



Manual

GRAIN CART HITCH RETROFIT FROM 2-7/8" TO 3-3/4" SCALE BAR CLASSIC FRONT FOLD GRAIN CARTS



Rev. 2.22.2021

J&M Manufacturing Co, Inc

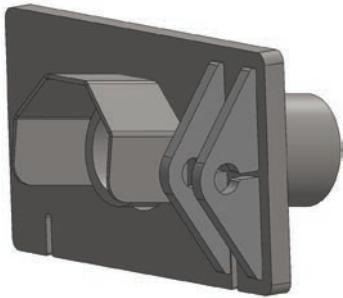
284 Railroad Street - P.O. Box 547 | Fort Recovery, OH 45846 | Ph: (419) 375-2376 | Fax: (419) 375-2708

www.jm-inc.com

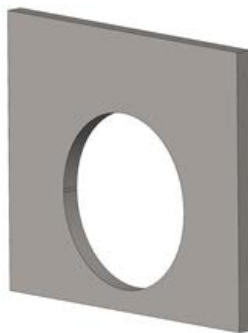
Required Parts

	Description	Part No.	Quantity
1	7° Hitch Front Weldment for 3-3/4" Neck Down to 2-7/8" Scale Bar	JM0030408	1
2	Rear Hitch Plate (1051, 1151, 1326, 1401)	JM0073412	1
2	Rear Hitch Plate (1000-20)	JM0073462	1
3	Hitch Cover	JM0026015	2
4	Frame Washer	JM0030408	1
5	1" ID x 3/16" GW x 1-3/8" GD Rubber Grommet	JM0016784	1
6	1"-8 Gr 2 Z Centerlock Hex Nut	JM0002149	3
7	1"-8 x 6" Gr8 YZ Hex Bolt	JM0074245	2
8	1"-8 x 4" Gr8 YZ Hex Bolt	JM0074434	1
9	Front Weldment Welding Jig	JM0074277	1

1



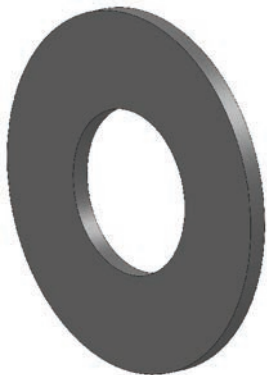
2



3



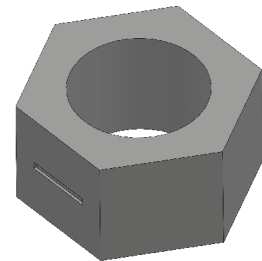
4



5



6



7



8



9



Step 1 – Disconnect the Scale Bar

1. Locate the scale wire junction box (circled in yellow in *Figure 1*) located behind the auger rest throw arm.
2. Remove its cover and locate the hitch scale bar wire (middle of the 3 wires closest to the cover).
 - Take note of the hitch scale bar wire installation locations as you will need to install the new scale bar wires in the same locations.
3. Remove the hitch scale bar wire from the junction box.



Figure 1



Figure 2

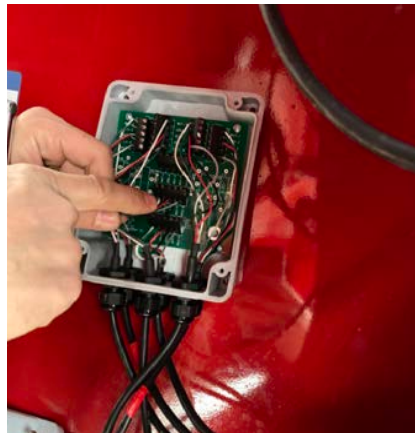


Figure 3

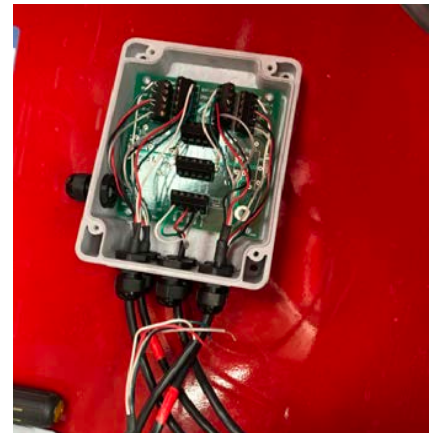


Figure 4

Step 2 – Remove the Current Hitch and Scale Bar

1. Unbolt and remove the hitch.
2. Unbolt and remove the hitch scale bar out the front. This step includes pulling the scale bar wire out of the tongue tube.
 - If you do not have a snake long enough to reach from the junction box to the hitch, connect a pull wire to the scale bar wire prior to removing the scale bar wire. The pull wire will be used for routing the new scale bar wire.
3. Remove the back of the hitch.



Figure 5



Figure 6

Step 2 – Remove the Current Hitch and Scale Bar

1. Place the rear hitch plate (JM0073412 for models 1051, 1151, 1326, and 1401, JM0073462 for model 1000-20) parallel to the front and tight against the tongue tubes.
2. Measure and mark each tongue tube 6" from the front of the rear hitch plate (*Figure 7*).
3. Extend the marks parallel with the plate to the outside of the tongue tubes.
4. Extend the marks square with the tube all around the entire tube (*Figure 8*).
5. Cut the tongue tubes along the mark to remove the tongue front (*Figure 9*). It is recommended to use a straight edge as a cutting guide.



Figure 7



Figure 8

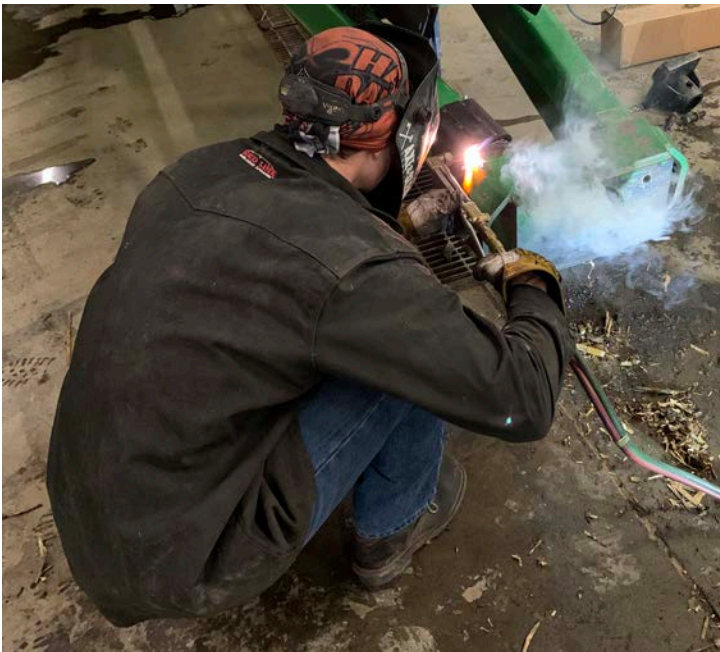


Figure 9

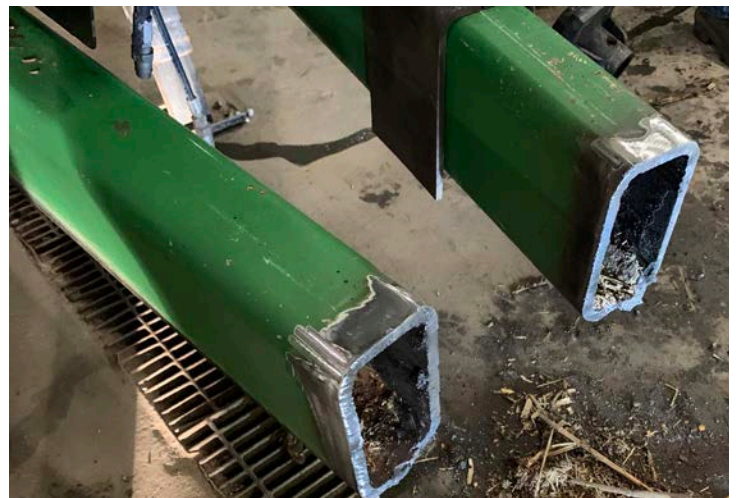


Figure 10

Step 4 – Tongue Tube Weld Prep

1. Grind the paint off of the tongue tubes in the following locations (*Figures 11 and 12*):
 - 1" from the tube front to the tube front all around the tube.
 - 6" from the tube front to 8-1/2" from the tube front on the top and bottom of the tube.
 - 8-1/2" from the tube front to the tube front on all 4 corner radii.
2. Place the hitch cover (JM0026015) on the tongue tubes (*Figure 13*) to verify the proper areas have been ground in preparation for welding in Step 5.



Figure 11



Figure 12



Figure 13

Step 5 – Welding Hitch Front

1. Assemble the front weldment welding jig (JM0074277) as shown in *Figure 14* and set the front weldment welding jig on the tongue tubes with the tabs on the bottom
2. Load the hitch front weldment (JM0073404) onto the welding jig tabs, push flush with the outside of the tongue tubes, and center the weldment vertically and horizontally with the tubes
3. Hold or tack weld the hitch front weldment in place and fit up the rear hitch plate (JM0073412 for models 1051, 1151, 1326, and 1401, JM0073462 for model 1000-20) and hitch covers (JM0026015) (*Figures 15 and 16*).
 - Hitch covers go on the top and bottom of the tongue tubes.
 - Rear hitch plate goes in between the tongue tubes with the hole on the bottom side.
 - If necessary, break the weld tacks and adjust the hitch front weldment angle relative to the tongue tubes to allow the rear hitch plate to be installed.
4. Once all four parts fit up successfully, fully weld around them (*Figure 17*).
5. Weld the inside where accessible from the slot in the hitch covers (*Figure 18*).



Figure 14



Figure 15

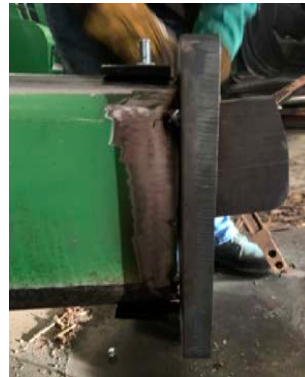


Figure 16



Figure 17



Figure 18

Step 6 – Add Scale Bar Wire Routing Hole

1. Identify the tongue tube that had the hitch scale bar wire in it, which is the right side when standing at the hitch and looking back at the cart.
2. Cut a 2" circle on the lower portion of the tube 2-3" behind the back of the rear hitch plate. The washer that will be welded on to cover this hole is 3" OD x 1-3/8" ID, so a perfect circle is not needed.
3. Cover the hole with the frame washer (JM0030408) and weld in place.



Figure 19

Step 7 – Paint New Parts

Touch up the hitch area with matching paint.

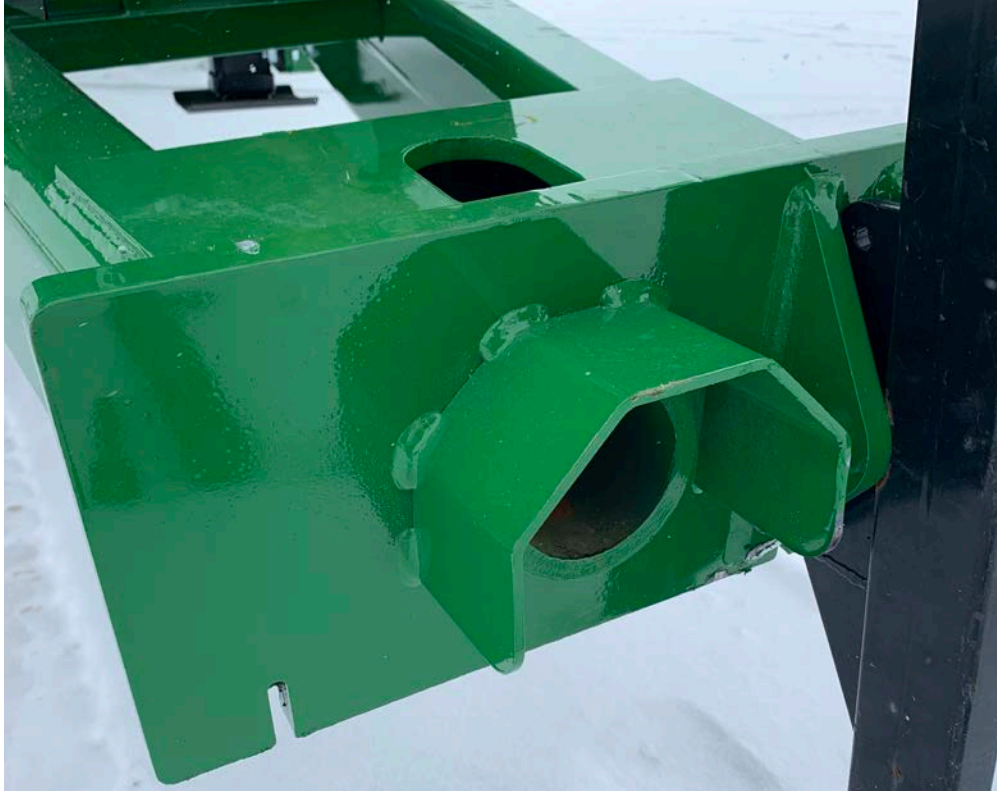


Figure 20

Step 8 – Install New Scale Bar

1. Install the rubber grommet (JM0016784) onto the washer from Step 6 (*Figure 21*).
2. Insert the new scale bar into the spool (*Figure 22*).
3. Bolt the new scale bar in place using the 1"-8 x 6" bolt (JM0074245) and 1"-8 centerlock hex nut (JM0002149).
4. Route the scale bar wire through the rubber grommet, into the frame, up the tongue tube, and out the frame by the junction box described in Step 1.



Figure 21



Figure 22

Step 9 – Install Scale Bar Wires

Install the scale bar wire ends the same way the previous scale bar wire ends were installed (circled in yellow in Figure 23).

- Previous scale calibration should be accurate within 1%. It is recommend to verify accuracy with the first 3-5 loads. If scales are not accurate, re-calibrate the scales system.

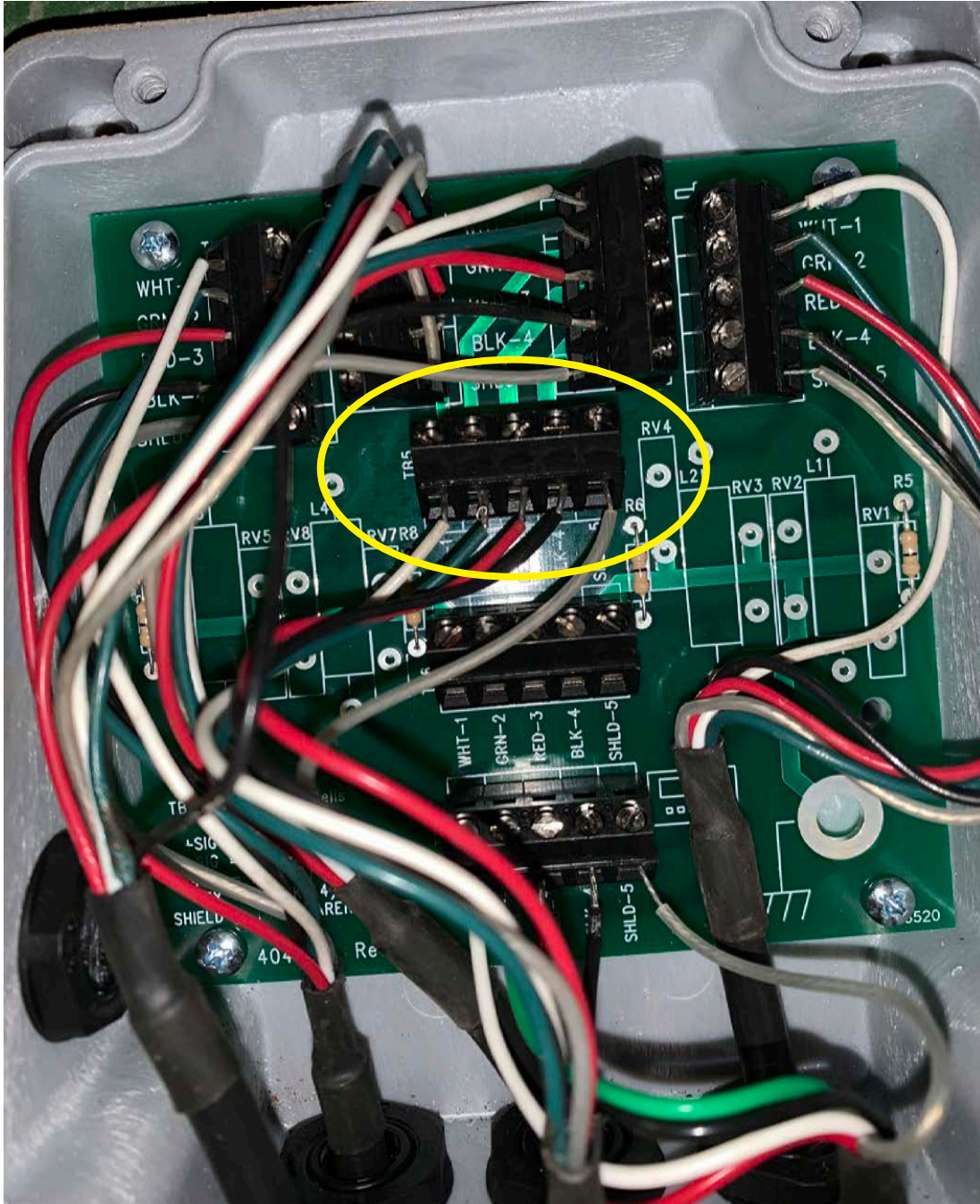


Figure 23

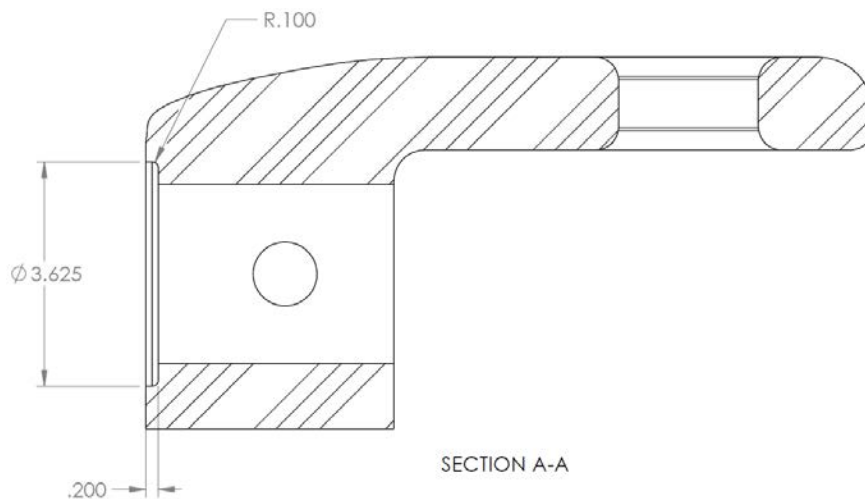
Step 10 – Install Hitch

Install original hitch onto the new scale bar and bolt in place using the 1"-8 x 6" bolt (JM0074245) and 1"-8 centerlock hex nut (JM0002149).

- Hitches made prior to 2021 will need the below modification made or a new hitch purchased in order to fit on the Digi-Star 3-3/4" neck down to 2-7/8" scale bar.



Figure 24



Step 11 – Safety Chain

If safety chain was used or is being added, use the 1"-8 x 4" bolt (JM0074434) and 1"-8 centerlock hex nut (JM0002149) to secure the safety chain onto the brackets on the right side of the hitch.



Figure 25