



## GRAIN CART RETROFIT

### BOLT-ON TYPE HITCH

### SCALE SYSTEM



#### Instructions

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Anamosa, Iowa USA

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### INTRODUCTION

Congratulations on the purchase of your new Scale-Tec Grain Cart scale system. This scale system is specifically designed to weigh the hopper on your Grain Cart. This scale kit is specifically designed for your make and model of Grain Cart. These instructions will guide you through general installation of the kit. The scale kit can be used to record and monitor seed weight going into or out of the grain cart.



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.

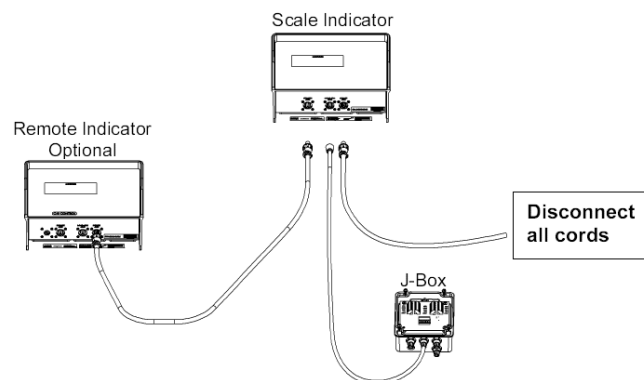


### IMPORTANT!

### Charging Battery and Welding

Disconnect all cables from the weighing indicator before charging the battery or welding on the machine. If cables are left connected, the weighing indicator and connected load cells could be damaged.

**Important:** Do not weld near indicator, load cells or cables; remove from area to be welded. Place ground close to area to be welded to prevent current from passing through electronic parts.



## SCALE BRACKET AND LOAD CELL MOUNTING INSTALLATION

### Scale Installation

The scale kit consists of mounting two spindle load cells, one hitch load cell, one J-box and a scale indicator to support the seed hopper.

1. Jack up one side of the cart utilizing a jack or lifting device that will support the full weight of the Grain Cart.



**SAFETY!!!** Ensure you properly block the Grain Cart to provide support in the event of a jack failure or lifting device failure. Only install one side at a time. Lifting both sides simultaneously may be too unstable and result in serious injury or death.

2. Remove the Wheel and Hub Assembly

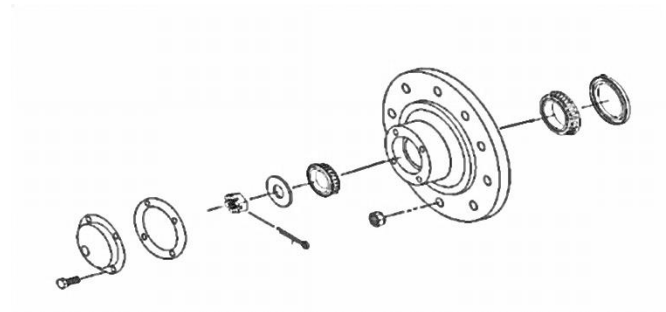


Fig. 1

Refer to Fig. 1  
To remove the hub....

- i. Remove the Hub Cap.
- ii. Remove the Hub Gasket (if installed).
- iii. Remove the Cotter Key / Roller Pin.
- iv. Remove the Castle Nut.
- v. Remove the Outer Washer.
- vi. Remove the Hub.
- vii. Remove the Inner Washer.
- viii. Remove the Hub seal.

Refer to Fig. 2

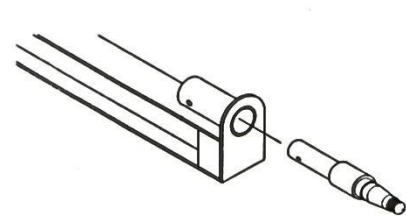


Fig. 2

- i. Remove the spindle retaining bolt and slide the spindle out.



**IMPORTANT!** It may be necessary to utilize a large pipe wrench, penetrating oil, or a slam hammer to remove rusted in axles. As a last resort, heat the sleeves with a torch to remove spindles.

3. Install the Spindle Load Cells.

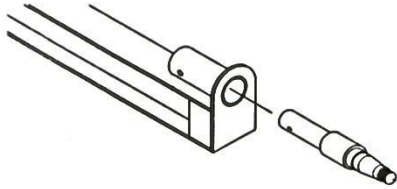


Fig. 3

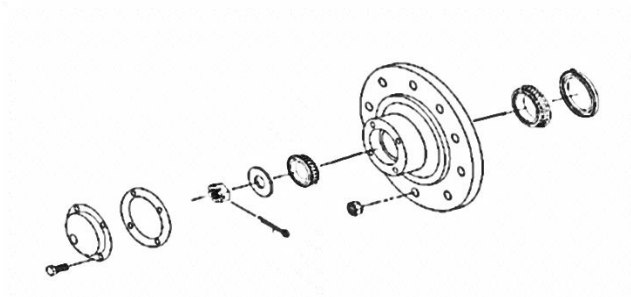


Fig. 4

4. Reinstall the wheel and tighten wheel lugs.

5. Repeat steps one through three for installation of the other side.

Refer to Fig. 3

- i. Install the load cell into the sleeve. It is necessary to route the cable through the sleeve prior to installing the load cell into the sleeve.
- ii. Install the existing hardware retaining bolt to secure the load cell into place.



**IMPORTANT!** Ensure the sticker with the serial number and part number is located on the top. Failure to do so will result in inaccurate weights.

Refer to Fig. 4

Install the hub assembly...

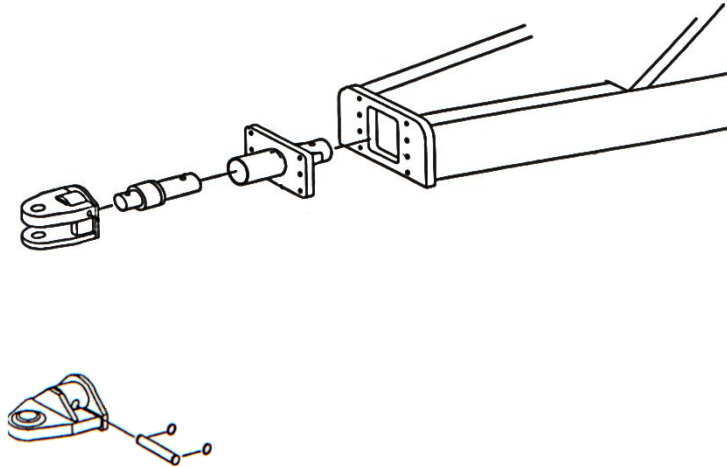
- i. Install the hub seal on the load cell.
- ii. Install the inner bearing.
- iii. Install the hub
- iv. Install the outer bearing
- v. Install the retaining washer
- vi. Install the Castle nut.
- vii. Install the Cotter Key/ Roll Pin
- viii. Install the Hub gasket
- ix. Install the Hub.



**IMPORTANT** –Grease the bearings during installation if needed.

5. Remove existing hitch and Install hitch load cell.

Refer to Fig. 5



- i. Remove the existing hitch assembly.
- ii. Install the new hitch plate (sleeve assembly) onto the face of the grain cart hitch.
- iii. Install the load cell into the sleeve routing the cable through a hole located on front sleeve.
- iv. Install the vertical retaining bolt to hold the load-cell into place on rear sleeve.
- v. Install the receiver on the load cell.
- vi. Install the retaining bolt or clevis pin as required to secure the hitch receiver to the load cell.

**⚠ IMPORTANT!!** For Digi-Star load cells arrow sticker must be pointed up. For Weigh-Tronix weigh Bars “TOP” sticker must be positioned to the top.

Fig. 5

# JUNCTION BOX MOUNTING

## Four Hole Junction Box

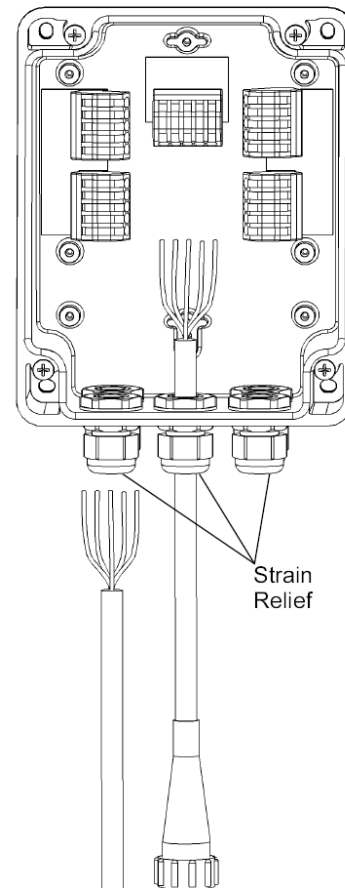
The junction box is water resistant, not water-proof. It should be mounted to avoid submersion during wetweather and to avoid physical abuse. The junction box can be mounted on the frame of the grain cart. All load cell cables must reach the J-Box. Install by removing the double sided tapebacking and apply to cleaned surface.

## Connect Load Cell and Indicator “J-Box” Cable

1. Route front and rear load cell cables to J-box location. Make sure they are not bound or pinched. Cable tie (customer provided) load cell cables in place.
2. Insert load cell and J-box cables through each of the water-tight strain-reliefs.
3. Remove each terminal block from the J-box.
4. Connect wires of the same color to the same terminal block as shown above. See instructions below.
5. Install terminal block into the J-box as shown (location not important).
6. Tighten nuts on the water-tight strain-reliefs.
7. Assure that gasket is properly installed in the cover.
8. Attach cover using 4 screws (provided).

## Installing Wires into Terminal Block

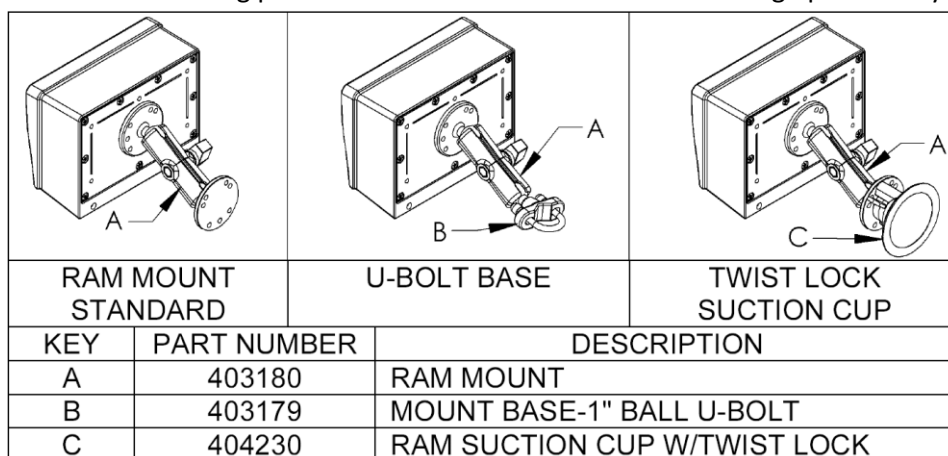
1. Open levers 90° to locked position.
2. Insert individual wires into terminal.
3. Close lever.
4. Tug wire to assure solid connection.



# INDICATOR MOUNTING

## RAM MOUNT

The scale indicator can be mounted in the tractor cab or on the grain cart with various mounting options. This particular instruction shows mounting with a “ram” type mount. Your particular kit may only come with a fixed mounting plate. Contact Scale-Tec for other mounting options for your need.



1. Bolt the readout directly to the ram mount utilizing the indicator mounting screws provided.
2. Install power cord to a 12-volt negative ground battery.
3. Route J-box cable to indicator and install to indicator bottom panel.

### Power Connection:

The power cable should be connected directly to a vehicle battery or regulated power supply. The scale end of the power cable is attached to the J901 connector located on the bottom panel of the indicator.

Connect the RED wire from the power cable to +12 VDC and the BLACK wire to GROUND. The indicator is fused internally at 4 amps.

### Power Cable Connections:

| Wire Color | Wire Function     |
|------------|-------------------|
| Red        | Battery (+12 VDC) |
| Black      | GROUND            |


### Load Cell Connection:

The indicator is designed to operate with strain gage load cells. The indicator will normally be supplied with a “J-BOX” cable going between the scale and the load cell junction box.

| Load Cell Wire | Digi-Star | Function |
|----------------|-----------|----------|
| 1              | Red       | +EX      |
| 2              | Green     | -SIG     |
| 3              | White     | +SIG     |
| 4              | Black     | -EX      |
| 5              | Clear     | SHIELD   |



## TESTING AND TROUBLE SHOOTING

 **IMPOTANT** All bars need to weigh accurately before it will be beneficial to recalibrate your indicator

### Inaccurate weights?

- 1) Measure the same person, or a 200 pound bag of seed, on each of the weigh bars.
  - If one weighs negative, turn that weigh bar over. (An upside down bar will weigh negative.)
  - If one side is weighing 20% light, check for an obstruction. Is anything binding or any metal rubbing?
  - Could be a faulty weigh bar
  - If they are all even weights, but are weighing light or heavy, you need to adjust the calibration. If your scale is more than 5% off, call us for help, as your scale may have had the wrong calibration number put in it from the factory. 1-888-962-2344.
  - The hopper being weighed needs to be at least  $\frac{3}{4}$  full for us to adjust calibration.
  - Check operator's manual or give us a call at 1-888-962-2344.

### Erratic weights?

The following process needs to occur in an effort to eliminate one part at a time in an effort to find the problem! When you reconnect the faulty part you will have erratic readings again.

- 1) Disconnect the junction box cord from the indicator marked "load cells". The indicator should stabilize after 45 seconds. Try to zero out the indicator. IF the indicator won't zero out, the indicator is the problem.

*IF it will zero out:*

- 2) Connect the junction box back to the indicator. And then disconnect all of the load cells from the junction box.
- 3) Zero out the indicator. IF the indicator won't zero out the problem is the junction box or the junction box cable.

*IF it will zero out:*

- 4) Reconnect the load cells ONE AT A TIME, zeroing out the indicator each time. When you reconnect the faulty load cell, you will have erratic readings again.