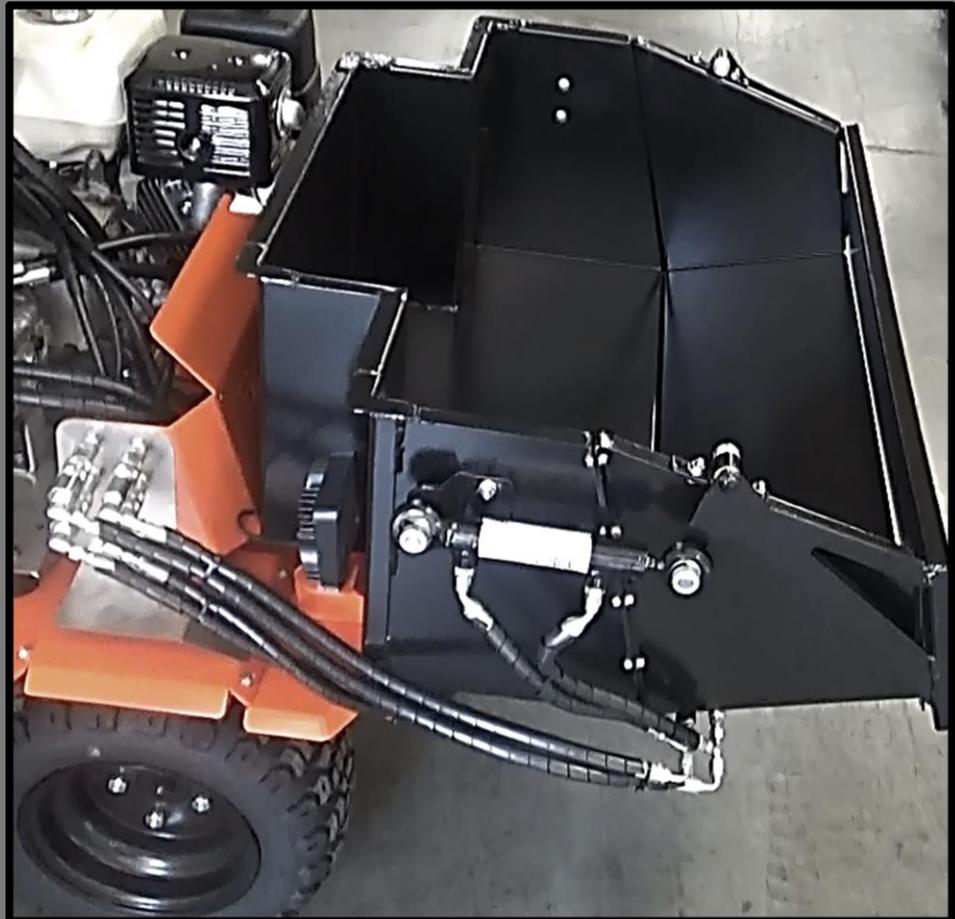


2018

INSTALLATION MANUAL FOR MATERIAL MOVER SYSTEM SNOWRATOR



IMPORTANT

!!!

This job
requires (2)
people to
complete
safely

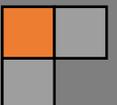




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1.0 IMPORTANT INFORMATION

1.1 PURPOSE

The purpose of this installation guide is to provide detailed instructions on how to install the Material Mover to your Snowrator.

1.2 PRODUCT OVERVIEW

The Material Mover is a hydraulic powered, 9 cu/ft mulch bucket attachment for the Snowrator. This attachment consists of the mulch bucket, counterbalance weights, and installation hardware.

1.3 MANUAL OVERVIEW

The installation of the Material Mover consists of attaching the mulch bucket and counterweights to the Snowrator. The system is tested for functionality after the counterweights and mulch bucket are attached. A parts list, mechanical drawing and hydraulic drawing are included.

1.4 SAFETY

Two people are required to install this product.

It is recommended that safety goggles and gloves be worn when installing and using this product.

Keep all body parts and clothing clear of hydraulic cylinders during operation.

1.5 MAINTENANCE

Lubricate hydraulic cylinders with standard machine grease.

For cleaning, use mild soap and water.

1.6 RELATED DOCUMENTS

Snowrator Owner's Manual

2.0 INSTALLATION



WARNING



Before Working on This Machine

- Switch Engine to OFF



- Please note that this installation guide is for a **standard machine only**.
- The hose and electrical harness routing may be different depending on the attachments that may already be installed on your machine.
- A Snowrator is shown for all assembly photos.
- For any questions please contact us at toll free (877) 482-204 Mon-Fri 8 a.m. to 4:30 p.m.

2.1 SHIPPING LIST

SR-MULCH HOPPER				
ITEM	QTY	P/N	DESCRIPTION	PICTURE
1	1	N/A	ASS'Y, BUCKET, MH,	
2	1	N/A	ASS'Y, PLATFORM, FERTBOX, LEFT, SR	
3	1	N/A	ASS'Y, PLATFORM, FERTBOX, RIGHT, SR	
4	1	SM10242-W	ASS'Y, WEIGHT, LEFT	
5	1	SM10242-WR	ASS'Y, WEIGHT, RIGHT	
6	2	80748	PIN, QUICK RELEASE, 3/8 x 1-1/2	
7	4	80706	PIN, LOCKING RING	
8	4	CB-381SS	BOLT, CARRIAGE - SS, 3/8-16 x 1	
9	4	CB-5161SS	BOLT, CARRIAGE - SS, 5/16-18 x 1	
10	4	HFNCS-38S	NUT, LOCK, FLANGE, SERRATED - SS, 3/8-16	

2.2 TOOLS & EQUIPMENT

TOOLS			
ITEM	QTY	DESCRIPTION	PHOTO
1	1	RATCHET	
2	4	SOCKET: 1/2, 5/8, 9/16, 13/16	
3	1	JACK, 1 TON	

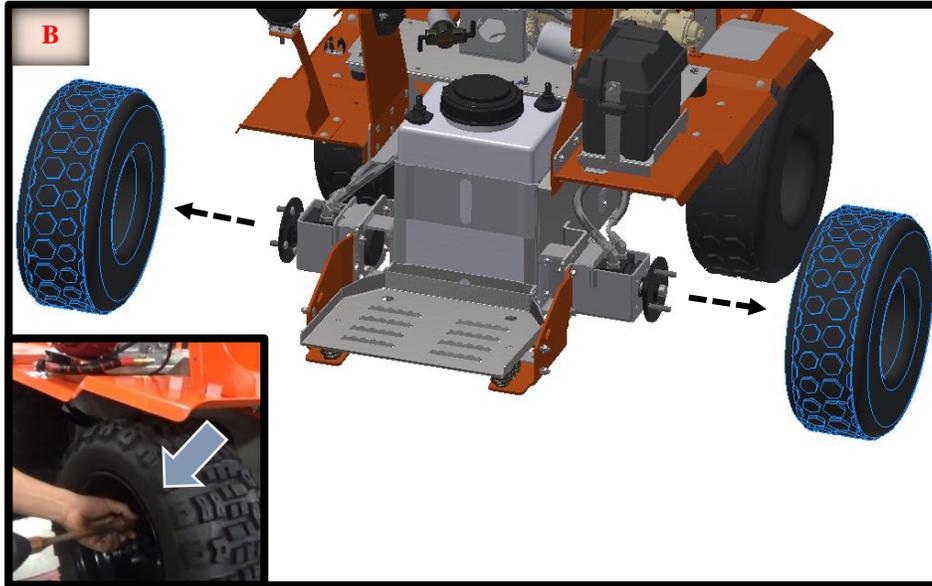
SAFETY EQUIPMENT			
ITEM	QTY	DESCRIPTION	PHOTO
1	1	GLOVES	
2	1	SAFETY GOGGLES	

2.3 WEIGHT PLATFORMS

2.3.1 Remove Rear Tires

Tools:
Ratchet with 13/16 Socket

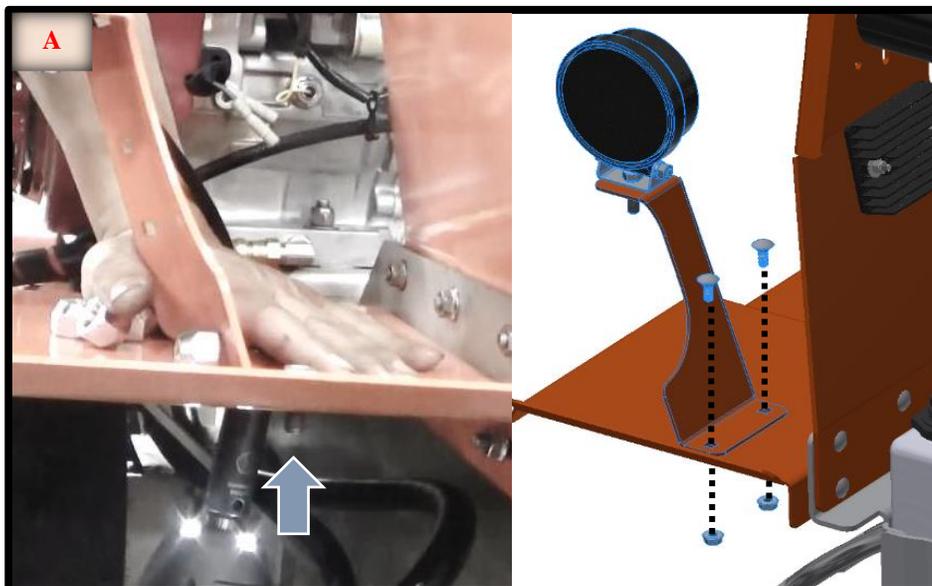
- A. Raise the **machine** using a Jack and Jack stands (*not shown*).
 B. Remove both **Rear Tires**.



2.3.2 Remove Rear Light Bracket

Tools:
Ratchet with 1/2" Socket

- A. Remove the two **Bolts** connecting the Rear Light Bracket to the Frame.
 B. Lay **Rear Light Bracket** gently on the Frame (*not shown*).

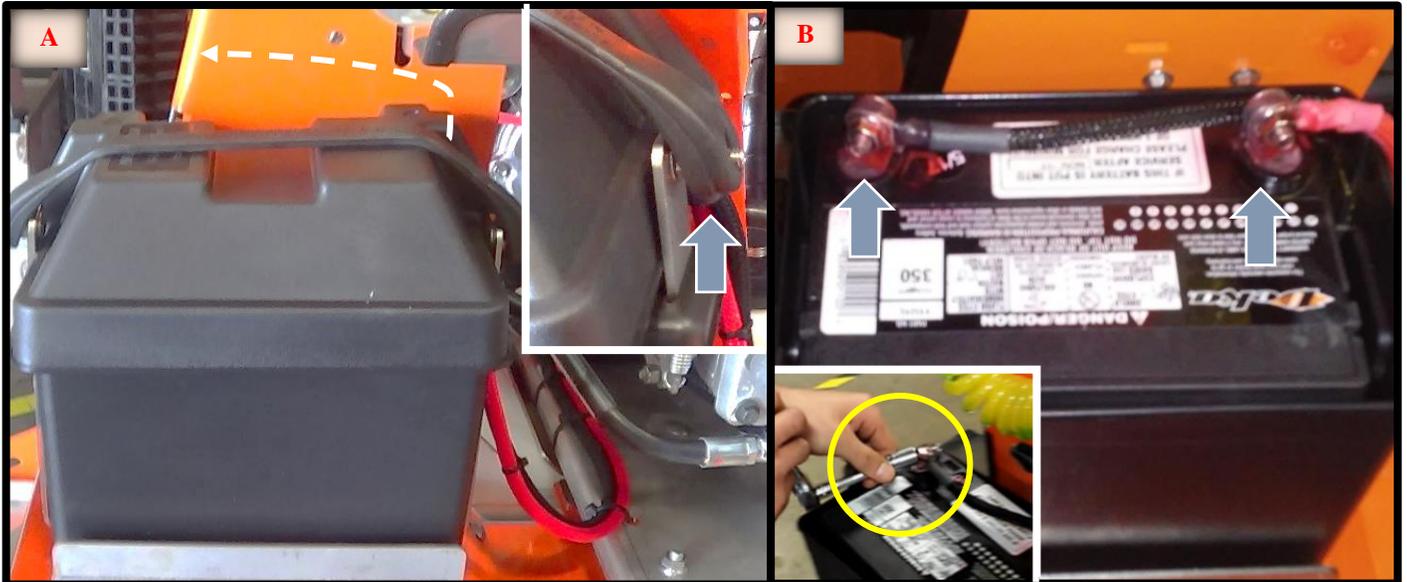


The bolts from this step may be discarded, but the flange nuts will be reused when the Rear Light Bracket is re-attached.

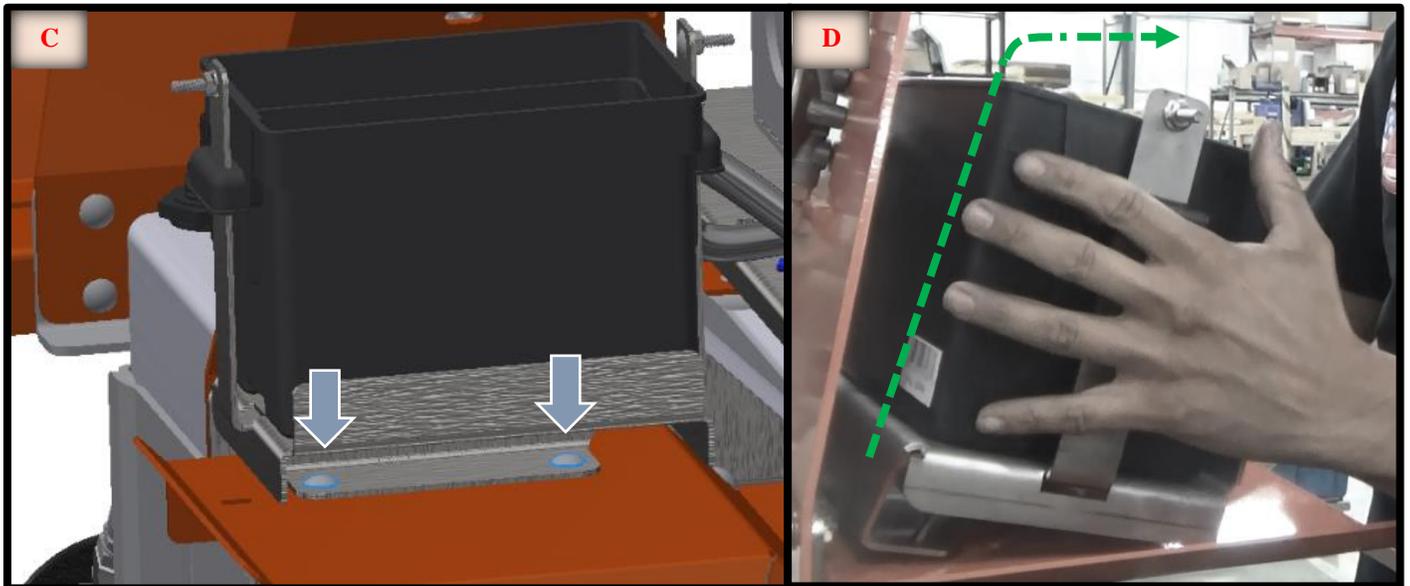
2.3.3 Remove Battery Box

Tools:
Ratchet with 1/2" Socket

- A. Remove **Battery Cover** by unhooking strap.
- B. Detach the Negative (black) and Positive (red) **Wires** from battery.



- C. Remove **bolts** that attach the Battery Box Bracket to the Frame.
- D. Remove **Battery Box Bracket** from Frame.

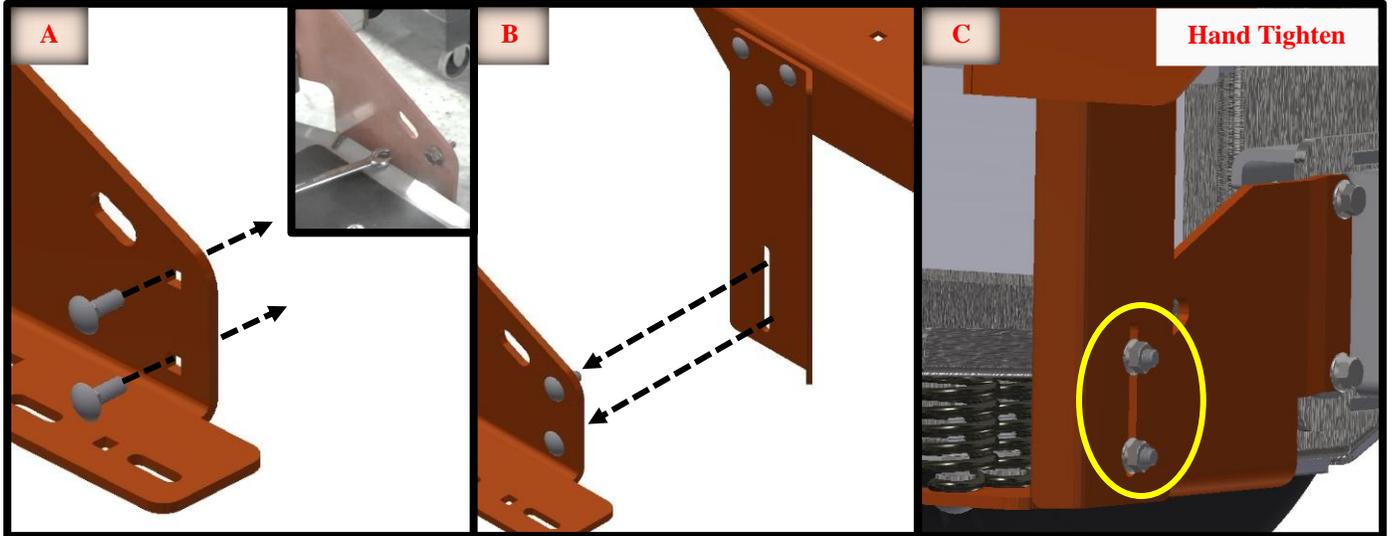


The bolts from this step may be discarded, but the flange nuts will be reused when the Battery Box is re-attached.

2.3.4 Attach the Right Weight Platform to Frame.

Tools:
Ratchet with 9/16" Socket

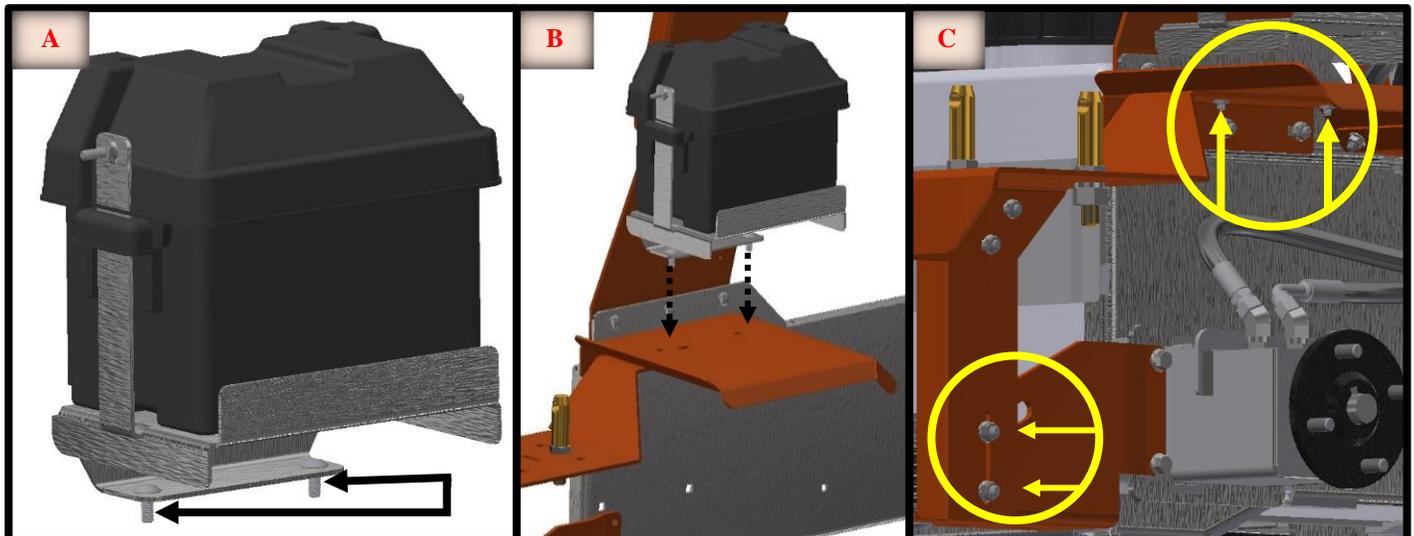
- A. Insert (2) 3/8" x 1" **Bolt** into Footplate Bracket
- B. Line up **Slot** in Weight Bracket with Bolts
- C. Fasten with (2) 3/8" Flange **Nuts**.



2.3.5 Attach the Battery Box Bracket

Tools:
Ratchet with 9/16" Socket

- A. Replace 5/16" x 3/4" **Bolts** in Battery Box Bracket with 5/16" x 1" Bolts
- B. Align **Weight Platform** to Fender and Battery Box Bracket
- C. Tighten all (4) **Bolts** to Foot Plate Bracket and Fender
- D. Re-Connect the Negative and Positive **Battery Cables** (not shown)

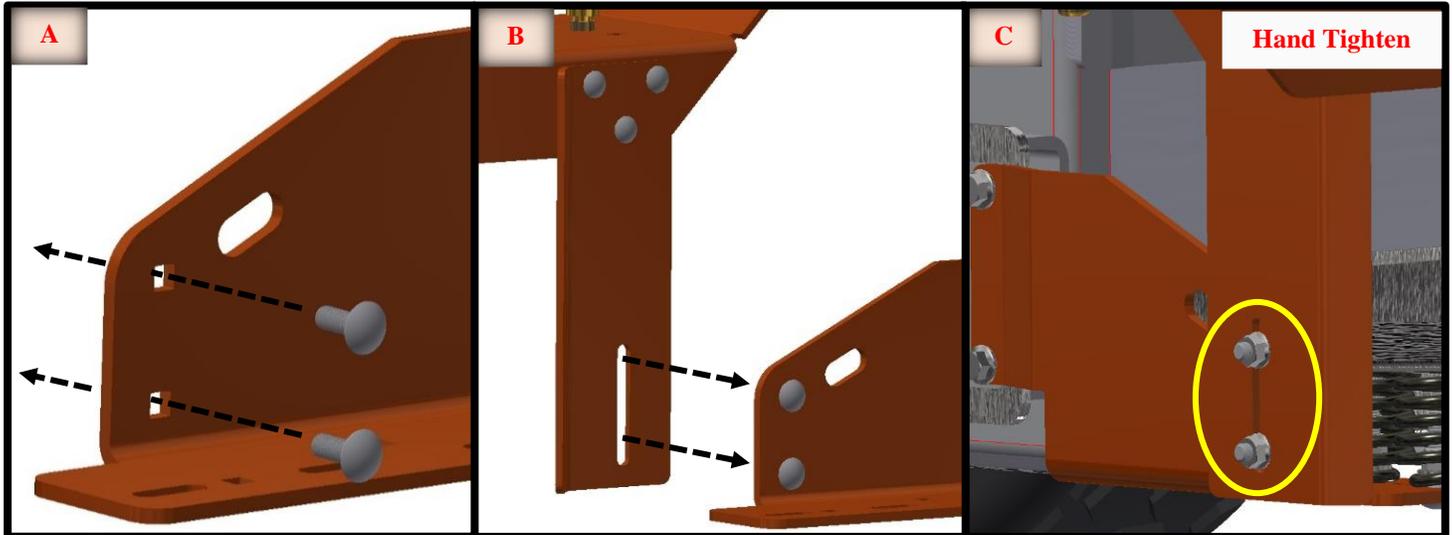


Use the existing 5/16" Flange Nuts removed during step 2.3.3

2.3.6 Attach Left Weight Platform to Frame

- A. Insert (2) 3/8" x 1" **Bolt** into Footplate Bracket
- B. Line up **Slot** in Weight Bracket with Bolts
- C. Fasten with (2) 3/8" Flange **Nuts**

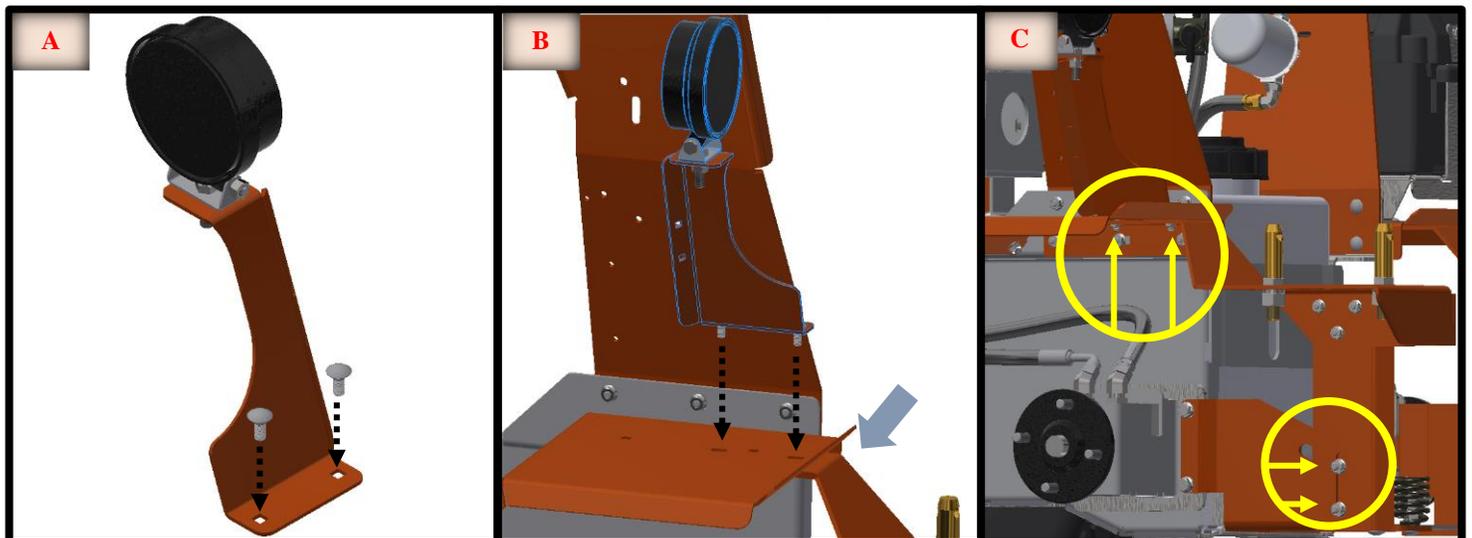
Tools:
Ratchet with 9/16" Socket



2.3.7 Attach Rear Light Bracket to Frame

- A. Insert (2) 5/16" x 1" **Bolt** into Rear Light Bracket
- B. Align **Weight Bracket** to Fender and Battery Box Bracket
- C. Tighten all (4) **Bolts** to Foot Plate Bracket and Fender

Tools:
Ratchet with 9/16" Socket

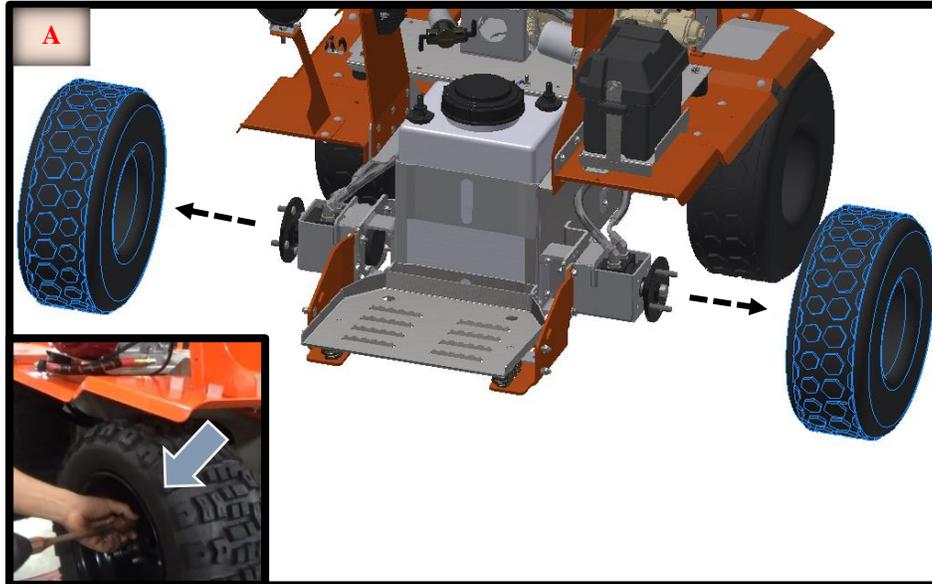


Use the existing 5/16" Flange Nuts removed during step 2.3.2

2.3.8 Attach Rear Tires

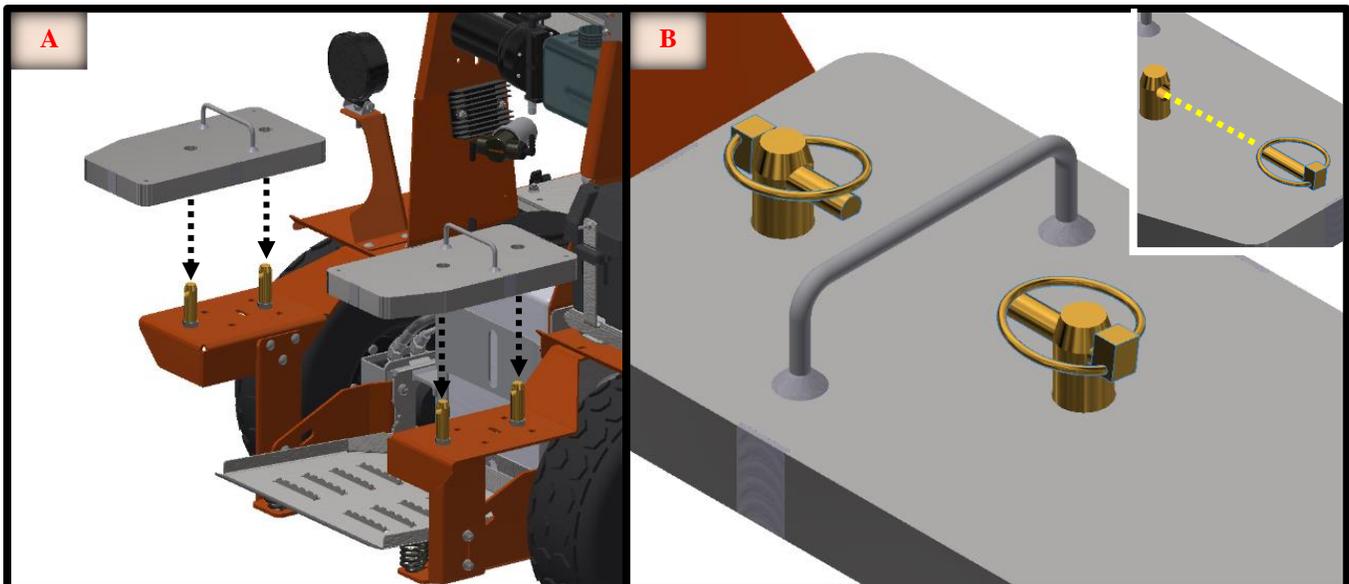
Tools:
Ratchet with 13/16 Socket

- A. Attach both **Rear Tires**.
- B. Lower the **machine** using a Jack and Jack stands (*not shown*).



2.3.9 Attach Weights to the Weight Platforms

- A. Place **Weight** onto Pins – Angle to outside unit.
- B. Secure **Weight** to Bracket using Locking Rings.



2.4 MATERIAL HOPPER

2.4.1 Attach Material Hopper to Frame

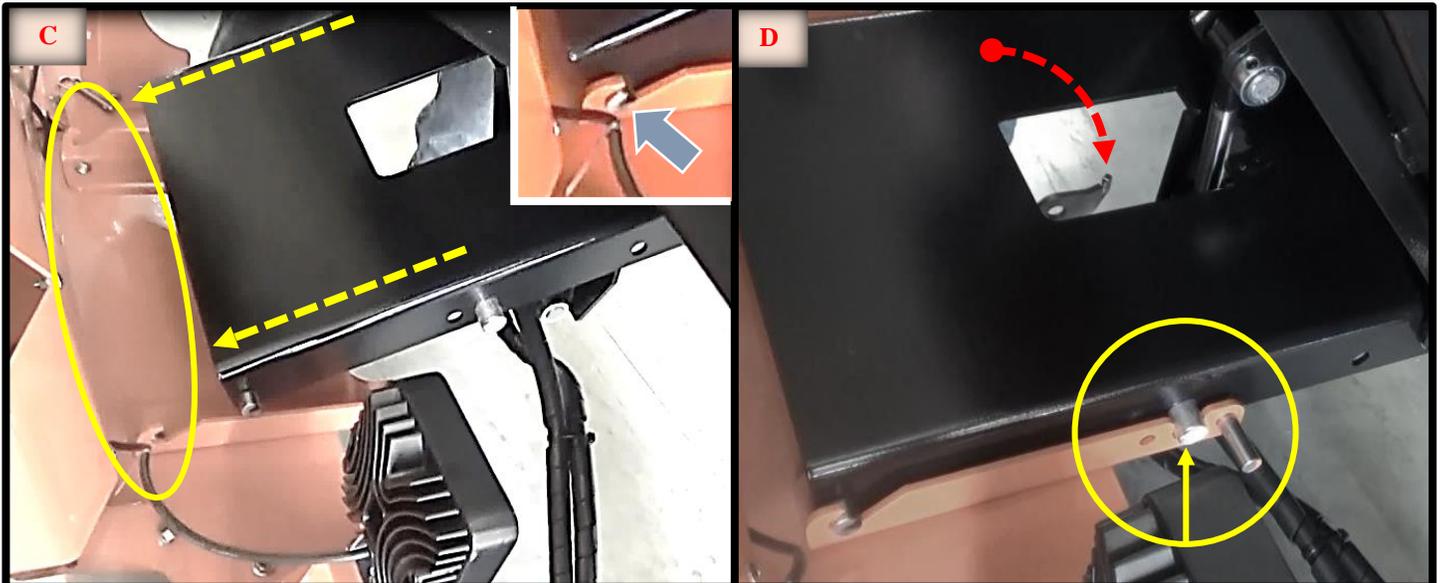
- A. Lay **Quick Release Pins** near the Mounting Bracket.
- B. **Lift Handler** into place (forward tilt Handler)

Important!

This step requires (2) people to complete safely!

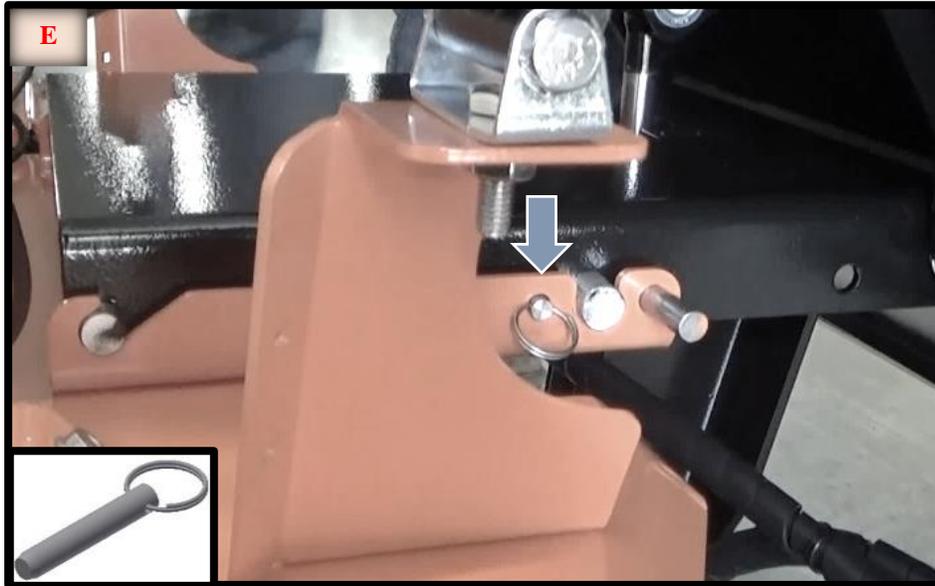


- C. **Slide Rear Hopper Pins** into Rear Slots of Hopper Mounting Bracket
- D. **Lower Front Hopper Pins** into Front Slots of Hopper Mounting Bracket



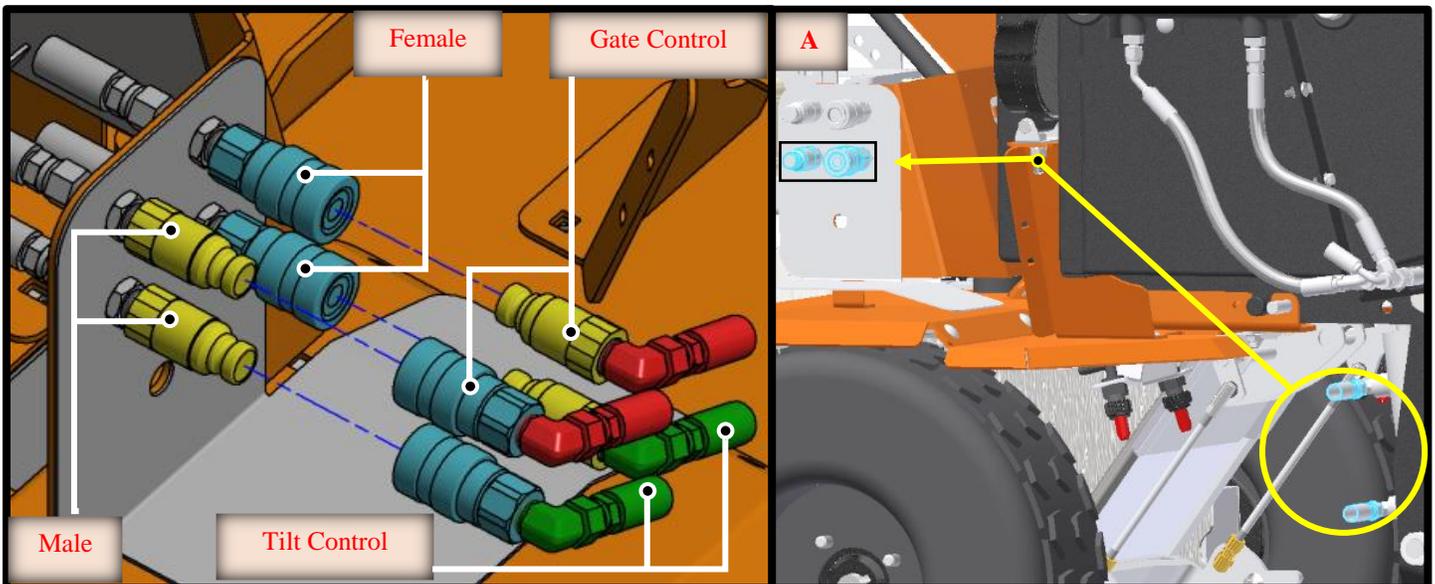
2.4.1 Cont.

E. Insert (2) **Quick-Release Pins** into Mounting Bracket to secure Hopper.



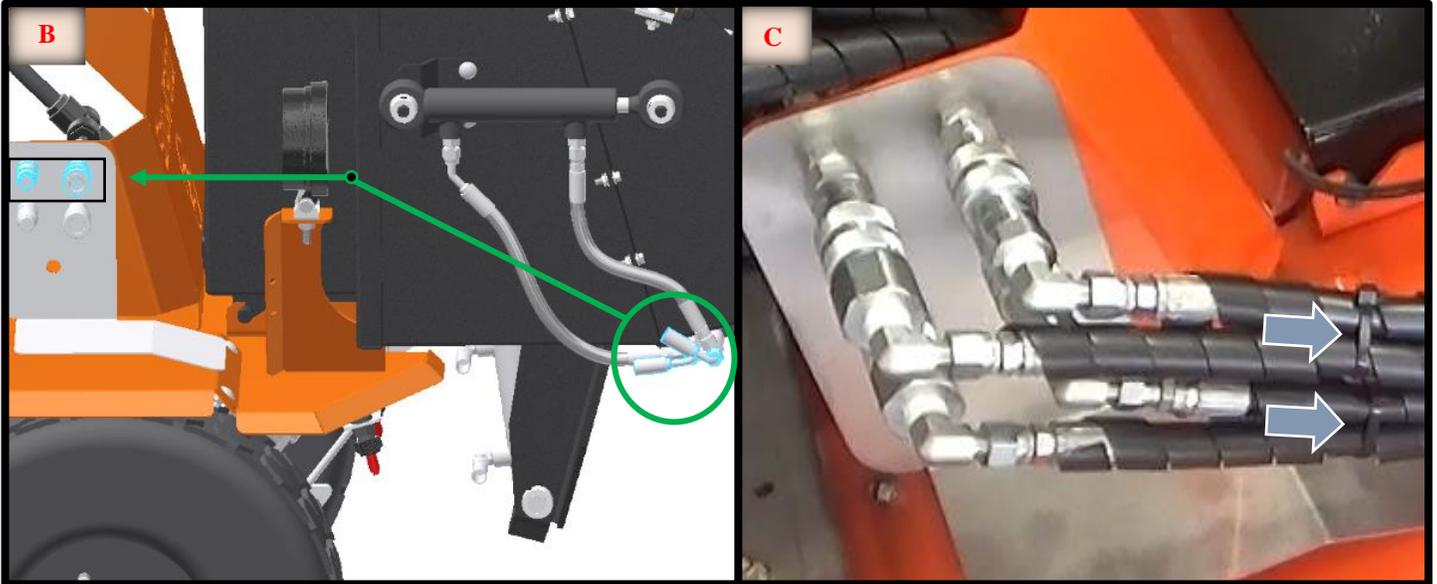
2.4.2 Connect Hydraulic Hoses.

A. Connect the **Tilt Control Hoses** to Bottom Fittings Set (Male to Female)

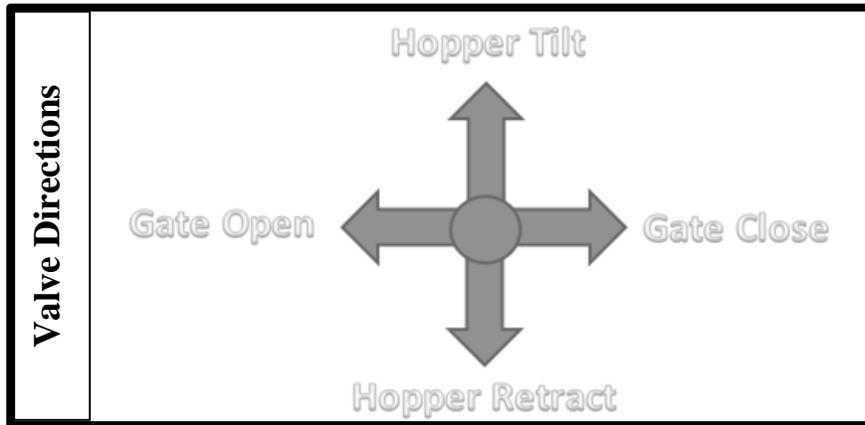


2.4.2 Cont.

- B. Connect the **Gate Control Hoses** to Top Fittings Set (Male to Female)
- C. Attach a **Cable Tie** to the Tilt and Gate Control Hoses

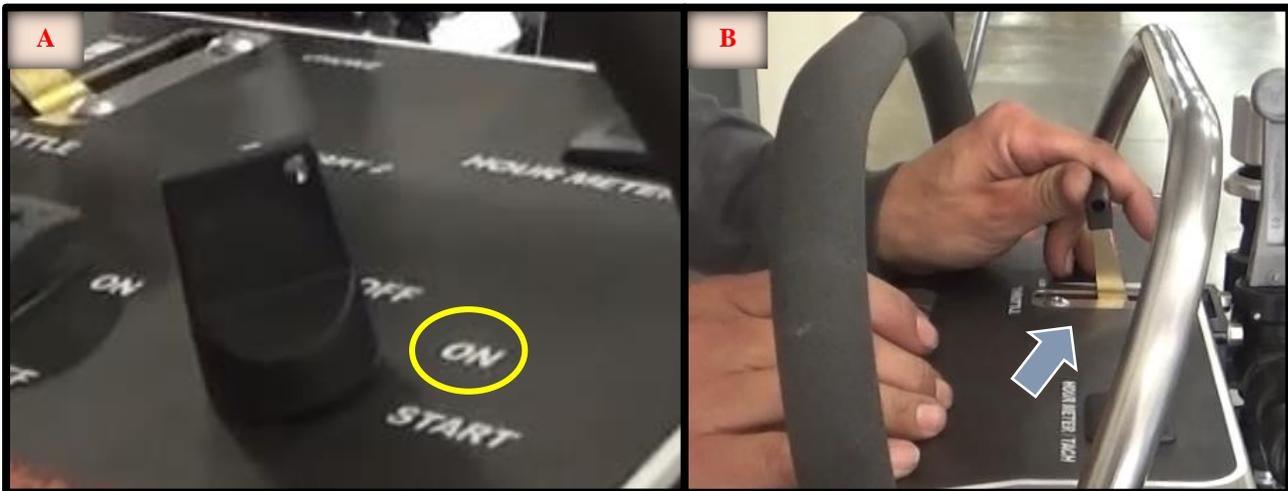


2.5 TEST



2.5.1 Shift Valve handle to operate the Hopper.

- A. Turn the ignition switch to the ON position.
- B. Adjust throttle to halfway.

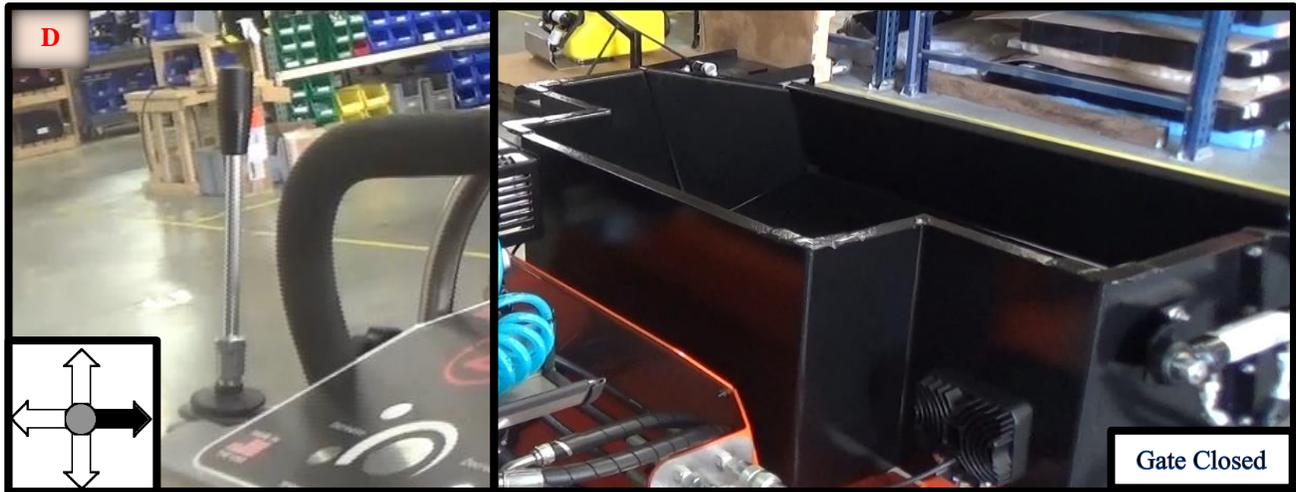


- C. Move the Valve Handle to the left to open the Hopper Gate.

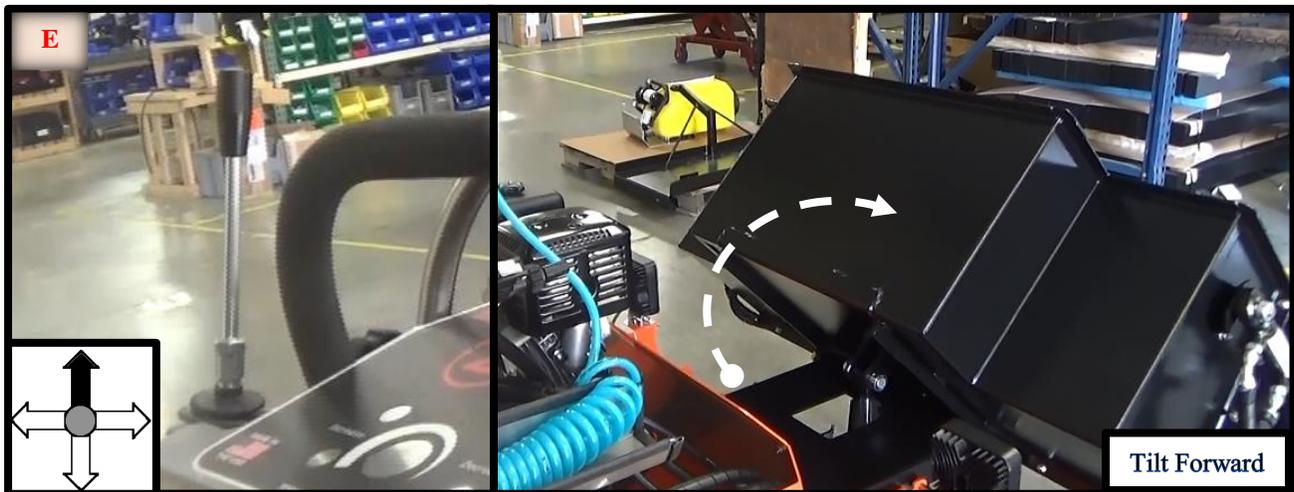


2.5.1 Cont.

D. Move the Valve Handle to the right to close the Hopper Gate.



E. Move the Valve Handle up to tilt the Hopper.



F. Move the Valve Handle down to retract Hopper

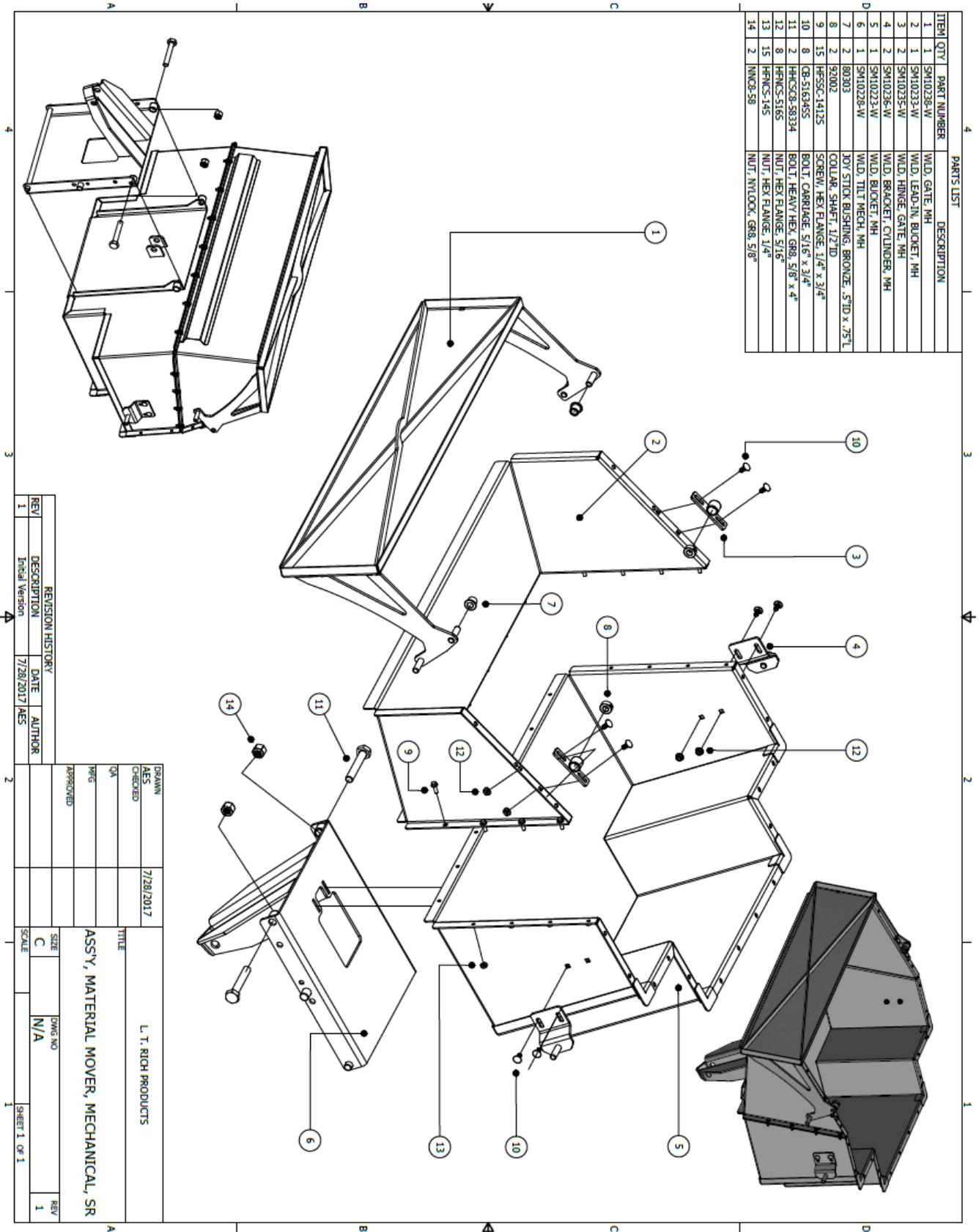


3.0 APPENDIX A

3.1 PARTS LIST

SR-MULCH HOPPER							
ITEM	P/N	DESCRIPTION	PHOTO	ITEM	P/N	DESCRIPTION	PHOTO
1	SM10223-W	WLD, BUCKET, MH		23	40014	HOSE, 1/4", 100R17, 4FJIC, 4FJIC90, OAL 28.5"	
2	SM10228-W	WLD, TILT MECH, MH		24	40013	HOSE, 1/4", 100R17, 4FJIC, 4FJIC90, OAL 29.5"	
3	SM10233-W	WLD, LEAD-IN, BUCKET, MH		25	40015	HOSE, 1/4", 100R17, 4FJIC, 4FJIC, OAL 33.5"	
4	SM10238-W	WLD, GATE, MH		26	40010	HOSE, 1/4", 100R17, 4FJIC, 4FJIC, OAL 50"	
5	SM10401	FERT BOX PLATFORM, LEFT		27	40011	HOSE, 1/4", 100R17, 4FJIC, 4FJIC45, OAL 52"	
6	SM10402	FERT BOX UPRIGHT, LEFT		28	SPILM-34	LOOM, SPIRAL CUT, OD 3/4"	
7	SM10402-R	FERT BOX UPRIGHT, RIGHT		29	80704-B	PIN, HEX NUT, HEX JAM NUT, WASHER, 5/8"	
8	SM10403	FERT BOX PLATFORM, RIGHT		30	80706	PIN, LOCKING RING	
9	SM10235-W	WLD, HINGE, GATE, MH		31	80748	PIN, QUICK RELEASE, 3/8" X 1-1/2", SS	
10	SM10236-W	WLD, BRACKET, CYLINDER, MH		32	80303	BUSHING, BRONZE, 5/16 X .75" L	
11	SM10246	ROD, PIVOT, SR, 0.75" X 4" SS		33	92002	COLLAR, SHAFT, 1/2" ID	
12	SM10248	ROD, PIVOT, SR, 0.75" X 3.375" SS		34	SC1-07500	COLLAR, SHAFT, 3/4" ID	
13	80453	CYLINDER, HYDRAULIC, GATE CONTROL SR		35	HFSSC-1434S	SCREW, HEX FLANGE GR8, 1/4" X 3/4"	
14	80454	CYLINDER, HYDRAULIC, TILT CONTROL SR		36	CB-51634SS	BOLT, CARRIAGE, 5/16" - 18 X 3/4"	
15	80429	FITTING, JIC MALE, 1/4", MALE STRAIGHT, 3/8" ORB		37	CB-5161SS	BOLT, CARRIAGE, 5/16" X 1"	
16	80617	FITTING, 1/4" JIC MALE 3/8" NPT MALE 90 DEG		38	CB-381S	BOLT, CARRIAGE, 3/8"-16 X 1"	
17	80435	FITTING, 1/4" JIC MALE, 1/4" NPT MALE 90 DEG		39	HHSCS8-58334	BOLT, HEAVY HEX GR8, 5/8" X 4"	
18	80619	FITTING, TEE, MALE, 1/4"		40	HFNCS-14S	NUT, HEX FLANGE, 1/4"	
19	80609	FITTING, 1/4" MALE QUICK DISCONNECT, 1/4" NPT FEMALE		41	HFNCS-516S	NUT, HEX FLANGE, 5/16"	
20	80611	FITTING, 1/4" FEMALE QUICK DISCONNECT, 1/4" NPT FEMALE		42	HFNCS-38S	NUT, HEX FLANGE, 3/8"	
21	40012	HOSE, 1/4", 100R17, 4FJIC, 4FJIC, OAL 15"		43	NNCS-58	NUT, LOCK, NYLON - ZINC, 8-32	
22	40017	HOSE, 1/4", 100R17, 4FJIC, 4FJIC45, OAL 15"					

3.2 MECHANICAL DRAWING



ITEM QTY	PART NUMBER	DESCRIPTION
1	SM1028-W	WLD. GATE, MH
2	SM1023-W	WLD. LEAD-IN, BUCKET, MH
3	SM1023-W	WLD. HINGE GATE, MH
4	SM1026-W	WLD. BRACKET, CYLINDER, MH
5	SM1023-W	WLD. BUCKET, MH
6	SM1028-W	WLD. TILT MECH, MH
7	80303	JOY STICK BUSHING, BRONZE, .5"ID x .75"L
8	92002	COLLAR, SHAFT, 1/2" ID
9	HF95C-14125	SCREW, HEX FLANGE, 1/4" x 3/4"
10	CB-5163455	BOLT, CARRIAGE, 5/16" x 3/4"
11	HHK5C8-S8334	BOLT, HEAVY HEX, GR8, 5/8" x 4"
12	HRK5C-5165	NUT, HEX FLANGE, 5/16"
13	HRK5C-145	NUT, HEX FLANGE, 1/4"
14	INNCB-58	NUT, NYLOCK, GR8, 5/8"

REV	DESCRIPTION	DATE	AUTHOR
1	Initial Version	7/28/2017	AES

DESIGN	DATE	TITLE
AES	7/28/2017	L. T. RICH PRODUCTS
CHECKED		
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3.3 HYDRAULIC DRAWING

