

eDrive VSi Installation Guide


Kit: EDVSi-MacDon 9000 Swather, P/N 911-1004-000

Fits MacDon Swather Models:

9220	9300
9250	9350
9252	9352i



Read and Follow Safety Messages

- In these instructions, you will see the heading **WARNING** and the safety alert symbol . They indicate a hazardous situation that, if not avoided, could result in death or serious injury. The safety messages provide information to identify a hazard associated with potential injury.
- Do not allow anyone to operate without instruction.
- Keep these instructions and all related safety information with the manuals for your machine and other implements.

If you have questions or need assistance, contact your local dealer or distributor.

Overview

This is a general guideline for the installation of the eDrive VSi electric steering wheel. Every effort has been made to verify the following installation procedure. However, due to the manufacturing process outside of Hemisphere GPS' control, the installer may have to adapt this kit to your distinct situation.

The items in the kit are detailed in the table that follows the safety warnings on the next page. After the kit table there are step-by-step installation instructions.

Please read this manual thoroughly before beginning the installation.

WARNING:

The VSi Electric Steering Wheel is designed as a driver aid for precision agriculture applications. At all times the driver is fully responsible for the safe operation of the vehicle. It is not intended for and must not be enabled for use on roadways.

WARNING:

To avoid serious injury or death during swather operation, install the appropriate kit for your swather make and model.

Machine Preparation

⚠ WARNING:

Inspect the machine and perform any needed maintenance before installing the VSi kit (for example, adjust the steering linkage so that the machine drives straight ahead without manual steering). This kit cannot perform as intended on a machine that is not maintained properly. Errors in performance increase the risk of operator and bystander injury or death.

Failure to maintain properly adjusted steering linkage can cause loss of directional control resulting in serious injury or death.

Turn off the machine and power off all components when installing or performing maintenance.




Before attempting to install any of the components:

- Park the machine on a clean level floor
- Ensure adequate clearance to work all around
- Lower all implements and headers to the ground
- Apply the park brake and chock the wheels

Before you perform any drilling, cutting or fastening, ensure that no other machine components, such as electrical wiring, will be damaged. Failure to follow this warning may cause physical injury and/or damage to the machine.

Kit Contents





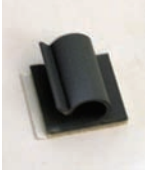
Unpack the supplied kit and identify the required parts as shown. Kit items are A, B, C etc. and those references are used in the step-by-step installation section of this guide.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
A	750-8001-000	1	VSi steering wheel	
B		1	Shaft adapter (coupler)	
C		4	Screw, M5 x 10M flat head socket cap screws (Shaft adapter to VSi steering wheel)	

Kit Contents (continued)

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
D		1	Screw, M6 x 40	
		1	Washer, spring	
		1	Washer, flat, plain (Shaft adapter to steering column - see inset)	
E		1	Anti-rotational (a/r) T bracket	
F		2	Bolt, M6 x 16, hex head	
		2	Washer, M6 spring (Anti-rotational T bracket to steering wheel assembly)	
G		1	Linchpin (Anti-rotational T bracket retainer)	
H			Anti-rotational pillow block/U-bolt assembly:	
		1	Pillow block	
		1	U-bolt and saddle	
		2	Nut, nylock (Restrains anti-rotational T bracket)	
I	750-8007-000	1	Steering wheel center logo cap	
J	750-8003-000	1	VSi power cable	

Kit Contents (continued)

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
K	750-8002-000	1	VSi junction box	
L		1	Junction box mounting bracket	
M	051-0259-000#	1	CAN bus harness	
N	750-8005-000	1	CAN bus terminator	
O		1	Junction box comms cable clip	

eDrive VSi Installation Procedure

NOTE:

On a clean surface lay out all the components and check them against the packing list (see “Kit Contents” on page 2). Become familiar with the components and where they are to be installed before proceeding with the installation (see “Appendix A - eDrive VSi Connections” on page 9).

1. Remove the machine’s steering wheel.

While supporting the steering shaft from below (unsupported it will drop down inside the column) use a roll pin punch to drive out the roll pin securing the steering wheel assembly (wheel and wheel hub) to the steering shaft (Figure 1). Remove and discard the upper plastic steering column console if fitted (not shown).

NOTE:

The roll pin actually secures the separate steering wheel hub to the steering shaft. Remove the steering wheel from its hub for easier access to the roll pin if preferred (Figure 1 left inset).

After removing the steering wheel assembly, use the pin punch to hold the shaft in place (Figure 1 right inset).

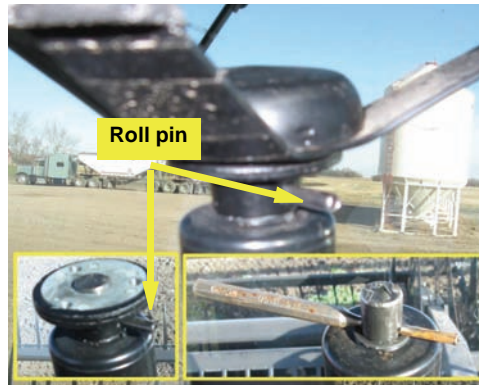


Figure 1 (with insets): Roll pin - driven out

2. Prepare the eDrive VSi electric steering wheel.

a. Apply anti-seize (not supplied) to the inner surface of the shaft adapter (coupler) **B** to facilitate later removal (Figure 2a).

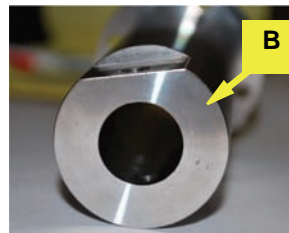


Figure 2a: Shaft adapter

b. Place the VSi steering wheel **A** on a clean surface with the wheel facing up. Insert shaft adapter **B** into steering wheel **A** (Figure 2b).

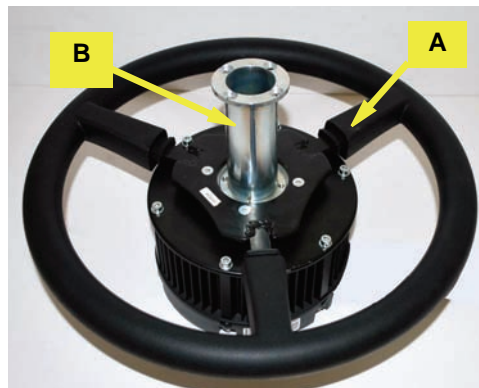


Figure 2b: Inserting shaft adapter into steering wheel



At step 2c following, tighten the screws to the specified torque only. **DO NOT OVERTIGHTEN - DAMAGE MAY OCCUR.**

c. Using the four countersunk screws **C**, secure the shaft adapter **B** in the steering wheel. Torque the screws to **6 N·m (53 in-lb)** (Figure 2c).

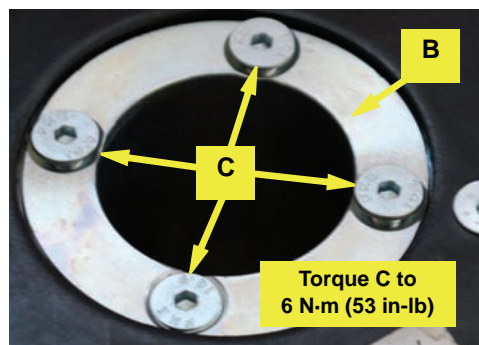



Figure 2c: Securing the shaft adapter. See Warning.

3. **Install the anti-rotational T bracket.**

NOTE: The anti-rotational (a/r) T bracket will be held in position at the front of the steering column. This will fix the position of the steering wheel assembly's communications port. So, before you install the a/r T bracket, decide where you want the communications port to be. Consider the cabling and visibility of the work area. In Figure 3, the comms port will be to the left of the steering column (see Figure 5a).

 When completing this step, ensure that you (i) use only the bolts provided, (ii) use the spring washers provided and (iii) tighten the bolts to the specified torque only. **DO NOT OVERTIGHTEN OR OMIT WASHERS - DAMAGE WILL OCCUR.**

Using hardware **F**, attach the anti-rotational T bracket **E** to the base of the steering wheel assembly **A**. Screw **F** into the appropriate threaded inserts (see note preceding). Torque the bolts to **8 N·m (71 in-lb)** (Figure 3).

4. **Install the anti-rotational pillow block/U-bolt assembly.**

Install the anti-rotational pillow block/U-bolt assembly **H** near the top of the steering column. Set the pillow block towards the front of the vehicle. Leave the nylock nuts loose enough to move the assembly (Figure 4).

5. **Install the VSi steering wheel assembly.**

a. With the steering shaft supported from below, slide the steering wheel assembly onto the steering shaft while guiding the shaft of T bracket **E** into the pillow block bushing. Insert and lock linchpin **G** (Figure 5a).

b. Align the hole for screw **D** in the shaft adapter **B** with the roll pin hole in the steering shaft. Using screw and washers **D** (not the temporary bolt shown), lock the shaft adapter to the steering shaft (Figure 5b). Torque **D** to **10 N·m (88 in-lb)**.

c. Slide the pillow block assembly as high as possible on the steering column and torque the U-bolt nylock nuts to **D** to **8 N·m (71 in-lb)**.

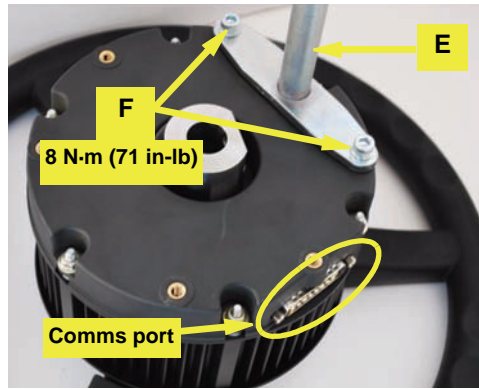


Figure 3: Anti-rotational T bracket installed. Comms port will be left of steering column.

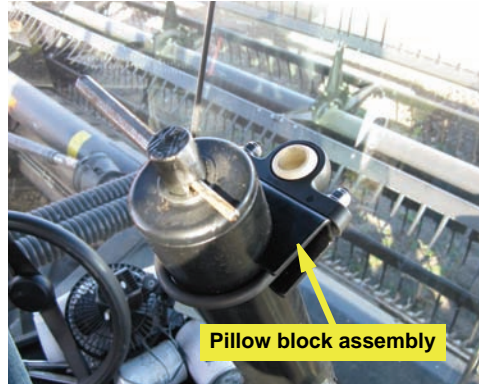


Figure 4: Loosely attached anti-rotational pillow block/U-bolt assembly



Figure 5a: Steering assembly mounted on steering shaft. Linchpin installed.

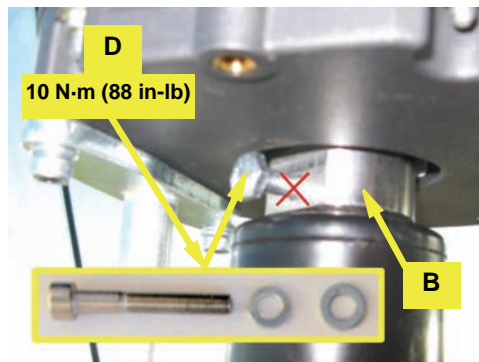


Figure 5b: Locking shaft adapter to steering shaft

5. **Install the VSi steering wheel assembly (continued).**

d. Install Outback center cap **I** (Figure 5c).

6. **Install and connect the electric steer junction box.**

NOTE: Before continuing, refer again to “Appendix A - eDrive VSi Connections” on page 9.

a. Route the power supply cable **J** from the battery into the cab to where you will mount the junction box **K** at steps 6b and 6c. Ensure the cable will not be a trip hazard. Connect the ring terminals to the battery (not shown).



When mounting the junction box in the following steps, ensure that the ON/OFF switch on the junction box is within easy reach of the operator. The switch must be in the OFF position when the vehicle is not under field guidance or on a road. See Figure 6a.

Ensure that the mounted junction box cannot interfere with movement of the steering column or visibility to the work area. Also keep in mind the location of the steering wheel assembly’s comms port.

b. Mount the electric steer junction box bracket **L** (not shown) on the steering column or windscreen using your preferred method, for example fasteners, double-sided tape, nylon ties (not provided).



If drilling the steering column, ensure nothing inside the column can be damaged.

c. Clip the junction box **K** into place on its bracket **L** (neither shown) then connect **K**’s 15-pin connector cable to the communications port on the steering wheel assembly (Figure 6b). Use clip **O** suitably (not shown).

d. Connect the gray connector of the power cable **J** (routed into the cab at step 6a) to the gray cable from the junction box **K** (Figure 6c).

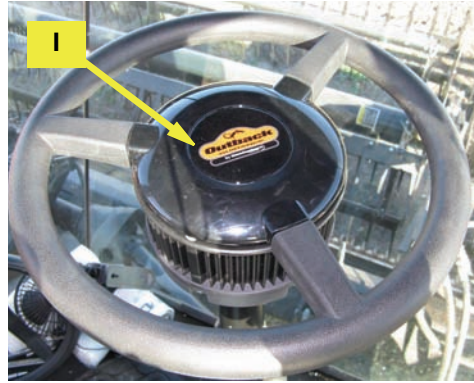


Figure 5c: Installed center cap

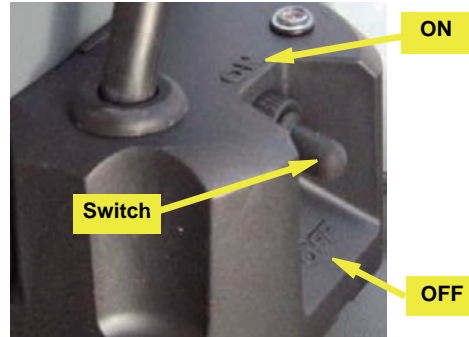


Figure 6a: Junction box ON/OFF switch

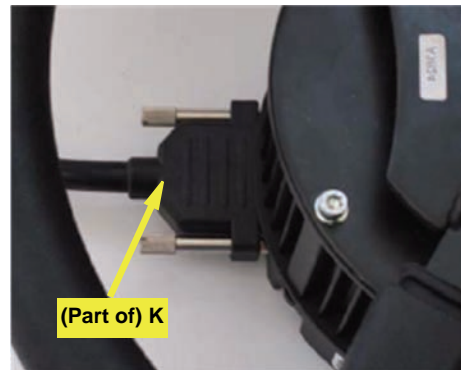


Figure 6b: Junction box comms cable connected to steering wheel assembly

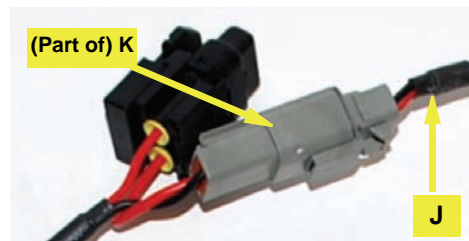


Figure 6c: Power cable to junction box cable

6. **Install and connect the electric steer junction box** (*continued*).

e. Connect the threaded 5-pin connector on the CAN bus harness **M** to either of the threaded connectors on the junction box **K**. Connect the CAN bus terminator **N** to the other threaded connector on the junction box (Figure 6d).

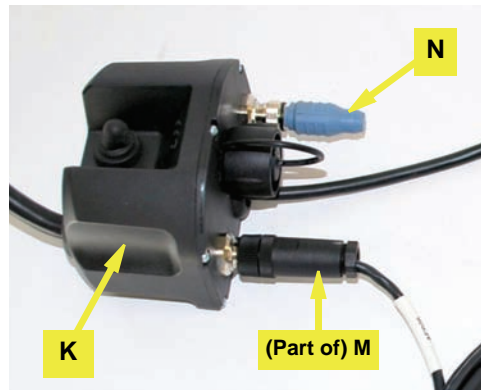


Figure 6d: CAN harness and terminator connected to junction box

f. Connect, according to the cable labeling, the two other connectors on CAN cable **M** to the EDRIVETC and the TERMINAL/RECEIVER (Figure 6e).



Figure 6e: CAN cables to eDriveTC and terminal/receiver

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Appendix A - eDrive VSi Connections

