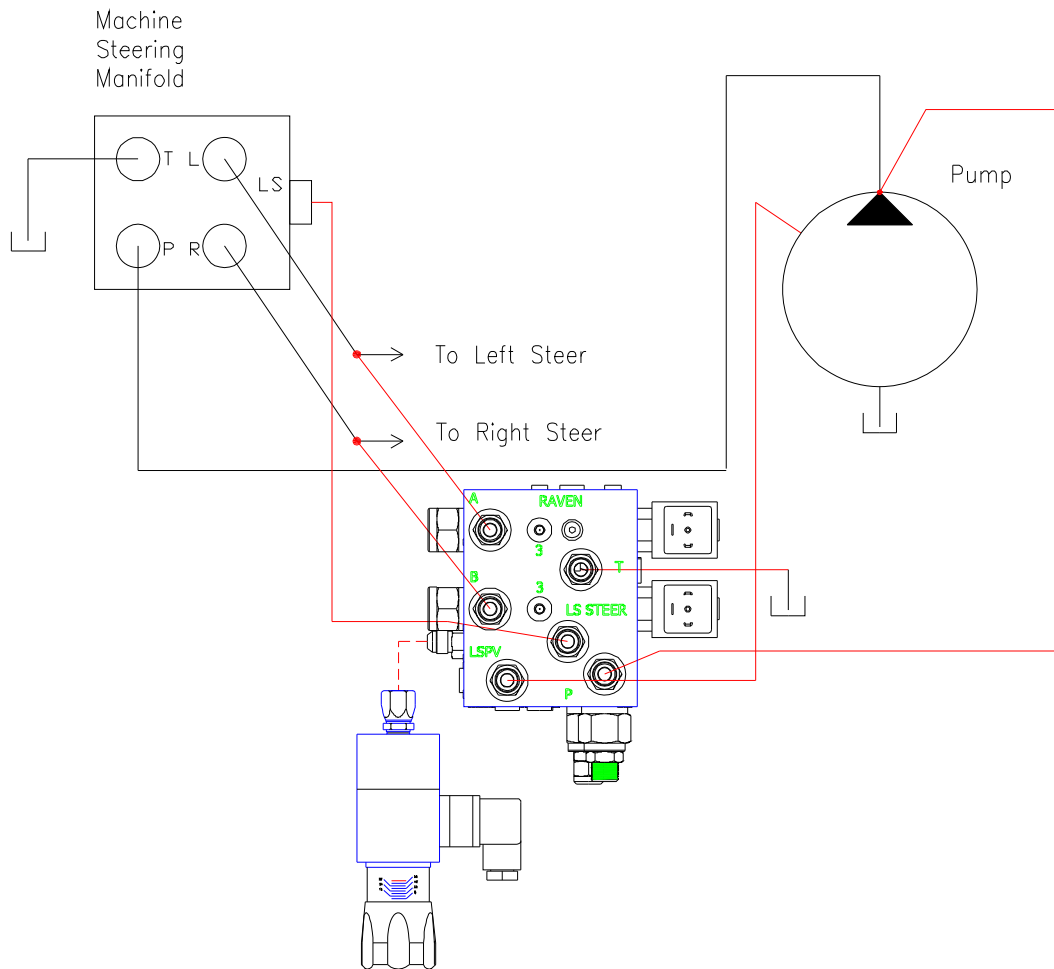
Attach pressure switch to the PS port on the Smartrax Valve.

Hydraulic Schematic

Before Smartrax Installation



After Smartrax Installation



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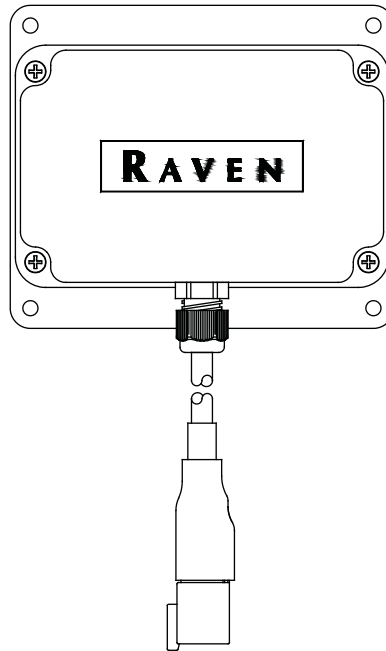
SENSOR MOUNTING

Yaw Sensor Installation

Mounting the Yaw Sensor

- Installing the Raven Yaw Sensor is quick and easy. Raven recommends that you keep the following points in mind while installing the sensor:
- The sensor is not weatherproof. Mount the sensor inside of the machine's cab or drivers compartment.
- Mount the sensor to a flat surface parallel to the ground with the Raven logo facing up. The floor of the cab is generally ideal.
- Once mounted, the sensor should remain fixed in relation to the vehicle. The sensor should not become loose or rotate due to machine vibration or movement.
- The sensor should also be mounted in a location where it will not be kicked or jarred during normal equipment operation.

- The cable does not need to be oriented in any way to the direction of travel of the vehicle. Mount the sensor with the cable routed to avoid tripping hazards or damaging the cable or yaw sensor.



Installation

- Mount the Yaw Sensor to the floor inside of the vehicle's cab using the double sided tape on the sensor or steel bolts or screws through the mounting plate. See the Mounting the Yaw Sensor section on the previous page for mounting location considerations.
- Connect the supplied sensor cable to the Yaw sensor and to the Yaw Sensor connector on the SmarTrax Interface cable.

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START-UP PROCEDURES

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

- ◆ Turn the wheels fully from side to side numerous times to remove air from the hydraulic system.
- Time the wheels for full left to right and right to left of approximately 6-8 seconds. Refer to the Universal Kit Manual for instructions on this.
- ◆ Adjust the pressure switch to the most responsive setting. Refer to the Universal Kit Manual for instructions on this.

Notes:



RAVEN INDUSTRIES LIMITED WARRANTY

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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