

# ENGAGE

## ZONE CONTROL

# MAINTENANCE MANUAL

Document revision: 1.1

Last revised: March 14, 2018



# Engage Zone Control Maintenance Manual

© 2018 Intelligent Agricultural Solutions All Rights Reserved.

Engage Zone Control Maintenance Manual. All content within is copyrighted by Intelligent Agricultural Solutions, and may not be reprinted without permission.

The content of this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Intelligent Agricultural Solutions. Intelligent Agricultural Solutions assumes no responsibility or liability for any errors or inaccuracies that may appear in the content contained in this guide.

U.S. Patent Application #15/639497, and foreign patents pending. Intelligent Agricultural Solutions, Engage Zone Control, Intelligent Agricultural Solutions, Intelligent Ag, Intelligent Ag Monitoring Solutions, IAS, and the IAS logo are trademarks or registered trademarks of Intelligent Agricultural Solutions. iPad is a registered trademark of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. All other trademarks are property of their respective owner.

Intelligent Agricultural Solutions, 1810 NDSU Research Circle North, Fargo, ND 58102 USA.

Visit us on the web at [www.intelligentag.com](http://www.intelligentag.com)  
Questions? E-mail us at [info@intelligentag.com](mailto:info@intelligentag.com)

<b>Related Documentation</b>	
<b>Document Number</b>	<b>Document Title</b>
600840-000043	Engage Zone Control Installation Guide
600890-000059	Engage Zone Control Operator's Guide

## SAFETY AND INFORMATION INDICATORS

Throughout the document, safety and informational items are indicated by the words and symbols below.

-  **CAUTION:** There is a risk of personal injury and damage to the system if the procedure is not correctly performed.
- IMPORTANT:** There is a risk of damage to the system if the procedure is not correctly performed.
- TIP:** Indicates extra information that might make the procedure easier.
- NOTE:** Indicates extra information applicable to some installations.

### WARNING

-  **CAUTION:** The Engage Zone Control unit is heavy. Use proper precautions such as steel toe boots and gloves. Lifting and installing the unit may require two people.
-  **CAUTION:** Unplug the bin harness from the Engage Zone Control unit enclosure before performing any maintenance.
-  **CAUTION:** Engage Zone Control unit gates and cleaning tools are sharp. Use caution when handling these components.

**IMPORTANT:** Read the Engage Zone Control Installation Manual (600840-000043) before installing the system.

**IMPORTANT:** Do not use an air or electric impact wrench when re-assembling any components.

This document may have been recently updated. For current documentation, videos, and other resources, visit [www.intelligentag.com/support](http://www.intelligentag.com/support).

## MAINTENANCE PROCEDURES

The Engage Zone Control unit requires periodic and end-of-season cleaning for optimal performance. Refer to the information in this document for cleaning and storage requirements.

### Tools needed

- 10 mm socket, ratchet, and extension
- 10 mm wrench
- Torque wrench
- Compressed air or shop vac
- Wire brush (such as a bore brush)
- Screwdriver or pick (if cleaning a dual shoot system)

### 1. Daily maintenance

**NOTE:** If you remove any components inside the enclosure, make sure that the inside of the enclosure and the parts removed are clean before reinstalling them.

1. Open the gates through the tractor's virtual terminal.
2. Unplug the bin harness that plugs into the Engage Zone Control unit enclosure.
3. Clean off any dirt from the enclosure lid. Remove the enclosure hardware indicated in the diagram on page 8 and slide the lid off.
4. Use compressed air or a shop vac to remove any residue from inside the Engage Zone Control unit enclosure and on the ledge where the enclosure and the plate meet. Use a wire brush or scraper to remove any remaining residue.
5. Remove the manifold cover. Blow out any residue around the gates.
6. Plug the bin harness into the Engage Zone Control unit enclosure. Cycle the gates open and closed through the tractor's virtual terminal to ensure that there is no product remaining on the gates.

## 2. Disassembling the Engage Zone Control unit

**TIP:** Refer to the diagram on page 8 for labelled part names.

1. Cycle the gates open and closed through the tractor's virtual terminal.
2. **Unplug the bin harness that plugs into the Engage Zone Control unit enclosure.**
3. Clean off any dirt from the enclosure lid. Remove the enclosure hardware indicated in the diagram on page 8 and slide the lid off.
4. Unplug S2 and S3 of the motor controller harness from the motor controllers.
5. Unscrew the nut holding the ground wire to the chassis and remove the ground wire.
6. Remove the 3 screws holding each motor mount to the enclosure and remove the motor mounts.

**IMPORTANT:** Make note of the serial number of each motor controller and if it is installed on the left side or right side of the enclosure. The motor controllers must be reinstalled in their original position.

7. Pull the gates toward you and remove them. Do not pry the gates out.



**CAUTION:** Engage Zone Control unit gates are sharp. Use caution when handling gates.

## 3. End-of-season/as-needed maintenance

1. Disassemble the Engage Zone Control unit by following the instructions in the previous section.
2. Use compressed air or a shop vac to remove any residue inside the enclosure and on the ledge where the enclosure and the plate meet. Use a wire brush or scraper to get any remaining residue.
3. Clean residue from the gates using a wire brush or scraper.
4. Clean any buildup from the end stop (see diagram on page 8).
  - **Single shoot system:** Remove the bottom manifold cover, then reach up with a screwdriver or other cleaning tool and scrape the sides and the end stop (where the gate hits the end of the slot) to remove any residue or debris buildup. Thoroughly clean the end stop to ensure proper functioning of the gates.
  - **Dual shoot system:** Close your shutoffs, pull the meter roll out of the meter housing, and remove the meter housing dividers. Then, reach into the meter housing with a screwdriver or other cleaning tool and scrape the sides and the end stop (where the gate hits the end of the slot) to remove any residue or debris buildup. Thoroughly clean the end stop to ensure proper functioning of the gates.
5. Use compressed air or a shop vac to clean out any additional dirt that was loosened in the previous step.

## 4. Reassembling the Engage Zone Control unit BEFORE STORAGE

After cleaning, follow the suggestions below for storing your system, depending on if you'll be storing your air seeder indoors or outdoors.

### If you store your air seeder indoors:

1. Push the gates back into the gate slots with the two tabs on the gates facing up.
2. Re-position the motor mounts in their original position in the enclosure (left or right side of the enclosure). Ensure that the nut holding clips rest on top of the short side of the gates, as seen in the diagram on page 8. You can move the nut holding clips to align with the gates, or pull the gates out to meet the position of the nut holding clips.

**TIP:** To more easily see where the nut holding clips align with the gates, remove the motor controller.

**TIP:** It is easier to align the nut holding clips if you position the motor mount at an angle and align the nut holders individually from one side to the other.

**IMPORTANT:** Use care when reinstalling the motors so that you do not bend the lead screws.

3. Tighten the 3 screws on the motor mounts. Torque to 20 in-lbs.
4. Re-attach the ground wire to the chassis.
5. Plug S2 and S3 of the motor controller harness into the motor controllers.  
**NOTE:** Ensure that that harness is routed within the groove in the center of the enclosure.
6. Place the lid back on the enclosure, but do not tighten the hardware until you are ready to use the system again next season.
7. Plug the bin harness into the Engage Zone Control unit enclosure.
8. Cycle the gates open and closed through the tractor's virtual terminal.

### If you store your air seeder outdoors:

1. Do not re-install the gates or motor mounts. Place the lid back on the enclosure and reinstall the enclosure hardware. Torque to 20 in-lbs.  
**IMPORTANT:** Do not over-torque enclosure hardware. **Do not use an air or electric impact wrench.** This could strip the bolt heads out of the plastic enclosure.
2. Store the gates and motor mounts indoors or in a climate-controlled area to prevent condensation on electrical components. Ensure that the motor mounts are protected so that the lead screws do not get bent.

**IMPORTANT:** At the beginning of the next season, perform the steps on the next page before using the system.

## 5. Preparing the Engage Zone Control unit for use AFTER STORAGE

### If you stored your air seeder indoors:

Re-install the enclosure hardware. Torque to 20 in-lbs.

**IMPORTANT:** Do not over-torque enclosure hardware. **Do not use an air or electric impact wrench.** This could strip the bolt heads out of the plastic enclosure.

### If you stored your air seeder outdoors:

1. Clean off any dirt from the enclosure lid. Remove the enclosure hardware indicated in the diagram on page 8 and slide the lid off.
2. Verify that the gates are clean. Push the gates back into the gate slots with the two tabs on the gates facing up.



**CAUTION:** Engage Zone Control unit gates are sharp. Use caution when handling gates.

3. Re-position the motor mounts in their original position in the enclosure (left or right side of the enclosure). Ensure that the nut holding clips rest on top of the short side of the gates, as seen in the diagram on page 8. You can move the nut holding clips to align with the gates, or pull the gates out to meet the position of the nut holding clips.

**TIP:** To more easily see where the nut holding clips align with the gates, remove the motor controller.

**TIP:** It is easier to align the nut holding clips if you position the motor mount at an angle and align the nut holders individually from one side to the other.

4. Reinstall the motor mounts and tighten the 3 screws. Torque to 20 in-lbs. **Ensure that the motor mounts are installed in their original position (left or right side of the enclosure, as noted in Section 2).**

**IMPORTANT:** Use care when reinstalling the motors so that you do not bend the lead screws.

5. Re-attach the ground wire to the chassis.
6. Plug S2 and S3 of the motor controller harness into the motor controllers.

**NOTE:** Ensure that that harness is routed within the groove in the center of the enclosure.

7. Place the lid back on the enclosure and reinstall the enclosure hardware. Torque to 20 in-lbs.
8. Plug the bin harness into the Engage Zone Control unit enclosure.
9. Cycle the gates open and closed through the tractor's virtual terminal.

# ENGAGE ZONE CONTROL UNIT COMPONENTS

