



Landoll 5210 Grain Drill Scale Kit

**Instructions
And
Repair Parts**



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INTRODUCTION

Congratulations on the purchase of your new Digi-Star Grain Drill Scale System. This scale system is specifically designed to weigh the seed hopper on a Grain Drill or other seeding hoppers. The scale kit can be used to record and monitor seed weight going into or out of the seed hopper.

This scale system is covered by the following US patents: 6732667, 7059258 and 7273017. The single-use license is included with this document (see page 14).

! 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.

!WARNING NEVER OPERATE WITHOUT ALL COVERS, SHIELDS AND GUARDS IN PLACE. KEEP HANDS, 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.

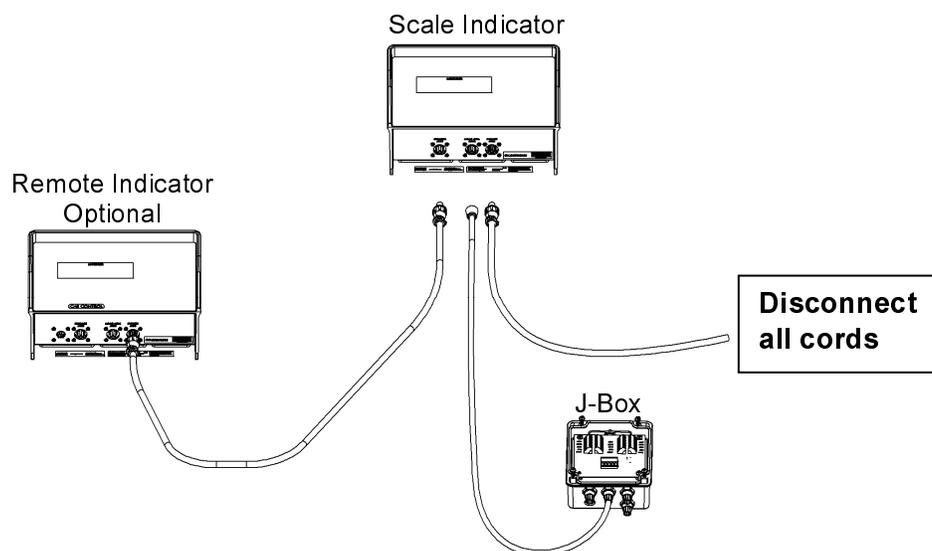
This supersedes all previous published instructions.

! **Important!**

Charging Battery and Welding

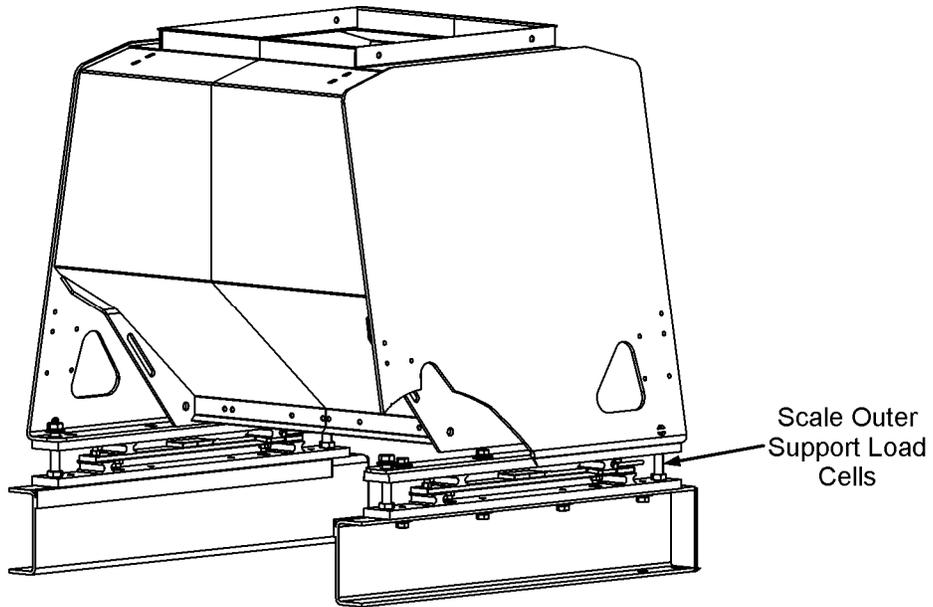
Disconnect all cables from the weighing indicator before charging the battery or welding on the machine. If cables are left connected, the weighing indicator and connected load cells could be damaged.

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.

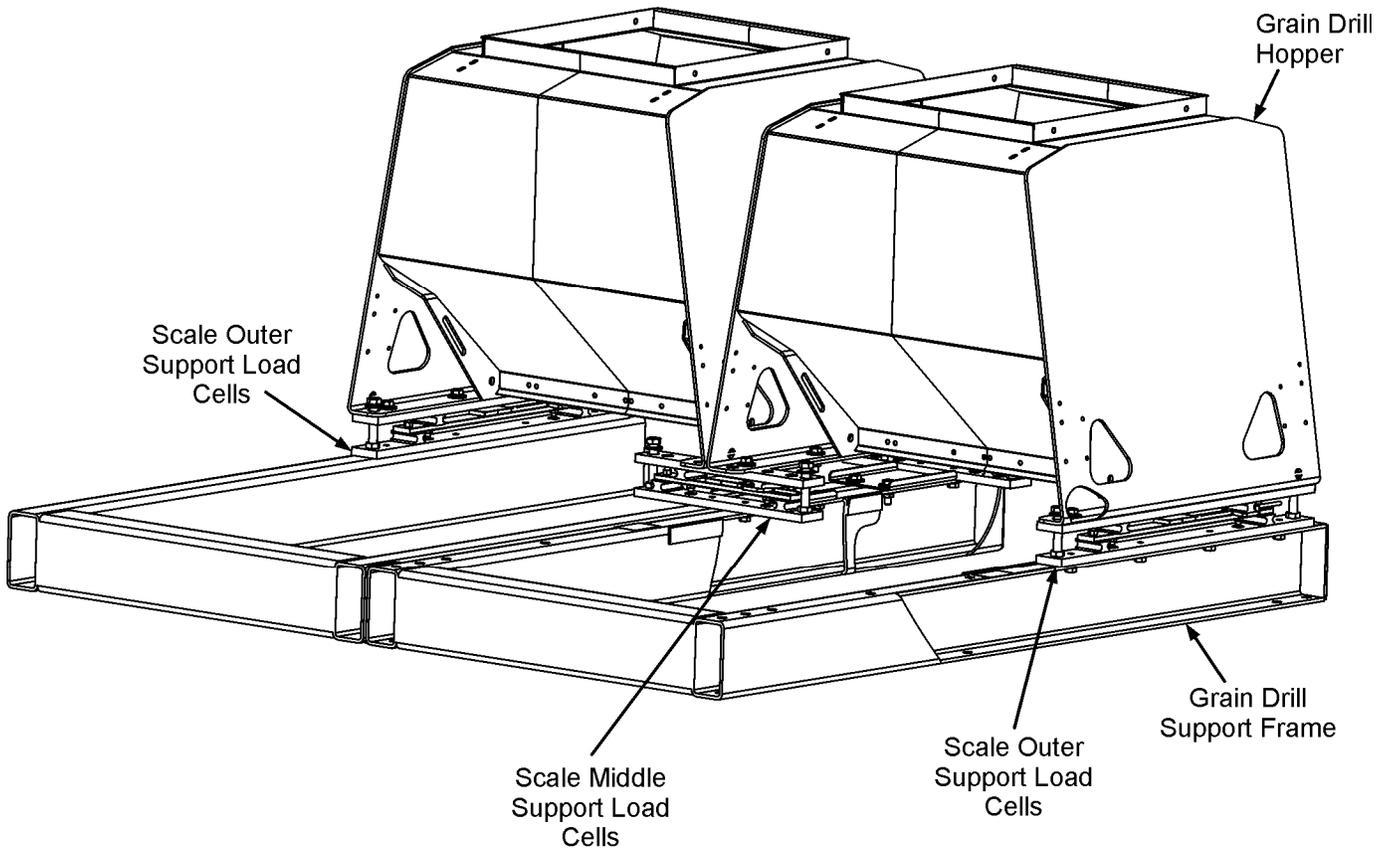


SCALE BRACKET AND LOAD CELL MOUNTING INSTALLATION

Single Hopper Overall View

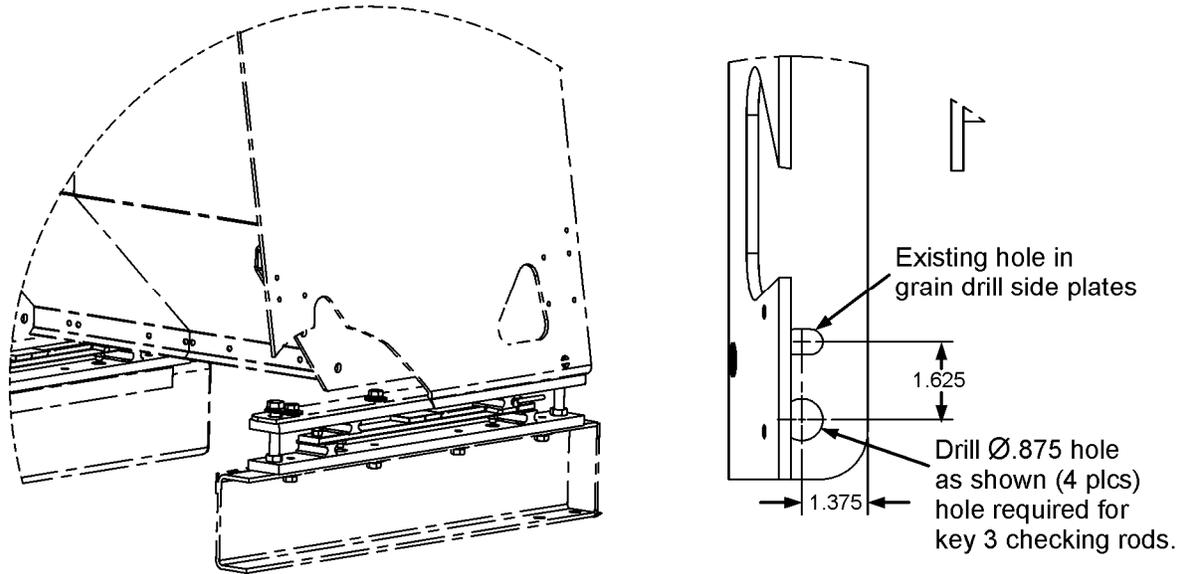


Dual Hoppers Overall View

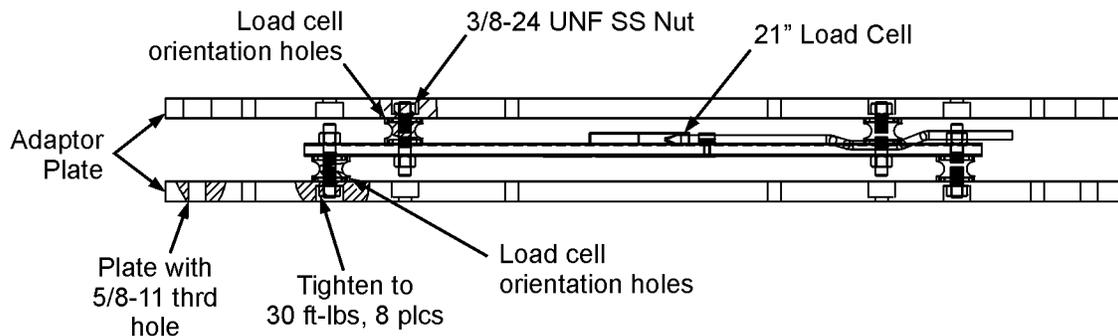


Outer Load Cell Assembly Instructions for Dual and Single Hoppers

1. Before beginning installation, the outer hopper supports must be modified by drilling two Ø.875 holes in each support as shown in Figure 1.
2. Assembly adaptor plates to load cells with four 3/8-24 UNF nut. Tighten 3/8-24 UNF SS Nut to 30 ft-lbs. See Figure 2. **NOTE:** Rubber mounts should remain perpendicular to load cell bar.



**Figure 1
Hopper Support Leg Modification**



**Figure 2
Outer Load Cell Support**

Middle Load Cell Support Assembly Instructions For Dual Hoppers

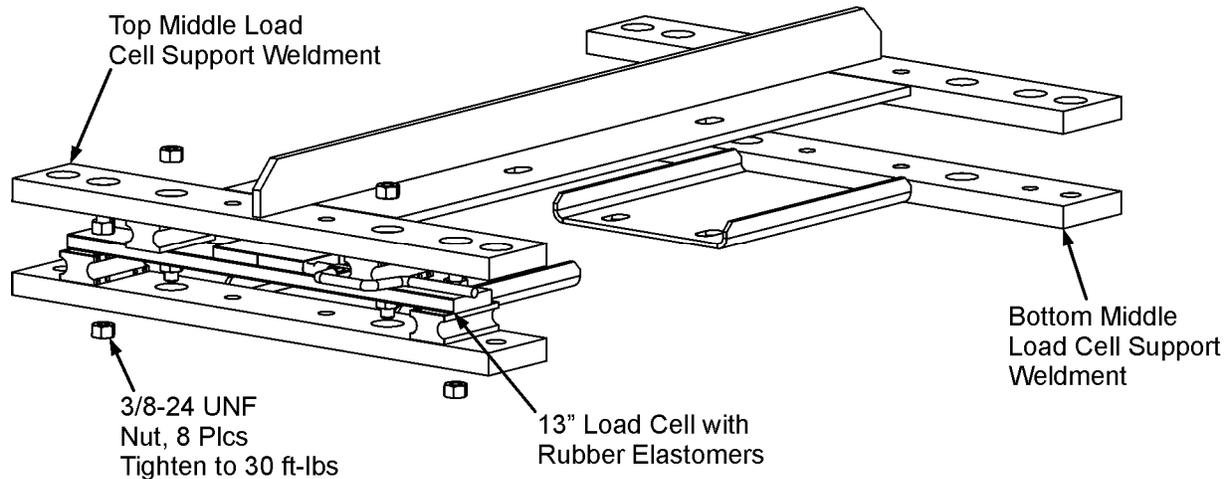


Figure 3

1. Assemble 13" Load Cells to top and bottom middle load cell support weldment with (8) 3/8-24 UNF hex nut. Tighten to 30 ft-lbs. **NOTE:** Rubber mounts should remain perpendicular to load cell bar.

Single Hopper Load Cell Assembly Installation

(See Figure 4)

1. On the right hopper side loosen the four 1/2" bolts that hold the seed hopper to the frame. Do not remove hardware.
2. On the left side remove the 1/2" bolts that hold the seed hopper to the frame.
3. If possible, on the inner frame on the left side (that runs under the seed hopper) place a jack between the frame and seed hopper. Lift the seed hopper up so that the load cell assembly can slide underneath the hopper. It is recommended the hopper be supported by two methods when attaching the load cells and brackets. In addition to lifting the hopper with a chain or nylon strap, the hopper should be supported in the middle with a hydraulic jack or stands.

IMPORTANT: The lifting chains, bucket attachments, loader/skid steer or winch must be capable of lifting and controlling 1000 lbs.

4. Install the outer load cell and bracket assembly with 1/2 x 1.0 bolt, lock washer and flat washer between the seed hopper and support frame. Keep the hardware loose. It may be necessary to loosen or remove the meter drive chain.
5. Go to the right hopper side and repeat steps 2-4.
6. The seed hopper is now supported by the two outer load cells. Install the outer 5/8" x 4.0" check bolts flat washer and 5/8" jam nut. Thread the 5/8" bolt into the lower bracket threaded hole until the check bolts bottoms out on the main hopper support frame. Then secure with the 5/8" jam nut. The 5/8" check rod should be centered in the top plate 7/8" diameter clearance hole. If not, loosen the (8) 1/2" x 1.0 bolts and adjust and align the top and bottom plates and retighten 1/2" x 1.0" bolts.

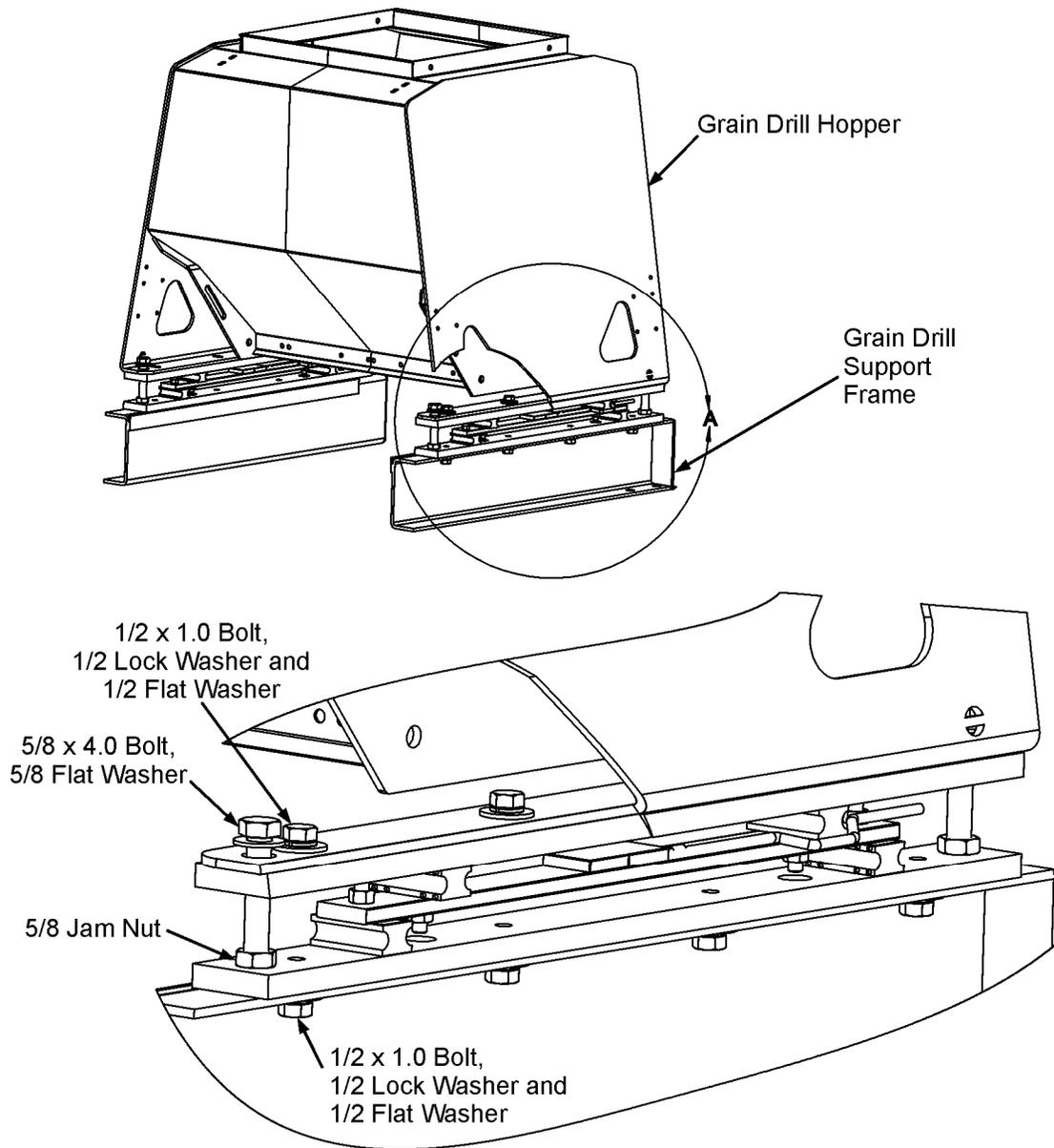


Figure 4
Single Hopper Load Cell Assembly Installation

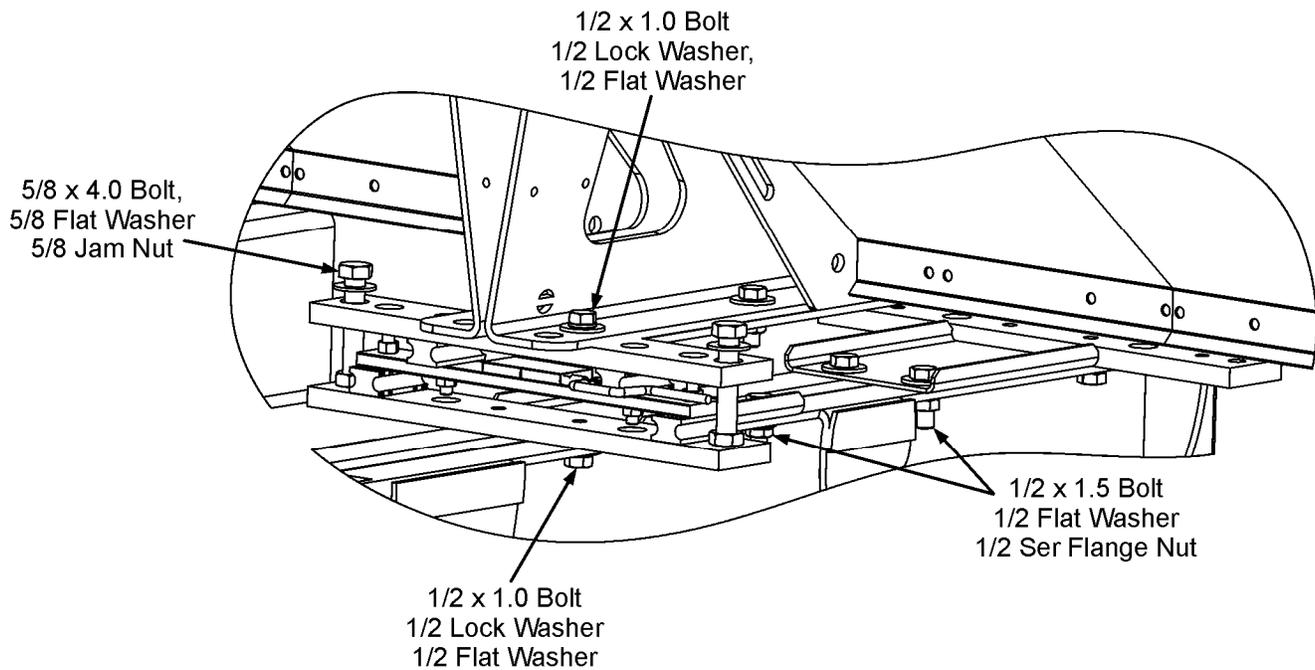


Figure 5

Dual Hopper Load Cell Assembly Installation

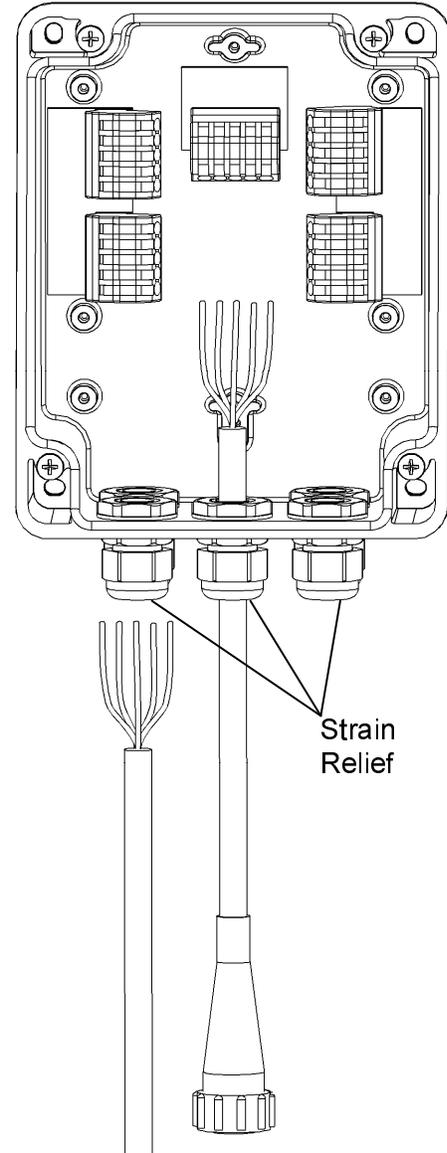
1. Loosen all of the right, left and middle hopper 1/2 bolts that hold the seed hopper to the frame. Do not remove.
2. Remove the middle hopper hardware that holds the hopper to the main frame and if possible, on the inner frame on the right and left side (that runs under the seed bin) place a jack between the frame and seed hopper to support the middle of both hoppers. Lift the seed hopper up so that the middle load cell assembly can slide underneath the middle. It is recommended the hopper be supported by two methods when attaching the load cells and brackets. In addition to lifting the hopper with a chain or nylon strap, the hopper should be supported in the middle with a hydraulic jack or stands.
IMPORTANT: The lifting chains, bucket attachments, loader/skid steer or winch must be capable of lifting and controlling 1000 lbs.
3. Slide the middle load cell assembly with the support weldments between the two hopper middle mounting flanges. Secure with mounting hardware listed in Figure 5. Keep the hardware loose. It may be necessary to loosen or remove the meter drive chain.
4. Install the outer load cell supports and follow steps listed on page 4, steps 1 - 6.
5. After all the 4 load cells are installed install the outer 5/8" x 4.0 check bolts flat washer and 5/8 jam nut (qty-8 on all load cell assemblies). Thread the 5/8 bolt into the lower bracket threaded hole until the check bolts bottoms out on the main hopper support frame. Then secure with the 5/8 jam nut. The 5/8 check rods should be centered in the top plate 7/8" diameter clearance hole. If not loosen the eight 1/2 x 1.0 bolts and adjust and align the top and bottom plates and retighten 1/2 x 1.0 bolts.

JUNCTION BOX MOUNTING

The junction box is water resistant, not water-proof. It should be mounted to avoid submersion during wet weather and to avoid physical abuse. The junction box can be mounted on the front or rear of the drill, planter or seeder. All load cell cables must reach the J-Box. Install by removing the double sided tape backing and apply to thoroughly cleaned surface.

Connect Load Cell and 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. 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.

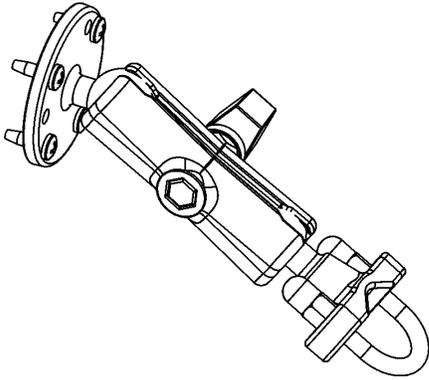
Note: Wire strip length is 7/16" (11mm).

406232	J-Box Lever Nut 4Pt (Planter)
141837	Cable - 30Ft J-Box
406074	Cable - 45Ft J-Box
403335	Cable - Power 17Ft 2-Wire
406073	Cable - Power 36Ft 2-Wire
406072	Cable - Power 6Ft 2-Wire
824316	Cable - 15Ft-J-Box
145096	Cable - 70Ft-J-Box
406276	Cable - Power 65Ft 2-Wire

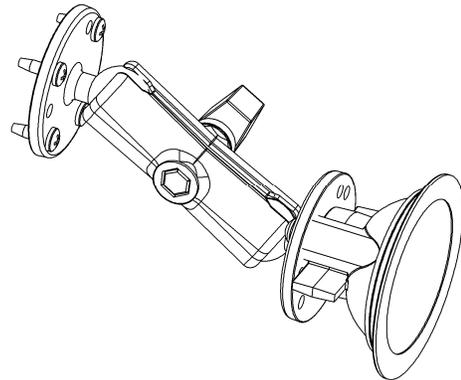
INDICATOR MOUNTING

The scale indicator can be mounted in the tractor cab or on the drill with swivel mounting pack (406081). Two cables must be connected to the indicator bottom panel, J-Box and power cables. Refer to Indicator Manual D3831-US for details of indicator mounting options and connection of power cord.

INDICATOR MOUNTINGS



U-BOLT MOUNTING



TRACTOR CAB MOUNTING

1. Bolt the readout in the cab with the bracket, or mount the bracket in the front of the lift cylinder.
2. Install power cord to a 12-volt negative ground battery.
3. Route J-box cable to indicator and install to indicator bottom panel.
4. Program indicator with the following set-up and calibration number (see Indicator manual).
 - 4-pt (4 Load Cells) Dual Hopper set-up #114008 calibration #1532
 - 2-pt (2 Load Cells) Single Hopper set-up #114004 calibration #778

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

TROUBLE SHOOTING

How to Check the Drill Scale After Installation

For the first test, lift the drill all the way up, to a level area. Put 200-250 pounds of weight on the right side, then compare it to the left. Both sides should be within four to six pounds of each other.

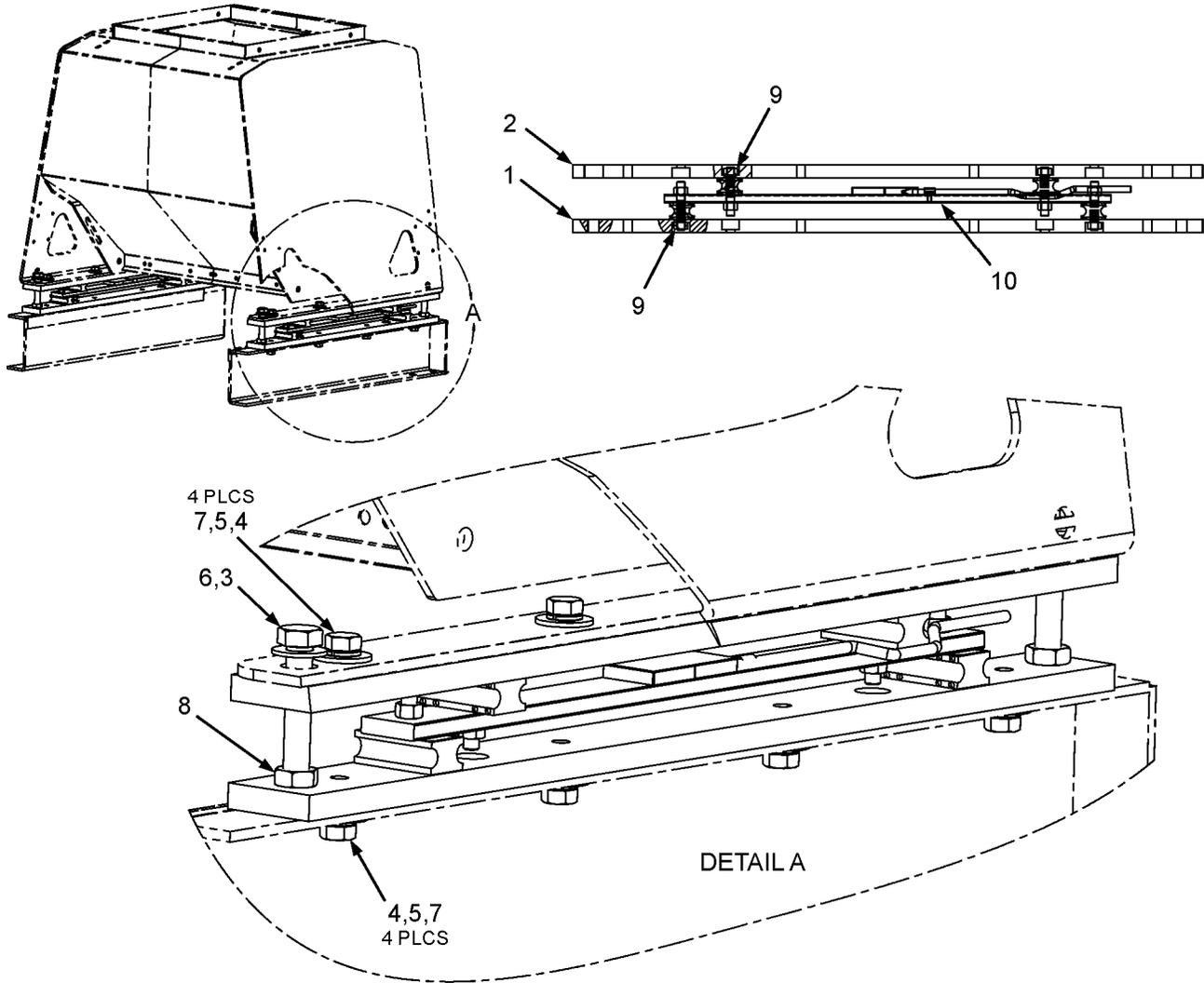
- If the weight is not within the four to six pound range, the drive chain might be too tight or the clutch is binding. Loosen the chain and check the weight again.
- If loosening the chain does not fix the problem, you must remove the clutch arm, and then check the weight on both sides. **NOTE:** *The clutch arm needs to be on the back of the clutch to work properly.*

The second test is to lift the drill to a level area and zero the scale. Lift the drill up and down two to three times, checking to see if the scale zeros out. Each time the scale is in the up position, it should be within four to six pounds. If not, remove the clutch arm and repeat the test. If this solves the weigh problem, the clutch is binding or it needs lubrication. **NOTE:** *The clutch arm needs to be on the back of the clutch to work properly.*

If further assistance is necessary, please call Digi-Star, LLC at 920-563-9700.

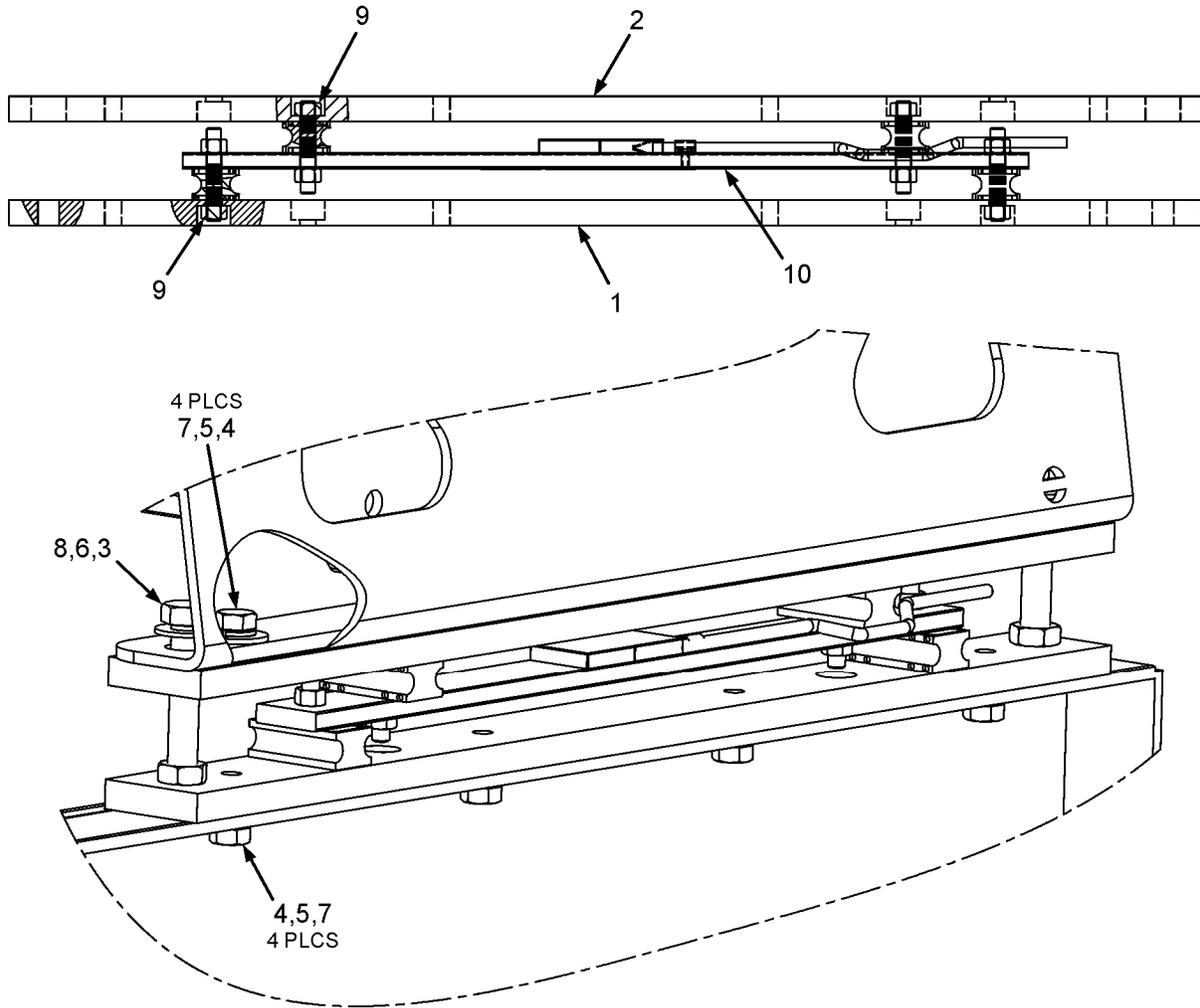
REPAIR PARTS

408026 Kit – Landoll 5210 (2 PT)



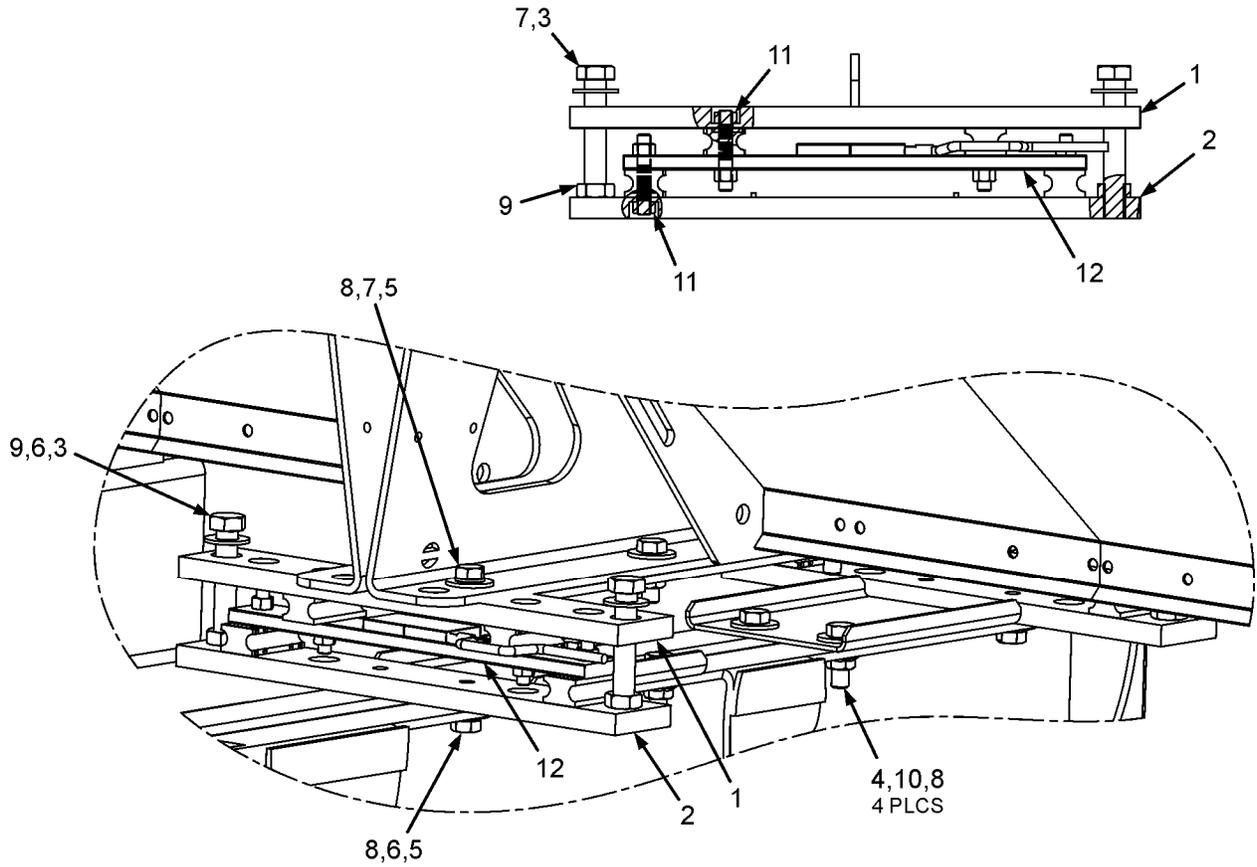
KEY	QTY.	PART NO.	DESCRIPTION
1	2	407949	PLATE-BOTTOM LANDOLL 5210
2	2	407950	PLATE-TOP LANDOLL 5210
3	4	408401	SCR - 5/8 X 4.0 HHCS ZP GRD 5
4	16	405228	SCR - 1/2-13 X 1.0 HHCS ZP GRD 5
5	16	405855	WASH-1/2 LOCK ZP
6	4	405252	WASH-5/8 FLAT NARROW ZP
7	16	405053	WASH-1/2 FLAT WIDE ZP
8	4	408402	NUT - 5/8-11 JAM NUT
9	8	146764	NUT - 3/8-24 UNF SS
10	2	408024	CELL-SW 21"-16' W/O CONN/EM

**408025 Kit – Landoll 5210 (4 PT)
Outer Load Cell Support**



KEY	QTY.	PART NO.	DESCRIPTION
1	2	407949	PLATE-BOTTOM LANDOLL 5210
2	2	407950	PLATE-TOP LANDOLL 5210
3	8	408401	SCR -5/8-11 X 4.0 HHCS ZP GRD 5
4	24	405228	SCR - 1/2-13 X 1.0 HHCS ZP GRD 5
5	24	405855	WASH-1/2 LOCK ZP
6	8	405252	WASH-5/8 FLAT NARROW ZP
7	32	405053	WASH-1/2 FLAT WIDE ZP
8	8	408402	NUT - 5/8-11 JAM HEX ZP
9	16	146764	NUT - 3/8-24 UNF SS
10	2	408024	CELL-SW 21"-16' W/O CONN/EM

**408025 Kit – Landoll 5210 (4 PT)
Middle Load Cell Support**

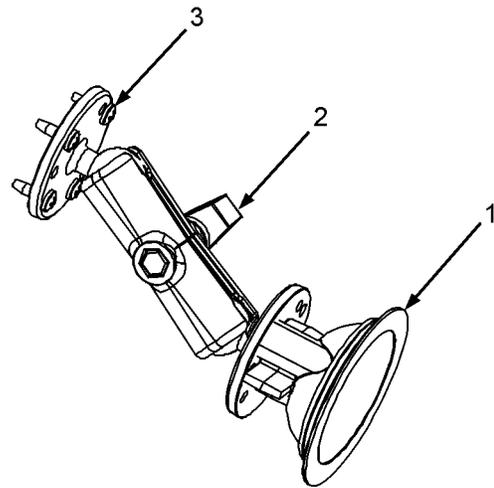
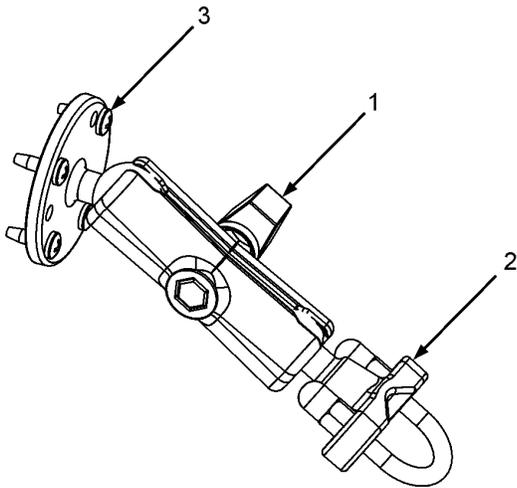


KEY	QTY.	PART NO.	DESCRIPTION
1	1	408019	WELD-MIDDLE TOP SUPPT LANDOLL
2	2	408023	WELD-MIDDLE BOTTOM LANDOLL
3	8	408401	SCR - 5/8-11 X 4.0 HHCS ZP GRD 5
4	8	406459	SCR - 1/2-13 X 1.5 HHCS ZP GRD 5
5	24	405228	SCR - 1/2-13 X 1.0 HHCS ZP GRD 5
6	8	405252	WASH-5/8 FLAT NARROW ZP
7	24	405855	WASH-1/2 LOCK ZP
8	32	405053	WASH-1/2 FLAT WIDE ZP
9	8	408402	NUT - 5/8-11 JAM HEX ZP
10	8	406085	NUT-1/2-13 SER FLANGE ZP
11	16	146764	NUT - 3/8-24 UNF SS
12	2	408027	CELL-SW 13"-12' W/O CONN/EM

Indicator Swivel Mount

406629

406385



KEY	QTY.	PART NO.	DESCRIPTION
1	1	403180	Assembly – 1" Ram Mount
2	1	403179	Mount Base - 1" Ball U-Bolt
3	4	403779	Scr - #10 x 5/8 PHSTS 48-2 Blk ZP

KEY	QTY.	PART NO.	DESCRIPTION
1	1	404230	Ram Suction Cup with Twist Lock
2	2	403180	Assembly – 1" Ram Mount
3	2	403779	Scr - #10 x 5/8 PHSTS 48-2 Blk ZP

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- Remedies for Violations. Owner reserves the right to seek all remedies available at law and in equity for violations of this Agreement, including but not limited to the right to recover the Licensed Product.
- Fees. In consideration for the rights granted under this Agreement, Customer has paid a license fee that was included in the amount invoiced to the Customer for the sale of the Purchased Product.
- Entire Agreement. Except as expressly stated herein to the contrary, this Agreement constitutes the entire agreement between the parties regarding the subject matter hereof, and no verbal or written prior statements or representations of any sort made by any party shall be effective or valid for any purpose whatsoever. This Agreement may be amended only upon the mutual consent of all parties in writing.
- Severability. If any provision of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby. The failure of any party to enforce any provision of this Agreement shall not be considered a waiver thereof, nor shall such failure prevent the future enforcement of any such provision.
- Governing Law. This Agreement and the relationship between the parties shall be governed in all respects by the laws of the State of Wisconsin and the United States of America. The parties consent to the jurisdiction and venue of the Wisconsin and United States courts located in Wisconsin for resolution of any dispute under to this Agreement.

Use or sale of the Licensed Product or of Purchased Product shall bind Customer to all terms and conditions herein without the necessity of signatures on this Agreement.