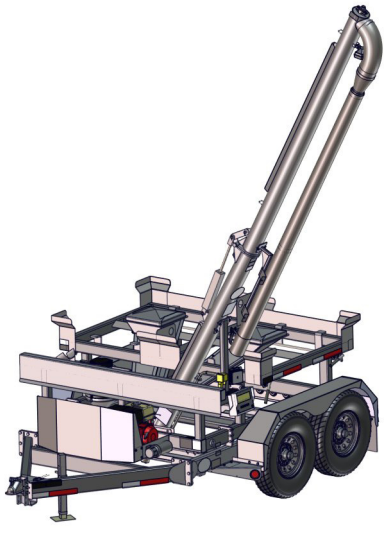
OPERATORS MANUAL

250
450

PRO BOX



Rev. 7.15.2022

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www.jm-inc.com

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General Information

TO THE DEALER

Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists are completed before releasing equipment to the owner.
The dealer must complete the Warranty Registration found on the Dealer Portal website located at dealer.jm-inc.com and return it to J. & M. Mfg. Co., Inc. at the address indicated on the form. Warranty claims will be denied if the Warranty Registration has not been submitted.

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 remanufactured 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 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 maintenance. 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 warranty and may not meet standards required for safety and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

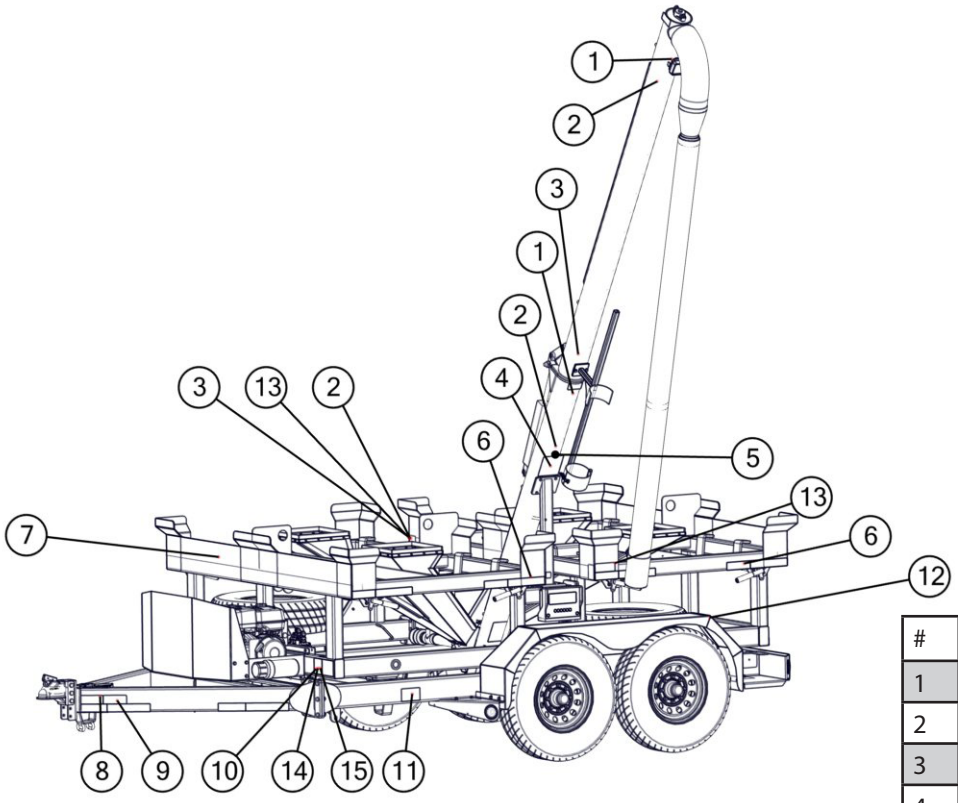
Model No: 250/450 Speed Tender **Serial No:** _____ **Date of Purchase:** _____

Purchased From: _____

Provide this information to your dealer to obtain correct repair parts.

⚠ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!⚠

Replace Safety Decals Immediately If Damaged or Missing

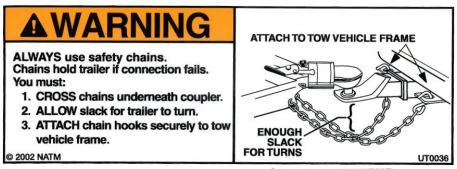


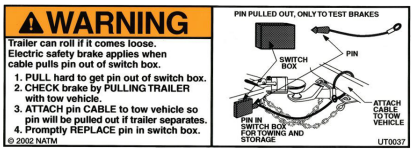
#	Description	Part. No.
1	Warning/Moving Parts	JM0014993
2	Warning/Falling or Lowering	JM0014992
3	Warning/Pinch Point	JM0014994
4	Danger/Serious Injury Elec Lines	JM0015099
5	Small J&M Oval	JM0010179
6	Red & White Reflective Tape	JM0015079
7	Speed Pro 450	JM0025336
8	Warning/Safety Chains	JM0014995
9	Warning/Trailer Can Roll	JM0014997
10	Warning/High Pressure	JM0010163
11	Chassis Manufacture #	N/A
12	www.jm-inc.com	JM0019239
13	Warning/Tire Wheel Lugnuts	JM0014996
14	Warning/Do Not Adjust	JM0014979
15	Warning/Open Flames	JM0014983

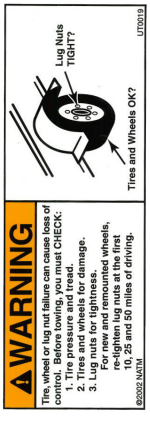
J&M

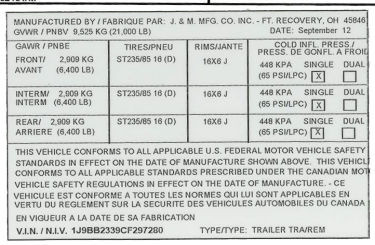
www.jm-inc.com

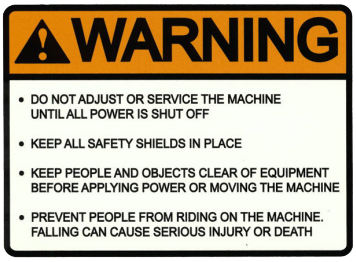
J&M SpeedTender Pro 450











TO THE OWNER:

The purpose of this manual is to assist you in operating and maintaining your Speed Pro 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. Reviews 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, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety. 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.

SAFETY RULES:

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

Safety

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 Pro safety chain to towing vehicle before transporting. Do not transport without safety chains being attached to tow vehicle.

6. Use good judgment when transporting Speed Pro 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 Pro.

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

8. Do not travel faster than 10 mph. 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 Pro near electric lines as serious injury or death can result from contact.

10. Never adjust, service, clean, or lubricate Speed Pro 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 everyone is clear of equipment before applying power or moving the Speed Pro.

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

1.1 Preparing the Towing Vehicle

Before towing the Speed Pro, 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 Pro 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 Pro

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 section of this manual.

1.3 Connecting Speed Pro to the Towing Vehicle

WARNING: Do not stand between the Speed Pro and tow vehicle when hooking up.

NOTE: The Speed Pro comes standard with a 2 5/16" ball coupler. A 3" lunette eye is also available. In addition the Speed Pro can come with an optional Gooseneck Frame in place of the A-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 Pro.
2. Align the vehicle's ball or lunette eye with the coupler or ring on the Speed Pro.
3. Lift tongue latch lever.
4. Lower jack to set Speed Pro coupler down on ball or lunette eye hook.
5. Latch coupler and insert pin. Check to make sure that coupler is securely latched.
6. Pivot jack to transport position and pin in place.
7. Attach 7-way plug to tow vehicle. Check the length of the Speed Pro 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 (Figure 1). Allow enough slack in chains necessary for turning.
10. Test the brakes and all the lights on the Speed Pro

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.

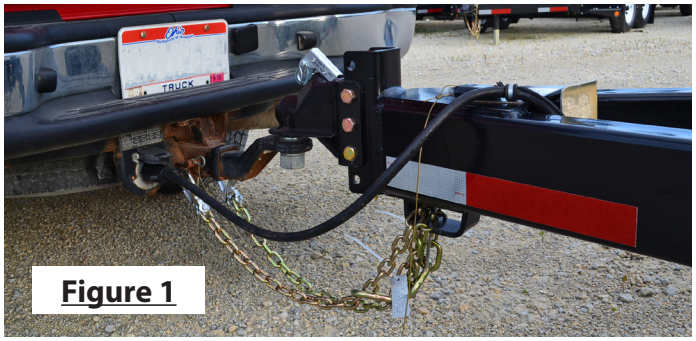


Figure 1

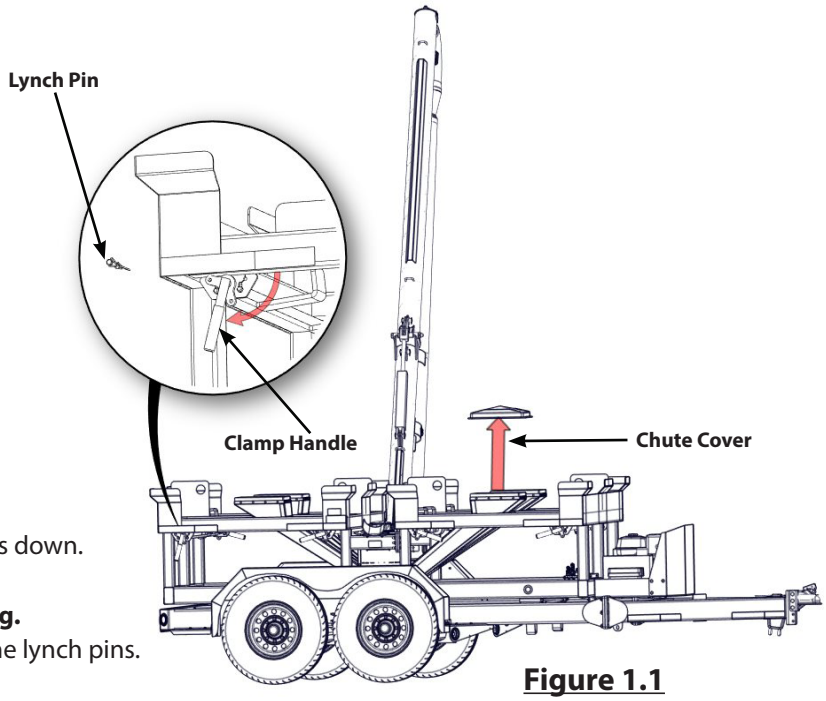


Figure 1.1

1.4 Attaching the bulk seed boxes

1. Unstrap and remove the chute covers.
2. Remove the lynch pins and rotate the clamp handles down.
3. Place a bulk seed box over each of the chutes.
   NOTE: Always load the front first to avoid flipping.
4. Now rotate all the clamp handles up and reinstall the lynch pins.

1.4 Transporting

NOTE: Make sure the jack is in the horizontal position before transporting.
When transporting the Speed Pro on public roads, it is recommended to have the auger in the storage position.

WARNING: Travel at a safe speed that allows you to maintain complete control of towing vehicle and Speed Pro 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.

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.

Operations

WARNING: Purge hydraulic system of air before operating Speed Pro 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 the key to the start position. Once engine starts, release key (Figure 1.2).
5. After starting, allow the engine to warm-up. Slide choke to the "OFF" position, and increase throttle speed (Figure 1.2).
6. To turn the engine off, slide the Fuel Shut-off to the "OFF" position (Figure 1.2).

NOTE: In 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 engine immediately and take appropriate action.
NOTE: See Engine manual for more details on upkeep and service.

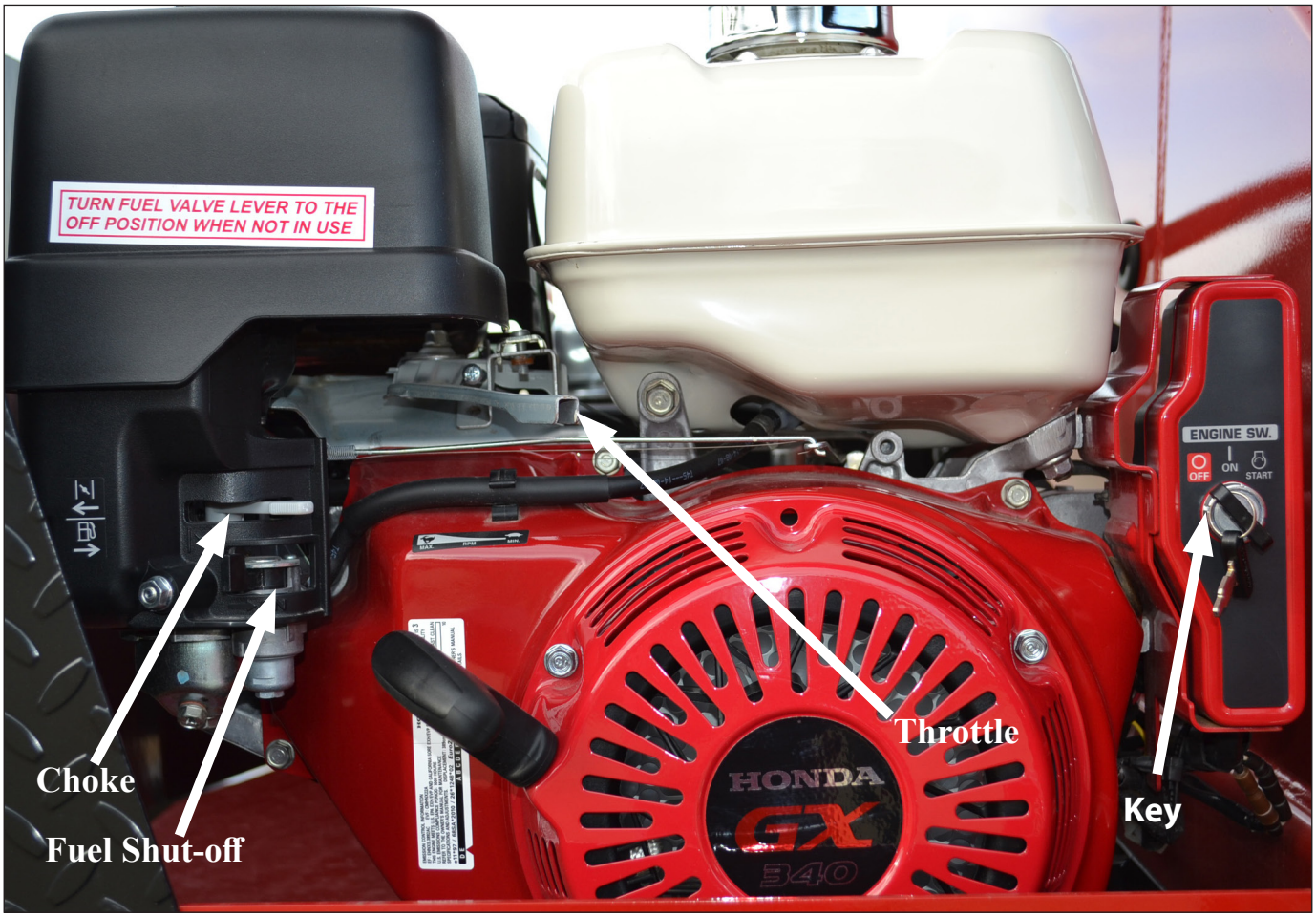


Figure 1.2

1.6 Field Operation

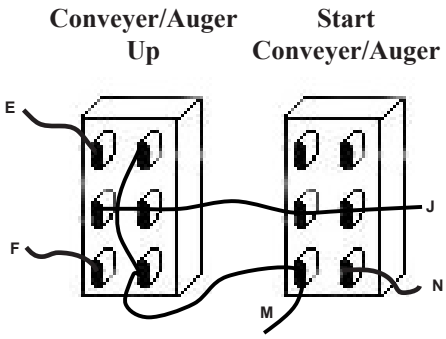
WARNING: The Speed Pro must be hooked to the towing vehicle during loading and unloading.

1. Position the Speed Pro next to the planter/drill so the auger will reach the planter box.
2. Start the hydraulic power unit and increase throttle speed. (Allow hydraulic fluid to warm-up.)(Figure 1.2).
3. Extend the auger to unload position using the handheld controller/wireless remote.

JM0037939

JM0029227

Starts/Stops Motor
Raises/Lowers Conveyer
JM0014984



E	Blue
F	Yellow
J	Red
M	Green/Black
N	Green

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

9. Use the Handheld Control or Wireless Remote to start the auger.
10. Fill the planter/drill to desired level then repeat.
    NOTE: Adjusting engine throttle will regulate auger speed.
11. The engine must throttle at, or above 80% throttle for 3 seconds to begin charge. After the 3 seconds at 80% throttle the battery will continue to charge until the engine is turned off.
12. Slide the fuel shut off lever to the "OFF" position. This will allow the engine to shutoff by running out of gas.
13. Turn the key to the "OFF" position.

Reprogramming the Key Fob and Receiver:
To complete the learn procedure, simply do the following. Power up the unit. When you do so, the LED on the receiver unit will flash "RED" four times. This indicates that the unit has received power. There is magnetically controlled switching circuitry embedded in the receiver unit. Place a fairly powerful magnet on the back of the receiver for a brief moment (3 seconds), and then remove it. The LED will go to a constant RED stare. Now immediately press any button on the transmitter you are attempting to learn . The LED will go to a GREEN/YELLOW color. This confirms that the receiver has picked up a signal from the transmitter, and subsequently learned that signal. Communication has been established, and it is now ready to function properly.

Troubleshooting:
Should the above procedure not complete successfully, wait until the LED light goes out, and repeat the procedure. If for any reason you experience a second failure of the learn procedure, do the following. Place the magnet on the learn area and the LED will go to a constant RED stare. Leave the magnet in place on the receiver until the LED light goes out. (Approximately 10 seconds). This action completely clears the receiver's memory. Once you have cleared the memory, proceed with the standard learn procedure detailed above for the key fob transmitters.

1.7 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.

1.8 Auger Cleanout

1. Raise the clean out door on the auger.
2. Run the auger in reverse until all of the grain is removed.
3. Close the clean out door.

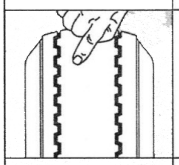
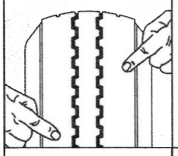
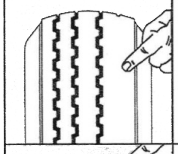
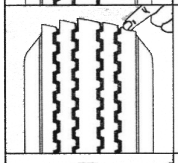
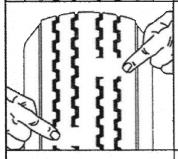
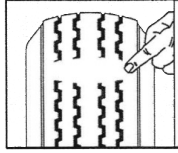
2.0 Service

1. Grease the auger bearing every 10 hours of operation and before storage. Use only two pumps of grease.

2.1 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. 235/85R16 tires that are standard on the Speed Pro tires should be inflated to 75psi. 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 is a troubleshooting chart used to ensure the tires wear evenly.

Fig. 2.3

	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

2.2 Tightening Lugnuts

Torque lug-nuts on new and removed wheels to 190 ft. lbs. after the first 10, 25, and 50 miles of driving, then recheck torque every 50 hours or every year, whichever comes first.

2.3 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 Pro.
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. Repack inner bearing with new grease.
    A. Place a moderate amount of grease in the palm of one hand.
    B. Hold the inner bearing, large side down, in your other hand
    C. Using the edge of the bearing (like an ice-cream scoop,) work it in until you see fresh grease come out of the top side of the bearing.
    D. Rotate 1/8 of a turn and repeat until the whole bearing is full of fresh grease.
12. Place the inner bearing in the back of the wheel hub and add a liberal dose of grease.
13. 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.
14. Slide the hub assembly onto the spindle and push it back into position.
15. Grease the outer bearings by hand. (See step 11)
16. Slide it and the spindle washer onto the spindle and into the hub recess.
17. Install and bottom out the spindle nut, then back it off 1/4 turn.
18. 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.
19. Pack the bearing cap with fresh grease and lightly drive it into the hub recess with a hammer.
20. Reinstall the wheel onto the hub and torque the wheel lug-nuts.
    NOTE: See wheel nut/bolt torque requirements located in section 2.10.

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.

2.4 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 155Z** or a **FRAM P1654A** 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).

Purge air from system as follows:

1. Disconnect the rod end clevis of all cylinders in a circuit and block up cylinders 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 rods stop moving. Check that all cylinders have 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 rods stop moving. Check that cylinders have fully extended or retracted.
5. Check for hydraulic leaks using cardboard or wood. Tighten connections according to the torque chart. (pg.23)
6. Repeat steps 2, 3, 4 and 5 (3 to 4 times).
7. Depressurize hydraulic system and connect cylinder rod clevises to their mating lugs.

2.5 Electric Brakes

The Speed Pro 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 Pro brakes at least once a year with normal use.

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

Your Speed Pro 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 ensure safe brake performance and synchronization, read the brake controller manufacturer's instruction completely before performing the synchronization procedure.

Make several hard stops from 20 mph on a dry paved road that is free of sand and gravel. If the Speed Pro 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 Pro 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. Raise the Speed Pro by using the jack.
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 Pro 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.

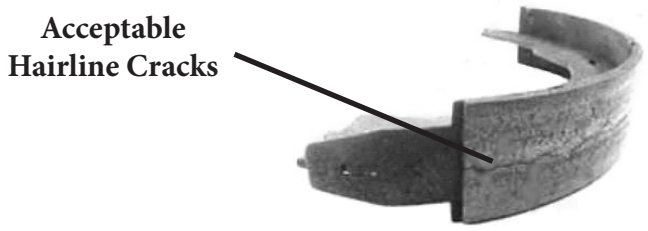


Figure 2.6

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 shoe retract spring.

After replacement of brake shoes and linings, the brake must be re-burnished to "seat" the new components. This should be done by applying the brakes 20 to 30 times from an initial speed of 40 mph, slowing the vehicle to 20 mph. 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.

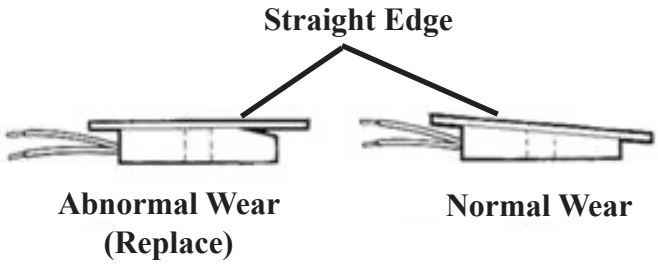


Figure 2.7

Voltage in the system should begin at 0 volts. As the controller bar is slowly actuated, the voltage should gradually increase 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 ensure 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 ensure 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.

2.6 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 auger bearing every 10 hours. Use only two pumps of grease per bearing
   NOTE: Over lubrication of this bearing will result in premature failure.
2. Check hydraulic oil level.
3. Inspect for oil leaks and repair as appropriate.
4. Check all hoses, fittings, bolts, and hardware to make sure that they are secure and properly tightened.
5. Check engine oil level. See Engine operator's manual for details on oil levels, oil types and service intervals.
6. Check Speed Pro brakes and lights before towing.
7. 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 Pro and greatly reduce its life.
8. Make sure tires are properly inflated (See section 2.1).
9. Make sure wheel lug nuts are properly torqued (See section 2.2).
10. Clean out the Auger at the end of every day of use (Section 1.8).

2.7 End of the Year Service

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

1. Grease the auger bearing. Use only two pumps of grease per bearing.
   NOTE: Over lubrication of this bearings will result in premature failure.
2. Grease pivot points on boom arm 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 chutes.
8. Clean out the Auger (Section 1.8).
10. Check the Speed Pro 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 Pro and greatly reduce its life.
11. Check hydraulic hoses for wear and replace if needed.
13. Remove battery from the Speed Pro and place in a cool dry place.
    NOTE: Attaching a trickle charger to the battery will help ensure a long life for your battery.
    IMPORTANT: Be sure to disconnect the scales from the battery before charging.
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).

2.8 Removing From Storage

1. Grease the auger bearing. Use only two pumps of grease per bearing
   NOTE: Over lubrication of this bearing will result in premature failure.
2. Grease pivot points on boom arm.
3. Torque lug-nuts (Section 2.4).
4. Make sure that the tires are properly inflated.
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 Pro lights before each time you tow.
11. Make sure that the auger hopper guard is in place.
12. Reattach battery and check to make sure that it is fully charged.
    IMPORTANT: Be sure to disconnect the scales from the battery before charging.

2.9 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 2.3).
Wheel makes grinding or squeaking noise	
	a. Service wheel bearings. (See section 2.3).
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 2.3).
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

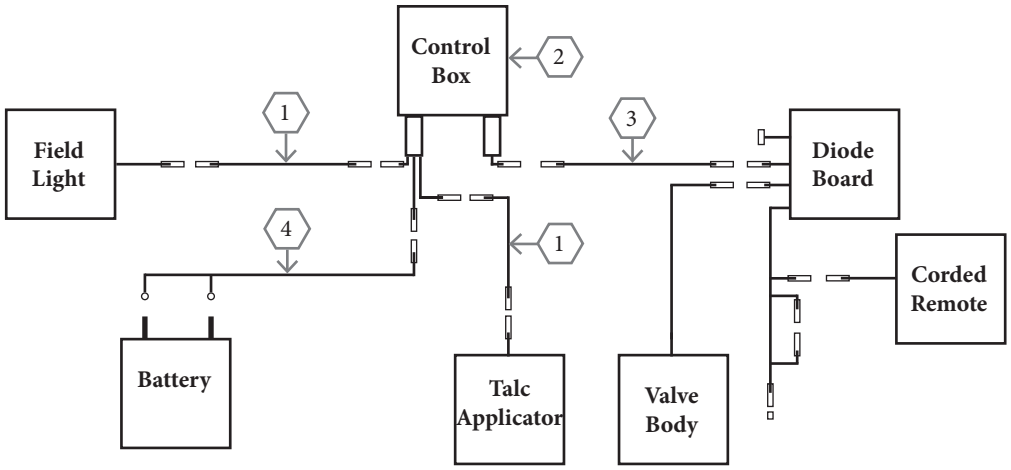
Problems	Solutions
Locking brakes	
	a. Replace any weak or broken springs in brakes
	b. Replace any excessively worn or contaminated linings
Grabbing brakes	
	a. Replace any excessively worn or contaminated linings
Surging brakes	
	a. Trailer is not adequately grounded
Auger is not moving - Hydraulic pump is not producing sufficient pressure or volume to auger 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.
Auger is not moving - Obstructed auger	
	a. Make sure auger is not clogged
Auger has insufficient output speed or R.P.M. - Hydraulic pump is not producing sufficient pressure or volume to auger 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. Repair or replace worn out pump.
Auger has insufficient output speed or R.P.M.	
	a. Check telescoping spout and conveyor for a clog.
	b. Remove material from clean out door.
Auger has insufficient output speed or R.P.M. - Air in hydraulic system.	
	a. Bleed air out of hydraulic system and fill reservoir (See section 2.4).
	b. Look for leaking or cracked fittings.
Auger 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
Auger will not move up or down - Engine R.P.M. slow.	
	a. Increase engine R.P.M.
Auger 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. Hydaulic 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. 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

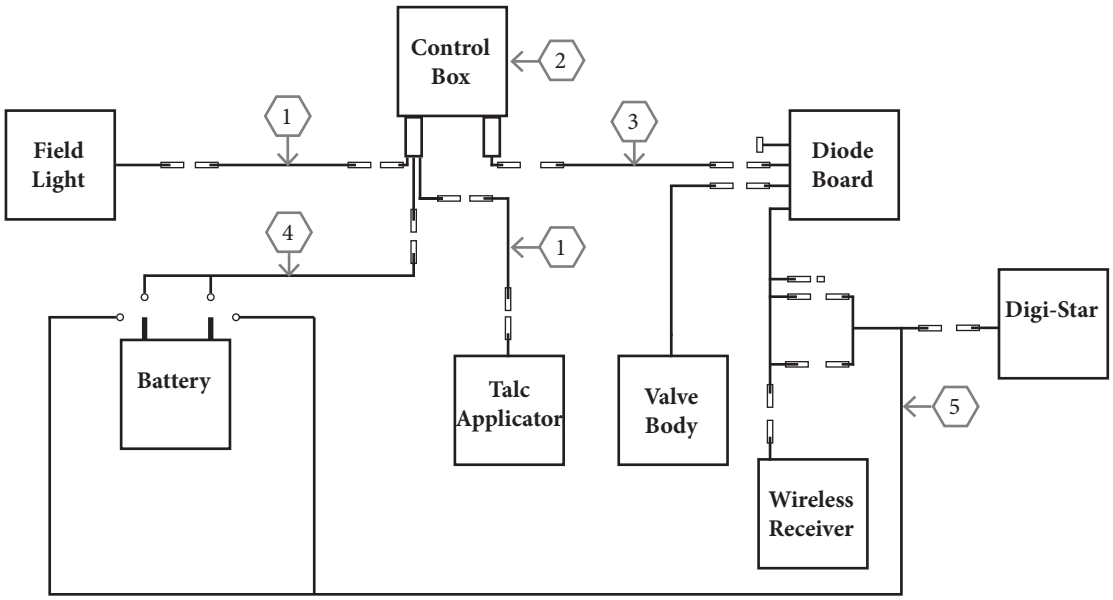
2.10 Bolt Torque Specifications

		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

Schematic with Corded Remote

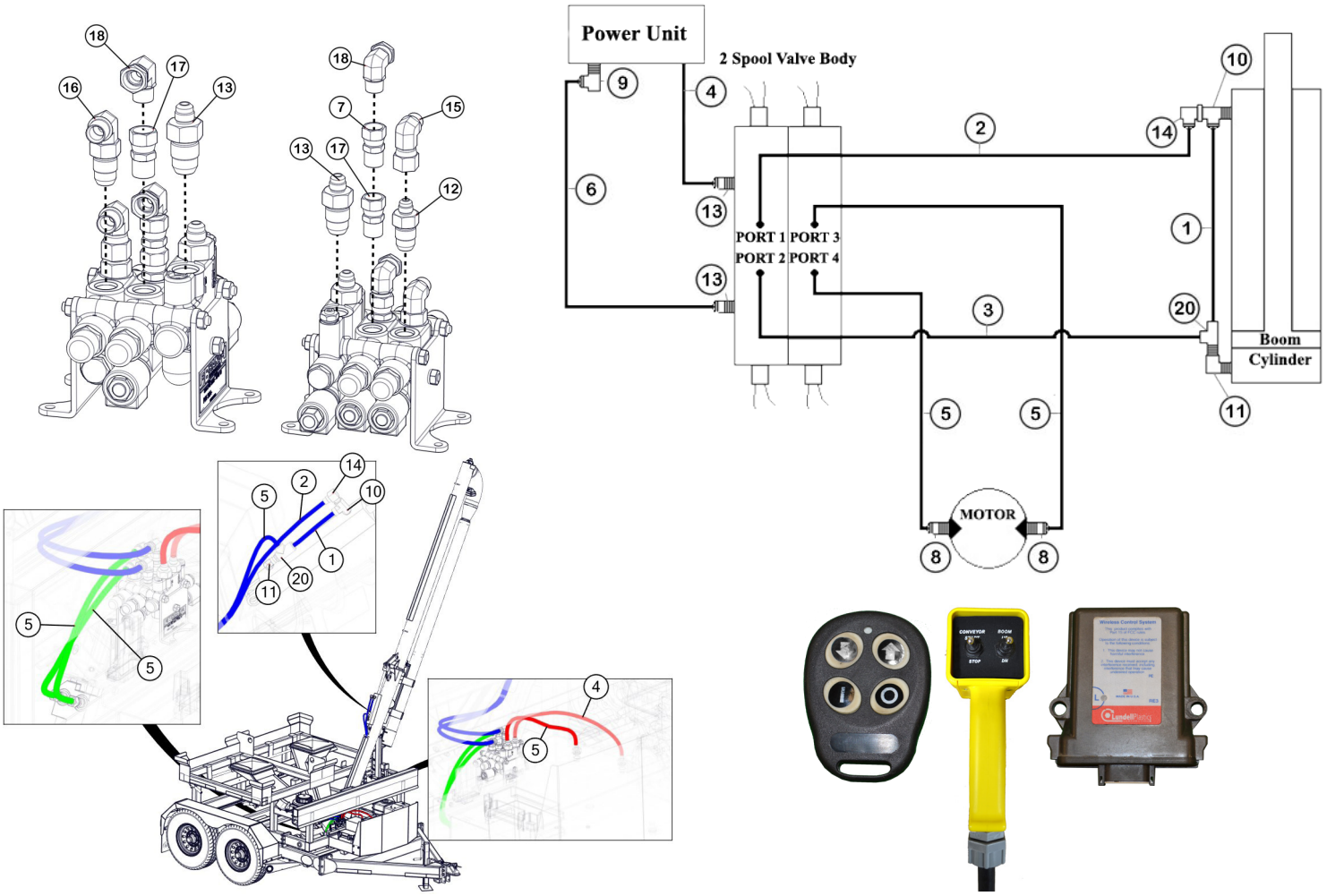


Schematic with Wireless Control and Auto Scale Shutoff



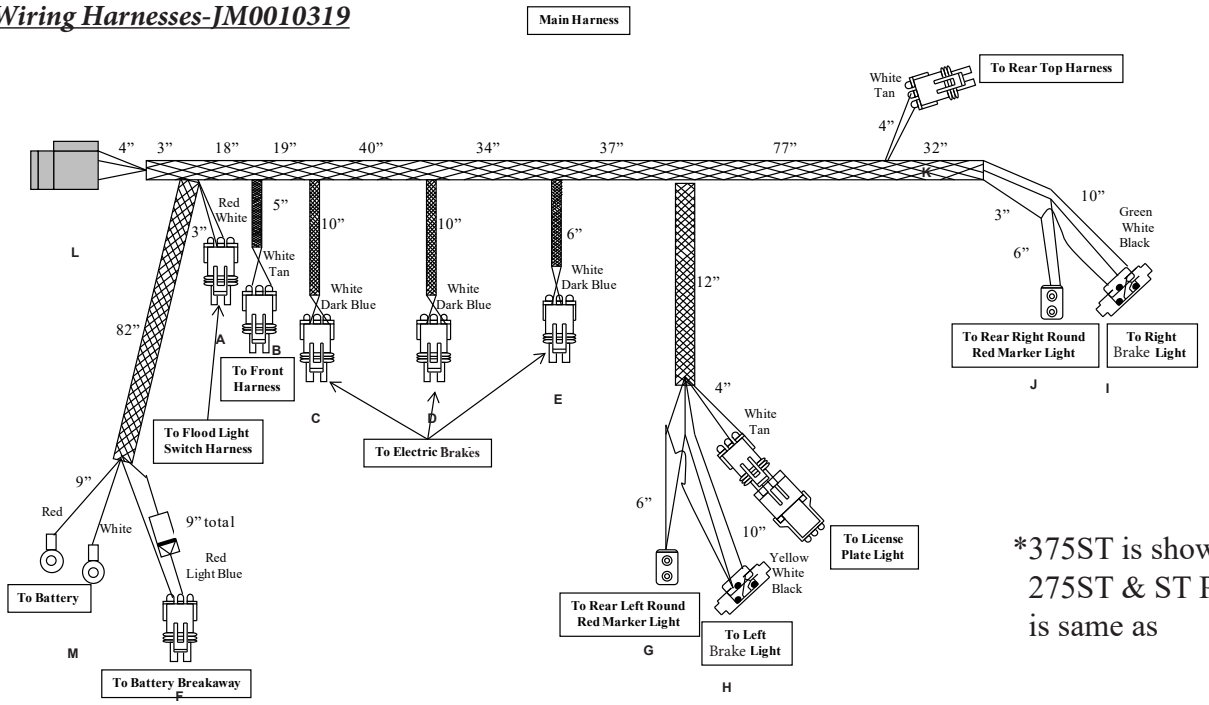
#	Description	Part. No.
1	Auger Light Extension Cable	JM0029827
2	Control Box	JM0029221
3	Control Box to Diode Board Extension	JM0029825
4	Power Cable	JM0029828
5	Auto Scale Shut-Off Power Cable	JM0029834
6	Wiring Kit Complete without Digi-Star Indicator or Corded Remote	JM0029824
7	Wireless Receiver	JM0029227
6	Key Fob	JM0037939
8	2 Switch Chorded Remote	JM0014984

3.0 Standard Models (Raise and lower boom only)-JM0010317

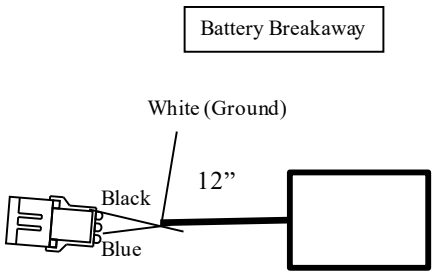


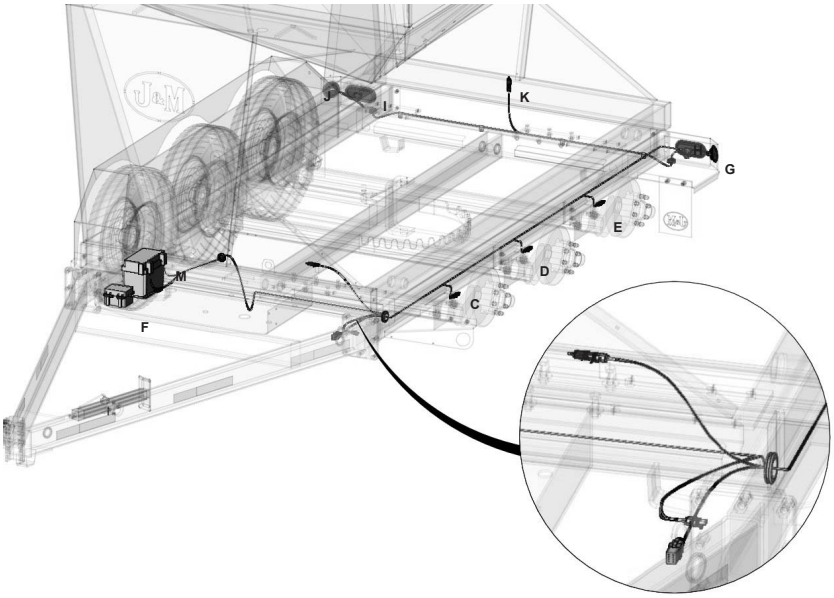
#	Description	Part #
1	1/4" I.D. Hose; 1/4" male NPT rigid X #6 female JIC swivel; 12" OAL	JM0010282
2	1/4" I.D. Hose; 3/8" male NPT rigid X 3/8" male NPT swivel; 170" OAL	JM0025342
3	1/4" I.D. Hose; 3/8" male NPT rigid X 3/8" male NPT swivel; 158" OAL	JM0025343
4	1/2" I.D. Hose; 3/8" male NPT swivel X #8 female JIC swivel; 30" OAL	JM0025344
5	1/2" I.D. Hose; #8 female JIC swivel X #8 female JIC swivel; 91" OAL	JM0025346
6	1/2" I.D. Hose; #8 female JIC swivel X #8 female JIC swivel; 34" OAL	JM0025647
7	3/8" male NPT X 3/8" female NPT swivel; straight	JM0010288
8	#8 male JIC X 1/2" male NPT; straight	JM0010289
9	#8 male JIC X 3/4" male NPT; 90 degree elbow	JM0010290
10	#6 male JIC X 1/2" male NPT X #6 male JIC; tee	JM0010291
11	1/2" male NPT X 3/8" female NPT; 90 degree elbow	JM0010292
12	#8 male JIC X #8 male o-ring; straight	JM0010293
13	#8 male JIC X #10 male o-ring; straight	JM0010294
14	#6 male JIC X #6 female JIC swivel; 90 degree elbow	JM0010295
15	#8 male JIC X #8 female JIC swivel; 90 degree elbow	JM0010296
16	#8 male JIC X #8 male o-ring; 90 degree elbow	JM0010297
17	#8 male o-ring X 3/8" female NPT swivel; straight	JM0010298
18	3/8" male NPT X 3/8" female NPT swivel; 90 degree elbow; with .062" orifice	JM0010299
19	2 Spool Valve Body	JM0001829
20	Pilot Check Valve	JM0018233

4.0 Light Wiring Harnesses-JM0010319

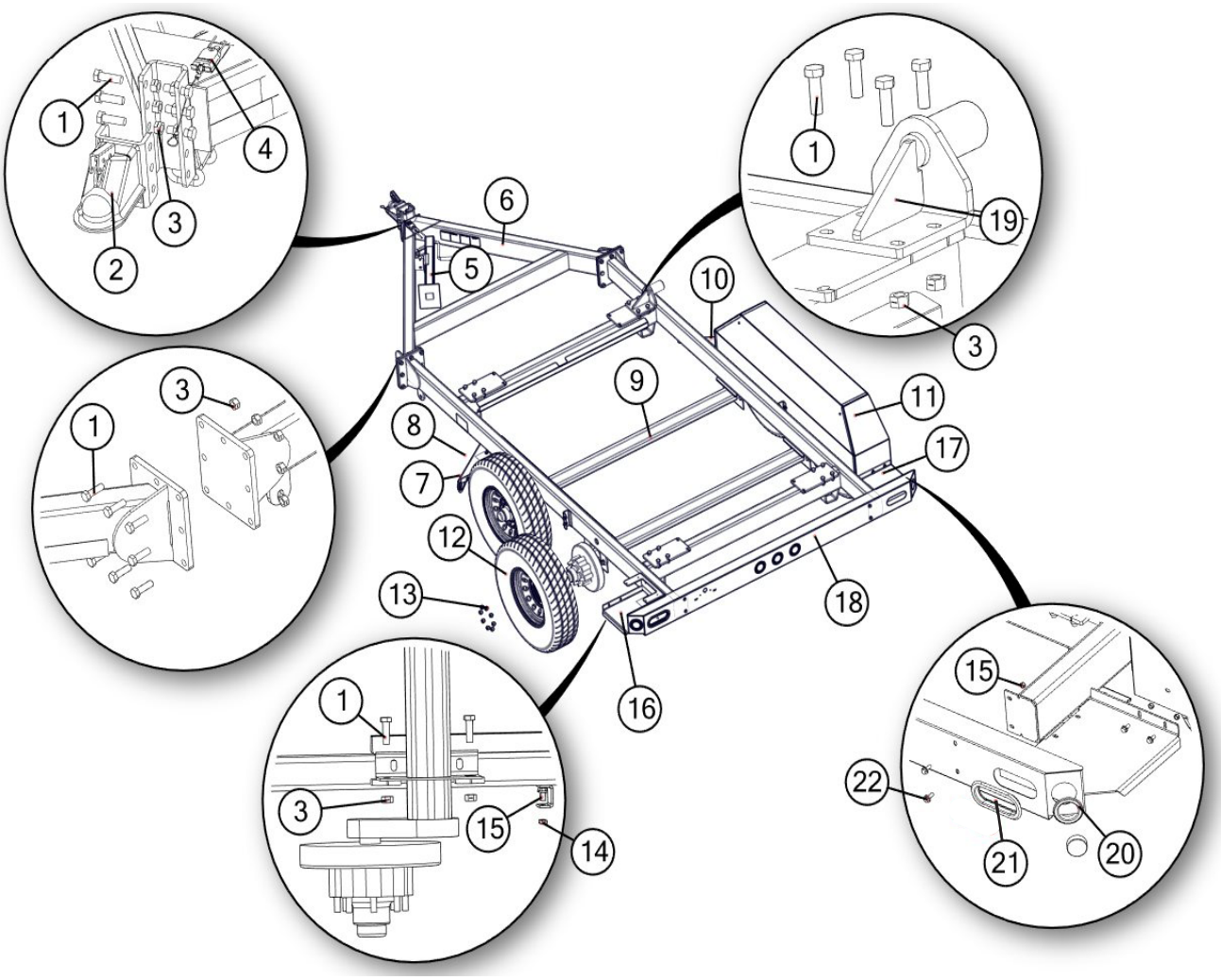


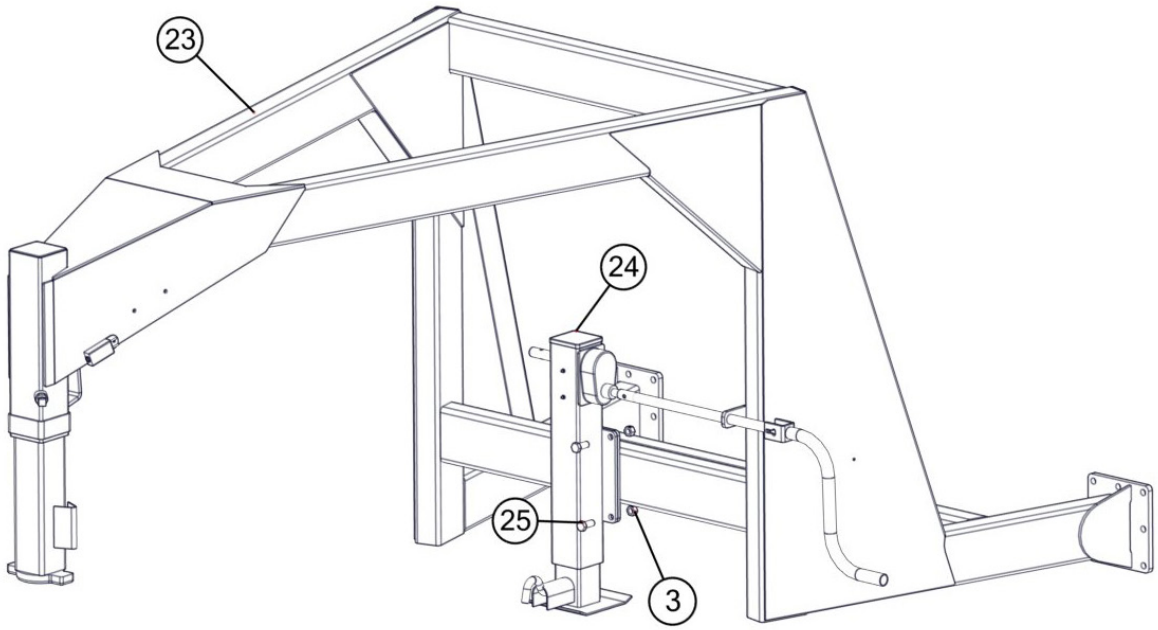
*375ST is shown
275ST & ST PRO
is same as





Chassis Parts (450 Pro Box)

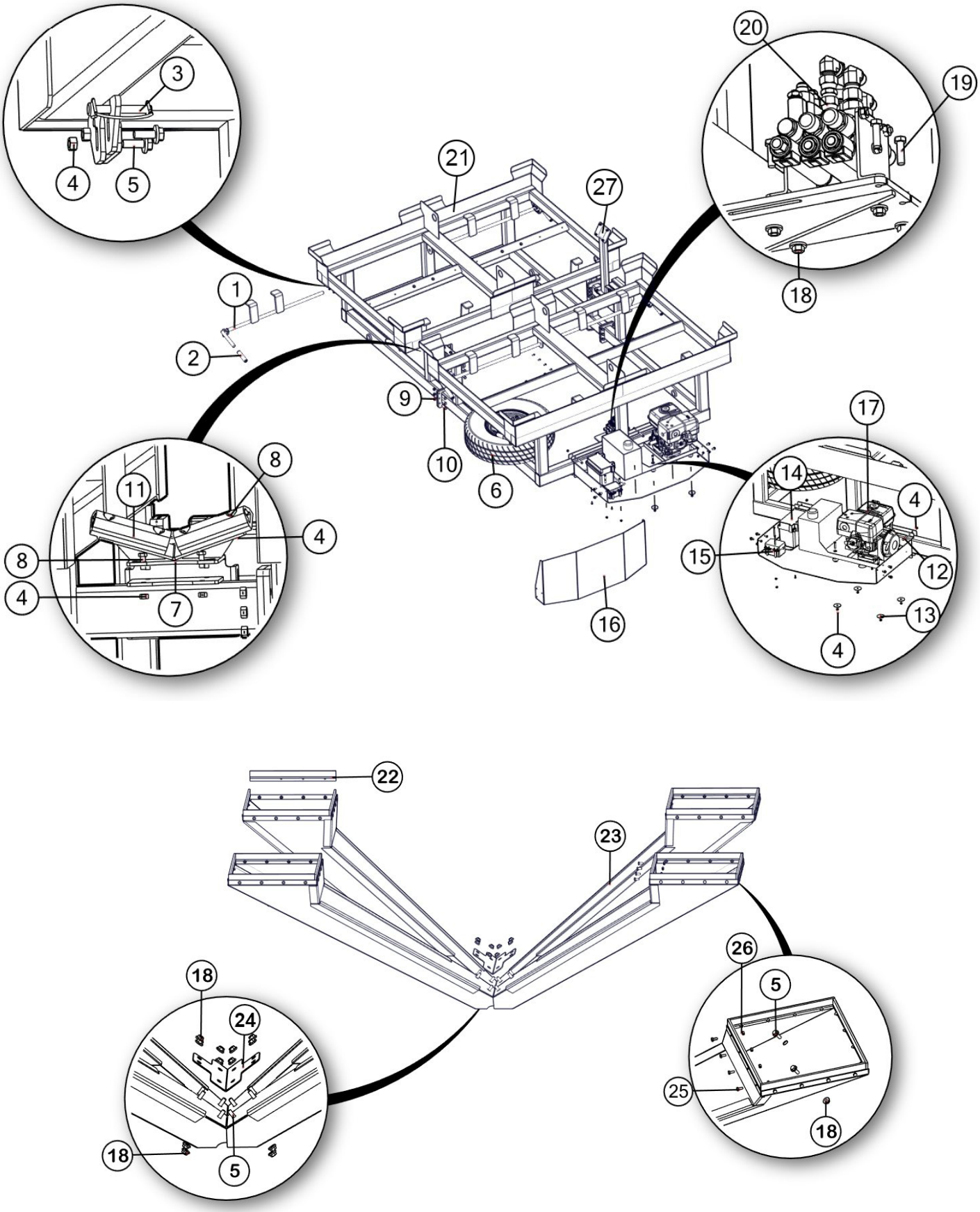




Chassis Parts (450 Pro Box)

#	Description	Part. No.
1	5/8"-11 x 2" Gr8 Z Hex Bolt	JM0001771
2	Titan-21,000lb 2.3125 Ball Coupling	JM0001893
3	5/8" Gr5 Z Centerlock Hex Nut	JM0002146
4	Breakaway Switch	JM0001843
5	Speed Pro Jack w/ Lynch Pin	JM0010191
6	Pro Box A-Frame Weldment	JM0018547
7A	Amber Round Light Assembly	JM0001908
7B	Amber Round Light	JM0001895
7C	Round Light Grommet	JM0001902
8	Front Driver Side Step Fender	JM0002339
9	7,000 Lb Axle with Electric Brakes	JM0001957
10	Front Passenger Side Step Fender	JM0002336
11	Fender Weldment	JM0005874
12	235-85-R16 8 Bolt Wheel & Tire	JM0016650
13	.562-18 Lugnut	JM0008525
14	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
15	3/8-16 x 3/4" Gr5 Z SF Hex Bolt	JM0001750
16	Rear Driver Side Step Fender	JM0002491
17	Rear Passenger Step Fender	JM0002490
18	Seed Tender Bumper	JM0020862
19	375ST Non-Scale Weldment	JM0002514
19	2-1/8" Diameter Weigh Bar	JM0002797
20A	Red Round Light Assembly	JM0001905
20B	Red Round Light	JM0001901
20C	Round Light Grommet	JM0001902
21A	Red Oval Brake Light Assembly	JM0001903
21B	Red Oval Brake Light	JM0007114
21C	Red Oval Brake Light Grommet	JM0001897
22	3/8"-16 x 1" Gr5 Z SF Hex Bolt	JM0002092
23	Gooseneck Weldment	JM0007079
24	Gooseneck Jack	JM0007078
25	5/8"-11 x 1-1/2" Gr5 Z Hex Bolt	JM0002103

Frame Weldment & Chutes (450 Pro Box)

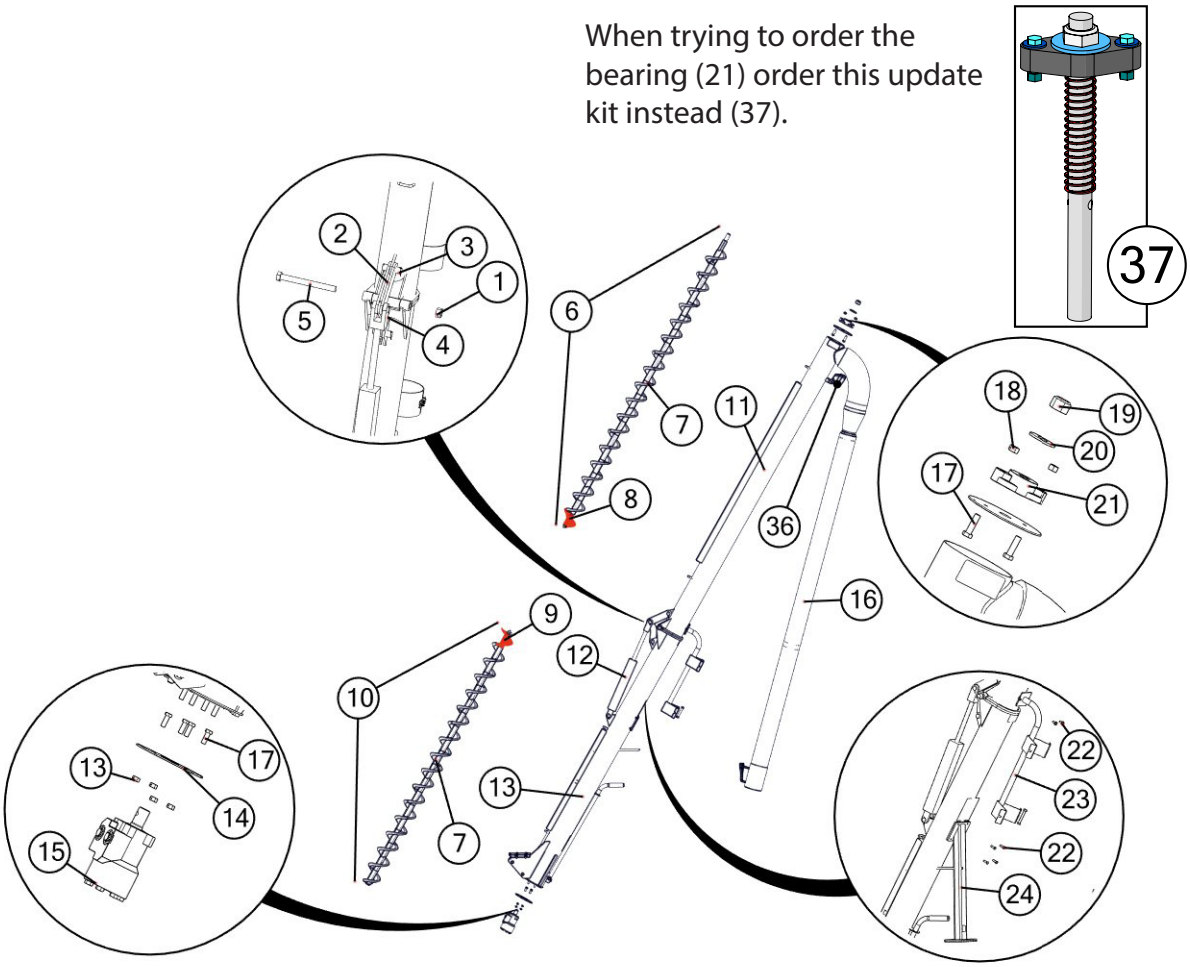


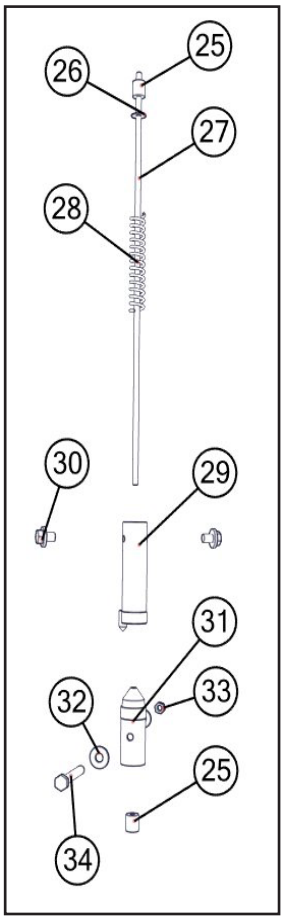
Frame Weldment & Chutes (450 Pro Box)

#	Description	Part.No.
1A	Right Lock Weldment	JM0020479
1B	Left Lock Weldment	JM0020480
2	Rubber Pipe Handle 1" ID Black	JM0024290
3	3/8" x 2-1/2" Z Round Wire Lynch Pin	JM0014929
4	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
5	3/8"-16 X 1" Gr5 Z SF Hex Bolt	JM0002092
6A	Spare Tire Assembly	JM0025359
6B	Tire Mount Square Bolt	JM0024203
6C	.562-18 Lugnut	JM0008525
7	Auger Rest Weldment	JM0027577
8	3/8"-16 X 1-1/2" Gr5 Z SF Hex Bolt	JM0001633
9	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511
10	1/2"-13 X 2" Gr8 Z Hex Bolt	JM0001620
11	6" x 2" Dock Bumper	JM0037644
12	3/8"-16 X 2-1/2" Gr5 Z Hex Bolt	JM0001647
13	1/2" ID x 2-1/8" OD Flat Washer - 1/8" Thick	JM0019081
14	Battery Box	JM0001846
15	Break Away Battery Box Assembly	JM0001833
16	Power Unit Guard	JM0000327
17	Hydraulic Power Unit	JM0003027
18	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
19	3/8"-16 X 1-1/4" Gr5 Z Hex Bolt	JM0016675
20	2 Spool Valve Body with Fittings	JM0010464
21	Frame Weldment	JM0020035
22	Molded Brush Seals	JM0027580
23	Chute Assembly	JM0022317
24	Center Bolt Plate	JM0022318
25	1/4"-20 X 5/8" Gr5 Z Hex Bolt	JM0001479
26	1/4"-20 Gr5 Z Centerlock Hex Nut	JM0001505
27	Auger Brace Weldment	JM0020565

Auger Assembly (250, 450 Pro Box)

When trying to order the bearing (21) order this update kit instead (37).



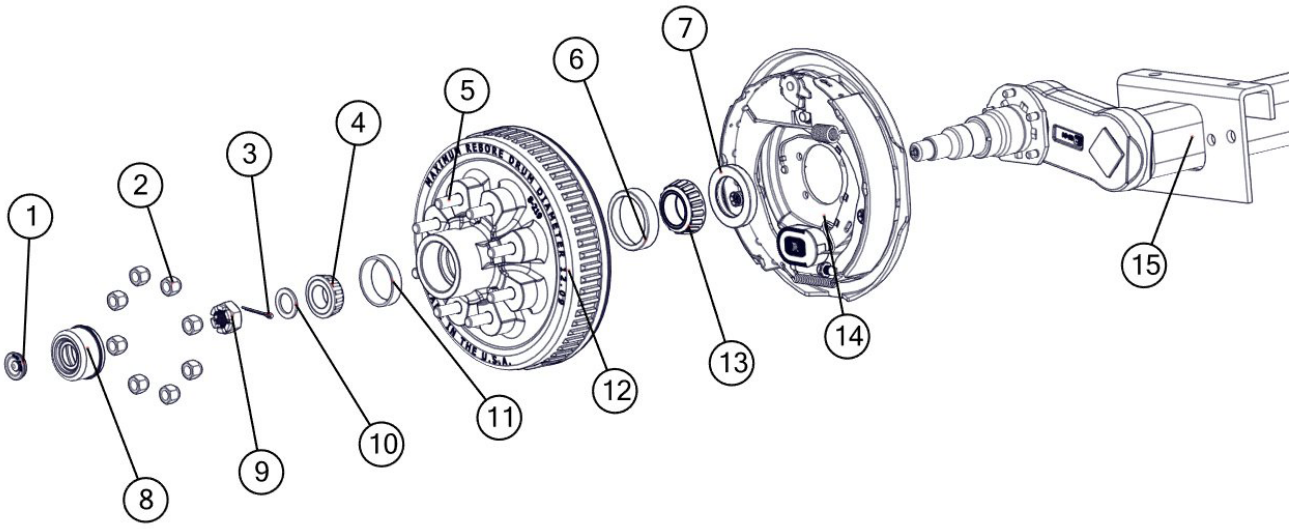


Pro-Box Auger Cable

#	Description	Part. No.
1	7/8"-9 Gr5 Z Centerlock Hex Nut	JM0002148
2	Upper Linkage Bar	JM0019805
3	1" x 3" Clevis Pin with Cotter Pins	JM0019407
4	Lower Linkage Bar	JM0016510
5	7/8"-9 X 9" Gr8 Z Hex Bolt	JM0024283
6	Probox Upper Auger Assembly.	JM0018344
7	6 Inch Cupped Flighting	JM0018339
8	6 Inch Cupped Flighting With Brace - Bottom of Top	JM0032529
9	6 Inch Cupped Flighting With Brace - Top of Bottom	JM0032530
10	Probox Lower Auger Assembly	JM0018343
11	Upper Tube Weldment	JM0018011
12	Cylinder 2" x 12"	JM0025341
13	Lower Tube Weldment	JM0025295
14	Auger Motor Bolt Plate	JM0018154
15	Hydraulic Motor	JM0010469
16	19'Three Stage Spout	JM0021785
17	3/8"-16 X 1-3/4" Gr5 Z Carriage Bolt	JM0002171
18	3/8"-16 Gr5 Z SF Hex Nut	JM0002152

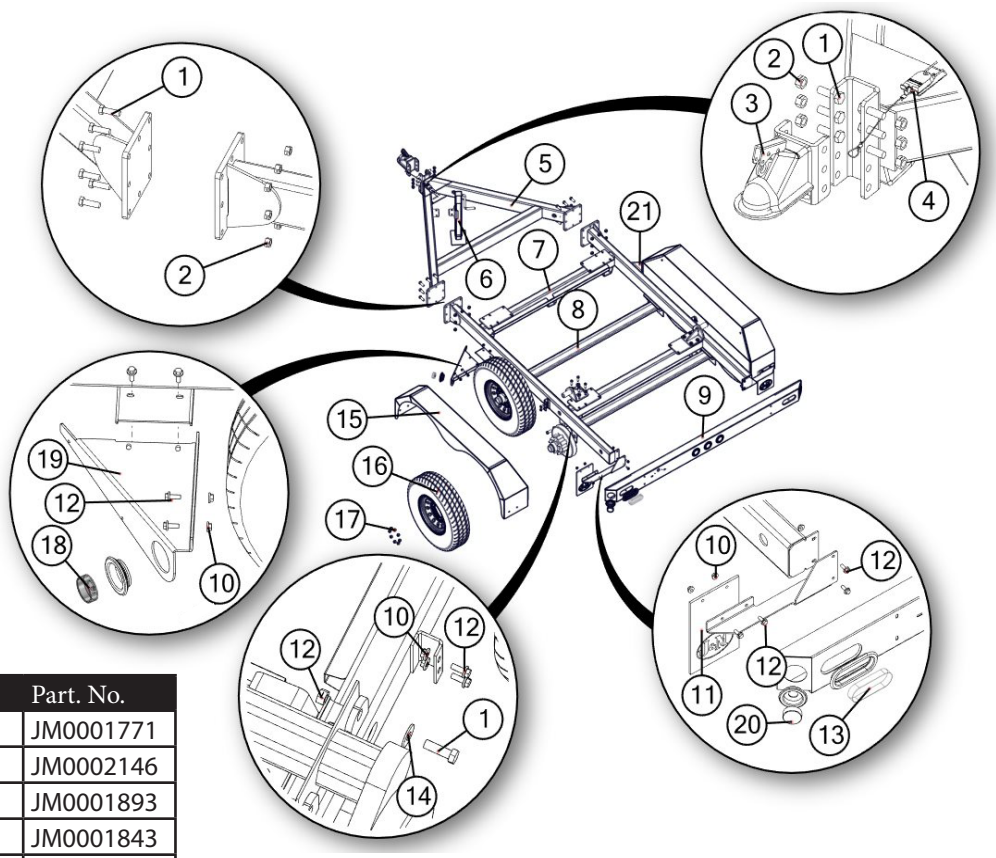
#	Description	Part. No.
19	1"-8 Gr5 Z Nylon Locking Hex Nut	JM0002161
20	1" USS Flat Washer	JM0003063
21	1" Shaft Bearing	JM0020794
22	3/8"-16 X 1" Gr5 Z SF Hex Bolt	JM0002092
23	Auger Down Spout Clamp	JM0020580
24	Auger Brace Wedlment	JM0020565
25	1/4" Aluminum Cable Stop	JM0040145
26	M6 Flat Washer	JM0019447
27	1/4" Dia. Cable	JM0040143
28	Spring	JM0018559
29	Bullet Nose Top	JM0040139
30	3/8"-16 x 1/2" Gr5 Z SF Hex Bolt	JM0040150
31	Bullet Nose Bottom	JM0040140
32	5/16" USS Flat Waher	JM0001742
33	5/16" Gr5 Z Centerlock Hex Nut	JM0002143
34	5/16"-18 x 2 1/2" Gr5 Z Hex Bolt	JM0028310
35	Pro-Box Auger Cable Assembly Complete	JM0040147
36	Field Light (LED) Assembly	JM0001881
37	Pro Box Upper Auger Shaft, Spring & Bearing Assembly	JM0080198

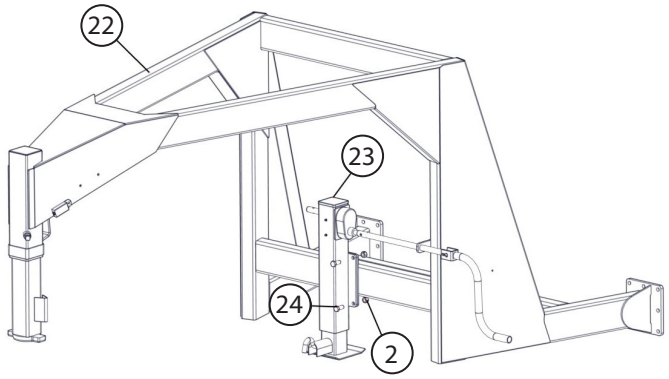
7,000 lb Axle (450 Pro Box)



#	Description	Part. No.
1	Rubber Plug for Dust Cap	JM0039538
2	9/16"-18 Lugnut	JM0008525
3	Cotter Pin 1/8" x 1-3/4"	JM0039545
4	14125A Roller Bearing	JM0039542
5	Stud 9/16"-18 x 2.81"	JM0020625
6	25520 Race	JM0018102
7	2-1/4" ID Grease Seal 10-36	JM0035951
8	Dust Cap for EZ Grease	JM0035957
9	Spindle Nut	JM0035956
10	Spindle Washer	JM0039543
11	Race 14276	JM0025077
12	Hub/Drum 7K	JM0035954
12	7K Hub/Drum w/ Races, Studs, and Lug Nuts	JM0039606
13	Tapered Bearing Cone 25580	JM0018104
14	Brake Drum Internal Parts Left Hand	JM0035973
14	Drum Brake Internal Parts Right Hand	JM0035974
15	7k Axle	JM0039596

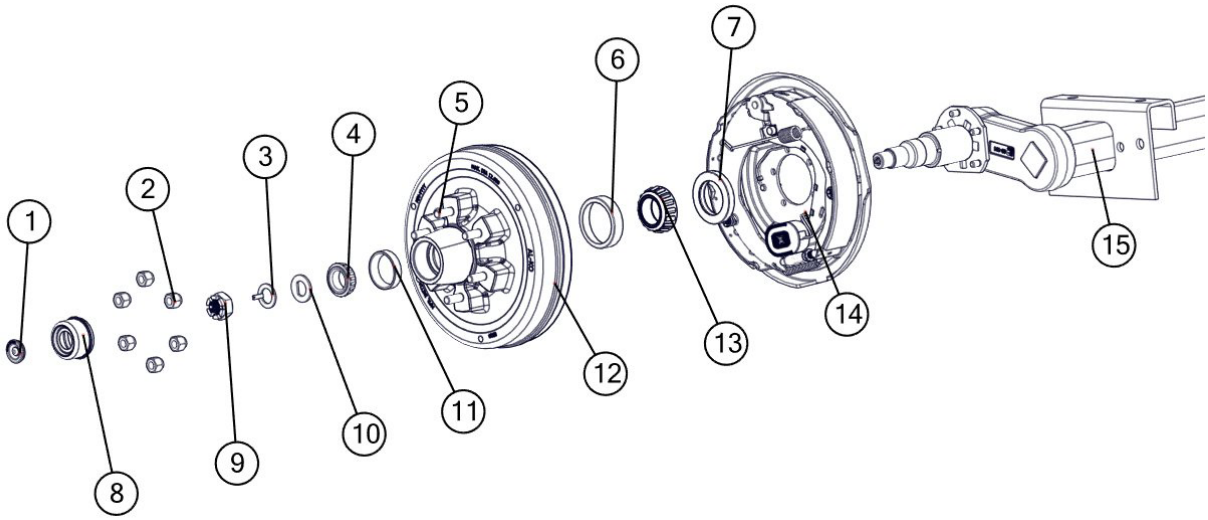
Chassis Parts (250 Pro Box)





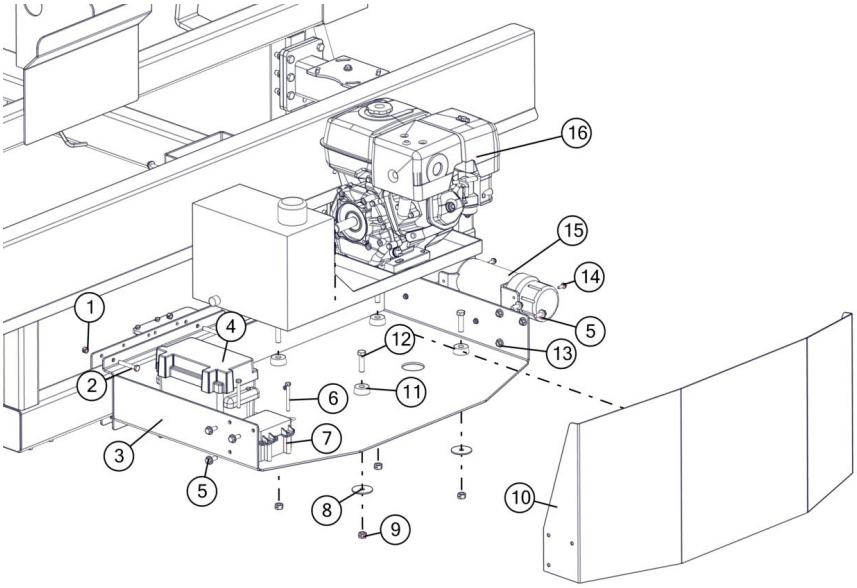
#	Description	Part. No.
1	5/8" x 2" Gr8 Z Hex Bolt	JM0001771
2	5/8" Gr5 Z Centerlock Hex Nut	JM0002146
3	Titan-21,000lb 2.3125 Ball Coupling	JM0001893
4	Breakaway Switch	JM0001843
5	A-Frame Weldment	JM0018547
6	Speed Pro Jack w/Lynch Pin	JM0010191
7	Chassis	JM0025032
8	5.2K Axle Lb Axle with Electric Brakes	JM0039549
9	Seed Tender Bumper	JM0020862
10	3/8" Gr5 Z SF Hex Nut	JM0002152
11	J&M Mud Flap	JM0001910
12	3/8" x 1" Gr5 Z SF Hex Bolt	JM0002092
13	Red Oval Brake Light Assembly	JM0001903
13A	Red Oval Brake Light	JM0007114
13B	Red Oval Brake Light Grommet	JM0001897
14	5/8" Flat Washer	JM0003073
15	Fender Weldment	JM0005874
16	235-85-R16 8 Bolt Wheel and Tire	JM0016650
17	.562-18 Lugnut	JM0008525
18	Round Amber Brake Light Assembly	JM0001908
18A	Round Amber Brake Light	JM0001895
18B	Round Amber Brake Light Grommet	JM0001902
19	Front Driver Side Step Fender	JM0002339
20A	Red Round Light Assembly	JM0001905
20B	Red Round Light	JM0001901
20C	Round Light Grommet	JM0001902
21	Front Passenger Side Step Fender	JM0002336
22	Gooseneck Weldment	JM0007079
23	Gooseneck Jack	JM0007078
24	5/8"-11 x 1-1/2" Gr5 Z Hex Bolt	JM0002103

5,200 lb Axle (250 Pro Box)



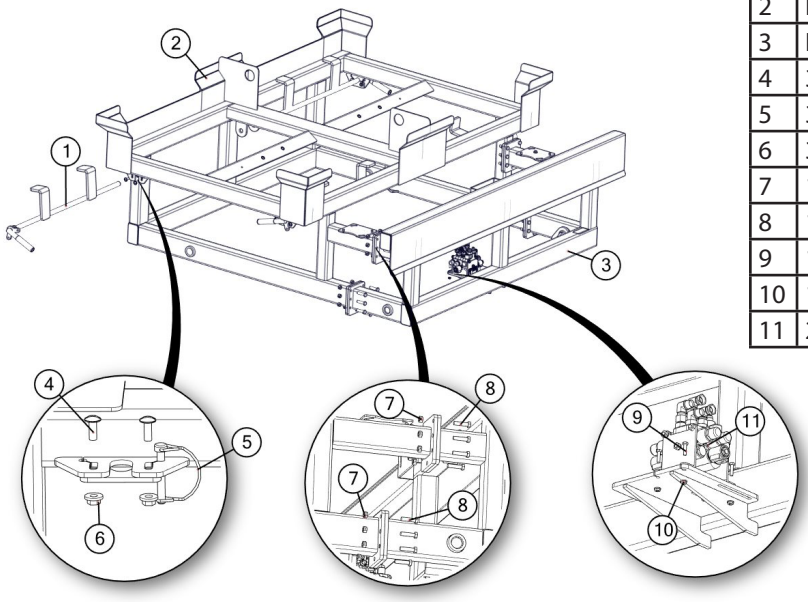
#	Description	Part. No.
1	Rubber Plug for Dust Cap	JM0039538
2	1/2"-20 60 Deg. Cone Nut	JM0003062
3	Tang Washer	JM0039589
4	Tapered Single - 15123 Cone	JM0019551
5	Stud 1/2"-20 x 2.7"	JM0039598
6	25520 Race	JM0018102
7	2-1/4" ID Grease Seal 10-36	JM0035951
8	Dust Cap for EZ Grease	JM0039577
9	Spindle Nut	JM0039590
10	D Washer	JM0039578
11	15245 Race	JM0019548
12	Hub/Drum For 5.2K Axle	JM0039573
12	Hub Drum with Studs and Races For 5.2K Axle	JM0039575
13	Tapered Bearing Cone 25580	JM0018104
14	Brake Drum Internal Parts Left Hand	JM0035973
14	Drum Brake Internal Parts Right Hand	JM0035974
15	5.2K Axle	JM0039549

Motor Mount (450 & 250 Pro Box)



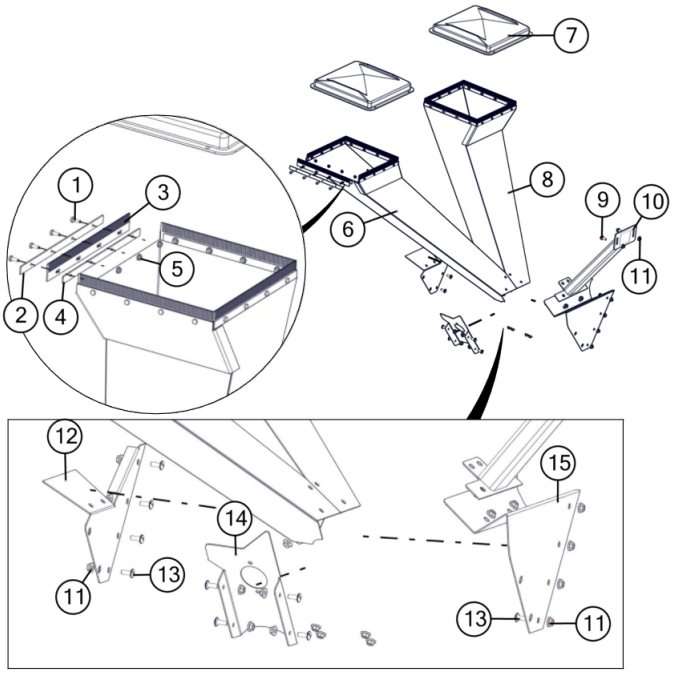
#	Description	Part. No.
1	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
2	3/8"-16 X 2-1/2" Gr5 Z Hex Bolt	JM0001647
3	Bolt on Motor Mount Plate	JM0020889
4	Battery Box	JM0001846
5	3/8"-16 X 1" Gr5 Z SF Hex Bolt	JM0002092
6	5/16-18 X 3" Gr5 Z Hex Bolt	JM0019359
7	Break Away Battery Box Assembly	JM0001833
8	1/2" Flat Washer	JM0019081
9	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511
10	Power Unit Guard	JM0000327
11	Neoprene Vibration Damping Mount	JM0001869
12	1/2"-13 X 2" Gr8 Z Hex Bolt	JM0001620
13	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
14	1/4"-20 X 3/4" Gr5 Z SF Hex Bolt	JM0001642
15	Manual Canister	JM0025266
16	Hydraulic Power Unit	JM0003207

Frame Weldment (250 Pro Box)



#	Description	Part. No.
1	Left Lock Weldment	JM0020480
1	Right Lock Weldment (Not Shown)	JM0020479
2	Rear Frame Weldment	JM0020035
3	Front Frame Weldment	JM0026192
4	3/8"-16 X 1" Gr5 Z Screwdriver Head Bolt	JM0002892
5	3/8" x 2-1/2" Z Round Wire Lynch Pin	JM0014929
6	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
7	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511
8	1/2"-13 X 2" Gr8 Z Hex Bolt	JM0001620
9	1/4"-20 X 1" Gr5 Z Hex Bolt	JM0002095
10	1/4"-20 Gr5 Z SF Hex Nut	JM0001630
11	2 Spool Valve Body with Fittings	JM0010464

Chutes (250 Pro Box)

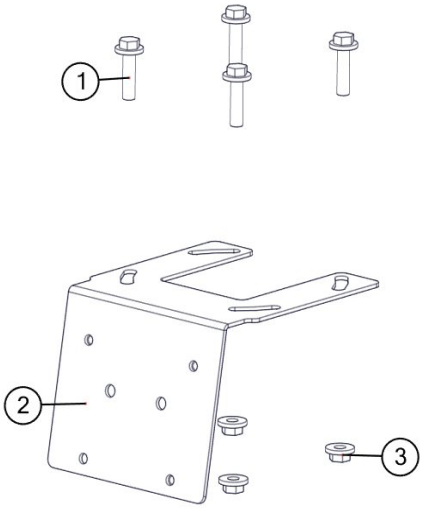


#	Description	Part. No.
1	1/4"-20 X 3/4" Gr5 Z Hex Bolt	JM0001507
2	Top Outside Ring Chute	JM0022311
3	Rubber Brush	JM0027580
4	Top Inside Ring Chute	JM0027579
5	1/4"-20 Gr5 Z SF Hex Nut	JM0001630
6	Left Chute Assembly	JM0022224
7	Plastic Cover	JM0025520
8	Right Chute Assembly	JM0022206
9	3/8"-16 X 1" Gr5 Z SF Hex Bolt	JM0002092
10	Lower Auger Brace	JM0027256
11	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
12	Hopper Side Panel	JM0022277
13	3/8"-16 X 1" Gr5 Z Screwdriver Head Bolt	JM0002892
14	Bolt on Hopper Cover	JM0026091
15	Hopper Support Side Panel	JM0028615

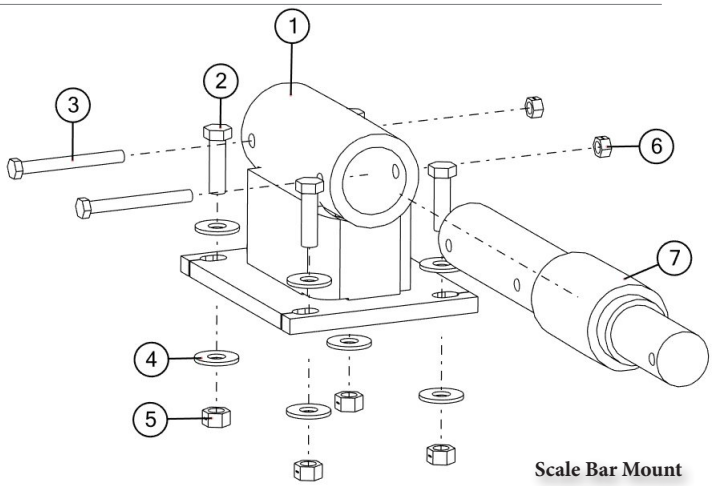
Scale Parts (250 and 450 Pro Box)

#	Description	Part. No.
1	3/8"-16 X 1.5 Gr5 Z SF Hex Bolt	JM0001633
2	Scale Mount Bracket	JM0025766
3	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
4	640 XL Display	JM0007293

640 XL Display

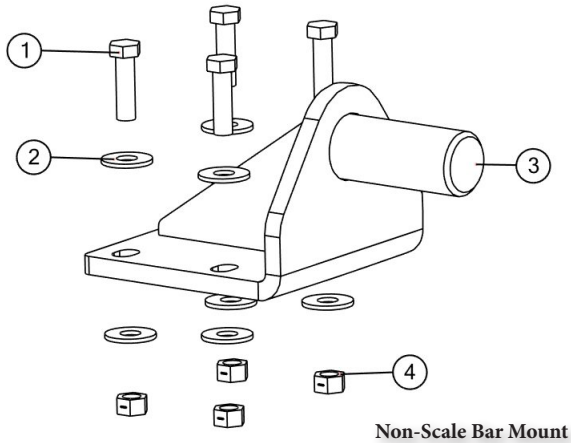


#	Description	Part. No.
1	Scale Mount Weldment	JM0009966
2	1/2"-13 X 1-3/4" Gr5 Z Hex Bolt	JM0002101
3	3/8"-16 x 3-1/2" Gr5 Z Hex Bolt	JM0001986
4	1/2" USS Flat Washer	JM0003082
5	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511
6	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
7	Avery Weigh-Tronix Weight Bar	JM0002797



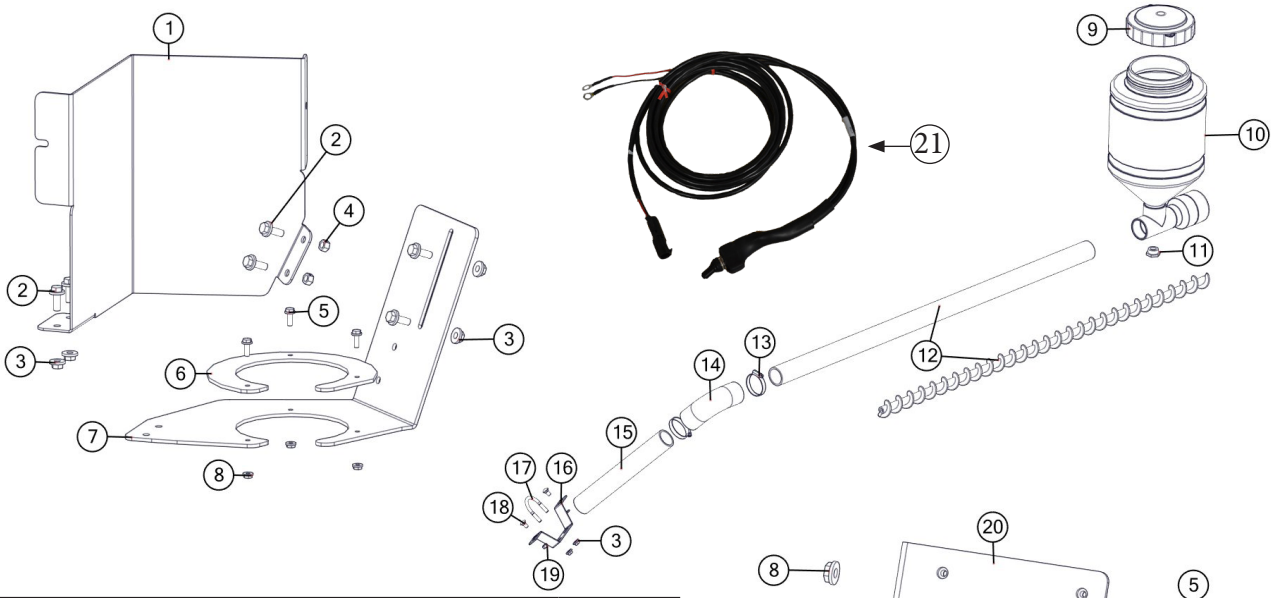
Scale Bar Mount

#	Description	Part. No.
1	1/2"-13 x 1-3/4" Gr5 Z Hex Bolt	JM0002101
2	1/2" USS Flat Washer	JM0003082
3	Non-Scale Weldment	JM0002514
4	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511



Non-Scale Bar Mount

Talc Applicator



#	Description	Part. No.
1	Tank Saddle	JM0029359
2	3/8"-16 x 1" Gr5 Z SF Hex Bolt	JM0002092
3	3/8"-16 Gr5 Z SF Hex Nut	JM0002152
4	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
5	1/4"-20 x 3/4" Gr5 Z SF Hex Bolt	JM0001642
6	Black UHMW	JM0029386
7	Talc Hanger Plate	JM0029084
8	1/4"-20 Gr5 Z SF Hex Nut	JM0001630
9	Lid	JM0018071
10	Talc Applicator Power Unit w/ Variable Speed Dial	JM0031238
10	Talc Applicator Power Unit (no dial)	JM0031246
11	Talc Hole Cap Cleanout Port	JM0030546
12	Pro Box Pipe & Auger Kit	JM0031259
	2" x 16" PVC	JM0025294
	18" Auger	JM0029765
12	275ST Pipe & Auger Kit	JM0031257
	2" x 44" PVC	JM0030522
	46" Auger	JM0031254
12	375ST Pipe & Auger Kit	JM0031256
	2" x 55" PVC	JM0030521
	57" Auger	JM0031253
13	Screw Clamp For Rubber Boot	JM0030547
14	Rubber Elbow	JM0030528
15	2 Inch PVC Pipe 16 Inch	JM0025294
16	Talc Tube U-Bolt Brace	JM0026471
17	3/8" Round U-Bolt	JM0000351
18	3/8"-16 x 3/4" Gr5 Z Carriage Bolt	JM0002172
19	3/8"-16 Gr5 Z Centerlock Hex Nut	JM0001512
20	Onbard Control Bracket	JM0029641
21	Toggle Switch	JM0032074
22	Onboard Switch Assembly/Harness without Variable Speed (2014 & Older)	JM0029926
22	Onboard Switch Assembly/Harness w/Variable Speed (2015 & Newer)	JM0031012
22	Onboard Switch Assembly/Harness Pro Box w/Variable Speed	JM0029221