John Deere
1990 30’ & 36’ CCS
1990 40’ & 44’ CCS
1690 Version
Planter Scale

Instructions
And
Repair Parts

Ft. Atkinson, Wisconsin  USA

Panningen, The Netherlands
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INTRODUCTION

Congratulations on the purchase of your new Digi-Star Planter Scale for John Deere 1990 30, 40 and 44 foot seeder. This manual is for 1690 version or single rank units.

The scale system is specially designed to weigh the central commodity seed hopper. The scale will record and monitor seed weigh going into or out of the CCS 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 11).

⚠️ 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.
1. Loosen the frame bolts on the front legs.
2. Disassemble the rear legs and remove the angle bracket mounted to the leg and the main frame.
3. Jack up one of the rear legs approximately 1 inch.
   
   Use Figure 1 for steps 4 - 7

4. Install and tighten the top bracket and hardware to the rear leg.
5. Assemble load cell to the rear base bracket by using the 3/4 x 3 1/2 in. bolts. Do not tighten bolts completely. You may have to slide load cell while aligning the base and top brackets. **TOP DECAL NEEDS TO BE ON TOP OF LOAD CELL!**
6. Bolt the rear base bracket to the main frame using 5/8 x 10" U-Bolts and 5/8 Flange Nut. Secure load cell to rear top bracket with 3/4 x 2" bolt. Apply thread lock to threads before installing. **This bolt cannot be completely tightened; leave 1/16" between bottom of bolt head and top bracket**
7. Install brackets on other side. Do not tighten mounting bolts on rear legs until front legs are installed.
8. Disassemble the front legs from base plates. Jack up front leg and remove the base plate and yoke plate bolted to the main frame.
9. Install the front top bracket by using the 5/8 x 3 1/2" special bolts. The cropped bolt edge is installed next to the 4 x 4 tubing and from the top (see Figure 2). Install the front top bracket by using 5/8 x 2" bolt and two 5/8" washers, flange nuts (see Figure 3).

10. Assemble load cell to the front base plate by using 3/4 x 3 1/2 in. bolts and locknut. Do not tighten bolts completely. You may have to slide load cell while aligning base and top brackets. **TOP DECAL NEEDS TO BE ON TOP OF LOAD CELL!** (See Figure 2 or 3)

11. Install front base plate weldment to the main frame with the yoke plate on the bottom. Reuse the original frame bolt (see Figure 2). Install front base plate weldment to the main frame with the supplied 5/8 x 8.75" U-bolts and 5/8 top lock flange nuts (see Figure 3).

12. The load cell is held to the front top bracket with 3/4 x by 2 in. bolts. The 2 in. bolts need to have thread lock applied to the threads. **THIS BOLT CAN NOT BE COMPLETELY TIGHTENED DOWN, LEAVE 1/16 IN. BETWEEN BOTTOM OF BOLT HEAD AND TOP BRACKET!**
13. Install brackets on the other front leg. When all brackets are installed tighten all of the frame bolts, top brackets and load cell bolt.

14. Loosen the left and right hand rear ladder u-bolt so there is 1/8” minimum clearance. The u-bolt must not contact the ladder tubing.

1/8” minimum clearance between u-bolt and ladder tubing
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 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 90º 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).

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>406232</td>
<td>J-Box Lever Nut 4Pt (Planter)</td>
</tr>
<tr>
<td>141837</td>
<td>Cable - 30Ft J-Box</td>
</tr>
<tr>
<td>406074</td>
<td>Cable - 45Ft J-Box</td>
</tr>
<tr>
<td>403335</td>
<td>Cable - Power 17Ft 2-Wire</td>
</tr>
<tr>
<td>406073</td>
<td>Cable - Power 36Ft 2-Wire</td>
</tr>
<tr>
<td>406072</td>
<td>Cable - Power 6Ft 2-Wire</td>
</tr>
<tr>
<td>824316</td>
<td>Cable - 15FT-J-Box</td>
</tr>
<tr>
<td>145096</td>
<td>Cable - 70FT-J-Box</td>
</tr>
<tr>
<td>406276</td>
<td>Cable – Power 65FT 2-Wire</td>
</tr>
</tbody>
</table>
INDICATOR MOUNTING

The scale indicator can be mounted in the tractor cab or on the drill, planter or seeder 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, or mount the swivel bracket on the drill, planter or seeder.
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 #145015 and calibration #15000 (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.

<table>
<thead>
<tr>
<th>Wire color</th>
<th>Wire Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Battery (+12 VDC)</td>
</tr>
<tr>
<td>Black</td>
<td>GROUND</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Load Cell Wire</th>
<th>Digi-Star</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RED</td>
<td>+EX</td>
</tr>
<tr>
<td>2</td>
<td>GREEN</td>
<td>-SIG</td>
</tr>
<tr>
<td>3</td>
<td>WHITE</td>
<td>+SIG</td>
</tr>
<tr>
<td>4</td>
<td>BLACK</td>
<td>-EX</td>
</tr>
<tr>
<td>5</td>
<td>CLEAR</td>
<td>SHIELD</td>
</tr>
</tbody>
</table>
TROUBLE SHOOTING

How to Check the Drill Scale after Installation

For the first test, lift the drill, planter or seeder 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, inspect the scale system for loose or misalign mounts.

The second test is to lift the drill, planter or seeder to a level area and zero the scale. Lift the drill/planter/seeder 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 further assistance is necessary, please call Digi-Star, LLC at 920-563-9700.
REPAIR PARTS

406142 Kit – Scale JD1990 CCS Single Rank 30'
406143 Kit – Scale JD1990 CCS Single Rank 30' (Indicator in cab)

KEY | QTY. | PART NO. | DESCRIPTION
--- | ---- | -------- | --------------
1 | 2 | 406031 | Weld-Top Rear Brkt (JD1990-03)
2 | 2 | 406024 | Weld-Base Rear Plate (JD1990-07)
3 | 2 | 406051 | Weld-Top Frt Brkt (JD1990-05)
4 | 2 | 406014 | Weld-30' Frt Brkt (JD1990-02)
5 | 4 | 405896 | Scr – 3/4-16 x 2.0 HHCS ZP Grd 5
6 | 8 | 406068 | Scr – 3/4-10 x 3.5 HHCS Zp Grd 8 ZP
7 | 8 | 405896 | Scr – 5/8-11 x 2.0 HHCS Zp Grd 5
8 | 4 | 406071 | Scr – 5/8-11 x 3.5 HHCS Zp Special
9 | 16 | 405858 | Wash – 5/8 Flat Wide ZP
10 | 8 | 405921 | Nut – 3/4-10 Top Lock ZP
11 | 20 | 406070 | Nut – 5/8-11 Top-Lock Flange ZP
12 | 4 | 406025 | Bolt-U 5/8-11 x 8.75W x 10.0L Grd 8 ZP
13 | 4 | 404284 | Cell-1.5 Sq DB-21 Ft

If front pin contacts #3 or #8, grind and chamfer lower pin edge.
**406144 Kit – Scale JD1990 CCS Single Rank 40’ & 44’**

**406145 Kit – Scale JD1990 CCS Single Rank 40’ & 44’ (Indicator in cab)**

<table>
<thead>
<tr>
<th>KEY</th>
<th>QTY.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>406031</td>
<td>Weld-Top Rear Brkt (JD1990-03)</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>406024</td>
<td>Weld-Base Rear Plate (JD1990-07)</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>406067</td>
<td>Scr – 3/4-16 x 2.0 HHCS Zp Grd 5</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>406068</td>
<td>Scr – 3/4-10 x 3.5 HHCS Grd 8 Zp</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>405896</td>
<td>Scr – 5/8-11 x 2.0 HHCS Zp Grd 5</td>
</tr>
<tr>
<td>6</td>
<td>32</td>
<td>405858</td>
<td>Wash-5/8 Flat Wide Zp</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>405921</td>
<td>Nut-3/4-10 Top Lock Zp</td>
</tr>
<tr>
<td>8</td>
<td>32</td>
<td>406070</td>
<td>Nut-5/8-11 Top-Lock Flange Zp</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>406025</td>
<td>Bolt-U 5/8-11 x 8.75W x 10.0L Grd 8 Zp</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>404284</td>
<td>Cell-1.5 Sq Db-21 Ft</td>
</tr>
</tbody>
</table>
## Indicator Swivel Mount

### Part Numbers:
- **406081**
- **406385**

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

#### 406385
<table>
<thead>
<tr>
<th>KEY</th>
<th>QTY.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>404230</td>
<td>Ram Suction Cup with Twist Lock</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>403180</td>
<td>Assembly – 1” Ram Mount</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>403779</td>
<td>Scr - #10 x 5/8 PHSTS 48-2 Blk ZP</td>
</tr>
</tbody>
</table>
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8. 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.

9. 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 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.