



Fertilizer Spreader

Pro-Force™ Pull-Type Undercarriage
Models 1450, 1850, 2250, & 2650

Serial Number B40330100 & Higher

Part No. 414345

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. It can be stored in the supplied tube located on the implement.

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

When ordering parts or when requesting further information or assistance, always give the following information:

- Machine name
- Model
- Serial number

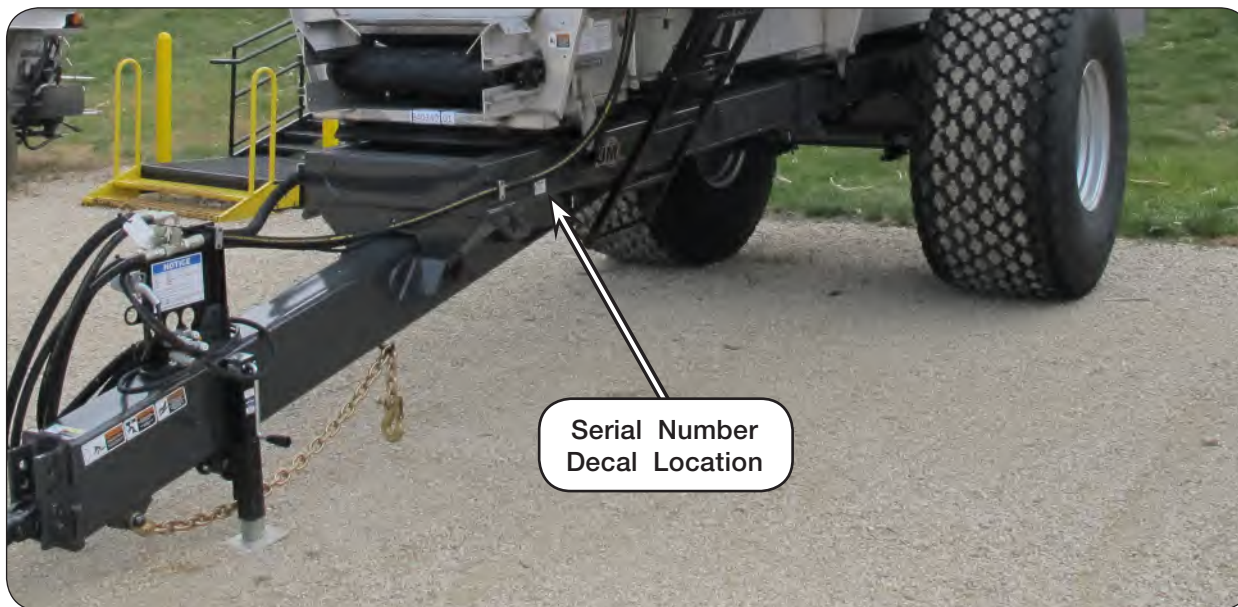
All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records.

Purchase Date _____ Model _____ Serial Number _____

Dealer _____ City _____

Dealer Contact _____ Phone _____



IMPORTANT

- The information, specifications, and illustrations in the manual are based on 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.

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FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.
FOR AUTO GREASE INFORMATION, PLEASE REFER TO YOUR AUTO GREASE MANUAL.
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Section I

Safety

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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.

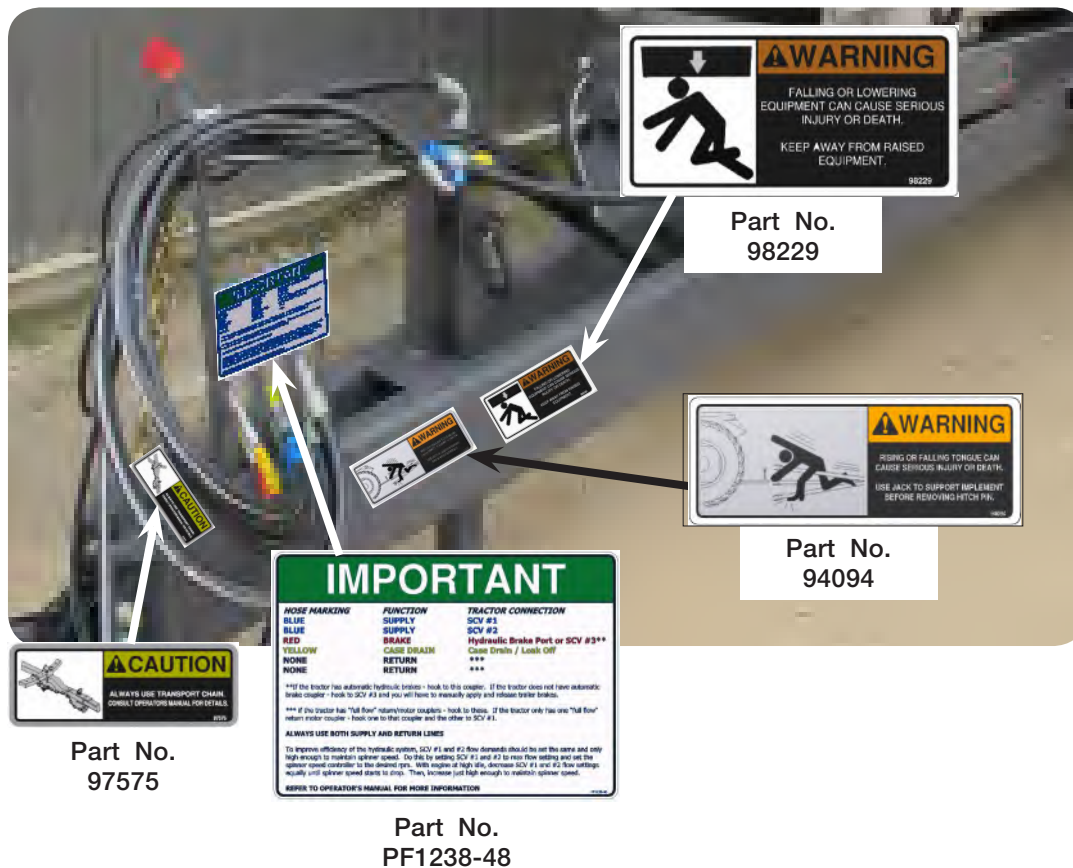


Is used for instruction on operating, adjusting, or servicing a machine.


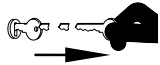


Safety Decals

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.




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 tractor engine off and remove key before servicing.

- 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 attempt to operate implement unless you are in driver's seat.


Before Operating

- This machine is only intended to be used with corresponding Pro-Force dry spreader. Any other use is prohibited and may pose safety risks to operators and others.
- Do not stand between towing vehicle and implement during hitching.
- Always make certain everyone and everything is clear of the machine before beginning operation.
- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.
- Secure drawbar pin with safety latch and lock tractor drawbar in fixed position.
- Add sufficient ballast to tractor to maintain steering and braking control at all times. Do not exceed tractor's lift capacity or ballast capacity.
- Ensure that the towing vehicle drawbar has sufficient strength to support the draft and vertical tongue load of a fully-loaded dry spreader.
- Braking system must be purged of air before operating to prevent serious injury or death. See Maintenance section for proper procedure.

Before Servicing

- Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked. 
- When working around the implement, be careful not to be cut by sharp edges.
- Secure drawbar pin with safety lock and lock tractor drawbar in fixed position.
- 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.

During Operation

- Comply with all laws and product label directions governing safe product application.
- Regulate speed to field conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Use extreme care when operating close to ditches, waterways, fences, or on hillsides.
- Do not leave towing vehicle unattended with engine running.


Before Transporting

- Secure transport chain to towing vehicle before transporting. DO NOT transport without chain.
- Make sure the attached hopper's lights are operational and SMV emblem and SIS decals are visible to approaching traffic.
- Hydraulic brakes are optional for pull-type units equipped with an undercarriage. Ensure tractor is properly ballasted to safely control and stop the undercarriage and spreader.
- Check brakes for proper function, if equipped.
- Unit uses tractor-oil supplied brakes. Verify tractor hydraulic oil level before transporting.

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 pull-type dry spreader with wheels or tracks should never exceed 20 m.p.h. Do not exceed 10 m.p.h. 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 pressure before disconnecting hydraulic lines from tractor, loosening any hydraulic fittings or servicing hydraulic system. See hydraulic power unit manual for procedure to relieve pressure.
- High-pressure fluids can penetrate the skin and cause serious injury or death. Use a piece of cardboard or wood to detect leaks of hydraulic fluid under pressure. 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.

Fertilizer and Chemical Hazards

- Always wear personal protective equipment when working with or near fertilizers and/or chemicals. This equipment includes, but is not limited to: protective eye wear, gloves, shoes, socks, long-sleeved shirt, and long pants. Additional protection may be required for many types of fertilizers and/or chemicals.
- Seek and receive fertilizer and/or chemical product training prior to using agricultural fertilizers and/or chemicals.
- Read and understand the entire label of every fertilizer and/or chemical being applied with this dry spreader.
- Wash hands before eating, drinking, chewing gum, or using the toilet.
- Remove clothing immediately if fertilizers and/or chemicals penetrate clothing and contact skin. Wash thoroughly and put on clean clothing.
- Dispose of unused fertilizer and/or chemical in accordance with fertilizer and/or chemical label directions and local/national regulations.

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

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Pre-Delivery Checklist

- ☐ Power wash any road salt off this unit to help prevent corrosion.
- ☐ Torque wheel nuts and check tire pressure as specified in MAINTENANCE section.
- ☐ All grease fittings have been lubricated.
- ☐ Verify all safety decals are correctly located and legible. Replace if damaged.
- ☐ Verify all reflective decals are correctly located.
- ☐ Verify transport lights are working properly.
- ☐ Transport chains are properly installed and hardware is torqued to specification. See “Transport Chain Connection” in OPERATION section.
- ☐ Check hydraulic components for leaks.
- ☐ Check all plumbing components for leaks.
- ☐ Check brakes for proper function.
- ☐ Paint all parts scratched during shipment and dealer set up.

Dealer Set Up

WARNING

- 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.
- HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.
- UNHITCHING A LOADED UNIT CAN CAUSE SERIOUS INJURY OR DEATH DUE TO THE TONGUE RISING OR FALLING. ALWAYS HAVE A LOADED UNIT ATTACHED TO A TRACTOR. THE JACK IS INTENDED TO SUPPORT AN EMPTY UNIT ONLY.

Dealer Set Up (continued)

WARNING

- TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.
- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.
- 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 5,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.

Single Wheel & Tire Installation

WARNING

- RAISE AND SUPPORT ONLY ONE SIDE AT ANY GIVEN TIME IN THE FOLLOWING PROCEDURE.
1. Park the unit on a firm, level surface. Block undercarriage tires to keep the machine from moving. Set the tractor's parking brake. Shut-off engine and remove ignition key.
 2. Use a safe lifting device and supports rated at a minimum of 5,000 lbs. during the wheel and tire attachment. Place supports under the axle near the axle clamps.
 3. Use a minimum 2,000 lbs. safe lifting device to support the wheel and tire during install.
 4. Attach the rim to the hub using original M22 x 2.5P x 70 capscrews (97038), M22 x 2.5P hex nuts (97684) and 7/8" flat washers (97041). Tighten wheel nuts to appropriate requirements and recheck as outlined in the MAINTENANCE section of this manual.
 5. Raise unit, remove lifting device and lower spreader to the ground.

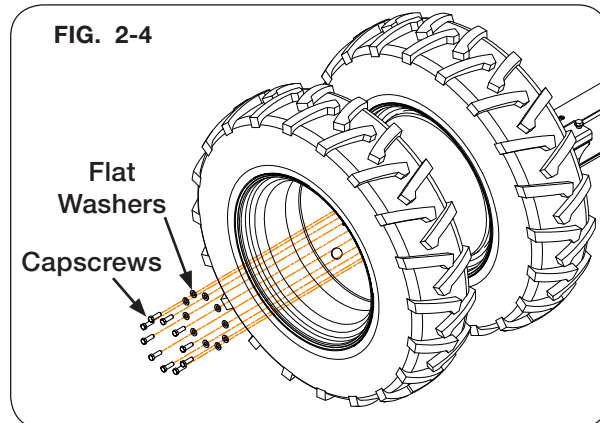
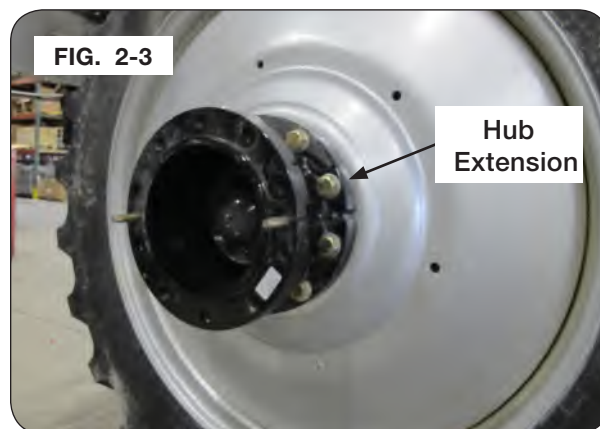
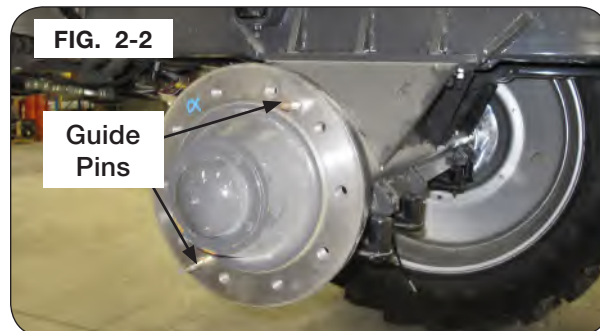


FIG. 2-1

Dealer Set Up (continued)

Dual Wheel Installation

1. Park the unit on a firm, level surface. Block undercarriage tires to keep the machine from moving. Set the tractor's parking brake. Shut-off engine and remove ignition key.
 2. Use a safe lifting device and supports rated at a minimum of 5,000 lbs. during the wheel and tire attachment. Place supports under the axle near the axle clamps.
 3. Use a minimum 2,000 lbs. safe lifting device to support the wheel and tire during install.
 4. Insert two guide pins (19293) into the drilled holes on the hub. (FIG. 2-2).
 5. Align and install inner wheel and hub extension over the guide pins (FIG. 2-3).
 6. Attach the hub extension and the inner wheel to the hub using ten 7/8" flat washers, ten M22 x 2.5P x 65 capscrews and ten M22 x 2.5 hex nuts.
 7. Insert two guide pins remaining to the outside of the hub extension.
 8. Secure the outer wheel to the hub extension with ten 7/8" flat washers, ten M22 x 2.5P x 100 capscrews and ten M22 x 2.5P hex nuts. (FIG. 2-4)
- NOTE:** Refer to the "MAINTENANCE" section for proper torque requirements.
9. Raise unit, remove lifting device and lower spreader to the ground.
 10. Repeat steps 2 through 9 for opposite side.



Adjustable Axle Setting

Wheel Spacing Combinations

WARNING

- USE EXCEPTIONAL CARE WHEN OPERATING SPREADER EQUIPPED WITH SINGLE TIRES AND SET AT NARROW WHEEL SPACING. THE POSSIBILITY OF TIPPING OVER DURING TURNS OR TRAVEL ON ROUGH ROADS IS INCREASED UNDER THESE CONDITIONS.

IMPORTANT

- Always ensure axles are spaced equally.

The axle spacing is adjustable between minimum and maximum settings. Through a combination of wheel offset, axle adjustment, and hub spacers, a wide variety of dual wheel spacings is possible. Refer to the chart for a summary of the available wheel spacings for each tire and wheel combination.

| TIRE / WHEEL | WHEEL OFFSET | MIN. SPACING (inches) | MAX. SPACING (inches) |
|--------------------------------|--------------|-----------------------|-----------------------|
| IF 900/65R32 | Inside | 76 | 102 |
| IF 900/65R32 | Outside | 94 | 120 |
| 480/80R46 Duals (30" Rows) | - | 120 Outer Dual | 148 Outer Dual |
| VF 480/80R46 Duals (30" Rows) | - | 120 Outer Dual | 148 Outer Dual |
| VF 380/90R46 Duals (30" Rows) | - | 120 Outer Dual | 148 Outer Dual |
| VF 380/90R46 Duals (22" Rows) | - | 106 Outer Dual | 132 Outer Dual |
| VF 320/105R54 Duals (36" Rows) | - | 128 Outer Dual | 154 Outer Dual |
| VF 320/105R54 Duals (38" Rows) | - | 132 Outer Dual | 154 Outer Dual |

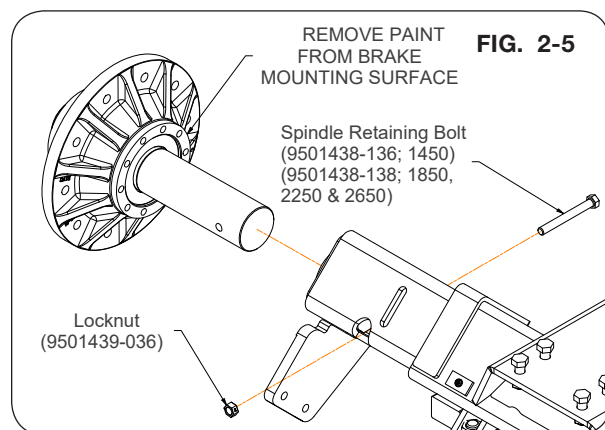
Disc Brake Set Up (Optional)

Disc Brake Installation

WARNING

- KEEP HANDS CLEAR OF PINCH POINT AREAS.
- TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.
- RELIEVE THE 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.
- HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.
- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.
- 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 5,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.

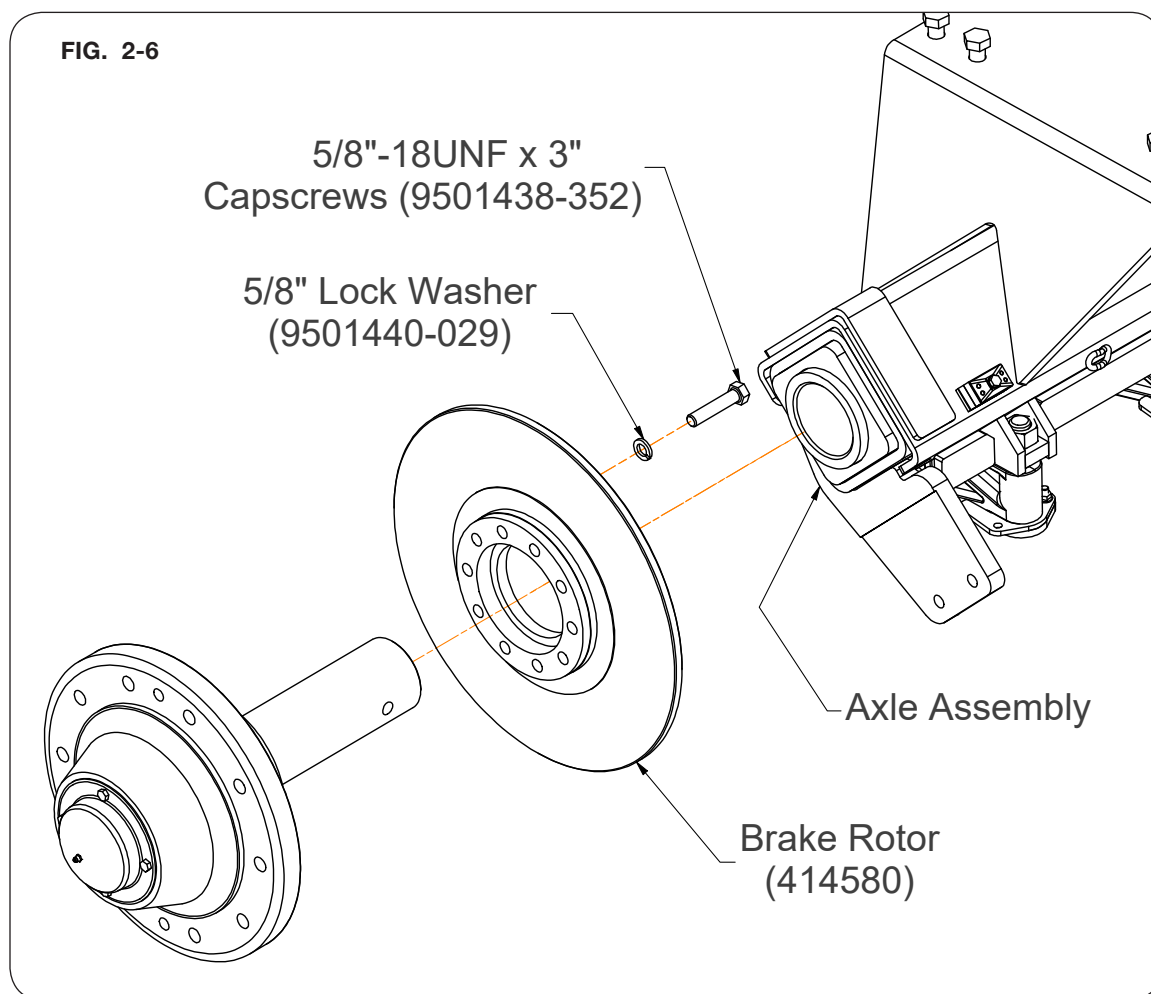
1. Park the unit on a firm, level surface. Block the tires to keep the machine from moving. Set the tractor's parking brake. Relieve hydraulic pressure from the hydraulic hoses, see hydraulic power unit manual for proper procedure. Shut-off the engine and remove the ignition key.
2. Using a safe lifting device rated for 5,000 lbs., lift one side of the unit at a time.
3. Using a safe lifting device rated for 2,000 lbs., remove hardware and tires. Keep hardware.
4. Using a safe lifting device rated for 250 lbs., unscrew the spindle retaining bolt (9501438-136; for 1450) (9501438-138; for 1850, 2250, 2650) and locknut (9501439-036), and remove the hub and spindle assembly (414842CEG). Keep hardware. (FIG. 2-5)
5. Remove the paint from the brake rotor mounting face on the back of the hub. (FIG. 2-5)



Disc Brake Set Up (Optional) (continued)

6. Mount the brake rotor (414580) to the hub using twenty 5/8"-18UNF x 3" capscrews (9501438-352) and twenty 5/8" lock washer (9501440-029) (FIG. 2-6)
7. Torque 5/8" rotor hardware as listed in "Maintenance" chart.
8. Using a safe lifting device rated for 250 lbs., slide the hub and spindle into the axle assembly and reattach hardware from step 4.

FIG. 2-6



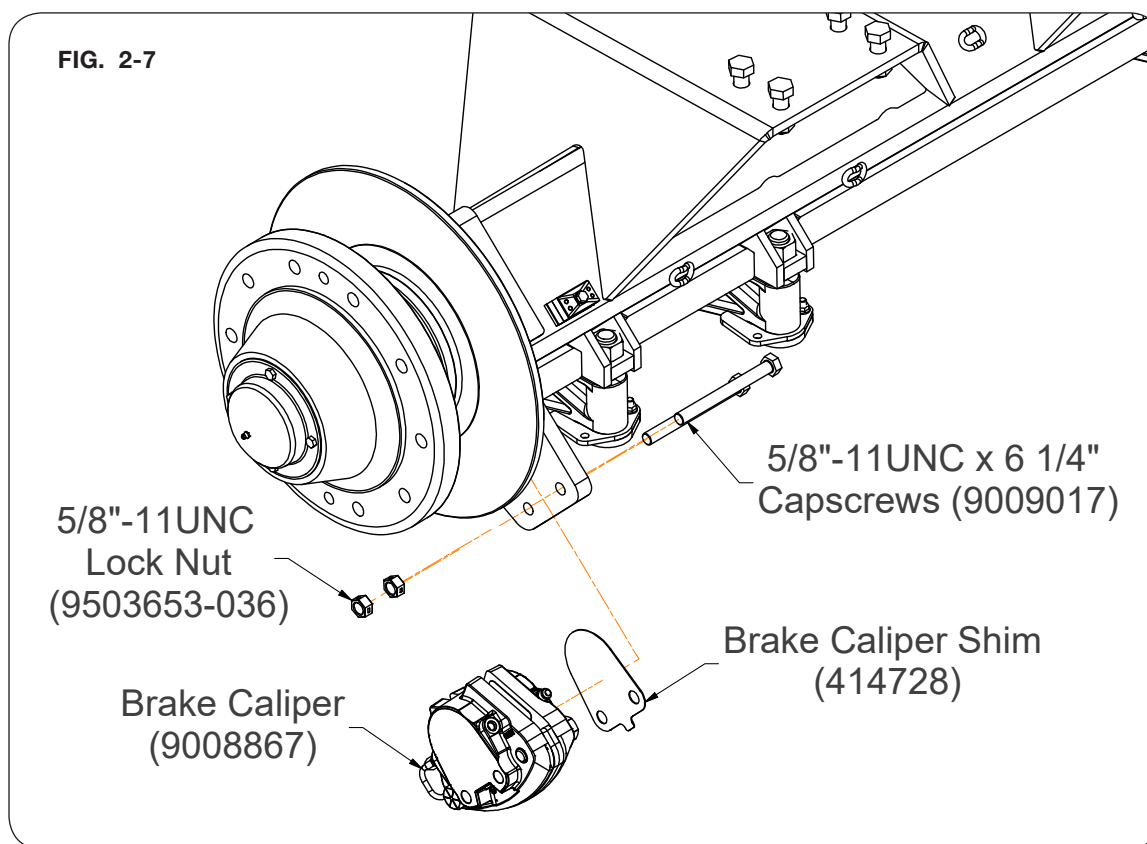
Disc Brake Set Up (Optional) (continued)

NOTE: Brake caliper (9008867) must be installed with the cross tube connecting the two halves of the caliper on the bottom side of the axle assembly shown in FIG. 2-7.

9. Separate the pads in the caliper and slide over the rotor in the location shown in FIG. 2-7.
10. Use brake caliper shims (414728) between the axle mount and caliper to ensure the caliper is centered on the rotor. (FIG. 2-7)

NOTE: Brake caliper must be within 1/8" of being centered with the rotor by adding or removing shims.

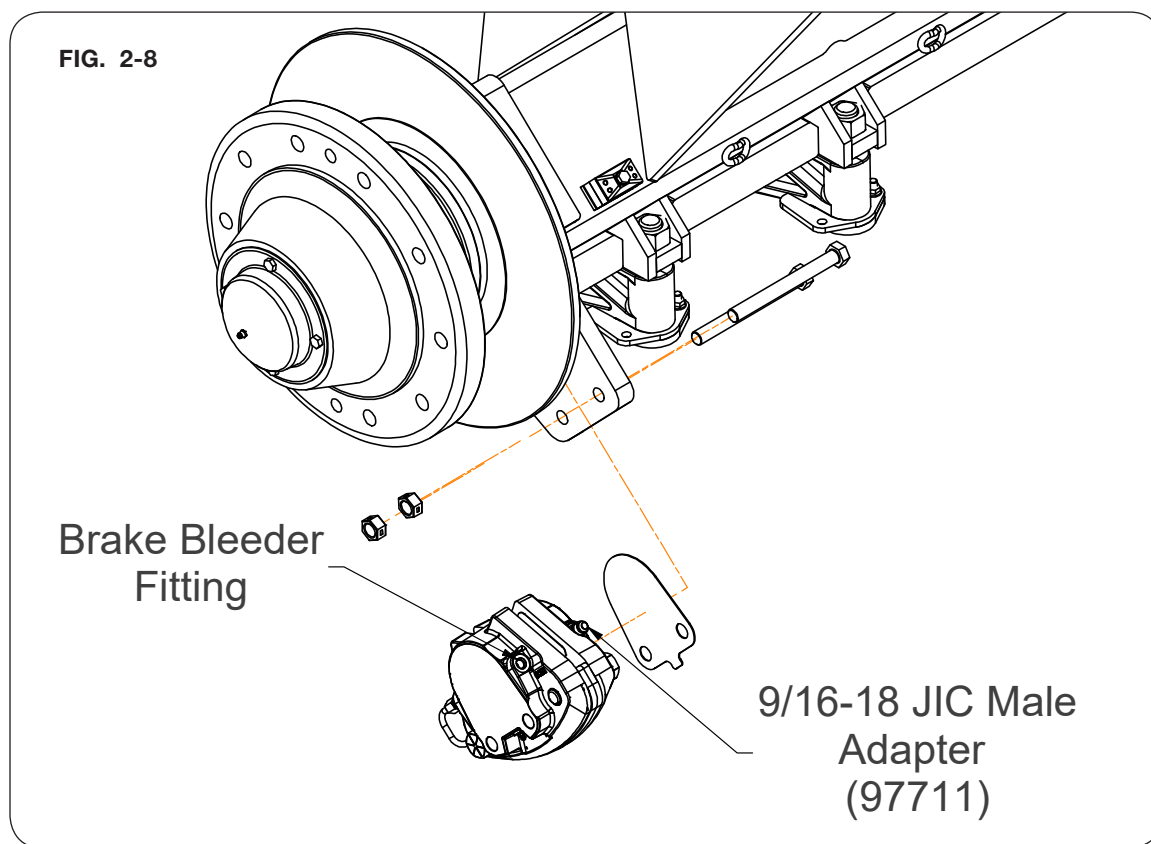
11. Begin by assembling one shim and loosely secure the caliper with one 5/8"-11UNC x 6 1/4" capscrew (9009017) and one 5/8"-11UNC lock nut (9503653-036) to hold in position to check caliper alignment with the rotor. (FIG. 2-7)
12. Torque 5/8" caliper hardware as listed in "Maintenance" chart.



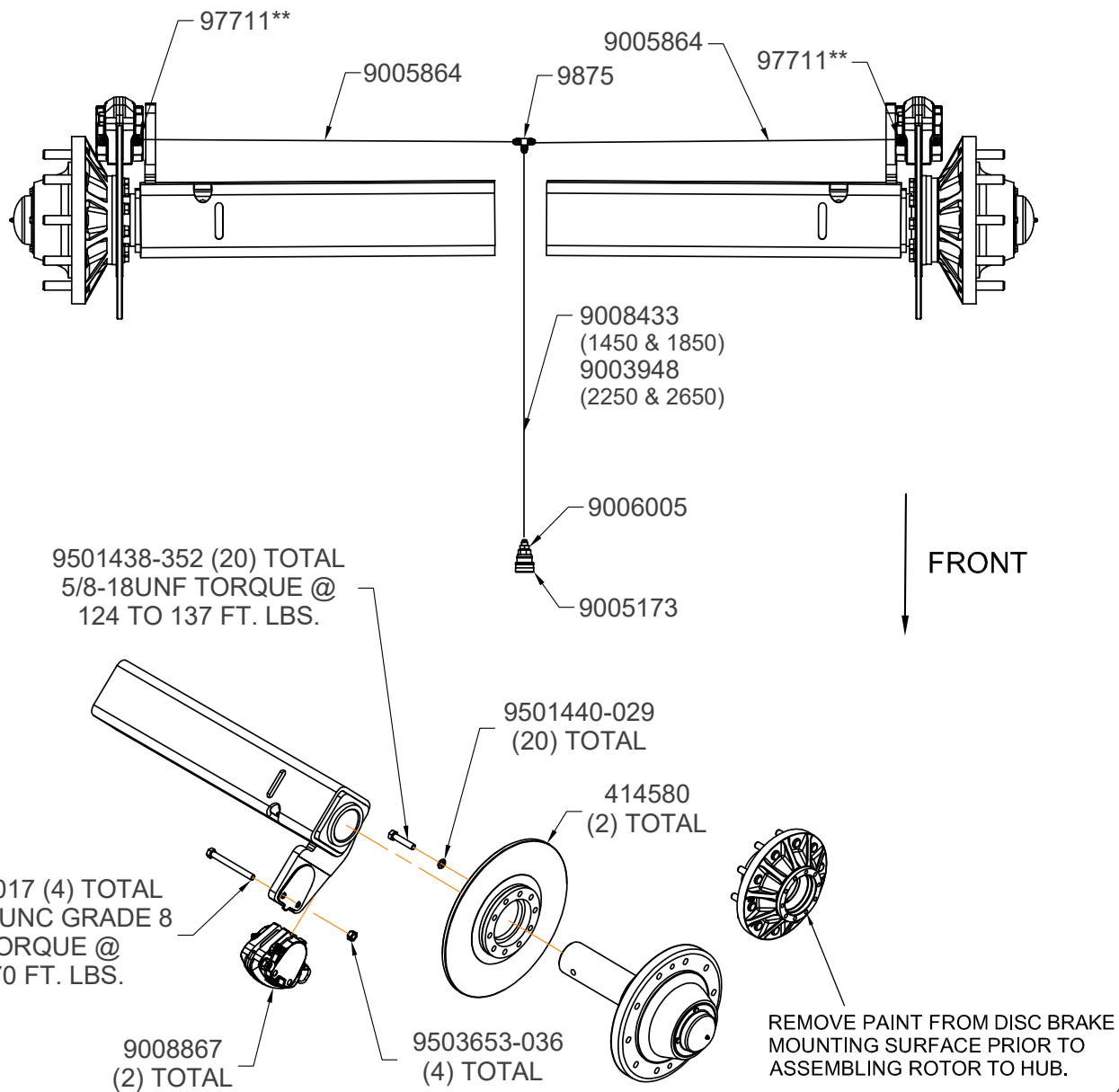
Disc Brake Set Up (Optional) (continued)

13. Install adapter (97711) to the brake caliper. (FIG. 2-8)
14. Attach one 1/4" x 66" hydraulic hose (9005864) to adapter.
15. Route excess hose for each side through hose clamp (9003816). Attach hoses (9005864) to tee (9875) at the center of the unit.
16. Connect 1/4" x 372" hose (9003948; for 22'-26' units) or 1/4" x 310" hose (9008433; for 14'-18' units) and route with the case drain hose to the front of the unit.
17. Assemble brake quick release coupler (9005173), adapter (9006005) and hose wrap (PF1207-R16) to the front end of the hose.
18. Using a safe lifting device rated for 2,000 lbs., reassemble tires using hardware from step 3 and torque the wheel nuts.
19. Lower wheels and tires and repeat steps 2 through 15 for other side.
20. To purge the brakes, follow the instructions given in "Purging Procedure For Braking System" in the "Maintenance" section of this manual.

NOTE: Refer to next page for overview image of disc brake set up.



Disc Brake Set Up (Optional) (continued)



**LOCATE/REPLACE TOWARDS TOP OF EACH CALIPER.

Electrical Hook-Up

Always verify correct electrical function before using this spreader.

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.

The main harness has a 7-pin (round) plug conforming to SAE standards that connects to tractor. If your tractor does not have the mating socket connector, contact your tractor dealer.

Notes

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FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.

Preparing Pull-Type Undercarriage

Perform the service checks as outlined below. Repair or replace any damaged or worn parts before operating.

Hardware

Check for loose hardware, and tighten as needed. Check again after the first half-day of operation.

Hitch

Check hitch and hitch retention hardware for damage and wear.

Hydraulic System



- RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR 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.

Check all hoses and cylinders for signs of leakage. Hoses should not be kinked, twisted or rubbing against sharp edges. Re-route or repair hoses as necessary. Refer to SAFETY section for additional information on safe repair and inspection of hydraulic components.

TRACTOR HYDRAULIC REQUIREMENTS:

Tractor hydraulics max pressure is 2900 psi.

HYDRAULIC PUMP REQUIREMENTS:

40 - 45 gpm @ 3500 psi. If more than 45 gpm is used, it must be done with a "load sensing" variable displacement pump.

IMPORTANT

- *Warranty is void if this requirement is not followed.*

Preparing Pull-Type Undercarriage

Tires/Wheels

Check tire pressures and maintain at recommended values listed in the MAINTENANCE section.



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 THE “MAINTENANCE” SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.

IMPORTANT

- *Installing wheels without the proper inset could result in hub or spindle failure. This will cause substantial damage to the spreader and is not covered by warranty. Inset/offset will vary depending on tire size. Consult dealer for proper inset/offset.*

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 for your convenience.

Hitching to Tractor

Drawbar Connection

WARNING

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

This pull-type mounted dry spreader is intended to be hitched to a tractor drawbar. Do not attempt to hitch to any other location on the tractor other than the drawbar.

The pull-type mounted dry spreader is equipped with a single-tang hitch with a 1 1/2" hitch bushing (9007941) which requires a 1 1/2" diameter drawbar pin. Hold the 1 1/2" hitch bushing in place with snap ring (9007938).

NOTE: The use of a smaller diameter hitch pin will result in additional clearance between the hitch and pin. This additional clearance may cause accelerated pin wear, tractor and dry spreader hitch wear, along with more pronounced jolting from the dry spreader during transport operation.

The holes in the hitch and vertical holes in the tongue allow for adjustment so the dry spreader box sits level.

NOTE: Verify and/or adjust the unit hitch height before coupling to the tractor. The hitch is adjusted by unbolting the hitch and reinstalling in a different set of holes provided.

NOTE: Drawbar must be locked in the center position.

After inserting drawbar pin, secure drawbar pin with a locking device to help prevent uncoupling during use.

SNAP RING USED ONLY
WITH 1 1/2" BUSHING

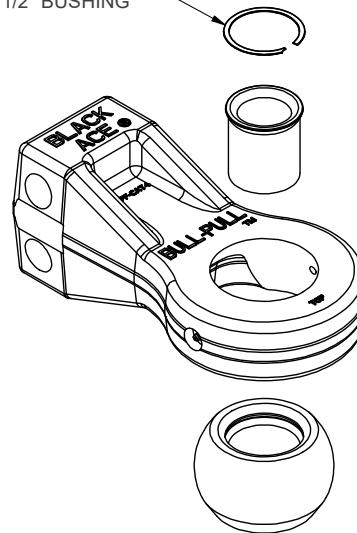


FIG. 3-1



FIG. 3-2

Hitching to Tractor (continued)

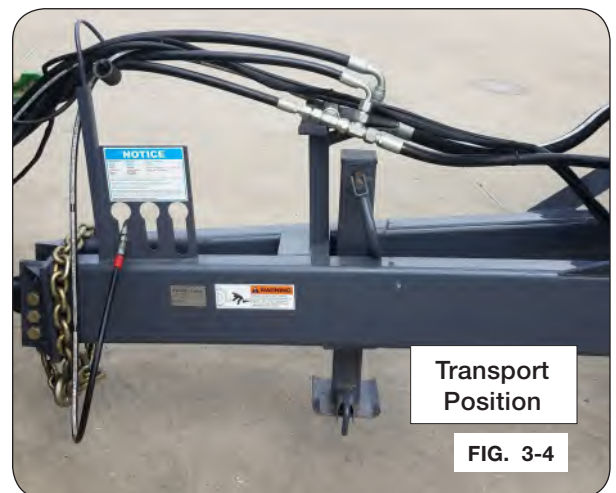
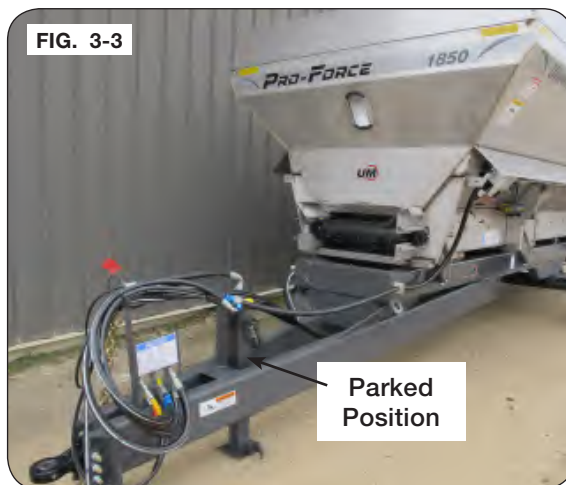
Jack Usage

WARNING

- UNHITCHING A LOADED DRY SPREADER CAN CAUSE SERIOUS INJURY OR DEATH DUE TO THE TONGUE RISING OR FALLING. ALWAYS HAVE A LOADED DRY SPREADER ATTACHED TO A TRACTOR. THE JACK IS INTENDED TO SUPPORT AN EMPTY DRY SPREADER ONLY.

IMPORTANT

- *Fully raise and retract jack leg when dry spreader is hitched to tractor.*



Hitching to Tractor (continued)

Transport Chain Connection



CAUTION

- ALWAYS USE TRANSPORT CHAIN WHEN TRANSPORTING IMPLEMENTS. FAILURE TO USE A TRANSPORT CHAIN COULD CAUSE PERSONAL INJURY IF DRY SPREADER BECOMES DISENGAGED.

Tractor must be equipped with an intermediate transport chain support. Always use intermediate support when connecting dry spreader directly to a tractor. DO NOT use the intermediate chain support as the chain attaching point.

The chain is rated at a maximum 61,000 lbs. for towing the dry spreader on public roads. Use only ASABE approved chains. Allow no more slack in chain than necessary to permit turning.

IMPORTANT

- *Replace transport chain if any link or end fitting is broken, stretched, or damaged. DO NOT WELD TRANSPORT CHAIN.*

Hitching to Tractor (continued)

Hydraulic Connections

IMPORTANT

- When coupling hydraulic hoses to ports on the tractor, be sure that the coupler ends are clean of dust, dirt and debris. Failure to do so could contaminate hydraulic system resulting in excessive wear and possible failure. (FIG. 3-4)
- Return line has unique quick coupler (PF1202-8434) that will weep oil to protect hydraulic components. This weeping is normal and does not indicate issues with the hydraulic system.

Clean hydraulic hose couplers before connecting to the tractor. For convenience, it is recommended to connect the supply circuit hoses to tractor SCV implement coupler #1 and #2, brake circuit hoses to hydraulic brake port or coupler #3, and attach case drain circuit to the case drain / leak off coupler.

This unit is equipped with color bands attached to the hydraulic hoses. This will help in identifying the hose function and correct hook up.

This unit utilizes two (2) SCV circuits for hydraulic supply.

NOTE: Tractor hydraulic requirements are 38 GPM.

Blue: Supply

Red: Hydraulic Brake

Yellow: Case Drain

None: Return (attached to SCV return port with Blue supply lines)

After initial set-up or replacement of any hydraulic component on the dry spreader, air must be removed from the dry spreader's hydraulic system. See "Maintenance" section for "Purging Hydraulic System."

Route hoses away from areas that may cause abrasion or kinking of hoses during operation.

Before disconnecting hoses from the tractor, relieve pressure in the system. See the tractor's Operator's Manual for the proper procedure. Shut off engine and apply parking brake before disconnecting hoses. Install couplers into storage slots provided.



Hitching to Tractor (continued)

Electrical Connections

This dry spreader is equipped with a seven-pin SAE connector plug which will connect with the receptacle found on most newer tractors. If your tractor does not have this type of receptacle, an SAE J-560 seven-point socket can be purchased from your Unverferth dealer (Part number 92824). (FIG. 3-6)

The wiring diagram for this dry spreader, shown in the MAINTENANCE section, complies with ASABE Standards. Always verify correct electrical function before using this cart.

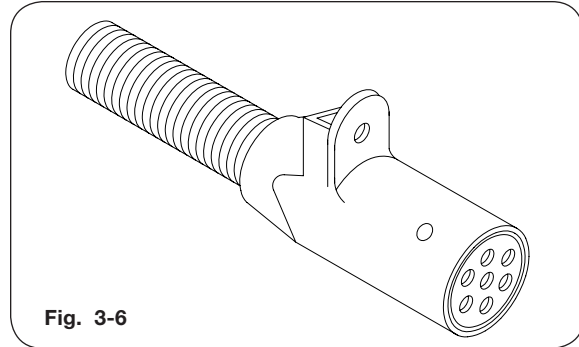


Fig. 3-6

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.

Transporting

WARNING

- USE EXCEPTIONAL CARE WHEN OPERATING SPREADER EQUIPPED WITH SINGLE TIRES AND SET AT NARROW WHEEL SPACING. THE POSSIBILITY OF TIPPING OVER DURING TURNS OR TRAVEL ON ROUGH ROADS IS INCREASED UNDER THESE CONDITIONS.

IMPORTANT

- *Hydraulic brakes are optional for pull-type dry spreaders.*

See towing vehicle manual for towing. Regulate speed to road conditions. Maximum transport speed of dry spreader should never exceed 20 m.p.h. as indicated on the machine. Do not exceed 10 m.p.h. during off-highway travel.

Secure drawbar pin with a locking device and lock tractor drawbar in centered position.

Secure transport chain to tractor before transporting. Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.

It is probable that this implement is taller, wider, and longer than the towing tractor. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.

Ladder Operation

WARNING

- FALLING OR LOWERING EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH. KEEP EVERYONE AWAY FROM EQUIPMENT WHEN SUSPENDED, RAISING, OR LOWERING.
- DO NOT ALLOW ANYONE TO RIDE ON THE LADDER. MAKE SURE EVERYONE IS CLEAR BEFORE OPERATING MACHINE OR TOWING VEHICLE.

If ladder steps are covered with snow/debris, it is important to remove snow/debris before unfolding ladder section.

NOTE: The ladder must be locked in the storage position when not used. (FIG. 3-6)

1. Hold the ladder. (FIG. 3-7)
2. Carefully unhook the ladder pins from the ladder. Keep ladder pins.
3. Slowly lower and swing the ladder section completely away from the hopper.
4. When the ladder is not in use, lift and walk the ladder towards the hopper to lock ladder into position with the ladder pins.



Section IV

Maintenance

| | |
|---|------|
| Pull-Type Undercarriage Maintenance | 4-2 |
| Lubrication | 4-3 |
| Seasonal Storage..... | 4-5 |
| Purging Hydraulic System | 4-6 |
| Wheel, Hub and Spindle Disassembly and Assembly | 4-7 |
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FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.

Pull-Type Undercarriage Maintenance

WARNING

- TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.
- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.
- KEEP HANDS CLEAR OF PINCH POINT AREAS.
- ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING WITH OR NEAR CHEMICALS. THIS EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO: PROTECTIVE EYE WEAR, GLOVES, SHOES, SOCKS, LONG-SLEEVED SHIRT, AND LONG PANTS. ADDITIONAL PROTECTION MAY BE REQUIRED FOR MANY TYPES OF CHEMICALS.
- AVOID BREATHING CHEMICALS AND FUMES.
- WASH HANDS BEFORE EATING, DRINKING, CHEWING GUM, OR USING TOILET.
- NEW HYDRAULIC SYSTEMS OR SYSTEMS THAT HAVE BEEN MAINTAINED MUST BE PURGED OF AIR BEFORE OPERATING OR MOVING MACHINE TO PREVENT SERIOUS INJURY OR DEATH.

CAUTION

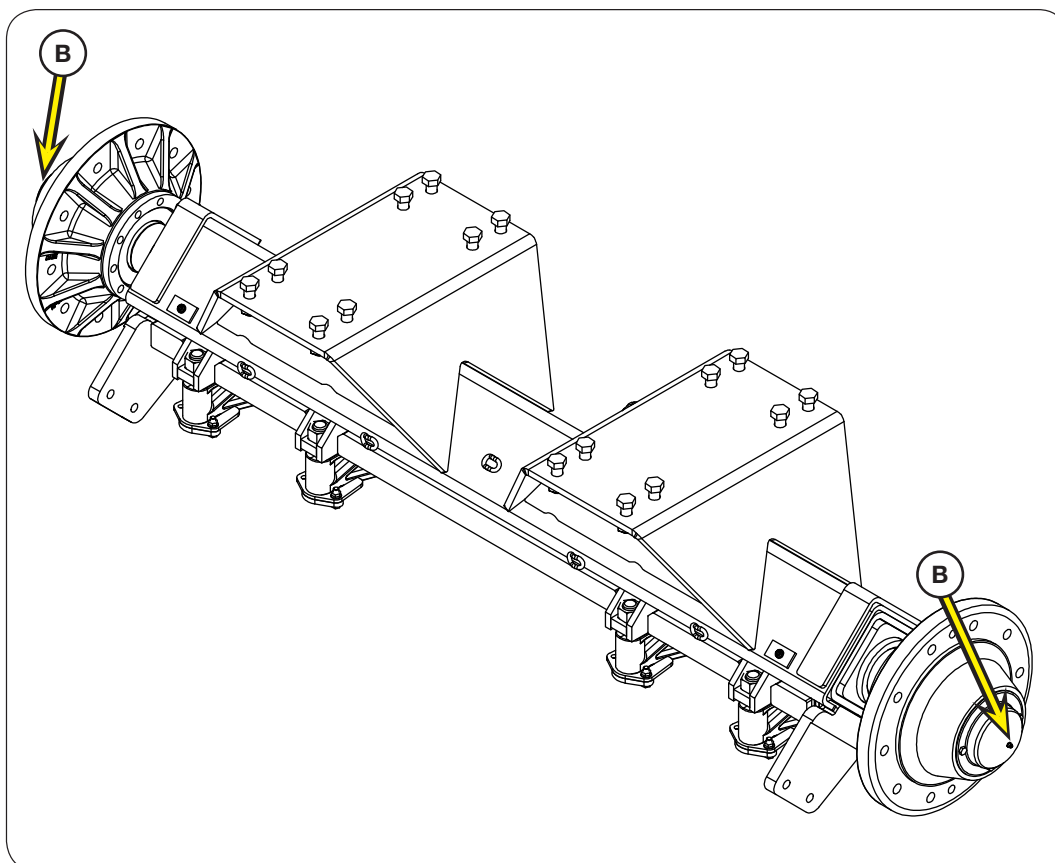
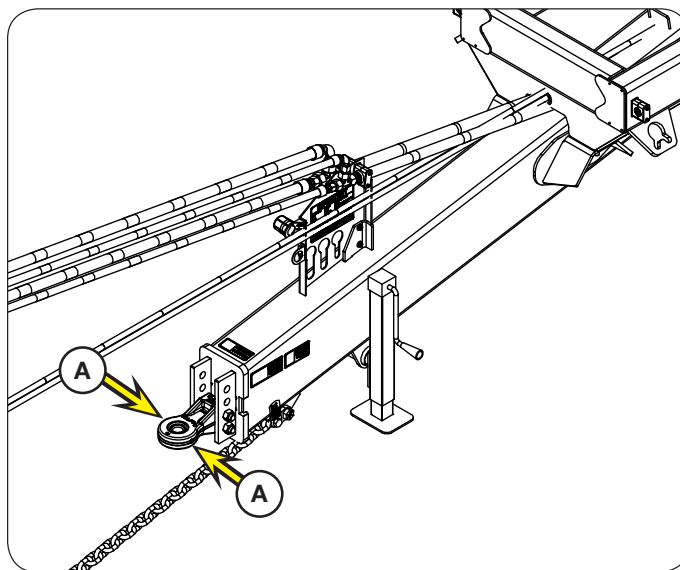
- SHARP EDGES ON DRY SPREADER CAN CAUSE SERIOUS INJURY. BE CAREFUL WHEN WORKING AROUND DRY SPREADER.

Pull-Type Undercarriage Maintenance (continued)

Lubrication

To keep your dry spreader in top operating condition and to assure its proper performance and reliability for a long period of time, periodic inspection and lubrication is a must. Make sure to use NLGI-2 high quality EP grease.

The lubrication locations and recommended schedule are as follows:



(Continued on next page)

Pro-Force Pull-Type Undercarriage — Maintenance

Pull-Type Undercarriage Maintenance (continued)

| ITEM | DESCRIPTION | POINT | LUBRICANT | QTY. | HOURS |
|------|--|-------|------------|---------|---------|
| A | Bull Pull Hitch | 2 | NLGI No. 2 | 2 Shots | Weekly |
| B | Hubs | 2 | NLGI No. 2 | Repack | 2 Years |
| C | Track Lubrication (Refer to your 36" Wide x 112" Long track manual.) | - | - | - | - |

NOTE: Completely lubricate all locations at the end of the season.

Pull-Type Undercarriage Maintenance (continued)

Seasonal Storage

Immediately after season is finished, completely wash machine to remove corrosive fertilizer/chemicals inside and out before storing. When using pressure washers, maintain an adequate distance to avoid blasting water into bearings, hydraulic seals or electrical connections.

- After washing machine, spray an oil/diesel mixture inside hopper to avoid corrosion.
- Repaint all areas where paint has been removed to keep rust from developing.
- Inspect machine for parts that may need to be replaced so they may be ordered in the off season.
- Lubricate machine at all points outlined in the Lubrication section.
- Inspect for damage or worn parts, replace before next season.
- Replace all worn, torn or faded decals and reflectors.
- Store the spreader inside, away from animals.
- Keep tarp open, if equipped.
- Check hydraulic hoses for weather cracks and replace accordingly.
- After any period of unused time, unit should be operated to check function of hydraulic system.

Pull-Type Undercarriage Maintenance (continued)

Purging Hydraulic System



- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.
- RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR 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.

1. Purge air from system as follows:

- A. Turn on two SCVs for the BLUE supply lines with engine at low idle. Allow 1 minute for oil to fill the spreader hydraulic system.
- B. Turn on the spinner and conveyor. Check that all hydraulic valves have opened.
- C. Start hydraulic system and run for 1 minute or until hydraulic motor starts turning.
- D. Check oil reservoir in hydraulic power source and re-fill as needed.
- E. Check for hydraulic leaks using cardboard or wood. Tighten connections according to directions in Torque Specifications in MAINTENANCE section.
- F. De-pressurize hydraulic system.

Wheel, Hub and Spindle Disassembly and Assembly

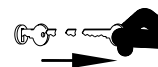
WARNING

- TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.
- 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 12,000 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 IMPLEMENT.
- KEEP HANDS CLEAR OF PINCH POINT AREAS.

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.

1. Hitch undercarriage to tractor. Park the empty undercarriage on a firm, level surface. Block the tires to keep the machine from moving. Set the tractor's parking brake, shut off engine and remove key from tractor.



2. With undercarriage and attached dry spreader unloaded, use a safe lifting device rated at 12,000 lbs. to support the weight of your undercarriage and dry spreader. Place the safe lifting device under the axle closest to the tire.
3. Use a minimum of 1,500 lbs. safe lifting device to support the wheel and tire during removal.

WARNING

- ON UNITS WITH DUAL WHEELS, INNER WHEEL AND TIRE MAY FALL FROM HUB CAUSING SERIOUS INJURY OR DEATH. ALWAYS SUPPORT INNER WHEEL WHEN REMOVING OUTER WHEEL AND/OR THE WHEEL EXTENSION.
4. If only changing wheel and tire, skip to Step 8; otherwise continue with Step 4.

Remove the hardware retaining the hubcap. Next, remove the hubcap, gasket, capscrew, castle nut, and spindle washer. Remove hub with bearings from old spindle using a 200 lbs. lifting device.

Wheel, Hub and Spindle Disassembly and Assembly (continued)

5. Inspect the spindle and replace if necessary. If spindle does not need to be replaced, skip to Step 6; otherwise continue with Step 5.

Remove the bolt and lock nut that retain the spindle to the axle. Using a safe lifting device rated for 150 lbs., replace the old spindle with a new spindle. Coat axle contact length of spindle shaft with anti-seize lubricant prior to installation. Reuse bolt and lock nut to retain spindle to axle. Tighten as outlined in Maintenance Section.

6. Remove seal and inspect bearings, spindle washer, castle nut and cotter pin. Replace if necessary. Pack both bearings with approved grease and reinstall inner bearing. Install new seal in hub with garter spring facing the hub by tapping on flat plate that completely covers seal while driving it square to hub. Install until flush with back face of hub. Using a 200 lb rated lifting device, install hub assembly onto spindle. Install outer bearing, spindle washer and castle nut.

IMPORTANT

- *Do not use an impact wrench!*
7. Slowly tighten castle nut while spinning the hub until drag causes the hub to stop freely spinning. Turn castle nut counterclockwise until the hole in the spindle aligns with the next notch in castle nut. Hub should spin smoothly with little drag and no end play. If play exists, tighten to next notch of castle nut. If drag exists, then back castle nut to next notch of castle nut. Spin and check again. Install bolt and nut. Clean face for hub cap gasket and install gasket, grease filled hub cap and retain hubcap with hardware removed. Tighten hubcap hardware in alternating pattern.
 8. Attach the wheel(s) and tire(s) to the hub using the same rated safe lifting device for removal. Tighten wheel nuts to appropriate requirements and recheck as outlined in the Wheel and Tire section of this manual.
 9. Raise dry spreader, remove lifting device and lower spreader to the ground.

Purging Procedure For Braking System

WARNING

- RELIEVE THE 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.
- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.

NOTE: Use ONLY quality hydraulic oil. If pressure purging equipment is available, follow manufacturer's instructions in purging the brake system.

NOTE: System is intended for tractors with hydraulic trailer brakes. If your tractor does not have hydraulic trailer brakes, contact your dealer for support.

Connector should comply with ISO:5676 standards. Brake hydraulic hose is designated with red color band. See tractor's operators manual for connection location.

1. Block wheels to prevent movement. Set the tractor parking brake, but leave tractor engine on throughout the procedure. Attach hydraulic brake coupler on the undercarriage to the implement brake port at the rear of the tractor.
2. Apply and hold pressure to brake pedal.
3. Attach a hose to the bleeder fitting to drain hydraulic fluid/air. Loosen the bleeder fitting, at the top of the brake caliper and allow air bubbles to escape. Close bleeder fitting when oil flow is free of bubble interruptions and flowing steady. If necessary, pump the brake pedal to build circuit pressure. See FIG. 4-1 & FIG 4-2.
4. Repeat steps 2 and 3 to the next brake caliper in the brake circuit. Repeat until all brakes are bled.
5. Perform a final tightness check of all caliper bleeder fittings before beginning spreader operation. Check that both brakes actuate and release properly with tractor brake pedal.

FIG. 4-1

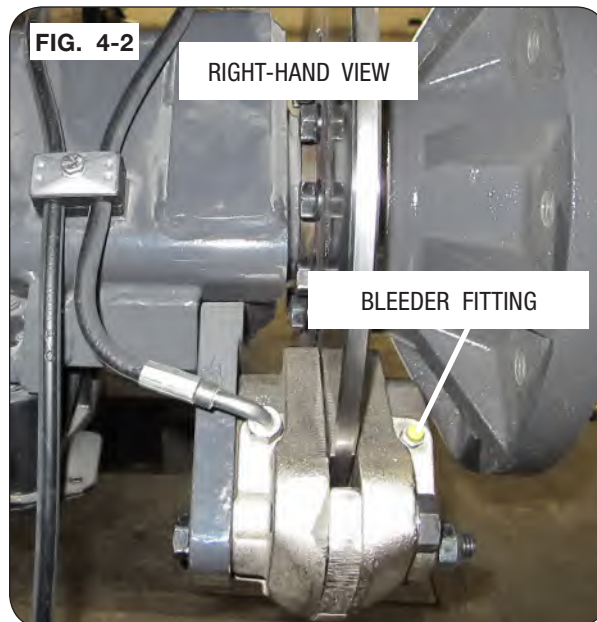
LEFT-HAND VIEW



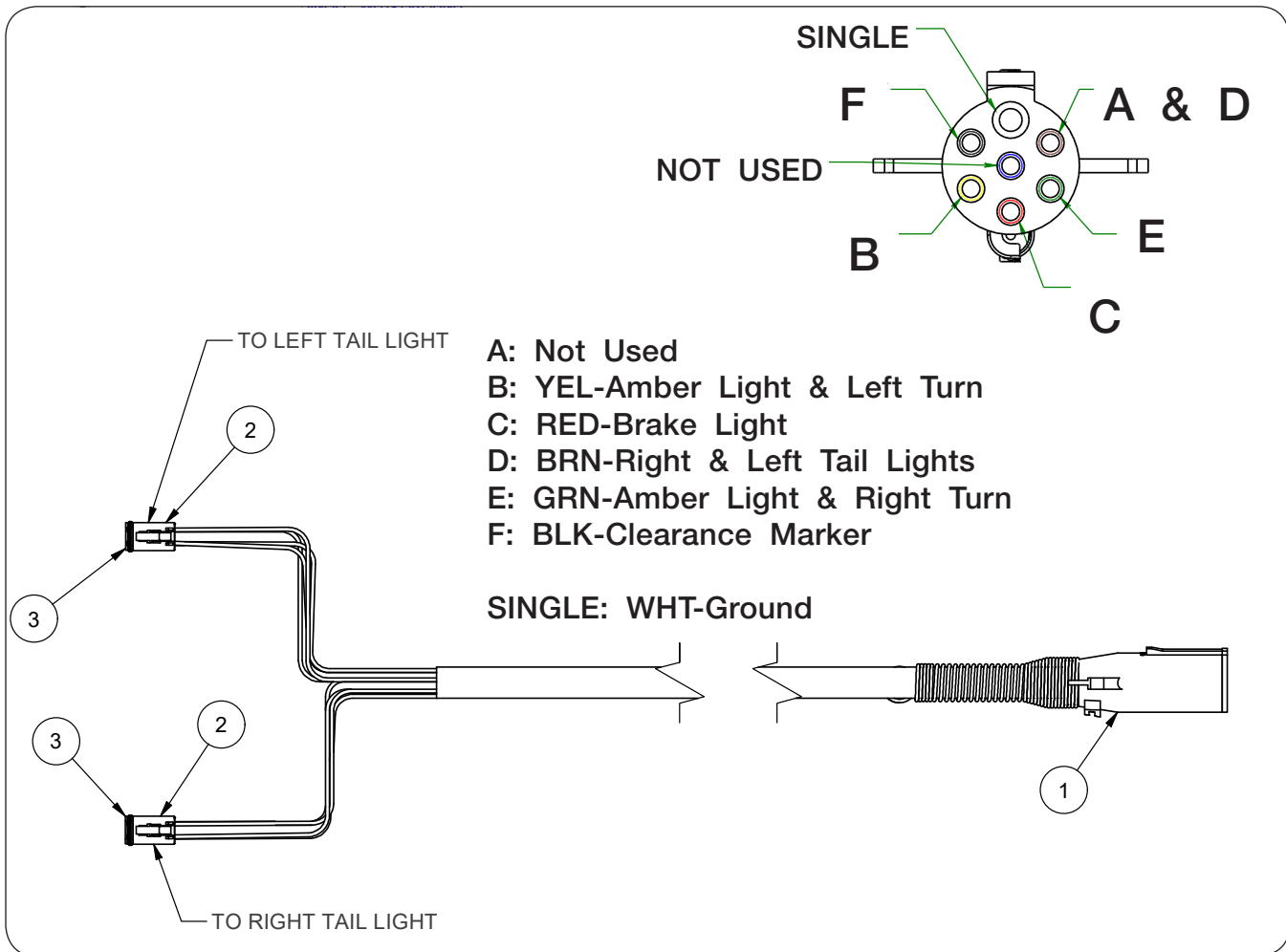
FIG. 4-2

RIGHT-HAND VIEW

BLEEDER FITTING



Schematic — Electrical — Tail Light Extension Cable 1450 & 1850 (PF1223-754) / 2250 & 2650 (PF1223-75426)



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 THEREAFTER. 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 |
| Axle (M22 x 2.5 10 Bolt) | 615 Ft.-Lbs. |

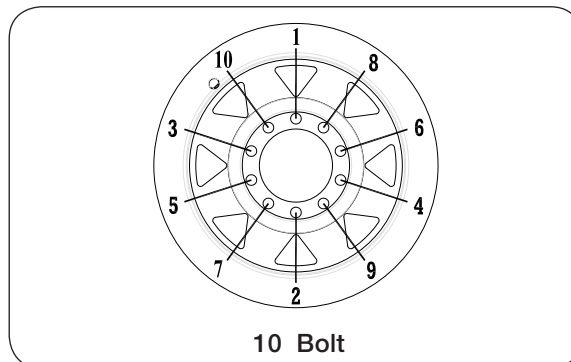


DIAGRAM 1

Wheels and Tires (continued)

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 unit is loaded. 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. After beads are seated on the rim, deflate to 5-10 PSI, then reinflate to the tire's recommended PSI when mounting.

| Tire Pressure for Unverferth Dry Spreaders | | | |
|--|---------------------|------------------|---------|
| Tire Make | Tire Size | Load Index / Ply | |
| | | Rating | Max PSI |
| Firestone | VF380/90R46 R-1 | 173 B | 64 |
| | 480/80R46 R-1 | 158 A8 | 35 |
| | VF480/80R46 R-1W | 169 B | 35 |
| | IF900/65R32 CFO R-3 | 191 B | 46 |
| Mitas | VF320/105R54 | 169 D | 58 |

* Based on a field load of 40,000 lbs. on the axle. Base machine weight, 18 tons of material minus tongue weight. Do not transport fully loaded on the road.

Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Following are phone numbers and Websites for your convenience:

| | |
|---------------------------------------|--|
| <u>Firestone</u> | www.firestoneag.com Phone 800-847-3364 |
| <u>Titan</u> or <u>Goodyear</u> | www.titan-intl.com Phone 800-USA-BEAR Fax 515-265-9301 |
| <u>Trelleborg</u> | www.trelleborg.com Phone 866-633-8473 |
| <u>Continental/Mitas</u> | www.mitas-tires.com Phone 704-542-3422 Fax 704-542-3474 |

Complete Torque Chart

Capscrews - Grade 5

NOTE:

- Grade 5 capscrews can be identified by three radial dashes on the head.



| SIZE | FOOT POUNDS | NEWTON METERS |
|----------|----------------|------------------|
| 1/4-20 | 8-10 | 11-13 |
| 1/4-28 | 9-11 | 12-15 |
| 5/16-18 | 15-17 | 20-23 |
| 5/16-24 | 17-19 | 23-26 |
| 3/8-16 | 25-28 | 34-38 |
| 3/8-24 | 28-31 | 38-42 |
| 7/16-14 | 40-45 | 54-61 |
| 7/16-20 | 45-50 | 61-68 |
| 1/2-13 | 62-68 | 84-92 |
| 1/2-20 | 68-75 | 92-102 |
| 9/16-12 | 90-98 | 122-133 |
| 9/16-18 | 100-110 | 134-148 |
| 5/8-11 | 120-135 | 162-183 |
| 5/8-18 | 124-137 | 168-186 |
| 3/4-10 | 200-220 | 270-300 |
| 3/4-16 | 210-230 | 285-310 |
| 7/8-9 | 330-350 | 425-475 |
| 7/8-14 | 360-380 | 460-515 |
| 1-8 | 500-525 | 675-710 |
| 1-14 | 540-560 | 730-760 |
| 1 1/8-7 | 600-635 | 815-860 |
| 1 1/8-12 | 665-700 | 920-950 |
| 1 1/4-7 | 850-895 | 1150-1215 |
| 1 1/4-12 | 940-990 | 1275-1340 |
| 1 3/8-6 | 1125-1175 | 1525-1590 |
| 1 3/8-12 | 1280-1335 | 1735-1810 |
| 1 1/2-6 | 1500-1560 | 2035-2115 |
| 1 1/2-12 | 1685-1755 | 2285-2380 |

IMPORTANT

- Follow these torque recommendations except when specified in text.

Complete Torque Chart (continued)

Capscrews - Grade 8

NOTE:

- Grade 8 capscrews can be identified by six radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.



| SIZE | FOOT POUNDS | NEWTON METERS |
|----------|----------------|------------------|
| 5/16-18 | 20-22 | 27-30 |
| 5/16-24 | 21-23 | 28-31 |
| 3/8-16 | 35-39 | 47-53 |
| 3/8-24 | 36-41 | 49-55 |
| 7/16-14 | 54-58 | 73-78 |
| 7/16-20 | 55-60 | 75-80 |
| 1/2-13 | 82-88 | 110-120 |
| 1/2-20 | 94-99 | 125-135 |
| 9/16-12 | 127-134 | 170-180 |
| 9/16-18 | 147-155 | 199-210 |
| 5/8-11 | 160-170 | 215-230 |
| 5/8-18 | 165-175 | 225-235 |
| 3/4-10 | 280-295 | 380-400 |
| 3/4-16 | 330-365 | 445-495 |
| 7/8-9 | 410-430 | 555-580 |
| 7/8-14 | 420-440 | 570-595 |
| 1-8 | 630-650 | 850-880 |
| 1-14 | 680-700 | 920-950 |
| 1 1/8-7 | 900-930 | 1220-1260 |
| 1 1/8-12 | 930-950 | 1260-1290 |
| 1 1/4-7 | 1250-1300 | 1695-1760 |
| 1 1/4-12 | 1280-1320 | 1735-1790 |

IMPORTANT

- Follow these torque recommendations except when specified in text.

Complete Torque Chart (continued)

Metric Capscrews - Class 10.9

NOTE:

- For wheel torque requirements, refer to Wheels and Tires.



| SIZE | FOOT POUNDS | NEWTON METERS |
|------------|----------------|------------------|
| M5 X 0.8 | 6.5 | 8.8 |
| M6 X 1 | 11.1 | 15.0 |
| M7 X 1 | 18.6 | 25.2 |
| M8 X 1.25 | 26.9 | 36.5 |
| M10 X 1.5 | 53.3 | 72.2 |
| M12 X 1.75 | 92.9 | 126 |
| M14 X 2 | 148 | 200 |
| M16 X 2 | 231 | 313 |
| M18 X 2.5 | 317 | 430 |
| M20 X 2.5 | 450 | 610 |
| M22 x 1.5 | 475 | 644 |
| M22 X 2.5 | 612 | 830 |
| M24 X 3 | 778 | 1055 |
| M27 X 3 | 1138 | 1543 |
| M30 X 3.5 | 1546 | 2095 |
| M33 X 3.5 | 2103 | 2851 |
| M36 X 4 | 2701 | 3662 |
| M39 X 4 | 3495 | 4739 |
| M42 X 4.5 | 4324 | 5862 |

IMPORTANT

- Follow these torque recommendations except when specified in text.

Complete Torque Chart (continued)

Stainless Steel Capscrews - ASTM F593

IMPORTANT

- Stainless steel fasteners tend to gall, especially with long run downs, prevailing torque fasteners, impact drivers, and lack of lubrication. It is highly encouraged to use a lubricant such as graphite-based anti-seize or molybdenum disulfide based anti-seize or other commercially available anti-galling compounds and assemble with a slow and continuously applied torque to avoid galling.

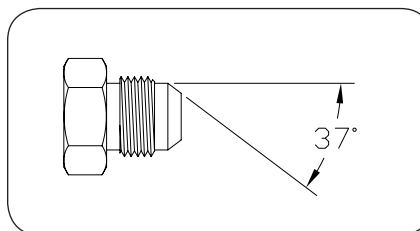
| SIZE | INCH POUNDS | NEWTON METERS |
|---------|----------------|------------------|
| 1/4-20 | 62 | 7 |
| 1/4-28 | 71 | 8 |
| 5/16-18 | 128 | 15 |
| 5/16-24 | 142 | 16 |

| SIZE | FOOT POUNDS | NEWTON METERS |
|----------|----------------|------------------|
| 3/8-16 | 19 | 26 |
| 3/8-24 | 21 | 29 |
| 7/16-14 | 30 | 41 |
| 7/16-20 | 34 | 46 |
| 1/2-13 | 46 | 63 |
| 1/2-20 | 52 | 71 |
| 9/16-12 | 67 | 91 |
| 9/16-18 | 74 | 100 |
| 5/8-11 | 92 | 125 |
| 5/8-18 | 104 | 141 |
| 3/4-10 | 113 | 153 |
| 3/4-16 | 126 | 171 |
| 7/8-9 | 182 | 247 |
| 7/8-14 | 201 | 273 |
| 1-8 | 273 | 370 |
| 1-14 | 306 | 415 |
| 1 1/4-7 | 545 | 739 |
| 1 1/4-12 | 604 | 819 |
| 1 3/8-6 | 715 | 970 |
| 1 3/8-12 | 813 | 1102 |
| 1 1/2-6 | 949 | 1287 |
| 1 1/2-12 | 1067 | 1447 |

Hydraulic Fittings - Torque and Installation

SAE Flare Connection (J. I. C.)

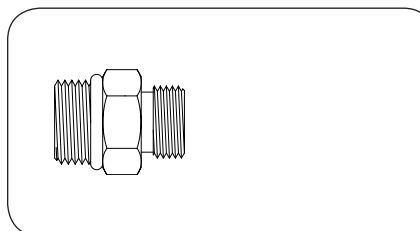
1. Tighten nut with finger until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.



| Steel 37° JIC Adapters | | |
|------------------------|--------------------|----------------|
| DASH SIZE | FLARED THREAD SIZE | TORQUE FT.-LBS |
| -6 | 9/16"-18 | 18-20 |
| -8 | 3/4"-16 | 27-39 |
| -10 | 7/8"-14 | 36-63 |
| -12 | 1 1/16"-12 | 65-88 |
| -14 | 1 3/16"-12 | 75-103 |
| -16 | 1 5/16"-12 | 85-113 |
| -20 | 1 5/8"-12 | 115-133 |
| -24 | 1 7/8"-12 | 125-167 |

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.
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.



| Steel SAE O-Ring Adapters J514 & J1926/3 Torque Values | | | |
|---|----------------------|------------------------------|--------------------------------|
| DASH SIZE | STRAIGHT THREAD SIZE | STRAIGHT STUD TORQUE FT.-LBS | ADJUSTABLE STUD TORQUE FT.-LBS |
| -6 | 9/16"-18 | 18-24 | 12-16 |
| -8 | 3/4"-16 | 27-43 | 20-30 |
| -10 | 7/8"-14 | 36-48 | 30-36 |
| -12 | 1 1/16"-12 | 65-75 | 44-54 |
| -14 | 1 3/16"-12 | 75-99 | 53-70 |
| -16 | 1 5/16"-12 | 85-123 | 59-80 |
| -20 | 1 5/8"-12 | 115-161 | 75-100 |
| -24 | 1 7/8"-12 | 125-170 | 105-125 |

Notes

Section V

Parts

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

| | |
|---|------|
| Hitch Components | 5-2 |
| Ladder Assembly | 5-4 |
| Brake Assembly (Optional) | 5-6 |
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| Adjustable Axle Hub Components | 5-9 |
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| Single Wheels & Tires | 5-12 |
| Track Axle Bundle Components | 5-13 |
| Undercarriage Decal Locations | 5-14 |
| Touch-Up Paint | 5-14 |
| Undercarriage Tail Light Cable Assembly | 5-15 |
| Front Hydraulics | 5-16 |

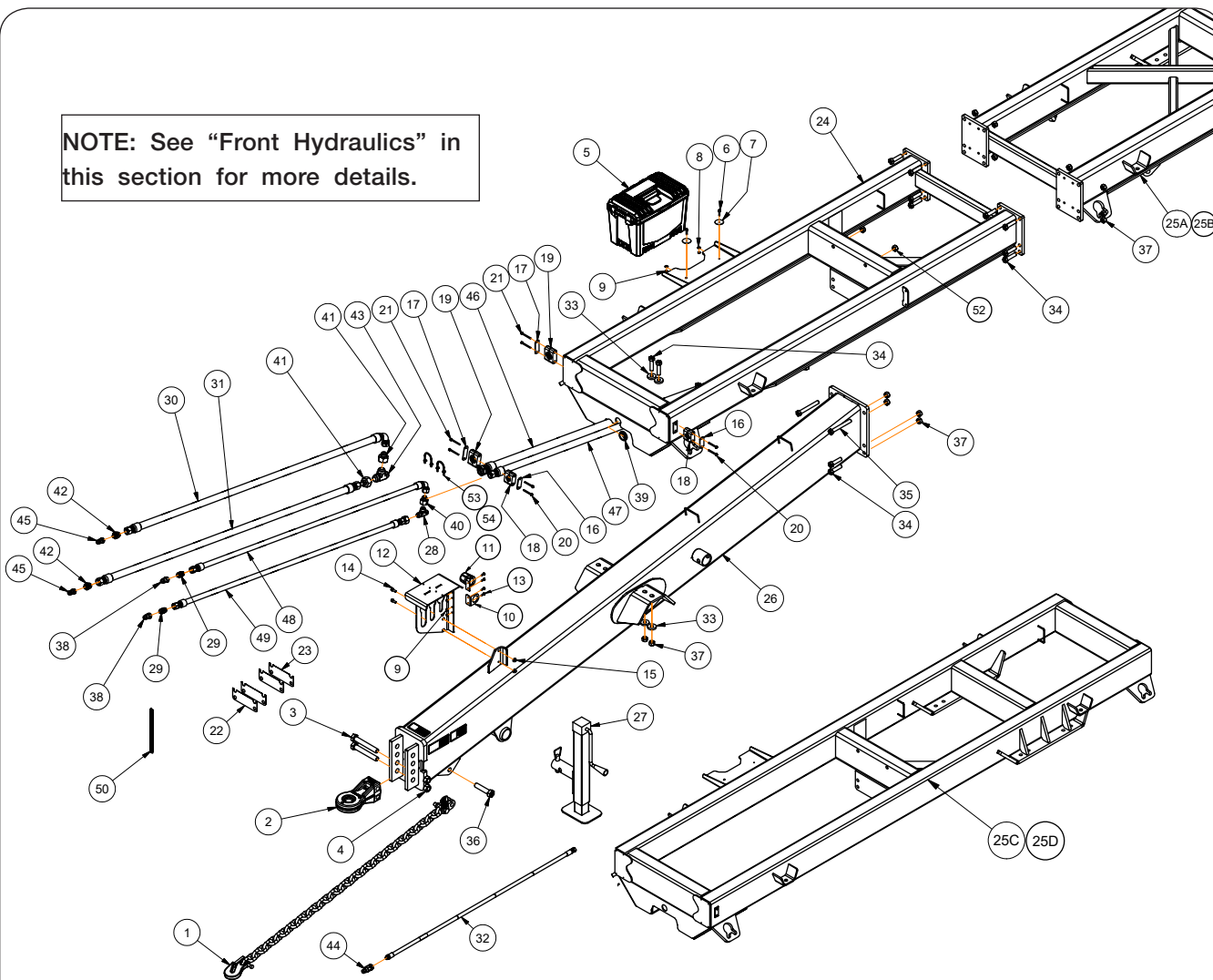
FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.
FOR AUTO GREASE INFORMATION, PLEASE REFER TO YOUR AUTO GREASE MANUAL.
FOR TRACK INFORMATION, PLEASE REFER TO YOUR TRACK MANUAL.

Pro-Force Pull-Type Undercarriage — Parts

Hitch Components

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

NOTE: See “Front Hydraulics” in this section for more details.



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|--|-----|-------|
| | 414639CEG | Undercarriage Frame Weldment 26' | 1 | |
| | 414638CEG | Undercarriage Frame Weldment 22' (SHOWN) | | |
| | 414693CEG | Undercarriage Frame Weldment 18' | | |
| | 414692CEG | Undercarriage Frame Weldment 14' | | |
| 1 | PF1238-19 | Transport Chain 61,000# | 1 | |
| 2 | 9006085 | Hitch, CAT4, Bull Pull Receiver | 1 | |
| 3 | 9503634-197 | Capscrew, 1"UNC x 8" G8 | 2 | |
| 4 | 9503653-039 | Lock Nut/Top, 1"-8UNC | 3 | |
| 5 | 9005850 | Toolbox | 1 | |
| 6 | 9501438-006 | Capscrew, 1/4"-20UNC x 1 1/4" G5 | 2 | |
| 7 | 94763 | Fender Washer | 2 | |
| 8 | 9501606-059 | Flat Washer, 1/4" USS | 2 | |
| 9 | 9501439-030 | Lock Nut, 1/4"-20UNC | 6 | |
| 10 | 281837B | PLATE-HOLDER =Black= | 1 | |
| 11 | 9001968 | CONNECTOR HOLDER | 1 | |
| 12 | 415245B | WELDMENT - PLATE, HOSE HOLDER | 1 | |
| 13 | 9501438-003 | Capscrew, 1/4"-20UNC x 3/4" G5 | 4 | |
| 14 | 9501438-055 | Capscrew, 3/8"-16UNC x 1" G5 | 2 | |
| 15 | 9501605-009 | Flange Nut, 3/8"-16UNC | 2 | |
| 16 | 414701 | PLATE- TOP, HOSE CLAMP | 1 | |
| 17 | 414702 | PLATE- TOP, HOSE CLAMP | 1 | |

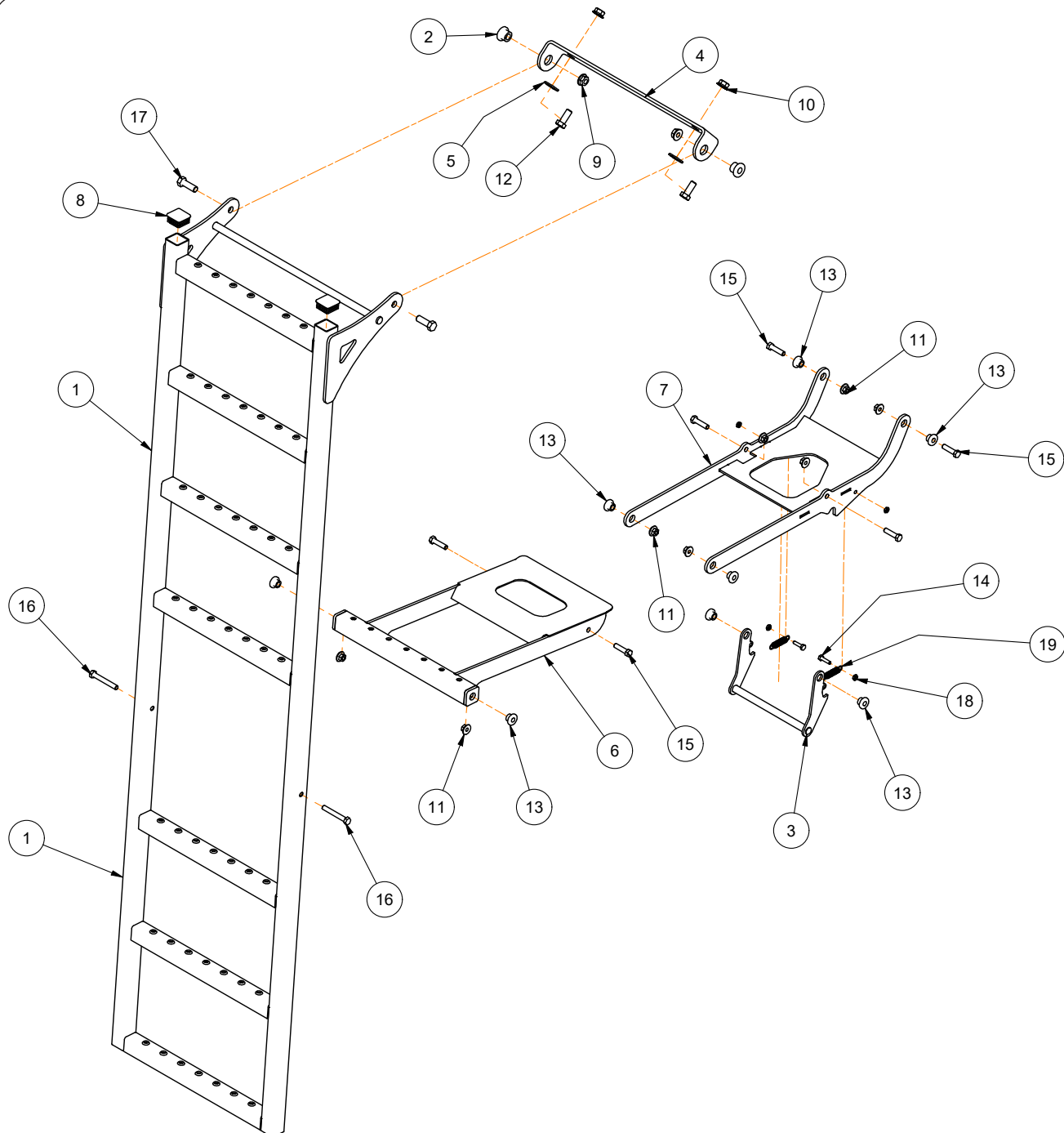
Hitch Components

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

| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|---------------|---|-----|---------------------------|
| 18 | 9008883 | CLAMP- SINGLE HOSE, 1.33 OD | 1 | |
| 19 | 9008884 | CLAMP- SINGLE HOSE, 1.90 OD | 1 | |
| 20 | 9501438-011 | Capscrew, 1/4"-20UNC x 2 1/2" G5 | 2 | |
| 21 | 9501438-012 | Capscrew, 1/4"-20UNC x 2 3/4" G5 | 2 | |
| 22 | 415000 | SHIM - 0.015" Thick | 2 | 2250 and 2650 Units |
| 23 | 415001 | SHIM - 0.030" Thick | 2 | |
| 24 | 414640CEG | FRONT UNDERCARRIAGE WELDMENT =CE Gray= | 1 | 2250 and 2650 Units |
| 25A | 414642CEG | REAR UNDERCARRIAGE WELDMENT =CE Gray= | 1 | 2650 Units |
| 25B | 414641CEG | | | 2250 Units (Shown) |
| 25C | 414561CEG | Undercarriage Weldment =CE Gray= | 1 | 1850 Units |
| 25D | 414560CEG | | | 1450 Units (Shown) |
| 26 | 414649CEG | TONGUE WELDMENT =CE Gray= | 1 | |
| 27 | 9004156 | JACK - SIDEWIND | 1 | |
| 28 | 900252 | BRANCH TEE 1 5/16-12 MJIC x 1 5/16-12 MJIC x 1 5/16-12 MJIC | 1 | |
| 29 | 9003615 | ADAPTER, 1 1/16-12 MJIC TO 7/8-14 O-RING | 2 | |
| 30 | 9008872 | HOSE, HYD. 1" X 84" 1 5/16-12 FJIC x 1 5/16-12 FJIC | 1 | |
| 31 | 9008873 | HOSE, HYD. 1" X 84" 1 5/16-12 FJIC x 1 5/16-12 FJIC | 1 | |
| 32 | 9008989 | HOSE, HYD. 1/2" X 480" 3/4-16 FJIC x 3/4-16 O-Ring | 1 | 2650 Units |
| | 9008982 | HOSE, HYD. 1/2" X 432" 3/4-16 FJIC x 3/4-16 O-Ring | | 2250 Units |
| | 9008988 | HOSE, HYD. 1/2" X 394" 3/4-16 FJIC x 3/4-16 O-Ring | | 1850 Units |
| | 9003027 | HOSE, HYD. 1/2" X 343 1/2" 3/4-16 FJIC x 3/4-16 O-R | | 1450 Units |
| 33 | 9009010 | FLAT WASHER 13/16" | 8 | |
| 34 | 9503634-1358 | Capscrew, 3/4"-10UNF x 3" G8 | 20 | 2250 and 2650 Units |
| | | | 8 | For SN B40850100 & Higher |
| | 9503634-149 | Capscrew, 3/4"-10UNC x 3" G8 | 20 | 1450 and 1850 Units |
| | | | 8 | For SN B40850100 & Higher |
| 35 | 9503634-157 | Capscrew, 3/4"-10UNC x 6" G8 | 2 | 2250 and 2650 Units |
| 36 | 9503634-192 | Capscrew, 1"-10UNC x 4 1/2" G8 | 1 | For SN B40850100 & Higher |
| 37 | 9503653-008 | Lock Nut 3/4"-10UNF G8 | 20 | 1450 and 1850 Units |
| | | | 8 | For SN B40850100 & Higher |
| | 9503653-037 | Lock Nut 3/4"-10UNC G8 | 22 | 2250 and 2650 Units |
| | | | 10 | For SN B40850099 & Lower |
| 38 | 95477 | HYD. COUPLER | 2 | 1450 and 1850 Units |
| 39 | 97421 | GROMMET 1 1/2" ID | 1 | For SN B40850100 & Higher |
| 40 | PF1202-1035 | REDUCER, 1 5/16-12 JICF X 1 1/16-12 JICM | 2 | 2250 and 2650 Units |
| 41 | PF1202-10350 | REDUCER, 1 5/8-12 JICF X 1 5/16-12 JICM | 2 | For SN B40850099 & Lower |
| 42 | PF1202-1100 | ADAPTER 1 5/16-12 JICM X 3/4-16 O-RING | 2 | 1450 and 1850 Units |
| 43 | PF1202-2604 | UNION TEE 1 5/8-12 JICM X 1 5/8-12 JICM x 1 5/8-12 JICM | 1 | For SN B40850099 & Lower |
| 44 | 9006048 | QUICK CONNECTOR- FLUSH FACE, 3/4-16 O-RING | 1 | |
| 45 | PF1202-8434 | QUICK CONNECTOR- RETURN, 3/4-16 O-RING | 2 | |
| 46 | PF1207-732 | HYD HOSE 1 1/4" x 102" 1 5/8 JICF X 1 5/8 JICF | 1 | |
| 47 | PF1207-733 | HYD HOSE 1" x 102" 1 5/16 JICF X 1 5/16 JICF | 1 | |
| 48 | PF1207-734 | HYD HOSE 3/4" x 76" 1 1/16 JICF X 1 1/16 JICF | 1 | |
| 49 | PF1207-735 | HYD HOSE 3/4" x 74" 1 1/16 JICF X 1 1/16 JICF | 1 | |
| 50 | PF1207-B16 | Spiral Hose Wrap | 1/4 | Specify in Feet |
| 51 | See Page 5-15 | Undercarriage Tail Light Harness | 1 | Not Shown |
| | | Undercarriage Tail Light Extension | | |
| 52 | 9503653-037 | Lock Nut 3/4"-10UNC G8 | 2 | For SN B40850100 & Higher |
| 53 | PF1200-260 | U-Bolt 1/4"-20UNC x 3" x 2" c/c | 2 | |
| 54 | 9398-007 | Lock Nut 1/4"-20UNC | 4 | |

Ladder Assembly

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



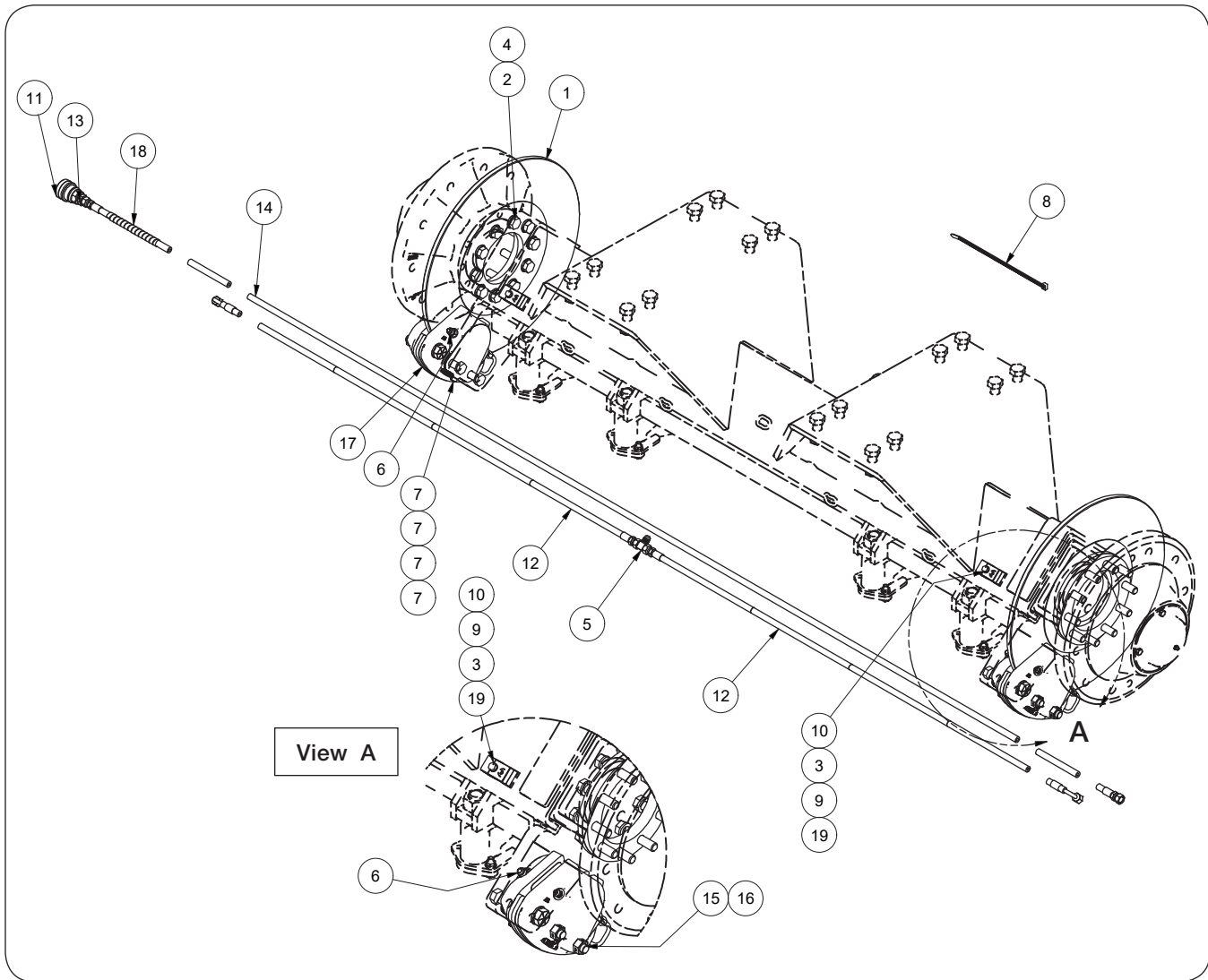
Ladder Assembly

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

| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|-----------------------------------|-----|---------------------|
| | 414879B | Ladder Assembly =Black= | 1 | Includes Items 1-19 |
| 1 | 414598B | Ladder Weldment =Black= | 1 | |
| 2 | 2003030 | Nylon Bushing 1 1/4" OD | 2 | |
| 3 | 289289B | Latch Weldment =Black= | 1 | |
| 4 | 414595 | Ladder Bracket | 1 | |
| 5 | 900902-044 | Flat Washers 1/2" SS | 2 | |
| 6 | 414603B | Step Weldment =Black= | 1 | |
| 7 | 414605B | Ladder Link Weldment =Black= | 1 | |
| 8 | 9001645 | Square Plug 1 1/2" | 2 | |
| 9 | 9003397 | Lock Nut 1/2"-13UNC SS | 2 | |
| 10 | 9005691 | Serrated Flange Nut 1/2"-13THD SS | 2 | |
| 11 | 9008159 | Lock Nut 3/8"-16UNC Grade F | 8 | |
| 12 | 900900-100 | Capscrew 1/2"-13UNC x 1 1/4" SS | 2 | |
| 13 | 2003029 | Nylon Bushing 1" OD | 8 | |
| 14 | 9390-005 | Capscrew 1/4"-20UNC x 1" G5 | 2 | |
| 15 | 9390-057 | Capscrew 3/8"-16UNC x 1 1/2" G5 | 6 | |
| 16 | 9390-062 | Capscrew 3/8"-16UNC x 2 3/4" G5 | 2 | |
| 17 | 9390-101 | Capscrew 1/2"-13UNC x 1 1/2" G5 | 2 | |
| 18 | 9395-002 | Hex Jam Nut 1/4"-20UNC G5 | 4 | |
| 19 | 99860 | Spring | 2 | |

Brake Assembly (Optional)

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



Pro-Force Pull-Type Undercarriage — Parts

Brake Assembly (Optional)

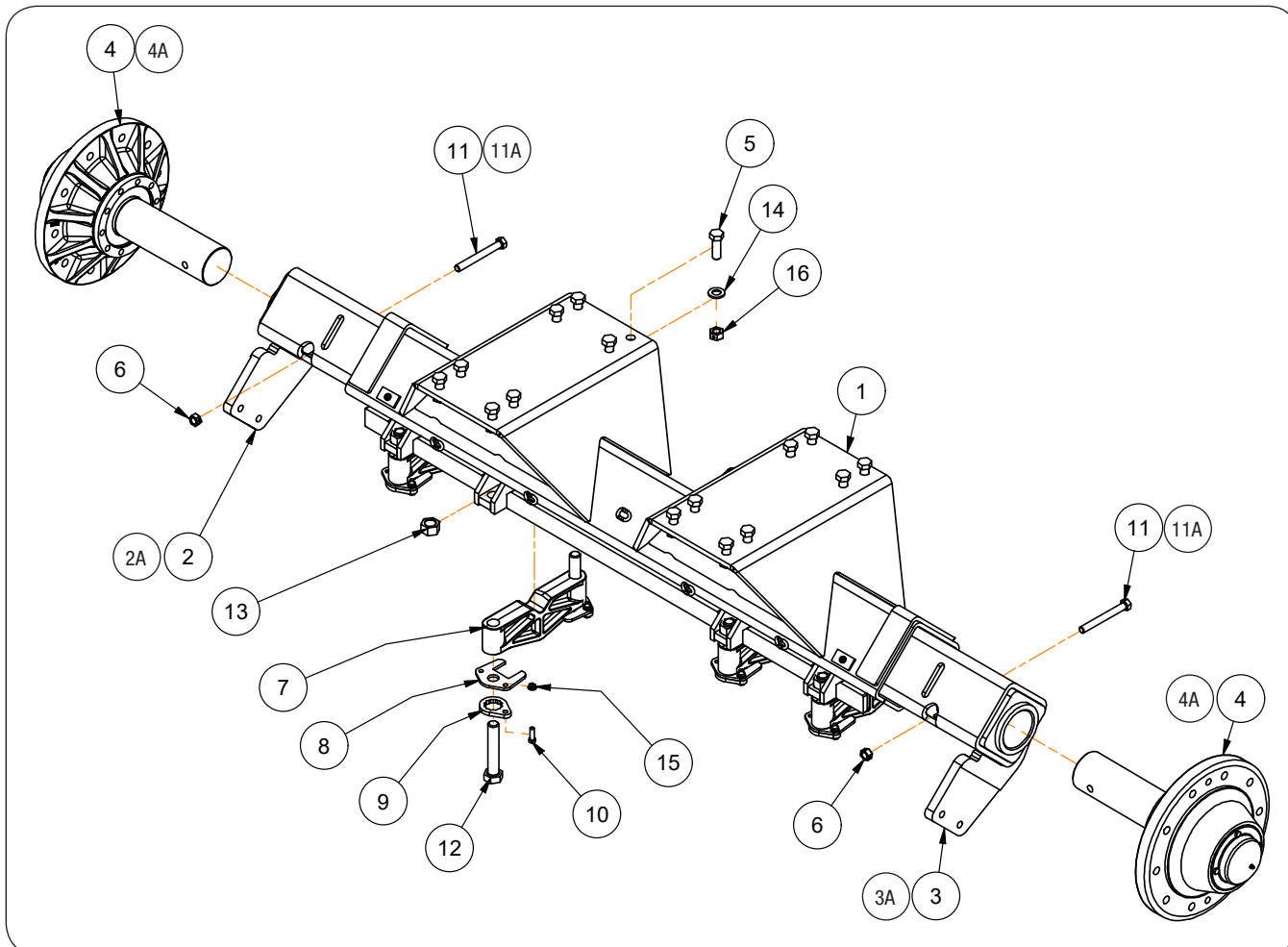
Please visit www.unverferth.com/parts/ for the most current parts listing.

| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|--|--------|-------------------------|
| | 414727 | Pro-Force Brake Kit | 1 | For 1450 and 1850 Units |
| | 414726 | | | For 2250 and 2650 Units |
| 1 | 414580 | WELDMENT - ROTOR, BRAKE | 2 | |
| 2 | 9501438-352 | Capscrew 5/8"-18UNF x 3" G5 | 20 | Torque to 137 Ft. Lbs. |
| 3 | 9501440-019 | Lock Washer 5/16" | 2 | |
| 4 | 9501440-029 | Lock Washer 5/8" | 20 | |
| 5 | 9875 | TEE 9/16-18 JIC MALE | 1 | |
| 6 | 97711 | Adapter, 9/16-18 JIC MALE x 7/16-20 O-R MALE | 2 | |
| 7 | 414728 | Brake Caliper Shim | 8 | As Required |
| 8 | 9003735 | Cable Tie | 24 | |
| 9 | 9003814 | Top Plate | 2 | |
| 10 | 9003816 | Double Hose Clamp | 2 | |
| 11 | 9005173 | Quick Release Coupler | 1 | |
| 12 | 9005864 | Hyd. Hose 1/4" x 66" 9/16-18 JICF Swivel | 2 | |
| 13 | 9006005 | Adapter 9/16-18 JIC MALE | 1 | |
| 14 | 9008433 | Hyd. Hose 1/4" x 310" 9/16-18 JICF Swivel | 1 | For 1450 and 1850 Units |
| | 9003948 | Hyd. Hose 1/4" x 372" 9/16-18 JICF Swivel | | For 2250 and 2650 Units |
| 15 | 9009017 | Capscrew 5/8"-11UNC x 6 1/4" G8 | 4 | |
| 16 | 9503653-036 | Lock Nut 5/8"-11UNC G8 | 4 | Torque to 170 Ft. Lbs. |
| 17 | 9008867 | Brake Caliper | 2 | |
| 18 | PF1207-R16 | Spiral Hose Wrap | 1/2 FT | Specify in Feet |
| 19 | 9501438-032 | Capscrew 5/16"-18UNC x 1 1/2" G5 | 2 | |

Pro-Force Pull-Type Undercarriage — Parts

Adjustable Axle Components

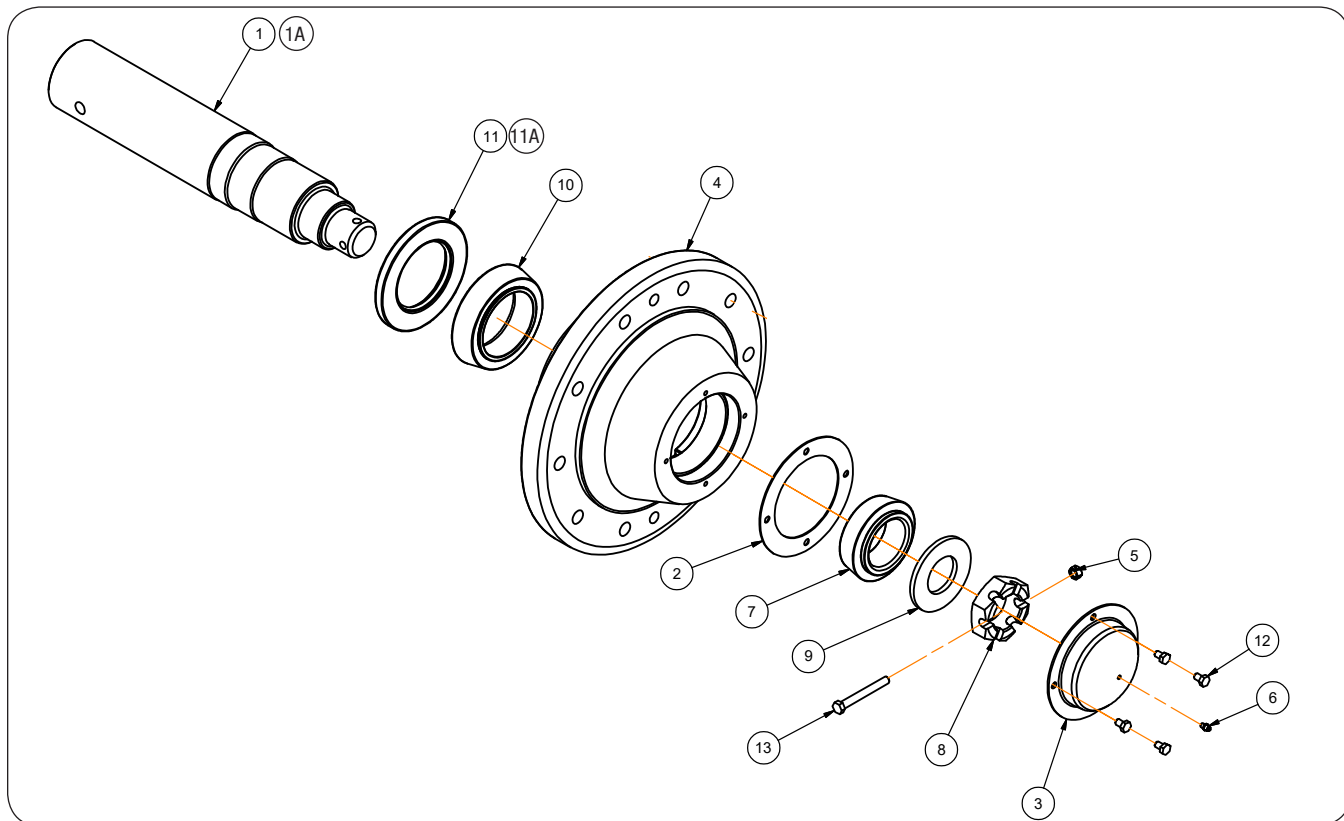
Please visit www.unverferth.com/parts/ for the most current parts listing.



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|--------------------------------------|-----|----------------------------|
| | 414454CEG | Pro-Force Adjustable Axle Assembly | 1 | For 1450 Units |
| | 414234CEG | | | For 1850, 2250, 2650 Units |
| 1 | 414450CEG | Main Axle Weldment =CE Gray= | 1 | |
| 2 | 414455CEG | Axle Extension Weldment LH =CE Gray= | 1 | For 1450 Units |
| 2A | 414235CEG | | | For 1850, 2250, 2650 Units |
| 3 | 414608CEG | Axle Extension Weldment RH =CE Gray= | 1 | For 1450 Units |
| 3A | 414236CEG | | | For 1850, 2250, 2650 Units |
| 4 | 414842CEG | Hub and Spindle Assembly =CE Gray= | 2 | For 1450 Units |
| 4A | 414242CEG | | | For 1850, 2250, 2650 Units |
| 5 | 9503634-149 | Capscrew, 3/4"-10UNC x 3" G8 | 16 | |
| 6 | 9501439-036 | Lock Nut, 5/8"-11UNC | 2 | |
| 7 | 404785B | Axle Clamp =Black= | 4 | |
| 8 | 413569B | Retainer Plate =Black= | 8 | |
| 9 | 413570B | Retainer Plate =Black= | 8 | |
| 10 | 9501438-056 | Capscrew, 3/8"-16UNC x 1 1/4" G5 | 8 | |
| 11 | 9501438-136 | Capscrew, 5/8"-11UNC x 6" G5 | 2 | For 1450 Units |
| 11A | 9501438-138 | Capscrew, 5/8"-11UNC x 7" G5 | 2 | For 1850, 2250, 2650 Units |
| 12 | 9501438-194 | Capscrew, 1"-8UNC x 5 1/2" G5 | 8 | |
| 13 | 9503637-020 | Hex Nut, 1"-8UNC G5 | 8 | |
| 14 | 9503636-104 | Flat Washer, 3/4" | 16 | |
| 15 | 9501439-032 | Lock Nut, 3/8"-16UNC Grade F | 8 | |
| 16 | 9503653-037 | Lock Nut, 3/4"-10UNC G8 | 16 | |

Adjustable Axle Hub Components

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



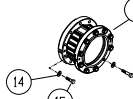
| ITEM | DESCRIPTION | PART NO. | QTY | NOTES |
|------|---------------------------------|----------|-----|----------------------------|
| 1 | Axle Spindle | 250601 | 1 | For 1450 Units |
| 1A | | 280240 | 1 | For 1850, 2250, 2650 Units |
| 2 | Hub Cap Gasket | 284230 | 1 | |
| 3 | HUB CAP WITH HOLE | 286171 | 1 | |
| 4 | #882 HUB MACHINED ASSEMBLY | 414844 | 1 | |
| 5 | CENTER LOCKNUT 3/8"-16UNC | 902875 | 1 | |
| 6 | GREASE ZERK | 91160 | 1 | |
| 7 | BEARING CONE | 92464 | 1 | |
| 8 | SLOTTED HEX NUT | 92470 | 1 | |
| 9 | WASHER SPINDLE | 92472 | 1 | |
| 10 | BEARING CONE | 92545 | 1 | |
| 11 | SEAL HUB | 92565 | 1 | For 1450 Units |
| 11A | Grease Seal | 92455 | 1 | For 1850, 2250, 2650 Units |
| 12 | Capscrew 5/16"-18UNC x 1/2" G5 | 9390-026 | 4 | |
| 13 | Capscrew 3/8"-16UNC x 3 1/4" G5 | 9390-064 | 1 | |

Dual Wheels & Tires

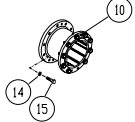
Please visit www.unverferth.com/parts/ for the most current parts listing.

EXTENSIONS

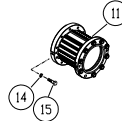
8" HUB EXTENSION



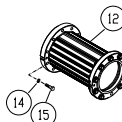
10" HUB EXTENSION



19 1/2" HUB EXTENSION

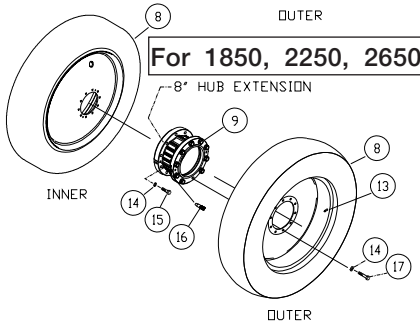
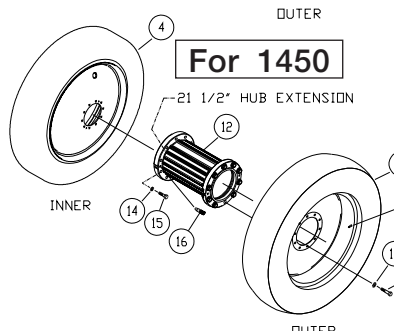
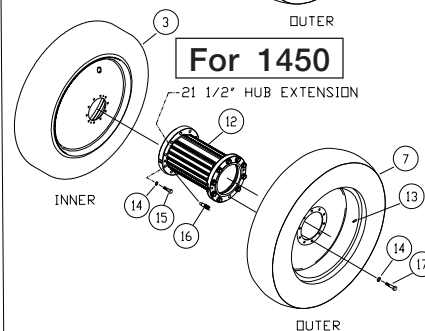
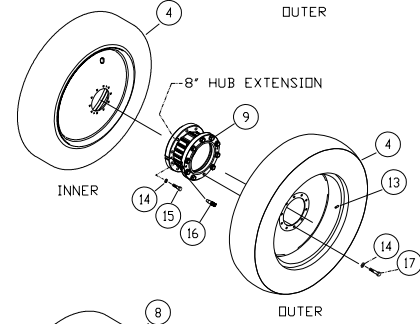
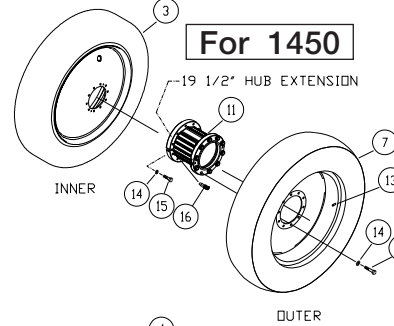
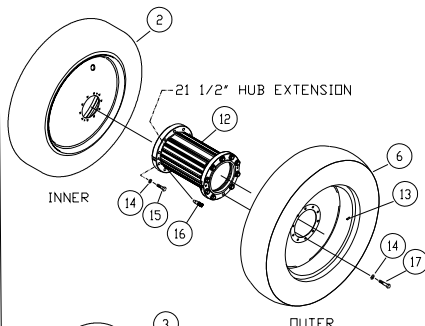
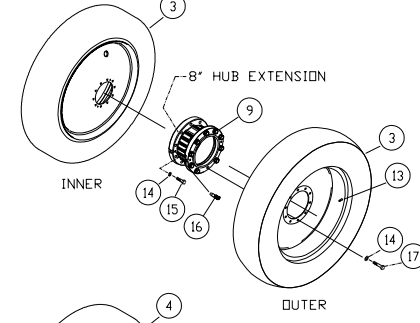
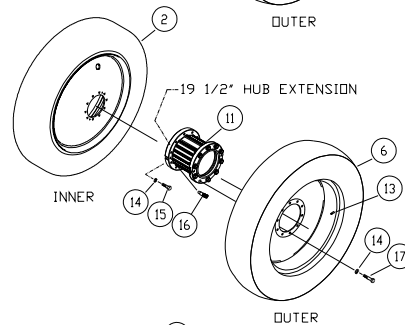
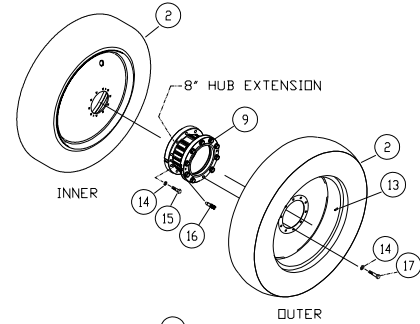
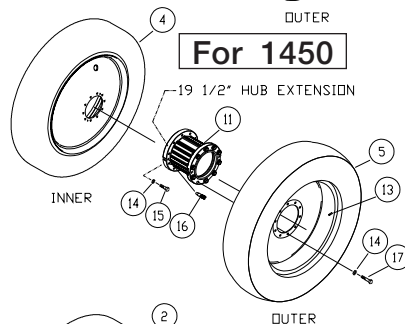
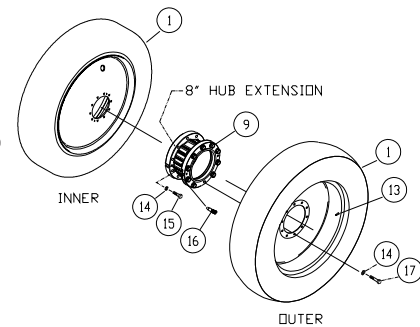
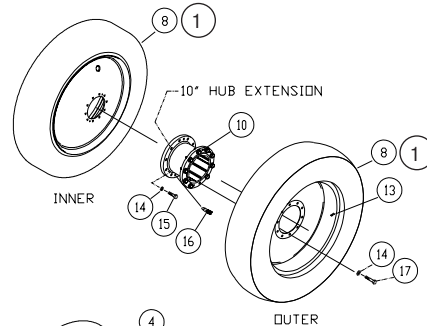


21 1/2" HUB EXTENSION



#8 For 1850, 2250, 2650

DUALS



Pro-Force Pull-Type Undercarriage — Parts

Dual Wheels & Tires

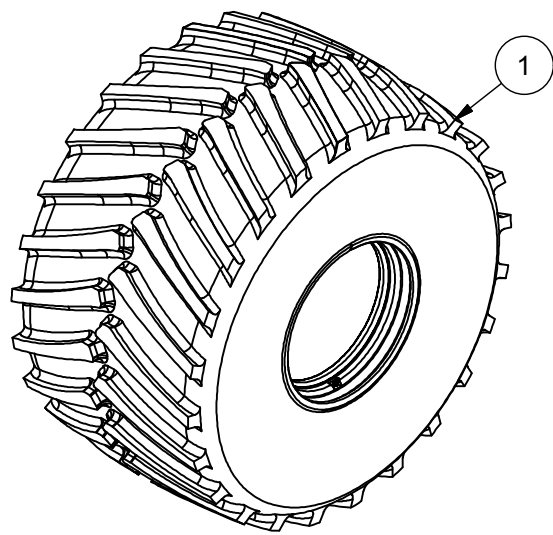
Please visit www.unverferth.com/parts/ for the most current parts listing.

| ITEM | DESCRIPTION | PART NO. | NOTES |
|------|-------------------------------------|----------|--|
| 1 | Wheel & Tire Assembly =Silver Mist= | 111314SM | TL VF320/105R54MT (169D Load Index) |
| | Wheel Only =Silver Mist= | 111313SM | 10 x 54 10-Bolt |
| 2 | Wheel & Tire Assembly =Silver Mist= | 111307SM | TL 480/80R46F (158A8 Load Index) |
| | Wheel Only =Silver Mist= | 111304SM | 16 x 46 10-Bolt |
| 3 | Wheel & Tire Assembly =Silver Mist= | 111308SM | TL VF480/80R46F (169B Load Index) |
| | Wheel Only =Silver Mist= | 111304SM | 16 x 46 10-Bolt |
| 4 | Wheel & Tire Assembly =Silver Mist= | 111306SM | TL VF380/90R46F (173D Load Index) |
| | Wheel Only =Silver Mist= | 14337SM | 13 x 46 10-Bolt |
| 5 | Wheel & Tire Assembly =Silver Mist= | 111332SM | TL VF380/90R46F (173D Load Index) 13 x 46 10-Bolt |
| 6 | Wheel & Tire Assembly =Silver Mist= | 111330SM | TL 480/80R46F (158A8 Load Index) 16 x 46 10-Bolt |
| 7 | Wheel & Tire Assembly =Silver Mist= | 111331SM | TL VF480/80R46F (169B Load Index) 16 x 46 10-Bolt |
| 8 | Wheel & Tire Assembly =Silver Mist= | 111343SM | TL VF380/90R46F (173D Load Index) |
| | Wheel Only =Silver Mist= | 111339SM | 13 x 46 10-Bolt |

| ITEM | DESCRIPTION | PART NO. | QTY. | NOTES |
|--------------------------------|-----------------------------------|----------|------|--|
| Extensions (2 Per Unit) | | | | |
| 9 | Hub Extension 8" Kit =Black= | 16986B | 1 | Used With VF320/105R54MT, 480/80R46F, VF480/80R46F, VF380/90R46F (22", 30", 36" Rows) Includes Hub & Hardware |
| 10 | Hub Extension 10" Kit =Black= | 18382B | 1 | Used With VF320/105R54MT VF380/90R46F (24" and 38" Rows) Includes Hub & Hardware |
| 11 | Hub Extension 19 1/2" Kit =Black= | 18875B | 1 | Used With VF380/90R46F, 480/80R46F, VF480/80R46F (36" Rows) Includes Hub & Hardware |
| 12 | Hub Extension 21 1/2" Kit =Black= | 17081B | 1 | Used With VF380/90R46F, 480/80R46F, VF480/80R46F (38" Rows) Includes Hub & Hardware |
| Hardware | | | | |
| 13 | Valve Stem | 93300 | 2 | |
| 14 | Flat Washer, 7/8 | 97041 | 20 | |
| 15 | Capscrew, M22 x 2.5P x 65 C10.9 | 95657 | 20 | Full Threaded |
| 16 | Guide Pin 5/8" Dia. (3.125 Lg.) | 19293 | 4 | |
| 17 | Capscrew, M22 x 2.5P x 100 C10.9 | 97039 | 20 | |
| 18 | Hex Nut, M22 x 2.5P | 97684 | 20 | Not Shown |

Single Wheels & Tires

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

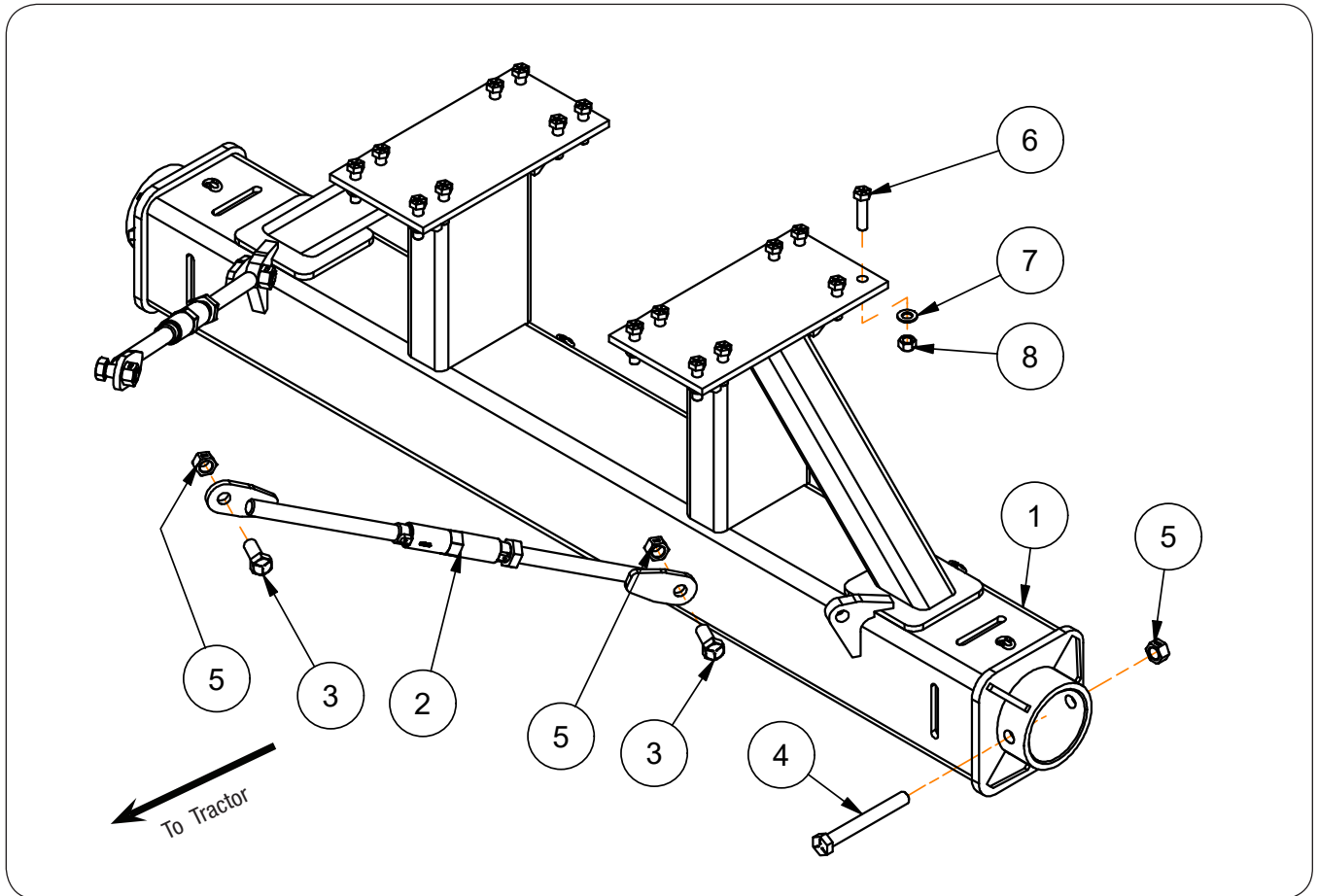


TIRES
For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty.

| ITEM | DESCRIPTION | PART NUMBER | QTY. | NOTES |
|------|---------------------------------|------------------|------|--|
| 1 | Wheel & Tire Assembly | 111303SM/9500946 | 2 | 30 x 32 / TLIF900/65R32F R-3 (191B Load Index) |
| | Valve Stem | 93300 | 2 | |
| | Wheel Only | 111303SM | 2 | 30 x 32 |
| 2 | Capscrew, M22 x 2.5P x 70 C10.9 | 97038 | 20 | Not Shown |
| 3 | Hex Nut, M22 x 2.5P | 97684 | 20 | |
| 4 | Flat Washer, 7/8 | 97041 | 20 | |

Track Axle Bundle Components

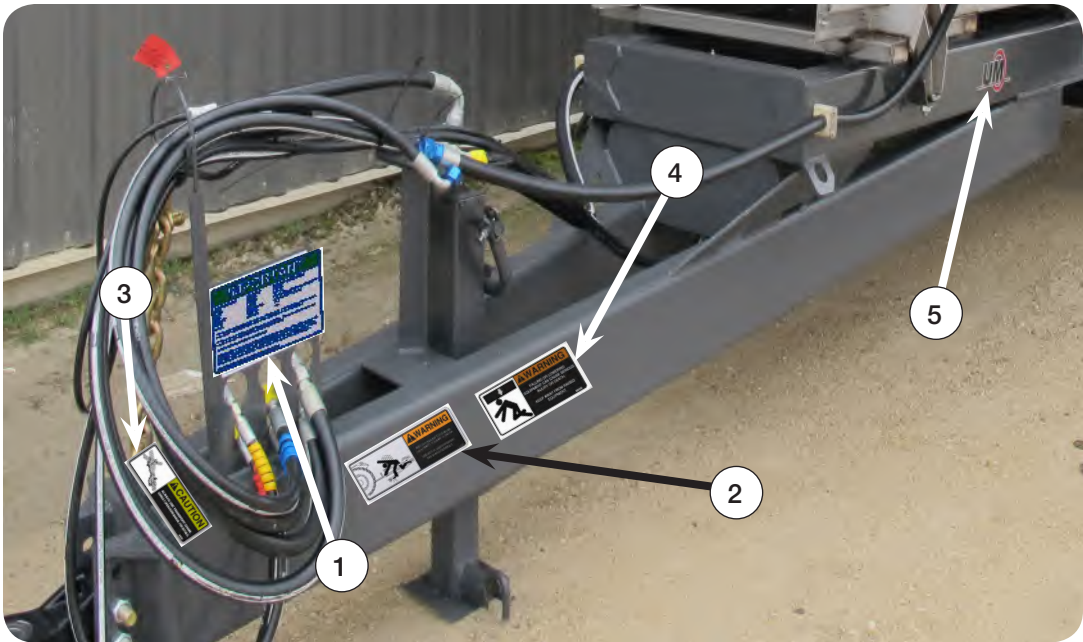
Please visit www.unverferth.com/parts/ for the most current parts listing.



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|-------------------------------|-----|---|
| | 415016CEG | Track Axle Bundle | 1 | Includes All Items For 1850, 2250, 2650 Units 36" x 112" Tracks |
| 1 | 415006CEG | Track Axle Weldment =CE Gray= | 1 | |
| 2 | 415033CEG | Axle Brace Assembly =CE Gray= | 2 | |
| 3 | 9501438-185 | Capscrew, 1"-8UNC x 2 1/2" G5 | 4 | |
| 4 | 9501438-462 | Capscrew, 1"-8UNC x 8 1/2" G5 | 2 | |
| 5 | 9501443-039 | Lock Nut, 1"-8UNC | 6 | |
| 6 | 9503634-149 | Capscrew, 3/4"-10UNC x 3" G8 | 16 | |
| 7 | 9503636-104 | Flat Washer 3/4" SAE G8 | 16 | |
| 8 | 9503653-037 | Top Lock Nut 3/4"-10UNC | 16 | |

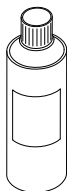
Undercarriage Decal Locations

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



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|-------------|---|-----|-------|
| 1 | PF1238-48 | Decal, Important (Hose Marking) | 1 | |
| 2 | 94094 | Decal, Warning (Rising or Falling Tongue) | 1 | |
| 3 | 97575 | Decal, Caution (Transport Chain) | 1 | |
| 4 | 98229 | Decal, Warning (Lowering Equipment) | 1 | |
| 5 | 901607 | Decal, UM Oval | 2 | |

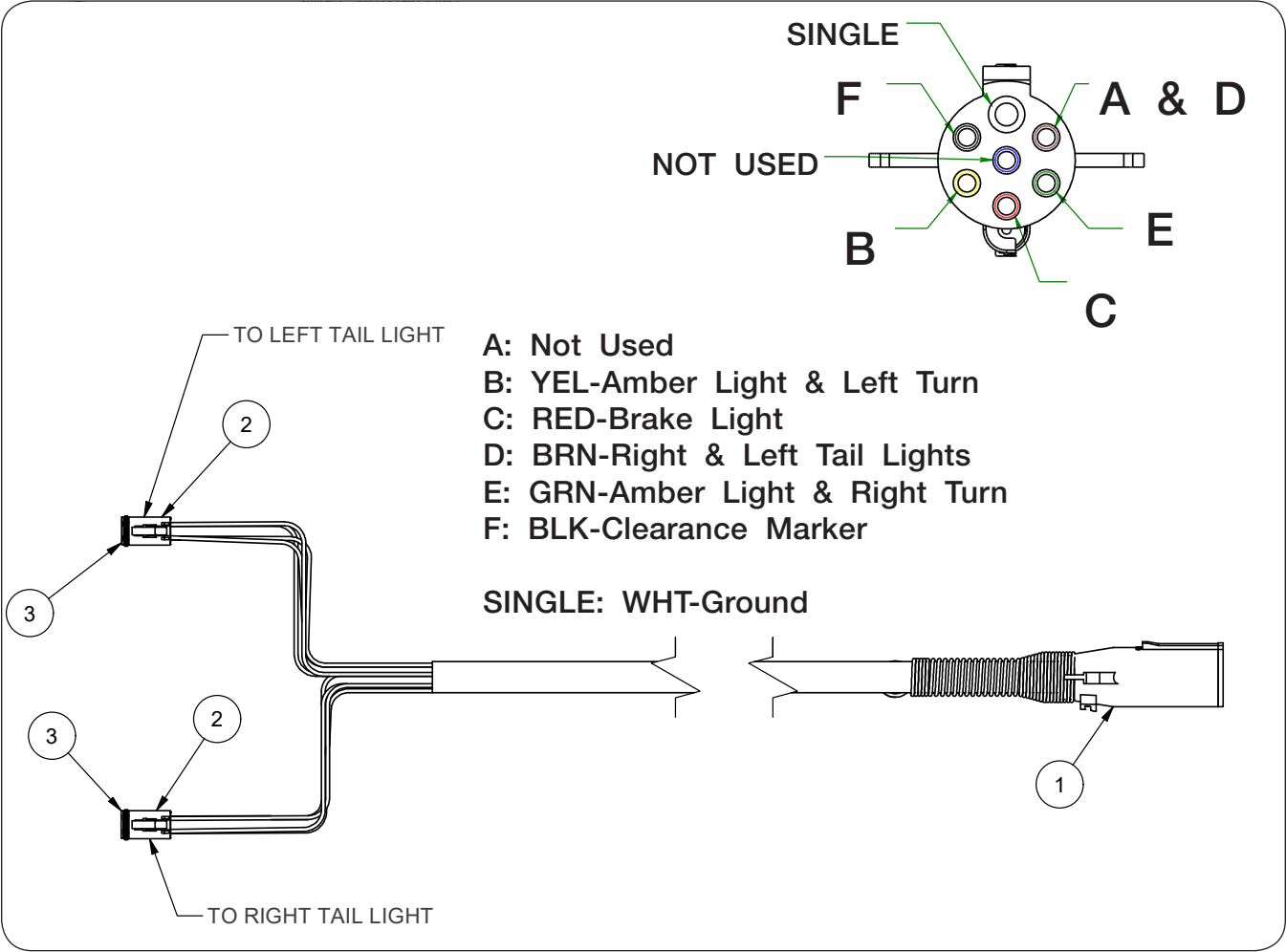
Touch-Up Paint



| PAINT | SPRAY |
|--------------|---------|
| Gray | 9008955 |
| Primer, Gray | 9500082 |
| Black | 97013 |
| Silver Mist | 97012 |

Undercarriage Tail Light Cable Assembly

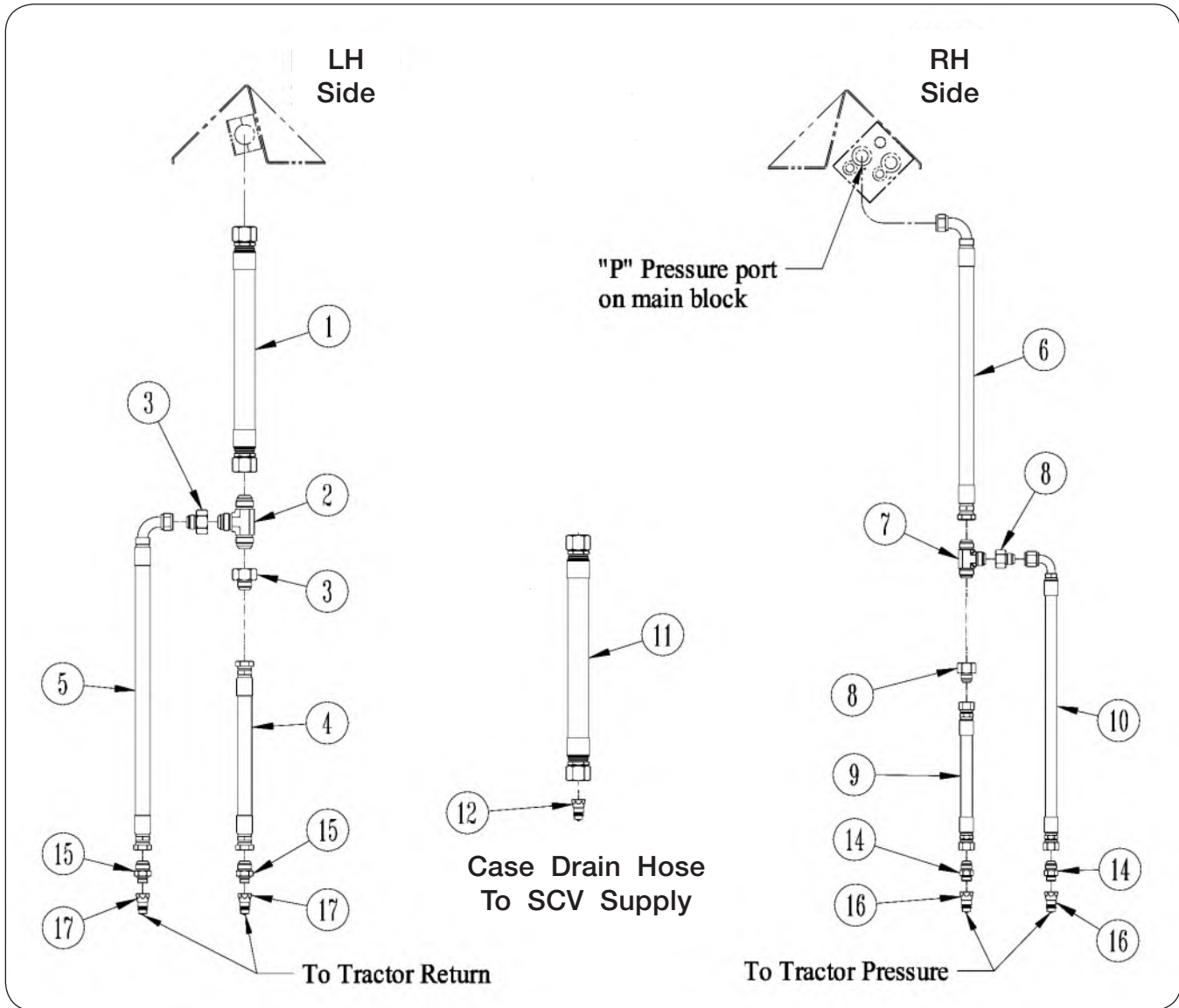
Please visit www.unverferth.com/parts/ for the most current parts listing.



| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|--------------|--|-----|---|
| | PF1223-754 | Undercarriage TAIL LIGHT EXTENSION CABLE | 1 | For 1450 and 1850 Includes All Items |
| | PF1223-75426 | Undercarriage Tail Light Harness | 1 | For 2250 and 2650 Includes All Items |
| 1 | 92450 | 7 Pin Single Grip Plug with Spring Guard | 1 | |
| 2 | 98910 | Deutsch 4 Socket Plug | 2 | |
| 3 | 98914 | Wedge Lock 4 Socket | 2 | |

Front Hydraulics

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



Front Hydraulics

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

| ITEM | PART NUMBER | DESCRIPTION | QTY | NOTES |
|------|--------------|--|-----|------------|
| 1 | PF1207-732 | HYD HOSE 1 1/4" x 102" 1 5/8 JICF X 1 5/8 JICF | 1 | |
| 2 | PF1202-2604 | Adapter, JIC UNION TEE 20-20-20 | 1 | |
| 3 | PF1202-10350 | Adapter, JIC Reducer / Expander 20-16 | 2 | |
| 4 | 9008873 | HOSE 1 x 84 (1 5/16-12 FS JIC) | 1 | |
| 5 | 9008872 | HOSE 1 x 84 (1 5/16-12 FJIC x 1 5/16 FSJIC 90DEG) | 1 | |
| 6 | PF1207-733 | Hydraulic Hose 1" x 102" SAE16 FJ90 & FJ STRAIGHT | 1 | |
| 7 | 900252 | UNION TEE 1 1/16-12 MJIC x 1 1/16-12 MJIC x 1 1/16-12 MJIC | 1 | |
| 8 | PF1202-1035 | Adapter, JIC Reducer / Expander 16-12 | 2 | |
| 9 | PF1207-735 | Hydraulic Hose 3/4" x 74" SAE12 FJ Straight | 1 | |
| 10 | PF1207-734 | Hydraulic Hose 3/4" x 76" SAE12 FJ90 & FJ STRAIGHT | 1 | |
| 11 | 9008989 | HOSE, HYD. 1/2" X 480" 3/4-16 FJIC x 3/4-16 O-Ring | 1 | 2650 Units |
| | 9008982 | HOSE, HYD. 1/2" X 432" 3/4-16 FJIC x 3/4-16 O-Ring | | 2250 Units |
| | 9008988 | HOSE, HYD. 1/2" X 394" 3/4-16 FJIC x 3/4-16 O-Ring | | 1850 Units |
| | 9003027 | HOSE, HYD. 1/2" X 343 1/2" 3/4-16 FJIC x 3/4-16 O-R | | 1450 Units |
| 12 | 9006048 | QUICK CONNECTOR- FLUSH FACE, 3/4-16 O-RING | 1 | |
| 14 | 9003615 | ADAPTER 1 1/16-12 JIC MALE | 2 | |
| 15 | PF1202-1100 | Adapter, MJIC To O-Ring 16-08 | 2 | |
| 16 | 95477 | PIONEER MALE TIP 8010-16 SAE 7/8-14 FEMALE OR | 2 | |
| 17 | PF1202-8434 | QUICK COUPLER, HYD. RETURN PLUG SIZE SAE | 2 | |



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