

SmarTrax»»»

Straight shot to easy steering



AGCO 9635, 9655, 9675, 9695

Supplement & Installation Manual

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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.

AGCO Allis 9635, 9655, 9675, 9695 SmarTrax Kit Contents

Quantity	Item Description	Part Number
1	KIT, S.P.S.	063-0181-001
1	WELD., BRACKET, UNIVERSAL HYD. MOUNTING, PART 'A'	116-0159-527
1	HOSE, HYD., 9/16" JIC (F) TO 9/16" JIC (F), 50" LG	214-1000-361
1	HOSE, HYD., 9/16" JIC (F) TO 9/16" JIC (F), 50" LG	214-1000-362
1	HOSE, HYD., 9/16" JIC (F) TO 9/16" JIC (F), 50" LG	214-1000-363
1	HOSE, HYD., 9/16" JIC (F) TO 9/16" JIC (F), 25" LG	214-1000-364
1	HOSE, HYD., 9/16" JIC (F) TO 9/16" JIC (F), 50" LG	214-1000-365
1	MANIFOLD, HYDRAULIC, JD 8XXX OVERRIDE W/FITTINGS	334-0003-024
1	VALVE, HYD., CLOSED CENTER LOAD SENSE	334-0003-056
4	FITTING, ELBOW, 45° SWIVEL, 9/16" JIC M/F	333-0012-027
7	FITTING, ELBOW, 90° SWIVEL, 9/16" JIC M/F	333-0012-042
4	FITTING, ADAPTER, SWIVEL RUN TEE, 9/16" JIC M/M/F	333-0012-043
3	FITTING, PLUG, -4 O-RING, INTERNAL HEX	333-0012-051
2	SCREW, SOCKET HEAD CAP, 1/4"-20 x 2" LONG	311-0050-009
4	BOLT, 5/16-18 x 7/8" HEX HEAD	311-0052-104
4	BOLT, HEX, 3/8"-16 UNC x 1/2"	311-0054-105
4	NUT, 3/8-16	312-1001-037
2	NUT, HEX, 1/4"-20	312-1001-074
6	WASHER, LOCK 1/4" SPLIT, ZINC	313-1000-016
4	WASHER, LOCK, 5/16"	313-1000-019
4	WASHER, LOCK, SPLIT, 3/8"	313-1000-022
2	WASHER, FLAT, 1/4"	313-2300-009
4	WASHER, FLAT, 3/8"	313-2300-013
1	MANUAL, INSTALLATION	016-0190-066
1	MANUAL, INSTALLATION, SMARTRAX	016-9001-021
1	LABEL, WARNING, DO NOT STEP	041-0159-688
1	LABEL, WARNING, TAMPERING	041-0159-689
1	CABLE, HYD., PRESSURE COMP., COMMAND	115-0171-716

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 UNIVERSAL BRACKET AND VALVE

Valve Mounting

1. Loosely attach 45° elbows to the 4 ports on the Raven steering valve.
2. Mount the valve on the universal bracket as shown in the Universal Kit manual.
3. Mount t-shaped half of the universal mounting bracket on lower left hand side of the tractor, as shown in the picture on page 8.
4. If not already completed, plug the LS Steer, LS PV, and PS ports with provided -4 SAE O-Ring plugs.

Notes:

CHAPTER

4

HYDRAULICS



1. Label pressure, tank, left, and right ports on the steering orbital and hoses attached to the ports before removing any hoses.
2. Remove hoses and install the provided -6 JIC run tees onto the orbital ports.
3. Reinstall the original hoses onto the previously installed run tees.



4. Connect the provided tank line to the open fitting on the tank port of the orbital using a supplied 90° fitting if desired. Route hose to the Raven steering valve, keeping it away from moving parts and excessive heat sources, attach to “R” port on valve.
5. Connect the provided pressure line to the pressure port on the orbital using a supplied 90° fitting if desired. Route hose to the Raven steering valve, attach to “P” port.
6. Connect provided “B Port to Right Steer” hose to the right steer port on the orbital using a supplied 90° fitting if desired. Route hose to the Raven steering valve, attach to “B” port.
7. Connect provided “Steering Override A” hose to the “A” port on the orbital.
8. Connect the other end of the “Steering Override A” hose to the “A” port on the pressure differential switch.
9. Connect the “Steering Override B” hose to the “B” port on the pressure differential switch.
10. Connect the other end of the “Steering Override B” hose to the “A” port on the Raven steering valve.

CHAPTER

5

STEERING POSITION SENSOR & WIRING HARNESS INSTALLATION

Mounting the Steering Position Sensor (SPS)



1. Mount the SPS between the steering cylinder and the connecting tie rod.
2. One end is attached to the steering cylinder by removing the bolt from the end of the cylinder and fabricating a bracket to attach the supplied mounting tab.



Important: On initial start up, turn wheels slowly and be sure the SPS is not over extended or over compressed.

Wiring Connections



1. Connect the cable ends to the pressure differential switch, hydraulic valve, and SPS.
2. Route cable into the cab.
3. Mount controller as desired.

CHAPTER

6

START-UP PROCEDURES

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

- ◆ Make sure the Steering Position Sensor rotates freely when turning the wheels.
- ◆ 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 time of approximately 6 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.

RAVEN



Raven Industries
Flow Controls Division
P.O. Box 5107
Sioux Falls, SD 57117-5107

Toll Free 800-243-5435
Fax 605-331-0426
www.ravenprecision.com
fcinfo@ravenind.com

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