OPERATOR'S MANUAL

500ST

SpeedTender
ADVANCED SEED DELIVERY

J. & M. MFG. Co., Inc.
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J&M

Revision 7.8.2013

TO THE DEALER:
Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration Card attached to the front inside cover of this manual and return to J. & M. Mfg. Co., Inc. at the address indicated on the card. Warranty claims will be denied if the Warranty Registration Card has not been completed and returned.

EXPRESS WARRANTY:
J. & M. Mfg. Co. Inc. warrants against defects in construction or materials for a period of ONE year. We reserve the right to inspect and decide whether material or construction was faulty or whether abuse or accident voids our guarantee.

Warranty service must be performed by a dealer or service center authorized by J. & M. Mfg. Co. Inc. to sell and/or service the type of product involved, which will use only new or re-manufactured parts or components furnished by J. & M. Mfg. Co. Inc. Warranty service will be performed without charge to the purchaser for parts or labor based on the Warranty Labor Times schedule. Under no circumstance will allowable labor times extend beyond the maximum hours indicated in the Warranty Labor Times schedule for each warranty procedure. The purchaser will be responsible, however, for any service call and/or transportation of the product to and from the dealer or service center's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under the warranty. Costs associated with equipment rental, product down time, or product disposal are not warrantable and will not be accepted under any circumstance.

Each warranty term begins on the date of product delivery to the purchaser. Under no circumstance will warranty be approved unless (i) the product warranty registration card has been properly completed and submitted to the equipment manufacturer, and (ii) a warranty authorization number has been issued by the equipment manufacturer. This Warranty is effective only if the warranty registration card is returned within 30 days of purchase.

This warranty does not cover a component which fails, malfunctions or is damaged as a result of (i) improper modification or repair, (ii) accident, abuse or improper use, (iii) improper or insufficient maintenance, or (iv) normal wear or tear. This warranty does not cover products that are previously owned and extends solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. J. & M. Mfg. Co. Inc. makes no warranty, express or implied, with respect to tires or other parts or accessories not manufactured by J. & M. Mfg. Co. Inc. Warranties for these items, if any, are provided separately by their respective manufacturers.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

In no event shall J. & M. Mfg. Co. Inc. be liable for special, direct, incidental or consequential damages of any kind. The exclusive remedy under this Warranty shall be repair or replacement of the defective component at J. & M. Mfg. Co. Inc.'s option. This is the entire agreement between J. & M. Mfg. Co. Inc. and the Owner about warranty and no J. & M. Mfg. Co. Inc. employee or dealer is authorized to make any additional warranty on behalf of J. & M. Mfg. Co. Inc.

The manufacturer reserves the right to make product design and material changes at any time without notice. They shall not incur any obligation or liability to incorporate such changes and improvements in products previously sold to any customer, nor shall they be obligated or liable for the replacement of previously sold products with products or parts incorporating such changes.

SERVICE:
The equipment you have purchased has been carefully manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety signs on the equipment.

For service, your authorized J. & M. dealer has trained mechanics, genuine J. & M. service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine J. & M. service parts. Substitute parts may void the warranty and may not meet standard required for safe and satisfactory operating. Record the model number and serial number of your equipment in the spaces provided:

Serial #_____ Purchase Date: _____ Purchased From: _____

Please provide this information to your dealer to obtain the correct parts:

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TO THE OWNER:

The purpose of this manual is to assist you in operating and maintaining your Speed Tender in a safe manner. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance and help maintain safe operating conditions. If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating:

1. Is instructed in safe and proper use.
2. Review and understands the manual(s) pertaining to this machine.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

This Safety-Alert symbol indicates a hazard and means
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

IMPORTANT: Indicates that failure to observe can cause damage to equipment.

NOTE: Indicates helpful information.

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by an operator's single careless act. In addition, hazard control and accident prevention are dependent upon the awareness, concern, judgment, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Make certain that the operator(s), prior to operating is instructed in safe and proper use and reviews and understands the manual(s) pertaining to this machine. Also make certain that the operator(s) reviews and understands the operator's manual of the tow vehicle prior to hooking up or operating the Speed Tender.

Read this manual before you operate this machine. If you do not understand any part of this manual, or need more information, contact the manufacturer or your authorized dealer.

Safety Rules Next Page

1. Understand that your safety and the safety of other persons are measured by how you service and operate this machine. Know the positions and functions of all controls before you try to operate them. Make sure to check all controls in a safe area before starting your work.

2. The safety information given in this manual does not replace safety codes, federal, state, or local laws. Make certain your machine has the proper equipment as designated by local laws and regulations.

3. A frequent cause of personal injury or death is from persons falling off equipment and being run over. Do not permit persons to ride on this machine.

4. Secure Speed Tender safety chain to towing vehicle before transporting. Do not transport without safety chains being attached to tow vehicle.

5. Make sure that the conveyor/auger is fastened securely to the boom arm, and the boom arm is resting on the boom arm support with lynch pin in place before transport.

6. Use good judgment when transporting Speed Tender on a highway. Maintain complete control at all times. Regulate speed to road conditions. Do not transport unit with rear compartment full and front compartment empty. The unit may not be properly balanced, offsetting the tongue weight of the Speed Tender.

7. When transporting on public roads, the conveyor must be in the forward position to meet with lighting and visibility marking requirements.

8. Do not travel faster than 10 m/h. during off highway travel. Drive slowly over rough ground, hill sides, and around curves to avoid tipping. Use extreme care when operating close to ditches, fences, or on hill sides.

9. Use care when moving or operating Speed Tender near electric lines as serious injury or death can result from contact.

10. Never adjust, service, clean, or lubricate Speed Tender until all power is shut off and the battery is disconnected. Keep all safety shields in place.

11. Carbon monoxide can cause severe nausea, fainting, or death. Do not operate engine in closed or confined work area.

12. Explosive fuel can cause fires and severe burns. Stop engine before filling fuel tank.

13. Hot parts can cause severe burns. Do not touch engine while operating or just after stopping.

14. Hydraulic oil leaking under pressure can penetrate skin and cause infection or other injury.

15. To prevent personal injury when working with hydraulic power unit:
    a. Relieve all pressure before disconnecting fluid lines.
    b. Before applying pressure, make sure all connections are tight and components are in good condition.
    c. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose.

16. Make sure that everyone is clear of equipment before applying power or moving the Speed Tender.

17. Before filling the Speed Tender, make certain that no one is inside the grain tanks. Never allow children or anyone in, near, or on the Speed Tender during transport or during loading and unloading of grain. Be aware that moving grain is dangerous and can cause entrapment, resulting in severe injury or death by suffocation.

18. Before unhooking the Speed Tender from the transport vehicle, be sure to properly block the wheels to prevent the Speed Tender from moving.

19. When using the Conveyor Swing option be sure to stand clear of the swinging boom arm at all times.

1.1 Preparing the Towing Vehicle

Before towing the Speed Tender, refer to towing vehicle's owner's manual for information concerning hitch capacities, hitch adjustments, and tire inflation.

Towing vehicle must be equipped with proper electric braking components.

NOTE: The Speed Tender is equipped with LED lights. The towing vehicle may require a flasher upgrade for lights to operate properly.

Do not exceed towing vehicles GVWR (Gross Vehicle Weight Rating) or GCWR (Gross Combination Weight Rating), or the maximum hitch load.

1.2 Preparing Speed Tender

Hydraulics: Check routing of all hydraulic hoses. Hoses should not be kinked, twisted or rubbing against sharp edges. Check all hoses and fittings for hydraulic leaks. Tighten and /or repair or replace as required.

Lubrication: Lubricate Speed Tender as outlined in Service section 2.1. Refer to engine manual for proper fluid levels in engine.

Tires/Wheels: Check tire pressures and maintain at recommended operating pressure. It is important to check wheel nut/bolts for proper torque as recommended. You can find proper tire pressure and wheel torque located in service manual section.

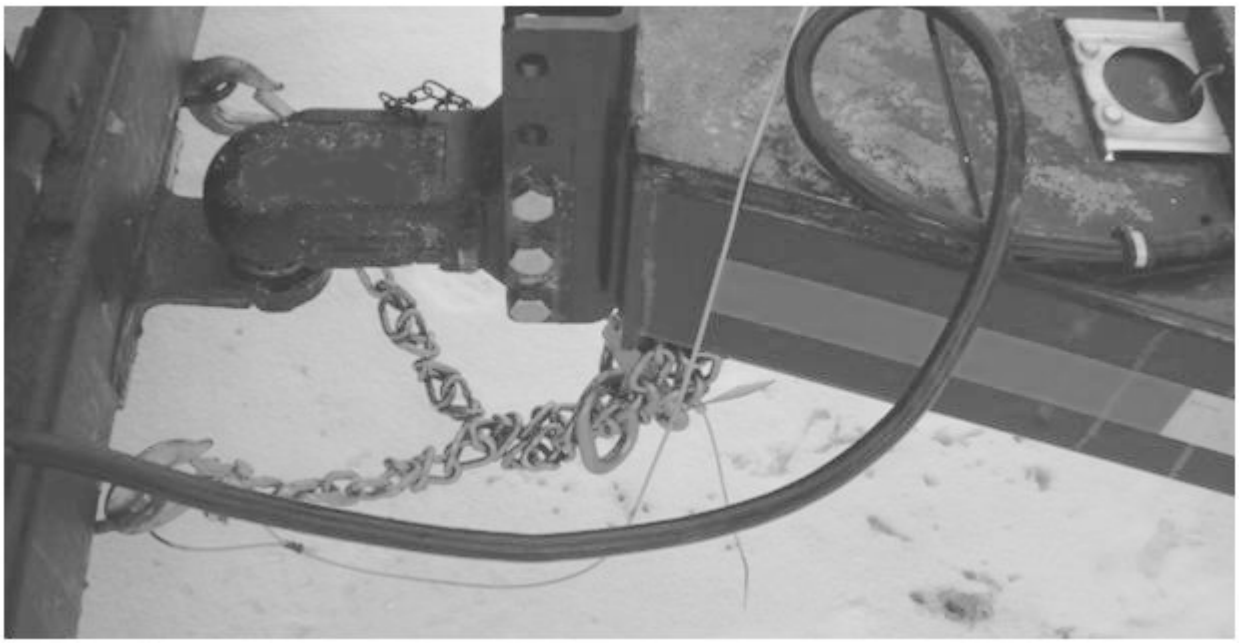
1.3 Connecting Speed Tender to the Towing Vehicle

⚠ **WARNING: Do not stand between the Speed Tender and tow vehicle when hooking up.**

The Speed Tender comes with a Gooseneck Frame. The Gooseneck Frame can feature either a 2-5/16" ball coupler or a 5th Wheel hook up.

1. Back tow vehicle up to Speed Tender.
2. Align the vehicle's ball with the coupler on the Speed Tender.
3. Lift tongue latch lever.
4. Lower jack to set Speed Tender coupler down on ball.
5. Latch coupler. Check to make sure that coupler is securely latched.
6. Raise jack.
7. Attach 7-way plug to tow vehicle. Check the length of the Speed Tender 7-way to make sure that it is long enough to turn, but not too long to touch the ground.
   NOTE: Check to make sure that lights are in proper operating condition and repair or replace if necessary.
8. Connect the brake breakaway cable to towing vehicle.
9. Attach safety chains to tow vehicle by crossing chains. Allow enough slack in chains necessary for turning.
10. Test the brakes and all the lights on the Speed Tender

⚠ **WARNING: Check safety chains for broken, stretched or damaged link or end fittings. Replace chains if found to be damaged. Do not weld safety chains.**



1.4 Transporting

NOTE: Make sure the jack is in the raised position before transporting.
NOTE: Check to make sure the boom arm is in the boom rest and the lynch pin is in place with the conveyor ratchet strap securely fastened.

⚠ **WARNING: Travel at a safe speed that allows you to maintain complete control of towing vehicle and Speed Tender at all times.**

1.5 Hydraulic Power Unit Operation

⚠ **WARNING: Explosive fuel can cause fires and severe burns. Stop engine before filling fuel tank.**

⚠ **WARNING: Carbon monoxide can cause severe nausea, fainting or death. Do not operate engine in an enclosed or confined area.**

⚠ **WARNING: Hot parts can cause severe burns. Do not touch engine while operating or just after stopping. Leave motor door open while running engine.**

⚠ **WARNING: Acid from battery can cause fires and severe acid burns. Make sure to charge battery in well-ventilated area.**

⚠ **WARNING: Make sure to relieve hydraulic pressure before working on hydraulic system.**

⚠ **WARNING: Purge hydraulic system of air before operating Speed Tender to prevent serious injury or death.**

⚠ **WARNING: Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.**

1. Check to make sure all fittings and hardware are in proper operating condition. Replace if worn or broken. Check engine fluid levels and sight gauge on reservoir for proper operating levels.
2. Slide the Fuel Shut-off Lever to the "ON" position (Figure 1.2).
3. Slide Choke Lever to the "ON" position (Figure 1.2).
4. Turn on main disconnect.
5. Turn the key to the start position. Once engine starts, release key (Figure 1.2).
6. After starting, allow the engine to warm-up. Slide choke to the "OFF" position, and increase throttle speed (Figure 1.2).
7. To turn the engine off, slide the Fuel Shut-off to the "OFF" position (Figure 1.2).

NOTE: In extremely cold weather, it is best to allow engine and hydraulics to warm-up before increasing throttle speed.

NOTE: If a hydraulic leak appears, turn off immediately and take appropriate action.

NOTE: See Engine manual for more details on upkeep and service.

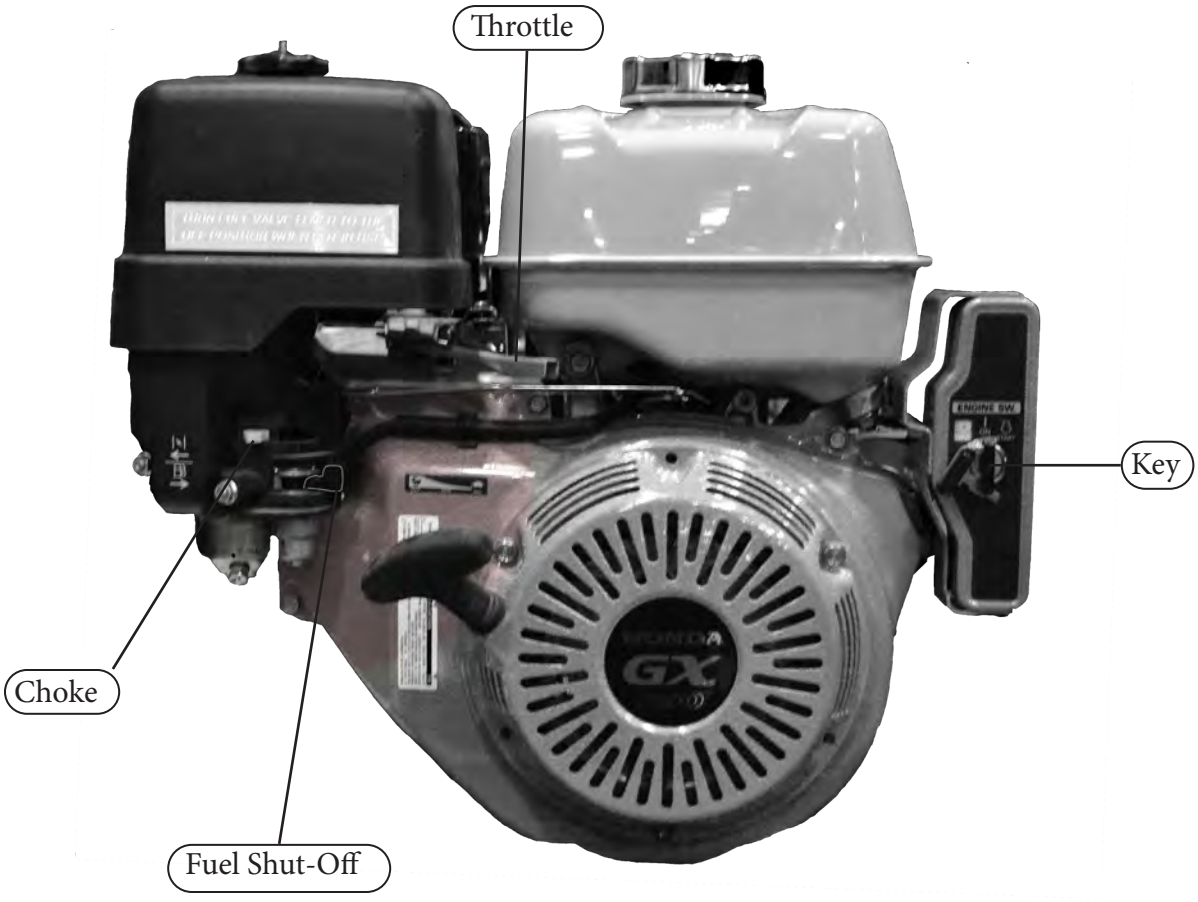


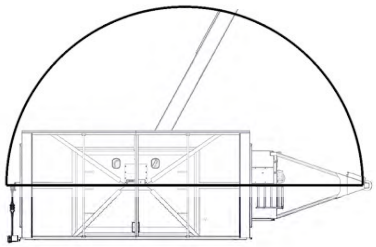
Figure 1.2

1.6 Field Operation

⚠ **WARNING: The Speed Tender must be hooked to the towing vehicle during loading and unloading.**

1. Position the Speed Tender next to the planter/drill so the conveyor/auger will reach the planter box.
2. Remove lynch pin from Boom Arm. (Figure 1.3)
3. Start the hydraulic power unit and increase throttle speed. (Allow hydraulic fluid to warm-up.) (Figure 1.2).
4. Raise the boom out of the Boom Rest using the handheld control (Figure 1.4).
   NOTE: Wireless options feature a Wireless Remote (Figure 1.4).

⚠ **WARNING: When operating the hydraulic swing option, do not stand in the operating range of the Conveyer.**



⚠ **WARNING: If you are parked on an incline the boom arm may swing freely. (It is advised that you do not use the Speed Tender on uneven ground).**

5. Check to make sure the hopper is in the up position (Figure 1.4)

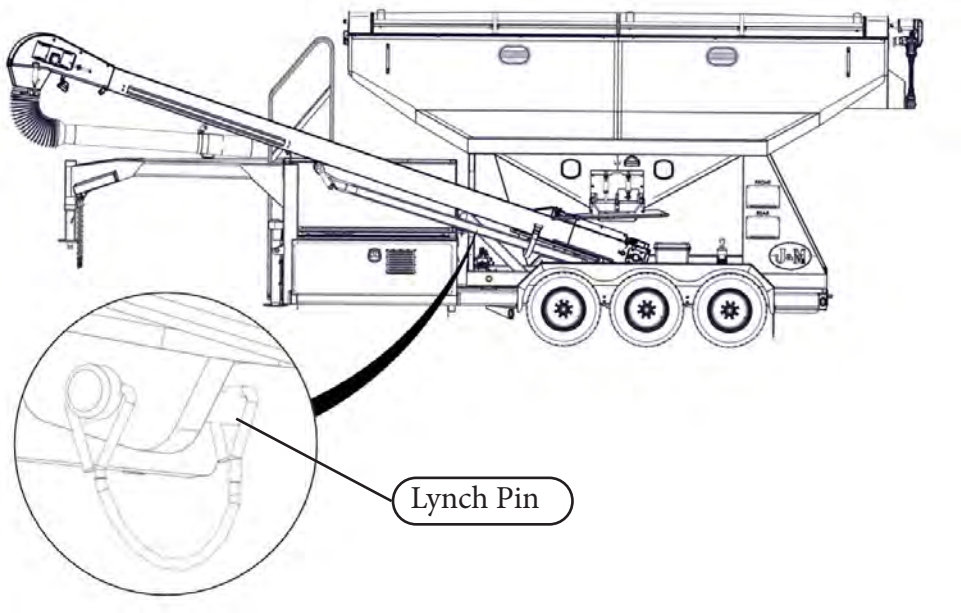


Figure 1.3

Wireless Remote

Figure 1.4
See Section 4.1 for Remote Options

Handheld Control

Figure 1.5

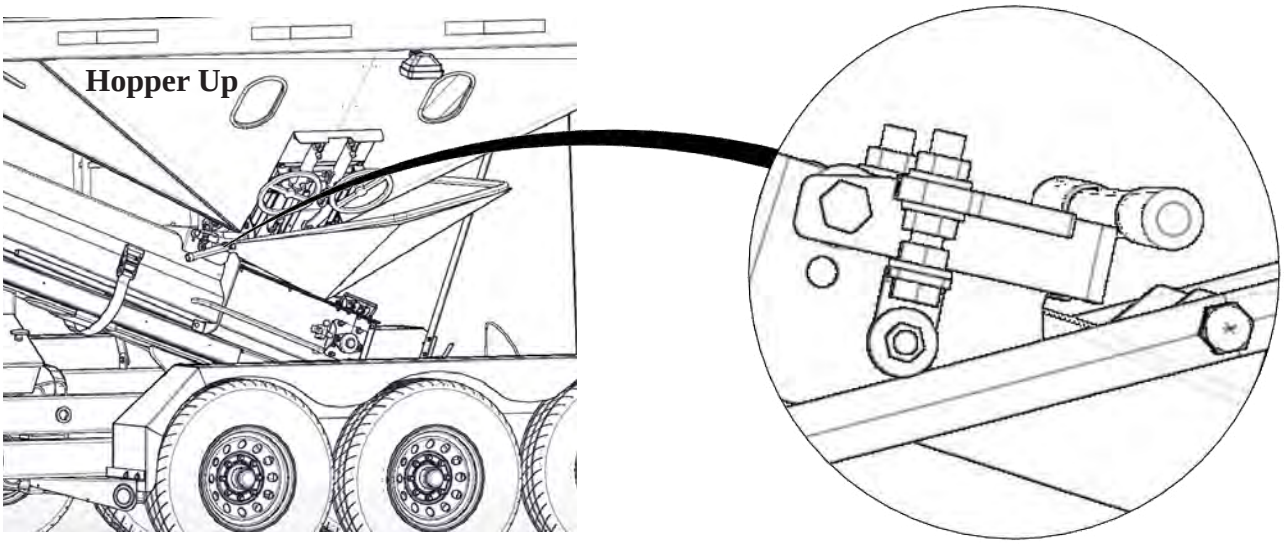


Figure 1.6

6. Using the remote, open the hydraulically driven doors on the speed tender.

⚠ **WARNING: Empty-out the rear compartment first to help prevent the chance of flipping the Speed Tender.**

7. Use the Handheld Control or Wireless Remote to start the conveyor.
8. Fill the planter/drill to desired level then repeat.
   NOTE: Adjusting engine throttle will regulate conveyor speed.
9. Close door on Speed Tender before the last planter seed box is full so you can completely empty-out collapsible hopper and conveyor.

⚠ **CAUTION: If you are parked on an incline the boom arm may swing freely. (It is advised that you do not use the Speed Tender on uneven ground).**

10. Position boom above boom rest and lower to allow its full weight on the boom rest.
11. Replace lynch pin in Boom Arm.
13. Make sure that the conveyor hold down ratchet strap is tight enough that the conveyor will not move during transportation.
14. Make sure the collapsible hopper is in the up position for storage (Figure 1.6).
    NOTE: If you are not using an optional hopper cover this will help the water drain out of the hopper.
15. Run the engine at 1/2 to full rpm for 20 minutes to recharge the battery.
16. Slide the fuel shut off lever to the "OFF" position. This will allow the engine to shut off by running out of gas.
17. Turn the key to the "OFF" position.
18. Turn off main disconnect.

1.7 Filling Speed Tender From Another Wagon or Bulk Container

⚠ **WARNING: The Speed Tender must be hooked to the towing vehicle during loading and unloading.**

1. Remove lynch pin from Boom Arm (Figure 1.3).
2. Start the hydraulic power unit and increase throttle speed. (Allow hydraulic fluid to warm up.)
   NOTE: Make sure collapsible hopper is in the down position.
3. Raise the boom out of boom rest using the handheld control. (Figure 1.4).
   NOTE: Wireless options feature a Wireless Remote (Figure 1.4).

⚠ **CAUTION: If you are parked on an incline, the boom arm may swing freely. (It is advised that you do not use Speed Tender on uneven ground)**

5. Rotate the conveyor to 45 deg. (Figure 1.8)
6. Lower the boom so you can remove the telescoping spout from the discharge end of the conveyor.
7. Undo the conveyor hold down ratchet strap.
8. Swing the collapsible hopper end out from under the Speed Tender shell.
9. Position the discharge end over the Speed Tender.
   NOTE: The conveyor is equipped with a stand (Figure 1.7). (It is recommended for use whenever possible to maximize conveyor performance and for easier access to discharge point on bulk seed containers).

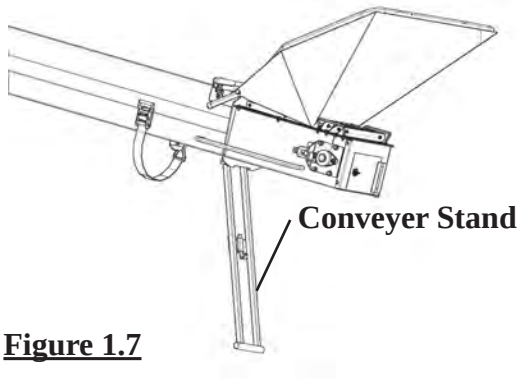


Figure 1.7

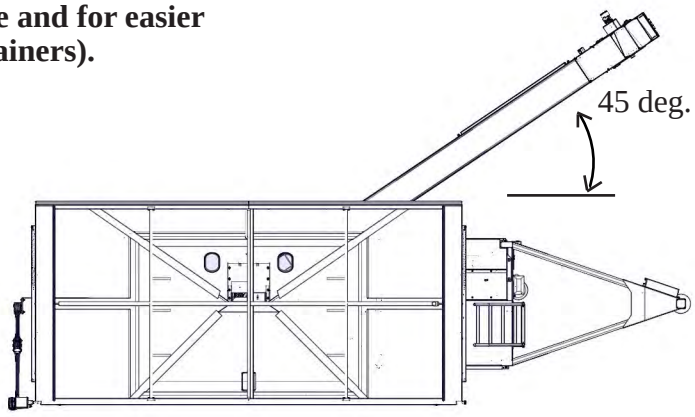


Figure 1.8

11. Lock collapsible hopper in the up position (Figure 1.6).
12. Position the wagon or bulk seed container over the collapsible hopper.
13. Use the handheld controller or wireless remote to start the conveyor.
14. Fill the Speed Tender to desired level.

⚠ **WARNING: Fill the front compartment first to help prevent the chance of flipping.**

15. Run the conveyor until the collapsible hopper is empty.
16. When finished loading seed into the Speed Tender, move the wagon or bulk seed container away from conveyor.
17. Place collapsible hopper in the down position.
18. With the Boom Arm at a 45 deg. angle, swing the conveyor/auger back into the resting position on the boom arm (Figure 1.8).
19. Place the conveyor/auger hold down ratchet strap around the conveyor/auger and tighten the strap (Figure 1.3).

⚠ **CAUTION: If you are parked on an incline, the boom arm may swing freely. (It is advised that you do not use the Speed Tender on uneven ground.)**

20. Position boom arm above the boom rest and lower to allow its full weight on the boom rest.
21. Replace lynch pin in boom arm pin.
22. Make sure that the conveyor/auger hold down ratchet strap is tight enough that the conveyor/auger will not move during transport.
23. Make sure the collapsible hopper is in the up position for storage (Figure 1.6).
    NOTE: This will help the water drain out of the hopper.
24. Run the engine at 1/2 to full rpm for 20 minutes to recharge the battery.
25. Slide the fuel shut off lever to the "OFF" position. This will allow the engine to shutoff by running out of gas.
26. Turn the key to the "OFF" position.
27. Turn off main disconnect.

1.8 Cleaning out Collapsible Hopper and Conveyer

⚠ **WARNING: The Speed Tender must be hooked to the towing vehicle during loading and unloading.**

1. Remove lynch pin from Boom Arm (Figure 1.3).
2. Start the hydraulic power unit and increase throttle speed. (Allow hydraulic fluid to warm up (Figure 1.2).
   NOTE: Make sure collapsible hopper is in the down position.
3. Raise the boom out of boom rest using the handheld control. (Figure 1.5).
   NOTE: Wireless options feature a Wireless Remote (Figure 1.4).

⚠ **CAUTION: If you are parked on an incline, the boom arm may swing freely. (It is advised that you do not use Speed Tender on uneven ground).**

4. Rotate the conveyor to 45 deg. (Figure 1.8).

7. Lower the boom so you can remove the telescoping spout from the discharge end of the conveyor/auger.
8. Undo the conveyor hold down ratchet strap (Figure 1.3).
9. Swing the collapsible hopper end out from under the Speed Tender shell.
10. Place the collapsible hopper in the up position (Figure 1.6)
11. With the discharge end lower than the collapsible hopper end, place the discharge end into a 5 Gal. bucket (Figure 1.9). Using the hand held controller, start the conveyor/auger and run until completely empty.
12. Lower the collapsible hopper end back down to the **ground.** This will allow you to open the clean-out door. (Figure 1.10)

Figure 1.9

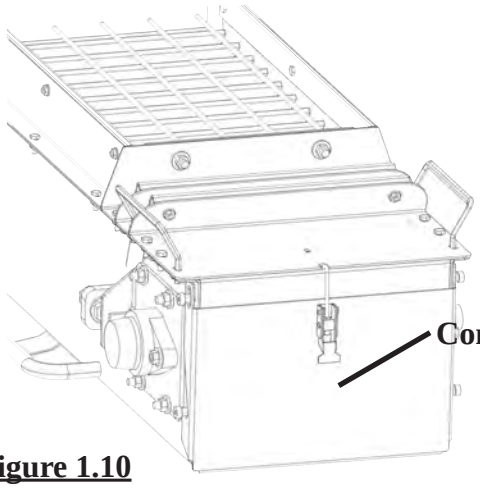


Figure 1.10

13. Place collapsible hopper in the down position.

⚠ **CAUTION: If you are parked on an incline, the boom arm may swing freely. (It is advised that you do not use Speed Tender on uneven ground).**

15. With the boom arm at a 45 Deg. angle, swing the conveyor/auger back into the resting position on the boom arm (Figure 1.8).
16. Place the conveyor hold down ratchet strap around the conveyor/auger and tighten the strap (Figure 1.3).
17. Position boom arm above boom rest and lower to allow its full weight on the boom rest.
18. Replace lynch pin in boom pin.
19. Make sure that the conveyor hold down ratchet strap is tight enough that the conveyor will not move during transportation.
20. Make sure the collapsible hopper is in the up position for storage (Figure 1.6).
    NOTE: This will help the water drain out of the hopper.
21. Slide the fuel shut off lever to the "OFF" position. This will allow the engine to shutoff by running out of gas.
22. Turn the key to the "OFF" position.
23. Turn off main disconnect.

1.9 Adjusting the Tarp Tension in Hanger Bracket

1. Fully unroll the tarp as shown in Figure 1.11.
2. Remove the two bolts that hold the tarp U-Joint on the splined shaft.
3. Remove the u-joint from the spline shaft.
4. Rotate u-joint and handle three or four spline teeth.
   NOTE: Clockwise to tighten the tarp or counter-clockwise to loosen it.
5. Slide the u-joint and handle back onto the spline shaft.
6. Replace and tighten the two bolts.

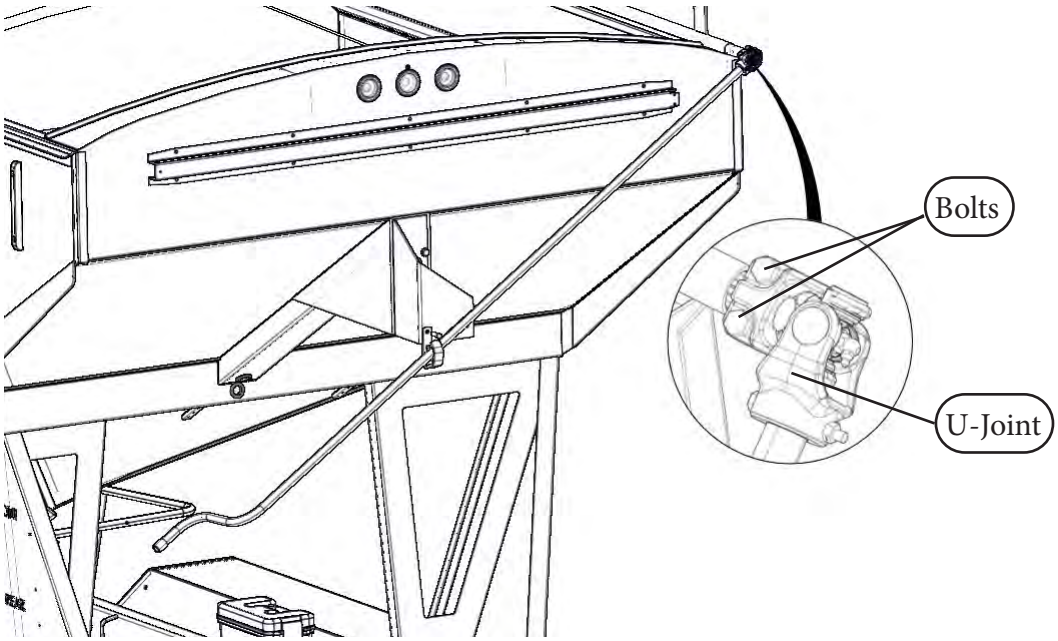


Figure 1.11

1.10 Basic Scale Operations

1. Turn the scale “ON” by pressing the on/off button. The display shows “Hello” then the current weight value is displayed.
2. Press G/N to access the gross mode. (Live scale weight is displayed in the G/N weighing mode.)
3. In the gross mode, press the ZERO/CLEAR key to zero the indicator when the Speed Tender is empty.
4. After initial amount is placed on the scale, press the TARE Key. (Weight is tarred off and goes into net mode, showing weight).
5. Load or unload material as needed (Shows + when loading and a – value when unloading).
6. When the display reaches the proper amount, stop loading or unloading.
7. Repeat steps 2 through 4 until complete.
   NOTE: For more information, refer to the scale manual.

2.1 Grease Conveyer Bearings

Grease the conveyor bearings every 10 hours of operation and before storage. Use only two pumps of grease per bearing (Figure 2.1).
NOTE: Over lubrication of these bearings will result in premature failure.
NOTE: The conveyor has four bearings that need grease (two at each end).

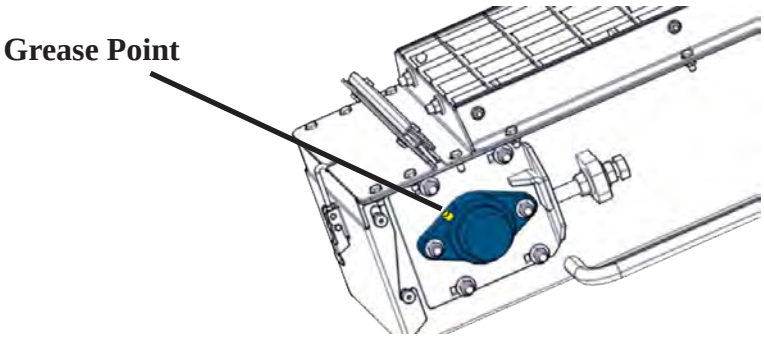


Figure 2.1

2.2 Grease Boom Arm

Grease pivot points on boom arm every 50 hours and before storage (Figure 2.2).

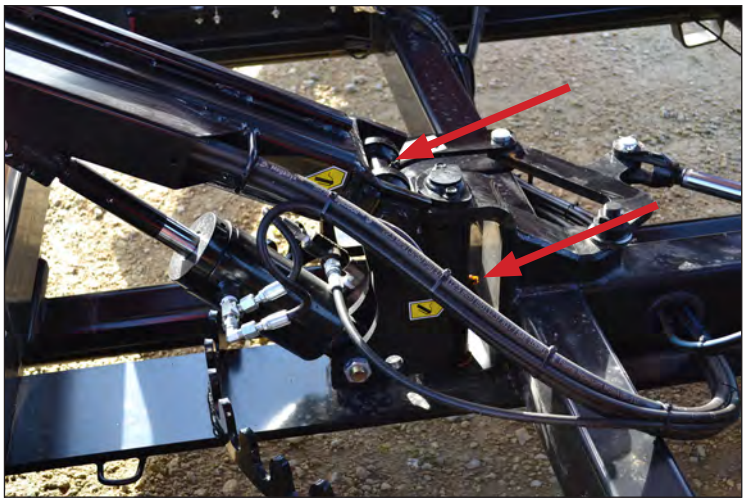


Figure 2.2

2.3 Tire Pressure

The following is to be used as a general guide for tire inflation. Figures can vary depending on specific brand of tire used. It is important that tires are inspected before and after unit is loaded. Start with the minimum pressure indicated. The tire should stand up with no side wall buckling or distress as tire rolls. Do not exceed maximum recommended tire pressure. 80 psi is the cold rating on the tire that is standard for the Speed Tender. J&M also recommends to rotate your tires front to back (not side to side) every 1,200 miles or 12 months (whichever comes first) for longer tire life. Figure 2.3 below is a troubleshooting chart used to ensure the tires wear evenly.

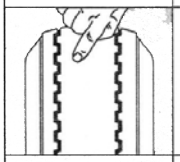
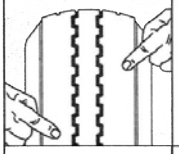
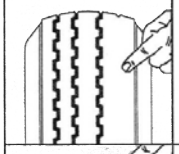
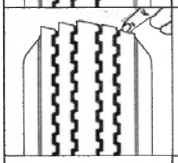
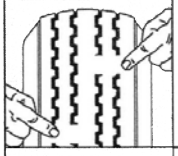
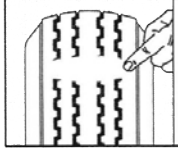
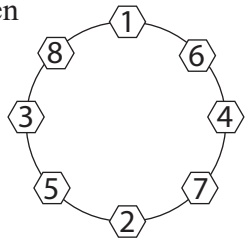
	Condition	Possible Cause	Remedy
	Even Center Wear	Over Inflation	Check & Adjust Pressure When Cold
	Inside & Outside Wear	Under Inflation	Check & Adjust Pressure When Cold
	Smooth, Side Wear - One Side	Loss of Camber or Overloading	Check & Unload As Necessary Have Alignment Checked
	"Feathering" Across The Face	Axle Not Square To Frame or Incorrect Toe In	Square Axles Have Alignment Checked
	Cupping	Loose Bearings or Wheel Balance	Check Bearing Adjustment and Wheel & Tire Balance
	Flat Spots	Wheel Lockup	Adjust Brakes

Figure 2.3

2.4 Tightening Lugnuts

Torque lug-nuts on new and removed wheels to 350-375 ft. lbs. after the first 10, 25, and 50 miles of driving, then recheck torque every 50 hours or every year, whichever comes first. Always tighten lug-nuts in the following sequence.



2.5 Wheel Bearings

The wheel bearings need to be cleaned, inspected, and repacked every 12 months or 12,000 miles. Use a number 2 wheel bearing grease to repack the bearings.

Bearing Inspection and Service:

1. Jack up Speed Tender.
2. Remove wheel lug-nuts.
3. Remove wheel from hub.
4. Remove grease cap.
   NOTE: Be careful not to dent or cut a hole in grease cap.
5. Remove the cotter pin, nut, and washer.
6. Wiggle the hub to take the outer wheel bearing out.
7. Pull hub assembly straight off the axle. If you want to reuse the grease seal, (which is not recommended), be careful to support the weight of the hub so that the end of the axle does not ruin the rubber part of the grease seal.
8. To remove the inner bearing, you must remove the grease seal.
9. Remove inner bearing.
10. Wash all grease and oil from the bearing cone using a suitable solvent. Dry the bearing with a clean, lint-free cloth and inspect each roller completely. If any pitting, scalding, or corrosion is present, then the bearing must be replaced. The bearing cups inside the hub must be inspected.
    NOTE: Bearings must always be replaced in sets of a cone and a cup (See bearing cup replacement on following page.)
11. Position the new wheel seal in its recess and lightly set it with a hammer.
    NOTE: Be careful to not deform the metal part of the seal.
12. Slide the hub assembly onto the spindle and push it back into position.
13. Slide it and the spindle washer onto the spindle and into the hub recess.
14. Install and bottom out the spindle nut, then back it off 1/4 turn.
15. Reinstall the spindle nut and replace the cotter pin with a new one.
    NOTE: If the castle nut does not line up with the hole in the spindle, then loosen the nut slightly until it does.
16. Reinstall the wheel onto the hub and torque the wheel lug-nuts.
    NOTE: See wheel nut/bolt torque requirements located in section 2.4.

Bearing cup replacement:

1. Place the hub on a flat work surface with the cup to be replaced on the bottom side.
2. Using a brass drift punch, carefully tap around the small diameter end of the cup to drive it out.
3. After cleaning the hub bore area, replace the cup by tapping it with the brass drift punch. Be sure the cup is seated all the way up against the retaining shoulder in the hub.

Bearing Lubrication

- The axles are equipped with oil lubricated hubs. The lubrication procedure is to periodically fill the hub with a high quality hypoid gear oil to the level indicated on the clear plastic oil cap. The oil can be filled through the rubber plug hole in the cap.

Recommended Oil- SAE 90 Hypoid Gear (Hypoid Rear Axle Oil)

Seal Inspection and Replacement

-Whenever the hub is removed, it's recommended to replace the seals to assure that the seal properly seals the bearing cavity. To replace the seal:

1. Pry the seal out of the hub with a screwdriver. Never drive the seal out with the inner bearing as you may cause damage to the bearing.
2. Apply Permatex sealant to the outside of the new seal.
3. Tap the new seal into place using a clean wood block.

Bearing Adjustment and Hub Replacement

If the hub has been removed or bearing adjustment is required, the following adjustment procedure must be followed:

1. Install the bearing and washer into the hub. Thread on the inner nut, rotate the hub and tighten the nut to 100 Ft-Lbs. of torque.
2. Then loosen the spindle nut to remove the torque. Do not rotate the hub.
3. Finger tighten the spindle nut until snug.
4. Back the spindle nut off slightly 1/4 to 3/8 turn.
5. Place the tang washer on the spindle and bend two tangs inward over the nut. This will keep the inner nut from turning while torque is applied to the outer nut
6. Install the outer nut and torque it to 100—175 Ft-Lbs. Insure that the inner nut does not turn. Bend two tangs from the tang washer over the outer nut flats to secure.
7. Install cap with the O-ring and plug installed. Rotate the hub and check the bearing adjustment. The allowable end play is .001" - .010".

Inspection and Replacement

All the components of your suspension system should be visually inspected at least every 6,000 miles for signs of excess ware, elongation of bolt holes, and loosening of fasteners. Whenever loose or replaced, the fasteners in your suspension system should be torqued as in the chart below.

Torque (Ft-Lbs.)		
Item	Min.	Max.
U-Bolt	110	150
Drum Mounting	90	110
Spring Eye Bolt	200	250
Equalizer	325	375
Plastic Oil Cap	20	30

2.6 Hydraulic Power Unit

Daily (every 5 hours of use):
1. Check oil level.
2. Inspect for oil leaks and repair as necessary.
3. Check all hoses, fittings, bolts and hardware to make sure that they are secure and properly tightened.
4. Check motor oil level. See Engine operator's manual for details on oil levels, oil types, and service intervals.

Once per season (every 20-25 hours of use):

Change hydraulic oil filter element with either a NAPA 1551 or a FRAM P1653A Filter.

Every two to three years (every 75-80 hours of use):

Drain oil reservoir and refill with clean, good quality hydraulic AW 32 oil. (It is not recommended to refill with tractor hydraulic oil).

Replacing hydraulic parts:

Check parts section for proper part description and part # for replacement.

Purge air from system as follows:
1. Disconnect the rod end clevis of a cylinder and block it up so the rod can completely extend and retract without contacting any other components.
2. Pressurize the system and maintain system at full pressure for at least 5 sec. after cylinder rod stops moving. Check that cylinders has fully extended or retracted.
3. Check hydraulic reservoir and refill as needed.
4. Pressurize system again to reverse the motion of step 2. Maintain pressure on system for at least 5 sec. after cylinder rod stops moving. Check that cylinder has fully extended or retracted.
5. Check for hydraulic leaks using cardboard or wood. Tighten connections according to the torque chart. (pg.28)
6. Repeat steps 2, 3, 4 and 5 (3 to 4 times).
7. De-pressurize hydraulic system and connect cylinder rod clevises to their mating lugs.

2.7 Conveyer Belt Tracking

Conveyor belt must run in the center of the pulley at both the discharge end and the collapsible hopper end. Failure to do so will lead to unnecessary wear and shortening of belt life. We recommend that you check your belt for proper tracking every 10 hours of use and before every season.

Checking the belt tracking at collapsible hopper end:
1. Open clean out-door located under collapsible hopper (Figure 2.4). This will allow you to see if the belt is centered on the pulley.
2. If the tracking is ok, close the clean out-door. If tracking is off, see (Section 2.8).

Checking the belt tracking at discharge end:
1. Remove the 12 bolts located at the discharge end (Figure 2.3).
2. Remove the Discharge Pan and Rubber Discharge Pan. This will allow you to see if the belt is centered on the pulley.
3. If the belt tracking is good, reinstall the head pan. If tracking is off, see Section 2.8.

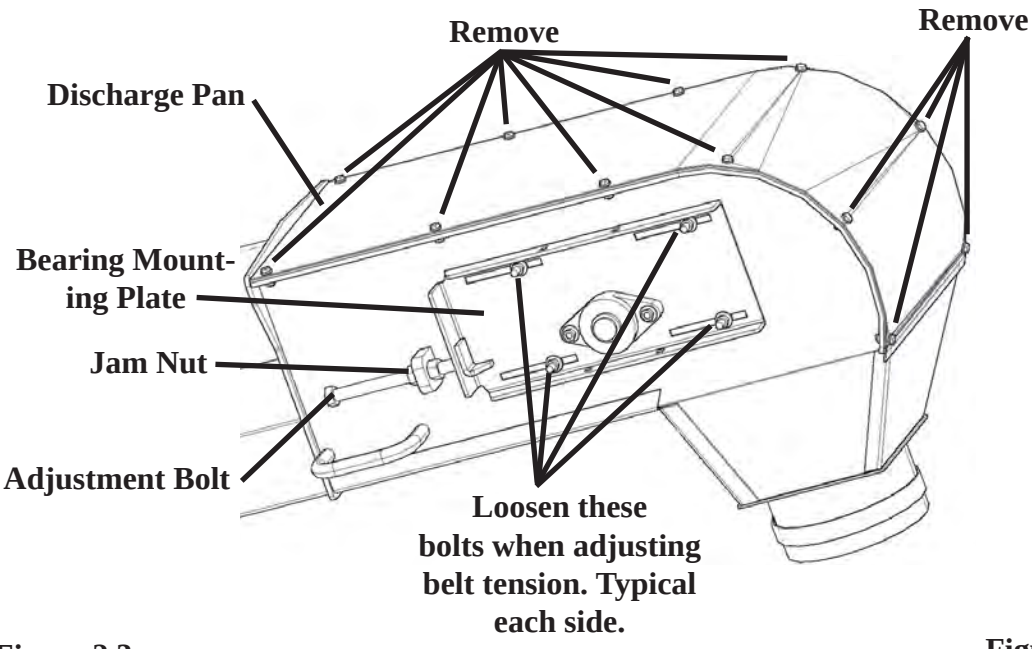


Figure 2.3

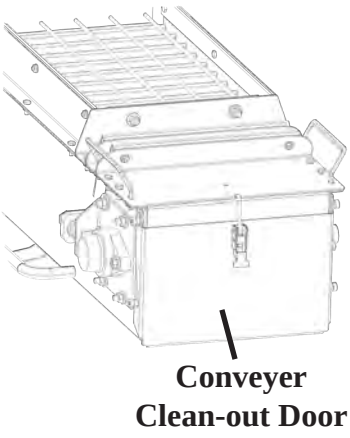


Figure 2.4

2.8 Adjusting Conveyer Belt Tracking

1. Loosen (Do Not Remove) the 4 bolts on the two bearing mounting plates located at the collapsible hopper end of the conveyor (Figure 2.5).
2. Operate the conveyor at a slow speed.

⚠ **CAUTION: Keep hands and clothing away from moving parts.**

3. Loosen jam nut on adjustment bolt (Figure 2.5).
4. Tighten the adjustment bolt slowly until belt is running in the center of the pulley.
   NOTE: Do not loosen the Adjustment bolt.
5. Tighten all bolts on bearing mounting plate, and adjustment bolts jam nuts.
6. Repeat at discharge end.
7. When belt is running in center of the pulley on both ends of conveyor, allow the Speed Tender to run for 10 min, and recheck belt for proper tracking.

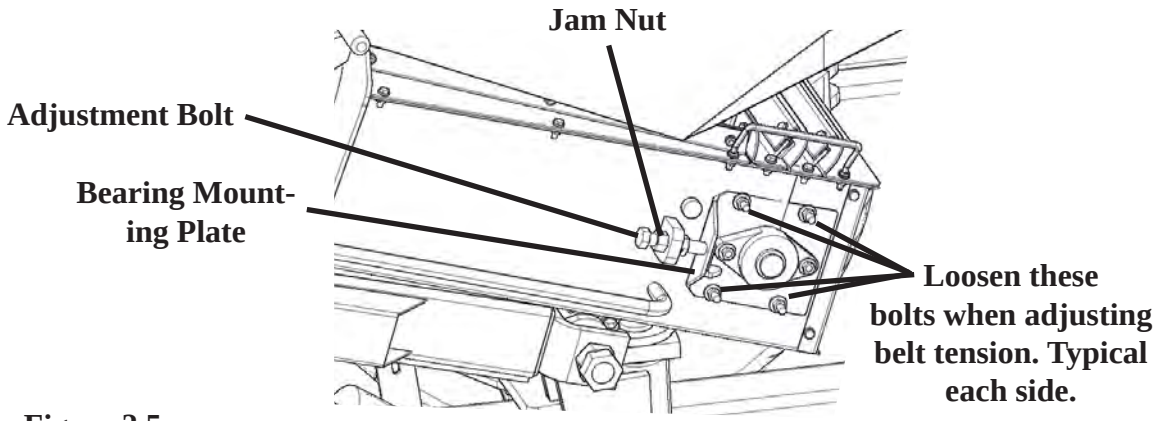


Figure 2.5

2.9 Belt Tensioning

NOTE: You need to adjust your belt tension at least once a year.

1. Remove the head pan and head rubber discharge pan (Figure 2.3).
2. Loosen (Do Not Remove) the 4 bolts on the two bearing mounting plates located at the discharge end of the conveyor (Figure 2.3).
3. Loosen jam nut on adjustment bolt at discharge end (Figure 2.3).
4. Torque threaded adjustment bolt to 23 ft-lb.
5. Operate the conveyor at a slow speed.

⚠ **CAUTION: Keep hands and clothing away from moving parts.**

6. If the belt is tracking properly go to step 7. If tracking is off, see Section 2.8.
7. Open the clean-out door located under collapsible hopper (Figure 2.4). This will allow you to see if the belt is centered on the pulley.
8. If the tracking is ok, close the clean-out door, tighten all hardware and go to step 9. If tracking is off, see Section 2.8.
9. Run the belt at medium speed for 10 min. and recheck the tracking at both the discharge and collapsible hopper end.
10. If tracking is off, see section 2.8.
11. If the belt is still tracking in the center of both pulleys, reinstall the head pan.

2.10 Electric Brakes

The Speed Tender is equipped with electric brakes. They need to be inspected and serviced immediately if a loss of performance is experienced. You need to service your Speed Tender brakes at least once a year with normal use.

How to use your electric brakes properly:
Your Speed Tender brakes are designed to work in synchronization with your tow vehicle brakes. Never use your tow vehicle or Speed Tender brakes alone to stop the combined load.

Your Speed Tender and tow vehicle will seldom have the correct amperage flow to the brake magnets to give you comfortable, safe braking unless you make proper brake system adjustments. Changing trailer load and driving conditions, as well as uneven alternator and battery output, can mean unstable current flow to your brake magnets. It is therefore imperative that you maintain and adjust your brakes as set forth in this manual, use a properly modulated brake controller, and perform the synchronization procedure noted below.

In addition to the synchronization adjustment detailed below, electric brake controllers provide a modulation function that varies the current to the electric brakes with the pressure on the brake pedal or amount of deceleration of the tow vehicle. It is important that your brake controller provide approximately 2 volts to the braking system when the brake pedal is first depressed and gradually increases the voltage to 12 volts as brake pedal pressure is increased. If the controller “jumps” immediately to a high voltage output, even during a gradual stop, then the electric brakes will always be fully energized and will result in harsh brakes and potential wheel lockup.

To synchronize:
To insure safe brake performance and synchronization, read the brake controller manufacturer’s instruction completely before preforming the synchronization procedure.

Make several hard stops from 20 m/h on a dry paved road that is free of sand and gravel. If the Speed Tender brakes lock and slide, decrease the gain setting on the controller. If they do not slide, slightly increase the gain setting, Adjust the controller just to the point of impending brake lockup and wheel skid.

How to adjust electric brakes:

1. Park the Speed Tender on firm and level ground.
2. Block the trailer tires on the opposite side securely so that no forward or rearward movement is possible.
3. Jack up the Speed Tender.
4. Secure the trailer on jack stands of adequate capacity front and rear.
5. At the back of the wheel, on the brake backing plate, there is a small rubber plug near the bottom of the backing plate. Pry out this plug to give access to the star wheel adjuster.
6. Insert the brake adjuster tool and maneuver it so that the tool engages with the teeth in the star wheel. The star wheel looks like a gear with exposed teeth on the perimeter.
7. Turn the adjuster until the brake locks up (you can no longer rotate the wheel by hand). This centers the brake shoes on the brake drum so that they are in the correct position.
8. Now back off the star wheel 8 to 10 clicks or as specified by the manufacturer. The wheel should spin freely with no apparent drag to slow it down. A slight scraping noise is normal as the wheel turns.
9. Repeat this procedure for all the wheels

When to adjust brakes:

1. After the first 200 miles of operating when the brake shoes and drums have "seated."
2. At 3,000 mile intervals or once a year, whichever comes first.

Brake Cleaning and Inspection:

Your Speed Tender brakes must be inspected and serviced at yearly intervals, (or more often as use and performance requires). Magnets and shoes must be changed when they become worn or scored thereby preventing adequate vehicle braking. Clean the backing plate, magnet arm, magnet, and brake shoes. Make certain that all the parts removed are replaced in the same brake and drum assembly. Inspect the magnet arm for any loose or worn parts. Check shoe return springs, hold down springs, and adjuster springs for stretch or deformation and replace if required.

Brake Shoe and Lining Inspection:

A simple visual inspection of your brake linings will tell if they are usable. Replacement is necessary if the lining is worn (to within 1/16" or less), contaminated with grease or oil, or abnormally scored or gouged. Hairline heat cracks are normal in bonded linings and should not be cause for concern (Figure 2.6). When replacement is necessary, it is important to replace both shoes on each brake and both brakes of the same axle. This will help retain the "balance" of your brakes.

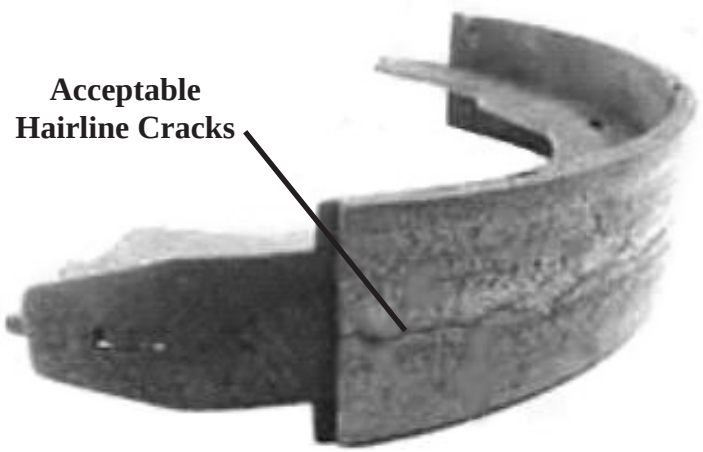


Figure 2.6

Replacing Brake Linings:

1. Remove the brake shoe retract spring.
2. Remove the shoe hold down assembly by holding the back of the pin with one hand and pushing against the spring and twisting with a hold down spring tool until the cup is released.
3. Remove both shoes together leaving the adjuster assembly and spring intact.
4. Clean the backing plate and lever arm.
5. Inspect magnet arm for any loose or worn parts.
6. Replace springs that are broken, bent, or weak.
7. Apply a light film of lubricant to the anchor pin and shoe rest pads & backing plate areas that are in contact with the lever arm.
8. Attach the adjuster screw and spring to the new brake shoes. The star wheel and adjuster must be positioned as before.
9. Install the new shoes on the backing plate and reinstall the shoe retract spring.

After replacement of brake shoes and linings, the brake must be re-burnished to seat in the new components. This should be done by applying the brakes 20 to 30 times from an initial speed of 40 m/h, slowing the vehicle to 20 m/h. Allow ample time for brakes to cool between applications. This procedure allows the brake shoes to seat into the drum surface.

Brake Lubrication:

Before reassembling, apply a light film of lubrication or similar grease, or anti-seize compound on the brake anchor pin, the actuating arm bushing and pin, and the areas of the backing plate that are in contact with the brake shoes and magnet lever arm. Apply a light film of grease on the actuating block mounted on the actuating arm.

Troubleshooting:

Most electric brake malfunctions that cannot be corrected by either brake adjustments or synchronization adjustments can generally be traced to electrical system failure. Mechanical causes are ordinarily obvious, bent or broken parts, worn out linings or magnets, seized lever arms or shoes, scored drums, loose parts, etc. Voltmeter and ammeter are essential tools for proper troubleshooting of electric brakes.

How to Measure Voltage:

System voltage is measured at the magnets. Connect the voltmeter to the two magnet lead wires at any brake. This may be accomplished by using a pin probe inserted through the insulation of the wires dropping down from the chassis or by cutting the wires. The engine of the towing vehicle should be running when checking the voltage (so that a low battery will not affect the readings).

Brake Magnet Inspection:

Your electric brakes are equipped with high quality electromagnets that are designed to provide the proper force and friction. Your magnets should be inspected and replaced if worn unevenly or abnormally (Figure 2.7). Even if wear is normal as indicated by your straightedge, the magnets should be replaced if any part of the magnet coil has become visible through the friction material facing of magnet. It is also recommended that the drum armature surface be re-faced when replacing magnets. Magnets should also be replaced in pairs - both sides of an axle.

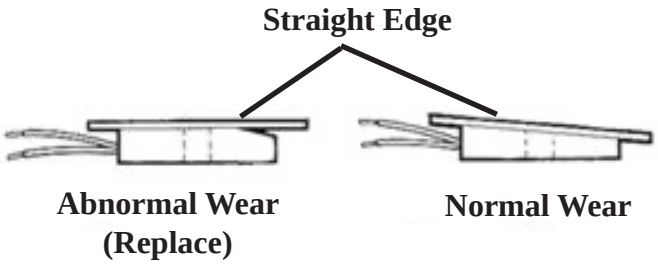


Figure 2.7

Voltage in the system should begin at 0 volts. As the controller bar is slowly actuated, the voltage should gradually increases to about 12 volts. This is referred to as modulation. No modulation means that when the controller begins to apply voltage to brakes it applies an immediate high voltage, which causes the brakes to apply instantaneous maximum power.

The threshold voltage of a controller is the voltage applied to the brakes when the controller first turns on. The lower the threshold voltage, the smoother the brakes will operate. Threshold voltage in excess of 2 volts (quite often found in heavy duty controllers) can cause grabbing, resulting in harsh braking.

How to Measure Amperage:
System amperage is the amperage being drawn by all brakes on the trailer. The engine of the towing vehicle should be running when checking amperage.

One place to measure system amperage is at the blue wire of the controller which is the output to the brakes. The blue wire must be disconnected and the amp meter put in series into the line. System amperage draw should be as noted in the table below. Make sure your ammeter has sufficient capacity and note polarity to prevent damaging your amp meter.

Brake Size	Amps/Magnet	Two Brakes	Four Brakes	Six Brakes	Magnet Ohms
12 X 2	3.0	6.0	12.0	18.0	3.2

Replacing brake magnet

1. Orient the magnet over the lever arm post such that the magnet leads are in the correct position for routing.
2. Push the magnet over the lever arm post by compressing the magnet spring between the magnet and the lever arm.
3. Insert the magnet clip in the slot of the magnet. Be sure to orient the magnet clip so it will “snap” into place.
4. Press down on the magnet and install the magnet clip.
5. Be sure that the magnet moves up and down freely on the lever arm post.
6. Route the wiring in the same manner noted on removal. Be sure that wires cannot bind, pinch, or rub. Manually actuate lever arm to insure there is no interference.
7. Install strain relief bushing, allowing enough slack in the wiring to allow the lever arm to move without straining the wires. Be sure the wire cannot come in contact with the armature.
8. Connect the magnet leads to the trailer wiring harness and then reinstall hub and drum.

Brake Drum Inspection:
There are two areas of the brake drum that are subject to wear and require inspection. These two areas are the drum surface where the brake shoes make contact during stopping and the armature surface where the magnet contacts (only in electric brakes).

The drum surface should be inspected for excessive wear or heavy scoring. If worn more than .020" oversized, or if the drum has worn out of round by more than .015", then the drum surface should be turned. If scoring or other wear is greater than .090" on the diameter, the drum must be replaced. When turning the drum surface, the maximum re-bore diameter for a 12" brake drum is 12.090"

The machined inner surface of the brake drum that contacts the brake magnet is called the armature surface. If the armature surface is scored or worn unevenly, it should be refaced to a 120 micro inch finish by removing not more than .030" of material. To insure proper contact between the armature face and the magnet face, the magnets should be replaced whenever the armature surface is refaced and the armature surface should be refaced whenever the magnets are replaced.

2.11 Daily Service (5 -10 Hours of Use)

NOTE: J&M recommends the following service to be performed daily (every 5-10 hours of use).

1. Grease the conveyor/auger bearings every 10 hours. Use only two pumps of grease per bearing
   NOTE: Over lubrication of these bearings will result in premature failure.
   NOTE: The conveyor has 4 bearings that need greased (2 at each end). The auger is equipped with 1 bearing (at Hopper end) (See section 2.1).
2. Check your belt for proper tracking every 10 hours of use and before every season. For steps to properly track your belt see section 2.7.
   NOTE: When checking the belt for tracking or when operating an auger you should empty out the clean-out door (Figure 2.4).
3. Check hydraulic oil level.
4. Inspect for oil leaks and repair as appropriate.
5. Check all hoses, fittings, bolts, and hardware to make sure that they are secure and properly tightened.
6. Check engine oil level. See Engine operator's manual for details on oil levels, oil types and service intervals.
7. Check Speed Tender brakes and lights before towing.
8. Check the Speed Tender periodically for cracks in welds and for other structural damage. Have cracked welds fixed immediately.
   NOTE: Failure to have cracked welds fixed immediately could result in extensive damage to the Speed Tender and greatly reduce its life.
9. Make sure tires are properly inflated (See section 2.3).
10. Make sure wheel lug nuts are properly torqued (See section 2.4).
11. Make sure that the conveyor/auger hopper guard is in place. Do not remove.
12. Clean out the Conveyor/Auger at the end of every day of use (Section 1.8).

2.12 End of the Year Service

IMPORTANT: When the Speed Tender is not going to be used for a length of time, J & M recommends that you store the Speed Tender in a dry, protected place. Leaving your Speed Tender outside and open to the weather will shorten its life.

1. Grease the conveyor/auger bearings. Use only two pumps of grease per bearing.
   NOTE: Over lubrication of these bearings will result in premature failure.
   NOTE: The conveyor has four bearing that need greased (two at each end).
2. Grease pivot points on boom arm and jack crank before storage.
3. The wheel bearings need to be cleaned, inspected, repacked, and adjusted. Use a number 2 wheel bearing grease to repack the bearings.
4. Inspect and service the brakes (magnets and shoes). They must be changed when they become worn or scored, thereby preventing inadequate vehicle braking. Clean the backing plate, magnet arm, magnet, and brake shoes. Make certain that all the parts removed are replaced in the same brake and drum assembly. Inspect the magnet arm for any loose or worn parts. Check shoe return springs, hold down springs, and adjuster springs for stretch or deformation, replace as needed.
5. Torque lug-nuts (Section 2.4).
6. Make sure that the tires are properly inflated.
7. Remove all grain from inside the grain tanks.
8. Clean out the Conveyor/Auger at the end of every season (Section 1.8).
9. Tension and track the conveyor belt. (Section 2.7).
10. Check the Speed Tender periodically for cracks in welds and for other structural damage. Have cracked welds fixed immediately.
    NOTE: Failure to have cracked welds fixed immediately could result in extensive damage to the Speed Tender and greatly reduce its life.
11. Check hydraulic hoses for wear and replace if needed.
12. Make sure that the conveyor/auger hopper guard is in place.
13. Remove battery from the Speed Tender and place in a cool dry place.
    NOTE: Attaching a trickle charger to the battery will help ensure a long life for your battery.
14. Change hydraulic oil filter element with either a NAPA 155Z or a FRAM P1654A Filter.
15. Top off hydraulic oil tank with good quality hydraulic AW 32 oil.
    NOTE: If the Hydraulic Oil appears to be "Milky" in color it should be changed immediately. Otherwise, the Hydraulic Oil should be changed every 2-3 years. If the environment is extremely dusty or dirty the Hydraulic Oil should be changed more often.
15. Check motor oil level. See Engine operator's manual for details on oil levels, oil types, and service intervals.
16. Retract all hydraulic cylinders to prevent the piston rods from rusting.
17. Touch-up spots where paint has been worn away (use good quality primer paint - especially before applying graphite paint to the inside of the grain tank).

2.13 Removing From Storage

1. Grease the conveyor/auger bearings. Use only two pumps of grease per bearing
   NOTE: Over lubrication of these bearings will result in premature failure.
   NOTE: The conveyor has four bearings that need greased (two at each end).
2. Grease pivot points on boom arm.
3. Torque lug-nuts (Section 2.4).
4. Make sure that the tires are properly inflated.
5. Check your belt for proper tracking every 10 hours of use and before every season. For steps to properly track your belt (Section 2.7).
6. Check oil level.
7. Inspect for hydraulic oil leaks and repair as appropriate.
8. Check all hoses, fittings, bolts, and hardware to make sure that they are secure and properly tightened.

9. Check engine oil level. See Engine operator's manual for details on oil levels, oil types, and service intervals.
10. Check Speed Tender lights before each time you tow.
11. Make sure that the conveyor/auger hopper guard is in place.
12. Reattach battery and check to make sure that it is fully charged.

IMPORTANT: Make sure main disconnect is off before charging.

2.14 Troubleshooting

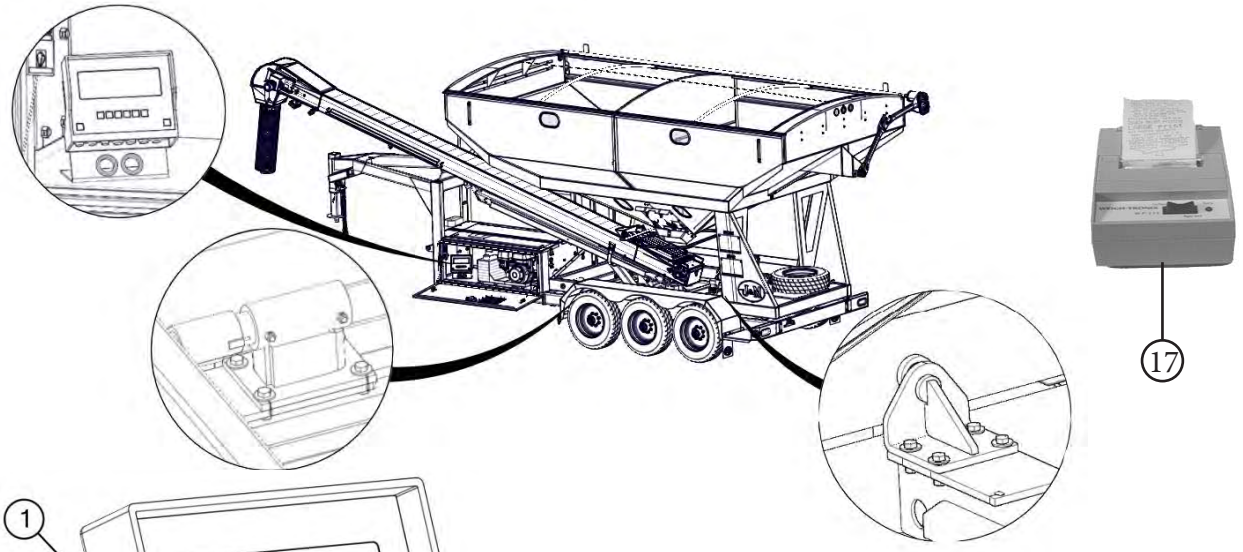
Problems	**Solutions**
Unit sways during travel	
	a. Check tire pressure.
	b. Check tow vehicle for loosened hitch parts.
	c. Check tow vehicle's hitch height.
	d. Reduce towing speed.
	e. Check wheel lug-nuts.
	f. Check wheel bearings for adjustment (See section 2.5).
Tires show excessive wear	
	a. Check tire pressure.
	b. Rotate tires. (See section 2.3)
	c. Check wheel bearings for adjustment. (See section 2.5).
Wheel makes grinding or squeaking noise	
	a. Service wheel bearings. (See section 2.5).
Noisy when brakes are being applying	
	a. Properly adjust brakes.
	b. Replace any weak or broken springs in brakes.
	c. Replace the brake linings if excessively worn or contaminated
	d. Check wheel bearings for adjustment (See section 2.5).
No Brakes	
	a. Properly adjust brakes
	b. Check for short in electric circuit
	c. Replace any brake magnets that are worn or defective
Weak brakes	
	a. Properly adjust brakes
	b. Replace any excessively worn or contaminated linings.
	c. Check for short in electric circuit
	d. Replace bent backing plate
Dragging brakes	
	a. Properly adjust brakes
	b. Replace any weak or broken springs in brakes
	c. Clean and lubricate the brake assemblies

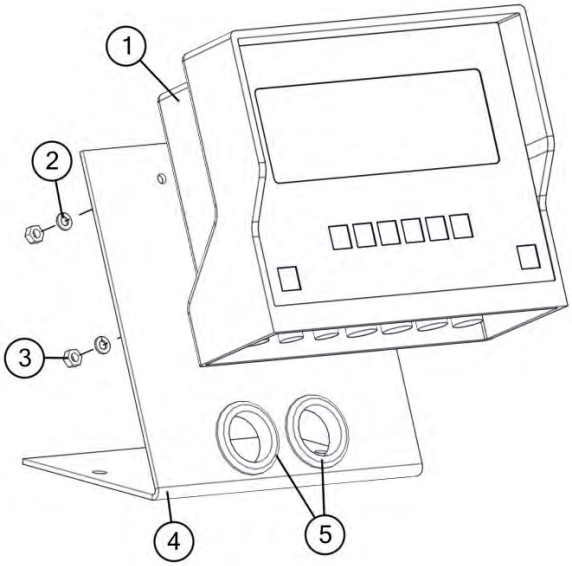
Problems	Solutions
Locking brakes	
	a. Replace any weak or broken springs in brakes
	b. Replace any excessively worn or contaminated linings
Grabbing brakes	
	a. Replace any excessively worn or contaminated linings
Surging brakes	
	a. Trailer is not adequately grounded
Belt is not moving - Hydraulic pump is not producing sufficient pressure or volume to belt motor.	
	a. Check for pinched or leaking hydraulic line
	b. Allow hydraulic oil to warm up
	c. Increase engine R.P.M.
	d. Charge battery or plug in to tow vehicle
	e. Hydraulic fluid level low
	f. Hydraulic filter clogged
	g. Check for proper oil viscosity
	h. Check hydraulic output pressure.
	i. Turn valve bank pressure bypass a 1/4 turn clockwise.
	j. Repair or Replace worn out pump.
Belt is not moving - Obstructed conveyer	
	a. Make sure conveyor is not clogged
Belt has insufficient output speed or R.P.M. - Hydraulic pump is not producing sufficient pressure or volume to belt motor.	
	a. Check for pinched or leaking hydraulic lines.
	b. Allow hydraulic oil to warm up
	c. Increase engine R.P.M.
	d. Hydraulic fluid level low
	e. Hydraulic filter clogged
	f. Check for proper oil viscosity
	g. Turn valve bank pressure bypass a 1/4 turn clockwise.
	h. Repair or replace worn out pump.
Belt has insufficient output speed or R.P.M. - Belt is slipping	
	a. Adjust belt tension and tracking (See section 2.8).
	b. Check telescoping spout and conveyor for a clog.
	c. Remove material from clean out door.
Belt has insufficient output speed or R.P.M. - Air in hydraulic system.	
	a. Bleed air out of hydraulic system and fill reservoir (See section 2.6).
	b. Look for leaking or cracked fittings.
Belt has insufficient output speed or R.P.M. - Leak in motor, valve body, or bypass valves.	
	a. Replace or repair motor, valve body, or bypass valves.
	b. Check for proper oil viscosity.

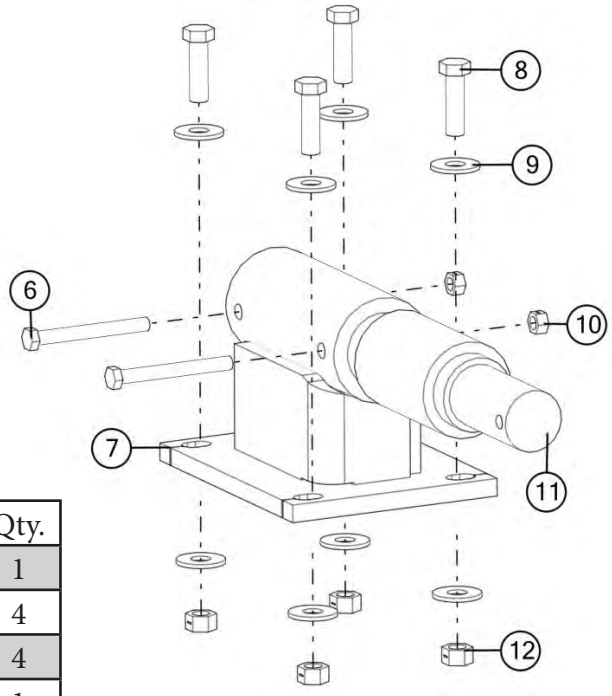
Problems	Solutions
Excessive wear to belt edge - Tracking is off.	
	a. Adjust belt tension and tracking (See section 2.8).
Excessive wear to belt edge - Rubber skirting is worn or out of place.	
	a. Replace rubber skirting.
	b. Adjust rubber skirting.
Boom arm will not move up or down - Engine R.P.M. slow.	
	a. Increase engine R.P.M.
Boom arm will not move up or down - Hydraulic pump is not producing sufficient pressure or volume to hydraulic cylinder.	
	a. Check for pinched or leaking hydraulic lines.
	b. Allow hydraulic oil to warm up.
	c. Increase engine R.P.M.
	d. Hydraulic fluid level low.
	e. Hydraulic filter clogged.
	f. Check for proper oil viscosity.
	g. Check to see if hydraulic pump is worn out
	h. Make sure battery is fully charged.
	i. Turn valve bank pressure bypass a 1/4 turn clockwise.
	j. Check wiring to valve body and hydraulic pump
Hydraulic unit squeals	
	a. Check sight glass on hydraulic unit reservoir and fill if necessary.
	b. Run engine at reduced speed for 5-10 minutes to warm up oil.
	c. Clean/replace filler cap/breather.
	d. Clear obstruction in suction hose.
	e. Replace plugged/dirty oil filter element.
Hydraulic unit has poor performance at high R.P.M.	
	a. Clean pressure relief in control valve or replace
	b. Check sight glass on hydraulic unit reservoir and fill if necessary.
	c. Replace plugged/dirty oil filter element
	d. Charge Battery

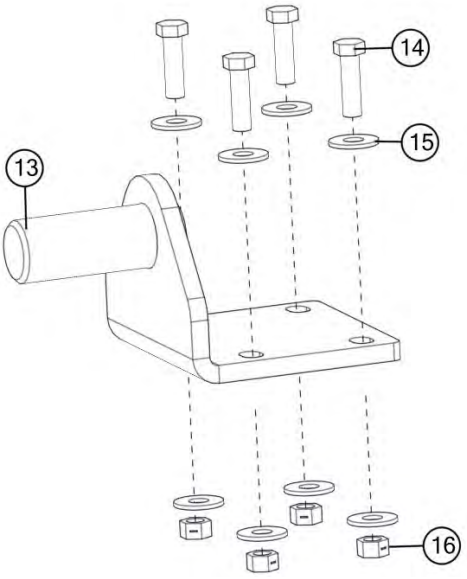
2.15 Bolt Torque Specifications

		Standard Dry Torque in Foot-Pounds					
Bolt Dia. (in.)	Pitch (threads/ inch)	SAE Grade 0-1-2 74,000 psi Low Carbon Steel	SAE Grade 3 100,000 psi Med. Carbon Steel	SAE Grade 5 120,000 psi Med. Carbon Heat T. Steel	SAE Grade 6 133,000 psi Med. Carbon Temp. Steel	SAE Grade 7 133,000 psi Med. Carbon Alloy Steel	SAE Grade 8 150,000 psi Med. Carbon Alloy Steel
1/4	20	6	9	10	12.5	13	14
5/16	18	12	17	19	24	25	29
3/8	16	20	30	33	43	44	47
7/16	14	32	47	54	69	71	78
1/2	13	47	69	78	106	110	119
9/16	12	69	103	114	150	154	169
5/8	11	96	145	154	209	215	230
3/4	10	155	234	257	350	360	380
7/8	9	206	372	382	550	570	600
1	8	310	551	587	825	840	700
1-1/8	7	480	872	794	1304	1325	1430
1-1/4	7	375	1211	1105	1815	1825	1975
1-3/8	6	900	1624	1500	2434	2500	2650
1-1/2	6	1100	1943	1775	2913	3000	3200
1-5/8	5.5	1470	2660	2425	3985	4000	4400
1-3/4	5	1900	3463	3150	5189	5300	5650
1-7/8	5	2360	4695	4200	6980	7000	7600
2	4.5	2750	5427	4550	7491	7500	8200

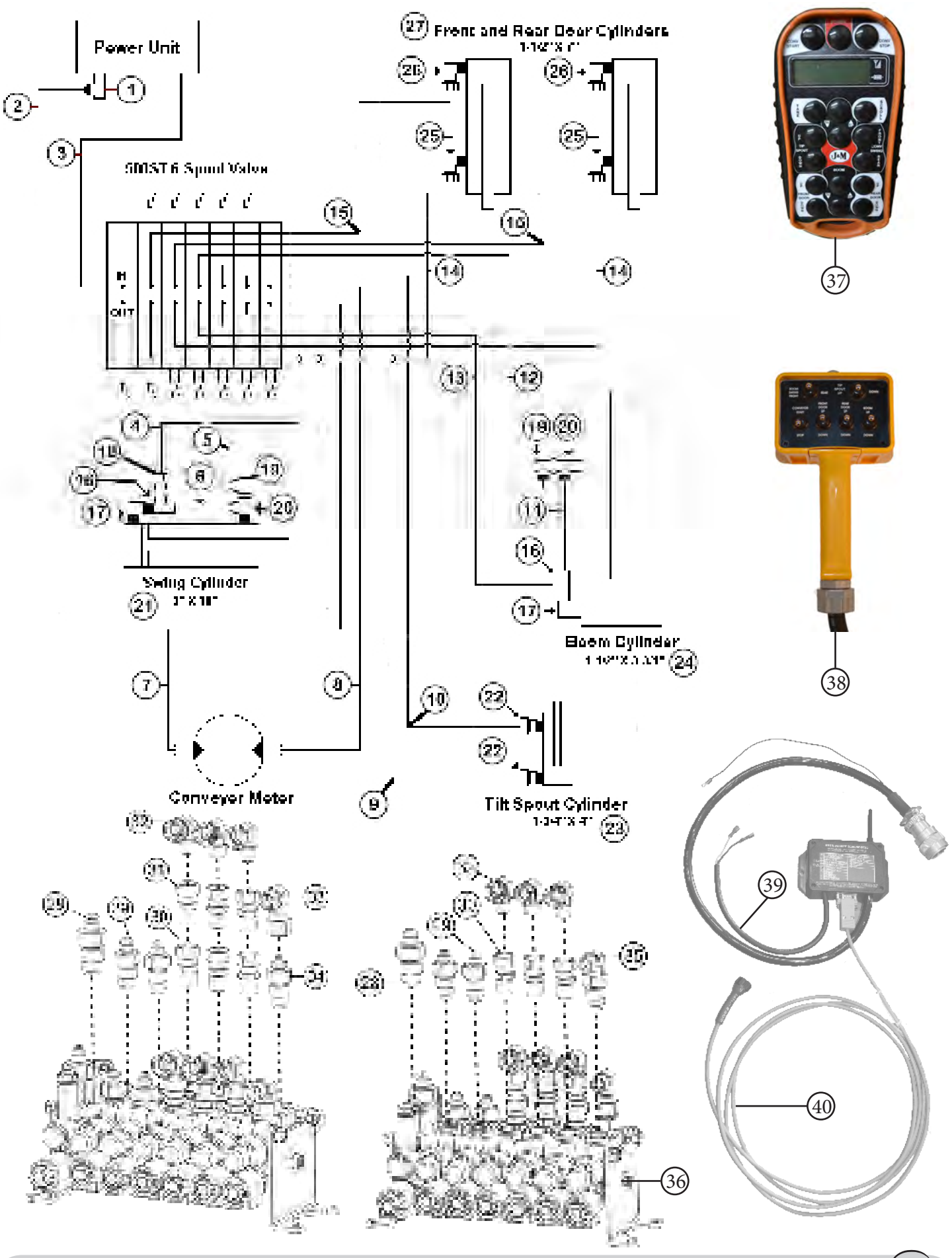








#	Description	Part.No.	Qty.
1	Scale Display Unit	JM0007293	1
2	1/4" USS Flat Washer	JM0003090	4
3	1/4"-20 Gr5 Z Hex Nut	JM0002122	4
4	Indicator Mounting Bracket	JM0013576	1
5	Grommet PN 3141	JM0016924	2
6	3/8"-16 X 3-1/2" Gr5 Z Hex Bolt	JM0001986	2
7	Weigh Bar Weldment	JM0009966	4
8	1/2"-13 X 1-3/4" Gr5 Z Hex Bolt	JM0002101	4
9	1/2" USS Flat Washer	JM0003082	8
10	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512	2
11	Scales Weight Bar	JM0002797	4
12	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511	4
13	Dummy Scale Weldment	JM0002514	4
14	1/2"-13 X 1-3/4" Grade 5 Zinc Hex Bolt	JM0002101	4
15	1/2" USS Flat Washer	JM0003082	8
16	1/2"-13 Grade 5 Zinc Centerlock Hex Nut	JM0001511	4
17	Roll Printer for Scale System	JM0017894	1


Power Unit
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SMST 6 Spool Valve
IN
OUT
27 Front and Rear Door Cylinders
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Swing Cylinder
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19 20
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Boom Cylinder
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23
Conveyor Motor
9
Tilt Spout Cylinder
23
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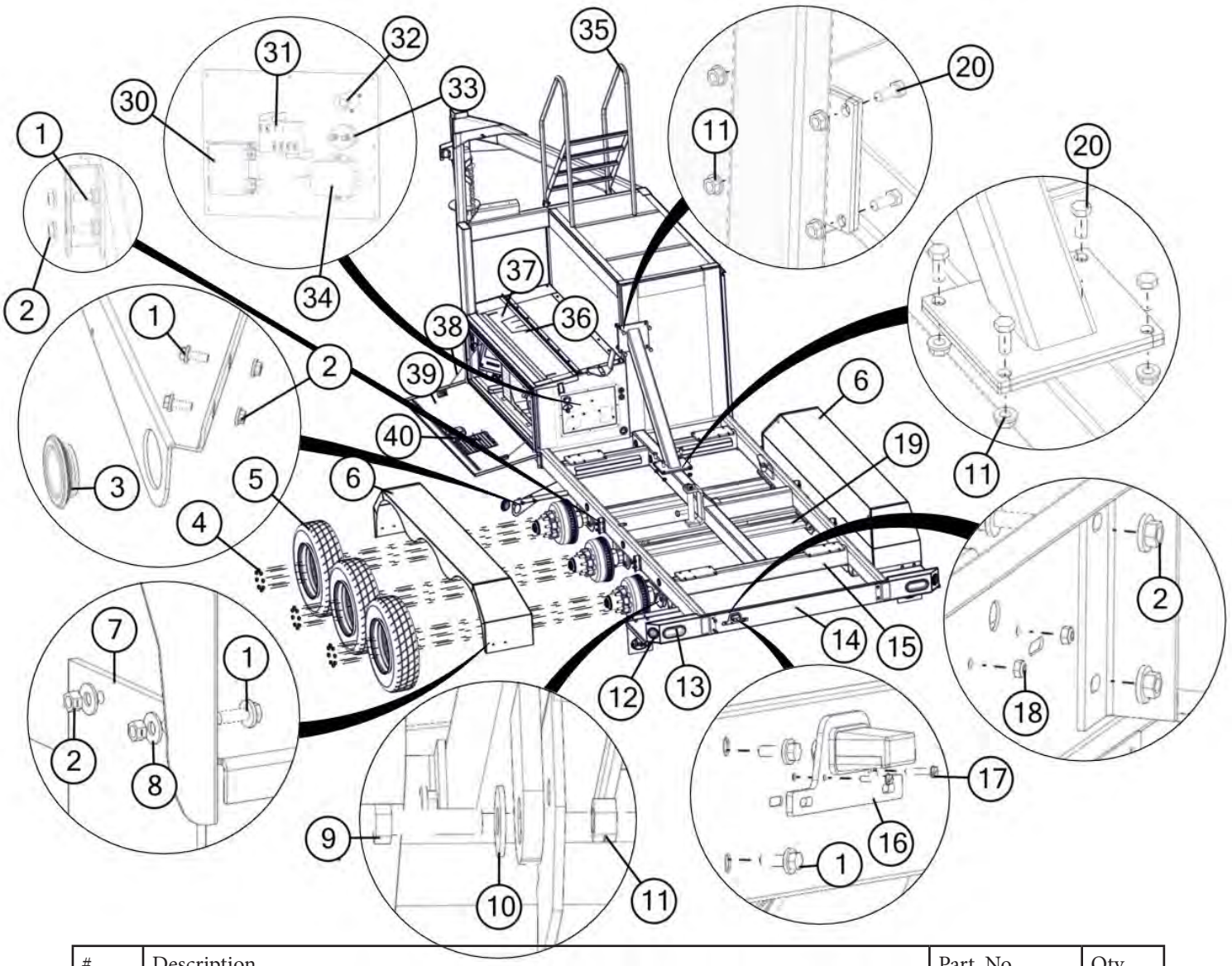
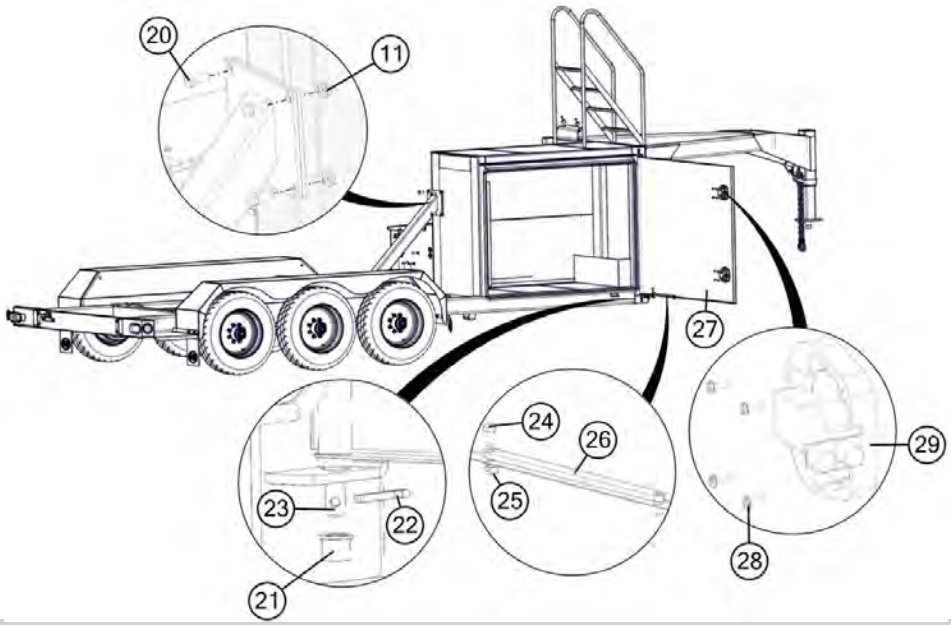
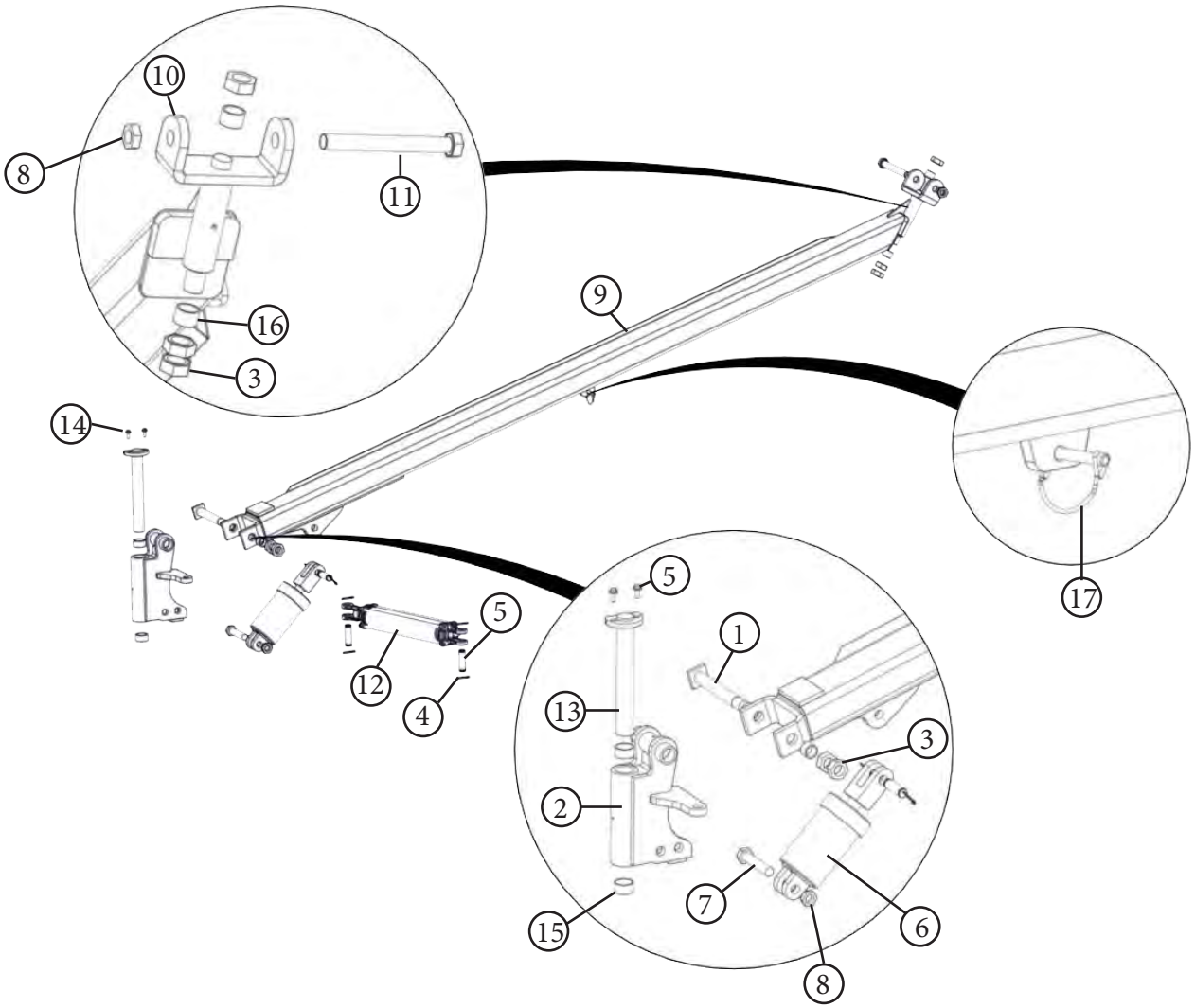
#	Description	Part.No.	Qty.
1	#8 male JIC X 3/4” male NPT; 90 degree elbow	JM0010290	1
2	1/2” I.D. Hose; #8 Female JIC Swivel X #8 Female JIC Swivel; 92” OAL	JM0016737	1
3	1/2” I.D. Hose; 3/8” Male Pipe Rigid X #8 Female JIC Swivel; 55” OAL	JM0016736	1
4	1/4” I.D. Hose; 3/8” Male Pipe Rigid X 3/8” Male Pipe Rigid; 45” OAL	JM0016717	1
5	1/4” I.D. Hose; 3/8” Male Pipe Rigid X #6 Female JIC Swivel; 60” OAL	JM0016730	1
6	1/4” I.D. hose; 1/4” male NPT rigid X #6 female JIC swivel; 14” OAL	JM0015190	1
7	1/2” I.D. Hose; #8 Female JIC Swivel X #8 Female JIC Swivel; 374” OAL	JM0016739	1
8	1/2” I.D. Hose; #8 Female JIC Swivel X #8 Female JIC Swivel; 372” OAL	JM0016738	1
9	1/4” I.D. Hose; 1/4” Male Pipe Rigid X 3/8” Male Pipe Rigid; 386” OAL	JM0016735	1
10	1/4” I.D. Hose; 1/4” Male Pipe Rigid X 3/8” Male Pipe Rigid; 384” OAL	JM0016734	1
11	1/4” I.D. hose; 1/4” male NPT rigid X #6 female JIC swivel; 12” OAL	JM0010282	1
12	1/4” I.D. Hose; 3/8” Male Pipe Rigid X #6 Female JIC Swivel; 123” OAL	JM0016732	1
13	1/4” I.D. Hose; 3/8” Male Pipe Rigid X 3/8” Male Pipe Swivel; 112” OAL	JM0016731	1
14	1/4” I.D. Hose; 1/4” Male Pipe Rigid X #6 Female JIC Swivel; 192” OAL	JM0010300	1
15	1/4” I.D. Hose; 1/4” Male Pipe Rigid X #6 Female JIC Swivel; 193” OAL	JM0016733	1
16	Brand Pilot Check Valve	JM0018233	2
17	1/2” male NPT X 3/8” female NPT; 90 degree elbow	JM0010292	2
18	3/8” male NPT X 3/8” female NPT swivel; straight; with .032” orifice	JM0001832	1
19	#6 male JIC X #6 female JIC swivel; 90 degree elbow	JM0010295	2
20	#6 male JIC X 1/2” male NPT X #6 male JIC tee	JM0010291	2
21	Lion 3” X 16” Cylinder with 1-1/4” Rod - Painted Black	JM0015862	1
22	1/4” male NPT X 1/4” female NPT swivel; straight; with .032” orifice	JM0010303	2
23	JD 1-3/4” X 4” Cylinder	JM0009851	1
24	JD 4-1/2” X 3-3/4”” Cylinder with 1-1/2” Rod; Clevises both ends	JM0003045	1
25	1/4” male NPT X 1/4” female NPT swivel; 90 degree elbow	JM0010301	2
26	1/4” male NPT X 1/4” female NPT swivel; 90 degree elbow; with .032” orifice	JM0010303	2
27	JD 1-1/2” X 7” Cylinder with Nitro-Steel Rod	JM0002882	1
28	#8 male JIC X #10 male o-ring; straight	JM0010294	2
29	#6 male JIC X #8 male o-ring; straight	JM0010302	4
30	3/8” male NPT X 3/8” female NPT swivel; straight	JM0010299	6
31	3/8” male NPT X 3/8” female NPT swivel; 90 degree elbow; with .062” orifice	JM0010299	3
32	#8 male o-ring X 3/8” female NPT swivel; straight	JM0010298	6
33	#8 male JIC X #8 female JIC swivel; 90 degree elbow	JM0010296	1
34	#8 male JIC X #8 male o-ring; straight	JM0010293	1
35	#8 male JIC X #8 male o-ring; 90 degree elbow	JM0010297	1
36	6 Spool Valve Body	JM0001831	1
37	Wireless Remote	JM0016154	1
38	Handheld Controller	JM0016156	1
39	Wireless Receiver	JM0020504	1
40	PC Interface Cable	JM0015400	1



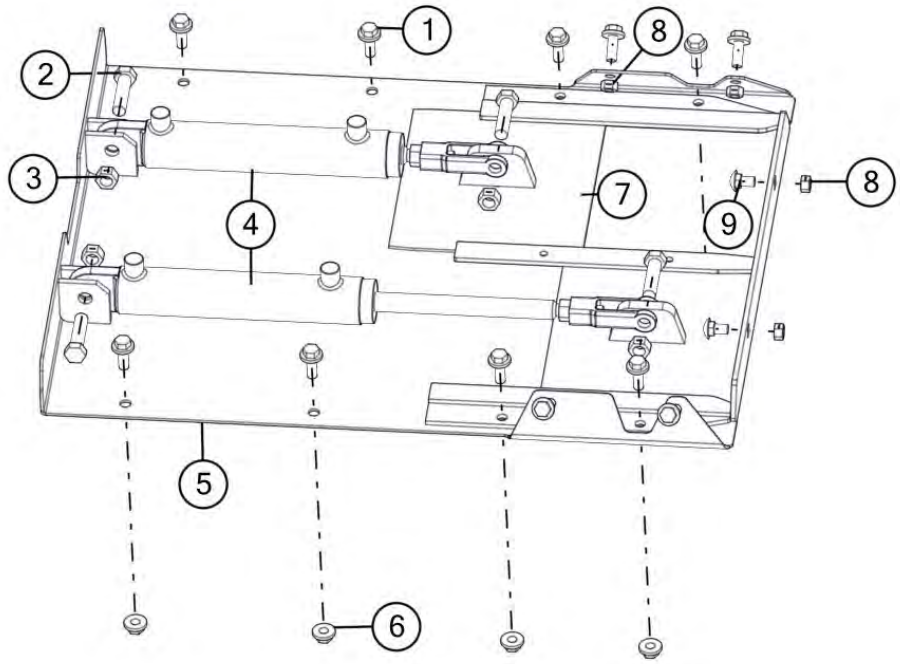
#	Description	Part. No.	Qty.
1	3/8”-16 x 1.0” Gr8 Z SF Hex Bolt	JM0001485	20
2	3/8”-16 Gr5 Z F Hex Nut	JM0001707	20
3A	Amber Round Light Assembly	JM0001908	2
3B	Amber Round Light	JM0001895	2
3C	Round Light Grommet	JM0001902	2
4	5/8”-18 Lugnut	JM0016936	48
5	Tire and Wheel	JM0016937	6
6	Fender Weldment	JM0015678	1
7	J&M Mud Flap	JM0001910	2
8	3/8” USS Flat Washer	JM0003061	4
9	5/8”-11 X 2.25” Gr5 Z Hex Bolt	JM0001493	6
10	5/8” USS Flat Washer	JM0003073	6
11	5/8”-11 Gr5 Z Centerlock Hex Nut	JM0001522	14
12A	Red Round Light Assembly	JM0001905	2
12B	Red Round Light	JM0001901	2
12C	Round Light Grommet	JM0001902	2
13A	Red Oval Brake Light Assembly	JM0001903	2

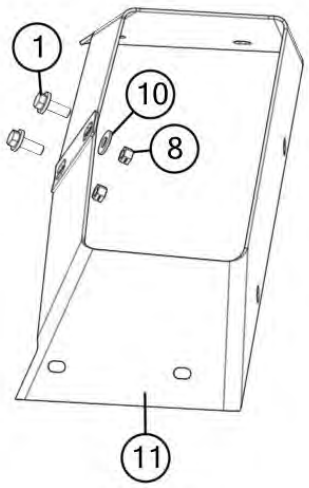
#	Description	Part. No.	Qty.
13B	Red Oval Brake Light	JM0007114	2
13C	Red Oval Brake Light Grommet	JM0001897	2
14	Bumper Weldment	JM0015682	1
15	Chassis Weldment	JM0015841	1
16	License Plate Holder	JM0010305	1
17	#10-24 x 1.0” Slotted Hex Washer Head Machine Screw	JM0009982	2
18	#10-24 Z Nylon Locking Hex Nut	JM0016030	2
19	10k Torsion Axle	JM0012466	3
20	5/8”-11 X 1.5” Gr5 Z Hex Bolt	JM0002103	8
21	14mm Shaft, 18mm OD, 2mm Thick Flange, 22 Flange OD Bushing	JM0016414	2
22	.188 X 1.5” Cotter Pin	JM0015883	2
23	Cargo Door Pin	JM0015615	1
24	1/2”-13 X 1.00” Gr5 Z Hex Bolt	JM0010225	1
25	1/2”-13 Gr5 Z Centerlock Hex Nut	JM0001511	1
26	Cargo Door Holder	JM0015582	1
27	Cargo Door	JM0015688	1
28	#10-24 x .563 Slotted Hex Washer Head Machine Screw	JM0016669	8
29	Compression Latch - Whaletail Chrome on Chrome	JM0016396	2
30	Break Away Battery Box Assembly	JM0001833	1
31	Fuse Panel	JM0016710	1
32	Universal AC Plug Holder Inlet	JM0017161	1
33	On-Off Disconnect	JM0016698	1
34	Battery Maintainer	JM0017508	1
35	Ladder Weldment	JM0015666	1
36	Upper Motor Access Door	JM0015695	1
37	Motor Access Gas Cylinder	JM0016412	2
38	Motor Door Support Cable	JM0016765	2
39	Lower Motor Access Door	JM0015691	1
40	Aluminum Louver	JM0016413	1



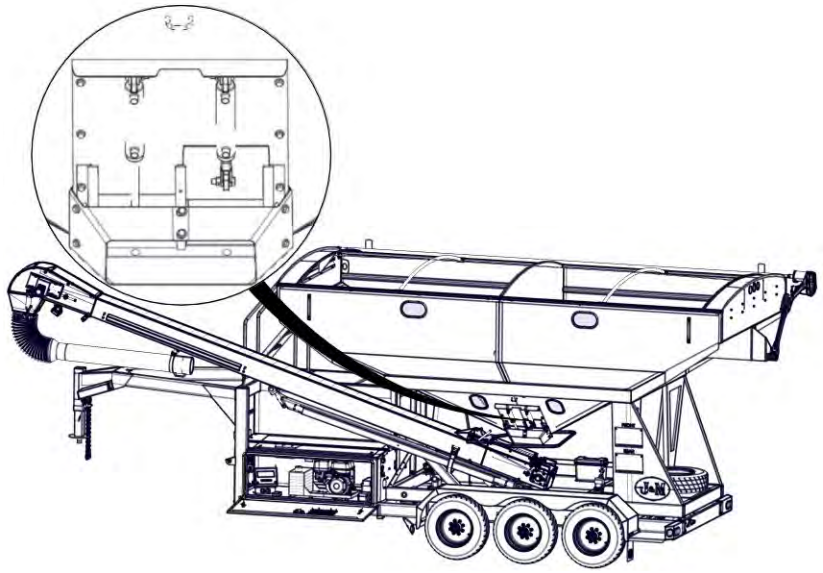


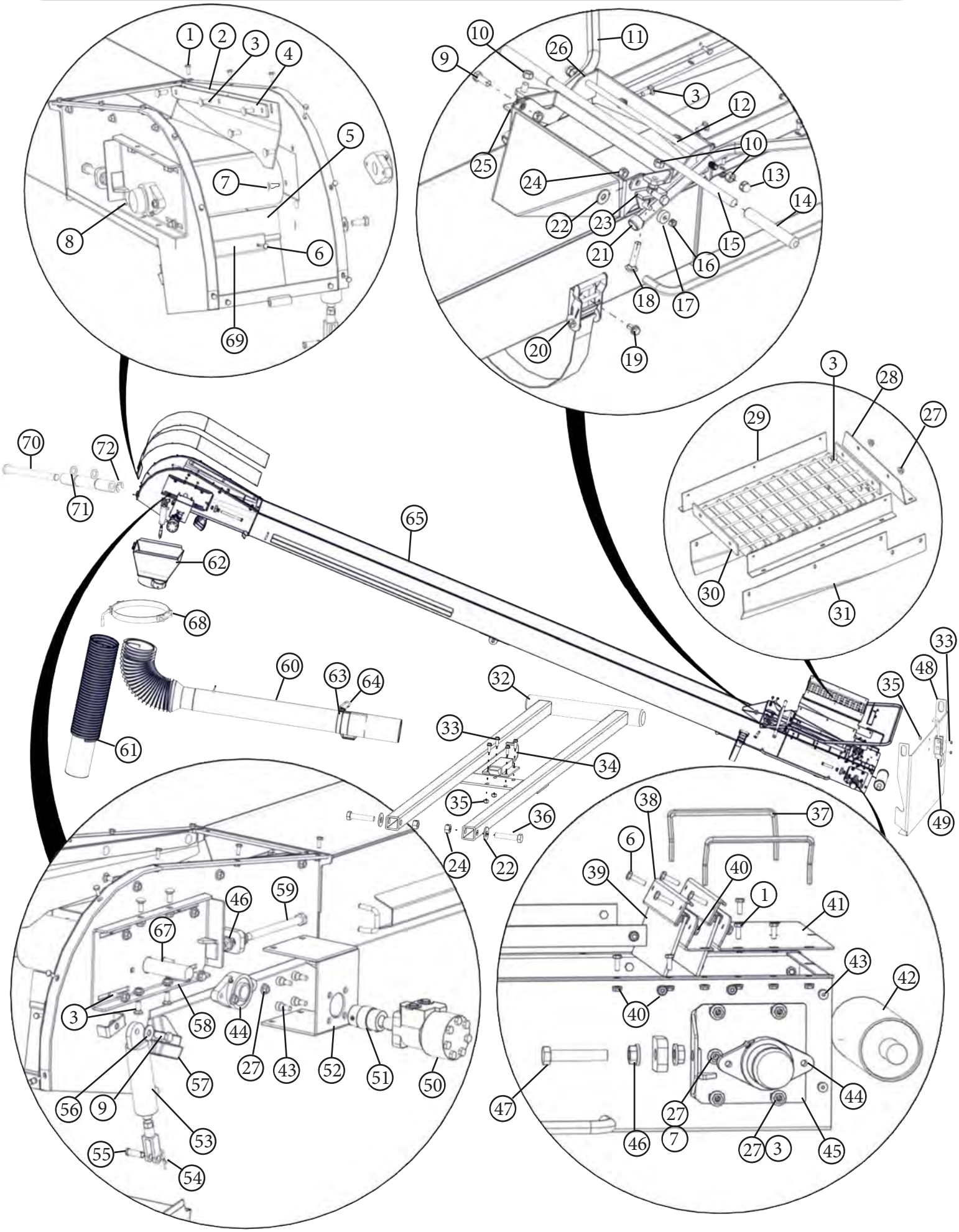
#	Description	Part. No.	#
1	Horizontal Axis Boom Pivot Pin	JM0002456	1
2	Vertical Axis Boom Pivot	JM0002241	1
3	1-1/4”-7 Gr5 Z Hex Nut	JM0001700	4
4	.188 X 1-1/2” Cotter Pin	JM0015883	2
5	1.0” Diameter Hydraulic Cylinder Pin	JM0015882	1
6	4-1/2” Bore x 3-3/4” Stroke 14-1/4” Hydraulic Cylinder	JM0016945	1
7	1.0”-8 X 5.0” Gr8 Pn Hex Bolt	JM0001774	1
8	1.0”-8 Z Gr5 Hex Jam Nut	JM0001705	1
9	Boom Arm Weldment	JM0015891	1
10	Upper Boom Pivot Weldment	JM0001605	1
11	1.0”-8 X 9.0” Gr8 Z Hex Bolt	JM0001708	1
12	3.0” Bore x 16” Stroke Hydraulic Cylinder	JM0015862	1
13	Conveyer Swing Pin	JM0002238	1
14	3/8”-16 x 1.0” Gr8 Z SF Hex Bolt	JM0001485	2
15	1-3/4” X 2” X 1 LG Bronze Bushing	JM0002244	2
16	1-17/64” ID X 1-1/2” OD X 1” LG Bronze Bushing	JM0002288	2
17	3/8” x 2-1/2” Z Round Wire Lynch Pin	JM0014929	1





#	Description	Part. No.	Qty.
1	3/8”-16 x 1” Serrated Flange Head Hex Bolt	JM0003150	12
2	1/2”-13 X 2” Gr5 Z Hex Bolt	JM0001620	2
3	1/2”-13 Gr5 Z Centerlock Hex Nut	JM0001511	2
4	1-1/2” Bore X 7” Stroke Hydraulic Cylinder	JM0002882	2
5	Hydraulic Door Frame Weldment	JM0012455	1
6	3/8”-16 Gr5 Z SF Hex Nut	JM0001707	8
7	Hydraulic Door Weldment	JM0012458	2
8	3/8”-16 Gr5 Z Centerlock Hex Nut	JM0001512	2
9	3/8”-16 X 3/4” Gr5 Z Carriage Bolt	JM0002172	2
10	3/8” USS Flat Washer	JM0003061	2
11	Hydraulic Door Rubber	JM0012371	1

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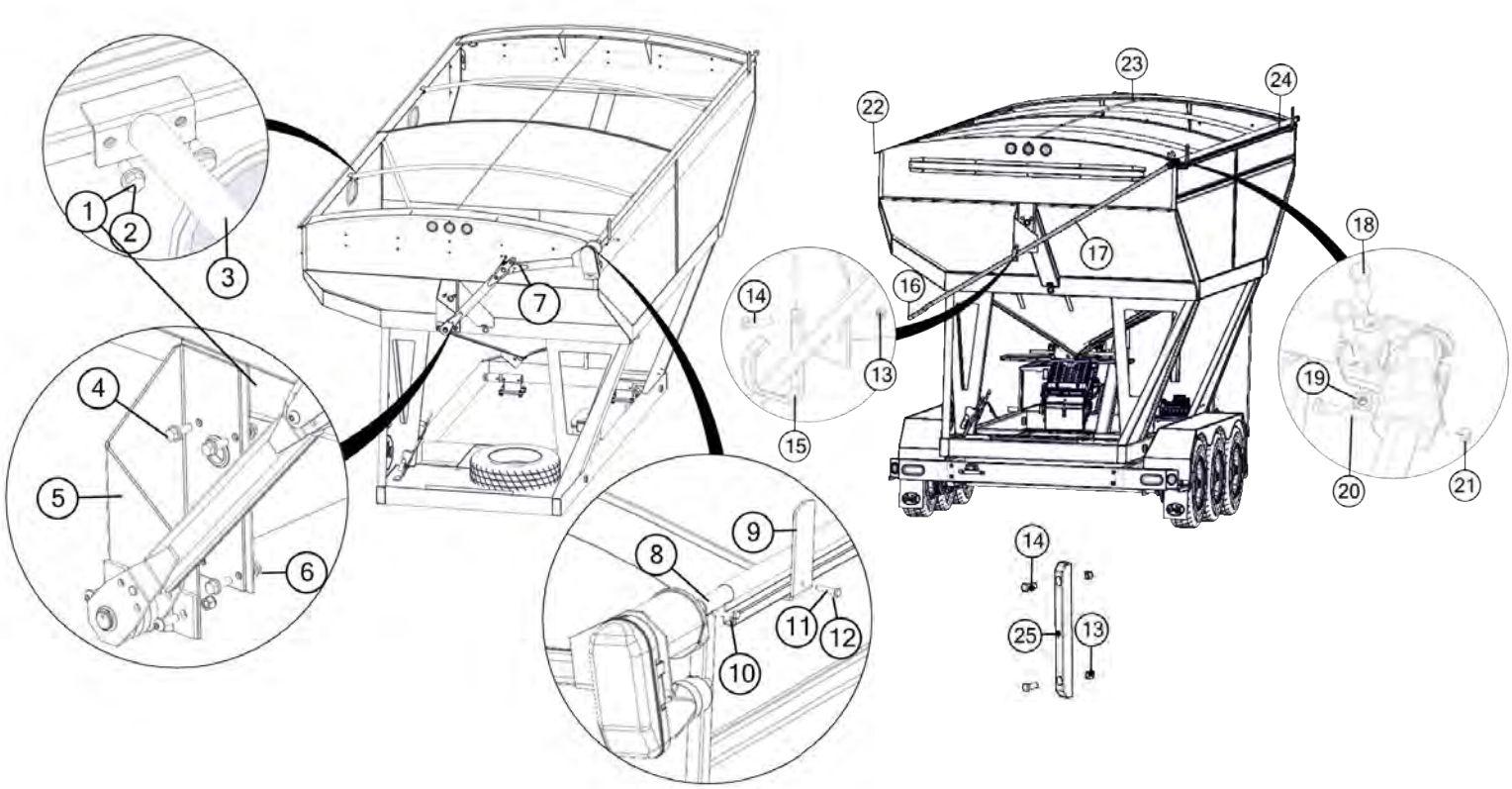
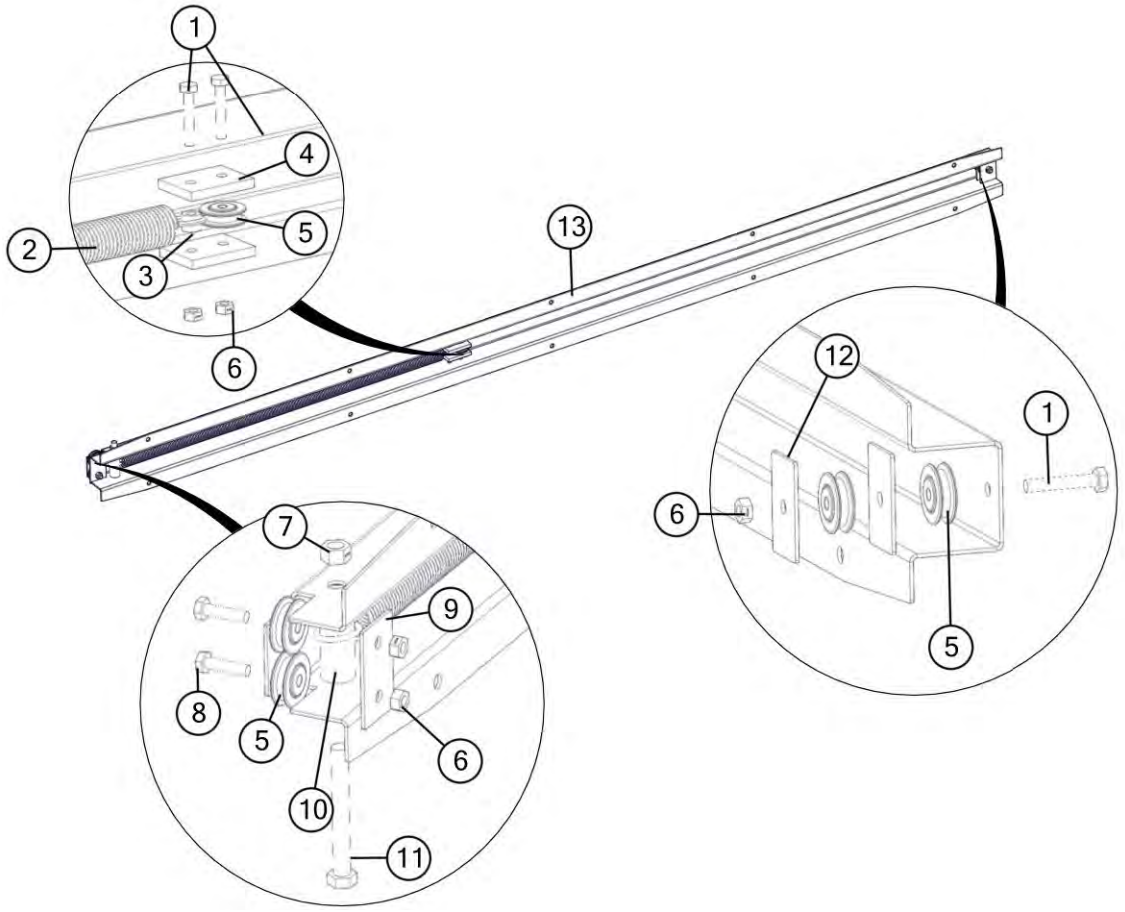
#	Description	Qty.	Part.No.
1	1/4”-20 X 3/4” Gr5 Z Hex Bolt	36	JM0001642
2	Conveyor Discharge End Skirt	2	JM0012365
3	3/8”-16 X 1.0” Gr5 Z Carriage Bolt	28	JM0001632
4	Conveyer Skirt Hold Down	2	JM0012411
5	3-1/4” Long X 12-1/2” .036 Nylon Strip Brush	1	JM0014919
6	1/4”-20 X 1.0” Gr5 Z Hex Bolt	6	JM0002095
7	3/8”-16 X 1-1/4” Gr5 Z Carriage Bolt	8	JM0001639
8	Left Hand Bearing Bracket Plate	1	JM0002232
9	1/2”-13 X 1-1/4” Gr5 Z Hex Bolt	3	JM0001592
10	1/2”-13 Gr5 Z Hex Nut	8	JM0002124
11	Conveyor Hopper Pipe	1	JM0012354
12	Conveyor Hopper Pivot Shaft	1	JM0012423
13	1/2”-13 Gr5 Z Acorn Hex Nut	2	JM0001772
14	Rubber Handle Cap	2	JM0002784
15	Conveyor Hopper Lock Weldment	1	JM0012412
16	3/8”-16 Gr5 Z Centerlock Hex Nut	5	JM0001512
17	3/8” Shaft Dia. 1-1/8” OD Steel Ball Bearing	2	JM0001828
18	1/2”-13 X 2-1/2” Gr2 Z Carriage Bolt	2	JM0014197
19	3/8”-16 X 3/4” Gr5 Z SF Hex Bolt	1	JM0001663
20	2” Wide Ratchet 10,000lb	1	JM0003084
21	Rubber Pipe Caps 1.0” ID	2	JM0002785
22	1/2” USS Flat Washer	3	JM0003082
23	Slider Pad	2	JM0014182
24	1/2”-13 Gr5 Z Centerlock Hex Nut	4	JM0001511
25	Hopper Handle Bearing Mount	2	JM0002220
26	1.0” OD 0.515” ID X 3/4” L Black UV Nylon Spacer	2	JM0001962
27	3/8”-16 Gr5 Z SF Hex Nut	36	JM0001707
28	Conveyor Guard Rear Mounting Plate	1	JM0012405
29	Conveyor Hopper Side Plates	2	JM0012404
30	Conveyer Hopper Guard	1	JM0012424
31	Conveyor Hopper End Skirt	2	JM0012366
32	Conveyor Support Stand	1	JM0002212
33	#8-32 x 1/2” Slotted Hex Washer Head Machine Screw	6	JM0012333
34	Leg Springer Plunger	1	JM0002789
35	#8-32 Z Nylon Locking Hex Nut	6	JM0012334
36	3/8”-16 X 1-3/4” Gr5 Z Hex Bolt	2	JM0002097
37	Hopper Tarp Protection Bar	2	JM0002223
38	Brush Clamp	2	JM0002741
39	5” Long X 12-3/4” .036 Nylon Strip Brush	2	JM0001917

#	Description	Qty.	Part.No.
40	1/4”-20 Gr5 Z SF Hex Nut	46	JM0002122
41	Conveyor Hopper End Rear Brush Plate	1	JM0012401
42	1-1/4” Dia. x 17” LG shaft 4” OD x 12” LG Crowned Idler Roller	2	JM0002740
43	1/2” Dia. X 3/8” LG 3/8”-16 Shoulder bolt	4	JM0009998
44	1-1/4” dia 2 Bolt Flange Bearing with Cover	4	JM0001811
45	Bearing Mount	4	JM0002199
46	5/8”-11 Gr5 Z SF Hex Nut	8	JM0001522
47	5/8”-11 X 3-1/2” Gr5 Z Hex Bolt	2	JM0001650
48	Cleanout Door	1	JM0002024
49	Adjustable Draw Latch	1	JM0010512
50	Hydraulic Motor	1	JM0010469
51	1” x 1-1/4” Keyed Coupling Weldment	1	JM0010220
52	Conveyor Drive Mount Weldment	1	JM0012407
53	1-3/4” Bore x 4” Stroke Hydraulic Welded Cylinder	1	JM0009851
54	1/8” Dia Wire for 3/8” Clevis Pin - Grip Cotter Pin	1	JM0010005
55	1/2” X 1-1/2” Clevis Pin	1	JM0016381
56	1/2” USS Flat Washer	2	JM0003082
57	Field Light Assembly	1	JM0001881
58	Right Hand Bearing Bracket Plate	1	JM0002235
59	5/8”-11 X 7-1/2” Gr5 Z Hex Bolt	2	JM0001631
60	10” dia x 12’ Long 2 Stage Telescoping Spout with Handle	1	JM0010506
61	10” Flex Hose x 36” long	1	JM0010503
62	Conveyor Spout Weldment	1	JM0012409
63	10” Dia Tele Spout snap ring holder	1	JM0012428
64	Oval .438 dia x 1-3/8” x 3-7/8” Z Carabiner	1	JM0010511
65	Conveyer Weldment	1	JM0012400
66	Conveyer Belt (Not Shown)	1	JM0012348
67	1-1/4” Dia x 19-1/2” LG Shaft, 5” OD x 12” LG vulk Crowned Drive Roller	1	JM0002744
68	10” Flex Hose Clamp	1	JM0010502
69	Brush Clamp (Spout)	1	JM0012374
70	Pin (Welded Hinge)	1	JM0017914
71	Bronze Washer Hinge	2	JM0017913
72	Retaining Clip	2	JM0017912
73	Sock for Flex Hose *	1	JM0010503
74	Sock for Telescoping Spout *	1	JM0010506
75	8” Tube, V-Guide, 22ft Conveyor REP		JM0027365

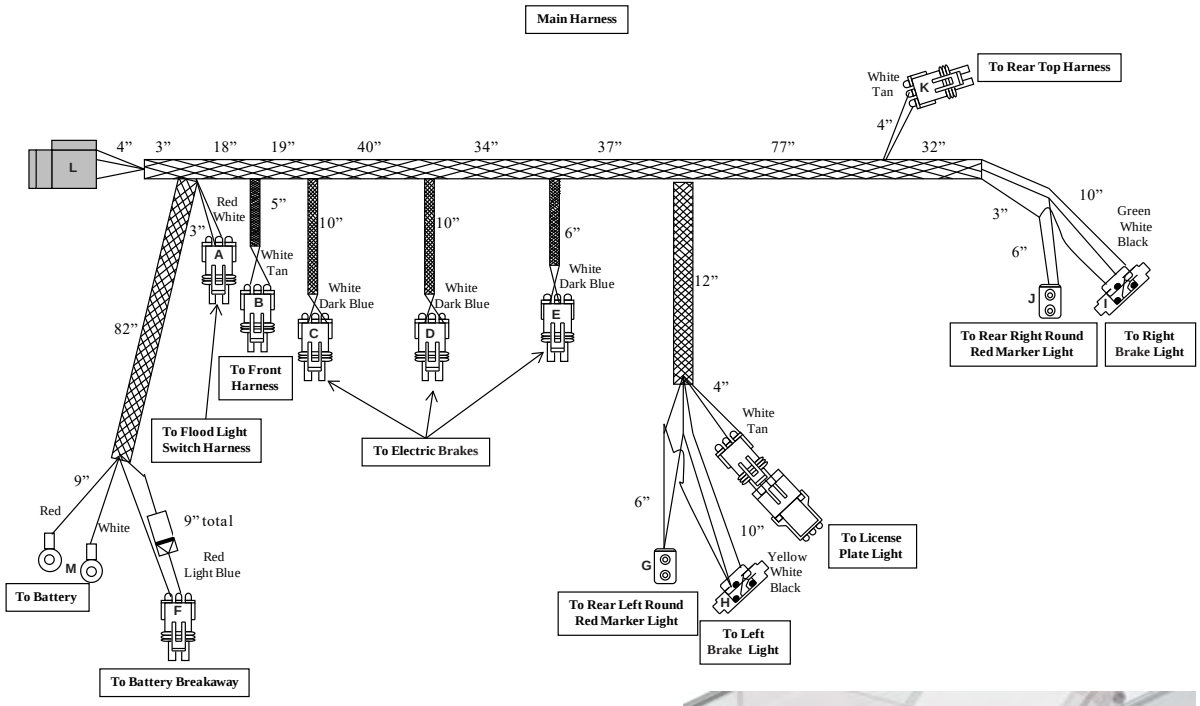
*Indicates not shown

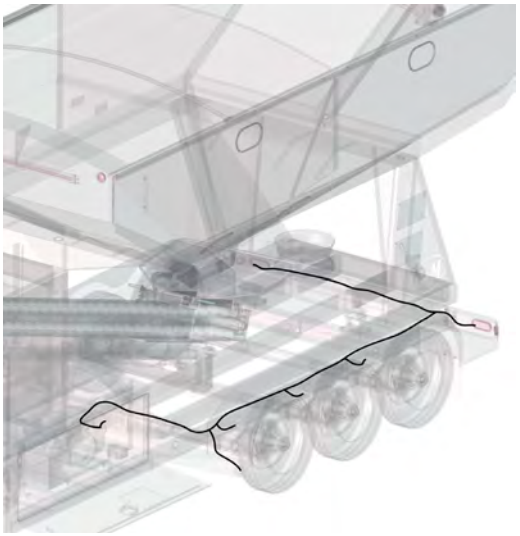


#	Description	Part. No.
1	3/8”-16 Grade 5 Zinc Serrated Flange Hex Nut	JM0002152
2	3/8”-16 x 3/4 Grade 5 Zinc Serrated Flange Hex Bolt	JM0001750
3	Tarp Bow	JM0013893
4	0.5”-13 X 1-1/4” Gr5 Z SF Hex Bolt	JM0001513
5	Electric Tarp Mounting Brace	JM0013846
6	1/2”-13 Gr5 Z SF Hex Nut	JM0002124
7	Electric Tarp Kit	JM0013944
8	Roll Pipe Weldment	JM0013891
9	Tarp Stop	JM0002448
10	Tarp Tube	JM0013896
11	3/8”-16 Grade 5 Zinc Serrated Flange Hex Nut	JM0002152
12	3/8”-16 X 1-3/4” Gr5 Z Hex Bolt	JM0002097
13	3/8”-16 Gr5 Z Centerlock Hex Nut	JM0001512
14	3/8”-16 X 1-1/2” Gr5 Z Hex Bolt	JM0001659
15	Tarp Crank Holder	JM0002976
16	Tarp Handle Rubber Cap	JM0010047
17	Tarp Handle	JM0002907
18	3/8”-16 x 2” Grade 5 Zinc Serrated Flange Hex Bolt	JM0016070
19	3/8”-16 Gr5 Z Centerlock Hex Nut	JM0001512
20	1/4”-20 X 2-1/2” Gr5 Z Hex Bolt	JM0001506
21	1/4”-20 Gr5 Z Centerlock Hex Nut	JM0001505
22	Drip Edge (2 pieces)	JM0013897
23	Ridge Cable	JM0016622
24	Canvas Tarp	JM0015905
25	Tarp Standoffs	JM0001889

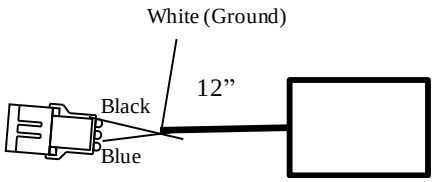


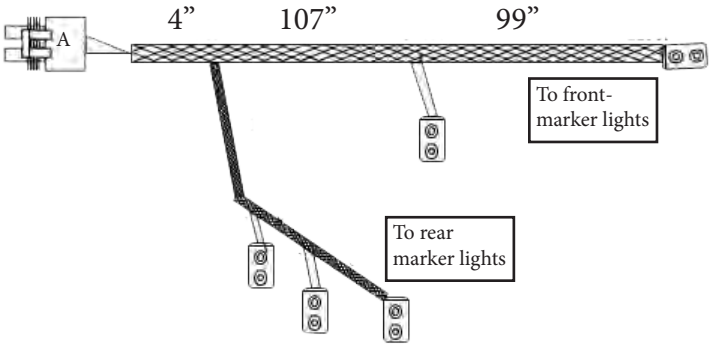
#	Description	Part. No.	Qty.
1	1/4”-20 X 1-1/2” Gr5 Z Hex Bolt	JM0002447	2
2	Spring Return Spring	JM0000207	1
3	Short Plastic Spacer	JM0002442	1
4	Rectangular Plastic Spacer	JM0002443	2
5	Roller Small	JM0002439	5
6	1/4”-20 Gr5 Z Centerlock Hex Nut	JM0001505	1
7	3/8”-16 Gr5 Z Centerlock Hex Nut	JM0001512	1
8	1/4”-20 X 1.0” Gr5 Z Hex Bolt	JM0002095	5
9	Pulley Brace Plate	JM0013484	1
10	Tall Plastic Spacer	JM0002444	1
11	3/8”-16 X 3” Gr5 Z Hex Bolt	JM0001666	1
12	Aluminum Spacer Rectangle	JM0002445	2
13	Spring Return Housing	JM0002446	1
14	Cable with Cable Crimps (Not Shown)	JM0010307	1
15	Spring Return Assembly	JM0002437	1

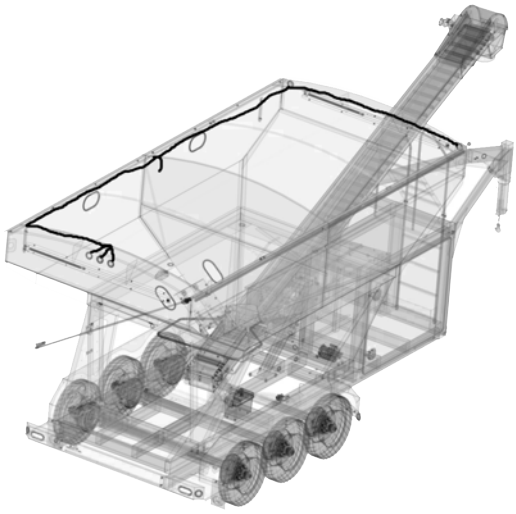


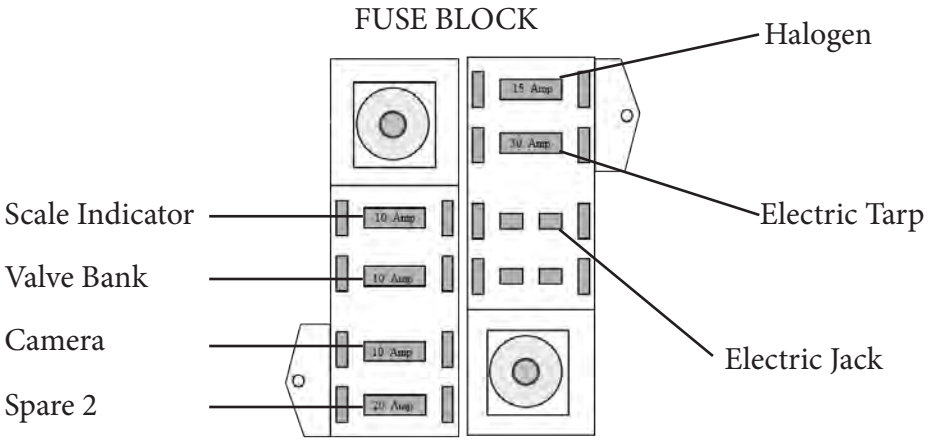


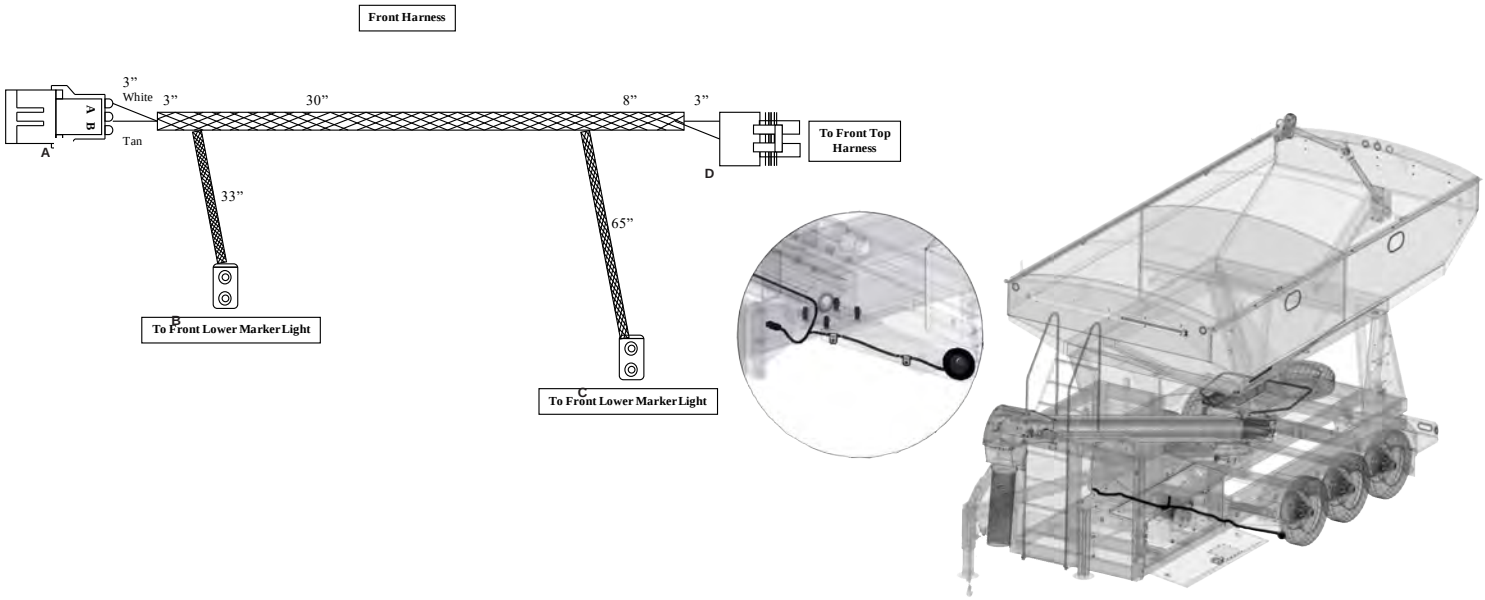
Battery Breakaway

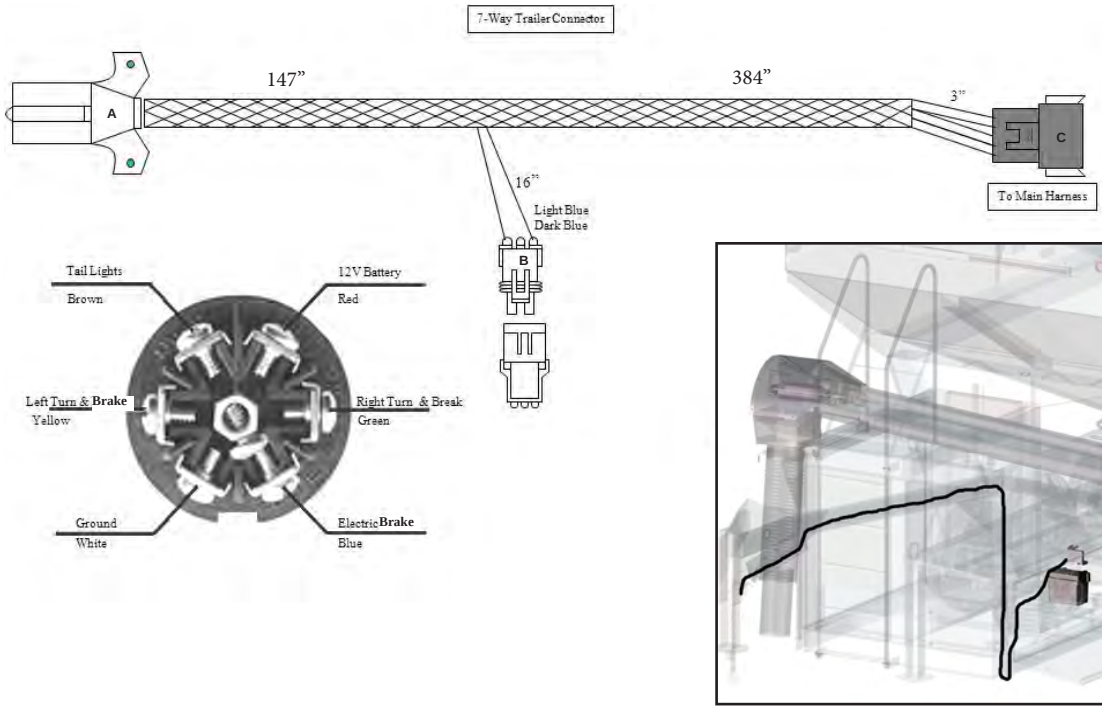


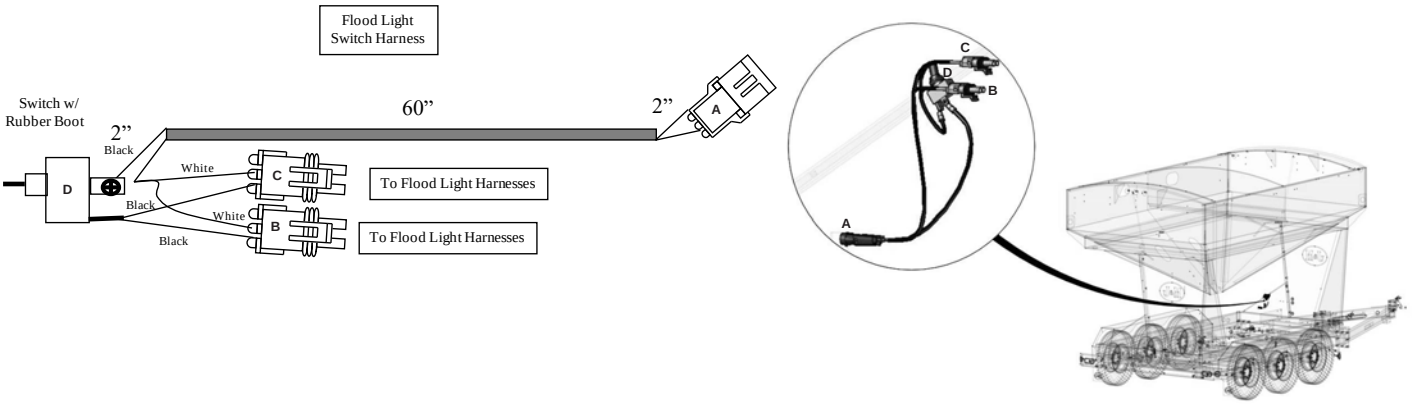


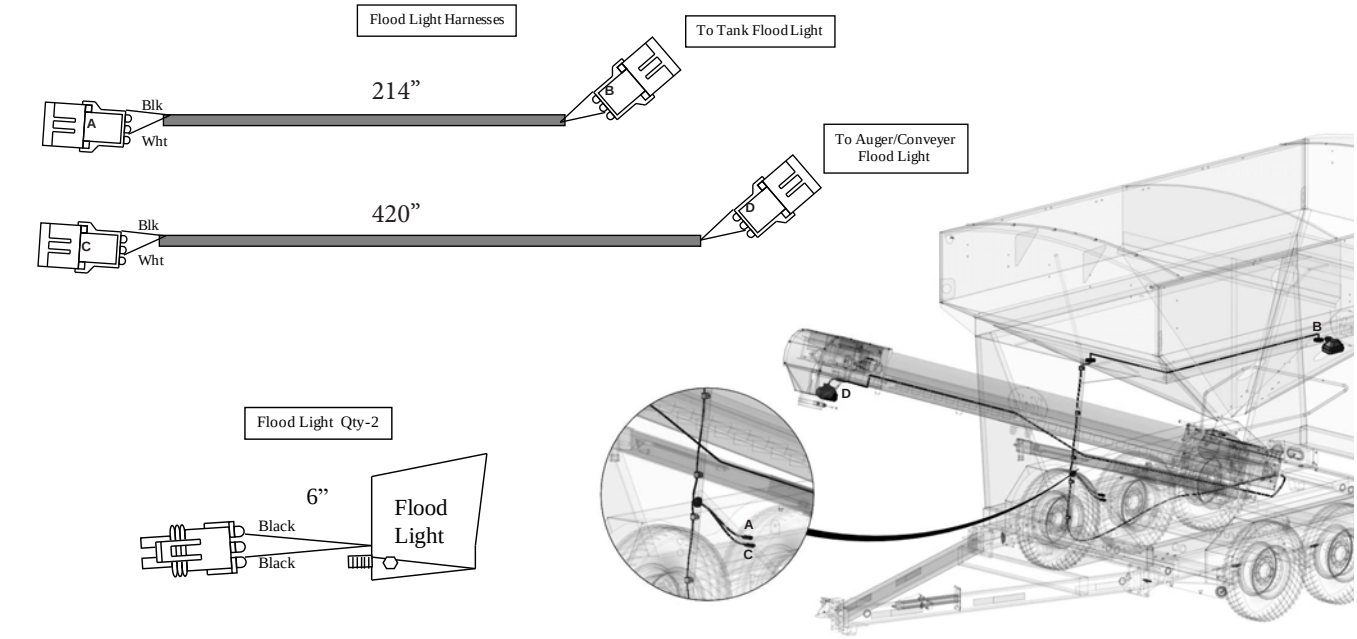



FUSE BLOCK
Halogen
Electric Tarp
Electric Jack
Scale Indicator
Valve Bank
Camera
Spare 2
15 Amp
30 Amp
10 Amp
10 Amp
10 Amp
20 Amp

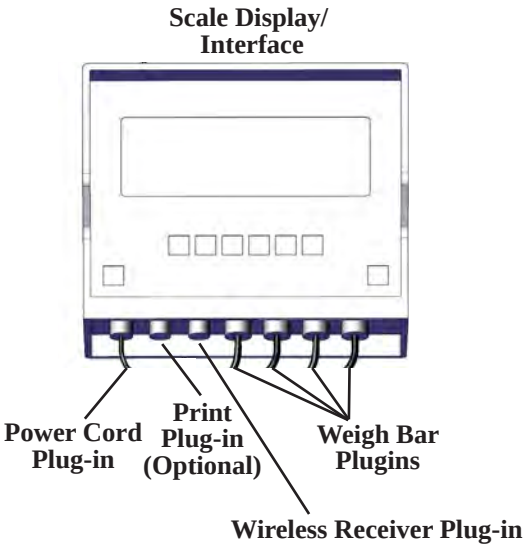

Front Harness
3"
White
3"
30"
8"
3"
A
B
Tan
To Front Top Harness
D
33"
65"
B
To Front Lower Marker Light
C
To Front Lower Marker Light

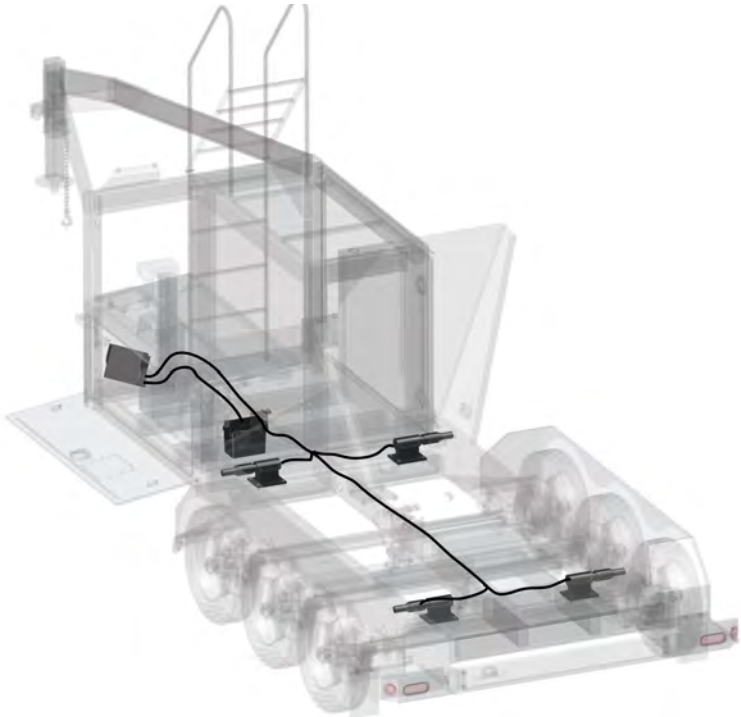

7-Way Trailer Connector
147"
384"
3"
A
C
16"
Light Blue
Dark Blue
To Main Harness
B
Tail Lights
Brown
12V Battery
Red
Left Turn & Brake
Yellow
Right Turn & Break
Green
Ground
White
Electric Brake
Blue





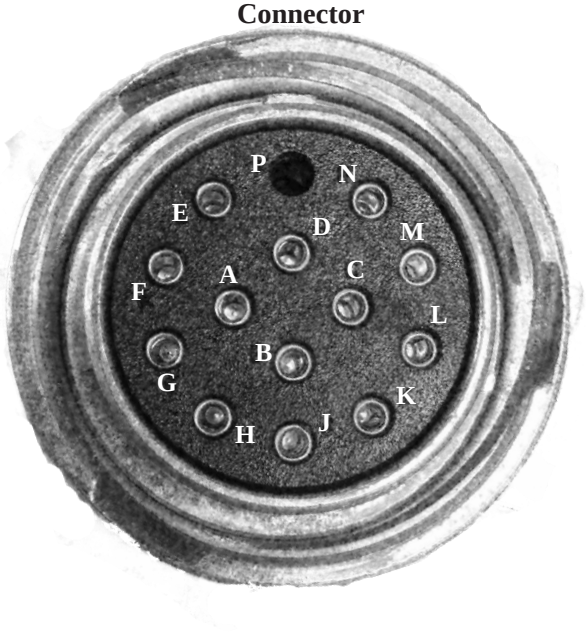
4.3 Scale Wiring

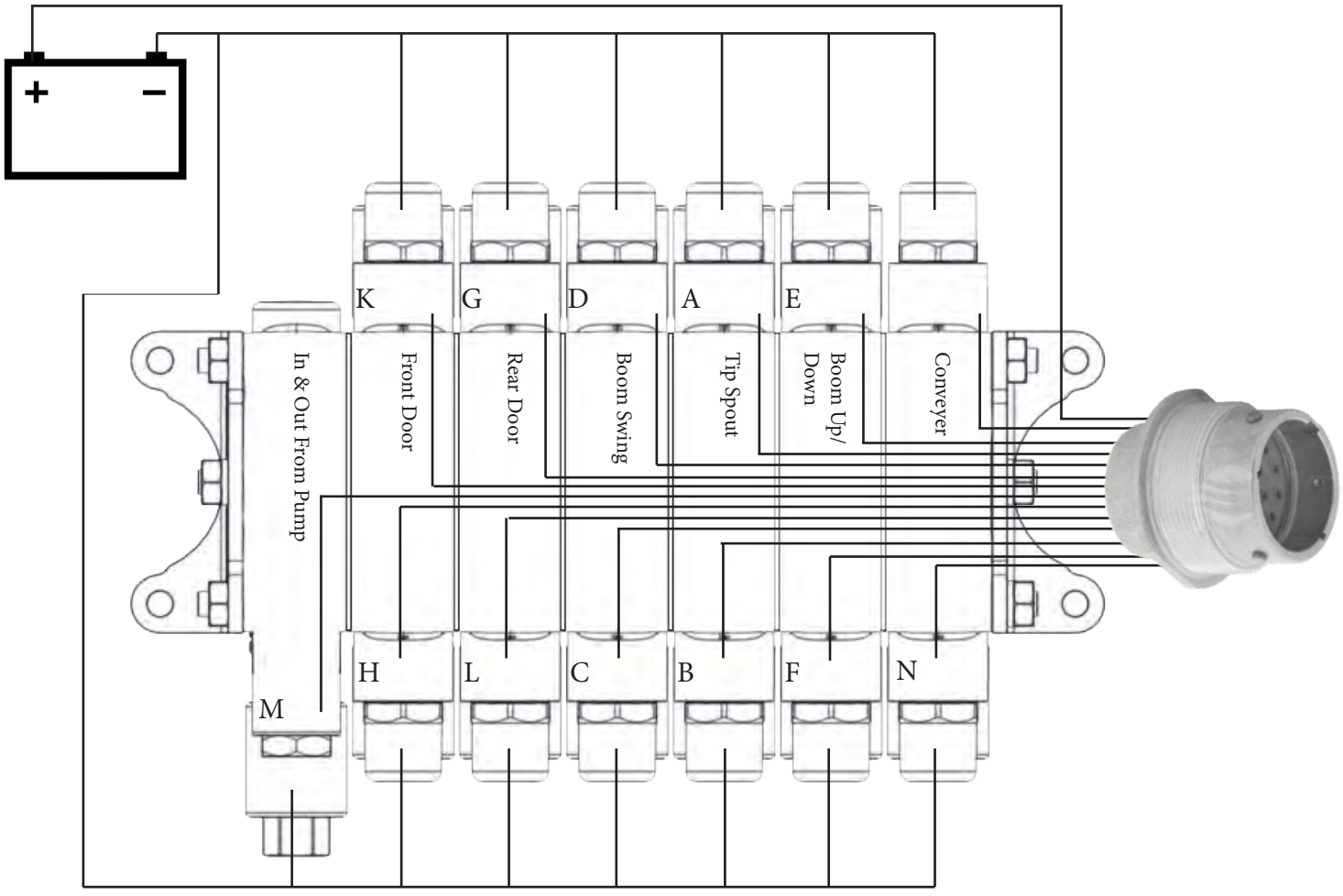




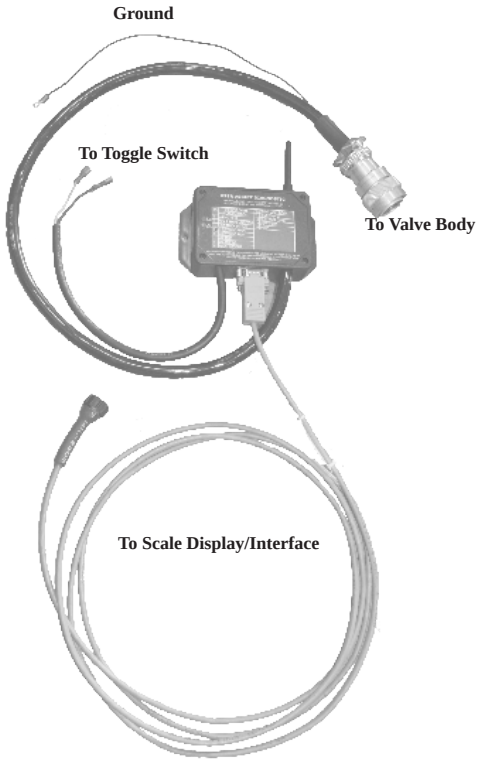
Reference Figures 4.1-4.4	Function
A	Tip Spout up
B	Tip Spout Down
C	Boom swing front (optional)
D	Boom swing rear (optional)
E	Boom Up
F	Boom Down
G	Rear door up (optional)
H	Front door down (optional)
J	Power
K	Front door up (optional)
L	Rear door down (optional)
M	Pump In
N	Conveyor Start

Wireless Receiver or Handheld Controller Connector

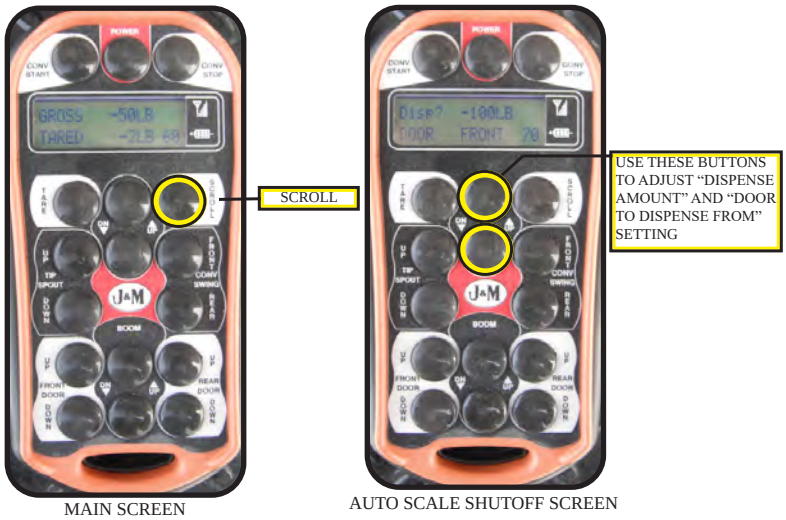




Deluxe Wireless Remote
- Starts/Stops Motor
- Raise/Lower Conveyer
- Open/Close Tank Doors
- Hydraulic Conveyer
- Auger Swing
- Tip Spout
- Electronic Auto Scale Shutoff



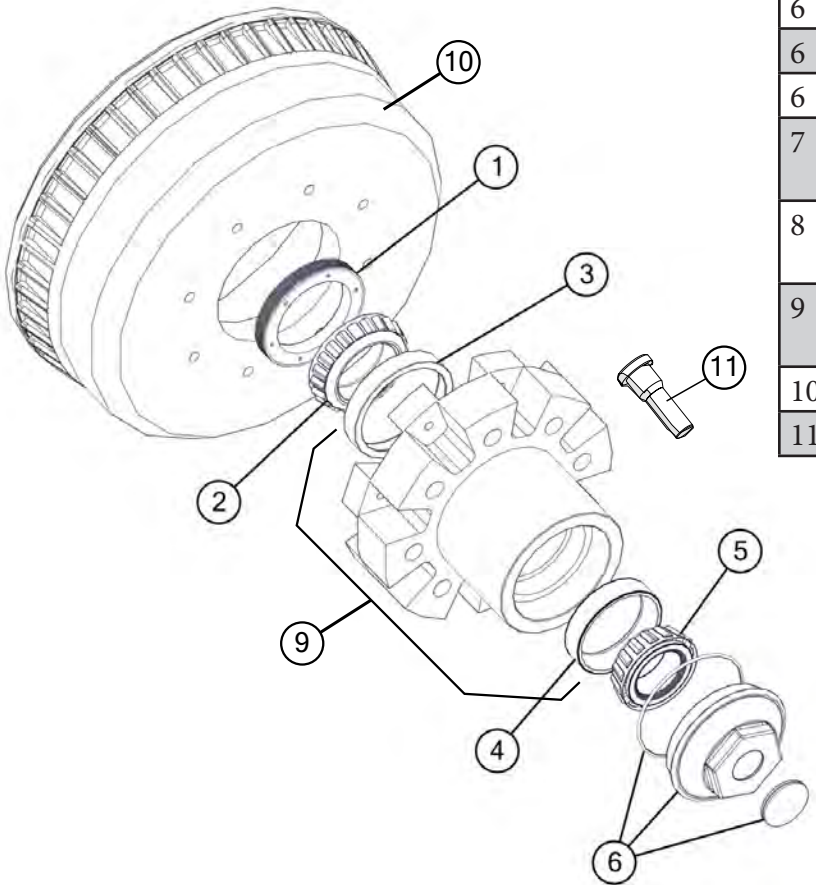
1. Turn Scale Head, Wireless Remote, and Wireless Toggle Switch on.
   -The main screen showing gross and tared weight will display.
2. **Press and release Scroll on the Wireless Remote.**
   -The setting for door weight and door selections (front or rear) will display.
3. **Press and hold Scroll until the weight value starts to flash.**
4. Using the up and down arrows just below the display in the center of the remote, adjust the desired dispense weight.
5. Press and release Scroll
   -The door setting will flash.
6. Using the up and down arrows just below the display in the center of the remote, select which door you want to dispense from.
7. **When settings are acceptable, press and hold Scroll for 3 seconds.**
   -The main screen will display again.
8. **Press conveyer start to dispense the set amount of seed from the desired door.**
   -The door will automatically shut when the set amount of seed is dispensed and the conveyor will turn off shortly after.
9. To dispense the same amount of seed from the same door, again press conveyer start, then repeat the dispense cycle. *If the remote is turned off, steps 1-8 will need to be repeated.

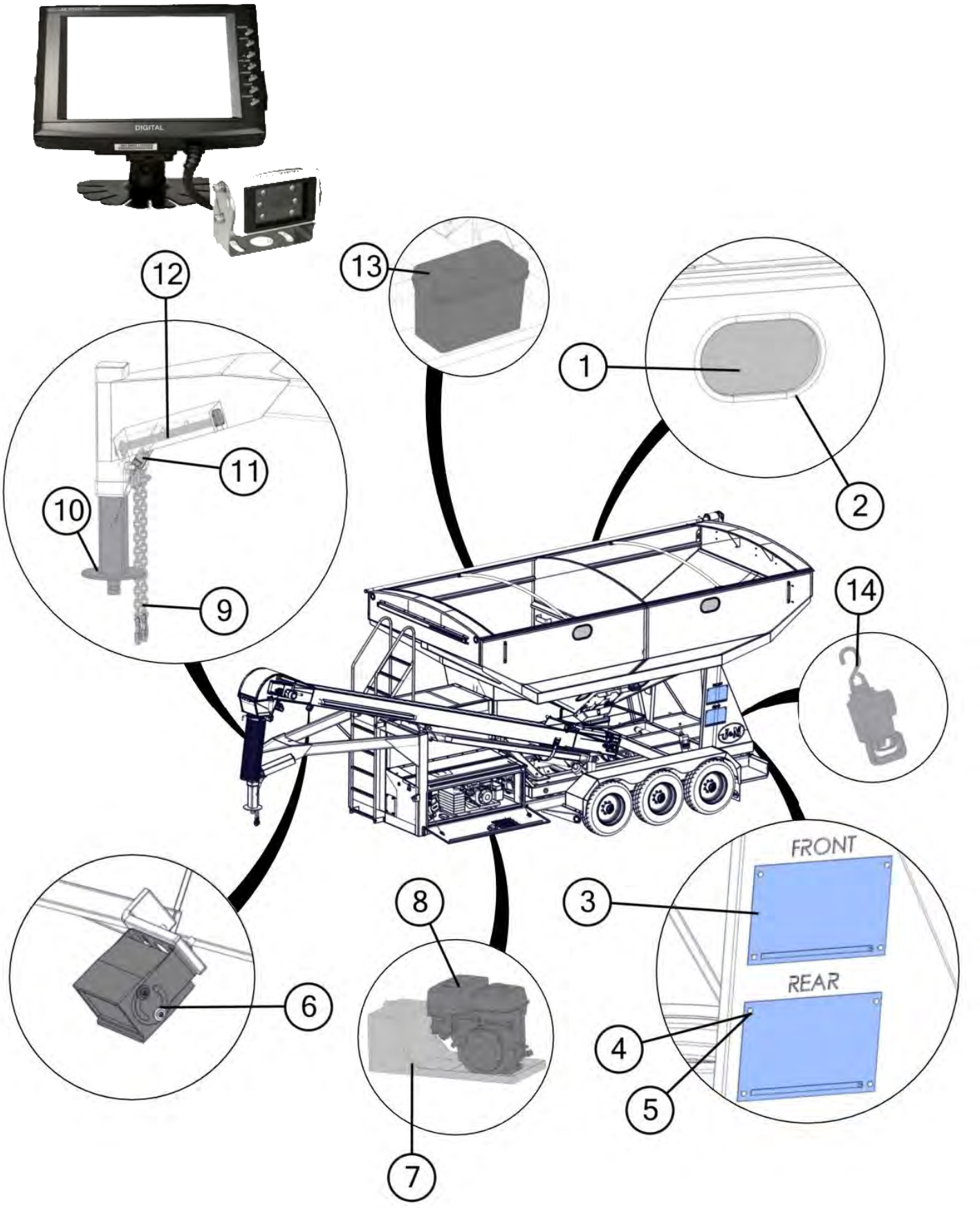


MAIN SCREEN

AUTO SCALE SHUTOFF SCREEN

#	Description	Part. No.
1	10K Torsion Axle Seal	JM0018099
2	Tapered Bearing Cone 387A	JM0018101
3	Tapered Bearing Cup 382A	JM0018100
4	Tapered Bearing Cup 25520	JM0018102
5	Tapered Bearing Cone 25580	JM0018104
6	O-Ring For Dust Cap	JM0202321
6	Dust Cap	JM0025747
6	Hub Cap (plastic)	JM0018379
7	10K Torsion Axle Primary Shoe and Liner	JM0018324
8	10K Torsion Axle Secondary Shoe and Liner	JM0018325
9	Hub for 10k Axle with Studs, Nuts, and Races	JM0039630
10	Drum for 10k	JM0039632
11	Stud for 10k 5/8”-18 x 3-1/16”	JM0020623




DIGITAL
12
13
1
2
11
10
9
14
FRONT
3
REAR
4
5
8
6
7

#	Description	Part. No.
1	Oval Window	JM0002455
2	Oval Window Grommet	JM0002454
3	Buckhorn Seed Pouch	JM0017562
4	1/4” x 3/4” Gr5 Hex Bolt	JM0001507
5	1/4” Centerlock Hex Nut	JM0001505
6	RearView Camera Kit	JM0016024
7	Hydraulic Power Unit	JM0005886
8	Honda GX390 Engine	JM0016753
9	Safety Chains	JM0016075
10	5th Wheel Receiver	JM0016068
11	Breakaway Switch	JM0001843
12	5th Wheel Harness Adapter	JM0016178
13	Toolbox	JM0001812
14	Ratchet Strap	JM0017507