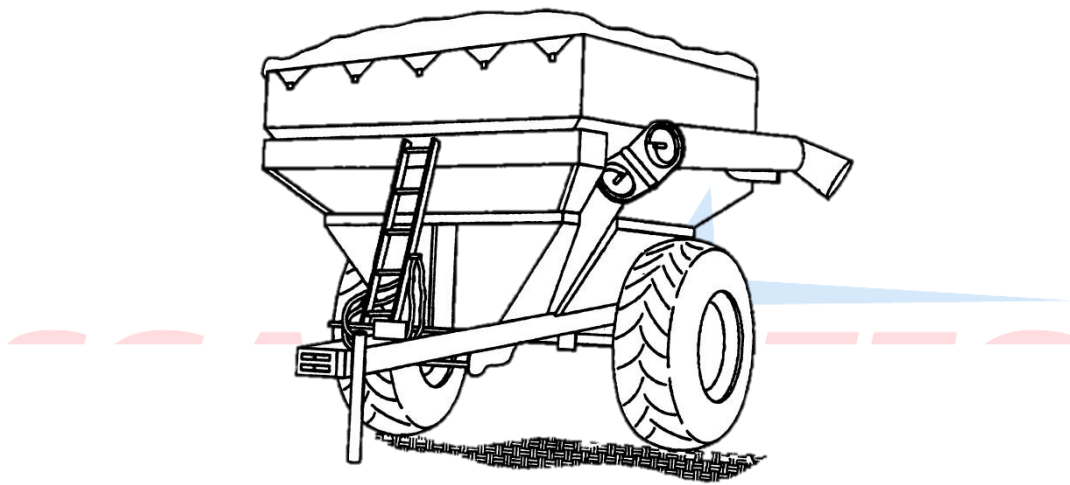




## Auto Gate Shutoff Control



### Instructions

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Anamosa, Iowa USA

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## INTRODUCTION

Congratulations on the purchase of your new Scale-Tec Auto Gate Control system for your GT460 or GT465 Indicator. This system is specifically designed to control the unload gate on your grain cart. These instructions will guide you through general installation of the auto gate control kit.



This **SAFETY ALERT SYMBOL** indicates important safety messages in the manual. When you see this symbol, be alert to the possibility of PERSONAL INJURY and carefully read the message that follows.



**NEVER OPERATE WITHOUT ALL COVERS, SHIELDS AND GUARDS IN PLACE. KEEPHANDS, FEET AND CLOTHING AWAY FROM MOVING PARTS. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**

Some covers and guards have been removed for illustrative/photographic purposes only in this manual.

For information on ordering repair parts, refer to Parts Section in this book.

This supersedes all previous published instructions.



**IMPORTANT!**



## Requirements for Auto Gate Control

**Firmware:** The GT460 must have a date code of August 2013 S/N 5659 or newer for the correct firmware version to function with the solenoid valve. If it does not, the GT460 can be updated by sending it into Scale-Tec for firmware and hardware update.

**Flow Rate:** The Auto-Gate Control requires 12 gpm flow rate.

**Warm Up Period:** It is recommended to allow the tractor utilized with the grain cart to allow a 15 minute warm up period, or longer, depending on cold temperature conditions. Inconsistent shutoff may result if hydraulic fluid is cold and the viscosity of the hydraulic oil is thick.

**Hydraulic Fittings:** Due to the universal nature of this product, Scale-Tec has attempted to identify the correct fitting for your grain cart. In some cases, incorrect fittings may exist on the hoses. Scale-Tec does not supply fittings other than what is supplied in the kit.

## Hydraulic Solenoid Block Installation

### Mounting the Valve Block

The auto gate control kit consists of mounting a valve block assembly, connecting pressure and return hoses, and connecting an electrical connection to your GT460/GT465 indicator.

1. Mount the hydraulic solenoid valve block to the cart.



Fig. 1

**⚠ IMPORTANT!** Mount valve block in an easily accessible location, but protected from moving parts..

Refer to Fig. 1.

- i. Drill two 5/16" holes. Use the block as your template to mark the holes. Ensure that Port A is located at the bottom of the valve block when installed.
- ii. Mount the valve block utilizing the two 1/4" x 3" bolts and 1/4" lock nuts.

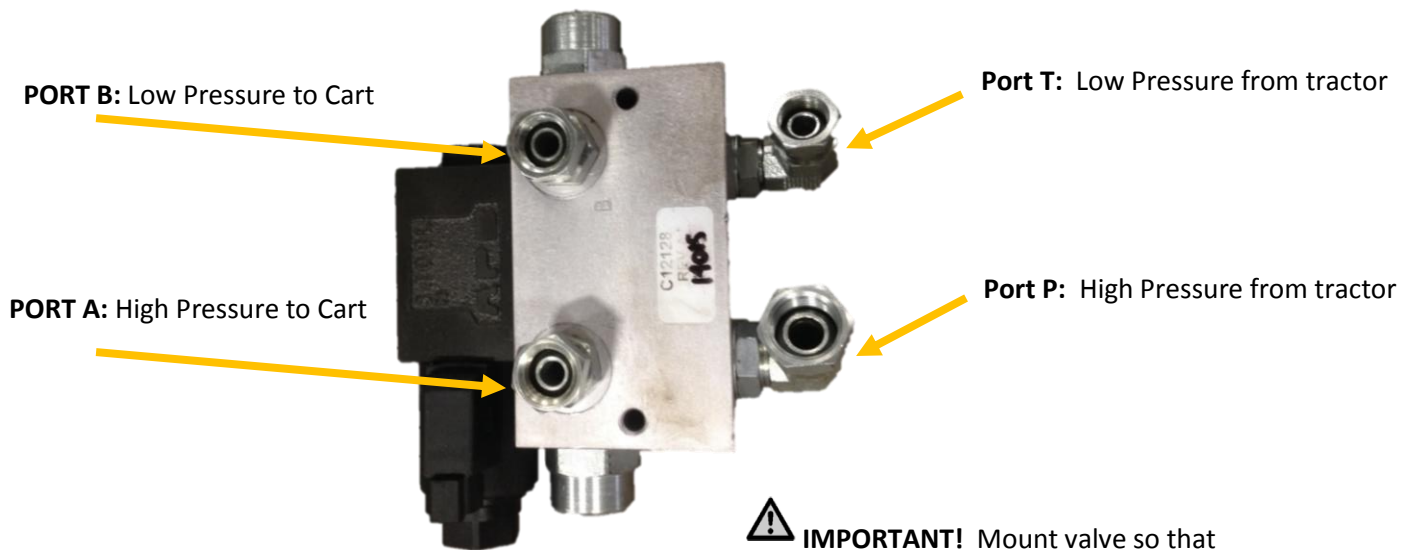
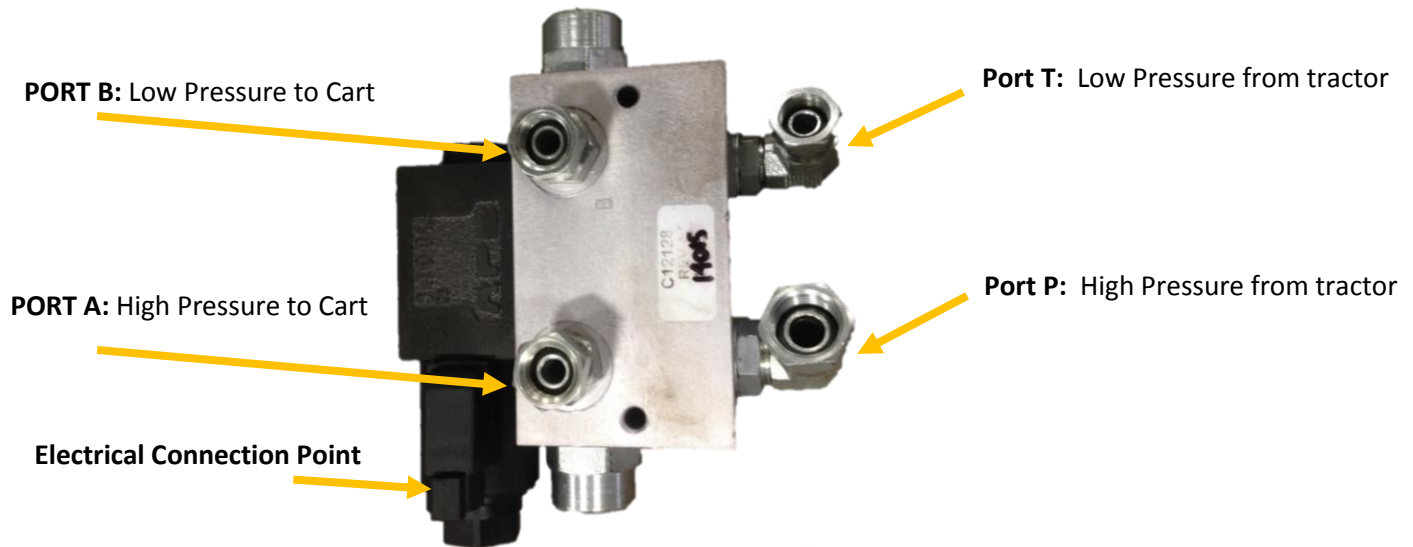


Fig. 2

**⚠ IMPORTANT!** Mount valve so that PORT A is orientated to the "Down" position as shown in this picture.

## Hydraulic Hose Connection



1. Tag or mark the pressure and return hoses that provide control for the gate door on the grain cart. Disconnect the pressure and return hoses from the grain cart.
2. Install the supplied high pressure hose from Port A on the valve block to the high pressure fitting on the grain cart.
3. Install the supplied low pressure (return) hose from Port B on the valve block to the low pressure (return) fitting on the grain cart.
4. Install the low pressure (return) hose from the tractor to Port B on the valve block. The return hose should be the original hose.
5. Install the high pressure hose from the tractor to Port A on the valve block. The pressure hose should be the original hose.
6. Connect the two pin Deutsch connector of the wire harness to the solenoid valve.

## Operating the GT460 with Auto-gate Shutoff

### Programming the Amount of Weight to Unload



1. Using the numerical keypad, typed in the amount of weight.

2. Press 

### Hydraulic Controls on the Tractor

The Hydraulic control on the tractor needs to be positioned to “Continuous Flow” in the direction that “Closes” the gate on your grain cart. See your tractors operators’ manual for proper configuration of your tractor hydraulic control.

### Unloading Grain from the Grain Cart

1. Start the PTO and bring the RPM to a safe operating speed for the grain cart.
2. The Indicator will recognize the PTO sensor signal and will start counting down the remaining weight programmed in your preset. Below is a flow chart of what the indicator will display.
3. Once the tolerance is reached (see Adjusting Tolerance Section) the gate will close and the auger will clean out.
4. Once the auger cleans out stop the PTO. The record will be made, and the gate will open.

#### UNLOAD START SEQUENCE (Starting the PTO)



#### UNLOAD STOP SEQUENCE (After auto-gate close, shut PTO off)





## Fine Tuning Unload Weight (TOLERANCE)

Three factors can affect accuracy of the auto-gate shutoff and achieving an accurate weight by the time the unload auger cleans itself out. This is considered “Tolerance.” These tolerance factors include:

**Hydraulic Warm Up:** Cold hydraulic fluid can delay or slow down the gate causing excess grain to pass through the unload auger and overshoot the scale preset.

**Commodity Type:** Different types of grain flow through the unload auger at different rates depending on grain size, and moisture content. This can allow for overshooting, or undershooting the preset weight.

**Unload Auger Diameter:** Unload augers come in all different diameter sizes. This greatly affects the amount of grain being unloaded after the gate is closed. A good rule of thumb is a tolerance of 2700 lbs. of grain remaining on a 22” diameter auger after the gate has closed (this number can vary slightly depending on the type of commodity being utilized).

### ADJUSTING TOLERANCE



1. TYPE 442
2. Press “SELECT”



T-MTHD is Displayed  
(Tolerance Method)



WEIGHT is Displayed

1. Press “Enter”



TOLER is Displayed  
(TOLERANCE)



Adjust the Tolerance by  
using the procedure outlined  
to the right:

### Entering Tolerance Value:

The tolerance value is the amount of grain remaining in the auger after the gate closes.

1. Using the Numerical Keypad, type in the weight ie. 2700.
2. Press the “Enter” button

ie. Default tolerance is set to 2500. If you are 200 lbs over weight after unloading, adjust the tolerance to 2300.

## Temporarily “Pausing” and “Resuming” the Load

Circumstances may dictate momentarily stopping the load, such as “Top Off” of wagons or semis or possible overfilling of storage facilities. This procedure does not constitute actions used in an emergency! Shut the PTO off if an emergency presents itself for immediate stop of unloading operations.



**IMPORTANT!** If and Emergency situation presents itself, shutoff the PTO!

Do not use the Pause/Resume function of the GT460!

### Temporarily Stopping the Load (Close Gate)



Press “START/STOP”



**NOTE: THIS PROCEDURE  
REQUIRES THE PTO TO  
REMAIN ON.**

### Resuming the Load (Open Gate)



Press “START/STOP”



## Disabling the Auto-Gate Shutoff

It is possible to disable the auto-gate shutoff function. This will cause the indicator to function with Auto-Logging capabilities only and will require manual operation of the unload gate on your Grain Cart.



1. TYPE 477
2. Press “SELECT”



ALP is Displayed  
(Auto Load Preset)

STORED is displayed  
STORED is Default

1. Press “SELECT”  
until “OFF is displayed.



2. Press “Enter”





## TROUBLE SHOOTING

To properly troubleshoot the auto gate system, it could be affected by many different aspects of the system. To breakout the system as a whole, it is best to start with the PTO sensor and work toward the Hydraulic function of the Gate Control.

### PTO Sensor (Rotation Counter)

1. Ensure the PTO sensor is installed correctly. (See autolog installation manual)
  - a. When the PTO sensor is properly installed in-front of the target an amber light should be illuminated, indicating proper spacing for the magnetic sensor.
  - b. When the PTO is activated, the amber light should “blink” as the target passes under the sensor.
  - c. Utilze the RPM diagnostic tool on the GT460 (DAN 508) to verify the PTO is registering RPM.
2. If the PTO sensor is determined to be defective, replace PTO sensor.

### Indicator Menu Settings.

1. Check to ensure the menu settings match with the default menu settings listed in the “MENU” section of this manual.

### Hydraulic Connections

1. Ensure that the pressure and return lines are properly installed to the valve block.
2. Ensure the pressure and return lines are properly installed to the grain cart.
3. Ensure the pressure and return lines are properly connected to the tractor.
4. Check to ensure you have at a minimum 12 gpm flow rate to the grain cart. (See your tractors operators manual).
5. Ensure that you have continuous flow to the grain cart in the direction of the Gate Closed position.
6. For inconsistent results, allow the tractor to warm up. Warm up period may vary depending on environmental conditions.

## MENU SETTINGS

### Direct Access Numbers (DAN)

To quickly access the appropriate setting for the Auto-Gate shutoff, utilize the DAN numbers provided in the table below. To access a DAN number simply use the numerical keypad and type in the number, followed by pressing the "Select" key.

1. Using the Numerical keypad type DAN (Direct Access Number)
2. Press the Select Button.
3. Press the Select button again, or enter numerical value as required
4. After setting is configured, press the "Enter" button

DAN No.	Setting	Options	Default Setting/Description
401	PRE-ALARM (P-ALM)	Method and Preset	METHOD: WEIGHT PRESET: 0
404	BUZZER	BUZZER	1= Shortest OFF= Alarm will not sound
406	RELAY	PREACT	PREACT (Setting that will allow for Preset)
426	Over/Under-Voltage	SIG12V	SIG12V- Provides Voltage to Solenoid
442	TOLERANCE (TOLER)	Method and Tolerance	T-MTHD: WEIGHT TOLER: See page 7.
475	PAST	PAST	PAST: 0.0
476	UNWEDI (Unload Weight Display)	UNWEDI	NET
477	AUTO Load Preset	ALP	STORED=Default OFF= Disabled Autogate
508	RPM Diagnostic Tool	DIAGN	OFF= Disabled ON= Enabled
531	Rotation Counter Sensor	RSCTL	ON
532	RPM STOP Speed	RSSMIN	Default is 300 May need to change due to RPM Sensor Location.
533	RPM Start Tolerance	RSSTOL	Default is 100 May need to change due to RPM Sensor location.
534	RPM Start Delay	RSSTOY	Default is 3.0 Seconds Do not Go Below 1.0
535	RPM STOP Delay	RSSPDY	Default is 1.0 Seconds Do not Go Below 1.0