



John Deere
750/1560/1590-20 ft
Grain Drill
Scale System

Instructions
And
Repair Parts



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TABLE OF CONTENTS

| | |
|---|----|
| INTRODUCTION | 1 |
| Charging Battery and Welding | 1 |
| SCALE BRACKET AND LOAD CELL MOUNTING INSTALLATION | 2 |
| John Deere Grain Drill Scale Kit | 6 |
| JUNCTION BOX MOUNTING | 7 |
| Connect Load Cell and J-Box Cable | 7 |
| Installing wires into Terminal Block | 7 |
| INDICATOR MOUNTING | 8 |
| Power Connection: | 8 |
| Load Cell Connection: | 8 |
| TROUBLE SHOOTING | 9 |
| How to Check the Drill Scale after Installation | 9 |
| REPAIR PARTS | 10 |
| Kit – Scale System | 10 |
| Indicator Swivel Mount | 12 |
| LICENSE AGREEMENT | 13 |

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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 John Deere 750/1560/1590-20 ft Grain Drill. 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: 6,732,667; 7,059,258; 7,273,017; 7,357,087; 7,448,335; 7,523,710; 12/427,915; 6,572,257; and 7,454,304. The single-use license is included with this document (see page 13).

! 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.

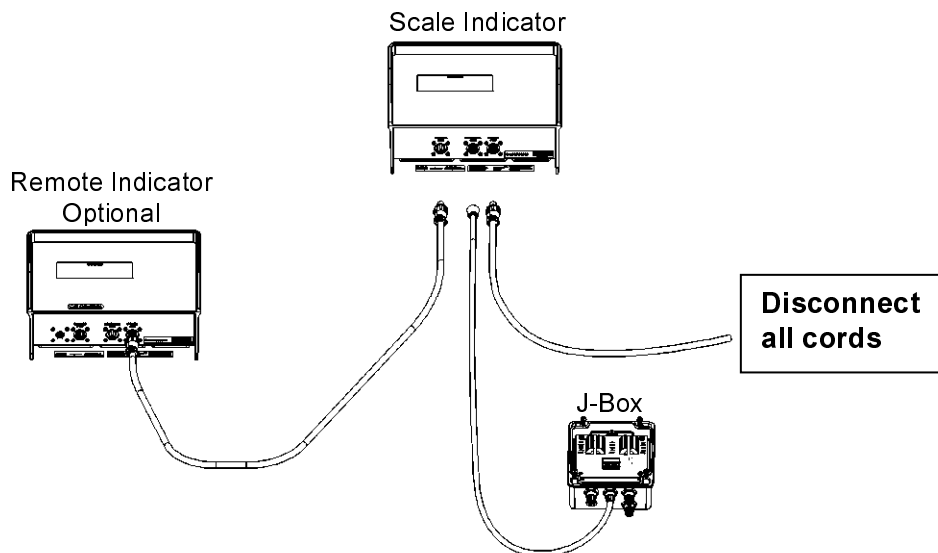
This supersedes all previous published instructions.

! **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.



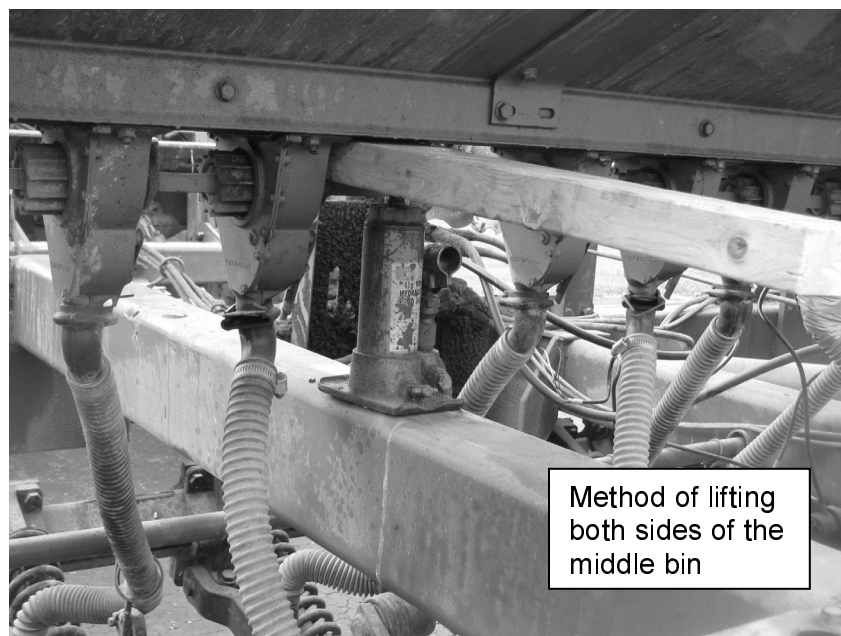
SCALE BRACKET AND LOAD CELL MOUNTING INSTALLATION

1. Remove the cat walk and drive chain off of both the ten foot seed bins.
2. On the left side of the seed bin, loosen the four bolts that hold the seed bin to the frame. DO NOT remove bolts. Repeat the process on the right side.
3. Remove the bolts on the middle of the two seed boxes. The access hole will need to be cut in order to access the back bolts.

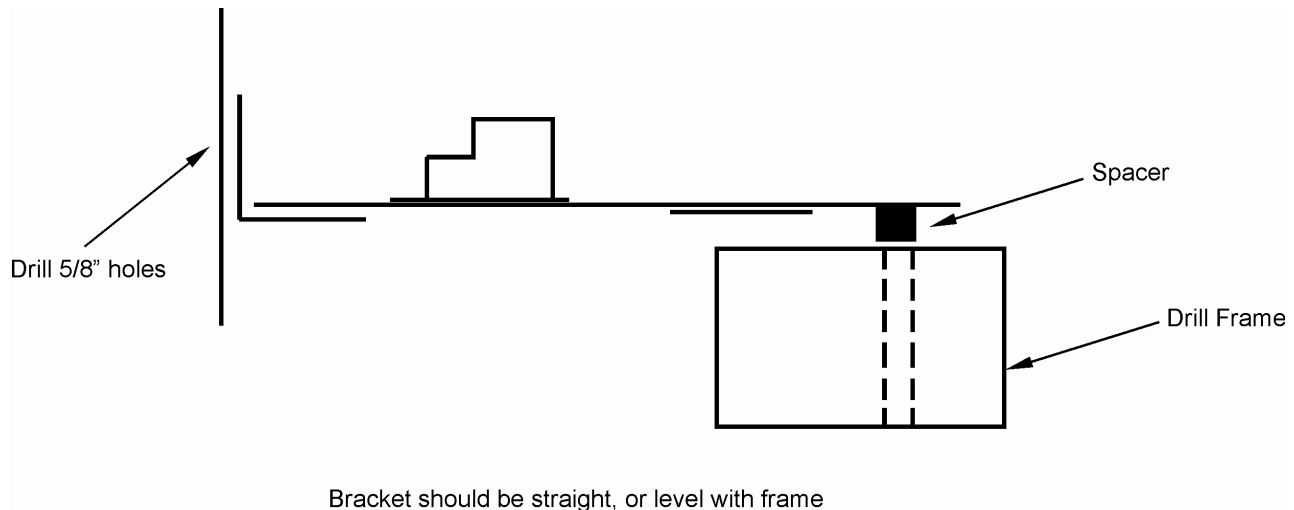


4. On the inner frame on the left and right sides (that runs under the seed bin) place a jack between the frame and seed bin. Lift the middle of both seed bins up about 2-3". Install the middle bracket. Do not tighten bolts.

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



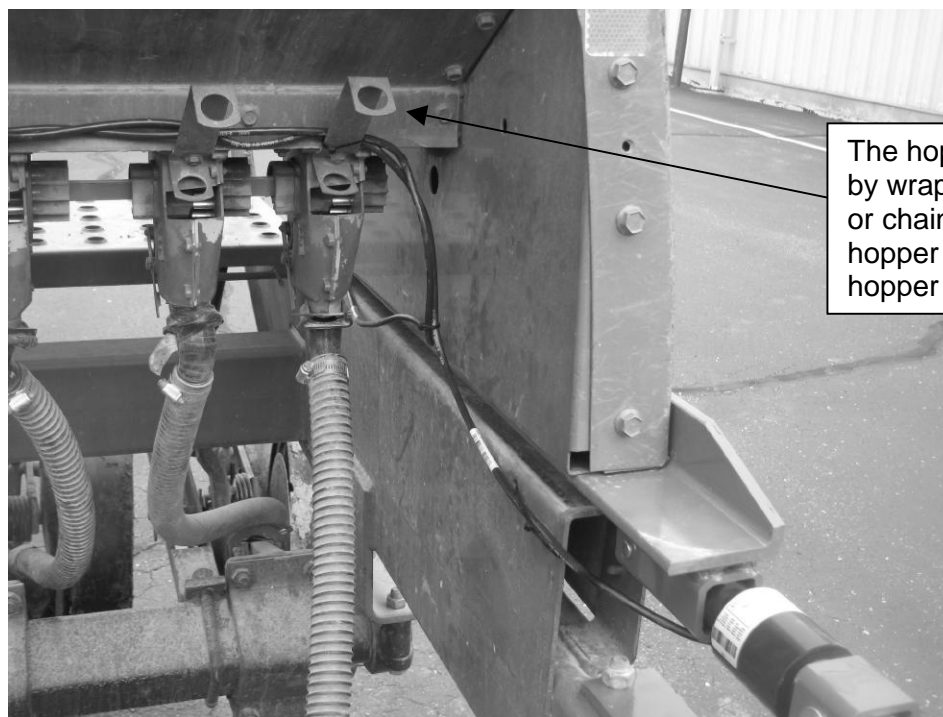
5. Install the front and back middle load cells with the 2-1/4" clevis pins. **The load cell's arrow must be pointed up** (located on the end of the load cell). Two of the load cells are marked with short cords for the center of the drill.
6. Next, install the rear middle bracket. Let the seed bin down to about 1". Use the 2-1/2" x 3/8" clevis pin to hold the weigh-bar in place. The pin should be in the middle of the 1/2" hole.



7. Install the front middle bracket. Install the 2-1/2 x 3/8 clevis pin the same as the rear bracket. Leave all bolts loose.



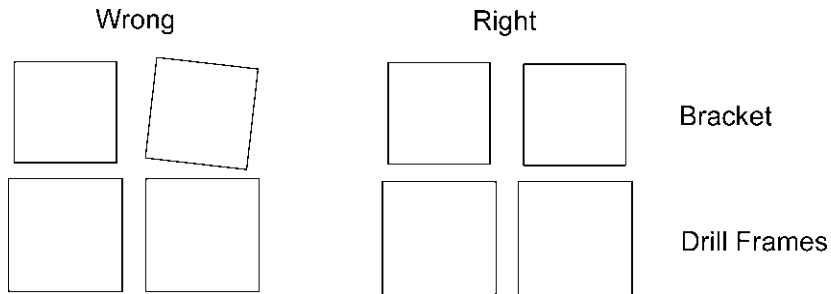
8. On the left side, remove the bolts that hold the seed bin to the frame.
9. Lift the seed bin up about 2-1/2" on the left side.



10. Install the middle bracket under the seed bin (do not tighten bolts yet). See the diagram of the John Deere Grain Drill Scale Kit.
11. Install the front and back load cell with the 2-1/4" x 3/8" pins. Make sure the load cell arrow sticker is pointed up.
12. Let the seed bin down to about 1" and slide the rear bracket on. Use the 5/8" x 8" bolts in the front 2 holes. Use the 2-1/2" x 3/8" clevis pin to hold the load cell in place. Make sure the pin is in the middle of the 1/2" hole. **Note:** *The rear step grip is installed between the rear bracket and the step bracket already on the grain drill. Do not tighten the bolts.*
13. Install the front bracket with the bolts left from the rear bracket. Use the 2-1/2" x 3/8" clevis pin to hold the load cell in place. Make sure the pin is in the middle of the 1/2" hole.
14. Make sure the middle, front and rear brackets are straight with each other.
15. Remove the bolts on the right side that hold the seed bin to the frame.
16. Repeat steps 9 to 14 on the right side of the drill.

17. When both sides are done, the brackets should stand straight; neither should lean. Tighten the bolts on all brackets in the following order:

- 1st: Tighten the middle bracket
- 2nd: Tighten the rear bracket
- 3rd: Tighten the front bracket

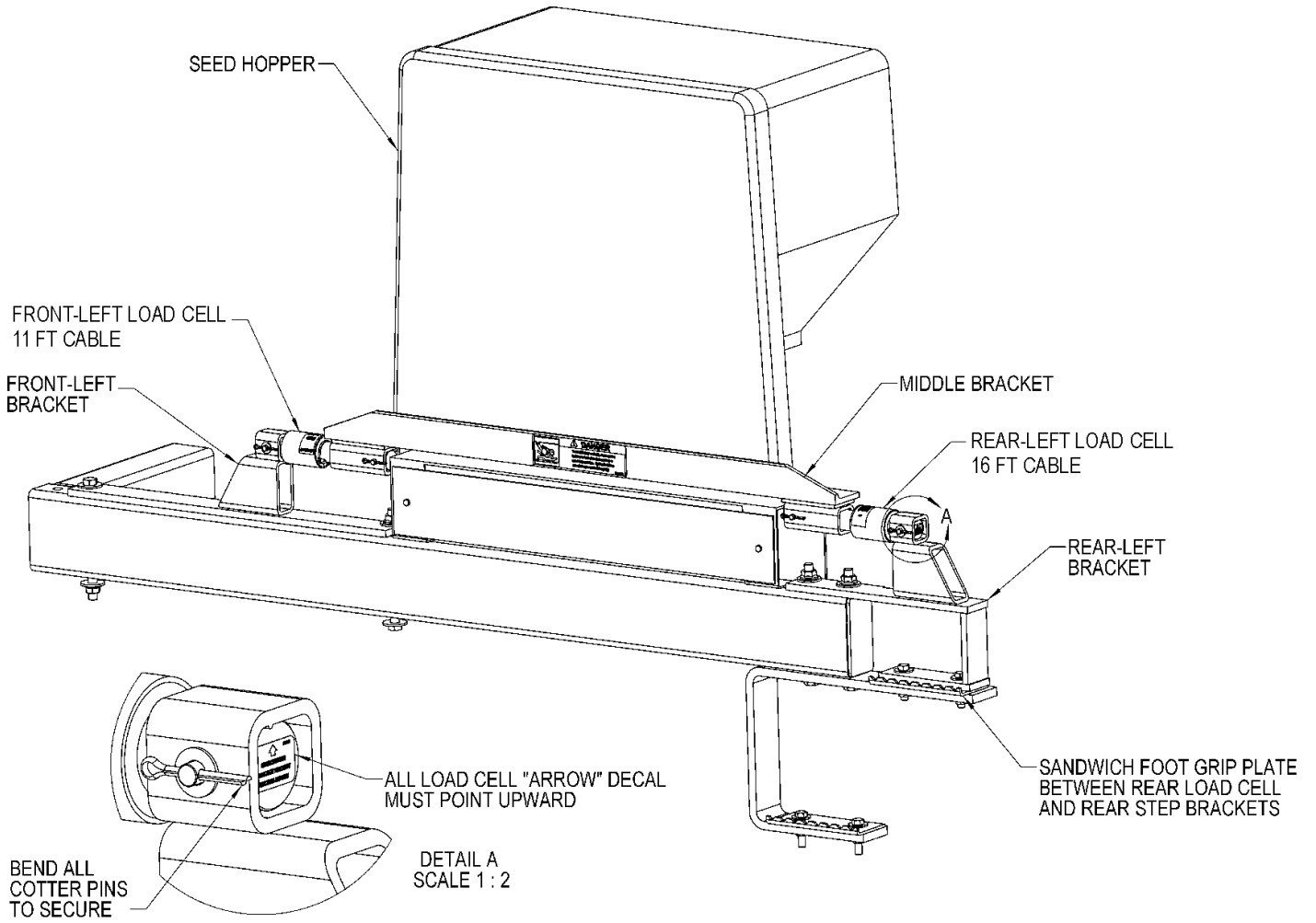


18. Reinstall catwalk. Trim catwalk so that it does not interfere with middle bin support.



- 19. Bolt the readout in the cab with the bracket or mount the bracket on a stand in the front of the lift cylinder.
- 20. Install power cord to a 12 volt negative ground battery (white or red is positive, black is negative). Install the J-box on the seed bin in the middle of the drill
- 21. Route the load cell cords so it will not be bounced or pinched by anything (see Mount Junction Box instructions).
- 22. Lengthen the drive chain with provided chain links. **DO NOT TIGHTEN CHAIN.** Leave the chain loose enough so it is not pulling down on the seed bin.

John Deere Grain Drill Scale Kit

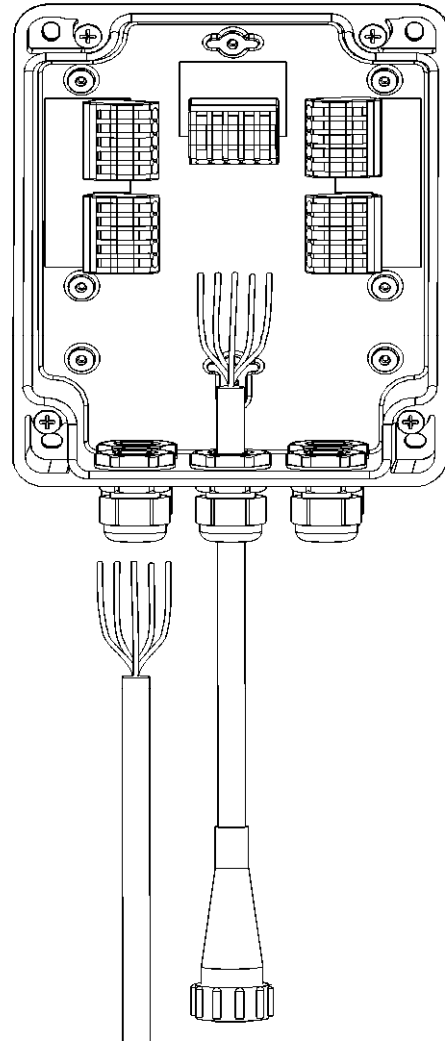


JUNCTION BOX MOUNTING

The junction box is water resistant, not water-proof. It should be mounted to avoid submersion during wet weather and to avoid physical abuse. Install the junction box on the front middle of the drill, by removing the double sided tape backing and apply to cleaned planter 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.

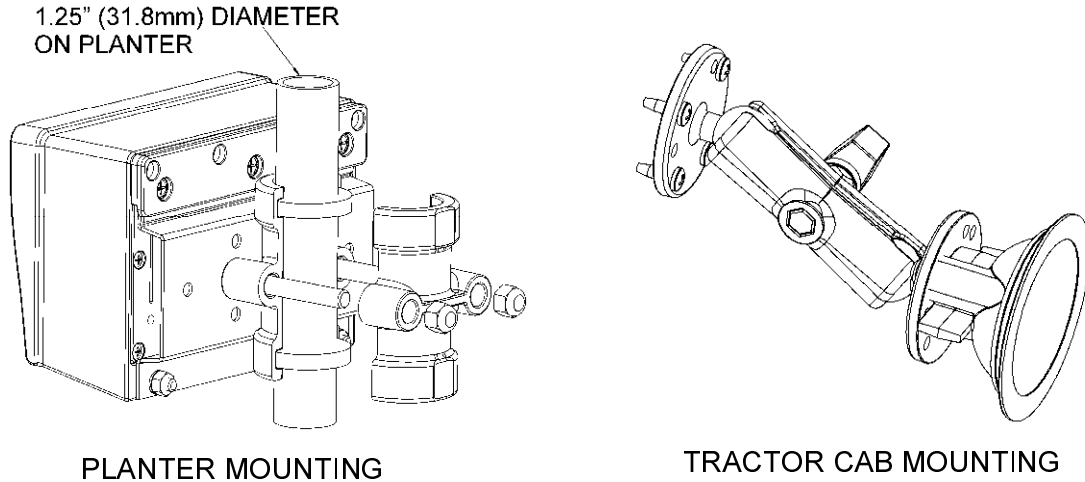
Note: Wire strip length is 7/16" (11mm).

| | |
|--------|-------------------------------|
| 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



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 set-up #145022 and calibration #21000 (see Indicator Manual)

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. Extension kits are available from your dealer in various lengths.

| 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.

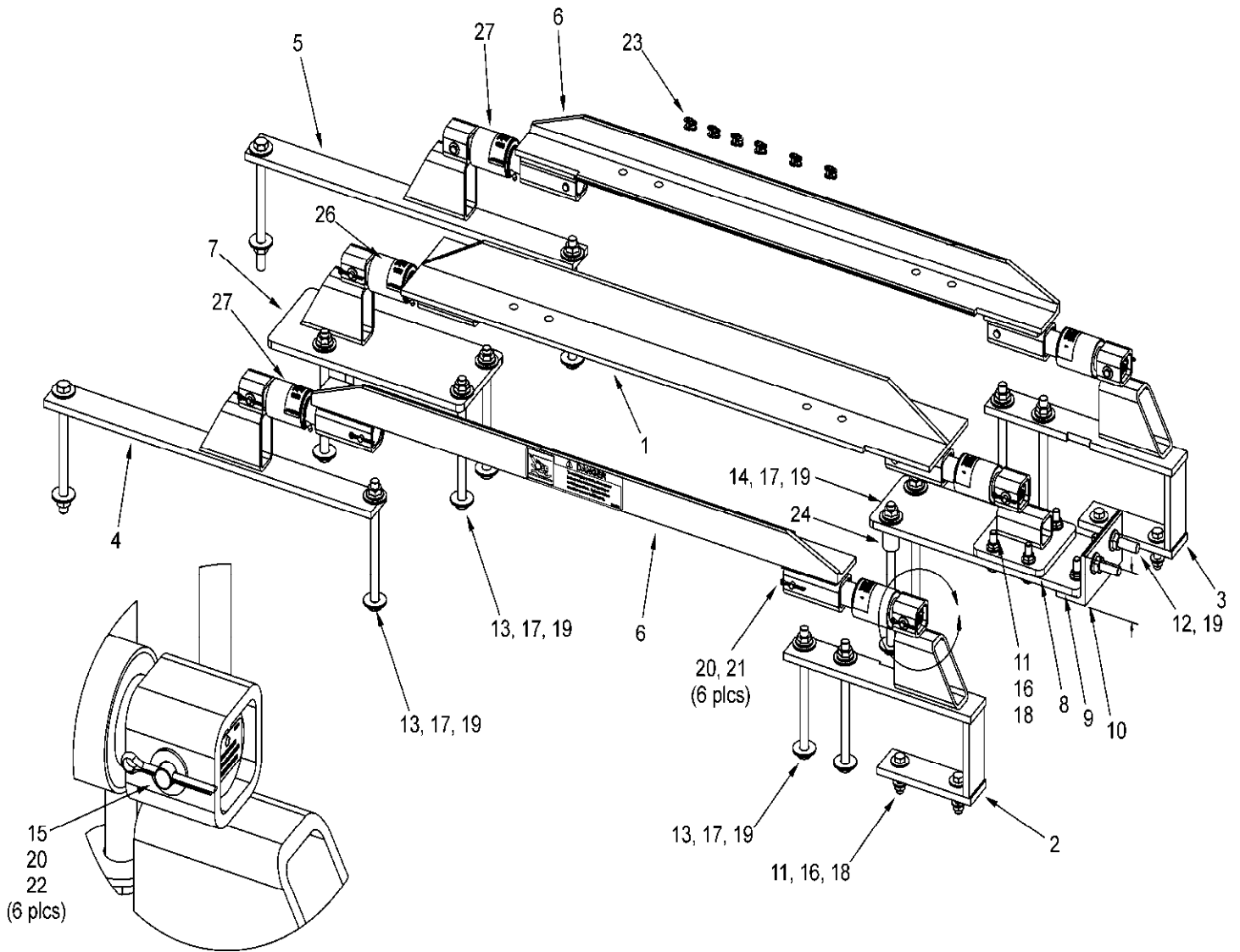
- If the weight is not within the four to six pound range, the drive chain might be too tight or the clutch is binding. Loosen the chain and check the weight again.
- If loosening the chain does not fix the problem, you must remove the clutch arm, and then check the weight on both sides. **NOTE:** *The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

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

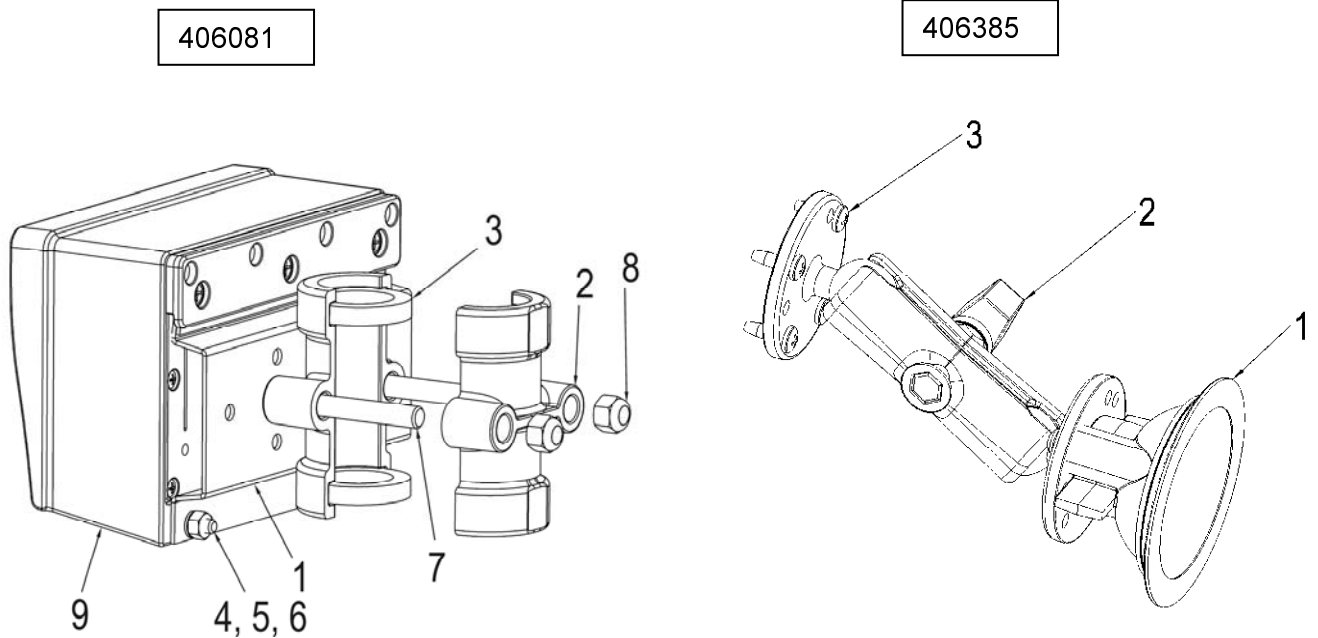
REPAIR PARTS

Kit - Scale System



| KEY | QTY. | PART NO. | DESCRIPTION |
|-----|------|----------|---------------------------------------|
| 1 | 1 | 405874 | Weld – Middle Support (JD750MB20) |
| 2 | 1 | 405760 | Weld – Rear Brkt LH (JD750-15') |
| 3 | 1 | 405761 | Weld – Rear Brkt RH (JD750-15') |
| 4 | 1 | 405762 | Weld – Front Brkt LH (JD750-15') |
| 5 | 1 | 405763 | Weld – Front Brkt RH (JD750-15') |
| 6 | 2 | 405764 | Weld – Middle Brkt (JD750-15') |
| 7 | 1 | 405851 | Weld – Front Middle Supt (JD1590-20') |
| 8 | 1 | 405846 | Weld – Rear Middle Supt (JD1590-20') |
| 9 | 1 | 405848 | Plate-8 Hole Mnt Rear (JD1590-20') |
| 10 | 1 | 405847 | Angle-4 Hole x 6" (JD1590-20') |
| 11 | 10 | 405854 | Scr 1/2-13 x 2-1/4 HHCS ZP Grd 5 |
| 12 | 2 | 405864 | Scr 5/8-11 x 2-1/2 HHCS ZP Grd 5 |
| 13 | 12 | 405863 | Scr 5/8-11 x 8-1/2 HHCS ZP Grd 5 |
| 14 | 2 | 405866 | Scr 5/8-11 x 10 HHCS ZP Grd 5 |
| 15 | 12 | 171610 | Wash 3/8 Flat Narrow ZP |
| 16 | 10 | 405053 | Wash 1/2 Flat Wide ZP |
| 17 | 28 | 405858 | Wash 5/8 Flat Wide ZP |
| 18 | 10 | 406085 | Nut 1/2-13 Ser Flange ZP |
| 19 | 16 | 406070 | Nut 5/8-11 Top-Lock Flange ZP |
| 20 | 12 | 405859 | Pin-Cotter 5/32 x 1.5 ZP |
| 21 | 6 | 405860 | Pin-Clevis 3/8 x 2.25 ZP |
| 22 | 6 | 405861 | Pin-Clevis 3/8 x 2.5 ZP |
| 23 | 6 | 405862 | Link-Offset #40 |
| 24 | 2 | 405865 | Spacer-1.5 (JD1590-20') |
| 25 | 1 | 405878 | Paint-JD Green Aerosol |
| 26 | 2 | 400373 | Cell-1.5 DB-11FT |
| 27 | 4 | 400400 | Cell-1.5 DB-16FT |
| 28 | 1 | 406233 | Assy J-Box 6PT (Planter) |
| 29 | 1 | 141837 | Cable-30FT J-Box |
| 30 | 1 | 406072 | Cable-Power 6FT 2-Wire |
| 31 | 1 | 405612 | GT400 Indicator |

Indicator Swivel Mount



| 406081 | | | |
|---------------|------|----------|--|
| KEY | QTY. | PART NO. | DESCRIPTION |
| 1 | 1 | 403980 | Brkt – Robo Mtg |
| 2 | 2 | 406086 | Brkt – Swivel Cast (JD H161618) |
| 3 | 2 | 406087 | Gasket – 1.813OD x 1.218 ID x .313 WID |
| 4 | 2 | 400036 | Scr – 1/4-20 x 3/4 HHCS ZP |
| 5 | 2 | 400038 | Washer – Lock 1/4 ZP |
| 6 | 2 | 400035 | Nut – 1/4-20 ZP |
| 7 | 2 | 405989 | Scr – 3/8-16 x 3.0 HHCS ZP Grd 5 |
| 8 | 2 | 404292 | Nut – 3/8-16 Nyloc ZP |
| 9 | 2 | 405612 | GT400 Indicator (Not included in kit 406081) |

| 406385 | | | |
|---------------|------|----------|-----------------------------------|
| 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 |

LICENSE AGREEMENT

IMPORTANT NOTICE: Acceptance and use of the enclosed electronic scale products (hereinafter referred to as “Purchased Product”) constitutes your agreement to the following terms and conditions. Please carefully read the following terms and conditions before using or reselling the Purchased Product.

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- Acceptance of Terms and Conditions.** Customer warrants that it has the authority to enter into this binding agreement. If Customer does not accept the terms and conditions, Customer shall not use the Purchased Product. Customer understands and agrees that if it uses the Purchased Product as permitted herein, it will be deemed to have accepted these terms and conditions and they shall become a binding agreement.
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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.