**Bulk Seed Handling**

# SEED PRO® BULK BOX CARRIER
# MODEL 210

Beginning With Serial Number D64320100 & Up

Part No. 2008047

## Foreword

⚠ This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, “Right-Hand” (RH) and “Left-Hand” (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.

## Product Information

All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records. The serial number plate is located on the frame as shown below.

Purchase Date _____ Model _____Serial No. _____

Dealer _____ City _____

Dealer Contact _____ Phone _____


**IMPORTANT**

*The information, specifications, and illustrations in the manual are on the basis of information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.*

## Table Of Contents



# SECTION I
# Safety



# SECTION II
# Set Up



**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**
**FOR WORK LIGHT INFORMATION, REFER TO YOUR WORK LIGHT MANUAL.**

## Table Of Contents

# SECTION III
# Operation



**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**
**FOR WIRELESS REMOTE INFORMATION, PLEASE REFER TO YOUR WIRELESS REMOTE MANUAL.**

## Table Of Contents

# SECTION IV
# Maintenance

## Table Of Contents

# SECTION V
# Parts



**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**

## Notes

# SECTION I
# Safety

## General Hazard Information

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, “the best kind of a safety device is a careful operator.” We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.

**REMEMBER:**

**THINK SAFETY**

**A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!**

**SIGNAL WORDS**


**INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.**


**INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.**


**INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.**


*Is used for instruction on operating, adjusting, or servicing a machine.*

## Safety Decals

**WARNING** REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.


Part No. 95445


Part No. 97961


Part No. 901580


Part No. 95839


Part No. 98350


Part No. 901478


Part No. 9500710


Part No. 235161


Part No. 97961


Part No. 9500345


Part No. 95445


Part No. 98229


Part No. TA1-906109-0


Part No. 95445


Part No. 97048

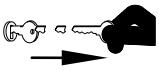

Part No. 902026


Part No. 95839

## Following Safety Instructions

- Read and understand this operator's manual before operating.

- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut towing vehicle engine and hydraulic power unit engine off and remove key before servicing the implement.



- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc., that may become entangled in moving parts.
- Do not allow anyone to ride on the implement. Make sure everyone is clear before operating machine or towing vehicle.

- Never enter a seed tender containing seed or grain. Flowing grain traps and suffocates victims in seconds.

## Before Servicing

- Avoid working under the unit; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked.

- Ensure that all applicable safety decals are installed and legible.
- To prevent personal injury or death, always ensure that there are people who remain outside the seed tender to assist the person working inside, and that all safe work place practices are followed. There is restricted mobility and limited exit paths when working inside the implement.
- Explosive separation of a tire and rim can cause serious injury or death. Only properly trained personnel should attempt to service a tire and wheel assembly.

## Before Operating

- Do not stand between the towing vehicle and implement during hitching.
- Always make certain everyone and everything is clear of the machine before beginning operation.
- Verify that all safety shields are in place and properly secured.
- Ensure that all applicable safety decals are installed and legible.

## During Operation

- Regulate speed to field conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Use extreme care when operating close to ditches, fences, or on hillsides.
- Do not leave towing vehicle or implement unattended with engine running.
- Carbon monoxide can cause severe nausea, fainting or death. Do not operate engine in closed or confined area.
- Explosive fuel can cause fires and severe burns. Stop engine before filling fuel tank.
- Hot parts can cause severe burns. Do not touch engine while operating or just after stopping.
- Explosive gas from battery can cause fires and severe acid burns. Charge battery only in a well ventilated area. Keep sources of ignition away.
- Seed being transported may contain seed treatment. Read and follow all requirements for personal protective equipment and first aid as outlined on seed tags.

## Before Transporting

- Secure transport chains to the towing vehicle before transporting. DO NOT transport without chains.
- Install transport locks before transporting.
- Check for proper functioning of all available transport lights. Make sure that all reflectors are clean and in place on machine.

## During Transport

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.
- Maximum speed of implement should never exceed 20 mph. Do not exceed 10 mph during off-highway travel.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.
- It is probable that this implement is taller, wider and longer than the towing vehicle. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

## Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See MAINTENANCE section of this manual for procedure to relieve pressure.

- High-pressure fluids can penetrate the skin and cause serious injury or death. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids.

- Hydraulic system must be purged of air before operating to prevent serious injury or death.

- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.

- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.

- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.

- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
  - End fittings damaged, displaced, or leaking.
  - Outer covering chafed/cut or wire reinforcing exposed.
  - Outer covering ballooning locally.
  - Evidence of kinking or crushing of the flexible part of a hose.

## Preparing for Emergencies

- Keep a first aid kit and properly rated fire extinguisher nearby.

- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.


## Wearing Protective Equipment

- Wear clothing and personal protective equipment appropriate for the job.

- Wear steel-toed shoes when operating.

- Wear hearing protection when exposed to loud noises.

- Do not wear additional hearing impairing devices such as radio headphones, etc.

# SECTION II
# Set Up



**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**
**FOR WORK LIGHT INFORMATION, REFER TO YOUR WORK LIGHT MANUAL.**

## Pre-Delivery Checklist

After the Seed Pro tender has been completely assembled, use the following checklist and inspect the seed tender. Check off each item as it is found satisfactory or after proper adjustment is made.

- ☐ Torque wheel nuts as specified in Maintenance section.
- ☐ Torque all axle mounting hardware to 120 ft.-lbs.
- ☐ Tires are inflated to specified air pressure.
- ☐ All grease fittings have been lubricated.
- ☐ Check to be sure all safety decals are correctly located and legible. Replace if damaged.
- ☐ Check to be sure all reflective decals are correctly located.
- ☐ Check belt alignment and tension.
- ☐ Check to be sure transport lights are working properly.
- ☐ Transport chains are properly installed and hardware is torqued to specification.
- ☐ Paint all parts scratched in shipment.
- ☐ For Seed Pro tenders equipped with a wireless remote option, cycle each function 10 times to ensure no air is present in hydraulic lines.

## General Set Up

**⚠ WARNING**

- **READ AND UNDERSTAND THE SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW THE SAFETY SECTION IN THIS MANUAL, IF NECESSARY.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **ENTANGLEMENT WITH MOVING PARTS CAN CAUSE SERIOUS INJURY OR DEATH. USE EXTREME CARE WHEN INSPECTING AND ADJUSTING BELT TRACKING. AVOID PERSONAL ATTIRE SUCH AS LOOSE FITTING CLOTHING, SHOESTRINGS, DRAWSTRINGS, PANTS CUFF, LONG HAIR, ETC., THAT MAY BECOME ENTANGLED IN MOVING PARTS.**
- **MOVING PARTS CAN CRUSH AND CUT. KEEP AWAY FROM MOVING PARTS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 7,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**

## General Set Up (continued)

**IMPORTANT**

- *The procedures for assembling this Seed Pro tender are intended for two or more people.*

NOTE: Unverferth Manufacturing has designed the transport lighting and marking kit to meet United States federal law and ASABE standards at the time of manufacture. Machine modifications, including additional features or changes to the intended configurations, may require updates to the lighting and marking as well.

Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

See federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Unverferth dealer for additional brackets, reflectors, or lights to meet your requirements.

This section contains instructions required for assembly of the Seed Pro tender.

For your safety, and the safety of others, use proper tools and equipment and always use safe working procedures. Refer to these instructions before starting any work on the machine.

For ease of assembly, install all hardware loosely until assembly is complete and then tighten according to Torque Chart in the MAINTENANCE Section of this manual.

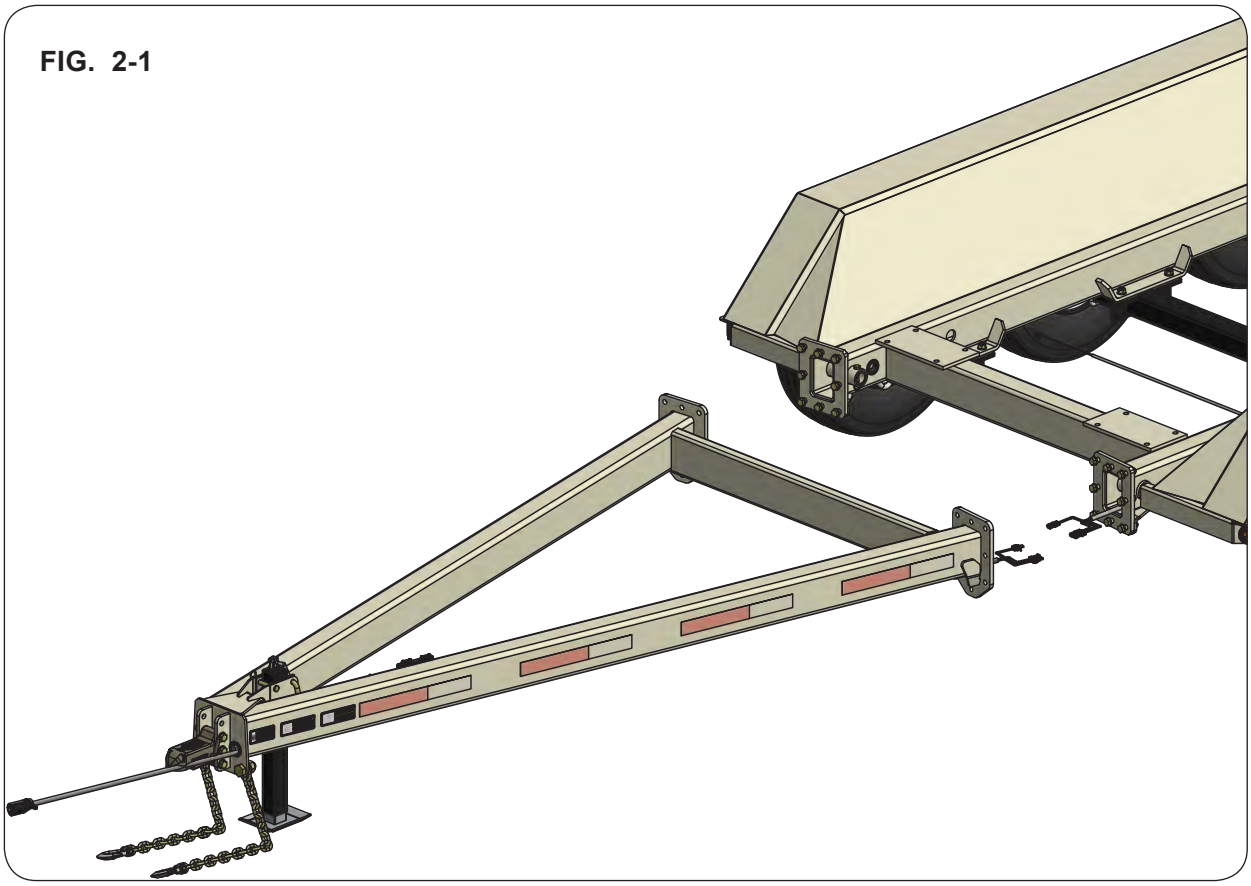
## Assemble Hitch to Undercarriage

1. If the Seed Pro tender was shipped with a hitch installed, torque 5/8”-11UNC retaining hardware to 120-135 ft.-lbs. If the Seed Pro tender was shipped without a hitch installed, proceed with the following. Place supports rated for minimum 1,000 lbs. capacity under front of undercarriage frame. Raise hitch using a safe lifting device with a minimum 1,000 lbs. capacity, and place the hitch in line with the undercarriage.

2. Connect the electrical connections, and push extra wire harness into tubes. Move hitch against undercarriage frame being careful not to pinch the wiring harness.

3. Bolt the hitch to undercarriage using 5/8”-11UNC x 2 1/4” (9390-125), 5/8” stainless steel flat washers (903108), and 5/8”-11UNC locknuts (9801). Torque 5/8”-11UNC hardware to 120-135 ft.-lbs.

FIG. 2-1



## Optional UM2520 Scale Package (#2009426TS)

**WARNING**

- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 1,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

1. Support one side of the upper platform using a safe lifting device rated at a minimum of 1,000 lbs.

2. Remove the 5/8" bolts holding the stationary bracket in place.

3. Remove the stationary bracket.

4. Create four scale sub-assemblies by assembling two left-hand scale brackets (29065TS) and two right-hand scale brackets (29065TS) with weigh bars (901173), 3/8"-16UNC x 3 1/2" capscrews (9390-065), and 3/8"-16UNC locknuts (9928).

**IMPORTANT**

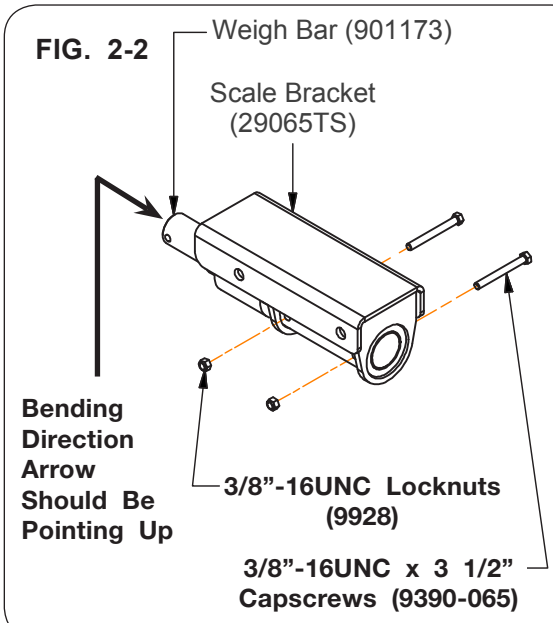
- *The weigh bars must be assembled so the bending direction arrow on the backside of the weigh bar is pointing up. The serial number decal on the spindle should be positioned on the top side of the weigh bar.*

5. Install all four weigh bars onto the unit making sure the arrow is pointing up. Reinstall the 5/8" bolts and locknuts, and tighten the bolts.

6. Remove the safe lifting device from the center plates on the upper platform.

7. Route the weigh bar cables along the inside edge of the box and fasten using the cable ties (9000106). Be certain cables will not get pinched or worn.

FIG. 2-2



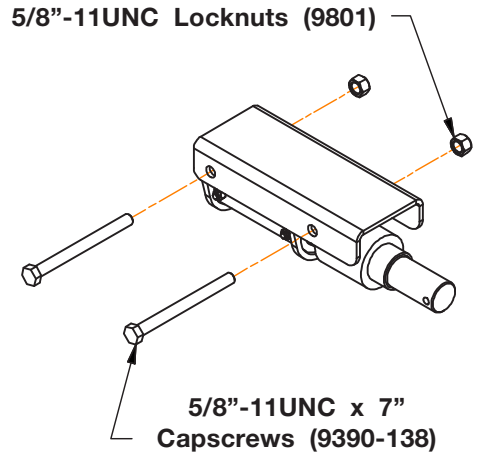



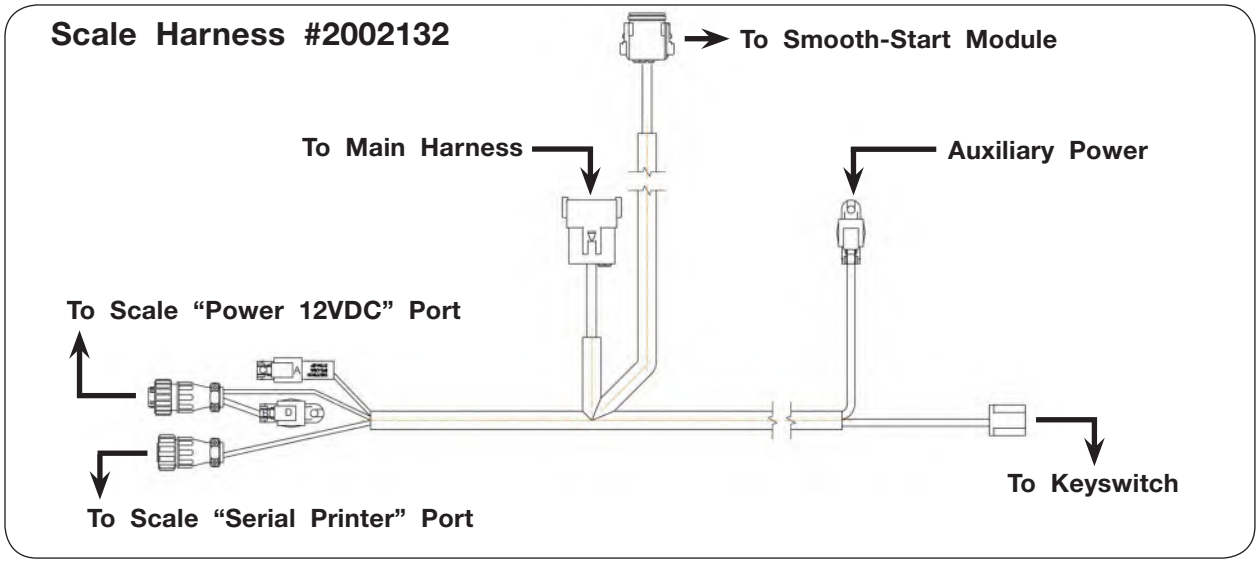

FIG. 2-3

## Optional UM2520 Scale Package (#2009426TS) (continued)

8. Route cables from weigh bars into opening at bottom of enclosure and connect to the scale indicator (9500374) ports. Fasten indicator into enclosure using two 1/4”-20UNC x 3/4” capscrews (9390-003) and locknuts (9928). Remove harness (2002130) from enclosure and replace with harness (2002132).


FIG. 2-4

## Optional UM2520 Scale Package (#2009426TS) (continued)




## Optional Hopper Cover (#901472)

FIG. 2-5

## Optional 6” Conveyor 10’x5” Dia. 3-Stage Telescopic Downspout (#22578)

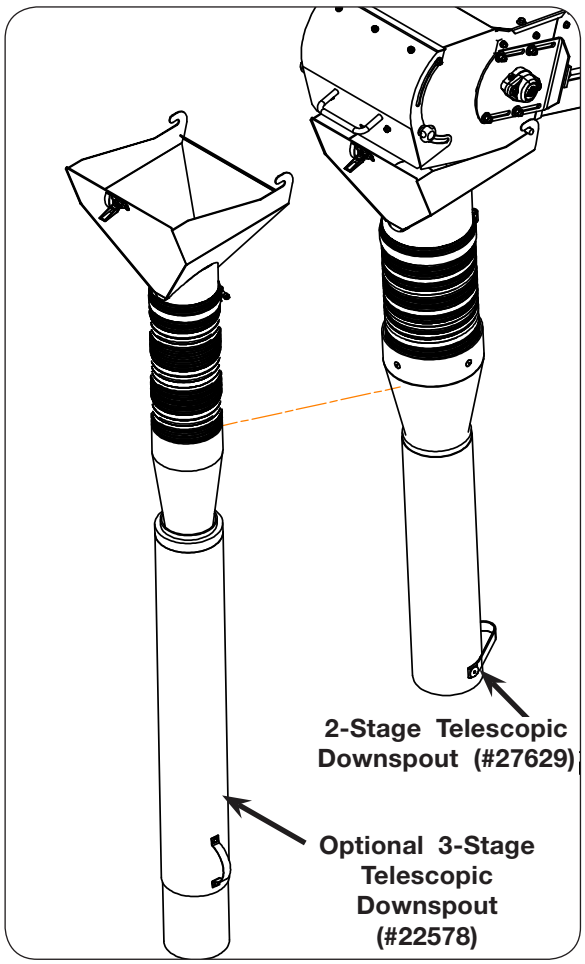
1. Lower the conveyor to approximately 4-5 feet off the ground.

2. Remove the 2-stage telescopic downspout (27629) from the conveyor.

3. Slip the optional 3-stage telescopic downspout (22578) with T-bolt clamp ring (98060) over the conveyor tube end and tighten.

NOTE: The 2-stage 4’ to 6’ telescoping downspout, as well as the optional 4’ flex spout are intended for bulk seed loading into large central-fill planter seed hoppers (35 to 100 bushels). They both have the full 8” diameter flex hose attachment at the discharge end of the conveyor and require no manual holding or maneuvering of the spout during operation.

The optional 3-stage 6’ to 10’ telescoping downspout is intended for manual filling of smaller individual planter seed hoppers, requiring increased operator holding, lifting, maneuvering of the long spout assembly while filling. The spout therefore is downsized with a metal adapter for the smaller 6” flex hose and smaller diameter spout for more manageable handling of the spout. The operator is encouraged to slow the engine and conveyor speed for proper operation.



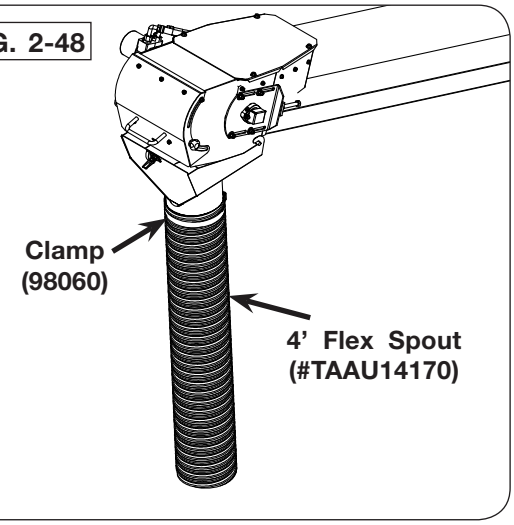

## 4’ Flex Spout for 6” Conveyor (#TAAU14170)

1. Park the empty Seed Pro on a firm, level surface. Block the wheels on the machine to keep it from moving. Set the towing vehicle’s parking brake. Lower the conveyor to approximately 4-5 feet off the ground, shut off the engine and remove the ignition key.

2. Remove the T-bolt clamp ring (98060) and spout from the conveyor.

3. Slip the 4’ flex spout over the conveyor tube end and tighten with T-bolt clamp ring (98060).

FIG. 2-48



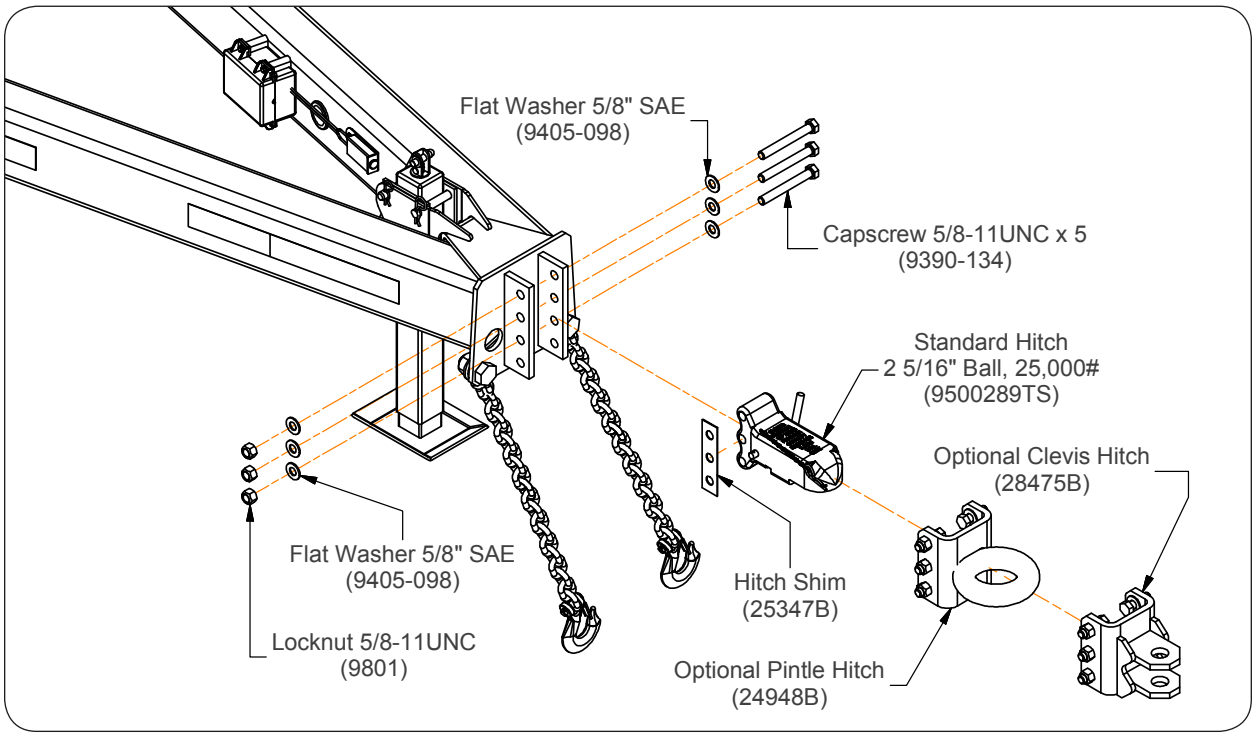
## Optional 2-Function Wireless Remote Control Pkg (#2008026)

**IMPORTANT**

- *See manual #2008027 for complete set up instructions.*

## Optional Hitches, Pintle Hitch (#24948B) & Clevis Hitch (#28475B)

1. Remove the hardware, shims, and hitch.
2. Attach optional hitch using the hardware and shims removed in step #1.
3. Torque hardware according to “Torque Chart” in MAINTENANCE section.



## Optional AG Decal Package Placement

1. Center and attach the SMV Emblem (95730) to the rear of the unit 1” from the frame. (FIG. 2-20)

2. Attach the SIS decal (9008714) to the rear of the unit 9 3/4” from the bottom of the SMV Emblem (95730). (FIG. 2-20)

3. Attach the red reflector (9003126) 13” from the right-hand side of the bumper. (FIG. 2-20)

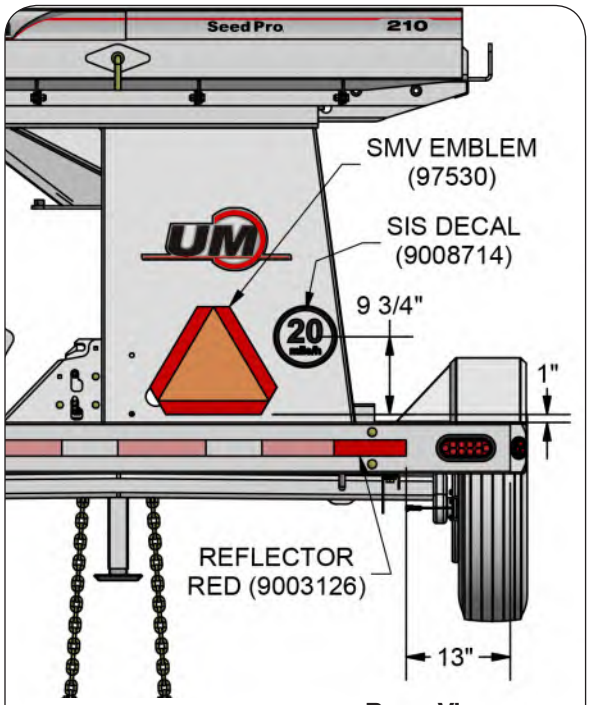



FIG. 2-20 Rear View

4. Attach the SIS decal (9008714) to the front of the unit 31 3/4” from the frame and 5 3/4” from the side of the panel as shown in FIG. 2-21.

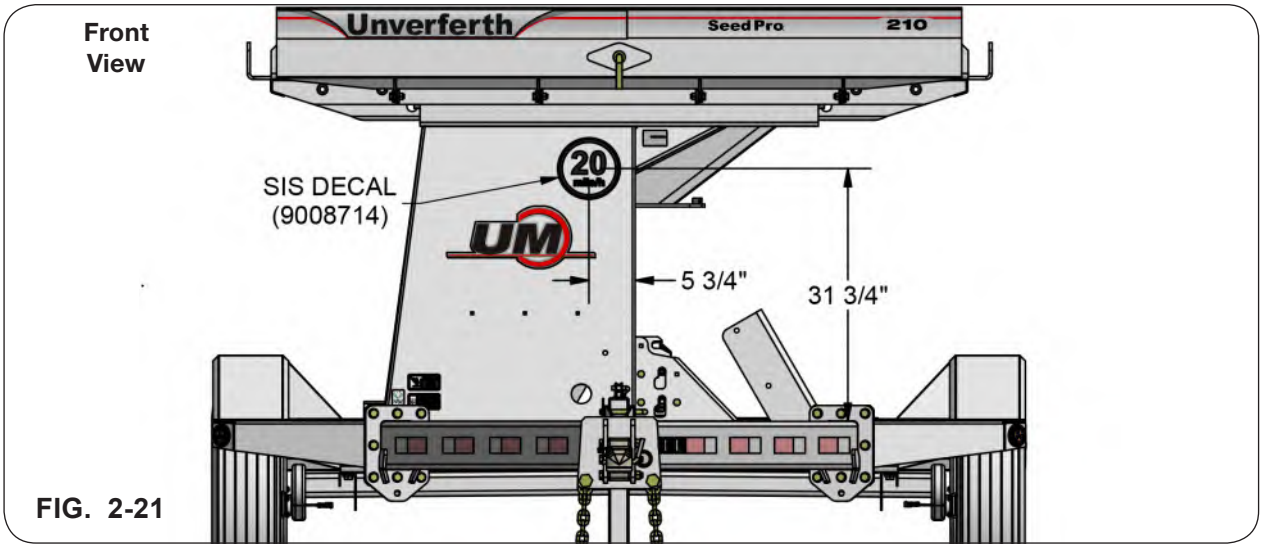



FIG. 2-21

## Optional AG Decal Package Placement (continued)

5. Place the amber reflector (9003127) 2” down on the frame on the right-hand side of the unit. (FIG. 2-22)

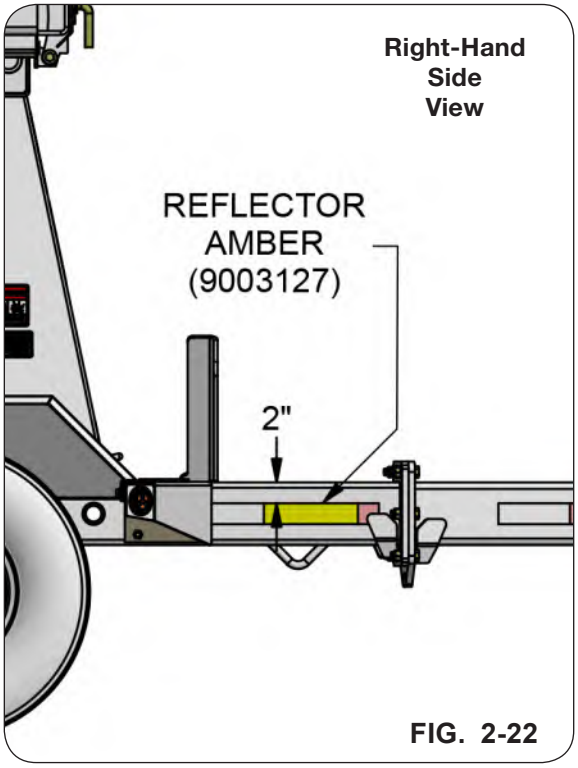



FIG. 2-22

6. Place the amber reflector (9003127) 2” down on the frame on the left-hand side of the unit. (FIG. 2-23)

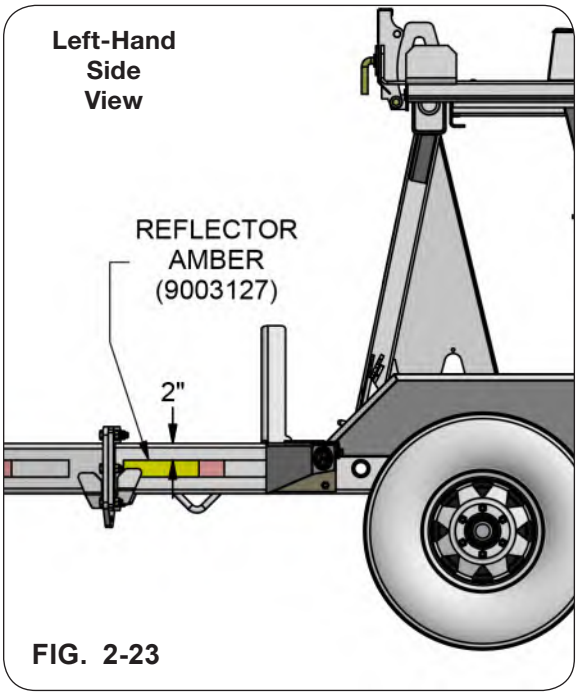



FIG. 2-23

# SECTION III
# Operation



**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**
**FOR WIRELESS REMOTE INFORMATION, PLEASE REFER TO YOUR WIRELESS REMOTE MANUAL.**

## Preparing Towing Vehicle

Before operating implement, refer to towing vehicle's operator's manual for information concerning safe methods of operation, hitch capacities, hitch adjustments, tire inflation, and undercarriage braking operation.

Vehicle must be equipped with proper electric undercarriage braking components. Check vehicle brakes and transport lights. Make sure they are in proper working order.

Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

See federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Unverferth dealer for additional brackets, reflectors, or lights to meet your requirements.

**IMPORTANT**

- *This implement is equipped with LED lights. The towing vehicle may require a flasher upgrade for lights to function properly. For flasher upgrade, please see towing vehicle manufacturer for assistance.*

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

Estimated weights of the fully loaded Seed Pro tender are:

**Model 210**

- Gross Vehicle Weight Rating is 8,500 lbs.
- Loaded tongue weight is 700 lbs.

These are estimates. The loaded tongue weight will vary greatly based on the height of the hitch, and the variation in terrain that implement is being pulled across.

Towing vehicle hitch – ball or pintle hook, must be heavy enough to carry the load of the Seed Pro tender.

# Preparing Implement

## Hydraulic System

Check routing of all hydraulic hoses. Hoses should not be kinked, twisted, or rubbing against sharp edges.

Check hoses and fittings for hydraulic leaks. Tighten and/or repair or replace as required. Refer to "Torque Chart" in MAINTENANCE section.

## Lubrication

Lubricate the implement as outlined in the MAINTENANCE SECTION of this manual.

Refer to this operator's manual for proper fluid levels in engine.

## Tires/Wheels

**⚠ CAUTION**

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN MAINTENANCE SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Check tire pressures and maintain at recommended values listed in the MAINTENANCE section of this manual. Check wheel nuts/bolts torque as specified in the MAINTENANCE section.

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Tire manufacturers' phone numbers and web sites are listed in the MAINTENANCE Section of this manual for your convenience.

## Connecting to Towing Vehicle

**⚠ WARNING**

- **CRUSHING CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT STAND BETWEEN THE TOWING VEHICLE AND IMPLEMENT WHEN HITCHING. ALWAYS ENGAGE THE PARKING BRAKE AND STOP THE ENGINE BEFORE INSERTING THE HITCH PINS OR SECURING THE LATCHES.**

The Seed Pro undercarriage is designed to be connected to a towing vehicle utilizing either the pintle hitch, clevis hitch or a 2 5/16" ball hitch.

Back the towing vehicle up to the undercarriage and align the vehicle's ball or pintle hook with the coupler or ring on the undercarriage. Lower jack to set undercarriage down on ball or pintle hook. Latch coupler so the connection is secure. Pivot jack to transport position and pin in place.

Connect electrical plug from undercarriage to towing vehicle. Check routing of the electrical cord to be certain it is long enough to pivot when turning, but not too long to touch or rub the ground during transport.

Connect undercarriage brake breakaway cable to towing vehicle. Do not connect this directly to hitch. It needs to be connected in a place that will still be attached, even if the ball or pintle coupler fails.

## Transport Chains

**⚠ CAUTION**

- **ALWAYS USE TRANSPORT CHAINS WHEN TRANSPORTING IMPLEMENTS. FAILURE TO USE A TRANSPORT CHAIN COULD CAUSE PERSONAL INJURY OR DAMAGE IF IMPLEMENTS BECOMES DISENGAGED.**

- **REPLACE TRANSPORT CHAIN IF ANY LINK OR END FITTING IS BROKEN, STRETCHED OR DAMAGED. DO NOT WELD THE TRANSPORT CHAIN.**

Transport chains should have a minimum rating equal to the gross weight of implement and all attachments. Allow no more slack in chains than necessary to permit turning.

Cross chains when connecting as shown in photo.

## Transporting

**DANGER**

- **ELECTROCUTION WILL CAUSE SERIOUS INJURY OR DEATH. ELECTROCUTION CAN OCCUR WITHOUT DIRECT CONTACT. KEEP AWAY FROM ALL UTILITY LINES AND DEVICES.**

**WARNING**

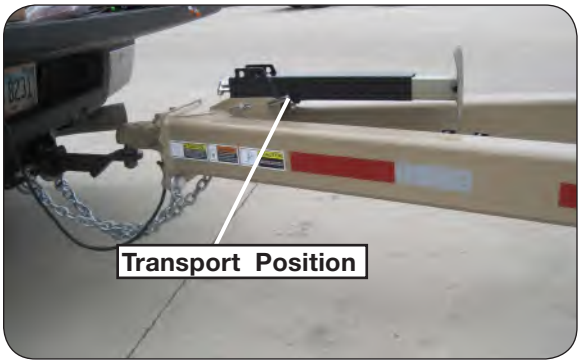
- **ALWAYS TRAVEL AT A SPEED THAT PERMITS COMPLETE CONTROL OF TOWING VEHICLE AND IMPLEMENT.**

**CAUTION**

- **USE APPROVED ACCESSORY LIGHTS AND REFLECTORS WHEN TRANSPORTING AT NIGHT, DURING PERIODS OF POOR VISIBILITY, AND AS REQUIRED BY ALL LAWS.**

**IMPORTANT**

- *Before seed tender is transported, be sure the jack stand is in the 'Transport Position'.*
- *Conveyor must be latched in the unloading position. The pivoting arm must be latched in the transport position with klik pin installed before moving Seed Pro tender. Refer to photo on following page.*
- *This implement is equipped with LED lights. The towing vehicle may require a flasher upgrade for lights to function properly. For flasher upgrade, please see towing vehicle manufacturer for assistance.*



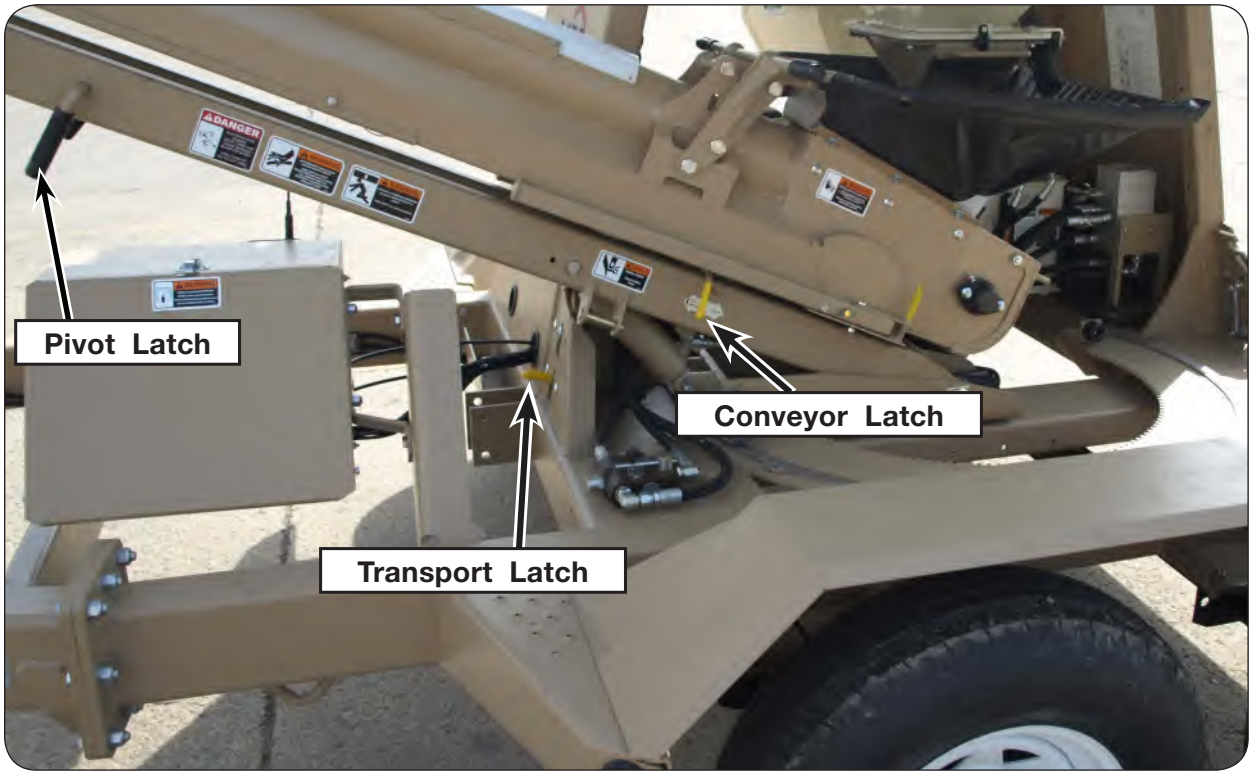
## Transporting (continued)

When transporting on public roads, the conveyor needs to be latched in the forward position, extending over the tongue of the undercarriage. Transporting implement with conveyor latched in the rearward position does not comply with lighting and conspicuity marking requirements.

The center of gravity on the seed tender is higher than a typical undercarriage. Use extreme caution when making turns and entering/exiting fields.

Comply with all state and local laws governing highway safety and regulation when moving machinery on public roads.

Be sure reflectors and lights are in place and clearly visible to approaching traffic.



## Hydraulic Power Unit Operation

**⚠ WARNING**

- **EXPLOSIVE FUEL CAN CAUSE FIRES AND SEVERE BURNS. STOP ENGINE BEFORE FILLING FUEL TANK.**

- **CARBON MONOXIDE CAN CAUSE SEVERE NAUSEA, FAINTING OR DEATH. DO NOT OPERATE ENGINE IN A CLOSED OR CONFINED AREA.**

- **HOT PARTS CAN CAUSE SEVERE BURNS. DO NOT TOUCH ENGINE WHILE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **EXPLOSIVE GAS FROM BATTERY CAN CAUSE FIRES AND SEVERE ACID BURNS. CHARGE BATTERY ONLY IN A WELL VENTILATED AREA. KEEP SOURCES OF IGNITION AWAY.**

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

- **OPERATION OF THIS EQUIPMENT MAY CREATE SPARKS THAT CAN START FIRES AROUND DRY VEGETATION. A SPARK ARRESTOR MAY BE REQUIRED. THE OPERATOR SHOULD CONTACT LOCAL FIRE AGENCIES FOR LAWS OR REGULATIONS RELATING TO FIRE PREVENTION REQUIREMENTS. THE SPARK ARRESTOR MUST BE PURCHASED SEPARATELY AND CAN BE FOUND IN THE PARTS SECTION NEAR THE END OF THIS MANUAL.**

## Hydraulic Power Unit Operation (continued)

**IMPORTANT**

- *Make certain hoses are all connected, and everyone is clear of conveyor before starting engine.*
- *Conveyor must be turned off before starting engine. Starting engine with conveyor turned on will result in hard starting, or failure to start.*
- *When engine is not in use, turn fuel lever to the* **<OFF>** *position. Leaving the fuel valve on could cause carburetor flooding, fuel in crankcase, or fuel leakage. See photo above.*


NOTE: Installation instructions for the spark arrestor can be found in the Honda engine manual.

### Before Starting Engine

Inspect that all fittings and hardware are in place and secure. Check for any potential hydraulic leaks. Check fluid levels in engine and sight gauge on reservoir. Be sure all valves are switched to neutral position.

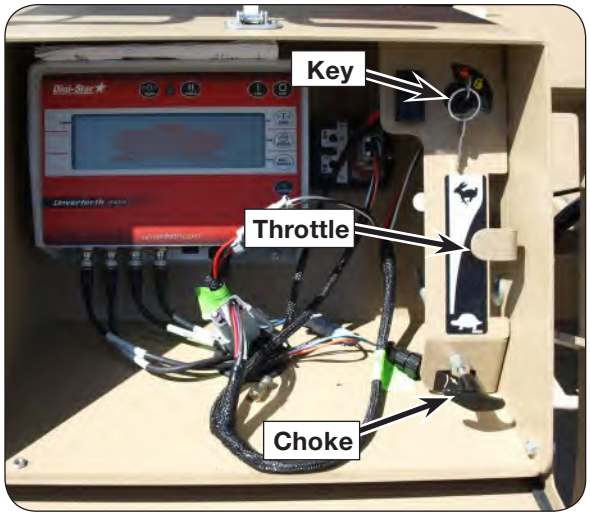
## Hydraulic Power Unit Operation (continued)

### Starting Engine

1. Turn fuel shut-off valve to <ON> position.

2. Apply choke.

3. **Wired Two-Function Switch:**
   Turn key to start engine.
   **Remote Two-Function Switch:**
   Turn key to start the engine. Pull the red emergency stop button out on the 2-Function remote to enable remote functions.




4. Once running, turn choke off and increase throttle speed.

In extremely cold weather, it is best to allow engine and hydraulics to warm up before operating at full throttle speed.

NOTE: If hydraulic leaks become apparent, turn engine **<OFF>** immediately and take appropriate actions.

See Engine operator's manual for more detailed information on engine operation.

### Adjusting Hydraulic Pressure Relief Valve

**⚠ WARNING**

- **FAILURE TO REPLACE THE CAP ON THE RELIEF VALVE BEFORE STARTING THE ENGINE WILL CAUSE OIL TO ESCAPE FROM THE RELIEF VALVE CARTRIDGE.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

***IMPORTANT***

- *It will be necessary to install a pressure gauge into the hydraulic system to accurately adjust the relief valve.*

## Hydraulic Power Unit Operation (continued)

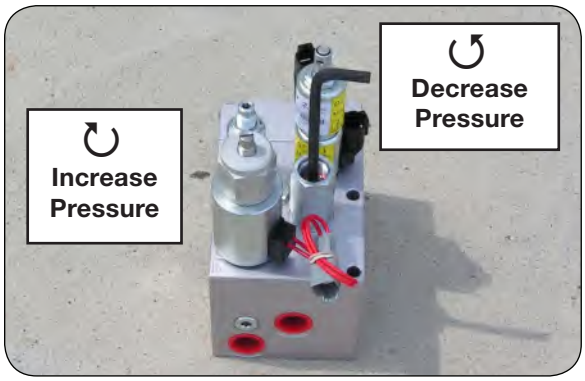
A. The Seed Pro box carrier has an adjustable relief valve on the direction control valve which can be adjusted for optimum operation. It is pre-set at the factory to by-pass the system once the hydraulic fluid pressure exceeds 1800 psi. This is the optimum setting. Adjusting the relief to higher settings may give unsatisfactory results.

**IMPORTANT**

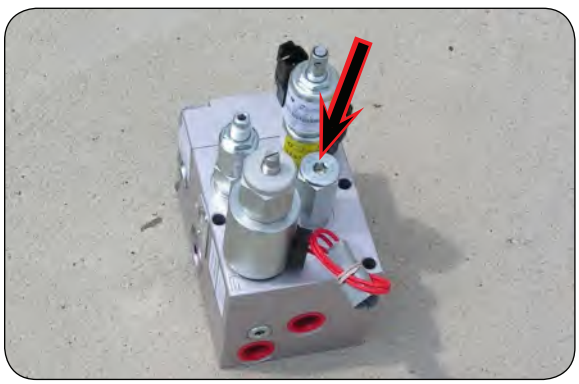
- *This Seed Pro can be adjusted to provide system pressures from 1,000 PSI up to 2,500 PSI. When adjusting the relief to allow the system to exceed 1,800 PSI, the engine will tend to bog down due to the load and in high load applications, may cause the engine to stall.*

B. Remove the cap from the relief valve on the directional control valve with an allen wrench.

C. To increase the pressure, turn the wrench clockwise.
To decrease the pressure, turn the wrench counter-clockwise.




D. Replace the cap on the relief valve and tighten.



## Conveyor Belt Electronic Speed Control

The smooth-start module speed control is simply two push buttons one to increase the conveyor speed and one to decrease the conveyor speed. Each time a button is pressed the conveyor speed changes by 10%. The speed can be varied from 20% to 100% The speed is shown by a series of LEDs, the LEDs indicate 10% steps by flashing and 20% increments by being on continuous.

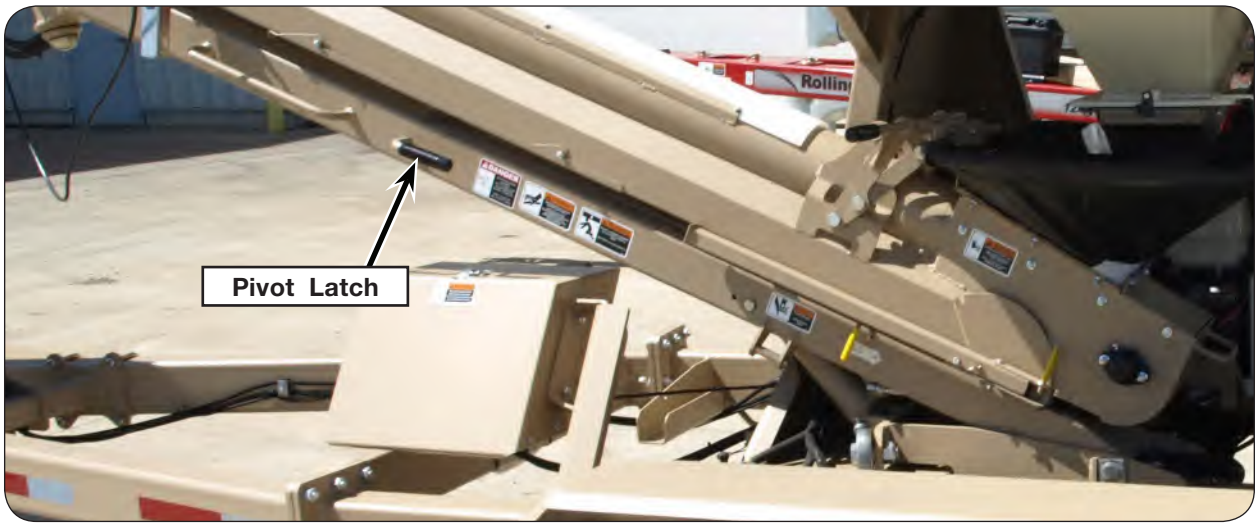
## Pivoting Conveyor Side-To-Side

Unlatch the conveyor arm by pressing down and sliding the latch into the unlocked position. Turn the pivot latch handle down and pull the conveyor out away from the box to pivot.

**IMPORTANT**

- *Do not raise the conveyor arm until it has been moved out of the latch position.*






Conveyor pivot can be left to swing freely, or it can be latched in place at various points along the track.

**⚠ CAUTION**

- **WHEN THE SEED TENDER IS PARKED ON AN INCLINE, THE CONVEYOR MAY PIVOT AS SOON AS THE LATCH IS RELEASED. INADVERTENT MOVEMENT OF THE CONVEYOR MAY CAUSE PERSONAL INJURY.**

## Raising and Lowering Conveyor

Conveyor height is adjusted by a switch either on the wired pendant, or the remote control. This switch activates the solenoid on the spool valve to raise or lower the conveyor.

**IMPORTANT**

- *Always swing the conveyor out from the transport position before raising the conveyor.*

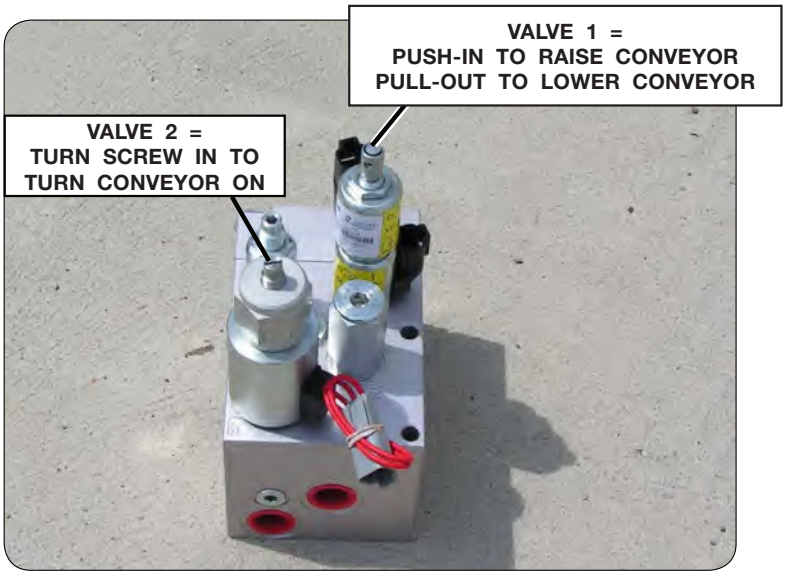
Activate switch to raise or lower conveyor to desired height. A check valve in the system requires hydraulic pressure for both raising and lowering the conveyor.

## Manual Control Of Conveyor

Should the wired switch or remote control not work to operate the conveyor, use the override buttons on the valve for operation. These are the knurled buttons located on top of the solenoids. The operations are performed by either pushing in the button and holding in place or pulling the button up and holding in place.

Valve 1 = By pushing this button in and holding in position, it will raise the conveyor. Pull this button up and hold in position, to lower the conveyor.

Valve 2 = To override, turn screw clockwise to turn conveyor on. To return to normal valve function, turn screw counterclockwise until it stops.




NOTE: To pull-out on Valve 1, push in on the button and pull up on the knurled sleeve.

## Pull Start Engine

Should the engine fail to start due to a weak battery, it is possible to pull start the engine. If the battery voltage is extremely low the ignition system will need to be bypassed to be able to pull start the engine. This procedure includes:

1. Flip the override switch to the “pull start” position.
2. Pull the choke and then pull start the engine, open the choke as the engine warms.
3. Once the engine is running, move the keyswitch to the on position and flip the override switch back to “key switch” position.

## Loading Boxes Onto Seed Pro Box Carrier

1. Remove covers from the chute.

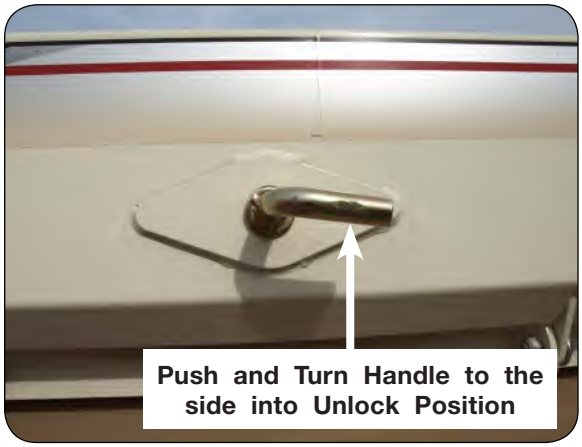


2. Locate covers in storage position in front of the front standard, securing with provided bungee cord.

## Loading Boxes Onto Seed Pro Box Carrier (continued)

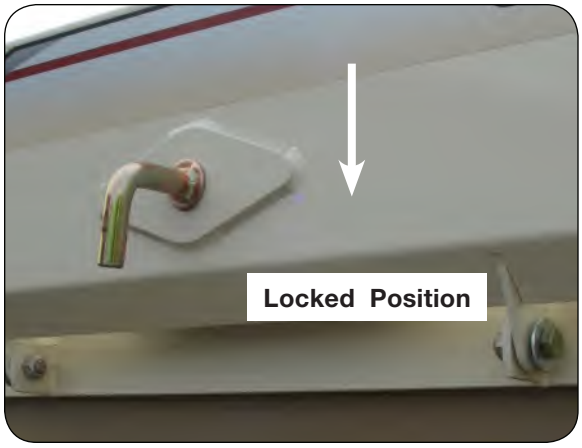
3. Push and turn handle to the side to unlock all box hold downs.

4. Lift boxes into position on platform.





5. With boxes in position, push and turn handle down to lock all box hold downs.



## Filling Planter or Drill

Position the seed tender next to planter so conveyor discharge will be over planter box. Start engine on hydraulic power unit and increase throttle speed. Raise conveyor to desired discharge height, and pivot to location over planter. Place spout over planter box. Open door(s) on seed tender box to begin flow of seed. Turn on conveyor by pressing conveyor on/off switch.

Fill box to desired level and turn conveyor off. Repeat process until each box/hopper is filled by pressing conveyor on/off button again. Adjusting engine speed on the hydraulic power unit will regulate conveyor speed. Shut the doors so that the conveyor is empty when filling the last box.

**IMPORTANT**

- *Do not let telescoping spout rest in bottom of seed box. Seed will rapidly build up and plug conveyor, resulting in potential damage to belt.*

It is recommended that the conveyor be emptied once planter is filled. Do this by closing door(s) on seed tender box shortly before last planter box is full, and let conveyor empty out.

NOTE: When using seed tender to fill individual planter boxes, the cover plate must be installed over grate. This will slow grain flow to an acceptable level for ease of use. Failure to do so will result in over-filling conveyor and potential damage to seed or conveyor.

Leaving seed in the conveyor for short periods of time will not damage conveyor, nor will it hinder starting/stopping conveyor when it is full, but over time seed could begin to settle resulting in hard starting of the conveyor.

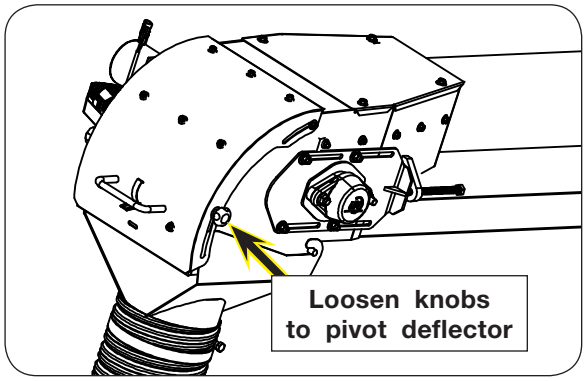

Standard Two-Function Wired Switch

## Rotating Conveyor Out For Transferring Grain

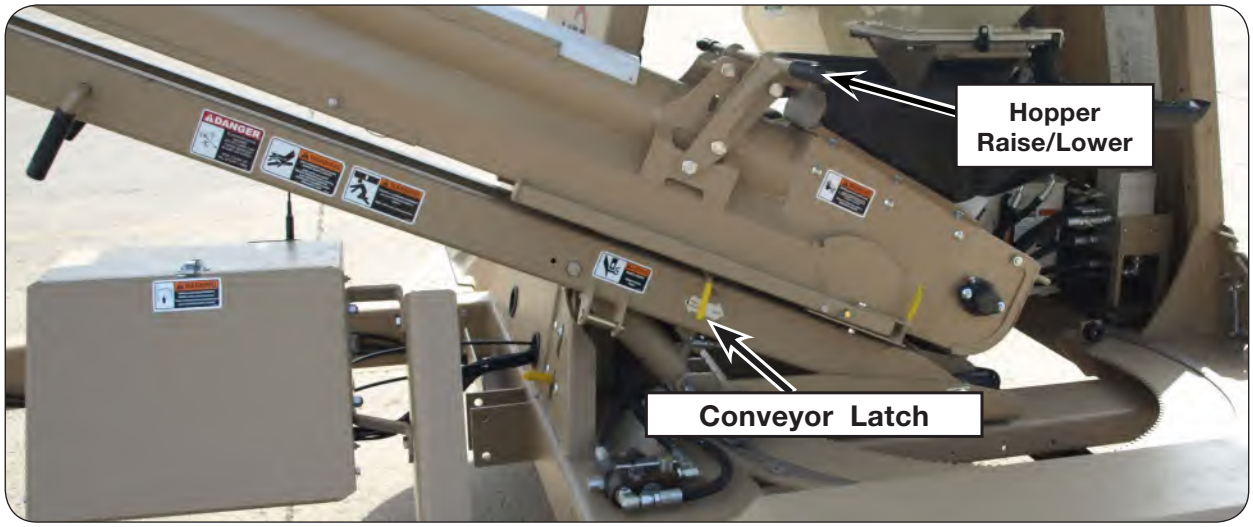
**⚠ WARNING**

- **THE SEED PRO MUST BE HOOKED TO THE TOWING VEHICLE WHEN BEING FILLED AND THE BRAKES ON THE TOWING VEHICLE MUST BE SET.**

Pivot conveyor out of transport position and lower completely. Remove upper spout from conveyor by releasing latch and sliding spout off of conveyor. Loosen the two knobs on the side of the deflector, pivot deflector up, and tighten knobs to hold deflector in place.




Raise conveyor about half way up. Unlatch conveyor from lower cradle, lower flexible hopper by sliding lever back, and pull hopper end of conveyor out from under the Seed Pro box.




Position conveyor so that the discharge end is located over the Seed Pro box and the hopper is on the ground or on the stand away from the box.

## Rotating Conveyor Out For Transferring Grain (continued)

**IMPORTANT**

- *Whenever possible, use the stand on the bottom of the conveyor to keep the hopper off the ground. Maximum conveyor performance and easier access to discharge point on bulk seed containers will result.*

**Raise flexible hopper by sliding lever to the upright position. Locate wagon or bulk seed container over conveyor hopper and operate conveyor to fill Seed Pro.**

**When finished loading seed into the Seed Pro tender, move wagon or bulk seed container away from conveyor. Pivot conveyor hopper back under the Seed Pro box, and latch in place. Conveyor should be placed back in the transport position and secured with the latch pin.**

**IMPORTANT**

- *When pivoting conveyor, be certain to pivot back in the direction it originally came from. Do not pivot conveyor round and around. Doing so will twist hydraulic hoses at pivot point resulting in damage to hoses and potential hydraulic failure.*

- *Conveyor must always be latched in cradle except when self-filling seed tender box.*

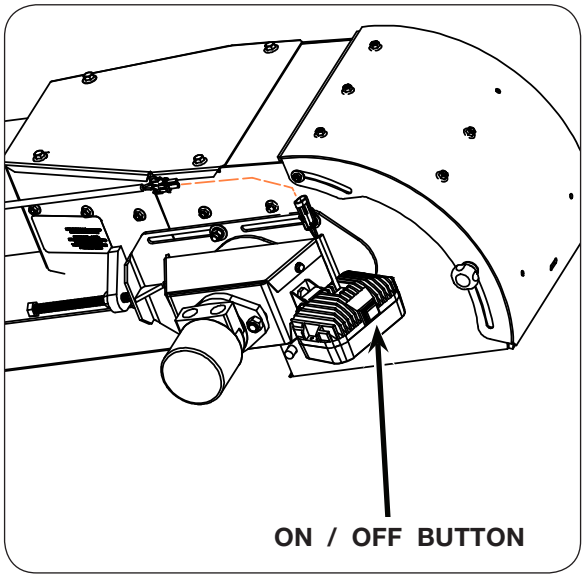
## Work Light Kit #2004450 (Optional)

Turning light on/off:

1. Turn light on/off using the button on the light or by turning the key on or off. Aim light to best illuminate work area.

**IMPORTANT**

- *When not using light for long periods of time, make sure light is turned off. If left on battery may be drained.*



# SECTION IV
# Maintenance

## Lubrication

Lubricate with an SAE multi-purpose grease. All fittings must be free from dirt and paint to insure entry of lubricant inside bearing.

### Conveyor Bearings

Lubricate these bearings every 100 hours of operation and at the end of each season before storage. Use only one stroke of grease per bearing.

**⚠ CAUTION**

- **DO NOT USE A HIGH-PRESSURE GREASE GUN TO LUBRICATE CONVEYOR BEARINGS, AS DAMAGE TO BEARING SEAL COULD OCCUR.**

NOTE: Excessive lubrication of these bearings will result in premature failure.


### Pivot Points

Lubricate pivot points on pivoting arm every 50 hours of operation and at the end of each season.

### Wheel Bearings

The wheel bearings should be cleaned, repacked and adjusted every 12 months or 12,000 miles, whichever comes first. Use a number 2 wheel bearing grease to repack the bearings and adjust the bearing to a free-rolling fit with no end play.

### Hydraulic Power Unit

Inspect hydraulic oil level in reservoir daily. Level should be 1 to 1 1/2" from the top. Add appropriate hydraulic oil as needed. Most farm tractor type hydraulic oils are acceptable. **DO NOT** use Automatic Transmission Fluid! **DO NOT** mix different oils when topping off the tank.

Check motor oil level in engine daily. See Engine operator's manual for details on oil levels, oil types, and service intervals.

## Hydraulic System

Refer to parts section for hydraulic component detail listing.

When properly assembled and maintained, the hydraulic system of the seed tender requires little maintenance.

Replacing Hoses/Fittings/Cylinders:

1. Use replacement hoses, fittings, and cylinders from your Unverferth Manufacturing dealer which are rated for 3000 psi.
2. Do not use hoses, fittings and cylinders that have pipe threads.
3. Do not use Teflon tape or thread sealant on JIC or O-ring fittings. Tighten fittings according to “Torque Chart” in this section.
4. When replacing hoses, always allow sufficient slack to permit hoses to move through the full range of motion of the cylinders.
5. Always purge the hydraulic system after servicing.

## Purge Hydraulic System

**⚠ WARNING**

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE "RELIEVING HYDRAULIC PRESSURE".**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **KEEP CLEAR OF PINCH POINTS WHEN ADJUSTING OR MOVING CONVEYOR.**

Purge air from system as follows:

A. Disconnect the rod end of all cylinders in a circuit and block up cylinders so the rod can completely extend and retract without contacting any other component.
B. Pressurize the system and maintain system at full pressure for at least 5 seconds after cylinder rods stop moving. Check that all cylinders have fully extended or retracted.
C. Check oil reservoir in hydraulic power source and refill as needed.
D. Pressurize system again to reverse the motion of step B. Maintain pressure on system for at least 5 seconds after cylinder rods stop moving. Check that cylinders have fully extended or retracted.
E. Check for hydraulic leaks using cardboard or wood. Tighten connections according to directions in Torque Chart.
F. Repeat steps B, C, D, and E 3-4 times.
G. Depressurize hydraulic system and connect cylinder rod clevises to their mating lugs.

**IMPORTANT**

- *Machine damage will occur if the cylinder is incorrectly installed.*

Check for and correct any leaks. Make sure hoses are not kinked, stretched, or twisted. Secure hoses to prevent cuts or chafing during operation.

## Hydraulic System (continued)

### Relieving Hydraulic Pressure

To relieve hydraulic pressure in the system, be sure hydraulic motor is disengaged and/or hydraulic cylinder is not exerting force on the system. Next, turn off engine and actuate valve in hydraulic system to all positions of actuation and to the neutral position. This should relieve all pressure in the system. If there is a need to remove hydraulic fittings or hoses, slowly loosen the appropriate connections. If there appears to be pressure in the system, begin at the top of this section and perform all procedures again until pressure if relieved.

## Conveyor Belt

Proper tensioning and tracking of the belt are critical to maintaining the belt for years of worry-free use. Belt tension and belt tracking should be checked after the very first initial use then after the first 2 hours of initial use. Thereafter, belt tracking and tension should be checked at the beginning of each season and every eight hours of use. Belt tracking will also need to be checked anytime the belt tension is adjusted.

**⚠ WARNING**

- **ENTANGLEMENT WITH MOVING PARTS CAN CAUSE SERIOUS INJURY OR DEATH. USE EXTREME CARE WHEN INSPECTING AND ADJUSTING BELT TRACKING. AVOID PERSONAL ATTIRE SUCH AS LOOSE FITTING CLOTHING, SHOESTRINGS, DRAWSTRINGS, PANTS CUFFS, LONG HAIR, ETC., THAT MAY BECOME ENTANGLED IN MOVING PARTS.**

### Belt Tension

Belt tension is inspected by removing lower cover panel from conveyor, and gently pulling on the conveyor belt. The belt should have approximately 1/2" of slack at the center.

Belt tension is adjusted at the discharge end of the conveyor. Loosen, **DO NOT REMOVE**, the four 3/8" bolts on each side of the conveyor. Use the two adjusting bolts to adjust the belt to the proper tension.

It is important to move both sides the same distance. Too much tension on the belt will stretch the splice link and greatly reduce belt life. Too little tension on the belt could result in belt slipping on drive pulley. Replace the bottom cover panel and continue to check belt tracking before re-tightening the four bolts on each side of the conveyor.

**IMPORTANT**

- *Belt tracking must be done every time tension is adjusted.*

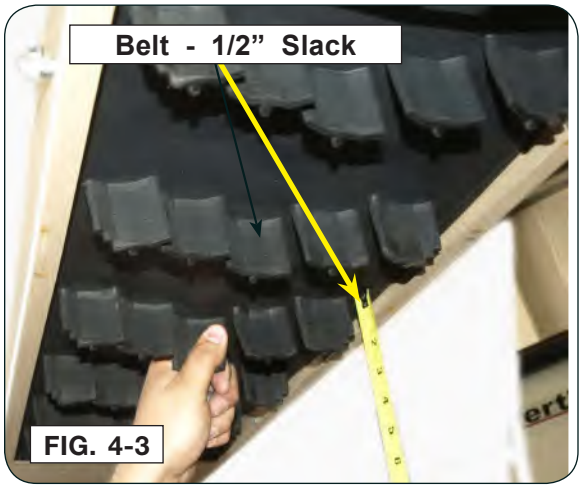
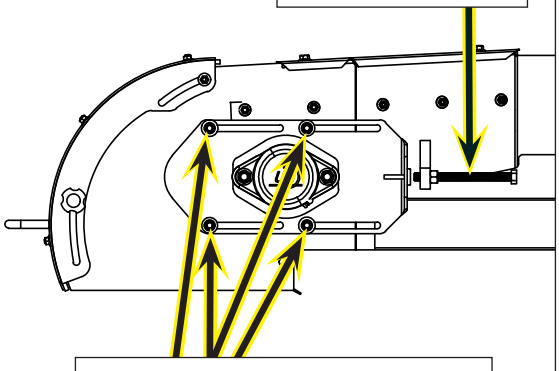


FIG. 4-3

FIG. 4-4



## Conveyor Belt (continued)

### Belt Tracking

Conveyor belt must always run at the center of the pulley on both the intake and discharge end. Improper tracking of the belt will result in excessive wear to the edge of the belt, and will greatly reduce belt life. Check belt tracking every 8 hours of use, and every time belt tension is adjusted.

Inspect tracking of belt at discharge end by removing lower spout, pivoting deflector up, and looking up at the belt and pulley. Belt should be in center of pulley.

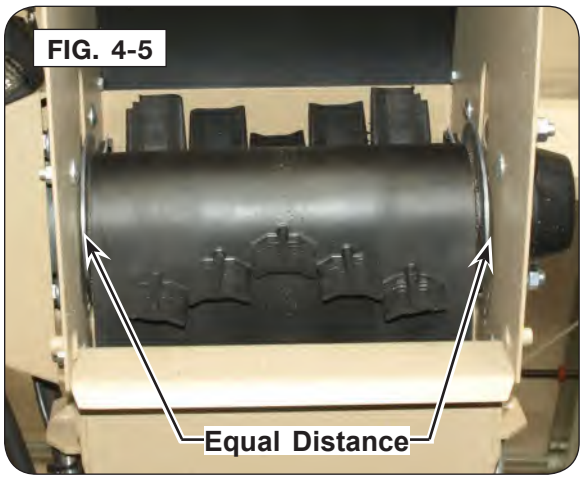


FIG. 4-5

Adjust by loosening, DO NOT REMOVE, the four bolts on the side of the conveyor. Operate conveyor at slow speed, and tighten or loosen the adjustment bolt until belt is running in the center of the pulley.

Tighten all bolts on side of conveyor, and lock adjustment bolts into place.

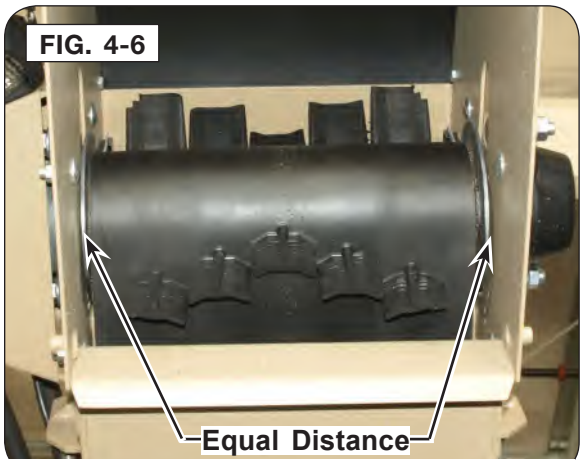


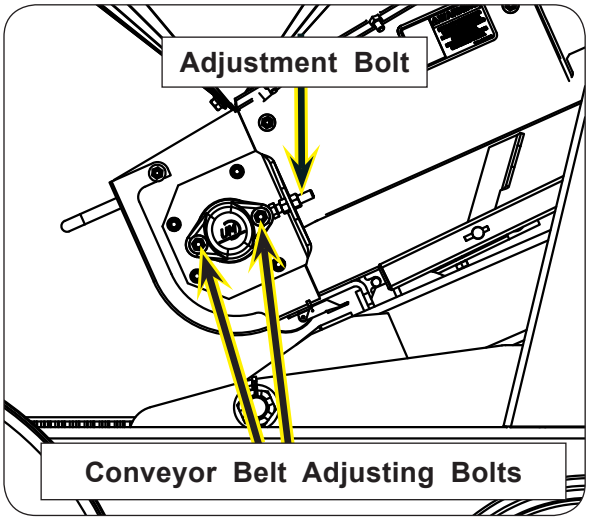
FIG. 4-6

## Conveyor Belt (continued)

### Belt Tracking (continued)

Adjust by loosening (Do Not Remove) the four bolts (two on each side) on the adjusting plate.

Inspect tracking of belt at intake end by opening bottom inspection door on conveyor. Belt should be in the center of the pulley.




Operate conveyor at slow speed, and tighten or loosen adjustment bolt until belt is running in the center of the pulley.

Tighten the two bolts on the adjustment plate, and lock the adjustment bolt into place.

## Brake Cleaning and Inspection

Your undercarriage brakes must be inspected and serviced immediately if a loss of performance is experienced. With normal use, servicing at one year intervals is usually adequate. With increased usage, this work should be performed more frequently as required. Magnets and shoes must be changed when they become excessively worn or scored, a condition which can reduce 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 for any loose or worn parts, stretched or deformed springs and replace as necessary.

**⚠ WARNING**

- **POTENTIAL ASBESTOS DUST HAZARD - SOME BRAKE LININGS MAY CONTAIN ASBESTOS DUST, WHICH HAS BEEN LINKED TO SERIOUS OR FATAL ILLNESSES. CERTAIN PRECAUTIONS NEED TO BE TAKEN WHEN SERVICING BRAKES:**

  1. Avoid creating or breathing dust.
  2. Avoid machining, filing or grinding the brake linings.
  3. Do not use compressed air or dry brushing for cleaning (dust can be removed with a damp brush).

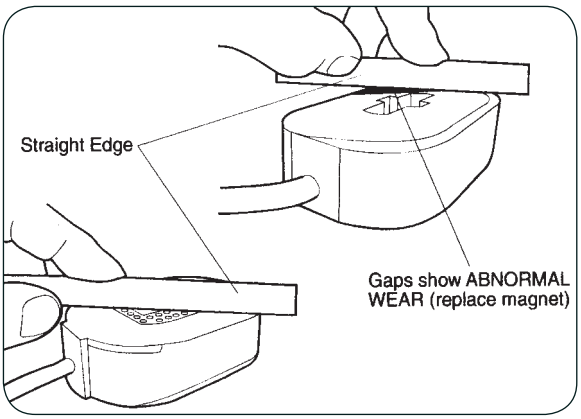
## Brake Lubrication

Before reassembling, apply a light film of grease or anti-seize compound on the brake anchor pin, the actuating arm bushing and pin, and the areas on 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.

NOTE: Do not get grease or oil on the brake linings, drums or magnets.

## Magnets

Your electric brakes are equipped with high quality electromagnets that are designed to provide the proper input force and friction characteristics. Your magnets should be inspected and replaced if worn unevenly or abnormally. Use a straightedge to check magnet condition. For best results, the magnet should be flat. 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 the magnet. It is also recommended that the drum armature surface be refaced when replacing magnets. Magnets should also be replaced in pairs - both sides of an axle.



## Brake Cleaning and Inspection (continued)

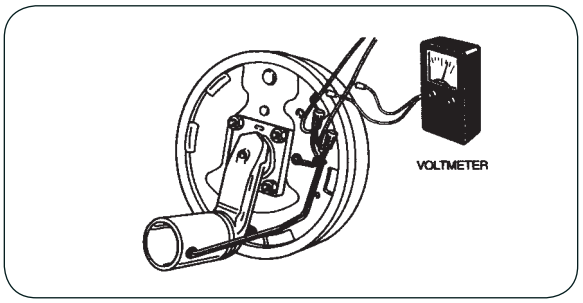
### Shoes and Linings

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. 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.

After replacement of brake shoes and linings, the brakes 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.p.h., slowing the vehicle to 20 m.p.h. Allow ample time for brakes to cool between applications. This procedure allows the brake shoes to seat in to the drum surface.

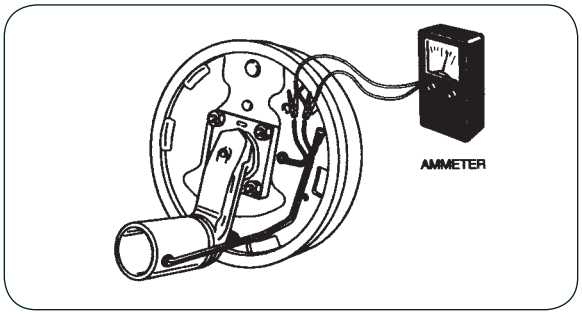

## How to Measure Voltage

System voltage is measured at the magnets by connecting 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. The engine of the towing vehicle should be running when checking the voltage so that a low battery will not affect the readings. Voltage in the system should begin at 0 volts and, as the controller bar is slowly actuated, should gradually increase to about 12 volts. If the controller does not produce this voltage control, consult your controller manual. The threshold voltage of a controller is the voltage applied to the brakes when the controller first turns on. Lower threshold voltage will provide for smoother braking. If the threshold voltage is too high, the brakes may feel grabby and harsh.



## How to Measure Amperage

System amperage is the current flowing in the system when all the magnets are energized. The amperage will vary in proportion to the voltage. The engine of the tow vehicle should be running with the undercarriage connected when checking the undercarriage braking system. 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 ammeter put in series into the line. System amperage draw should be as noted in the following table.




| Brake Size | Amps/ Magnet | Two Brakes | Four Brakes | Six Brakes | Magnet Ohms |
|---|---|---|---|---|---|
| 7 x 1¼ | 2.5 | 5.0 | 10.0 | 15.0 | 3.9 |
| 10 x 1½ | 3.0 | 6.0 | 12.0 | 18.0 | 3.2 |
| 10 x 2¼ | 3.0 | 6.0 | 12.0 | 18.0 | 3.2 |
| 12 x 2 | 3.0 | 6.0 | 12.0 | 18.0 | 3.2 |
| 12¼ x 2½ | 3.0 | 6.0 | 12.0 | 18.0 | 3.2 |

Make sure your ammeter has sufficient capacity and note polarity to prevent damaging your ammeter. If a resistor is used in the brake system, it must be set at zero or bypassed completely to obtain the maximum amperage reading. Individual amperage draw can be measured by inserting the ammeter in the line at the magnet you want to check. Disconnect one of the magnet lead wire connectors and attach the ammeter between the two wires. Make sure that the wires are properly reconnected and sealed after testing is completed. The most common electrical problem is low or no voltage and amperage at the brakes. Common causes of this condition are:

1. Poor electrical connections
2. Open circuits
3. Insufficient wire size
4. Broken wires
5. Blown fuses (fusing of brakes is not recommended)
6. Improperly functioning controllers or resistors

Another common electrical problem is shorted or partially shorted circuits (indicated by abnormally high system amperage). Possible causes are:

1. Shorted magnet coils
2. Defective controllers
3. Bare wires contacting a grounded object

Finding the cause of a short circuit in the system is done by isolating one section at a time. If the high amperage reading drops to zero by unplugging the undercarriage, then the short is in the undercarriage. If the amperage reading remains high with all the brake magnets disconnected, the short is in the undercarriage wiring. All electrical troubleshooting procedures should start at the controller. Most complaints regarding brake harshness or malfunction are traceable to improperly adjusted or nonfunctional controllers. See your controller manufacturer's data for proper adjustment and testing procedures. For best results, all the connection points in the brake wiring should be sealed to prevent corrosion. Loose or corroded connectors will cause an increase in resistance which reduces the voltage available for the brake magnets.

## Brake Drum Inspection

There are two areas of the brake drum that are subject to wear and require periodic 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 the drum has worn out of round by more than .015", then the drum surface should be re-machined. 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 is as follows:

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 re-faced 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 re-faced and the armature surface should be re-faced whenever the magnets are replaced.

**IMPORTANT**

- *It is important to protect the wheel bearing bores from metallic chips and contamination which result from drum turning or armature re-facing operations. Make certain that the wheel bearing cavities are clean and free of contamination before reinstalling bearing and seals. The presence of these contaminants will cause premature wheel bearing failure.*

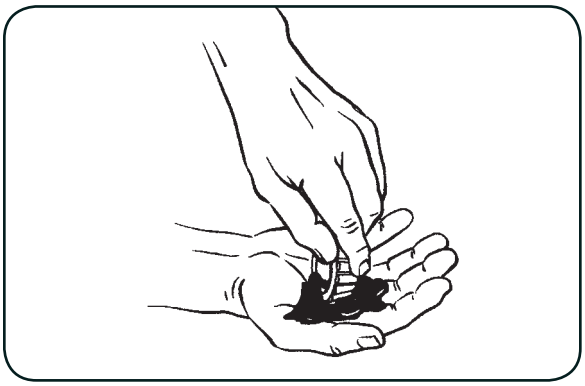
## Bearing Inspection

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.

## Bearing Lubrication

Along with bearing adjustment, proper lubrication is essential to the proper function and reliability of your undercarriage axle. Bearings should be lubricated every 12 months or 12,000 miles. The method to repack bearing cones is as follows:

1. Place a quantity of grease into the palm of your hand.
2. Press a section of the widest end of the bearing into the outer edge of the grease pile closest to the thumb forcing grease into the interior of the bearing.
3. Repeat this while rotating the bearing from roller to roller.
4. Continue this process until you have the entire bearing completely filled with grease.
5. Before reinstalling, apply a light coat of grease on the bearing cup.



## Troubleshooting Brakes

Most electric brake malfunctions, that cannot be corrected by either brake adjustments or synchronization adjustments, can generally be traced to electrical system failure. Voltmeters and ammeters are essential tools for proper troubleshooting of electric brakes. Mechanical causes are ordinarily obvious, i.e. bent or broken parts, worn out linings or magnets, seized lever arms or shoes, scored drums, loose parts, etc. Please consult the following troubleshooting charts in this section of the manual to determine the causes and solutions for common problems found in undercarriage braking systems.

**⚠ CAUTION**

- **BEST BRAKING PERFORMANCE IS ACHIEVED WITH A CONTROLLER SETTING THAT IS JUST SHORT OF WHEEL LOCK UP OR SLIDE. OVERLY AGGRESSIVE BRAKING WHICH RESULTS IN WHEEL LOCK UP AND SLIDING, CAN CAUSE A DANGEROUS LOSS OF CONTROL AND RESULT IN PERSONAL INJURY OR DEATH.**

## Power Pak

For general maintenance and servicing of power pak unit.

NOTE: Honda engines are warranted for 3 years. For maintenance of engine and warranty information, refer to Operator's Manual provided with engine. Following are Websites to locate local Honda engine dealers and service centers:

US www.engines.honda.com

Canada www.honda.ca

Please provide Honda with the following engine information:
11.7 HP GX390 UT2QNE2

The hydraulic filter and fluid should be replaced after every 100 hours of engine run or once the filter gauge indicates a restriction in the red area. Be sure to filter the fluid when filling tank, especially from a bulk container. Any foreign materials in fluid will dramatically reduce the life of the pump. Follow steps below to change hydraulic fluid:

**⚠ WARNING**

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR THE PROPER PROCEDURES.**

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

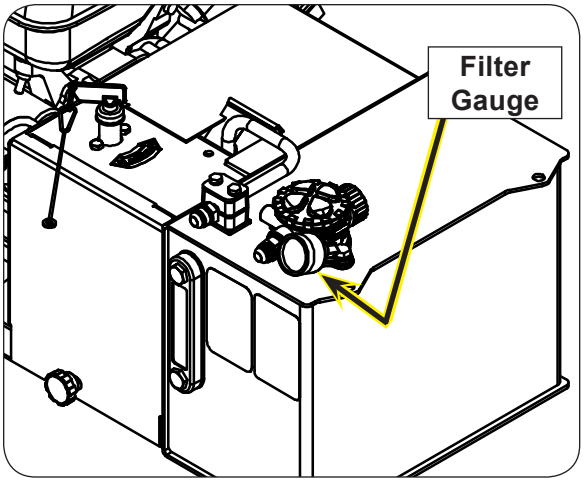
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

## Power Pak (continued)

Replace the initial filter after 3 hours of use with the additional oil filter provided. It is not necessary to replace the hydraulic fluid at this time. When the filter is replaced after the initial filter replacement, it is important that the hydraulic fluid be replaced too. It takes approximately 4.5 gallons to fill the system.

**IMPORTANT**

- *When checking the filter by using a gauge, check the filter gauge after conveyor is ran for 2 minutes to allow oil to warm up.*




- *When replacing filter be sure that it is replaced with an Unverferth service part. This filter has an ultra-fine mesh which filter out microscopic particles. Failure to replace with an Unverferth filter could result in system malfunction and/or shortened life of components. The hydraulic filter and fluid should be replaced after every 100 hours of engine run time. Be sure to filter the fluid when filling the tank, especially from a bulk container. Any foreign fluid will dramatically reduce the life of the pump.*

- *Use a premium hydraulic fluid. This fluid not only will provide pressure to operate your equipment, but also lubricates all components. This unit was designed to use* **Chevron 1000 THF hydraulic fluid***. Use the same or equivalent-type hydraulic fluid to provide a long service life of your Power Pak.*

NOTE: The filter gauge may take several seasons for the gauge to approach the red (replace) portion of the gauge. Once the gauge is close to the red (replace) portion, the gauge will spike.

1. Turn off engine and remove spark plug to prevent engine from starting. Be sure all hydraulic fittings and hoses are relieved of pressure, Fig. 1.

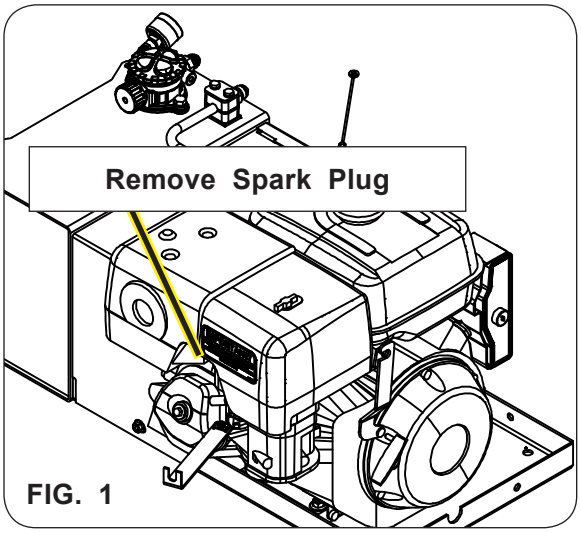



FIG. 1

## Power Pak (continued)

2. Make sure a proper container is available to drain hydraulic oil. Remove hydraulic fluid o-ring drain plug (99692) and drain hydraulic oil into container, Fig. 2.

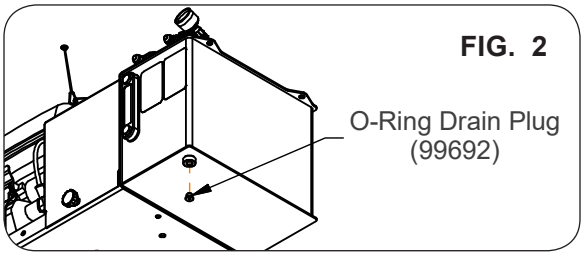



FIG. 2

3. Using a 1 7/8" wrench, remove intake strainer from tank. Clean strainer of all debris and check for any damage. Replace if necessary, Fig. 3.

4. Before reinstalling intake strainer to tank, apply teflon paste or tape on threads to help seal threads, Fig. 3.

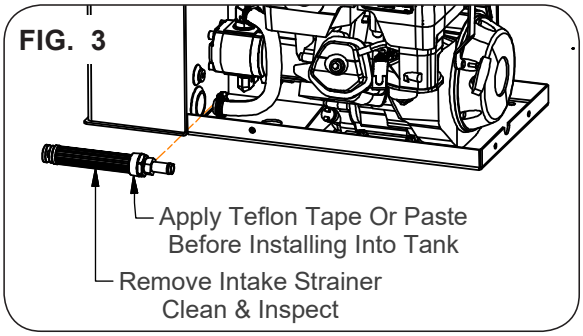



FIG. 3

5. On return line filter, remove filter cap and pull out filter using pull tabs on filter, Fig. 4. Properly dispose of filter and replace with a new filter of exact specifications. DO NOT substitute filter specifications.

6. Once all components have been reassembled and secured, new hydraulic fluid may be added to the hydraulic fluid tank. Fill fluid to the top of the level gauge on the front of the unit, Fig. 4. There must be 1 to 1 1/2 inches of space at the top of the tank. DO NOT over fill. Once the tank is full, secure cap to top of tank.

NOTE: When topping off hydraulic fluid tank, always use the same fluid as what is already in the tank. DO NOT mix different brands or types of hydraulic fluid.

**NOTE: Use Chevron 1000 THF hydraulic fluid.**

7. With the spark plug removed, the pump must be primed. To prime pump, rotate engine by pulling on the pull cord to make pump cycle. Do this approximately 10 times to fill the intake line.

8. Reinstall spark plug and start engine.

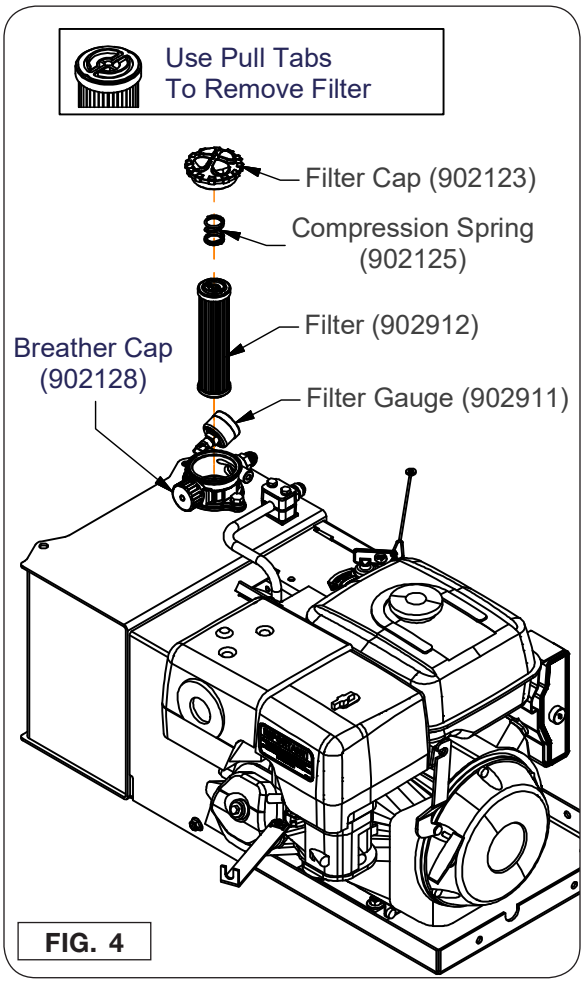



FIG. 4

## Power Pak (continued)

Also to maintain POWER PAK, inspect the battery. Remove battery cover and inspect the battery itself, along with any components, wires and connections for any wear or damage, Fig. 5. Replace as required.

Be sure battery strap is secure preventing battery from shifting inside compartment.

**IMPORTANT**

- *When storing Seed Pro tender for long periods of time be sure battery has a full charge and then turn the battery disconnect switch to the off position.*

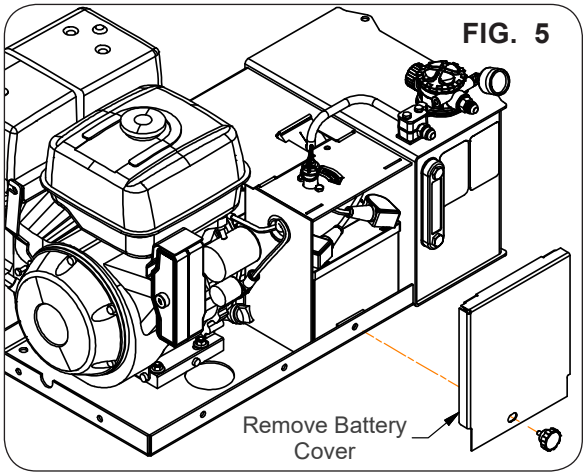



FIG. 5

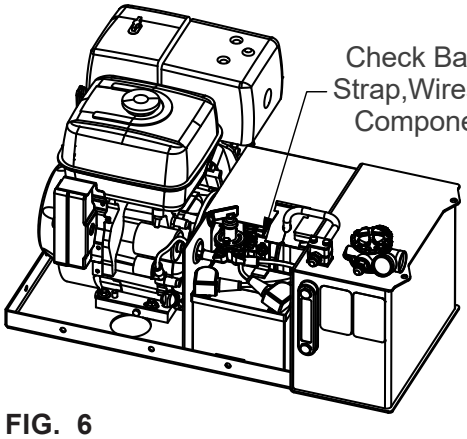



FIG. 6

## Battery Warranty

Interstate Battery:
www.interstatebatteries.com
800-CRANKIT

## Wheels and Tires

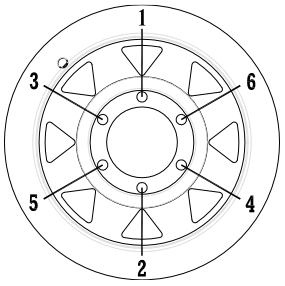
### Wheel Nut Torque Requirements

**⚠ CAUTION**

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS..**

Failure to check torque before first load may damage wheel nut/bolt seats. Once seats are damaged, it will become impossible to keep nuts/bolts tight. Tighten nuts/bolts to applicable torque value shown in table. Start all nuts/bolts by hand to prevent cross threading. Torque nuts/bolts in the recommended sequence as shown in Diagram 1.

| WHEEL HARDWARE | |
|---|---|
| SIZE | FOOT-POUNDS |
| 1/2-20 (UNF) | 75 ft.-lbs. |




6 BOLT

DIAGRAM 1

### Tire Pressure

- The following is to be used as a general guide for tire inflation and figures can vary depending on specific brand of tire used. **It is important that tires are inspected after Seed Pro Tender is loaded.** Start with minimum pressure indicated. The tire should stand up with no side-wall buckling or distress as tire rolls. Record the pressure needed to support the full load and maintain this pressure to achieve proper tire life. **Do not exceed maximum recommended tire pressure.**

| TIRE SIZE | PSI |
|---|---|
| 225/75R15 | 65 |

(All tire pressures in psi)

## Wheels and Tires (continued)

### Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Following is a phone number and Website for your convenience:

*Carlisle
www.carlisletire.com
Phone 800-260-7959
Fax 800-352-0075

*NOTE: Gladiator and Ironman tire brands are being sold by Carlisle as well.

## Complete Torque Chart – Capscrews - Grade 5

**IMPORTANT**

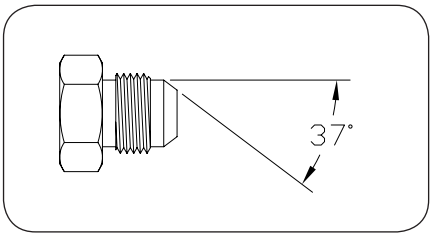
- *Grade 5 capscrews can be identified by three radial dashes on head.*
- *For wheel torque requirements, refer to Wheels and Tires.*
- *Tighten U-bolts to have the same number of threads exposed on each end.*

| SIZE | FOOT POUNDS | NEWTON METERS | SIZE | FOOT POUNDS | NEWTON METERS |
|---|---|---|---|---|---|
| 1/4-20<br>1/4-28 | 8-10<br>9-11 | 11-13<br>12-15 | 3/4-10<br>3/4-16 | 200-220<br>210-230 | 270-300<br>285-310 |
| 5/16-18<br>5/16-24 | 15-17<br>17-19 | 20-23<br>23-26 | 7/8-9<br>7/8-14 | 330-350<br>360-380 | 425-475<br>460-515 |
| 3/8-16<br>3/8-24 | 25-28<br>28-31 | 34-38<br>38-42 | 1-8<br>1-14 | 500-525<br>540-560 | 675-710<br>730-760 |
| 7/16-14<br>7/16-20 | 40-45<br>45-50 | 54-61<br>61-68 | 1 1/8-7<br>1 1/8-12 | 600-635<br>665-700 | 815-860<br>920-950 |
| 1/2-13<br>1/2-20 | 62-68<br>68-75 | 84-92<br>92-102 | 1 1/4-7<br>1 1/4-12 | 850-895<br>940-990 | 1150-1215<br>1275-1340 |
| 9/16-12<br>9/16-18 | 90-98<br>100-110 | 22-133<br>134-148 | 1 3/8-6<br>1 3/8-12 | 1125-1175<br>1280-1335 | 1525-1590<br>1735-1810 |
| 5/8-11<br>5/8-18 | 120-135<br>124-137 | 162-183<br>168-186 | 1 1/2-6<br>1 1/2-12 | 1500-1560<br>1685-1755 | 2035-2115<br>2285-2380 |

## Hydraulic Fittings – Torque and Installation

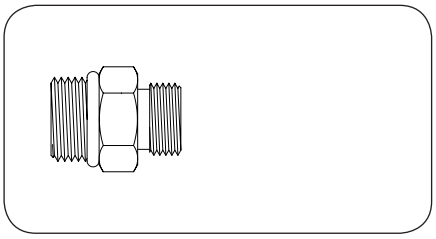
### SAE FLARE CONNECTION (J.I.C.)

1. Tighten nut with finger until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.




### SAE STRAIGHT THREAD O-RING SEAL

1. Insure jam nut and washer are backed up to the back side of smooth portion of elbow adapter.
2. Lubricate o-ring -- VERY IMPORTANT!
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.



## Storage

Your Seed Tender is an important investment. Spend a little time to protect it from destructive rust and corrosion. You will be repaid in longer service life and better performance.

After use, clean out box, conveyor, and hopper. Remove all seed, and pressure wash to remove road dirt, seed treatment, etc.

Prepare engine on hydraulic power unit for storage. Refer to engine operator's manual for details.

Inspect hydraulic oil level in reservoir. Level should be 1 to 1 1/2" from the top. Add appropriate hydraulic oil as needed. Most farm tractor type hydraulic oils are acceptable. DO NOT use Automatic Transmission Fluid! DO NOT mix different oils when topping off the tank.

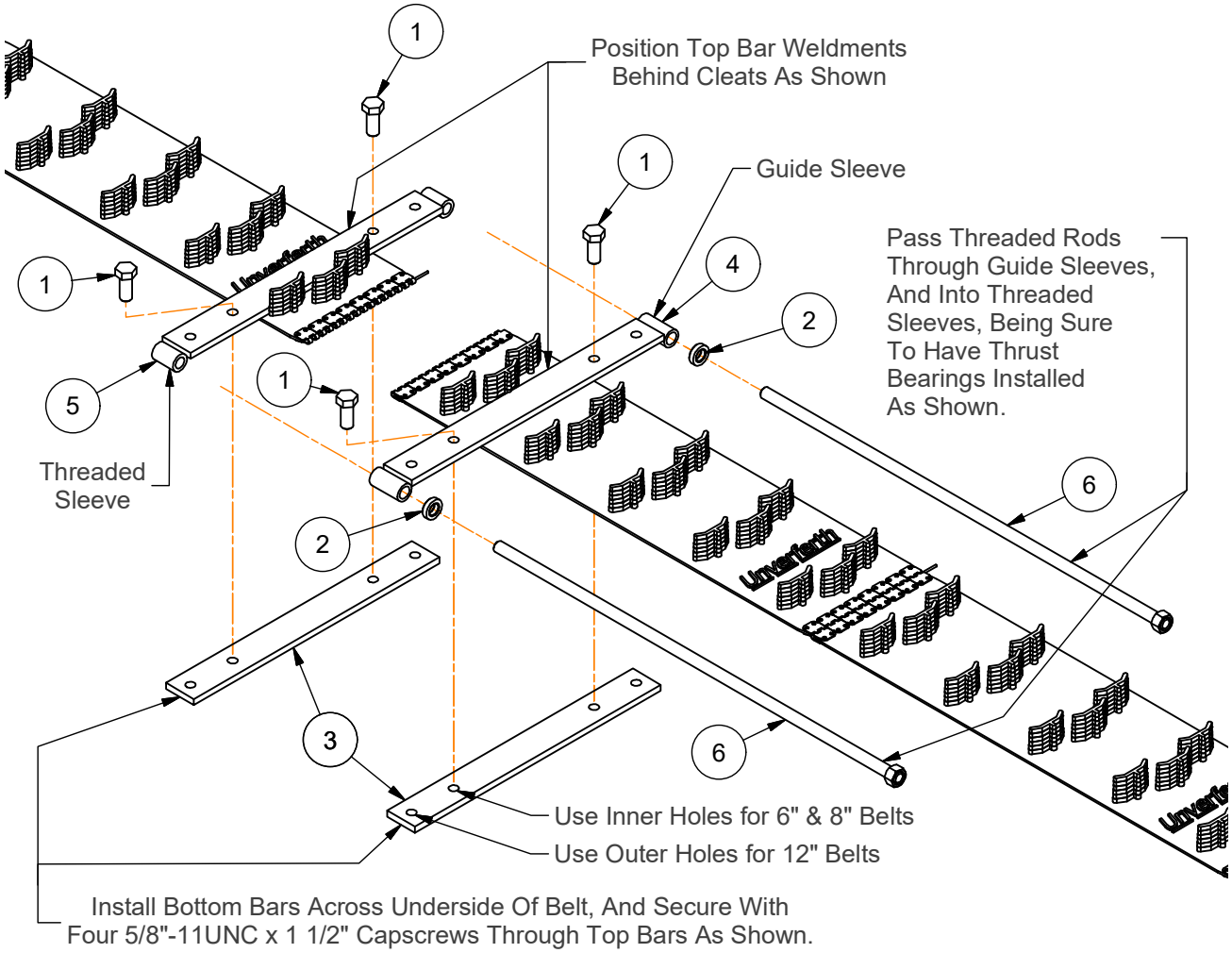
Check bolts for tightness. Inspect for damaged or worn parts. Check valves, motor, hoses, and fittings for leaks. Check hoses for wear. Replace or repair items as needed.

Repaint any chipped or scraped areas, and store inside away from livestock.

Charge battery before storage if applicable. Lack of charge may result in the battery to freeze over the winter.

Replace all worn, torn or faded decals and reflectors.

## Belt Stretcher (Optional)

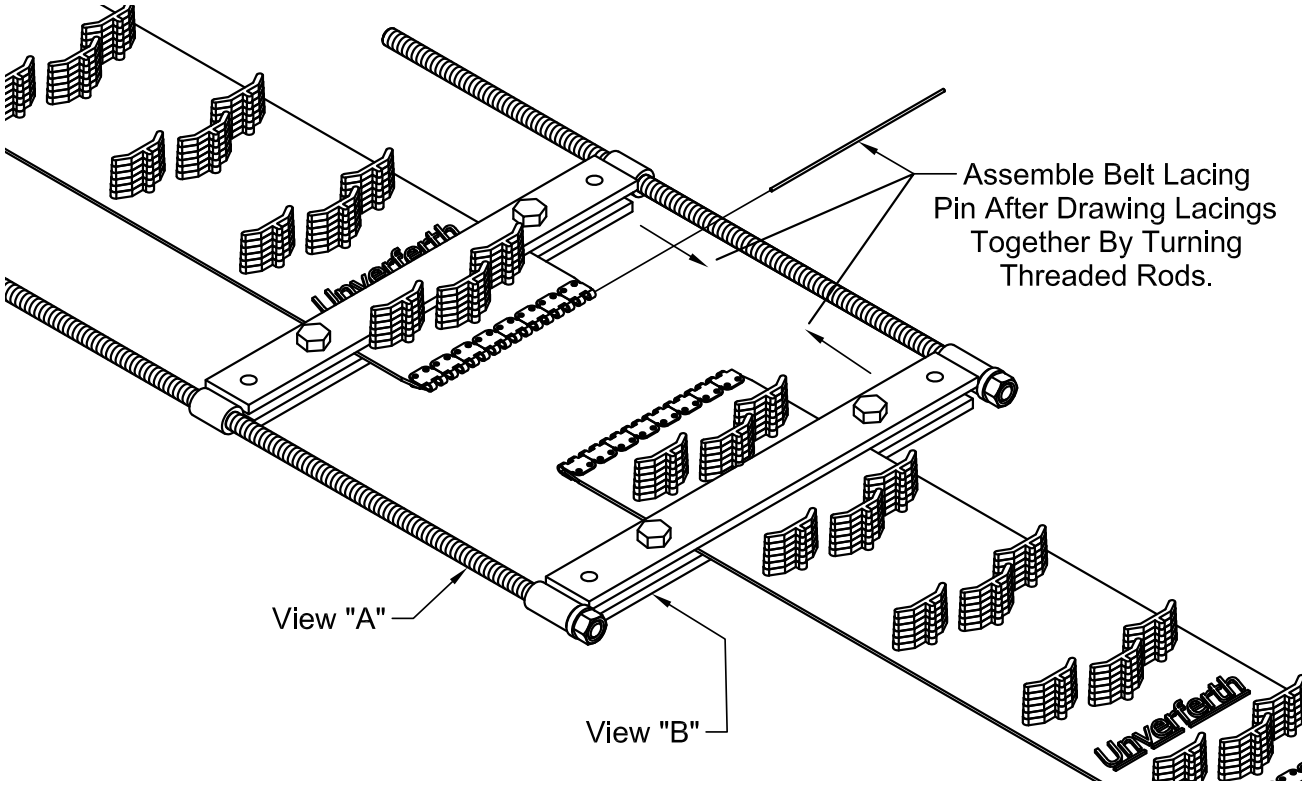


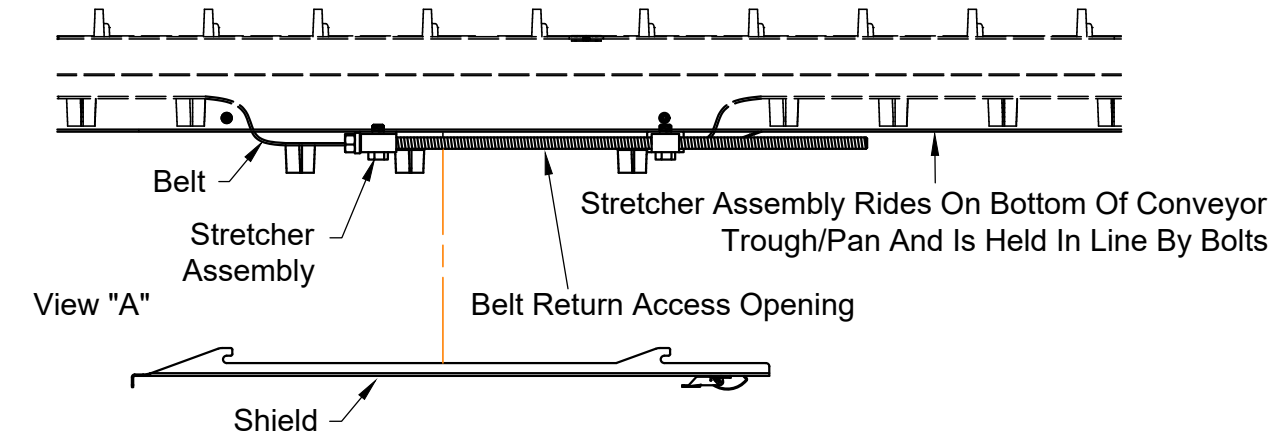

| ITEM | PART NO. | QTY | DESCRIPTION |
|---|---|---|---|
| | TA4-114400-0 | 1 | BELT INSTALLATION TOOL |
| 1 | 9390-122 | 4 | CAPSCREW, 5/8-11UNC x 1 1/2 LG. GRADE 5 |
| 2 | TA0-903118-0 | 2 | BEARING, BALL THRUST, 5/8" I.D. |
| 3 | TA1-114401-0 | 2 | BOTTOM BAR |
| 4 | TA2-114404-0 | 1 | PLAIN TOP BAR WELDMENT |
| 5 | TA2-114406-0 | 1 | THREADED TOP BAR WELDMENT |
| 6 | TA2-114408-0 | 2 | THREAD ROD WELDMENT |

## Belt Stretcher (Optional) (Continued)

### Stretcher Assembled to Belt

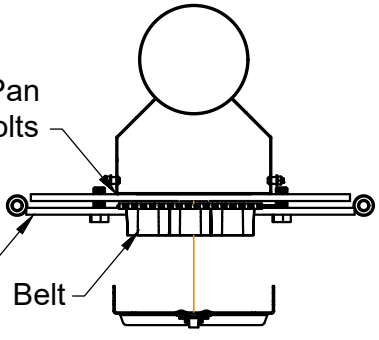
FOR ILLUSTRATION ONLY




View "B"

Stretcher Assembly Rides On Bottom Of Conveyor Trough/Pan And Is Held In Line By Bolts



## Troubleshooting

| PROBABLE CAUSE | CORRECTION |
|---|---|
| **Undercarriage Swaying, Tire Wear, Lights** | |
| Unit sways during travel | Check tire pressure<br>Check tongue and steering hardware, tighten appropriately |
| Tires show excessive wear | Check tire pressure |
| Wheel makes grinding or squeaking noise | Service wheel bearings |
| Tail lights are not functioning | Check wires and connections<br>Replace lamps |
| **Conveyor Will Not Turn Over or Develop Proper Speed/Torque** | |
| Pump does not deliver sufficient pressure or volume | Check output and delivery, change if necessary |
| Conveyor jammed | Shut-off and lock-out power, open clean-out door and remove excess material (make sure swivel spout is clear) |
| Oil level too low | Fill to proper level |
| **Conveyor Runs Too Slow** | |
| Engine running too slow | Increase engine speed |
| Pump not producing minimum required flow and pressure | Check pump fluid capacity and correct |
| Pump is worn | Repair or replace pump |
| Internal leak in controls or motor | Replace seals; repair or replace valves or motor |
| Air in system | Purge system and tighten connections |
| Improper hydraulic oil viscosity | If conveyor starts slowly and speed increases after oil heats up, oil is too heavy weight. If conveyor slows down after oil heats up, oil is too light weight |

## Troubleshooting (continued)

| PROBABLE CAUSE | CORRECTION |
|---|---|
| **Oil Heats Excessively** | |
| Oil viscosity incorrect | Drain and refill with proper weight oil |
| Dirty oil | Drain, flush, and refill with a clean oil and filter |
| Oil level too low | Fill to proper level |
| Oil slipping through worn pump | Repair or replace pump |
| Restricted line or piping | Reroute lines to eliminate restrictions |
| Reservoir too small to provide adequate cooling | Replace with larger reservoir or install oil cooler |
| **Belt Edges Showing Excessive Wear** | |
| Belt tracking incorrect | Adjust tracking as detailed in service section page 2-3. |
| Poly seals on intake and/or discharge end worn. | Replace poly seals |
| **Pivoting Arm Will Not Raise or Lower** | |
| Engine running too slow | Increase engine speed |
| **Conveyor Will Not Pivot** | |
| Pivot lock in place | Unlatch conveyor or check pivot lock operating mechanism. |
| Dirt or debris on pivot track | Clean dirt from track |
| Bearing worn out | Replace bearing |
| **Power Pak** | |
| Pump Squeals:<br>A. Oil level too low in reservoir<br>B. Oil is cold<br>C. Intake strainer is plugged<br>D. Return-line filter is plugged<br>E. Hoses are kinked or leaking | <br>A. Check sight gauge on reservoir<br>B. Run engine at low idle until hydraulic fluid warms<br>C. Drain reservoir and clean strainer<br>D. Remove and replace filter<br>E. Inspect, adjust or replace hose if necessary |
| Unit is lacking power:<br>A. Oil level too low in reservoir<br>B. Oil is cold<br>C. Intake strainer is plugged<br>D. Return-line filter is plugged<br>E. Hoses are kinked or leaking<br>F. Pressure relief valve is set too low or is plugged | <br>A. Check sight gauge on reservoir<br>B. Run engine at low idle until hydraulic fluid warms<br>C. Drain reservoir and clean strainer<br>D. Remove and replace filter<br>E. Inspect, adjust or replace hoses if necessary<br>F. Remove cover and adjust with “L” wrench or remove valve and inspect for contamination |

## Troubleshooting (continued)

### Conveyor Raise/Lower Cylinder Not Working Properly

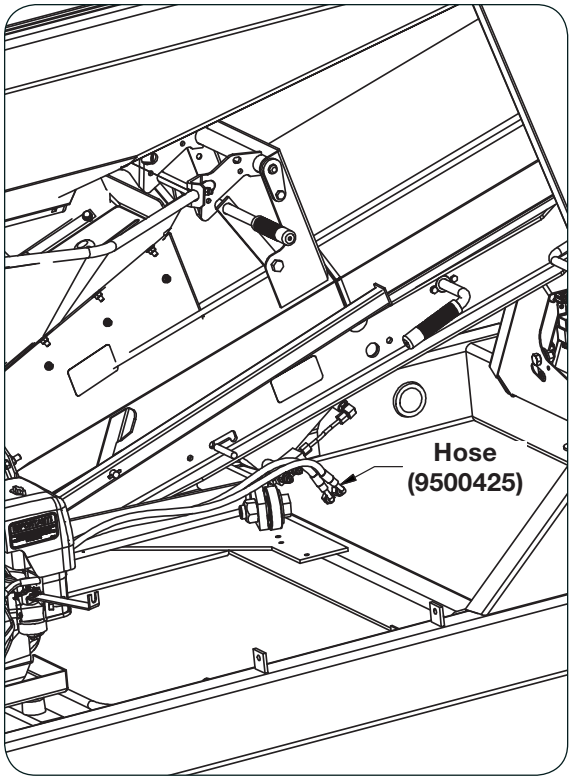
**⚠ WARNING**

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**
- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**
- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**
- **DO NOT BEND OR STRIKE HIGH-PRESSURE LINES. DO NOT INSTALL BENT OR DAMAGED TUBES OR HOSES.**
- **REPAIR ALL OIL LEAKS. LEAKS CAN CAUSE FIRES, PERSONAL INJURY, AND ENVIRONMENTAL DAMAGE. ROUTE HOSES AND LINES CAREFULLY TO PREVENT PREMATURE FAILURE DUE TO KINKING AND RUBBING AGAINST OTHER PARTS. MAKE SURE THAT ALL CLAMPS, GUARDS AND SHIELDS ARE INSTALLED CORRECTLY.**

The parts list would include:
99515 Ball Check Valve
99516 Check Valve Seal Kit
9003744 0.030 Orifice fitting (2) required
92295 Union Fitting

1. If the conveyor is in the raised position, use an appropriate lifting device rated for at least 1,000 lbs and support the conveyor. If the conveyor is in the transport position proceed as follows. Make sure that all the load is off the lift cylinder (902361) and that cylinder pin will freely rotate.

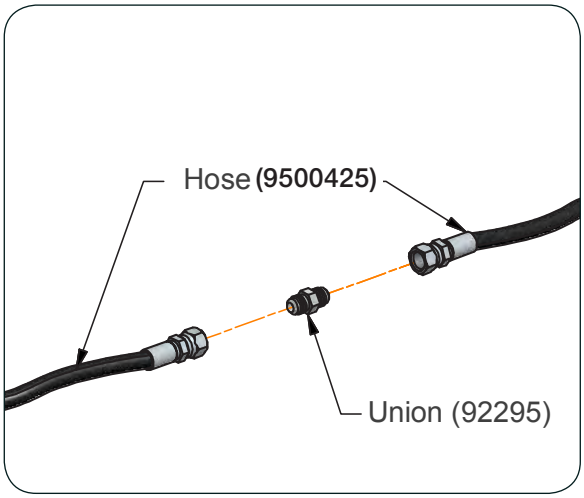
2. Remove the two hoses (9500425) from the cylinder (902361) and connect the two hoses (9500425) together using union fitting (92295). Tighten the connections as directed by the "Hydraulic Fittings - Torque and Installation" in the MAINTENANCE section of the Seed Pro operator's manual.

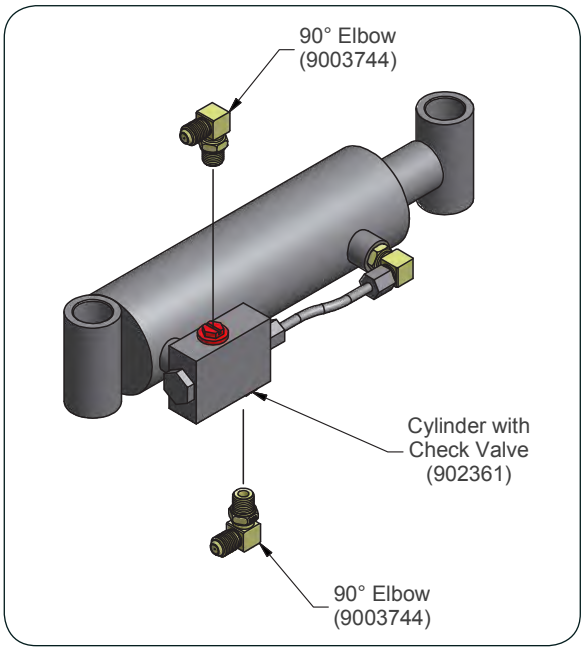


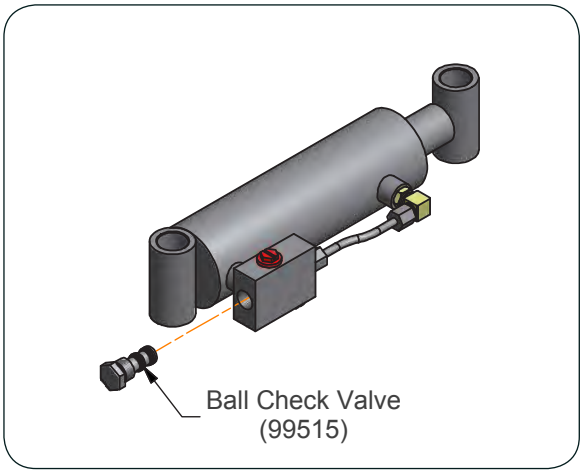
## Troubleshooting (continued)

### Conveyor Raise/Lower Cylinder Not Working Properly (continued)

3. To flush the two hoses (9500425), operate the Seed Pro for a minimum of ten minutes while actuating the control to raise and lower the conveyor. Make sure to actuate the control in both directions (raise and lower).



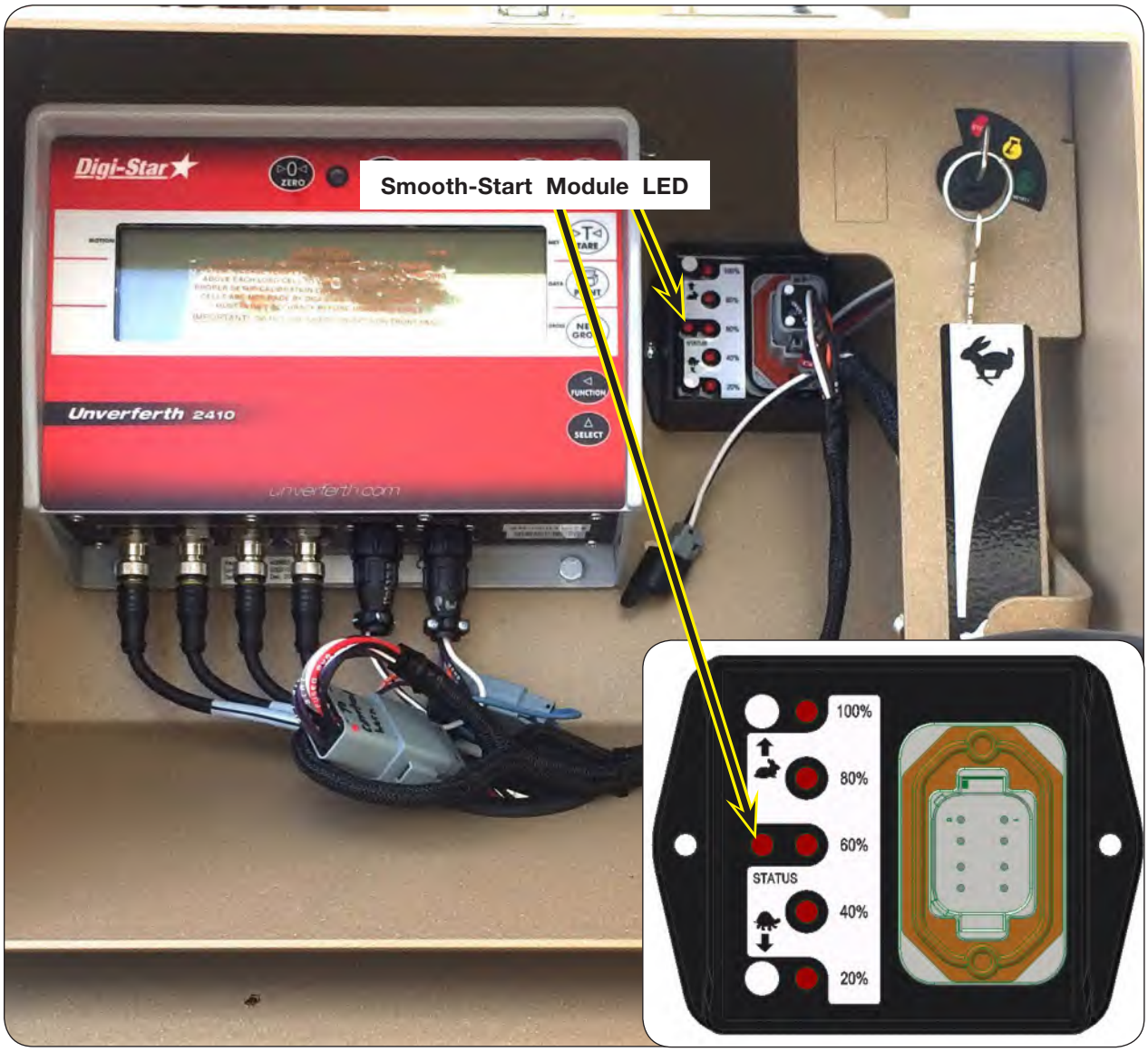



## Smooth-Start Module With Speed Control Troubleshooting

This module, located inside the common enclosure at the front of the machine, is used to control the conveyor belt speed by gradually bringing the speed up, reducing the wear on the conveyor components.

If the system is not operating as expected, the LED can be used to determine what is occurring.

| LED State / Blink Rate | System Status |
|---|---|
| Steady Off | The module is not powered or has failed. |
| Slow On/Off Flash (1 Hz) | The input signal is inactive and the output is off. (CONVEYOR OFF) |
| Steady On | The input signal is detected as active and the output is on. (CONVEYOR ON) |
| Rapid On/Off Flash (5 Hz) | The input signal is active and the output is active. The module is detecting an error condition with the output. Check the output wiring for open or short circuits. |



## Scale Troubleshooting

Does the indicator come on?

NO

**BAD INDICATOR:** If you suspect a bad indicator, the easiest way to check, is to try another indicator. Even if the indicator is a different model or is set-up for a different scale, it at least should come on.

**POOR CONNECTION:** Poor connections can be tricky. If in doubt, don't just tighten the connection, take them apart and clean them first. Any connection with rust or paint should be sanded or wired brushed.

**BAD BATTERY:** If you suspect the battery, try replacing it with another one. Don't be fooled if using a voltmeter to test your battery. A weak battery may test good if checked when there is no load on the battery.

**BAD POWER CORD:** Make sure the power cord's red wire is connected to the plus (+) positive side of the battery, and the black (-) negative wire is connected to the negative side of the battery. If using a multi-meter to check for voltage measure between pin 1 (POS) and pin 2 (NEG). The meter should read between 10.5 and 14.6 volts DC. If using a tractor power cord, the black wire on the tractor power cord is positive and the white wire is negative. If checking voltage coming out of the scale indicator, it should measure 7.8 - 8 volts

YES

Is the reading on the indicator stable?

NO

If your display is unstable, or flashes "Range" disconnect the J-Block cord from the indicator. Is the display still unstable?

NO

YES

Stand on, or hang your weight over, each load cell. Does the indicator respond to your weight when you stand, or hang, on the scale?

NO

YES

Your indicator is probably defective. Try another indicator to verify.
NOTE: Be aware of electrical interference that might affect your scale such as: mobile phones, CB radios, radio towers, electrical motors, etc. Also make sure load cell cables are not attached to hydraulic lines or reservoir because of static electricity.

YES

Check all J-Block and load cell cables for cuts or pinched/flat spots.

Does the scale weigh you **CORRECTLY** with your weight over any of load cells?
NOTE: Are the readings all positive? If not, the load cell is upside down.

YES

Is there moisture inside the J-Block?

YES

Dry out your J-Block. (A hair dryer works great.)

Remove the cover from J-Block.

NO

NO

NO

Have you found a bad connection or a loose wire?

YES

Fix or replace the J-Block.

Look for loose connections. If you watch your indicator display while moving the wires inside the J-Block around, and by pressing on the J-Block printed circuit board, you will see if there is a loose connection or bad solder joint.

NO

Disconnect all the load cell wires from the terminal blocks inside the J-Block. (You can leave the indicator on while connecting or disconnecting the load cell wires, you will not damage the load cells or indicator if wires are shorted during this step.)

Does the scale weigh you approximately the same over all three load cells?

YES

ZERO balance the indicator. (First press the **[FIELD]** net/gross key then the **[ZERO]** key.) The indicator should display "0".

Your indicator is probably not set-up and calibrated correctly. Check the decal on the bottom of the indicator. The decal shows what type of load cells the indicator was calibrated to. By pressing the **[ON]** key while the indicator is already on, you will get the indicator's "SET-UP" and "CAL" numbers. Write these down and see if they compare to the set-up and calibration numbers on the indicator. Contact your dealer for further information.

NOTE: You are going to hook-up the load cells to the J-Block one at a time (meaning only one load cell connected at a time). The purpose of this is to get a reading for each load cell. Also while performing this test, you should watch for any other symptoms such as erratic/unstable display, indicator flashing "±RANGE", or a negative reading, etc. If the indicator reading should ever appear abnormal with any load cell connected, that load cell is probably bad.

Connect one load cell back into on of the terminals in the J-Block.
NOTE: The reading you get for each load cell is dependent on the size and type of load cell and how much weight is over each load cell. In general, the number should be a positive and be stable.

Write down the indicator reading with the load cell connected.

Stand or hang your weight over the connected load cell. Write down how much the weight increased with your weight over the load cell. (Don't be alarmed by the reading, a scale with only one load cell connected will weigh heavy.)

NOTE: If the scale responded to your weight, that's verification that the J-Block is OK. If the scale did not respond to your weight, either that load cell is bad or the J-Block is bad. Try another load cell. If the scale still shows no response to your weight, the J-Block is probably bad.

Disconnect the first load cell and reconnect a second one. Write down the indicator reading for that load cell. Stand or hand your weight over the connected load cell. Write down how much the weight increased with your weight over the load cell.

Disconnect the second load cell and reconnect the third load cell. Write down the indication reading for that load cell also. Stand or hang your weight over the connected load cell. Write down how much the weight increased with your weight over the load cell.

Do not expect the load cells to give you the same reading. It is common for each load cell to have a reading that is hundreds, maybe even thousands, different than the others. Especially when one load cell is carrying more weight than the others. (Example: the two axial load cells will be carrying more weight than the hitch bar.)

A bad load cell will have a reading that is either unstable, or makes the indication flash "±RANGE", or is more than three times greater, or less than the average of the others. Additionally the readings of your weight over each load cell should be similar. (Probably 2-3 times your actual weight, but similar to each other.) Any differenced could be an indication of a bad load cell or a structural problem.

## Scale "Short Form" Set Up & Calibration For UM2520 Indicator

*IMPORTANT! This indicator was calibrated at the factory to weigh accurately with your system. Additional calibration is not necessary under NORMAL conditions.*

The Short Form Set Up & Calibration procedure allows you to change the "SETUP" and "CAL" numbers of the indicator. You may want to perform this procedure if;

1) The indicator is being connected to different load cells.
or
2) You want to adjust the calibration to match another scale system.

PLEASE NOTE: Do not attempt to calibrate the scale if the indicator is not reading stable weights. The calibration procedure will not fix instability, inconsistencies, or flashing "RANGE" messages.

Before continuing, first write down the current "SETUP" and "CAL" numbers of your UM indicator. These numbers are displayed during the "Self Test". To run the Self Test:

With the indicator already ON, press the [FIELD] key and then [ON/OFF] key to start the Self Test. Press the [ON/OFF] key to "pause' the Self Test while numbers are displayed. Press [ON/OFF] key again to resume.

Verify the SETUP & CAL numbers with the Example table below and record the numbers on your UM indicator.

Example Table:

| SETTING | SEED PRO |
|---|---|
| SETUP# | 127060 |
| CAL# | 24080 |

SETUP# _____ CAL# _____

Keep this information for future reference. See next page for more SETUP#'s & CAL#'s.

### 1. Adjust UM2520 Indicator to Match Another Scale:

Sometimes two different scales are used to weigh the same load. When this is done, the weight measured by each scale may not be the same. This can be caused by one or both of the two scales being slightly out of calibration. This indicator has the ability to match any other scale, even if that scale is uncalibrated.

To match your UM2520 scale (Scale A) to another scale (Scale B) you must determine the Calibration Multiplier. To do this, place a load on Scale A (feed wagon, etc...) and write down the weight displayed. Repeat several times to determine the average weight. Next, place the same load on Scale B and again write down the weight displayed. Again, repeat several times to determine the average weight. Then, use this formula to determine the Calibration Multiplier for the UM2520's "CAL" number:

## Scale "Short Form" Set Up & Calibration For UM2520 Indicator (continued)

It is important to use an average of several weights before calibrating the scale.

Scale Matching Example:
Original
SETUP# 127060
CAL# 24080

| | 1 Trail | 2 Trail | 3 Trail |
|---|---|---|---|
| Scale B | 30,000 | 30,580 | 28,000 |
| Scale A | 29,440 | 29,800 | 27,500 |
| Scale B ÷ A | 1,020 | 1,026 | 1,018 |

1.020 + 1.026 + 1.018 = 3.064
3.064 ÷ 3 Trails = 1.021 CAL Multiplier

Orig. UM CAL# X CAL Multiplier = NEW UM CAL#
24080 X 1.021 = 24586

**You should not modify your "SETUP" number. Only your "CAL" number.**

Scale Matching Example:
Original
SETUP# _____
CAL# _____

| | 1 Trail | 2 Trail | 3 Trail |
|---|---|---|---|
| Scale B | | | |
| Scale A | | | |
| Scale B ÷ A | | | |

(Trail 1) + (Trail 2) + (Trail 3) = "X"

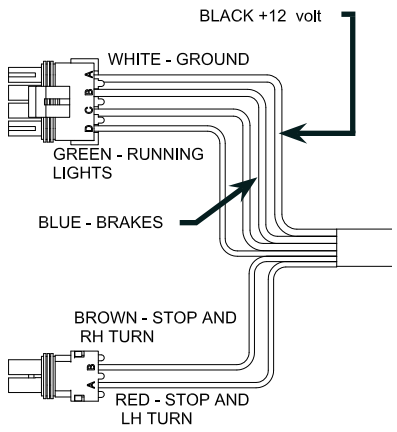
"X" ÷ 3 Trails = _____ CAL Multiplier

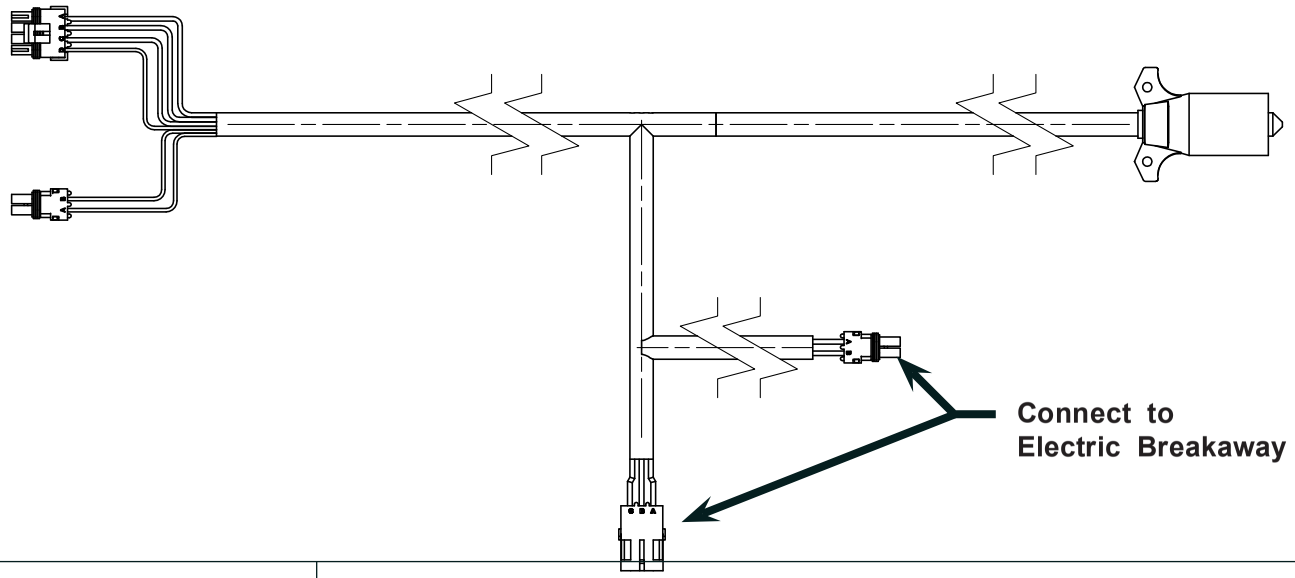
Orig. UM CAL# X CAL Multiplier = NEW UM CAL#

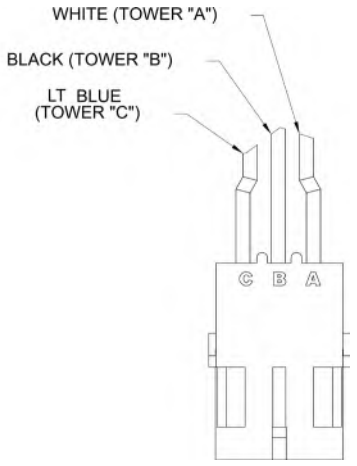
_____ X _____ = _____

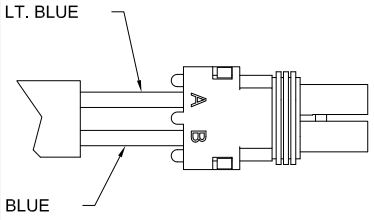
**Follow the instructions "To change the Set Up / Calibration Numbers" shown in the indicator operator's manual.**

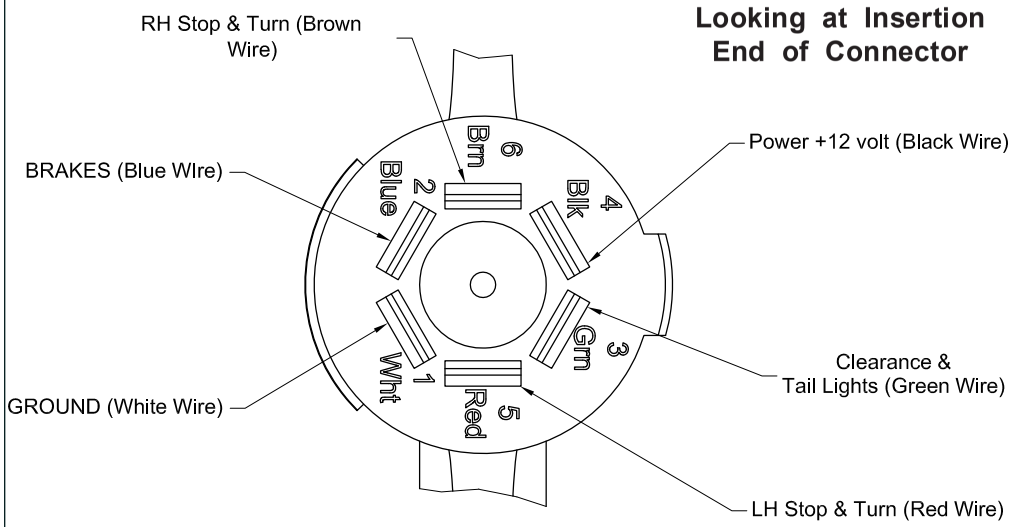
# Undercarriage Hitch #25045 Electrical Schematic



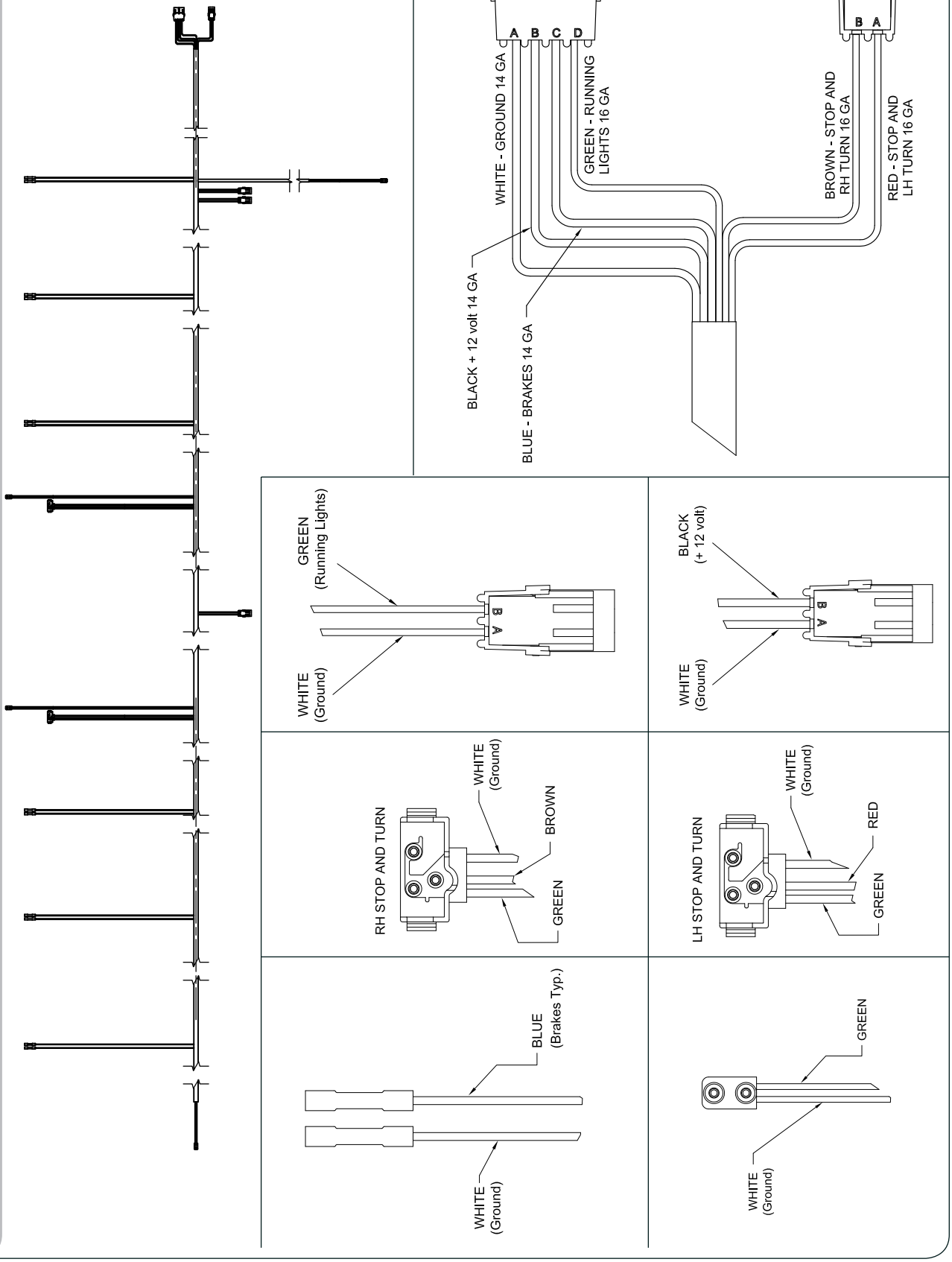



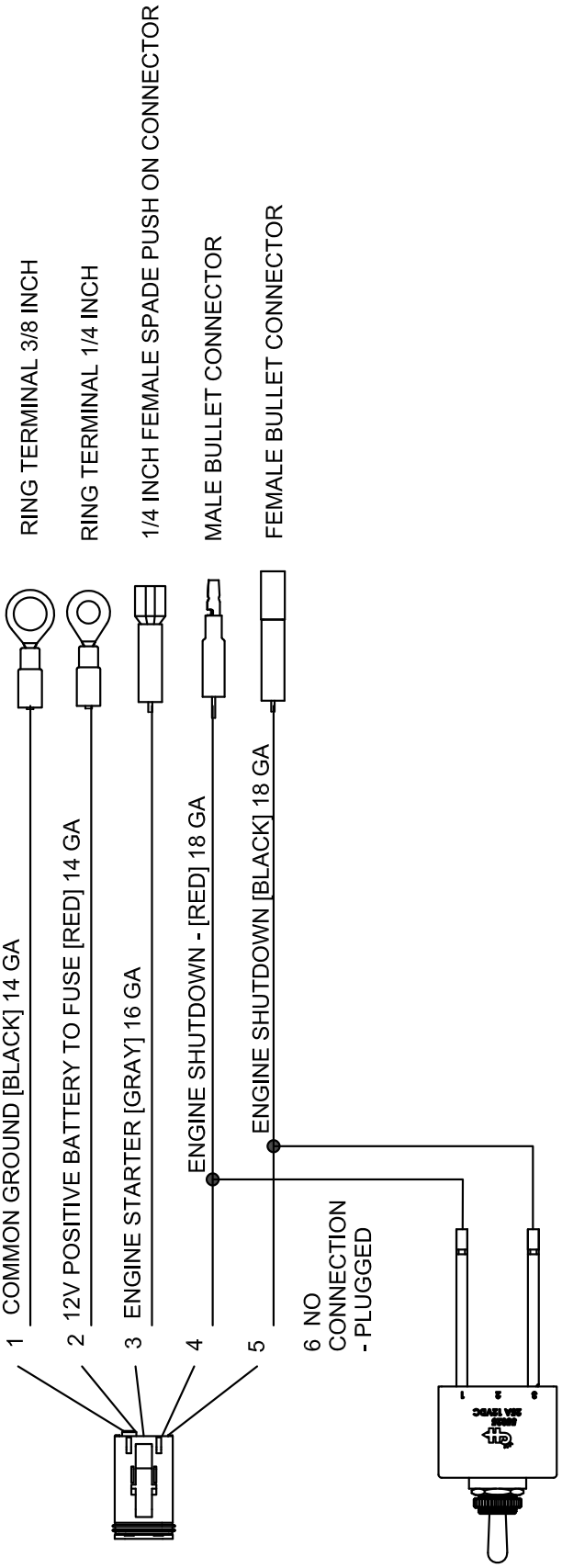



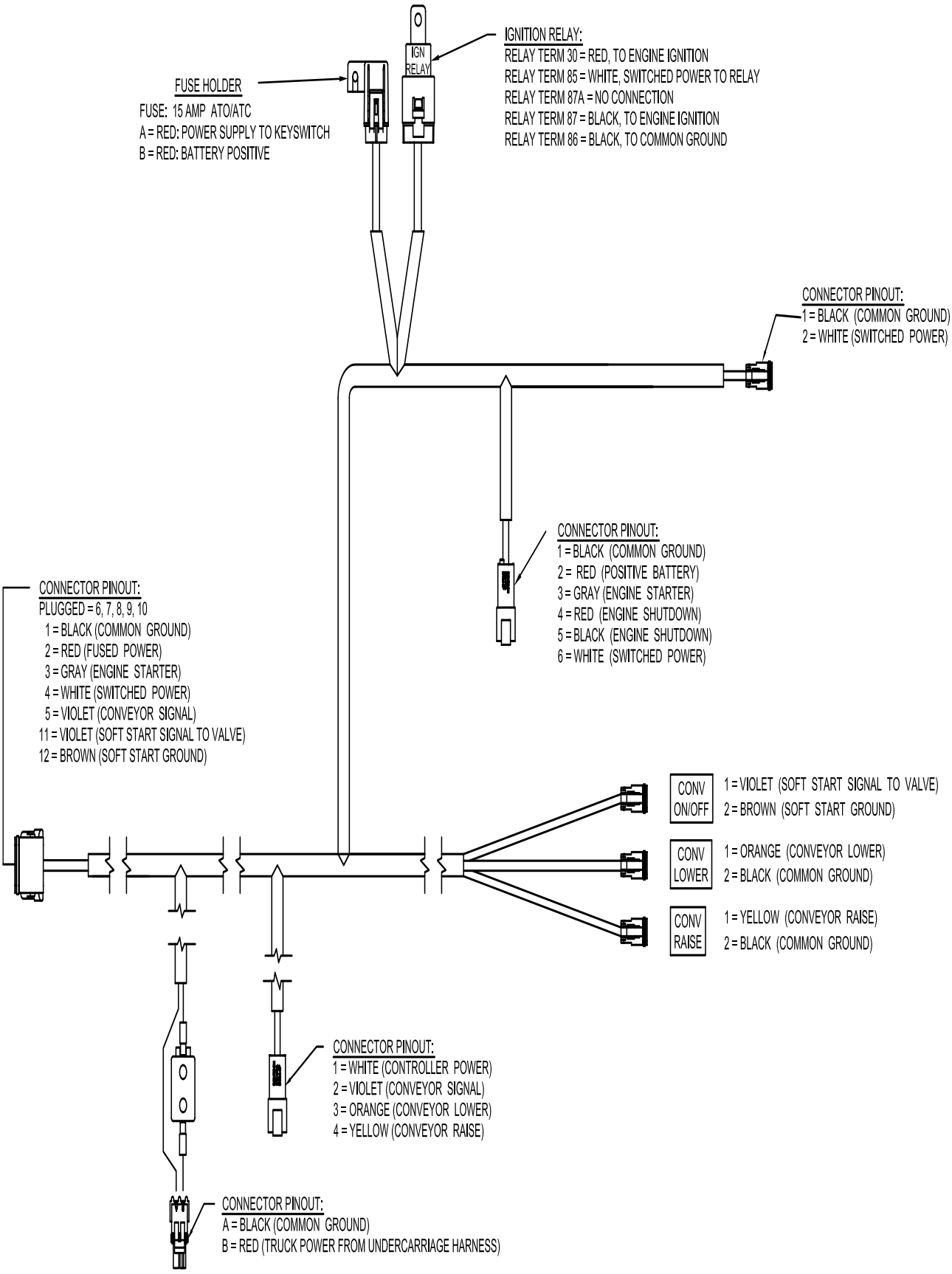
## Undercarriage Lighting & Brake Electrical Schematic — #25046



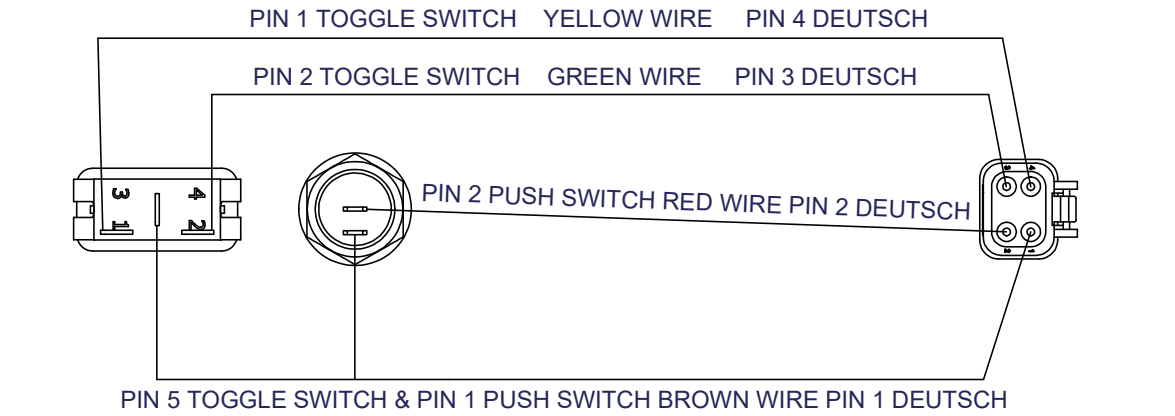
## Engine Harness #2009998 Schematic

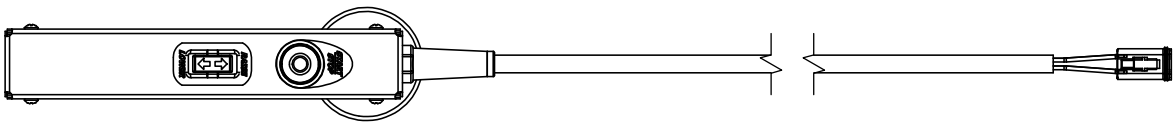


## Standard Corded Control Harness Schematic (#2002519)



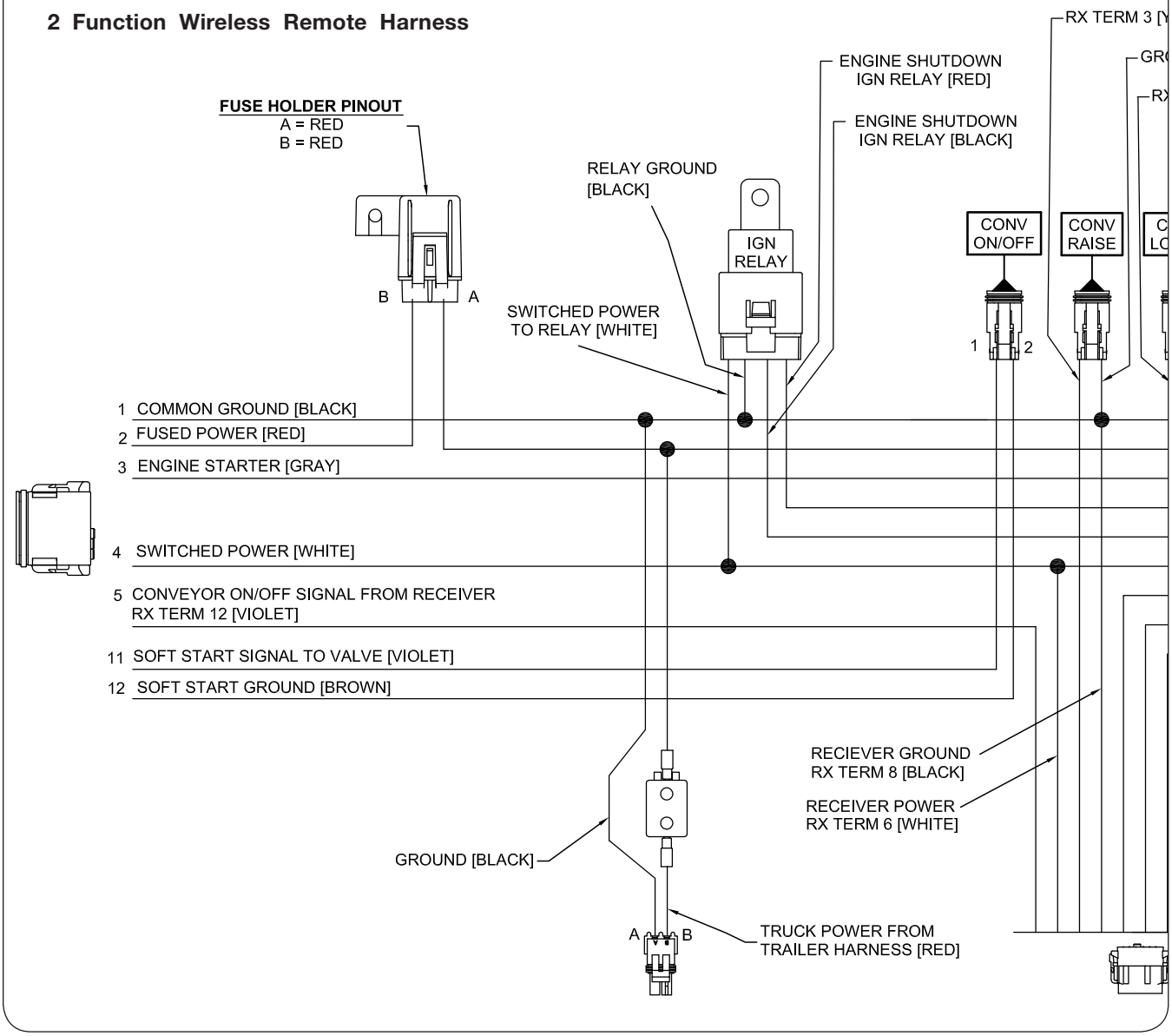
## Switch Assembly Schematic (#27627)



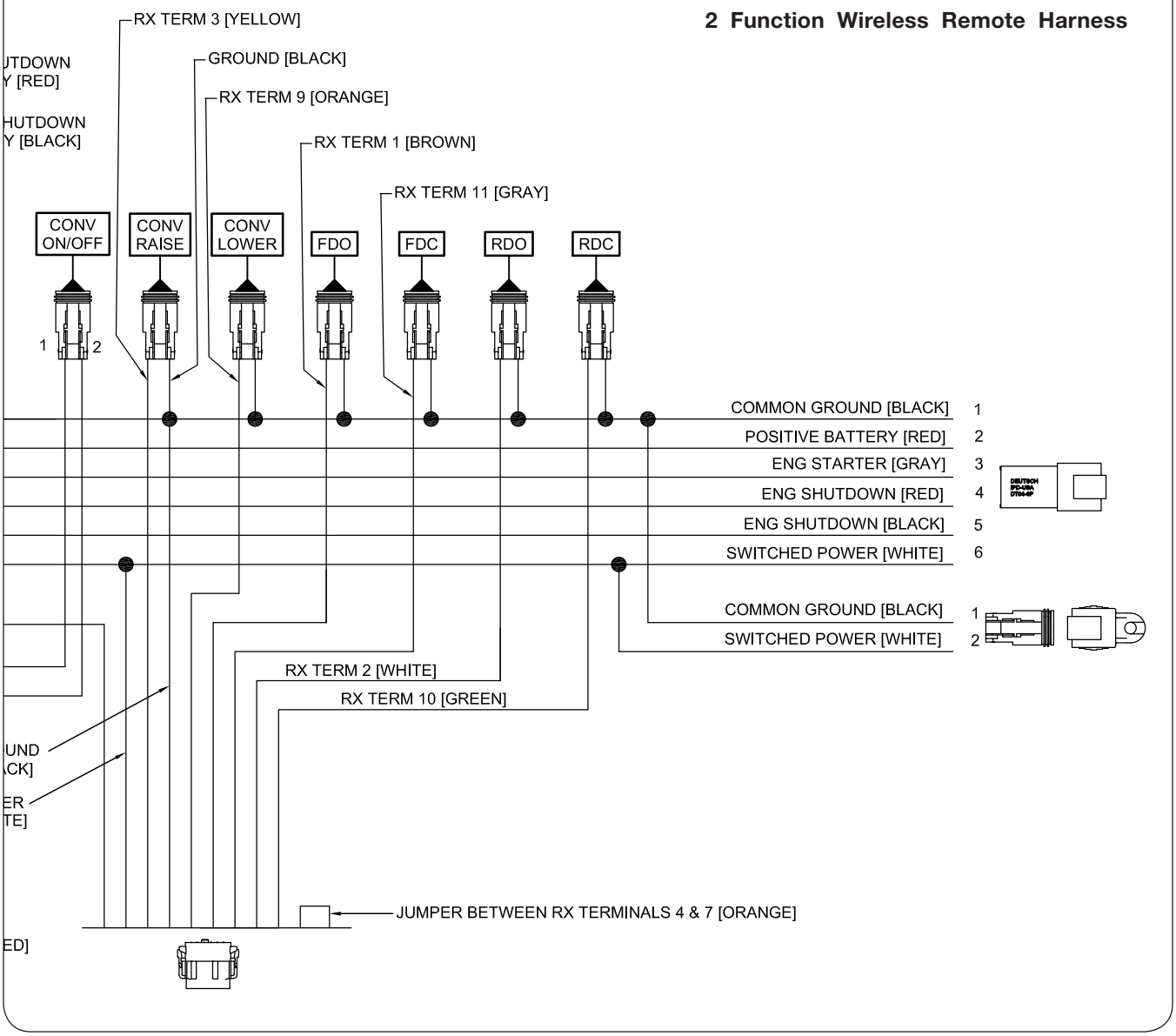



## Wireless Remote Harness Schematic (#2002520)

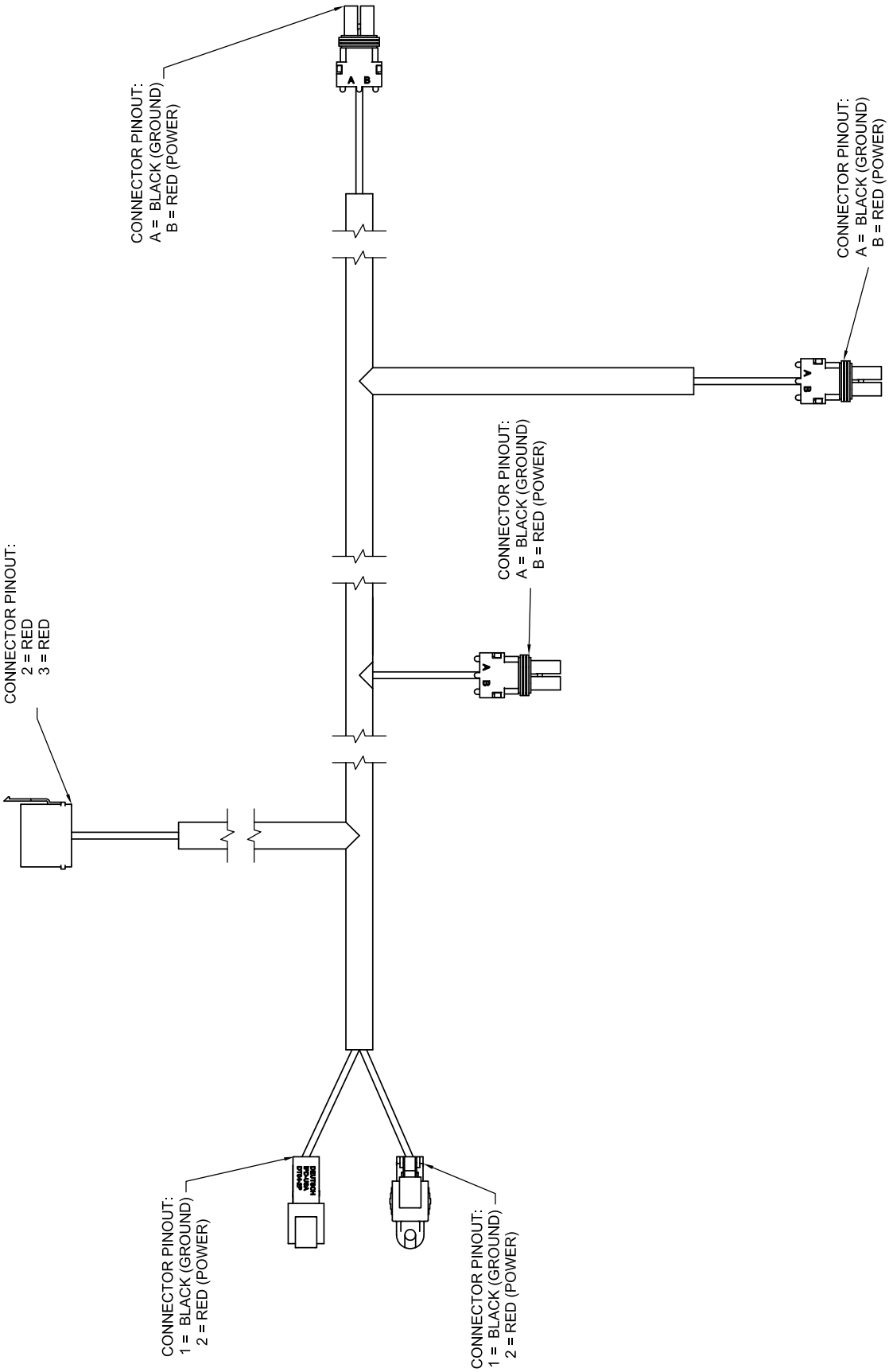
### 2 Function Wireless Remote Harness



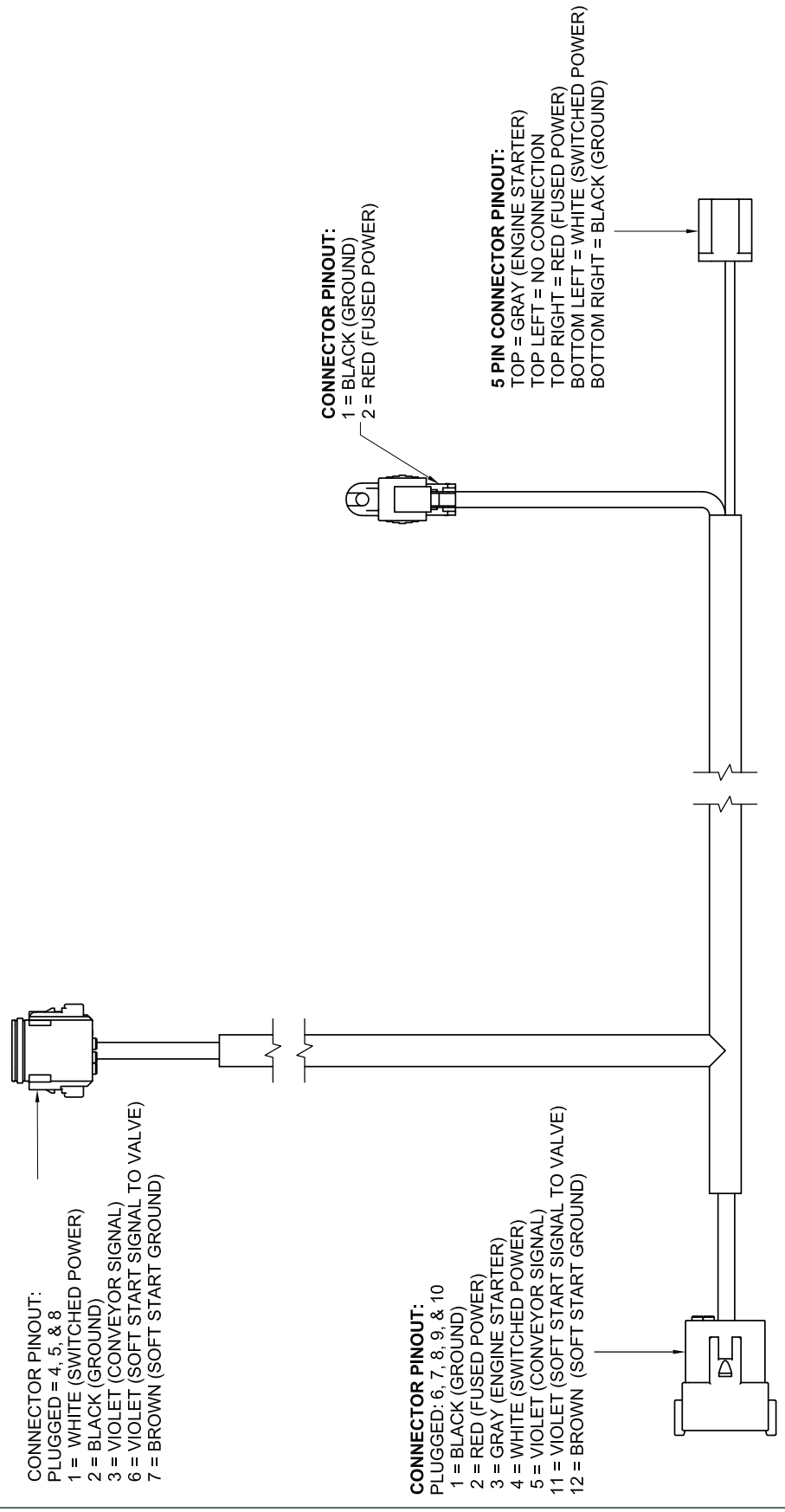
## Wireless Remote Harness Schematic (#2002520) (continued)



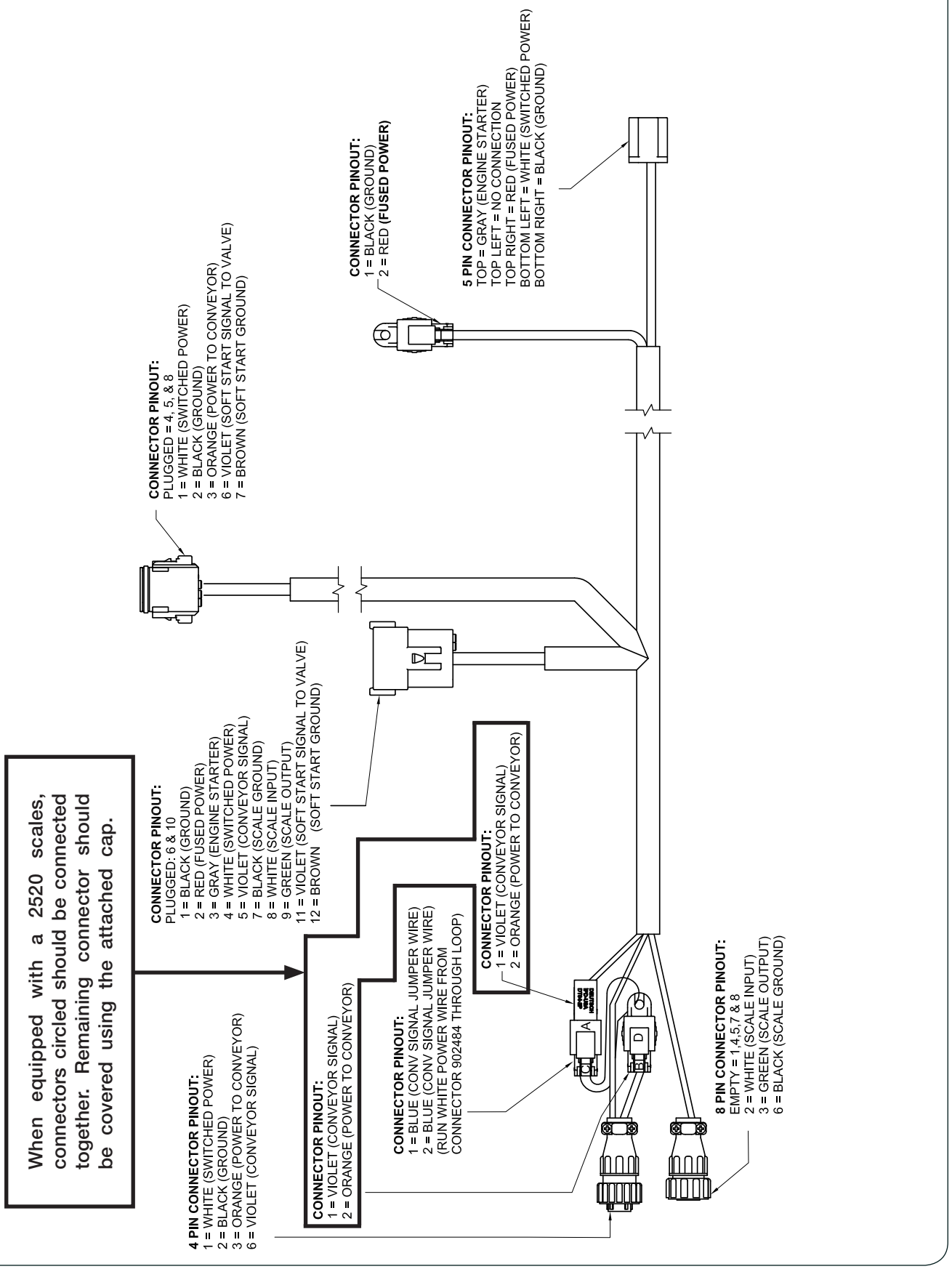
## Work Light Harness #2002125 — Electrical Schematic



## Non-Scale Electrical Schematic (Harness #2002130)



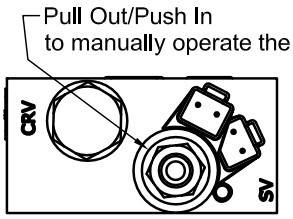
## Scale Electrical Schematic (Harness #2002132) (Option)



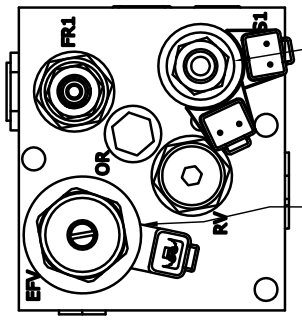
# Stackable Valve Manual Override Operation & Wire Schematic

*Push the inner button down, and either push in or pull up on the outer collar to activate the function.

## Bumper Hitch Hydraulic Jack Valve




## 2 Function




**Conveyor Raise/Lower**
* Pull out to lower conveyor.
  ORANGE Wire Labeled: Conveyor Lower - Top Solenoid
* Push in to raise conveyor.
  YELLOW Wire Labeled: Conveyor Raise - Bottom Solenoid

**Conveyor On/Off**
Screw In to override and operate the conveyor.
PURPLE Wire Labeled: Conveyor On/Off

2003034 Rev. 4

# SECTION V
# Parts

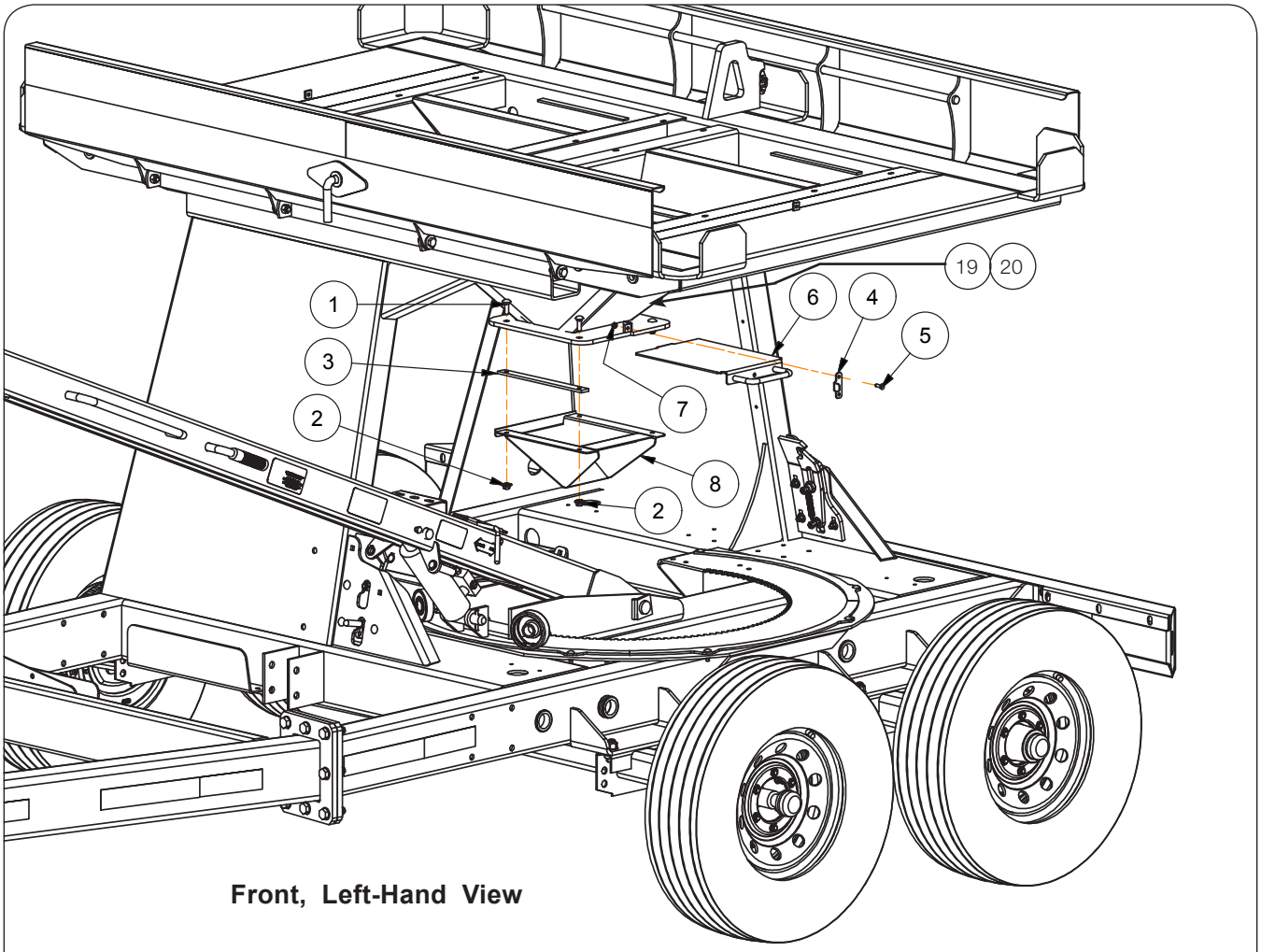
**Please visit www.unverferth.com/parts/ for the most current parts listing.**



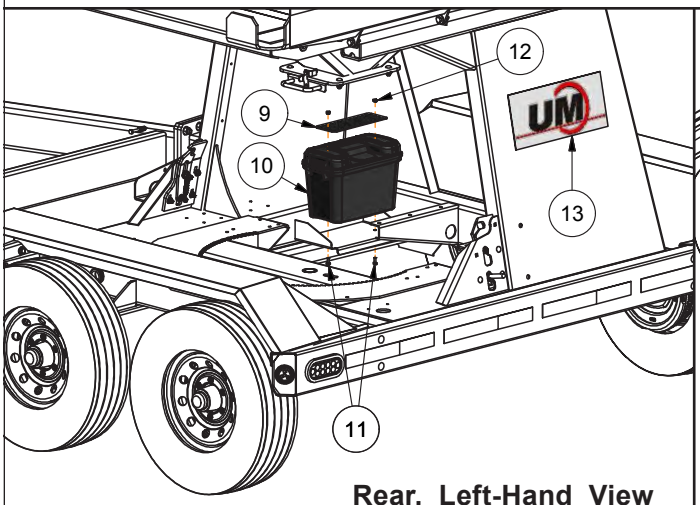
**FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**

## Door Components & Frame Decals

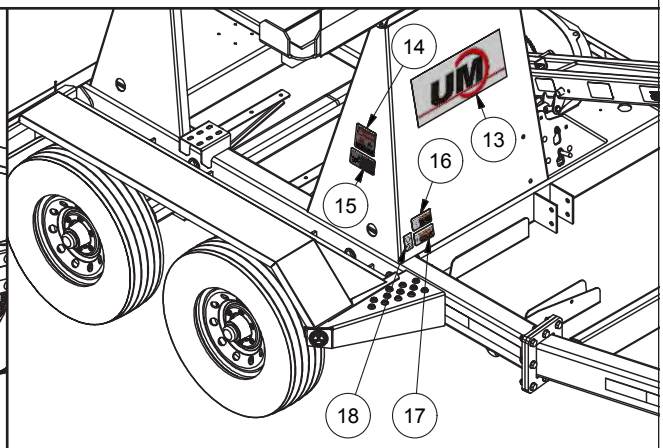
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




Front, Left-Hand View




Rear, Left-Hand View




Front, Right-Hand View

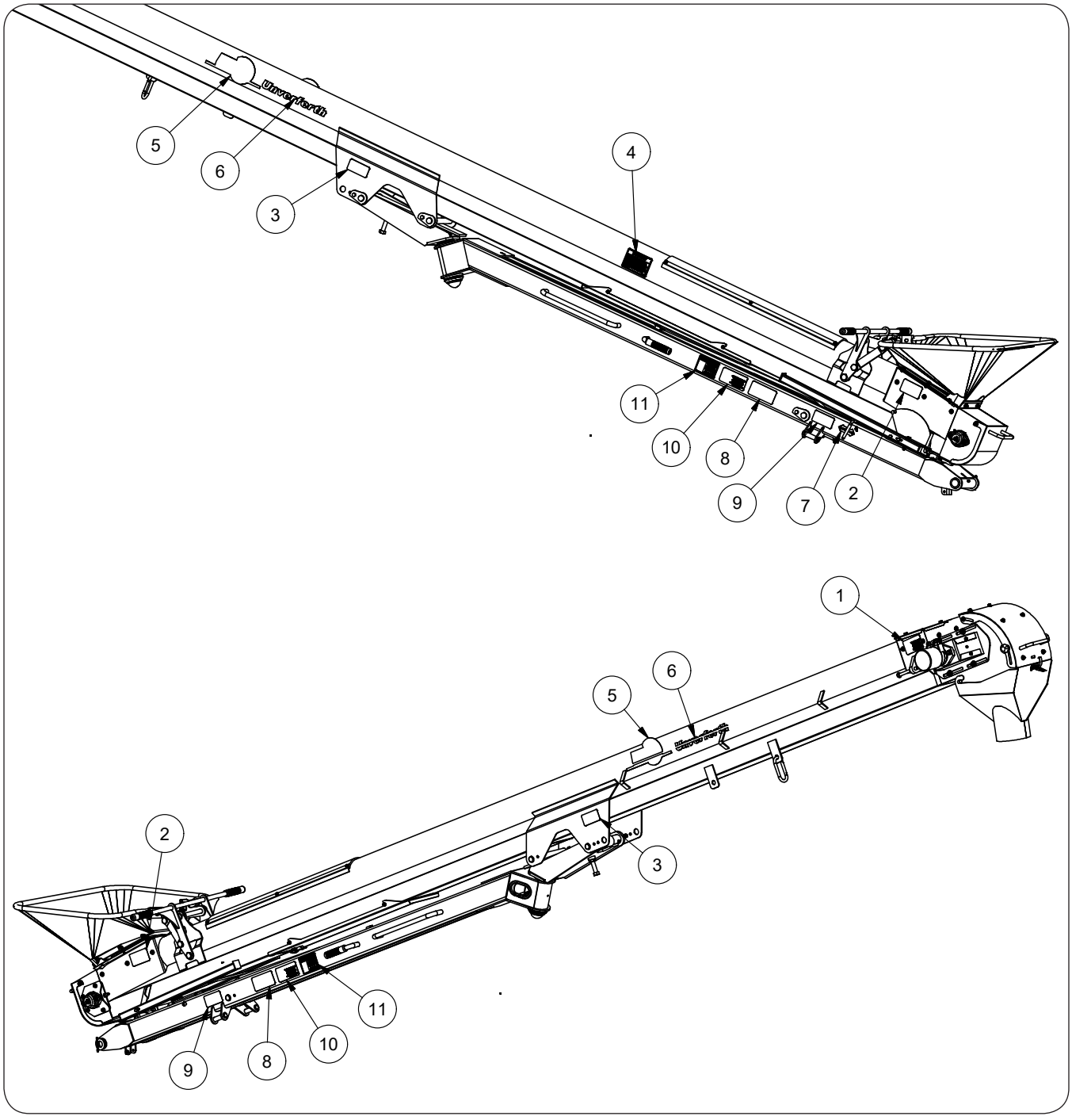
## Door Components & Frame Decals

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 9388-052 | Carriage Bolt 3/8-16UNC x 1 1/4 | 4 | Grade 5 |
| 2 | 91263 | Large Flange Nut 3/8-16UNC | 4 | |
| 3 | 29261TS | Spacer Bar | 2 | |
| 4 | 25977B | Latch | 1 | |
| 5 | 9390-003 | Capscrew 1/4-20UNC x 3/4 | 1 | Grade 5 |
| 6 | 29078TS | Door Weldment | 1 | |
| 7 | 9936 | Locknut 1/4-20UNC | 1 | |
| 8 | 2000959TS | Chute Weldment | 1 | |
| 9 | 27741B | Tool Box Strap | 1 | |
| 10 | 902456 | Tool Box | 1 | |
| 11 | 9390-028 | Capscrew 5/16-18UNC x 3/4 | 2 | Grade 5 |
| 12 | 9807 | Locknut 5/16-18UNC | 2 | |
| 13 | 901833 | Decal UM | 2 | |
| 14 | 235161 | Decal, DANGER “Flammable” | 1 | |
| 15 | 95445 | Decal, WARNING “High-Pressure Fluid” | 1 | |
| 16 | 98350 | Decal, WARNING “No Riders” | 1 | |
| 17 | 97961 | Decal, WARNING “Read and Understand” | 1 | |
| 18 | 91605 | Decal, FEMA | 1 | |
| 19 | 2001622IV | Talc Applicator Hole Cover | 1 | |
| 20 | 9473 | Self Drilling Screw 1/4-14 x 3/4 | 3 | |

## Pivot Arm & Conveyor Decals

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



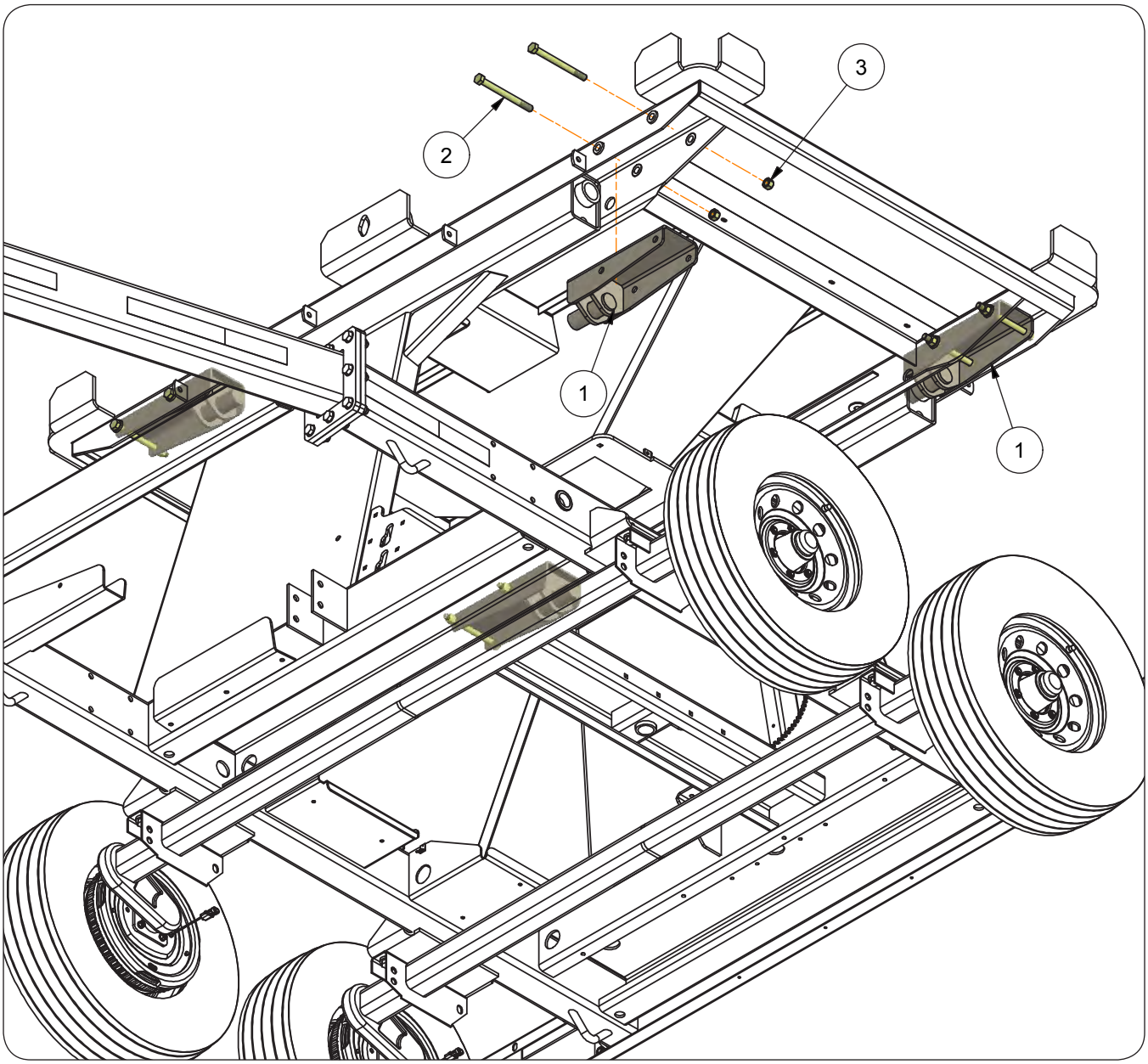
## Pivot Arm & Conveyor Decals

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 95445 | Decal, WARNING (High Pressure) | 1 | |
| 2 | TA1-906109-0 | Decal, WARNING (Moving Parts) | 2 | |
| 3 | 95839 | Decal, WARNING (Pinch Point) | 2 | |
| 4 | 9501790 | Decal, IMPORTANT | 1 | |
| 5 | 901607 | Decal, UM Oval | 2 | |
| 6 | 901705 | Unverferth Logo | 2 | |
| 7 | 902685 | Decal "Lock/Unlock" | 1 | |
| 8 | 98229 | Decal, WARNING (Lower Equipment) | 2 | |
| 9 | 95839 | Decal, WARNING (Pinch Point) | 2 | |
| 10 | 95445 | Decal, WARNING (High Pressure) | 2 | |
| 11 | 901478 | Decal, DANGER (Electrocution Hazard) | 2 | |

## Stationary Bracket Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



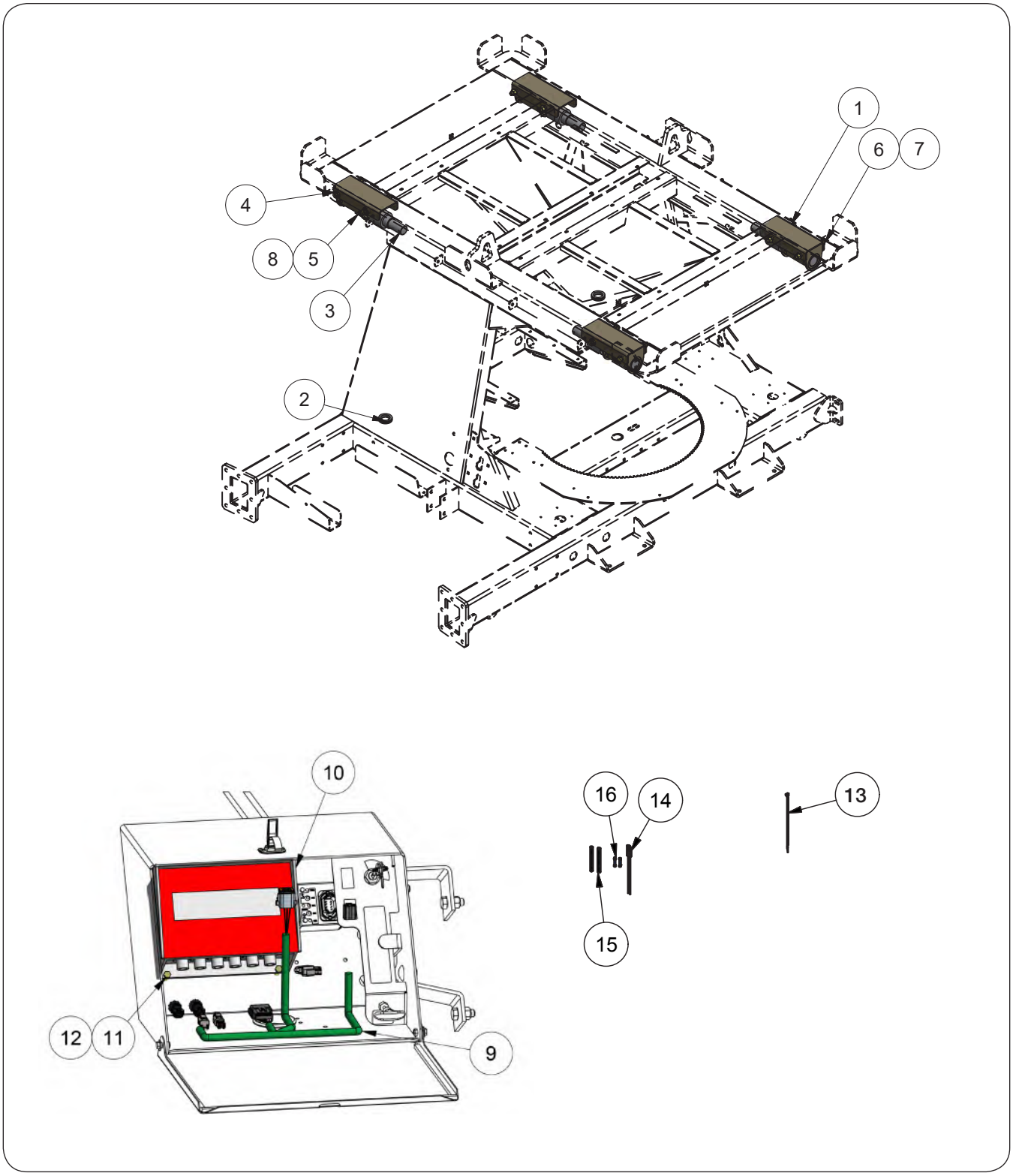
## Stationary Bracket Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 29070TS | Stationary Bracket | 4 | |
| 2 | 9390-138 | Capscrew 5/8-11UNC x 7 | 8 | Grade 5 |
| 3 | 9801 | Locknut 5/8-11UNC | 8 | |

## Scale Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



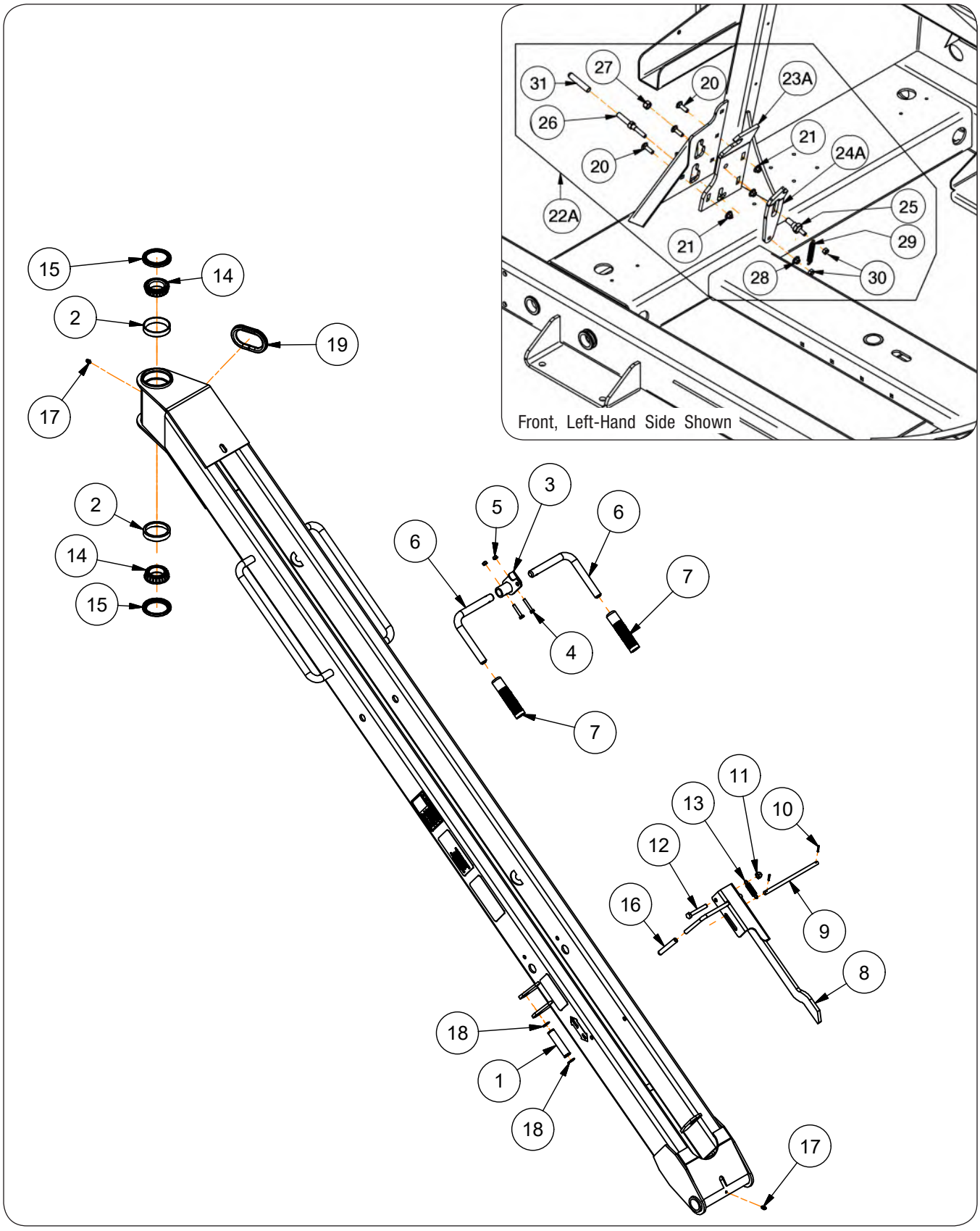
## Scale Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 29065TS | Scale Bracket Weldment | 4 | |
| 2 | 900513 | Grommet/Rubber 2" Dia. | 2 | |
| 3 | 901173 | Weigh Bar | 4 | |
| 4 | 903108 | Flat Washer 5/8" (Stainless Steel) | 16 | |
| 5 | 9390-065 | Capscrew 3/8-16UNC x 3 1/2 | 8 | Grade 5 |
| 6 | 9390-138 | Capscrew 5/8-11UNC x 7 | 8 | Grade 5 |
| 7 | 9801 | Locknut 5/8-11UNC | 8 | |
| 8 | 9928 | Locknut 3/8-16UNC | 8 | |
| 9 | 2002132 | Common Scale Wiring Harness | 1 | |
| 10 | 9500374 | 2520 Scale Indicator | 1 | |
| 11 | 9390-003 | Capscrew 1/4-20UNC x 3/4 | 2 | Grade 5 |
| 12 | 9936 | Locknut 1/4-20UNC | 2 | |
| 13 | 9000106 | Cable Tie 6" | 16 | |
| | 9000107 | Cable Tie 15 1/2" | 6 | |
| | 94038 | Cable Tie 32" | 2 | |
| 14 | 21903 | Connector | 1 | |
| 15 | 26554 | Heat Shrink Tube | 2 | |
| 16 | 91023 | Butt Connector | 2 | |
| 17 | 9007102 | Roll Printer Kit | 1 | NOT SHOWN |

## Pivot Arm Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



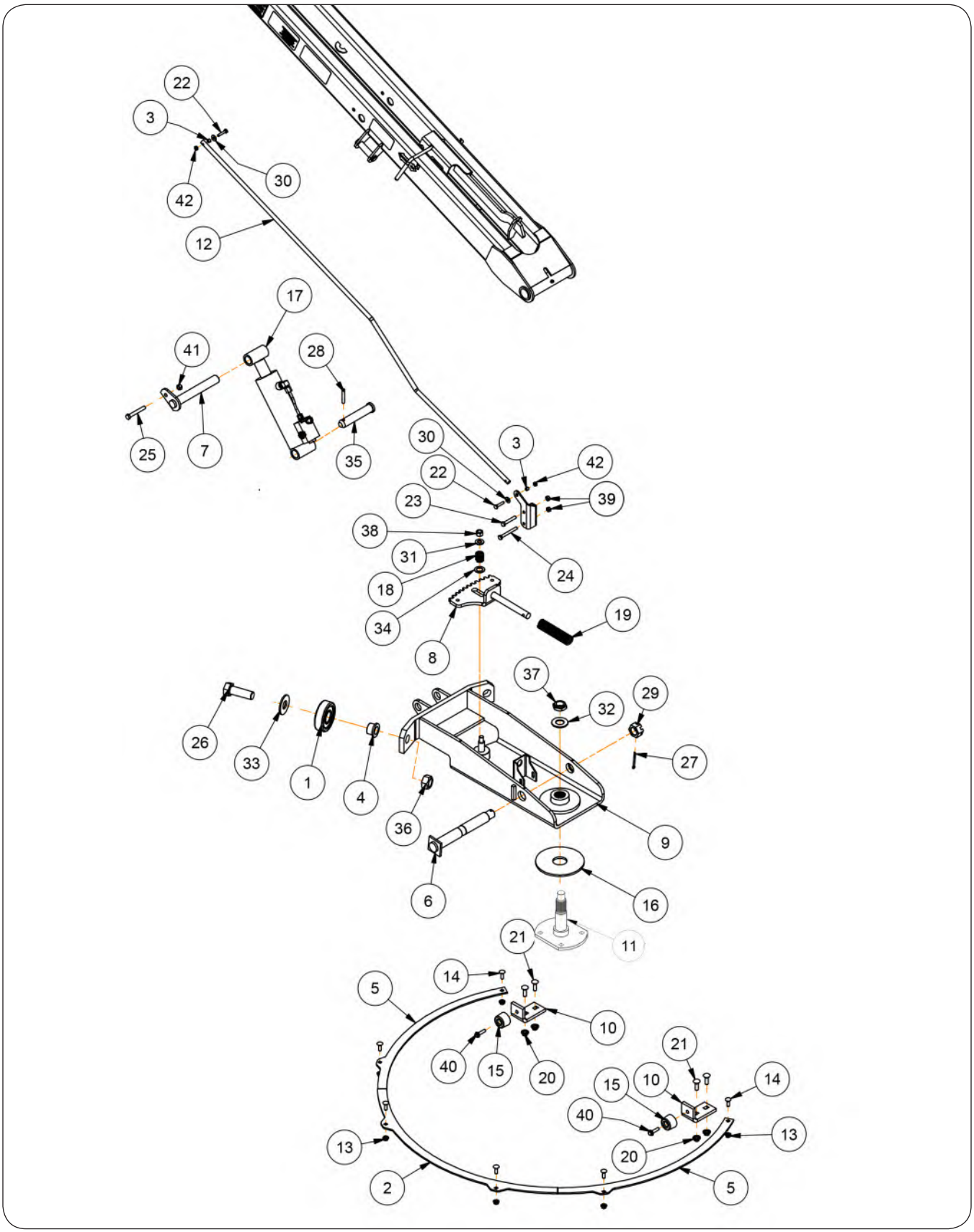
## Pivot Arm Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 29248 | Pin 3/4" Dia. | 2 | |
| 2 | 9349 | Bearing Cup LM501310 | 2 | |
| 3 | 29974TS | Cam Weldment | 1 | |
| 4 | 9390-007 | Capscrew 1/4-20UNC x 1 1/2 | 2 | |
| 5 | 9936 | Locknut 1/4-20UNC | 4 | |
| 6 | 24023TS | Handle | 2 | |
| 7 | 92928 | Hand Grip 3/4" ID | 2 | |
| 8 | 27750TS | Latch Weldment | 1 | |
| 9 | 27755 | Pin 3/8" Dia. | 1 | |
| 10 | 9392-056 | Roll Pin 1/8" Dia. x 3/4" | 2 | |
| 11 | 9928 | Locknut 3/8-16UNC | 1 | |
| 12 | 9390-061 | Capscrew 3/8-16UNC x 2 1/2 | 1 | |
| 13 | 99860 | Spring 2 1/4" Long | 1 | |
| 14 | 9247 | Bearing Cone LM501349 | 2 | |
| 15 | 9355 | Seal 2 1/4" | 2 | |
| 16 | 9003869 | Hand Grip 3/8" ID | 1 | |
| 17 | 91160 | Grease Zerk | 2 | |
| 18 | 903145-018 | Retaining Ring 3/4" Nom. | 4 | |
| 19 | 82044 | U-Channel | 1 | |
| 20 | 9388-052 | Carriage Bolt 3/8-16UNC x 1 1/4 | 6 | |
| 21 | 91263 | Flange Nut 3/8-16UNC | 6 | |
| 22A | 29220CG | Latch Assembly LH (SHOWN) | 1 | Includes Items 23A though 31 |
| 22B | 29221CG | Latch Assembly RH | 1 | Includes Items 23B though 31 |
| 23A | 29200CG | Latch Plate LH | 1 | |
| 23B | 29201CG | Latch Plate RH | 1 | |
| 24A | 29217CG | Inside Plate LH | 1 | |
| 24B | 29218CG | Inside Plate RH | 1 | |
| 25 | 29209 | Double Threaded Pin | 2 | |
| 26 | 29219 | Latch Pin | 2 | |
| 27 | 91263 | Flange Nut 3/8-16UNC | 2 | |
| 28 | 9800 | Locknut 1/2-13UNC | 2 | |
| 29 | 903141 | Extension Spring | 2 | |
| 30 | 9928 | Locknut 3/8-16UNC | 4 | |
| 31 | 902603 | Hand Grip | 2 | |

## Pivot Arm Mounting Components to Platform

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



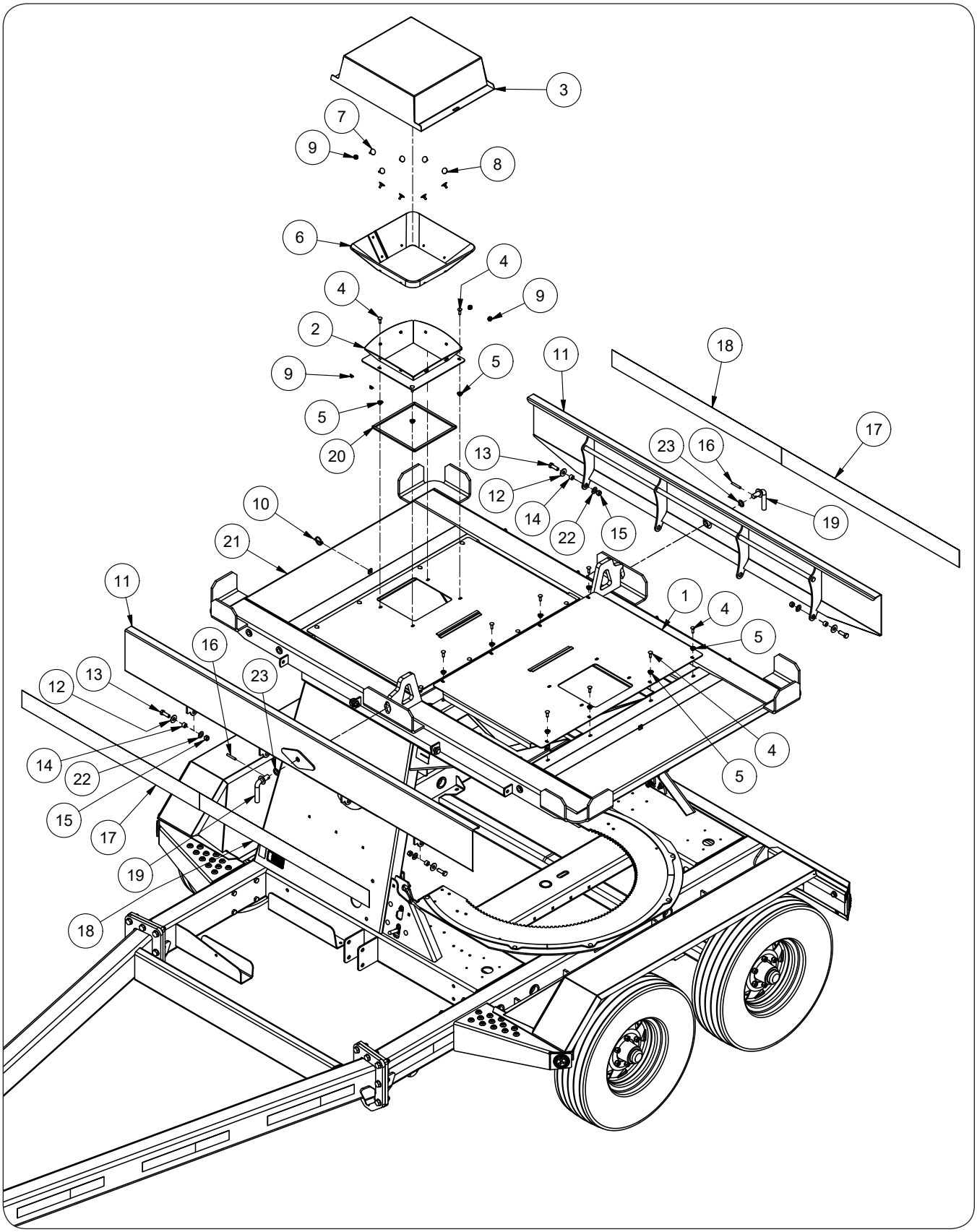
## Pivot Arm Mounting Components to Platform

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 2000189 | Bearing Assembly | 2 | |
| 2 | 2001301 | Plate/Segment | 1 | |
| 3 | 22018 | Bushing 3/8" OD | 2 | |
| 4 | 23951 | Bushing | 2 | |
| 5 | 24863 | Plate/Segment | 2 | |
| 6 | 27512 | Pin Weldment 1 1/4" Dia. x 9 7/8" | 1 | |
| 7 | 27922 | Pin Weldment 1" Dia. x 7 3/4" | 1 | |
| 8 | 28453TS | Latch Weldment | 1 | |
| 9 | 29032TS | Pivot Weldment | 1 | |
| 10 | 29414TS | Stop Bracket | 2 | |
| 11 | 29970TS | Pivot/Hub Weldment Splined Shaft 2" Dia. | 1 | |
| 12 | 29973TS | Push Rod | 1 | |
| 13 | 9005639 | Flange Nut 5/16"-18UNC | 6 | Stainless Steel |
| 14 | 9007908-025 | Carriage Bolt 5/16"-18UNC x 1" | 6 | Stainless Steel |
| 15 | 901169 | Rubber Bumper | 2 | |
| 16 | 901186 | Poly Washer | 1 | |
| 17 | 902361 | Cylinder 2 1/2 x 4 | 1 | |
| | 2004322 | Seal Kit | | |
| 18 | 902602 | Spring 1" Long | 1 | |
| 19 | 902616 | Spring 5" Long | 1 | |
| 20 | 91263 | Flange Nut 3/8"-16UNC | 14 | |
| 21 | 9388-052 | Carriage Bolt 3/8"-16UNC x 1 1/4" G5 | 14 | |
| 22 | 9390-006 | Capscrew 1/4"-20UNC x 1 1/4" G5 | 2 | |
| 23 | 9390-034 | Capscrew 5/16"-18UNC x 2" G5 | 1 | |
| 24 | 9390-037 | Capscrew 5/16"-18UNC x 2 3/4" G5 | 1 | |
| 25 | 9390-062 | Capscrew 3/8"-16UNC x 2 3/4" G5 | 1 | |
| 26 | 9390-187 | Capscrew 1"-8UNC x 3" G5 | 2 | |
| 27 | 9391-046 | Cotter Pin 3/16" Dia. x 2" | 1 | |
| 28 | 9392-159 | Roll Pin 5/16" Dia. x 2" | 1 | |
| 29 | 9393-020 | Slotted Nut 1"-14UNS | 1 | |
| 30 | 9405-064 | Flat Washer 1/4" USS | 2 | |
| 31 | 9405-086 | Flat Washer 1/2" SAE | 1 | |
| 32 | 9405-116 | Flat Washer 1" SAE | 2 | |
| 33 | 9405-118 | Flat Washer 1" USS | 2 | |
| 34 | 9500091 | Nylon Washer | 1 | |
| 35 | 9500423 | Pin 1" Dia. x 5 1/8" | 1 | |
| 36 | 9663 | Lock Nut/Top 1-8"UNC | 2 | |
| 37 | 96976-040 | Thin Locknut 1-14UNS | 1 | |
| 38 | 9800 | Lock Nut/Top 1/2-13UNC | 1 | |
| 39 | 9807 | Lock Nut/Top 5/16"-18UNC | 2 | |
| 40 | 98580 | Flange Screw 5/16"-18UNC x 1 1/4" G5 | 2 | |
| 41 | 9928 | Lock Nut/Top 3/8"-16UNC | 1 | |
| 42 | 9936 | Lock Nut/Top 1/4"-20UNC | 3 | |

## Platform Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



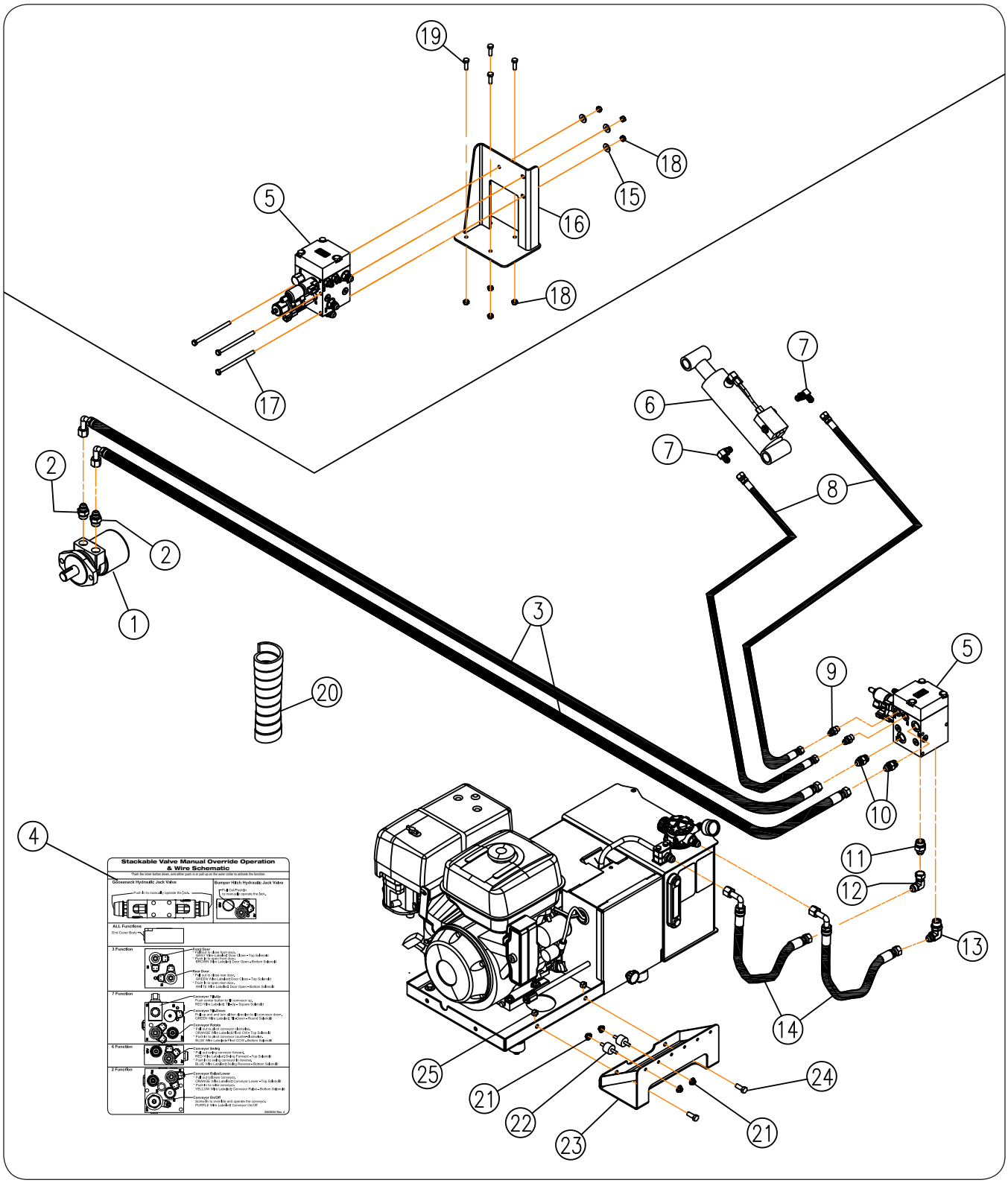
## Platform Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 2010229IV | Cover Panel Weldment =Ivory White= | 2 | |
| 2 | 27825IV | Hopper Weldment =Ivory White= | 2 | |
| 3 | 27827TS | Hopper Cover =Tan Speckle= | 2 | |
| 4 | 9388-025 | Carriage Bolt 5/16"-18UNC x 1" | 24 | Grade 5 |
| 5 | 91257 | Large Flange Hex Nut 5/16"-18UNC | 24 | |
| 6 | 27826 | Rubber Hopper | 2 | |
| 7 | 902346 | Elevator Bolt 1/4"-20UNC x 1" | 4 | |
| 8 | 902006 | Elevator Bolt 1/4"-20UNC x 3/4" | 14 | |
| 9 | 97189 | Large Flange Hex Nut 1/4"-20UNC | 18 | |
| 10 | 9093 | Klik Pin 3/16" Dia. | 2 | |
| 11 | 29030IV | Side Panel Weldment =Ivory White= | 2 | |
| 12 | 9405-088 | Flat Washer 1/2" USS | 8 | |
| 13 | 9390-101 | Capscrew 1/2"-13UNC x 1 1/2" | 8 | Grade 5 |
| 14 | 24550 | Bushing 1/2" Long | 8 | |
| 15 | 9800 | Locknut 1/2"-13UNC | 8 | |
| 16 | 91144-186 | Spiral Pin 5/16" Dia. x 2" | 2 | |
| 17 | 902642 | Decal, Unverferth Seed Pro | 2 | |
| 18 | 9502348 | Decal, Model Seed Pro 210 | 2 | |
| 19 | 2001336 | Pin Weldment | 2 | |
| 20 | 900152 | Foam Rubber | 2 | |
| 21 | 29020IV | Platform Weldment =Ivory White= | 1 | |
| 22 | 903108 | Flat Washer 5/8" (Stainless Steel) | 8 | |
| 23 | 9500091 | Nylon Washer 3/4" | 2 | |

## Hydraulic Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



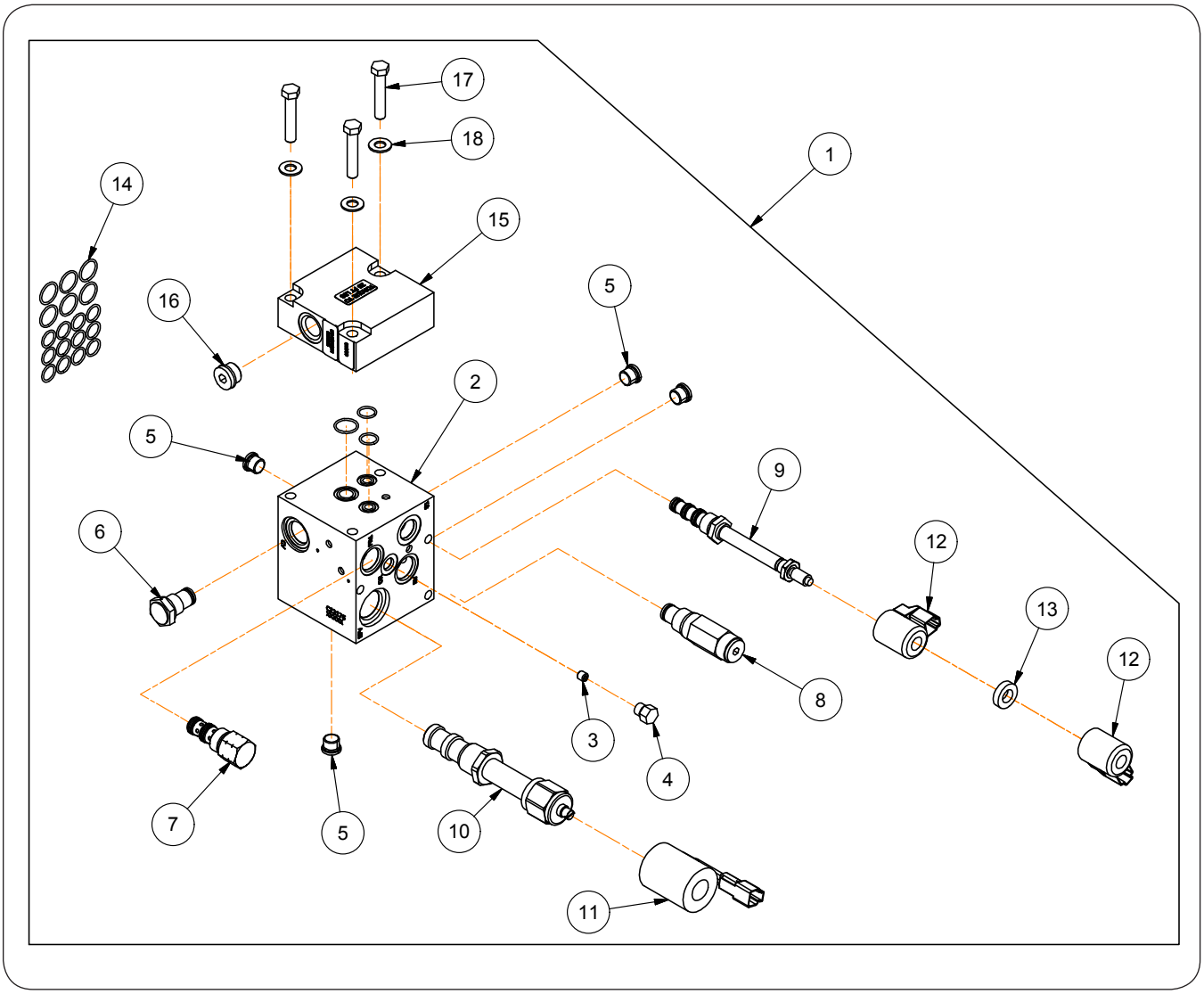
## Hydraulic Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 9500806 | Hydraulic Motor w/Keyed Shaft | 1 | |
| | 901649 | Woodruff Key 1/4" x 1" | - | |
| | 91687 | Seal Kit for Hydraulic Motor | - | |
| 2 | 93607 | Adapter 3/4-16 JIC Male x 7/8-14 O-Ring Male | 2 | |
| 3 | 902837 | Hose 1/2" x 310" | 2 | |
| 4 | 2003034 | Decal, Valve Manual Override Operation | 1 | |
| 5 | 9500855 | Stackable Control Valve - 2 Section | 1 | |
| 6 | 902361 | Cylinder 2 1/2" x 4" (3000 PSI) | 1 | |
| | 99515 | Ball Valve 3/4-16UNF-2A Threaded x 1 7/8 W/3 O-Rings | - | |
| | 2004322 | Seal Kit For Ball Valve | - | |
| 7 | 9003744 | 90° Elbow 9/16-18 JIC Male x 9/16-18 O-Ring Male w/ .030 Restrictor | 2 | |
| 8 | 9500425 | Hose 1/4" x 72" | 2 | |
| 9 | 9001495 | Adapter 9/16-18 JIC Male x 9/16-18 O-Ring Male | 2 | |
| 10 | 9864 | Adapter 3/4-16 JIC Male x 3/4-16 O-Ring Male | 2 | |
| 11 | 93607 | Adapter 3/4-16 JIC Male x 7/8-14 O-Ring Male | 1 | |
| 12 | 93683 | 90° Elbow 3/4-16 JIC Male x 3/4-16 JIC Female Swivel Nut | 1 | |
| 13 | 93599 | 90° Elbow 3/4-16 JIC Male x 7/8-14 O-Ring ADJ Male Boss | 1 | |
| 14 | 902836 | Hose 1/2" x 24" | 2 | |
| 15 | 9405-070 | Flat Washer 5/16" USS | 3 | |
| 16 | 2002553TS | Mounting Plate | 1 | |
| 17 | 9390-044 | Capscrew 5/16"-18UNC x 5" | 3 | |
| 18 | 9807 | Locknut 5/16"-18UNC | 8 | |
| 19 | 9390-030 | Capscrew 5/16"-18UNC x 1" G5 | 4 | |
| 20 | 9004075 | Spiral Hose Wrap | 3 | |
| 21 | 97189 | Large Flange Hex Nut 1/4"-20UNC | 4 | |
| 22 | 9500067 | Isolator | 2 | |
| 23 | 2005069TS | Relay Mount Weldment | 1 | |
| 24 | 9390-055 | Capscrew 3/8"-16UNC x 1" G5 | 2 | |
| 25 | 9928 | Lock Nut/Top 3/8"-16UNC | 2 | |

## Control Valve - 2 Function Components (Stackable Valve)

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



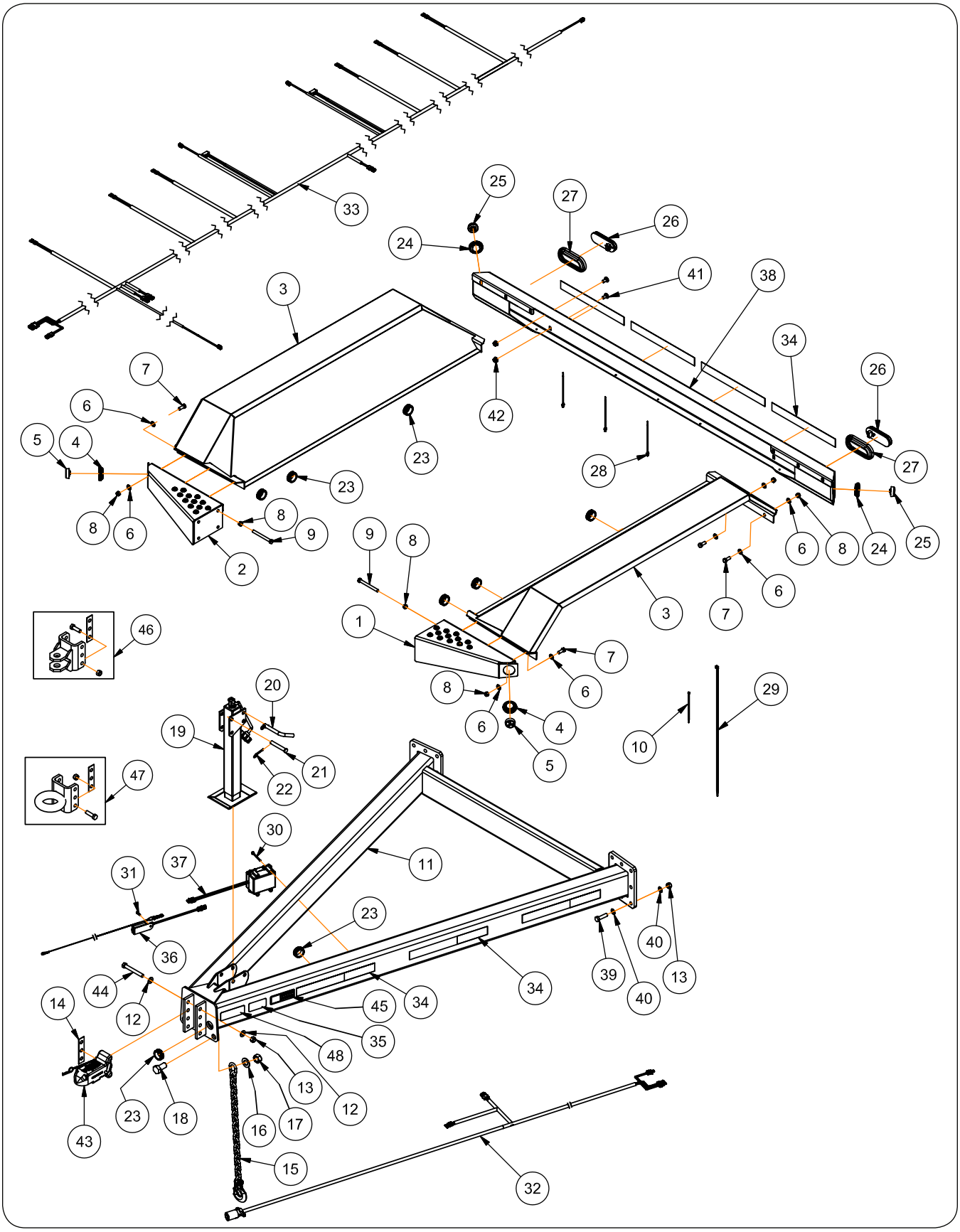
## Control Valve - 2 Function Components (Stackable Valve)

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY. | NOTES |
|---|---|---|---|---|
| 1 | 9500855 | Valve Assembly w/End Cover Assembly | 1 | Includes items 2 through 18 |
| 2 | 9500879 | Valve Body Only | 1 | |
| 3 | 902347 | Orifice Plug 0.025, 5/16-24UNF Thread, 0.125 Allen Hex Socket | 1 | |
| 4 | 902825 | Port Plug 7/16-20UNF Hex Head | 1 | |
| 5 | 9003423 | Plug 9/16-18 O-Ring Male w/Hollow Hex Socket | 4 | |
| 6 | 902821 | Check Valve | 1 | |
| | 902853 | Seal Kit | - | |
| 7 | 9501428 | Flow Regulator | 1 | |
| | 9500116 | Seal Kit | - | |
| 8 | 902918 | Relief Cartridge | 1 | |
| | 903032 | Seal Kit | - | |
| 9 | 902842 | Cartridge Valve 3/4-16UNF (3 Position, 4 Way) | 3 | |
| | 902849 | Seal Kit for 3 Position, 4 Way Cartridge Valve | - | |
| | 902813 | Coil Nut 1/2-20UNF | - | |
| 10 | 9500131 | Cartridge - Proportional 1 1/16-8UNC Thread | 1 | |
| | 9500132 | Seal Kit | - | |
| 11 | 9500136 | Proportional Coil | 1 | |
| 12 | 902811 | Coil - Electromagnetic | 6 | |
| 13 | 902812 | Coil Spacer | 3 | |
| 14 | 9500600 | Seal Kit - Valve Assembly O-Rings | - | |
| 15 | 9500306 | Valve End Cover Assembly without Power Beyond | 1 | Includes Item #17 |
| 16 | 98048 | Hex Plug 3/4-16 O-Ring Male | 1 | |
| 17 | 9390-059 | Capscrew 3/8-16UNC x 2 | 3 | |
| 18 | 9405-074 | Flat Washer 3/8" SAE | 3 | |

## Undercarriage Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



## Undercarriage Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 29237TS | Fender Step/Mount LH | 1 | |
| 2 | 29238TS | Fender Step/Mount RH | 1 | |
| 3 | 29240TS | Fender Weldment | 2 | |
| 4 | 900956 | Grommet | 8 | |
| 5 | 900954 | Light/Amber (Round) | 2 | |
| 6 | 9405-086 | Flat Washer 1/2" SAE | 22 | |
| 7 | 9390-100 | Capscrew 1/2-13UNC x 1 1/4 | 14 | Grade 5 |
| 8 | 9800 | Locknut 1/2-13UNC | 16 | |
| 9 | 9390-113 | Capscrew 1/2-13UNC x 5 | 8 | |
| 10 | 9000106 | Cable Tie 6" Long | A/R | |
| 11 | 25788TS | Hitch Weldment 10' Undercarriage w/Decals | 1 | SHOWN |
| | 2009899TS | Hitch Assembly 10' | - | Includes Items 12, 13, 15-23, 30-32, 34-37, 43-45, 48 |
| 12 | 9405-098 | Flat Washer 5/8" SAE | 6 | |
| 13 | 9801 | Locknut 5/8-11UNC | 27 | |
| 14 | 25347B | Shim | 2 | |
| 15 | 98792 | Chain w/Hook & C-Link Asy | 2 | |
| 16 | 9405-116 | Flat Washer 1" SAE | 2 | |
| 17 | 9663 | Locknut 1-8UNC | 2 | |
| 18 | 91299-184 | Capscrew 1"-8UNC x 2 1/4" | 2 | Grade 8 |
| 19 | 902326 | Jack Stand Weldment 8000# | 1 | |
| 20 | 84979 | Bent Pin 5/8" Dia. | 1 | |
| 21 | 9805 | Clevis Pin 5/8" Dia. x 4 | 1 | |
| 22 | 9806 | Hairpin Cotter .148" Dia. x 2.687 | 1 | |
| 23 | 98487 | Grommet 1 3/4" Dia. | 8 | |
| 24 | 900956 | Grommet | 2 | |
| 25 | 900955 | Light/Red (Round) | 2 | |
| 26 | 97180 | Light/Red (Oval) | 2 | |
| 27 | 97182 | Grommet | 2 | |
| 28 | 99599 | Cable Tie 8.39" Long | A/R | |
| 29 | 94038 | Cable Ties 32" Long | A/R | |
| 30 | 902238 | Flange Bolt 1/4-20UNC x 3 (Grade 5) | 4 | |
| 31 | 9512 | Screw/Self Drill 1/4-14 x 1 | 2 | |
| 32 | 25045 | Front Wiring Harness 165" | 1 | |
| 33 | 25046 | Rear Wiring Harness 352" | 1 | |

(Continued on next page)

## Undercarriage Components (continued)

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

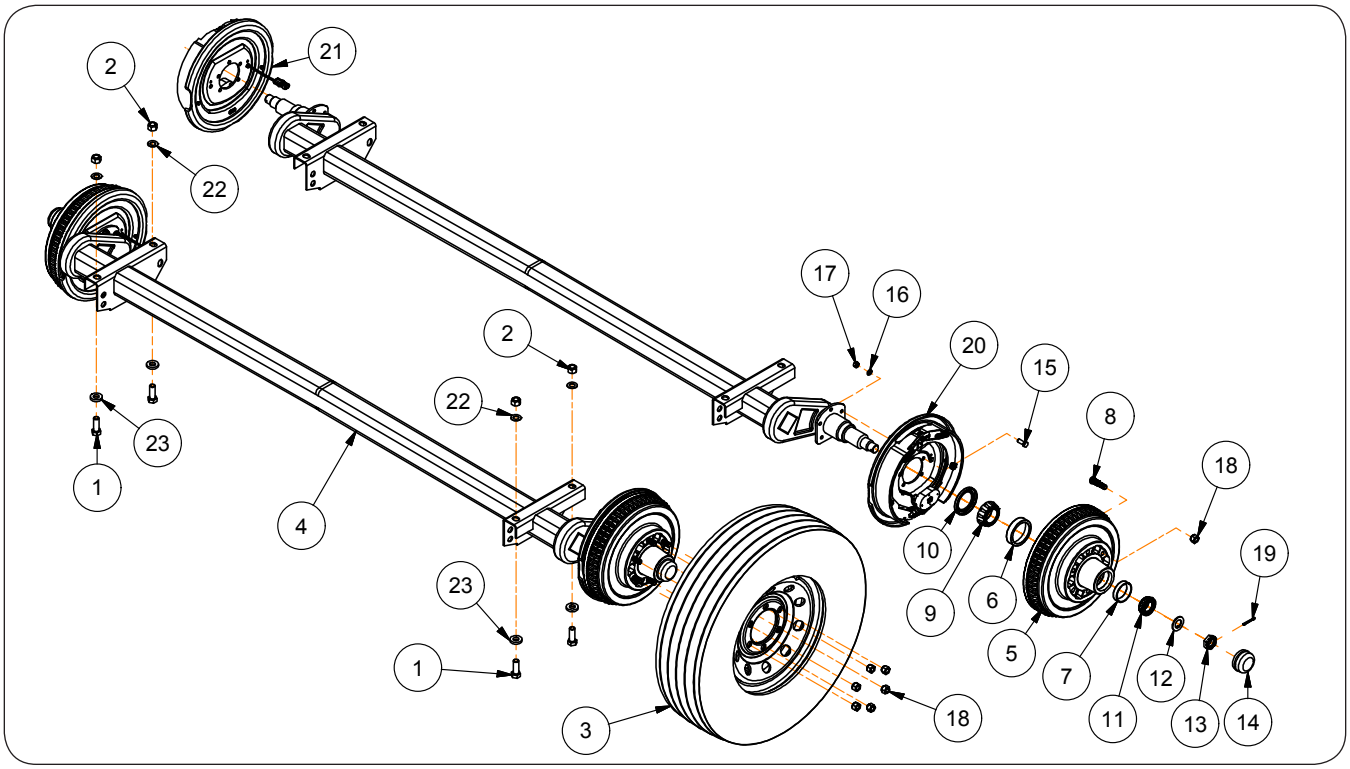
| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 34 | 25003 | Conspicuity Marking 18” | 10 | |
| 35 | 97961 | Decal WARNING (Read & Understand Manual) | 1 | |
| 36 | 900786 | Breakaway Electric Switch Complete | 1 | |
| 37 | 902764 | Battery w/Charger & Box | 1 | |
| 38 | 29230TS | Light Bar Weldment | 1 | |
| 39 | 9390-125 | Capscrew 5/8-11UNC x 2 1/4 | 16 | Grade 5 |
| 40 | 903108 | Flat Washer 5/8” (Stainless Steel) | 40 | |
| 41 | 9388-102 | Capscrew 1/2-13UNC x 1 | 4 | Grade 5 |
| 42 | 91267 | Flange Nut 1/2-13UNC | 4 | |
| 43 | 2000357TS | Ball Hitch Kit with Mounting Hardware | 1 | |
| 44 | 9390-134 | Capscrew 5/8-11UNC x 5 | 3 | Grade 5 |
| 45 | 9500710 | Decal CAUTION (Transport Chains) | 1 | |
| 46 | 2000264B | Optional Clevis Hitch Kit | - | |
| 47 | 2000265B | Optional Pintle Hitch Kit | - | |
| 48 | 9500345 | Decal, CAUTION (Towing...) | 1 | |

## Touch-Up Paint

| PAINT | PART NO. |
|---|---|
| Ivory White - Spray Paint (12oz) | 901210 |
| Tan Base Coat - Spray Paint (12oz) | 9500474 |
| Radiant Brass/Tan Speckle - Finishing Paint (12oz) | 901297 |

## Axle & Wheel Components

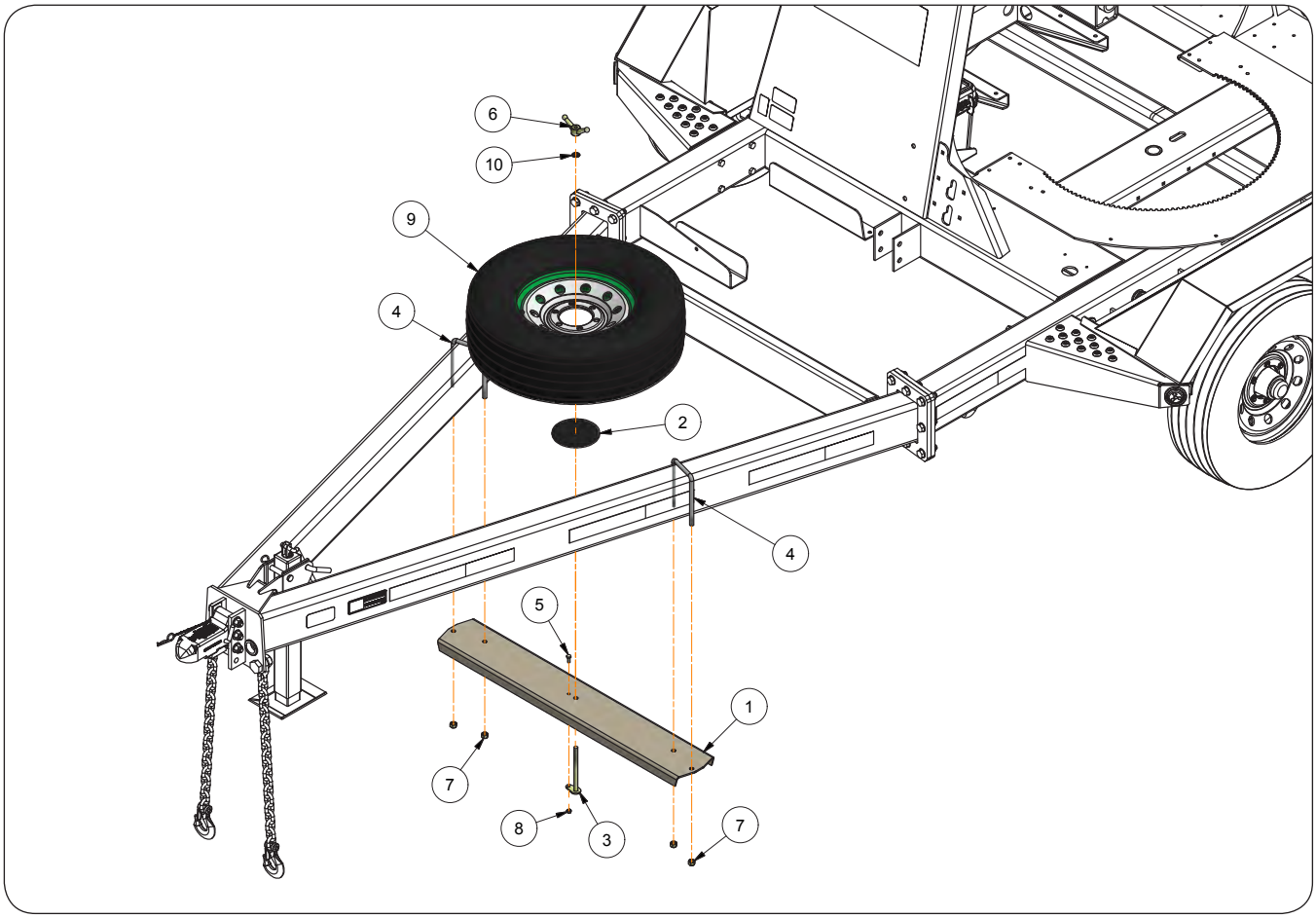
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | NOTES |
|---|---|---|---|
| 1 | 9390-123 | Capscrew 5/8-11UNC x 1 3/4 | Grade 5 |
| 2 | 9801 | Locknut 5/8-11UNC | |
| 3 | 98115 | Wheel/Tire Assembly 6 x 15 | TL225/75D15 |
| | 98395 | Wheel Only | |
| 4 | 903052B | Torsion Axle Assembly w/Brakes | Includes Items 5 through 21 |
| 5 | 32651 | Hub 6 Bolt Sub Asy with Cups & Studs | Includes Items 6 through 8 |
| 6 | 91812 | Bearing Cup (25520) | |
| 7 | 91813 | Bearing Cup (15245) | |
| 8 | 97346 | Stud Bolt 1/2-20UNF x 2 (Grade 8) | |
| 9 | 91822 | Bearing Cone (25580) | |
| 10 | 97342 | Seal 2 1/4 ID x 3.376 OD | |
| 11 | 91823 | Bearing Cone (15123) | |
| 12 | 97343 | Washer/Key 1.032 ID | |
| 13 | 97344 | Slotted Jam Nut 1-14UNS | |
| 14 | 97345 | Hub Cap | |
| 15 | 9390-055 | Capscrew 3/8-16UNC x 1 | Grade 5 |
| 16 | 9404-021 | Lock Washer 3/8" | |
| 17 | 9394-006 | Hex Nut 3/8-16UNC | |
| 18 | 91875 | Tapered Nut 1/2-20UNF | |
| 19 | 9391-035 | Cotter pin 5/32" Dia x 1 1/2 | |
| 20 | 97348 | Electric Brake Cluster, LH | |
| 21 | 97349 | Electric Brake Cluster, RH | |
| 22 | 903108 | Flat Washer 5/8" (Stainless Steel) | |
| 23 | 9746 | Flat Washer 5/8" | |

## Spare Tire Kit Components

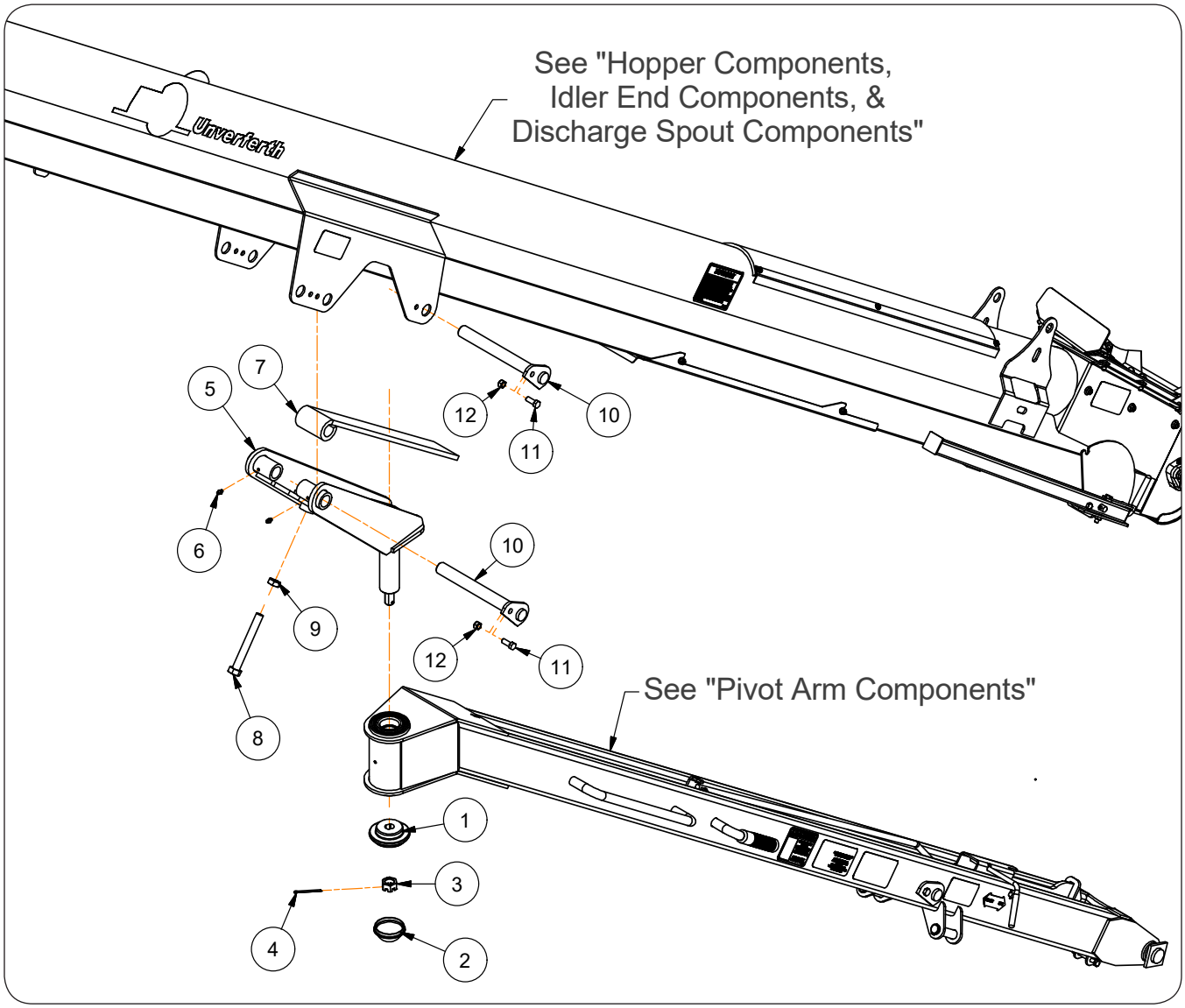
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | NOTES |
|---|---|---|---|
| | 2000622TS | Spare Tire Kit | Includes Items 1 through 10 |
| 1 | 29736TS | Mounting Plate | |
| 2 | 29744TS | Washer | |
| 3 | 29751 | Pin Weldment 1/2" Dia. x 6 5/8 | |
| 4 | 91323 | U-Bolt 1/2-13UNC x 7 1/8 | |
| 5 | 9390-028 | Capscrew 5/16-18UNC x 3/4 | Grade 5 |
| 6 | 9500475 | Handle Wing Nut 1/2-13UNC | |
| 7 | 9800 | Locknut 1/2-13UNC | |
| 8 | 9807 | Locknut 5/16-18UNC | |
| 9 | 98115 | Tire & Wheel Assembly (6 x 15) | TL225/75D15 |
| 10 | TA500470 | Lock Washer - External Tooth 1/2" I.D. | |

## Pivot Arm Mounting Components to Conveyor

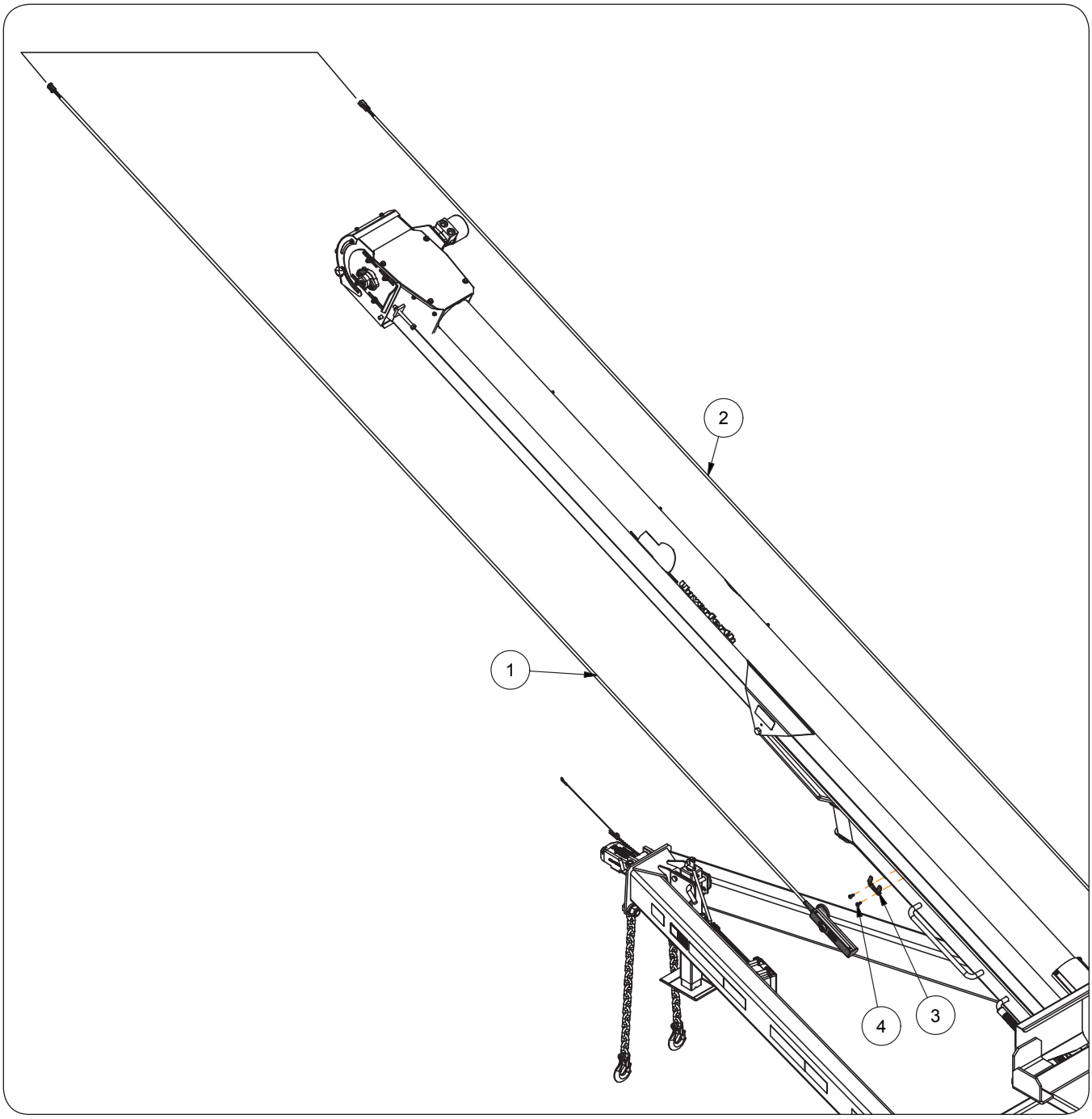
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 28581TS | Retainer Cap | 1 | |
| 2 | 9162 | Hub Cap | 1 | |
| 3 | 9393-015 | Slotted Nut 3/4”-10UNC G2 | 1 | |
| 4 | 9391-027 | Cotter Pin 1/8” Dia. x 2” | 1 | |
| 5 | 2001804TS | Upper Pivot Weldment | 1 | |
| 6 | 91160 | Grease Zerk | 2 | |
| 7 | 28496TS | Spring | 1 | |
| 8 | 9002131 | Capscrew 5/8”-11UNC x 5” Full Threaded | 1 | |
| 9 | 9395-014 | Hex Jam Nut 5/8”-11UNC | 1 | |
| 10 | 2001834 | Pin Weldment 1” Dia. x 9 3/4” | 2 | |
| 11 | 9390-055 | Capscrew 3/8”-16UNC x 1” G5 | 2 | |
| 12 | 9928 | Lock Nut/Top 3/8”-16UNC | 2 | |

## Conveyor Controller Components

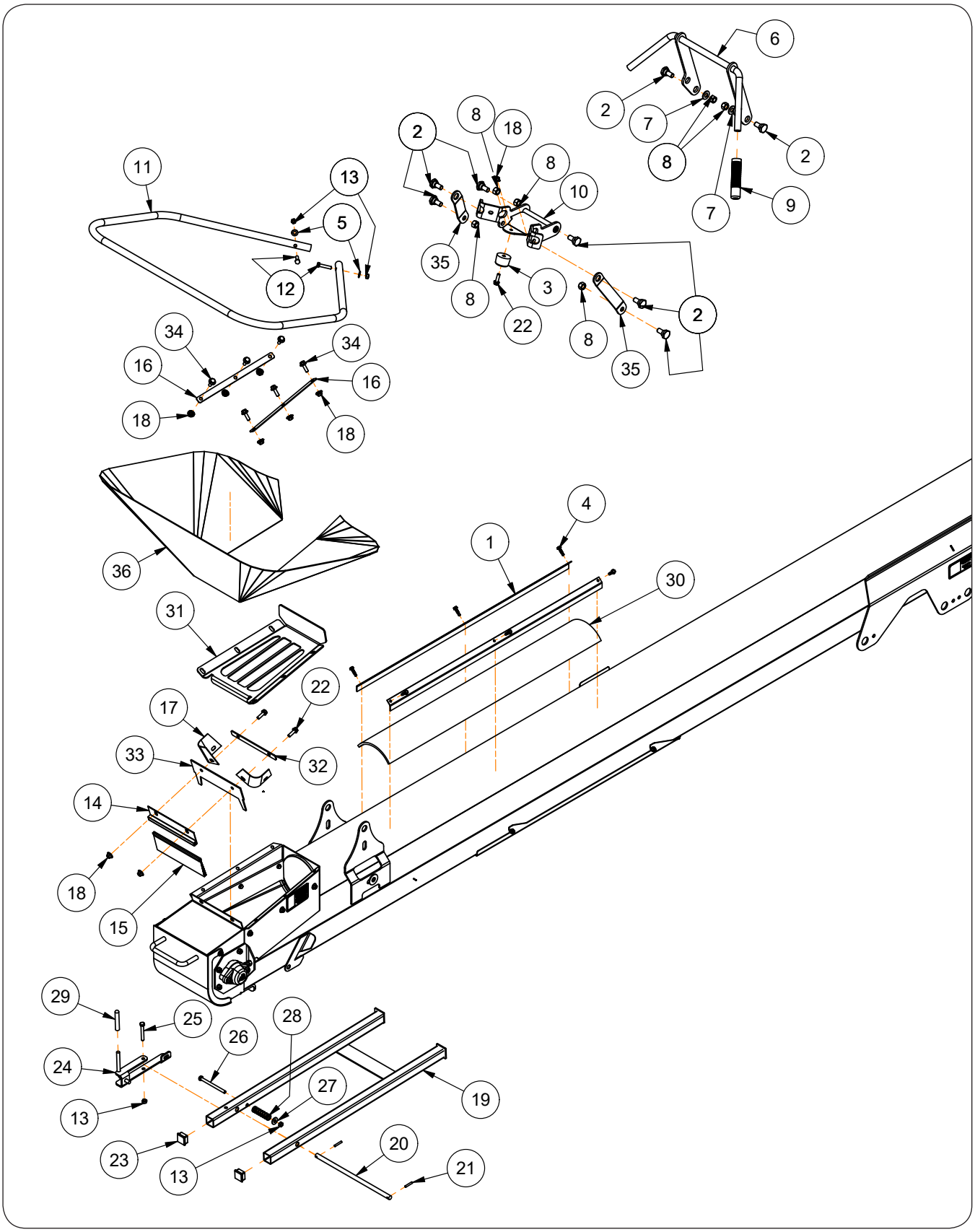
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 27627 | Switch Assembly | 1 | |
| 2 | 2002519 | Wire Harness | 1 | |
| 3 | 26505 | Switch Retainer | 1 | |
| 4 | 9473 | Self-Drilling Screw 1/4-14 x 3/4 | 2 | |

## Hopper Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



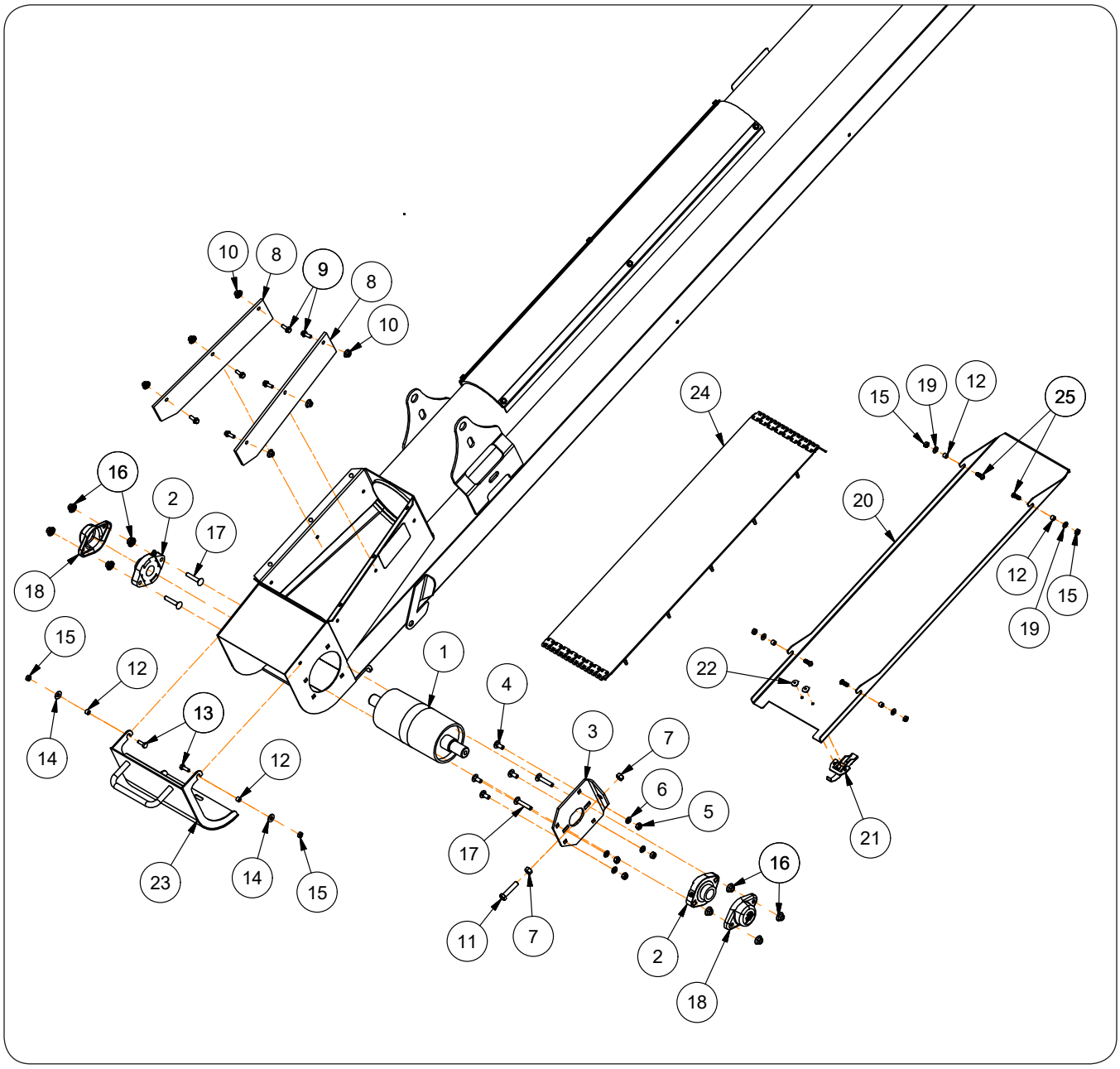
## Hopper Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY. | NOTES |
|---|---|---|---|---|
| 1 | N/A | Plate | 1 | |
| 2 | 2003191 | Shoulder Bolt with 1/2"-13UNC Threaded | 8 | |
| 3 | 901169 | Rubber Bumper 1.7" Dia. | 1 | |
| 4 | 9512 | Screw/Self Drilling 1/4-14 x 1 | 6 | |
| 5 | 9501011 | Nylon Washer | 2 | |
| 6 | 2007602TS | Handle Weldment | 1 | |
| 7 | 9405-086 | Flat Washer 1/2" SAE | 4 | |
| 8 | 9800 | Locknut 1/2-13UNC | 8 | |
| 9 | 92928 | Grip/Handle Bar | 2 | |
| 10 | 2003821TS | Pivot Weldment | 1 | |
| 11 | 2007603TS | Bent Tube | 1 | |
| 12 | 9390-032 | Capscrew 5/16-18UNC x 1 1/2 | 2 | |
| 13 | 9807 | Locknut 5/16-18UNC | 4 | |
| 14 | 24964 | Brush Holder | 1 | |
| 15 | 901111 | Nylon Brush | 1 | |
| 16 | 2001058TS | Strap | 2 | |
| 17 | 24986 | Poly Strip | 2 | |
| 18 | 91257 | Flange Nut 5/16-18UNC | 23 | |
| 19 | 24943TS | Stand Weldment | 1 | |
| 20 | 24946 | Pin | 1 | |
| 21 | 91144-121 | Spiral Pin 3/16" Dia. x 1 1/8" | 2 | |
| 22 | 901044 | Flange Screw 5/16"-18UNC x 1" G5 | 3 | |
| 23 | 9000117 | Plug | 2 | |
| 24 | 27110TS | Latch Weldment | 1 | |
| 25 | 9390-035 | Capscrew 5/16"-18UNC x 2 1/4" G5 | 1 | |
| 26 | 9390-042 | Capscrew 5/16"-18UNC x 4" G5 | 1 | |
| 27 | 9405-070 | Flat Washer 5/16" | 1 | |
| 28 | TA510035 | Spring, Stop Pin | 1 | |
| 29 | 9003869 | Hand Grip | 1 | |
| 30 | 2003862 | Wear Guard | 1 | |
| 31 | 2007952TS | Grate | 1 | |
| 32 | 28486TS | Plate/Strap 3/4" x 7 1/2" | 1 | |
| 33 | 26865 | Seal | 1 | |
| 34 | 97604 | Large Flange Screw 5/16"-18UNC x 1" G5 | 6 | |
| 35 | 2003176TS | Link Plate 1 3/8" x 7 1/4" | 2 | |
| 36 | 9500701 | Vinyl Hopper | 1 | |

## Idler End Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



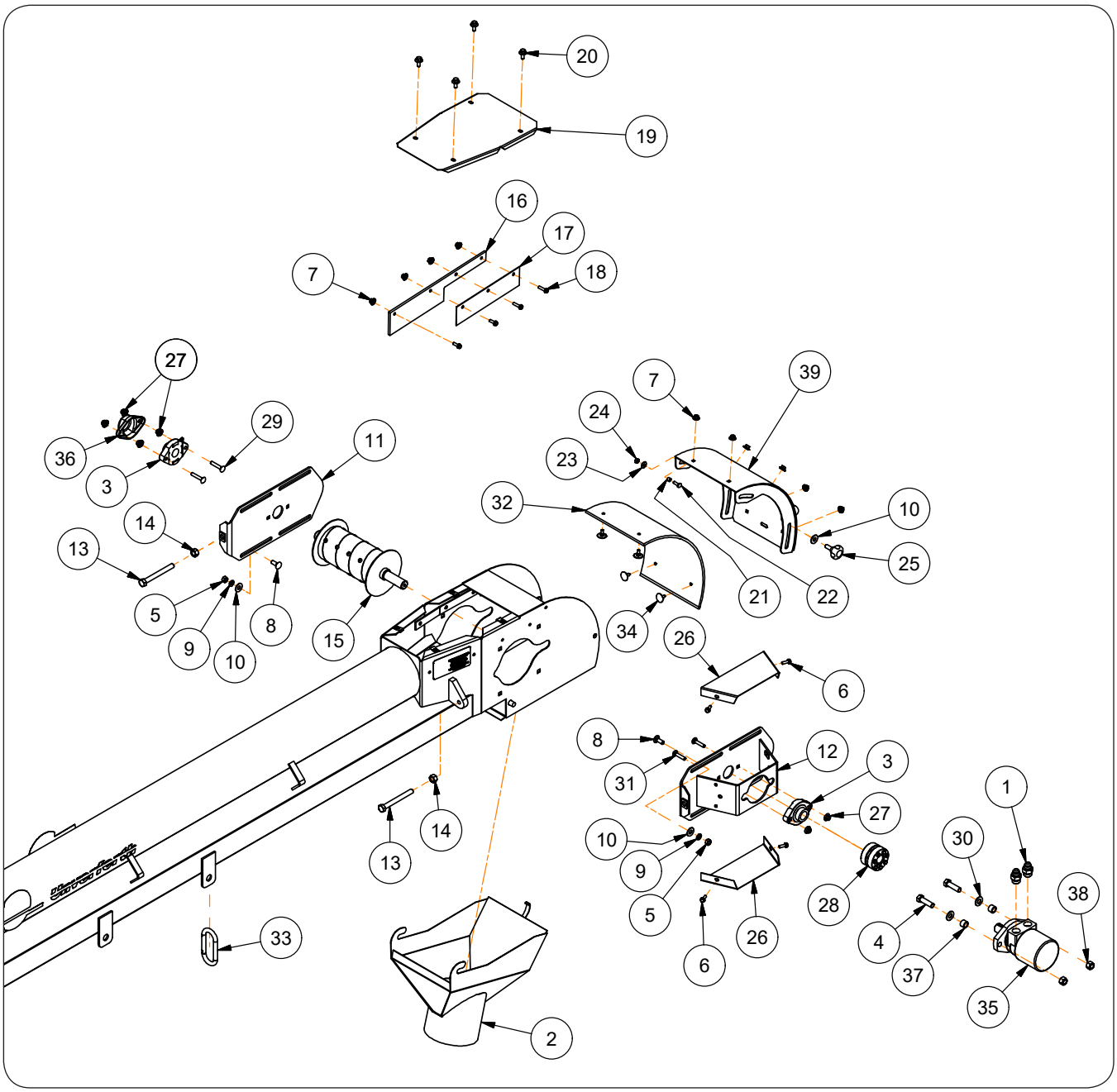
## Idler End Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 900608 | Idler Pulley | 1 | |
| 2 | TA0-903088-0 | Bearing w/ Flange | 4 | |
| 3 | 23912TS | Adjustment Plate | 1 | |
| 4 | 9388-024 | Carriage Bolt 5/16-18UNC x 3/4 | 4 | |
| 5 | 9394-004 | Hex Nut 5/16-18UNC | 4 | |
| 6 | 9404-019 | Lock Washer 5/16 | 4 | |
| 7 | 9394-006 | Hex Nut 3/8-16UNC | 10 | |
| 8 | 24756 | Poly Strip | 2 | |
| 9 | 97420 | Flange Screw 1/4-20UNC x 3/4 | 14 | |
| 10 | 97189 | Hex Nut / Large Flange 1/4-20UNC | 20 | |
| 11 | TA0-907104-0 | Capscrew 3/8-16UNC x 1 3/4 | 1 | |
| 12 | 22018 | Bushing | 8 | |
| 13 | 9390-003 | Capscrew 1/4”-20UNC x 3/4” G5 | 4 | |
| 14 | 9405-064 | Flat Washer 1/4” | 4 | |
| 15 | 9936 | Locknut 1/4”-20UNC | 8 | |
| 16 | 91257 | Flange Nut 5/16-18UNC | 23 | |
| 17 | 9500341 | Carriage 5/16-18UNC x 1 3/4 | 6 | |
| 18 | 9500310 | Idler Cover | 3 | |
| 19 | 9405-052 | Flat Washer 3/16” USS | 4 | |
| 20 | 2003793TS | Shield | 1 | |
| 21 | TA0-902596-0 | Latch/Draw Blade | 1 | |
| 22 | 9500175 | Rivet 3/16” | 2 | |
| 23 | 2003807TS | Cleanout Door | 1 | |
| 24 | 9501224 | Conveyor Belt | 1 | |
| | 9501506 | Belt Splice Kit | - | |
| | 9500087 | Belt Splice Pin | - | |
| 25 | 9003829 | Button Head Socket 1/4”-20UNC x 3/4” | 4 | |

## Discharge Spout Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



## Discharge Spout Components

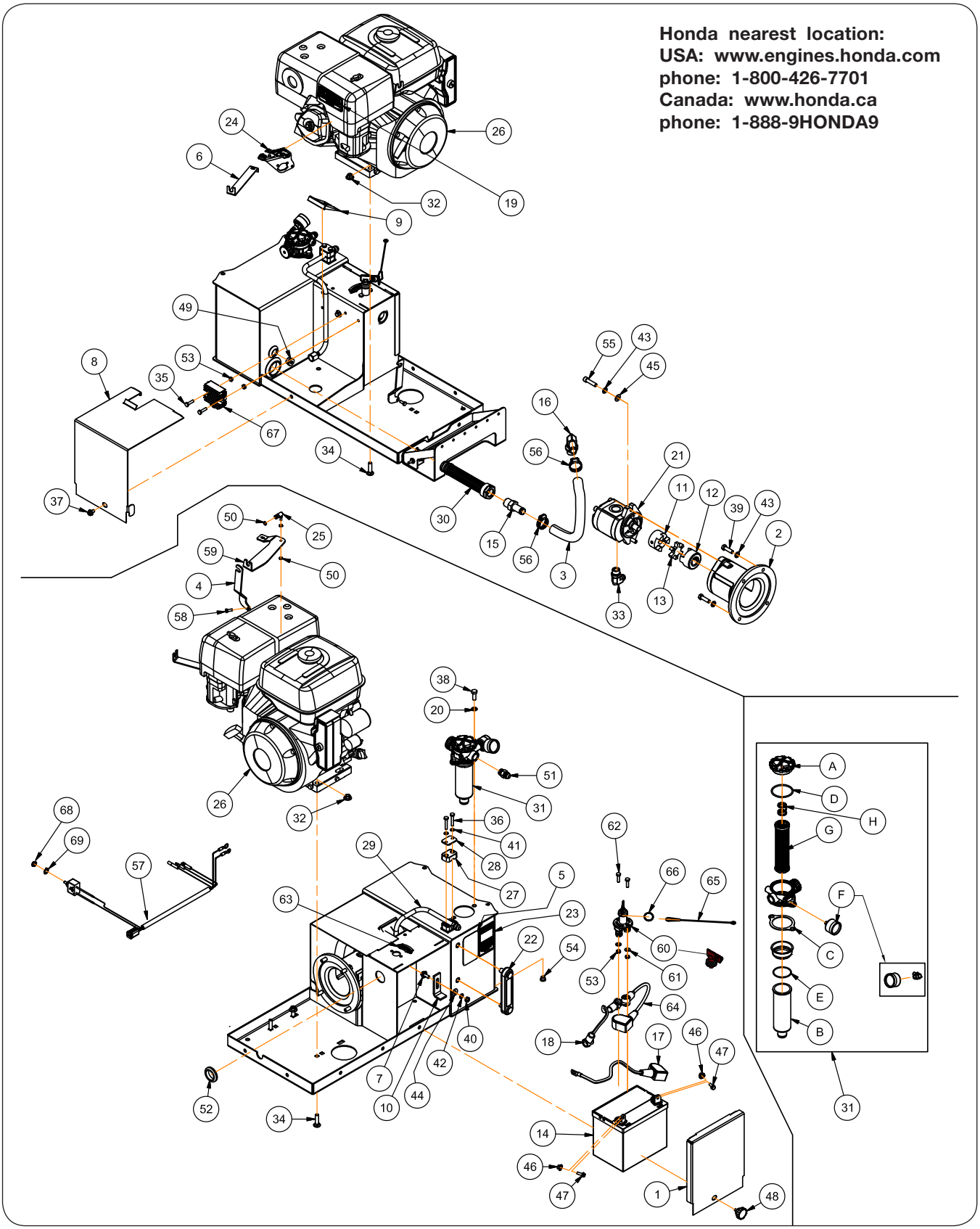
**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 93607 | Adapter 3/4-16 JIC Male x 7/8-14 O-Ring Male | 2 | |
| 2 | 2003772TS | Spout Weldment | 1 | |
| 3 | TA0-903088-0 | Bearing w/Flange | 4 | |
| 4 | 9390-102 | Capscrew 1/2"-13UNC x 1 3/4" G5 | 2 | |
| 5 | 9394-006 | Hex Nut 3/8"-16UNC | 10 | |
| 6 | 97420 | Flange Screw 1/4"-20UNC x 3/4" | 14 | |
| 7 | 97189 | Hex Nut/Large Flange 1/4"-20UNC | 20 | |
| 8 | 9388-051 | Carriage Bolt 3/8"-16UNC x 1" | 8 | |
| 9 | 9404-021 | Lock Washer 3/8" | 8 | |
| 10 | 9405-076 | Flat Washer 3/8" | 10 | |
| 11 | 2003742TS | Adjustment Plate Weldment | 1 | |
| 12 | 2003765TS | Adjustment Plate Weldment | 1 | |
| 13 | 93400 | Capscrew 1/2"-13UNC x 4 1/2" | 2 | |
| 14 | 9394-010 | Hex Nut 1/2"-13UNC | 2 | |
| 15 | 901077 | Drive Pulley | 1 | |
| 16 | 2003762 | Poly Strip | 2 | |
| 17 | 24260 | Seal | 2 | |
| 18 | 901101 | Flange Screw 1/4"-20UNC x 1" | 4 | |
| 19 | 2003730TS | Cover/Top Shield | 1 | |
| 20 | 91256 | Screw/Large Flange 5/16"-18UNC x 3/4" | 4 | |
| 21 | 22018 | Bushing | 8 | |
| 22 | 9390-003 | Capscrew 1/4"-20UNC x 3/4" G5 | 4 | |
| 23 | 9405-064 | Flat Washer 1/4" | 4 | |
| 24 | 9936 | Locknut 1/4"-20UNC | 8 | |
| 25 | 901046 | Knob | 2 | |
| 26 | 2003487TS | Shield | 2 | |
| 27 | 91257 | Flange Nut 5/16"-18UNC | 23 | |
| 28 | 9501220 | Fenner Coupler | 1 | |
| 29 | 9500341 | Carriage Bolt 5/16"-18UNC x 1 3/4" G5 | 6 | |
| 30 | 9405-086 | Flat Washer 1/2" SAE | 4 | |
| 31 | 9388-027 | Carriage Bolt 5/16"-18UNC x 1 1/2" G5 | 2 | |
| 32 | 9501256 | Neoprene Deflector | 1 | |
| 33 | 9500155 | Spring Snap Hook | 1 | |
| 34 | 902006 | Elevator Bolt 1/4"-20UNC x 3/4" | 6 | |
| 35 | 9500806 | Hydraulic Motor w/Keyed Shaft | 1 | |
| | 901649 | Woodruff Key 1/4" x 1" | - | |
| | 91687 | Seal Kit for Hydraulic Motor | - | |
| 36 | 9500310 | Idler Cover | 3 | |
| 37 | 24550 | Bushing | 2 | |
| 38 | 9800 | Lock Nut/Top 1/2"-13UNC | 8 | |
| 39 | 2003745TS | Deflector Weldment | 1 | |

## Power Pak Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

**Honda nearest location:**
**USA: www.engines.honda.com**
**phone: 1-800-426-7701**
**Canada: www.honda.ca**
**phone: 1-888-9HONDA9**



## Power Pak Components

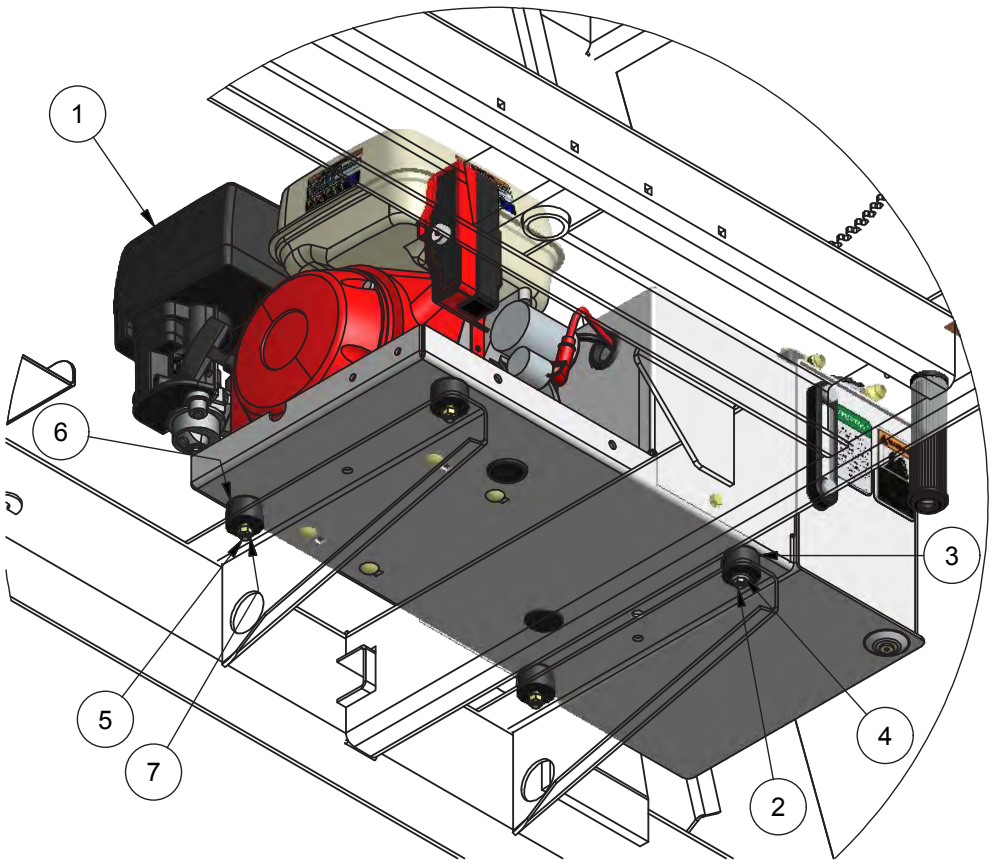
**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| ITEM | PART NO. | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | 25508IV | 1 | Battery Cover |
| 2 | 25515 | 1 | Pump/Motor Mount Weldment |
| 3 | 25519 | 1 | Hydraulic Hose 3/4" |
| 4 | 2007491B | 1 | Throttle Vertical Support |
| 5 | 26823 | 1 | Decal, IMPORTANT (Battery) |
| 6 | 27163B | 1 | Strap |
| 7 | 28664IV | 1 | Pan Weldment |
| 8 | 28668IV | 1 | Pump Shroud |
| 9 | 28670 | 1 | Flap Seal Trim |
| 10 | 28671IV | 1 | Battery Hold Down Strap |
| 11 | 901370 | 1 | Jaw Coupling 5/8" Bore |
| 12 | 901371 | 1 | Jaw Coupling 1" Bore |
| 13 | 901372 | 1 | Coupler Insert/Spider |
| 14 | - | 1 | Battery 12-Volt Top Post (Purchase Battery Locally) |
| 15 | 901379 | 1 | Straight 3/4" Hose ID Insert x 3/4-14 NPTF Male |
| 16 | 901380 | 1 | 90° Elbow 3/4" Hose Insert x 1 1/16-12 O-ring Male |
| 17 | 901404 | 1 | Battery Cable 14" (Black) |
| 18 | 9502625 | 1 | Battery Cable 14 13/16" (Red) |
| 19 | 901507 | 1 | Decal, IMPORTANT (Close Fuel Valve) |
| 20 | 901567 | 2 | Internal Lock Washer |
| 21 | 901694 | 1 | Pump 10 CU (2000RPM) |
| | 903056 | - | Key |
| 22 | 901771 | 1 | Site Gauge Assembly |
| 23 | 902026 | 1 | Decal, WARNING (Sparks) |
| 24 | 902275 | 1 | Choke Stay Control |
| 25 | 902368 | 1 | Ball Joint Quick Disconnect 10-32UNF Threaded Both Ends |
| 26 | 902927 | 1 | Honda 11.7 Net HP |
| | 903057 | - | Key on Output Shaft |
| 27 | 902892 | 1 | Clamp Body (2-Halves) |
| 28 | 902893 | 1 | Cover Plate - Clamp |
| 29 | 902898 | 1 | Hydraulic Steel Line 1/2" OD |
| 30 | 902910 | 1 | Suction Strainer w/Magnet |
| 31 | 902915 | 1 | In-Tank Return Filter 9.2GPM |
| A | 902123 | - | Cover |
| B | 902124 | - | Bowl |
| C | 902905 | - | Gasket |
| D | 902906 | - | O-Ring 2 5/16" Dia. |
| E | 902907 | - | O-Ring 1 31/32" Dia. |
| F | 902911 | - | Filter Gauge |
| | 9006817 | - | Adapter Street 90° Elbow |
| G | 902912 | - | Filter Replacement |
| H | 902125 | - | Compression Spring |
| 32 | 91263 | 4 | Large Flange Nut 3/8-16UNC |

| ITEM | PART NO. | QTY | DESCRIPTION |
|---|---|---|---|
| 33 | 93599 | 1 | 90° Elbow 3/4-16 JIC Male x 7/8-14 O-ring Adj. Male |
| 34 | 9388-053 | 4 | Carriage Bolt 3/8-16UNC x 1 1/2 (Grade 5) |
| 35 | 9390-005 | 2 | Capscrew 1/4-20UNC x 1 (Grade 5) |
| 36 | 9390-007 | 2 | Capscrew 1/4-20UNC x 1 1/2 (Grade 5) |
| 37 | 903161-014 | 2 | Large Flange Screw 5/16-18UNC x 1/2 |
| 38 | 9390-055 | 2 | Capscrew 3/8-16UNC x 1 G5 |
| 39 | 9390-056 | 4 | Capscrew 3/8-16UNC x 1 1/4 |
| 40 | 9394-004 | 1 | Hex Nut 5/16-18UNC |
| 41 | 9404-017 | 2 | Lock Washer 1/4" |
| 42 | 9404-019 | 1 | Lock Washer 5/16" |
| 43 | 9404-021 | 6 | Lock Washer 3/8" |
| 44 | 9405-070 | 1 | Flat Washer 5/16" USS |
| 45 | 9405-074 | 2 | Flat Washer 3/8" SAE |
| 46 | 97189 | 2 | Large Flange Hex Nut 1/4-20UNC |
| 47 | 97420 | 2 | Flange Screw 1/4-20UNC x 3/4 |
| 48 | 9501669 | 1 | Fluted Knob |
| 49 | 98048 | 1 | Plug 3/4-16 O-ring Male w/Hollow Hex Socket |
| 50 | 9830-016 | 3 | Hex Nut #10-32 (Grade 2) |
| 51 | 9864 | 1 | Adapter 3/4-16JIC Male x 3/4-16 O-ring Male |
| 52 | 98830 | 1 | Grommet/Rubber 1 1/4" Dia. |
| 53 | 9936 | 2 | Locknut 1/4-20UNC |
| 54 | 99692 | 1 | O-Ring Plug |
| 55 | 99888-065 | 2 | Socket Head 3/8-16UNC x 1 1/2 (Grade 8) |
| 56 | TA800912 | 2 | Hose Clamp SAE#16 |
| 57 | 2009998 | 1 | Engine Harness |
| 58 | 94917-038 | 1 | Capscrew M6x16 |
| 59 | 2007490B | 1 | Throttle Bracket |
| 60 | 9502619 | 1 | Battery Disconnect Switch |
| | 9502620 | - | Service Key |
| 61 | 9405-062 | 2 | Flat Washer 1/4" SAE |
| 62 | 9390-004 | 2 | Capscrew 1/4"-20UNC x 7/8" |
| 63 | 9502623 | 1 | Decal, On/Off Switch |
| 64 | 9502626 | 1 | Batter Cable 14 13/16" (Red) |
| | 901405 | | Non-Disconnect Cable 18" (Red) |
| 65 | 9502661 | 1 | Nylon Lanyard 8" |
| 66 | 97489 | 1 | Split Ring 1" |
| 67 | 9500076 | 1 | Rectifier |
| 68 | 9502847 | 1 | Facenut 0.570" Dia. |
| 69 | 9502848 | 1 | Locking Ring |

## Power Pak Mounting Components

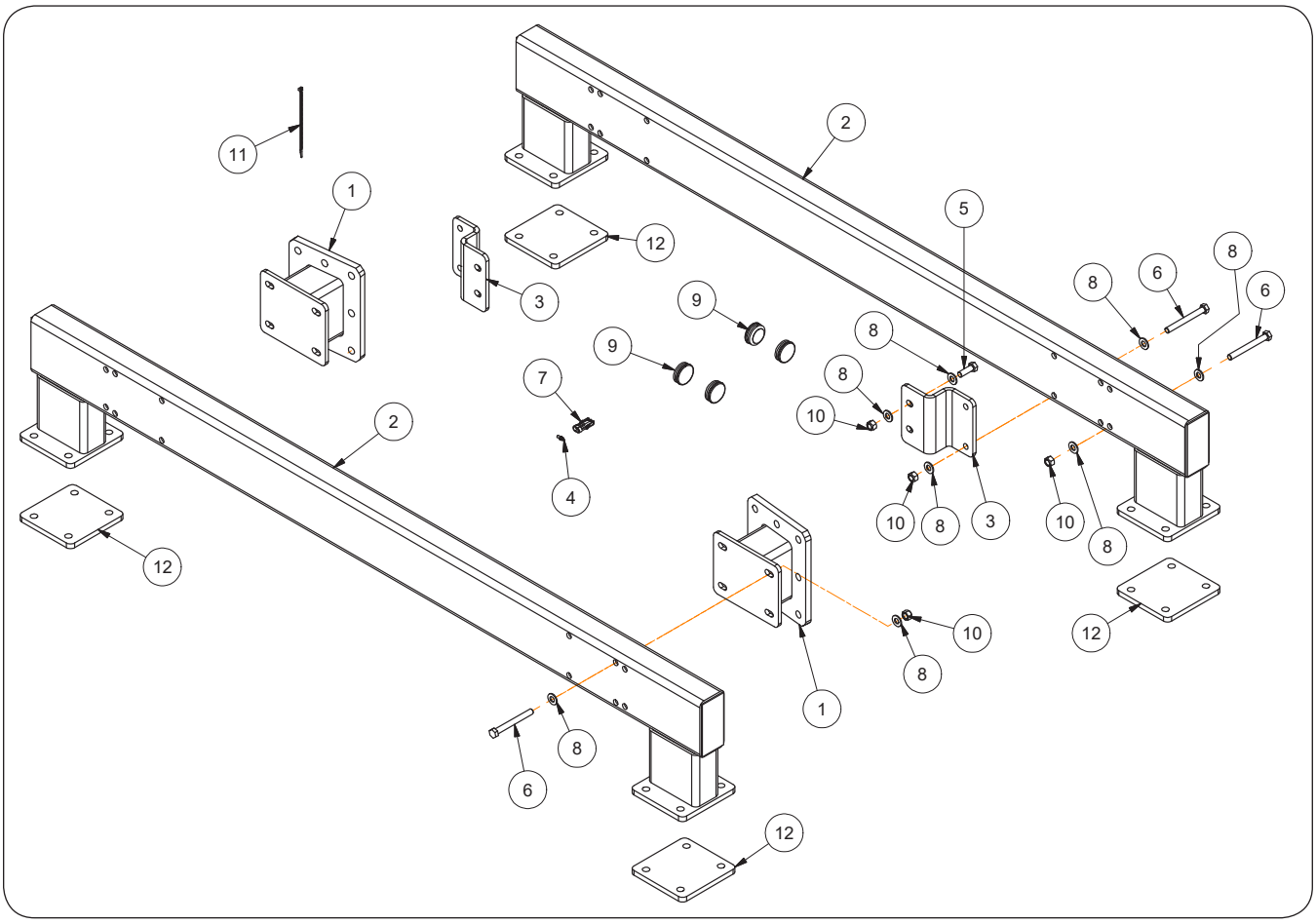
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | -- | Power Pak Assembly | - | |
| 2 | 901044 | Serrated Flange Bolt 5/16-18UNC x 1 | 1 | Grade 5 |
| 3 | 901169 | Rubber Bumper 1.7" Dia. | 4 | |
| 4 | 91257 | Large Flange Hex Nut 5/16-18UNC | 1 | |
| 5 | 9390-059 | Capscrew 3/8-16UNC x 2 | 3 | Grade 5 |
| 6 | 9405-076 | Flat Washer 3/8" USS | 3 | |
| 7 | 9928 | Locknut 3/8-16UNC | 3 | |

## Platform for Units Less Undercarriage

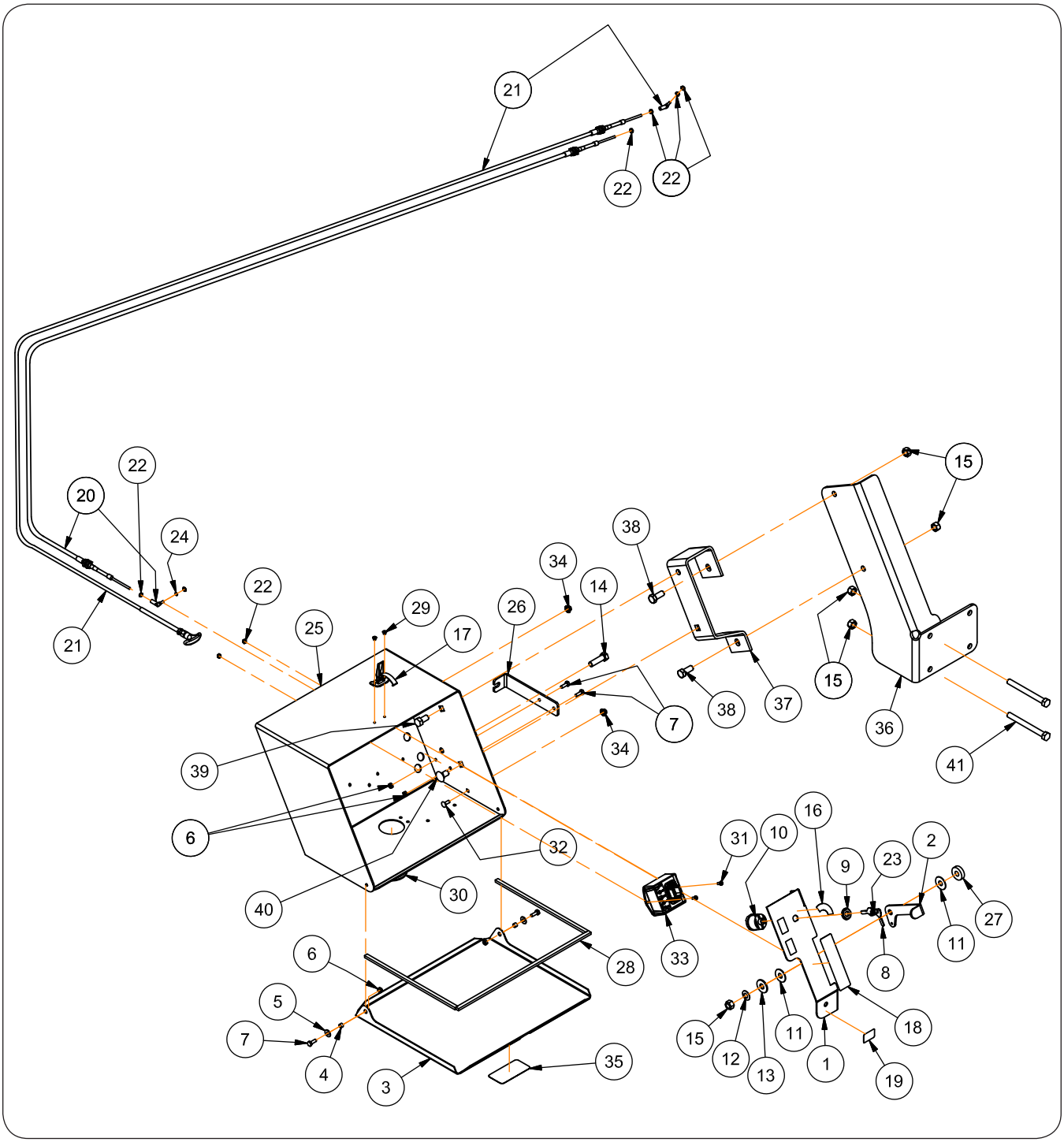
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 2003078TS | Adapter Bracket Weldment =Tan Speckle= | 2 | |
| 2 | 2003079TS | Stand Weldment =Tan Speckle= | 2 | |
| 3 | 2003126TS | S-Bracket =Tan Speckle= | 2 | |
| 4 | 901710 | Cavity Plug (Green) | 2 | |
| 5 | 9390-101 | Capscrew 1/2-13UNC x 1 1/2 (Grade 5) | 4 | |
| 6 | 9390-112 | Capscrew 1/2-13UNC x 4 1/2 (Grade 5) | 16 | |
| 7 | 98004 | Connector Assembly Shroud 2-Male Contacts | 1 | |
| 8 | 9405-086 | Flat Washer 1/2" SAE | 40 | |
| 9 | 9501151 | Round Plug | 12 | |
| 10 | 9800 | Locknut 1/2-13UNC | 20 | |
| 11 | 9000106 | Cable Tie 7 1/2" Long | 1 | |
| 12 | 2003075B | Backer Plate | 4 | |

## Enclosure Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



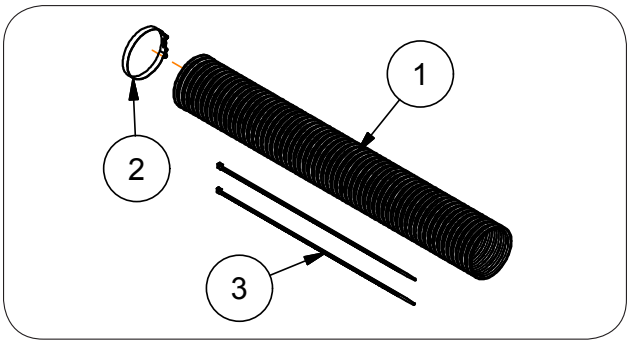
## Enclosure Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

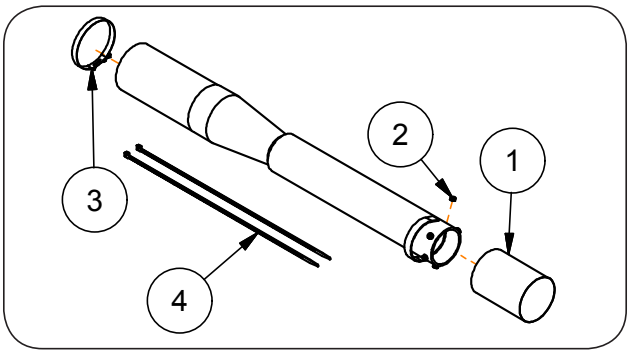
| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| | 2008492TS | Common Enclosure Assembly =Tan Speckle= | 1 | Includes Items 1 through 35 |
| 1 | 2002538TS | Keyswitch/Throttle/Choke Plate =Tan Speckle= | 1 | |
| 2 | 27134TS | Lever =Tan Speckle= | 1 | |
| 3 | 2002539TS | Cover =Tan Speckle= | 1 | |
| 4 | 22018 | Bushing | 2 | |
| 5 | 9405-064 | Flat Washer, 1/4" | 2 | |
| 6 | 9936 | Lock Nut, 1/4"-20UNC G5 | 4 | |
| 7 | 9390-003 | Capscrew, 1/4"-20UNC x 3/4" G5 | 4 | |
| 8 | 901718 | Key | 2 | |
| 9 | 901719 | Keyswitch Nut | 1 | |
| 10 | 901720 | Ignition Starter | 1 | |
| 11 | 95236 | Flat Washer, 7/16" | 2 | |
| 12 | 99913 | Belleville Washer, 1/2" | 1 | |
| 13 | 9405-088 | Flat Washer, 1/2" | 1 | |
| 14 | 9390-102 | Capscrew, 1/2"-13UNC x 1 3/4" (Grade 5) | 1 | |
| 15 | 9800 | Lock Nut, 1/2"-13UNC (Grade 5) | 7 | |
| 16 | 901811 | Decal, "Power Keyswitch" | 1 | |
| 17 | 9220 | Draw Latch | 1 | |
| 18 | 902321 | Decal, "Throttle" | 1 | |
| 19 | 902322 | Decal, "Choke" | 1 | |
| 20 | 9500339 | Control Cable with Ball Joint | 1 | |
| 21 | 9500340 | Control Cable with Handle | 1 | |
| 22 | 9830-016 | Hex Nut, #10-32UNF G2 | 8 | |
| 23 | 97489 | Split-Ring | 1 | |
| 24 | 9404-013 | Lock Washer #10 | 3 | |
| 25 | 2002540TS | Remote Enclosure Weldment =Tan Speckle= | 1 | |
| 26 | 2002630TS | Cable Mount Bracket =Tan Speckle= | 1 | |
| 27 | 29612 | Spacer 1 3/8" OD | 1 | |
| 28 | 900152 | Tape/Black Foam Rubber with Adhesive Back | 3 | |
| 29 | 9003503 | Rivet | 2 | |
| 30 | 901334 | Grommet 2 1/4" ID | 1 | |
| 31 | 903172-343 | Pan Head #10-32UNF x 1/2" Phillips, Machine Screw | 2 | |
| 32 | 9388-002 | Carriage Bolt 1/4"-20UNC x 3/4" G5 | 2 | |
| 33 | 9501811 | Conveyor Speed Module with Smooth Start | 1 | |
| 34 | 97189 | Hex Nut/Large Flange 1/4"-20UNC | 2 | |
| 35 | 97961 | Decal, WARNING "Read and Understand Manual" | 1 | |
| 36 | 2008018TS | Enclosure Mounting Bracket =Tan Speckle= | 1 | |
| 37 | 2003162TS | Side Mounting Bracket =Tan Speckle= | 1 | |
| 38 | 9390-100 | Capscrew 1/2"-13UNC x 1 1/4" G5 | 2 | |
| 39 | 9390-099 | Capscrew 1/2"-13UNC x 1" G5 | 1 | |
| 40 | 9388-102 | Carriage Bolt 1/2"-13UNC x 1" G5 | 1 | |
| 41 | 9390-113 | Capscrew 1/2"-13UNC x 5" G5 | 2 | |

## Telescopic Spout Components

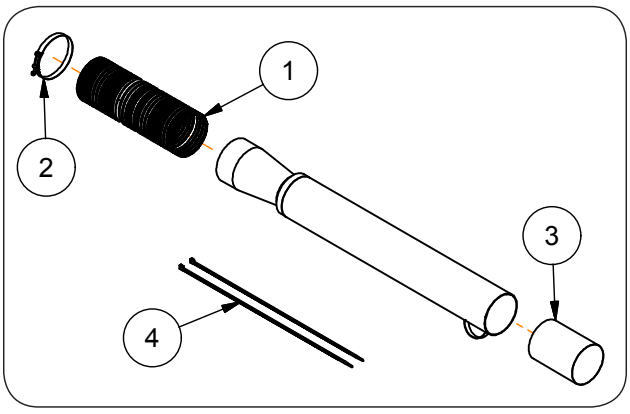
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART | DESCRIPTION | QTY |
|---|---|---|---|
| | **2005066** | **Standard Spout Bundle 6" x 48"** | - |
| 1 | TAAU14170 | 4' Flex Spout | 1 |
| 2 | 98060 | Clamp 6" Dia. | 1 |
| 3 | 94038 | Cable Tie 32" Long | 2 |



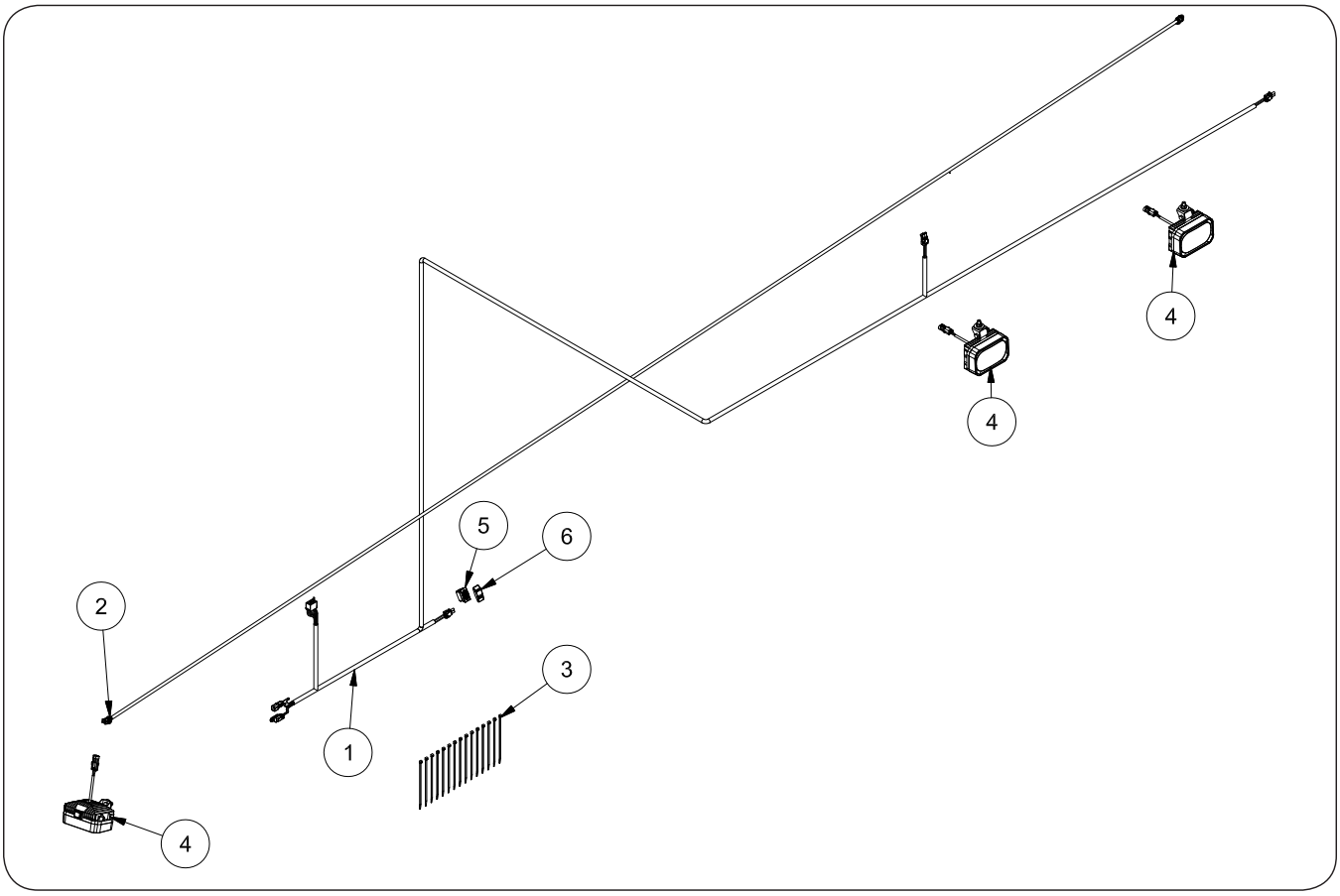

| ITEM | PART | DESCRIPTION | QTY |
|---|---|---|---|
| | **27629** | **2-Stage Telescopic Spout** | - |
| 1 | 22577 | Canvas Sock | 1 |
| 2 | 9003378 | Rivet 3/16" | 6 |
| 3 | 98060 | Clamp 6" Dia. | 1 |
| 4 | 94038 | Cable Tie 32" Long | 2 |




| ITEM | PART | DESCRIPTION | QTY |
|---|---|---|---|
| | **22578** | **3-Stage Telescopic Spout (Option)** | - |
| 1 | 21759 | 18" Flex Spout | 1 |
| 2 | 98060 | Clamp 6" Dia. | 1 |
| 3 | 22577 | Canvas Sock | 1 |
| 4 | 94038 | Cable Tie 32" Long | 2 |

## Optional Conveyor Spout Light Kit (2004450)

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

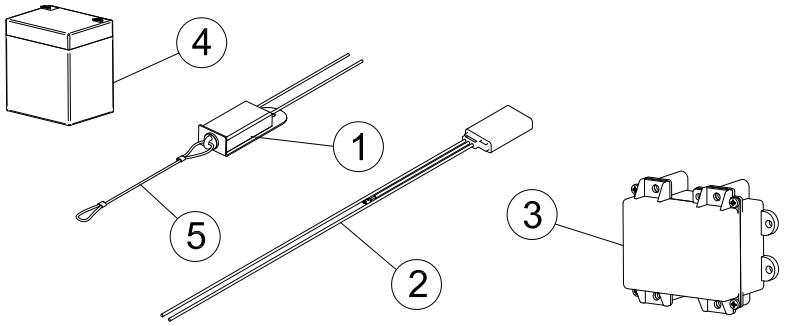



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 2002125 | Harness - Lights | 1 | |
| 2 | 2002489 | Light Harness | 1 | |
| 3 | 9000106 | Cable Tie 7 1/2” | 20 | |
| 4 | 301213 | Work Light W/Switch | 3 | |
| 5 | 9500977 | Contura III Switch | 1 | |
| 6 | 9500978 | Switch Actuator | 1 | |

## Optional Hopper Cover #901472

## Electric Breakaway Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

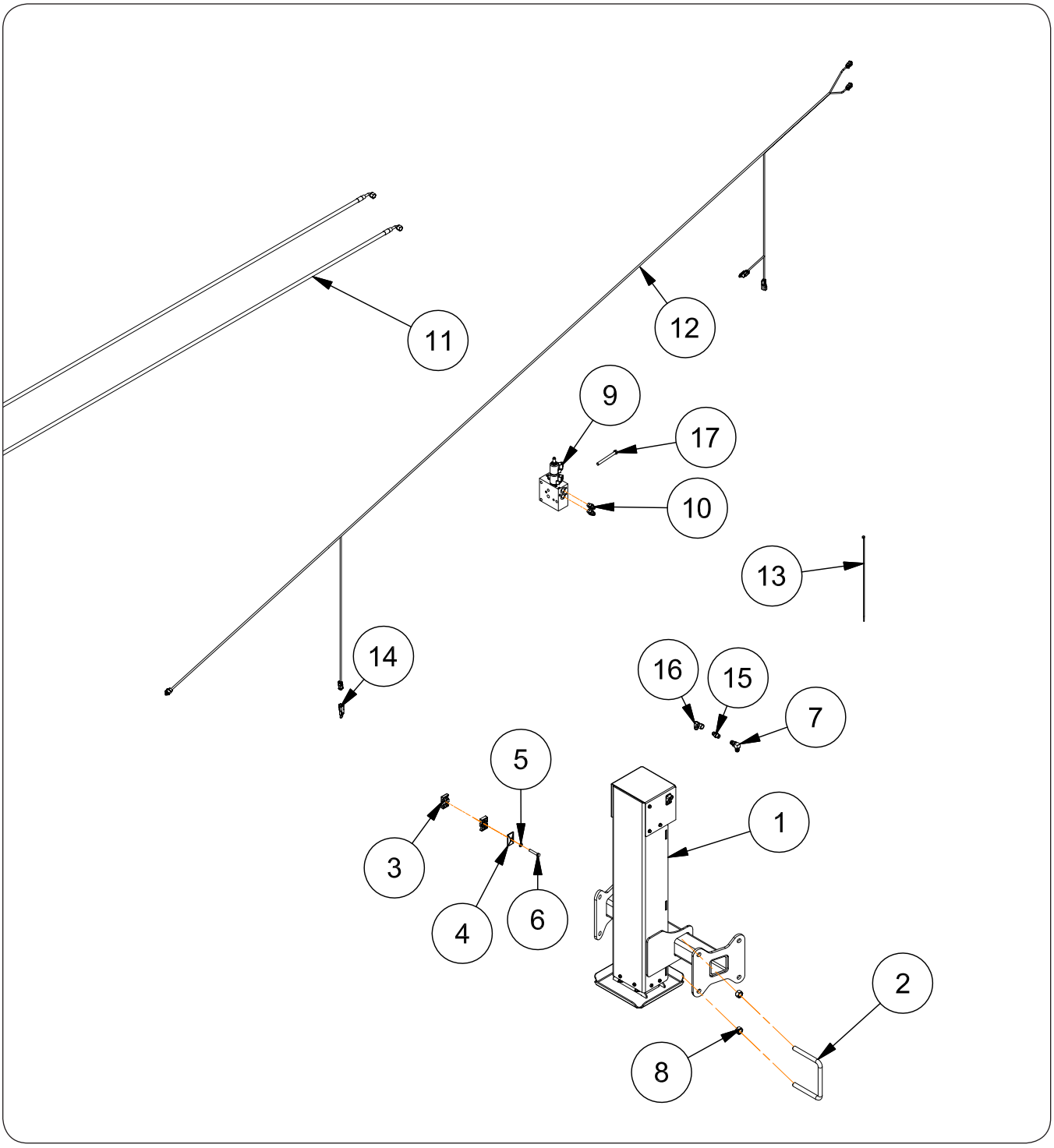



| ITEM | PART NO. | DESCRIPTION | NOTES |
|---|---|---|---|
| 1 | 900786 | Breakaway Electric Switch w/Pull Pin | |
| 2 | 900787 | Battery 12V Charger | |
| 3 | 902179 | Battery Box w/Decals | |
| 4 | 900789 | Battery 12V Rechargeable | 5.0 AMP-HR |
| 5 | 901950 | Pull Cord Breakaway Switch | |
| 6 | 902764 | Battery with Charger & Box (NOT SHOWN) | Includes Items 2, 3, & 4 |

## Optional 2-Function Wireless Remote Control Pkg #2008026

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

## Hydraulic Jack for Bumper Hitch Kit #2005116TS (Option)

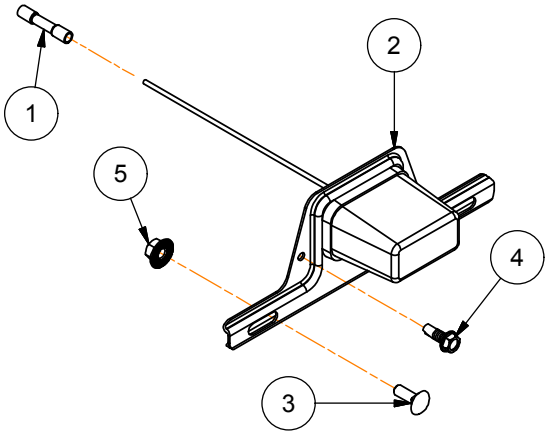


## Hydraulic Jack for Bumper Hitch Kit #2005116TS (Option)

| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 2005100TS | Hydraulic Jack Assembly | 1 | |
| 2 | 93419 | U-Bolt 5/8”-11UNC | 4 | |
| 3 | 9500058 | Clamp Set | 3 | |
| 4 | 9500059 | Cover Plate | 3 | |
| 5 | 9404-019 | Lock Washer 5/16” | 3 | |
| 6 | 9390-033 | Capscrew 5/16”-18UNC x 1 3/4” | 3 | Grade 5 |
| 7 | 97445 | 90° Elbow 9/16”-18 JIC Male x 9/16”-18 O-Ring Male | 1 | |
| 8 | 9801 | Locknut 5/8”-11UNC | 8 | |
| 9 | 9501021 | Valve Assembly | 1 | |
| | 9500600 | Seal Kit for Stackable Valves | - | |
| 10 | 900016 | Adapter 9/16”-18 JIC Male x 9/16”-18 O-Ring Male with 0.060 Restrictor | 2 | |
| 11 | 9500602 | Hydraulic Hose 1/4” x 240” 90° Elbow 9/16”-18 JIC Female x 9/16”-18 JIC Female | 2 | |
| 12 | 2002811 | Wire Harness 370” | 1 | |
| 13 | 94037 | Cable Tie .35 x 15 1/2” | 10 | |
| 14 | 2005833 | Loop Connector | 1 | |
| 15 | 9001495 | Adapter 9/16-18 JIC Male x 9/16-18 O-Ring Male | 1 | |
| 16 | 9876 | 90° Elbow 9/16-18 JIC Male x 9/16-18 JIC Female Swivel Nut | 1 | |
| 17 | 9390-067 | Capscrew 3/8-16UNC x 4 | 3 | Grade 5 NOT SHOWN |
| | 9390-075 | Capscrew 3/8-16UNC x 8 | | |
| | 9390-9500625 | Capscrew 3/8-16UNC x 10 | | |
| | 9390-752 | Capscrew 3/8-16UNC x 14 | | |

## Optional License Plate/Lamp Holder Assembly Kit #25481

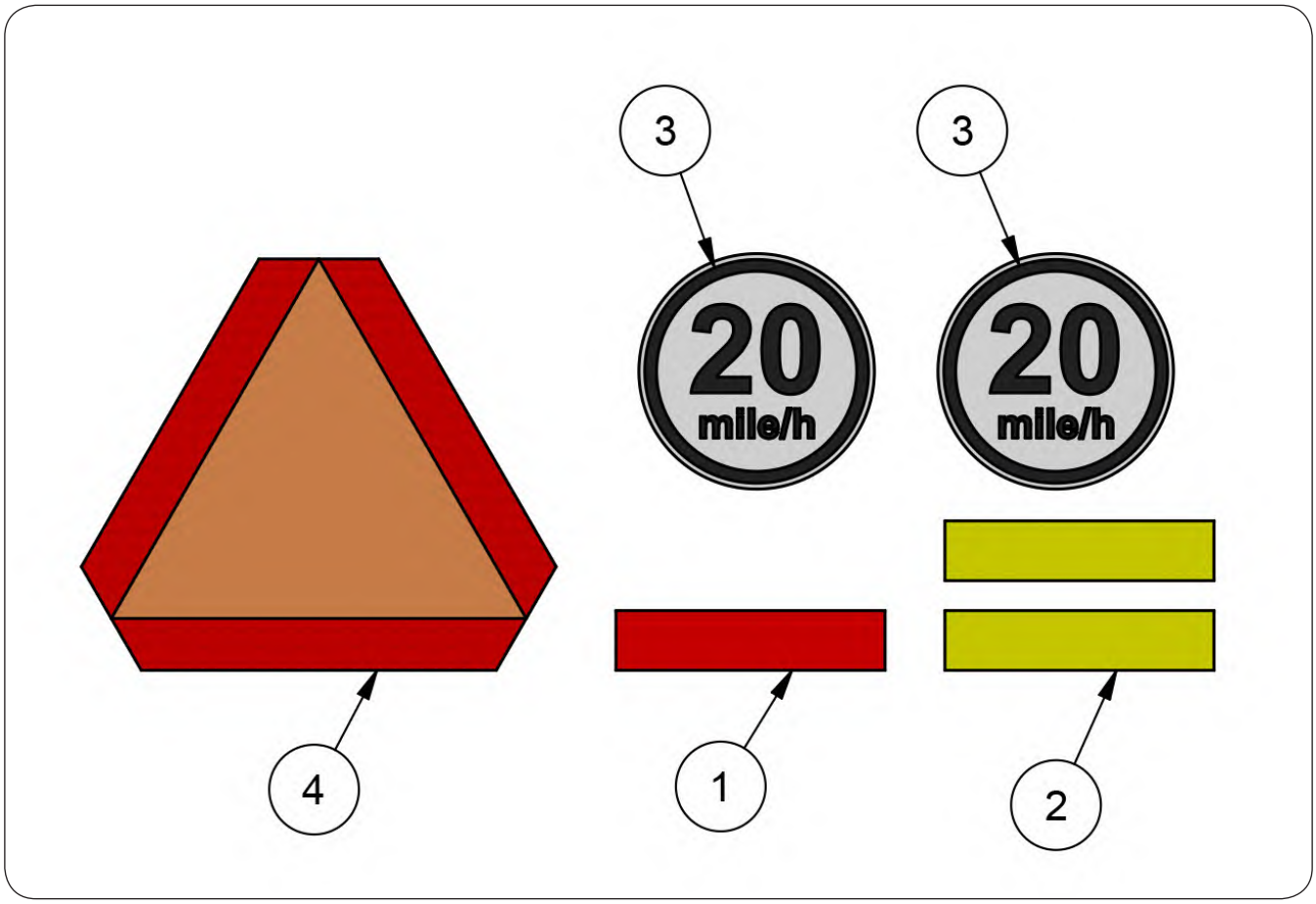
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY | NOTES |
|---|---|---|---|---|
| 1 | 900368 | Sealed Splice Connector | 1 | |
| 2 | 93769 | License Plate/Lamp Holder | 1 | |
| 3 | 9388-002 | Carriage Bolt 1/4-20UNC x 3/4 | 2 | |
| 4 | 9473 | Screw/Self 1/4-14 X 3/4 | 2 | |
| 5 | 97189 | Hex Nut/Large Flange 1/4-20UNC | 2 | |

## AG Decal Package (Optional) - SMV, SIS Decals, & Reflectors

**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION | QTY. | NOTES |
|---|---|---|---|---|
| | 2010513 | AG Decal Package Option | | |
| 1 | 9003126 | Reflector, RED | 1 | |
| 2 | 9003127 | Reflector, AMBER | 2 | |
| 3 | 9008714 | Decal, Rear SIS 20MPH | 2 | |
| 4 | 97530 | Decal, SMV Emblem | 1 | |


MEMBER
FEMA
FARM EQUIPMENT
MANUFACTURERS
ASSOCIATION