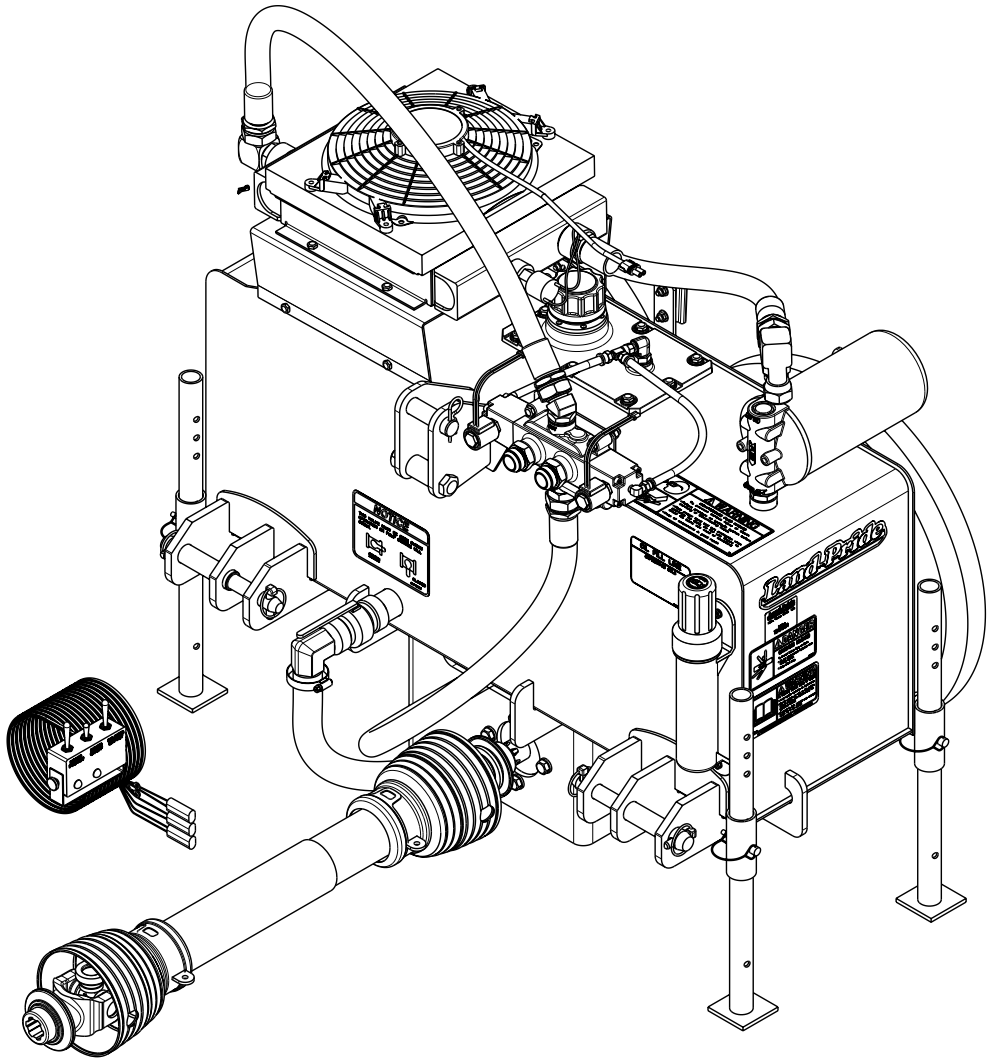
Table of Contents

Hydraulic Reservoir System

HRS3025

30386



316-271M
Operator's Manual

Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover photo may show optional equipment not supplied with standard unit.

For an Operator's Manual and Decal Kit in French Language, please see your Land Pride dealer.

Printed 1/16/20

Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements provided in the Specifications & Capacities Section of this manual with the Option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Delivery Date	
First Operation	
Accessories	

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

California Proposition 65

WARNING: Cancer and reproductive harm - www.P65Warnings.ca.gov

Printed in the United States of America.

See previous page for Table of Contents.

Parts Manual QR Locator

The QR (Quick Reference) code on the cover and to the left will take you to the Parts Manual for this equipment. Download the appropriate App on your smart phone, open the App, point your phone on the QR code and take a picture.

Dealer QR Locator

The QR code on the left will link you to available dealers for Land Pride products. Refer to Parts Manual QR Locator on this page for detailed instructions.

These are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Careful operation is you best insurance against an accident.

All operators, no matter how much experience they may have, should carefully read this manual and other related manuals before operating the power machine and this implement.

It is the owner's obligation to instruct all operators in safe operation.

- ▲ Thoroughly read and understand the "Safety Label" section, read all instructions noted on them.
- ▲ Do not operate the equipment while under the influence of drugs or alcohol as they impair the ability to safely and properly operate the equipment.
- ▲ The operator should be familiar with all functions of the tractor and attached implement, and be able to handle emergencies quickly.
- ▲ Make sure all guards and shields are in place and secured before operating implement.
- ▲ Keep all bystanders away from equipment and work area.
- ▲ Start tractor from the driver's seat with hydraulic controls in neutral.
- ▲ Operate tractor and controls from the driver's seat only.
- ▲ Never dismount from a moving tractor or leave tractor unattended with engine running.
- ▲ Do not allow anyone to stand between tractor and implement while backing up to implement.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ While transporting and operating equipment, watch out for objects overhead and along side such as fences, trees, buildings, wires, etc.
- ▲ Do not turn tractor so tight as to cause hitched implement to ride up on the tractor's rear wheel.
- ▲ Store implement in an area where children normally do not play.

Look For The Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

Be Aware of Signal Words

A signal word designates a degree or level of hazard seriousness. The signal words are:

DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

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

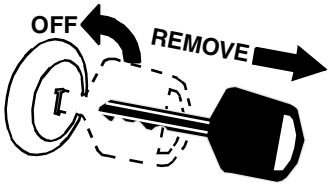
Safety Precautions for Children

Tragedy can occur if the operator is not alert to the presence of children, Children generally are attracted to implements and their work.

- ▲ Never assume children will remain where you last saw them.
- ▲ Keep children out of the work area and under the watchful eye of a responsible adult.
- ▲ Be alert and shut the implement and tractor down if children enter the work area.
- ▲ Never carry children on the tractor or implement. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the power machine.
- ▲ Never allow children to operate the power machine, even under adult supervision.
- ▲ Never allow children to play on the power machine or implement.
- ▲ Use extra caution when backing up. Before the tractor starts to move, look down and behind to make sure the area is clear.

Tractor Shutdown & Storage

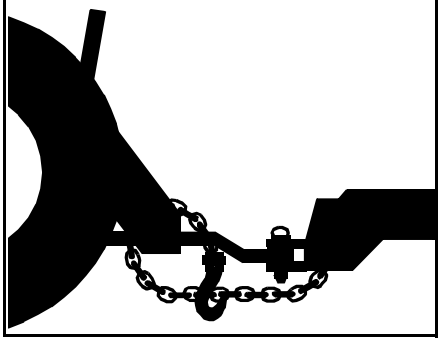
- ▲ If engaged, disengage power take-off.
- ▲ Park on solid, level ground and lower implement to ground or onto support blocks.
- ▲ Put tractor in park or set park brake, turn off engine, and remove switch key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressure to auxiliary hydraulic lines.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and skid-resistant surfaces when getting on and off the tractor.
- ▲ Detach and store implement in an area where children normally do not play. Secure implement using blocks and supports.



These are common practices that may or may not be applicable to the products described in this manual.

Use A Safety Chain

- A safety chain will help control drawn machinery should it separate from the tractor drawbar.
- Use a chain with the strength rating equal to or greater than the gross weight of the towed implement.
- Attach the chain to the tractor drawbar support or other specified anchor location. Allow only enough slack in the chain to permit turning.
- Always hitch the implement to the machine towing it. Do not use the safety chain tow the implement.

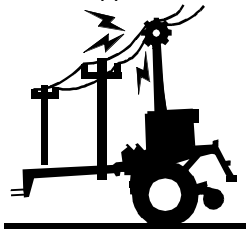


Transport Safely

- Comply with state and local laws.
- Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with tie downs and chains.
- Sudden braking can cause a towed trailer to swerve and upset. Reduce speed if towed trailer is not equipped with brakes.
- Avoid contact with any over head utility lines or electrically charged conductors.
- Always drive with load on end of loader arms low to the ground.
- Always drive straight up and down steep inclines with heavy end of a tractor with loader attachment on the "uphill" side.
- Engage park brake when stopped on an incline.
- Maximum transport speed for an attached equipment is 20 mph. DO NOT EXCEED. Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrains require a slower speed.
- As a guideline, use the following maximum speed weight ratios for attached equipment:

  20 mph when weight of attached equipment is less than or equal to the weight of machine towing the equipment.

  10 mph when weight of attached equipment exceeds weight of machine towing equipment but not more than double the weight.
- **IMPORTANT:** Do not tow a load that is more than double the weight of the vehicle towing the load.



Tire Safety

- Tire changing can be dangerous and must be performed by trained personnel using the correct tools and equipment.
- Always maintain correct tire pressure. Do not inflate tires above recommended pressures shown in the Operator's Manual.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- Securely support the implement when changing a wheel.
- When removing and installing wheels, use wheel handling equipment adequate for the weight involved.
- Make sure wheel bolts have been tightened to the specified torque.

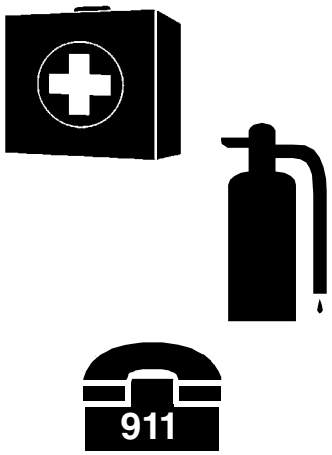
Practice Safe Maintenance

- Understand procedure before doing work. Refer to the Operator's Manual for additional information.
- Work on a level surface in a clean dry area that is well-lit.
- Lower implement to the ground and follow all shutdown procedures before leaving the operator's seat to perform maintenance.
- Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- Use properly grounded electrical outlets and tools.
- Use correct tools and equipment for the job that are in good condition.
- Allow equipment to cool before working on it.
- Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- Inspect all parts. Make certain parts are in good condition & installed properly.
- Replace parts on this implement with genuine Land Pride parts only. Do not alter this implement in a way which will adversely affect its performance.
- Do not grease or oil implement while it is in operation.
- Remove buildup of grease, oil, or debris.
- Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- Remove all tools and unused parts from equipment before operation.
- Do not weld or torch on galvanized metal as it will release toxic fumes.

These are common practices that may or may not be applicable to the products described in this manual.

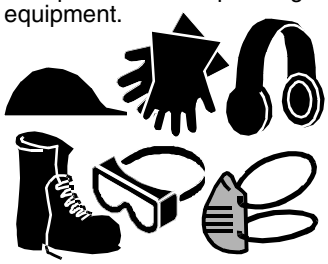
Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital, and fire department near phone.



Wear Personal Protective Equipment (PPE)

- ▲ Wear protective clothing and equipment appropriate for the job such as safety shoes, safety, glasses, hard hat, dust mask, and ear plugs.
- ▲ Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.

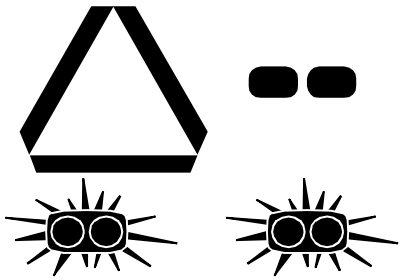


Avoid High Pressure Fluids

- ▲ Escaping fluid under pressure can penetrate the skin causing serious injury.
- ▲ Relieve all residual pressure before disconnecting hydraulic lines or performing work on the hydraulic system.
- ▲ Make sure all hydraulic fluid connections are properly tightened/torqued and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ **DO NOT DELAY.** If an accident occurs, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin or eyes must be treated within a few hours or gangrene may result.

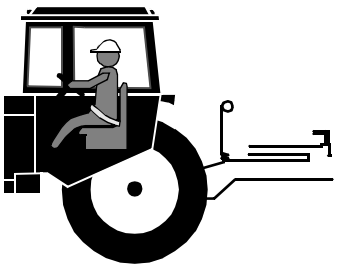
Use Safety Lights and Devices

- ▲ Slow moving tractors, and self-propelled equipment can create a hazard when driven on public roads. They are difficult to see, especially at night. Use the Slow Moving Vehicle (SMV) sign when on public roads.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads.



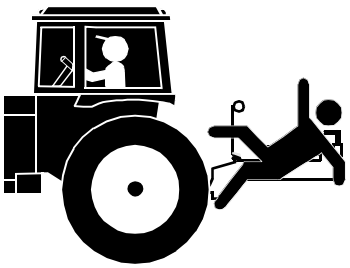
Use Seat Belt and ROPS

- ▲ Land Pride recommends the use of a CAB or roll-over-protective-structures (ROPS) and seat belt in almost all power machines. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the power machine should be upset.
- ▲ If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.



Keep Riders Off Machinery

- ▲ Never carry riders or use tractor to lift or transport individuals.
- ▲ There is not a safe place for a person to ride.
- ▲ Riders obstruct operator's view and interfere with the control of the power machine.
- ▲ Riders can be struck by objects or thrown from the equipment.

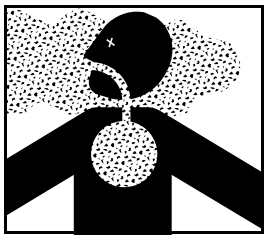


These are common practices that may or may not be applicable to the products described in this manual.

Avoid crystalline Silica (quartz) Dust

Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis).

There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.



- ▲ Be aware of and follow OSHA (or other local, State, or Federal) guidelines for exposure to airborne crystalline silica.
- ▲ Know the work operations where exposure to crystalline silica may occur.
- ▲ Participate in air monitoring or training programs offered by the employer.
- ▲ Be aware of and use optional equipment controls such as water sprays, local exhaust ventilation, and enclosed cabs with positive pressure air conditioning if the machine has such equipment. Otherwise respirators shall be worn.
- ▲ Where respirators are required, wear a respirator approved for protection against crystalline silica containing dust. Do not alter respirator in any way. Workers who use tight-fitting respirators can not have beards/ mustaches which interfere with the respirator seal to the face.
- ▲ If possible, change into disposable or washable work clothes at the work site; shower and change into clean clothing before leaving the work site.
- ▲ Do not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.
- ▲ Store food, drink, and personal belongings away from the work area.
- ▲ Wash hands and face before eating, drinking, smoking, or applying cosmetics after leaving the exposure area.

Handle Chemicals Properly

- ▲ Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- ▲ Follow instructions on container label.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire is a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.

Dig Safe - Avoid Underground Utilities

- ▲ **USA: Call 811**
  CAN: digsafecanada.ca
  Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- ▲ Be sure to ask how close you can work to the marks they positioned.

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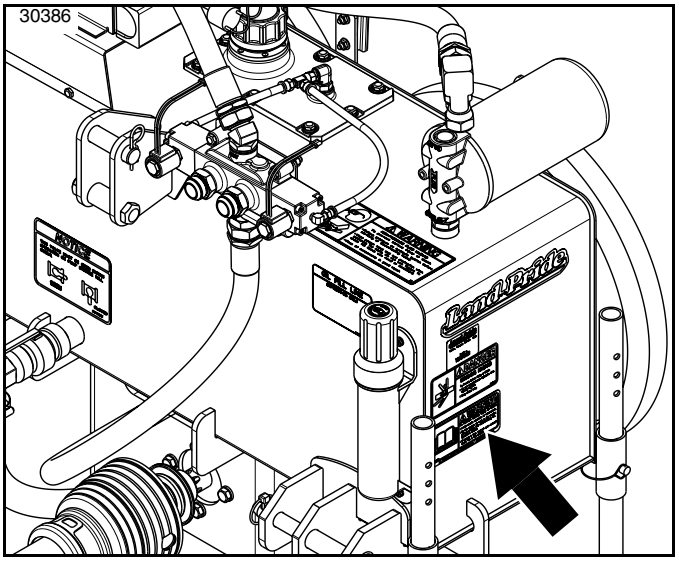
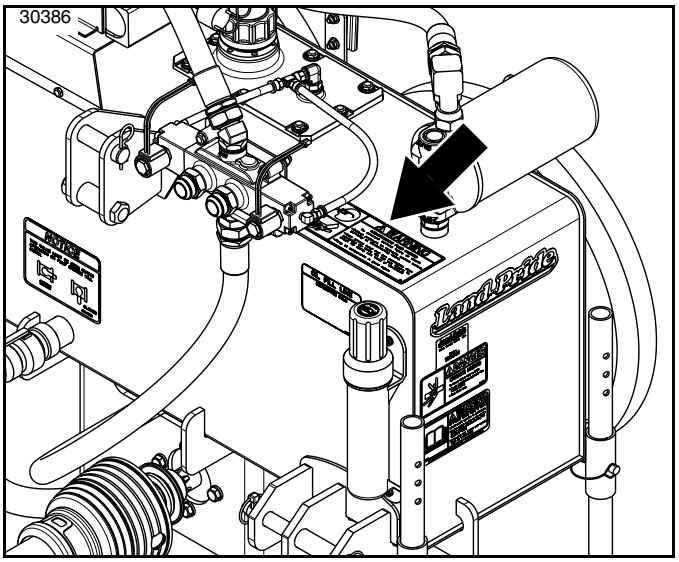
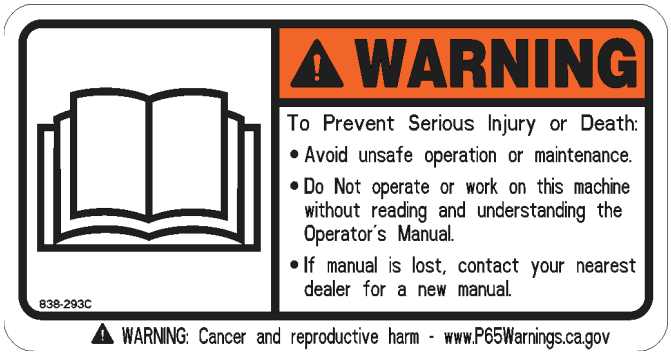
Safety Labels

Your Hydraulic Reservoir comes equipped with all safety labels in place. They were designed to help you safely operate your attachment. Read and follow their directions.

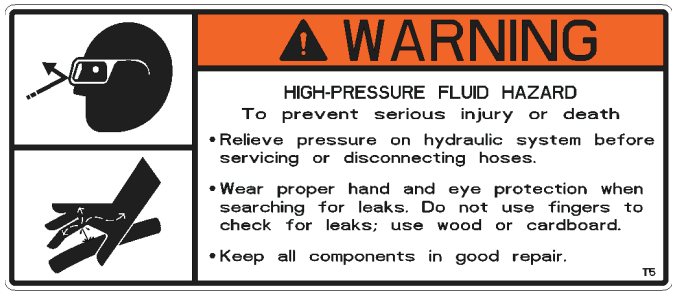
1. *Keep all safety labels clean and legible.*
2. *Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Land Pride dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.*
3. *Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.*
4. *Refer to this section for proper label placement. To install new labels:*
   a. *Clean surface area where label is to be placed.*
   b. *Spray soapy water onto the cleaned area.*
   c. *Peel backing from label and press label firmly onto the surface.*
   d. *Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.*



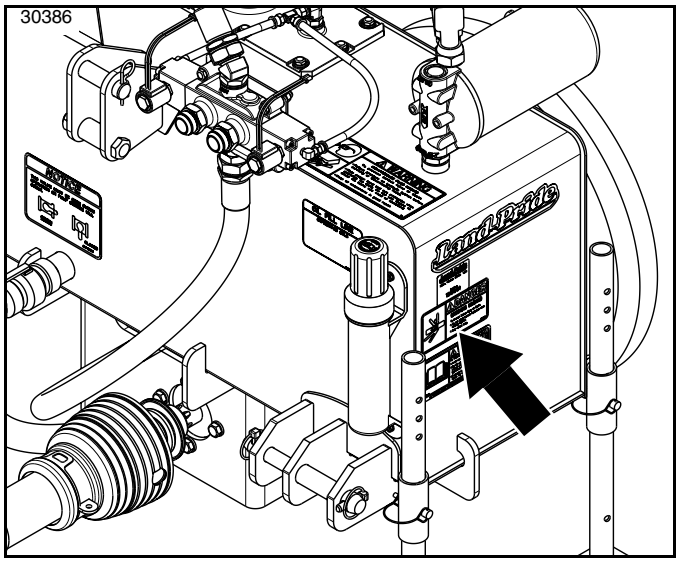


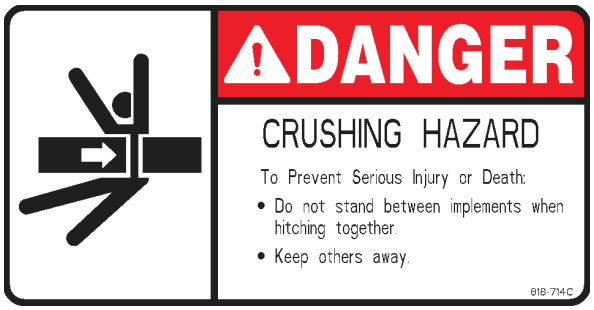


838-293C
Warning: Read Operator's Manual

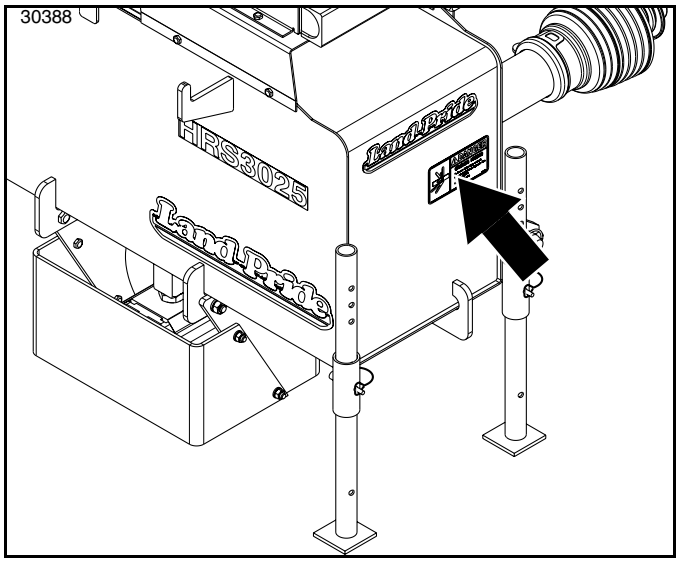


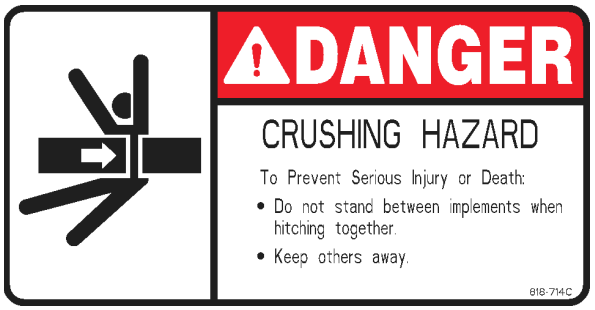
818-831C
Warning: High-Pressure Fluid Hazard



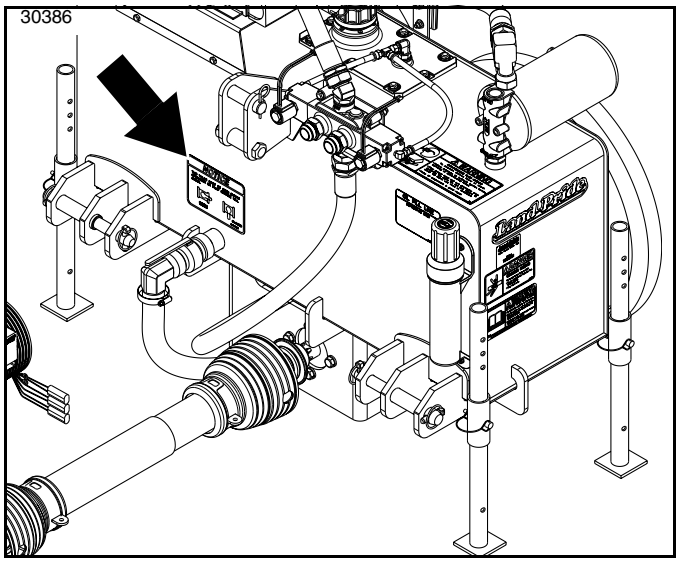


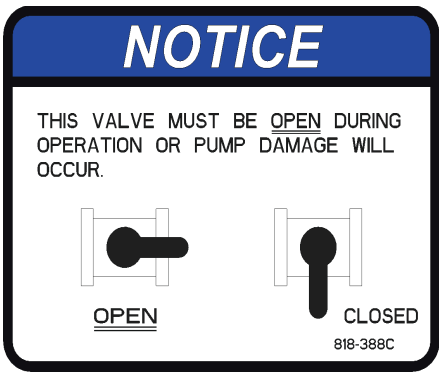
818-714C
Danger: Crushing Hazard





818-714C
Danger: Crushing Hazard





818-388C
Important - Valve must be open

Land Pride welcomes you to the growing family of new product owners. This Hydraulic Reservoir has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this product.

Application

The HRS3025 Hydraulic Reservoir System is designed and built by Land Pride for category I & II three-point hitches on the back of tractors with 540 rpm power take-off capability and minimum 52 horsepower. This unit is ideal for tractors not having a hydraulic system large enough to operate equipment requiring continuous circulating of hydraulic fluid such as Land Pride's SA Series Post Hole Diggers, SBL2566 Snow Blower, SR Series Power Rakes, SC Series Rotary Cutters, and AB Series Angle Brooms. They can also be used to operate drawbar attached equipment such as hydraulically driven rock picker and remotely located equipment such as hydraulically driven log splitters, sawmills, and pumps.

The HRS3025 (3000 psi at 25 gpm), and 35 gallon hydraulic reservoir with oil filter is designed to provide a maximum hydraulic output of 43 horsepower for handling just about any attachment in this operating range. All options, except "No Valve No Cooler Option", are equipped with an oil cooler to protect against oil overheating in heavy duty applications.

See **"Specifications & Capacities"** on page 35 and **"Features & Benefits"** on page 36 for additional information and performance enhancing options.

Using This Manual

- This Operator's Manual is designed to help familiarize the operator with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator's or Parts Manual, contact your authorized dealer. Manuals can also be downloaded, free-of-charge, from our website at www.landpride.com

Terminology

"Right" or "Left" as used in this manual is determined by facing forward in the direction the machine will operate while in use unless otherwise stated.

Definitions

IMPORTANT: A special point of information related to the following topic. Land Pride's intention is this information must be read & noted before continuing.

NOTE: A special point of information that the operator should be aware of before continuing.

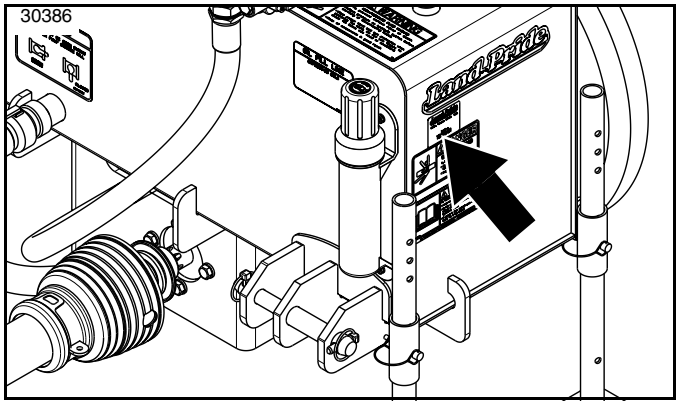
Owner Assistance

The dealer should complete the Online Warranty Registration at the time of purchase. This information is necessary to provide you with quality customer service.

The parts on your Hydraulic Reservoir have been specially designed by Land Pride and should only be replaced with genuine Land Pride parts. Contact a Land Pride dealer if customer service or repair parts are required. Your Land Pride dealer has trained personnel, repair parts, and equipment needed to service the reservoir.

Serial Number

For quick reference and prompt service, record model and serial number on the inside cover page and again on the warranty page. Always provide model number and serial number when ordering parts and in all correspondences with your Land Pride dealer. For location of your serial number plate, Figure 1.



Serial Number Plate Location
Figure 1

Further Assistance

Your dealer wants you to be satisfied with your new Hydraulic Reservoir. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss any problems you have with your Hydraulic Reservoir with your dealership service personnel so they can address the problem.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/problem, and request assistance.
3. For further assistance write to:

Land Pride Service Department
1525 East North Street

P.O. Box 5060
Salina, Ks. 67402-5060

E-mail address
lpservicedept@landpride.com

Tractor Requirements

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used.

Minimum Horsepower Rating . . . . . 52 hp
3-Point Hitch Category . . . . . Cat. I or Cat II
Rear power take-off Speed. . . . . .540 rpm
Power take-off Shaft Type. . . . . 1 3/8"-6 Spline
Tractor Weight . . . . . See Important Note Below

IMPORTANT: You could loose steering control if your tractor is too light. Refer to your tractor's manual to determine if additional ballast is needed.

Dealer Preparations

Read and understand the Operator's Manual. An understanding of how it works will aid in the assembly and setup. Go through the **Pre-Assembly Checklist** before assembling the Hydraulic Reservoir System. Speed up your assembly task and make the job safer by having all needed parts and equipment readily at hand.

Assembly Checklist

✔	Check	Ref.
☐	Have a fork lift or loader with properly sized chains and safety stands capable of lifting and supporting the equipment on hand.	
☐	Have a minimum of two people available during assembly.	
☐	Check to see if auxiliary tractor weights are needed. See Specifications on page 35 for unit weights.	
☐	Make sure all major components and loose parts are shipped with the machine.	Operator's Manual
☐	Double check to make sure all parts are installed in the correct location. Refer to the Parts Manual if unsure. **NOTE:** All assembled hardware from the factory has been installed in the correct location. Remember location of a part if removed during assembly. Keep parts separated.	Operator's Manual 316-191M Parts Manual 316-191P
☐	Make sure working parts move freely and bolts are tight.	Operator's Manual
☐	Make sure all grease fittings are lubricated.	Page 34
☐	35 Gallons of Hydraulic Fluid are needed for the hydraulic reservoir. Use any high quality mineral based hydraulic fluid such as Mobil Fluid 424 with a viscosity rating of 10W-30. (See www.mobil.com for alternate fluids)	Page 34
☐	Make sure all safety labels are correctly located and legible. Replace if damaged.	Pages 6 & 7

Torque Requirements

Refer to page 38 to determine correct torque values when tightening hardware.

⚠ CAUTION

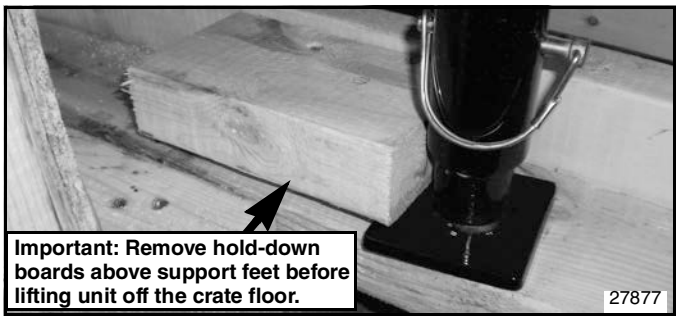
Handle pump carefully. Pump weight is approximately 50 lbs. and can be damaged or cause bodily injury if dropped.

Uncrating

1. Located inside the enclosed shipping container are components to be assembled to the Hydraulic Reservoir System. Pry off lid and remove components. Verify all components are present by using the parts list included with components.
2. Disassemble frame around Hydraulic Reservoir by cutting it apart or prying the boards apart.

Refer to Figure 1-1:

3. Be sure to remove hold-down boards positioned on top of the parking stand feet before lifting the unit off the crate floor.

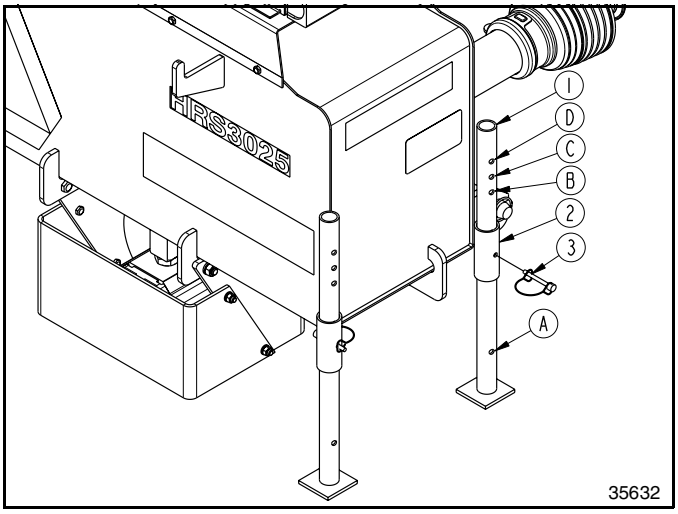


Remove Parking Stand Hold-Down Boards
Figure 1-1

Refer to Figure 1-2:

4. Lift Hydraulic Reservoir with either a tractor's 3-point lift system or a fork lift until reservoir is high enough to lower park stands to hole "B". Make sure forks will not damage reservoir or reservoir ports.
5. Remove wire retaining pins (#3) and slide all four park stands (#1) down until hole "B" in stands align with hole in support tubes (#2). Reinsert wire retaining pins and hook wire snaps over end of pins.

NOTE: Hole "A" in the park stands is used when operating or transporting the Hydraulic Reservoir.



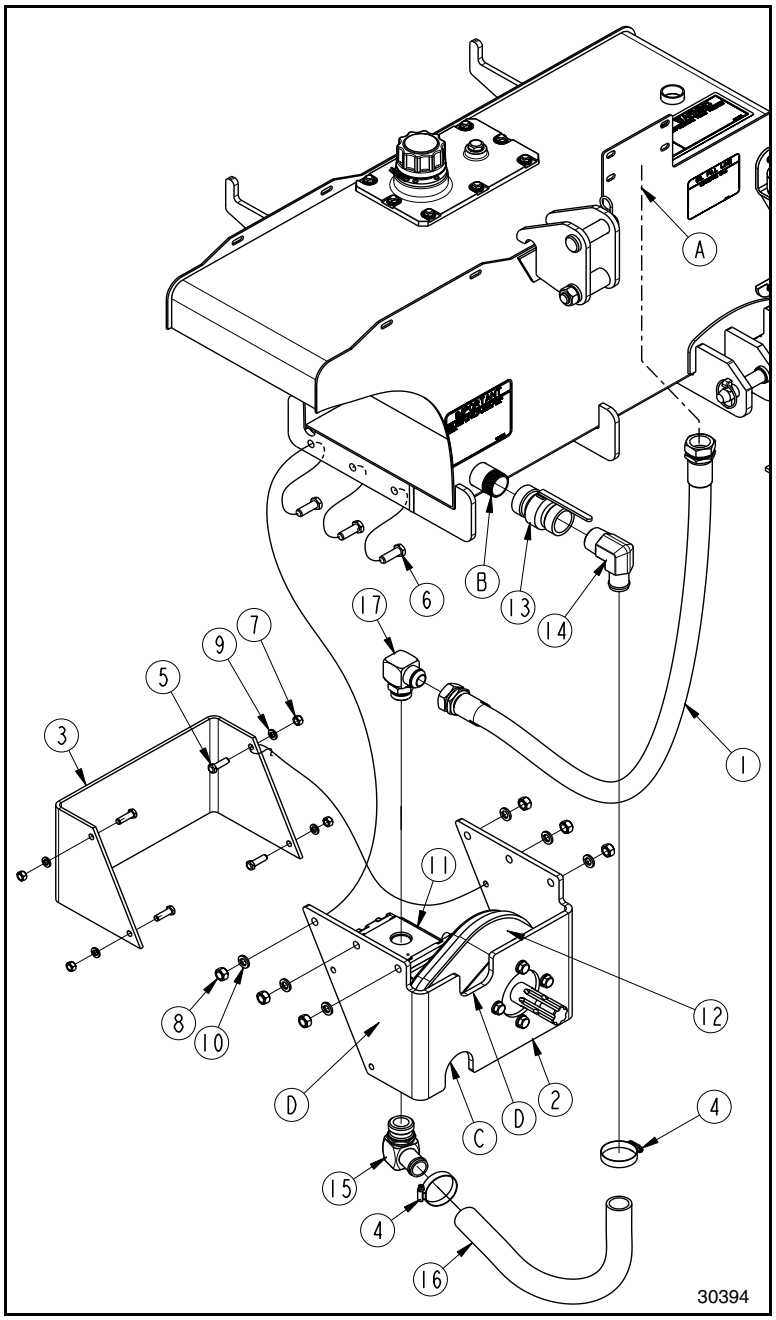
Parking Stand Installation
Figure 1-2

Pump & Gearbox Assembly

Refer to Figure 1-3:

The pump, capable of 25 gpm @ 540 rpm, is mounted under the reservoir tank and connected to tractor power take-off shaft with a driveline.

1. Separate pump rear guard (#3) from high speed pump mount (#2).
2. Verify gearbox (#12) is full of oil.
   a. Rotate high speed pump mount (#2) onto its right side plate "D".
   b. View sight glass in gearbox (#12). Oil should be visible in sight glass. Some tipping of unit and a flashlight may be needed to see oil line.
   c. If low or out of oil, remove sight glass and add recommended gearbox oil provided under **"Lubrication Points"** on page 34.
3. Screw 1 5/16" MJIC x 1 5/16" MORB elbow (#17) to "OUT" port of hydraulic pump (#11) until snug.
4. Screw 1 5/8" MORB x 1 1/4" HB elbow (#15) to the "IN" port of hydraulic pump (#10) until tight.
5. Center hydraulic hose (#1) in slot "D" and screw hydraulic hose to elbow (#17) as follows:
   - **No valve Option:** Screw 1" x 40" long hydraulic hose (#1) to elbow (#17) until tight.
   - **Manual & Solenoid Valve Option:** Screw 1" x 34" long hydraulic hose (#1) to elbow (#17) until tight.
6. With hydraulic hose (#1) centered in slot "D", tighten elbow (#17) to hydraulic pump (#11).
7. Attach high speed pump mount (#2) to reservoir tank with 1/2"-13 x 1 1/2" GR5 cap screws (#6), spring lock washers (#10), and hex nuts (#8). Tighten nuts to the correct torque.
8. Remove cap from nipple "B" and apply teflon tape to nipple. Screw ball valve (#13) to pipe nipple "B" until tight with control lever on top.
9. Apply teflon tape to elbow (#14) and screw elbow onto ball valve (#13) until tight with elbow turned down as shown.
10. Attach suction hose (#16) to elbow (#15) with worm drive clamp (#4) and tighten.
11. Attach suction hose (#16) to elbow (#14) with worm drive clamp (#4). Make sure suction hose passes through slot "C" and tighten worm drive clamp (#4).
12. Tighten elbow (#15) to hydraulic pump (#11).



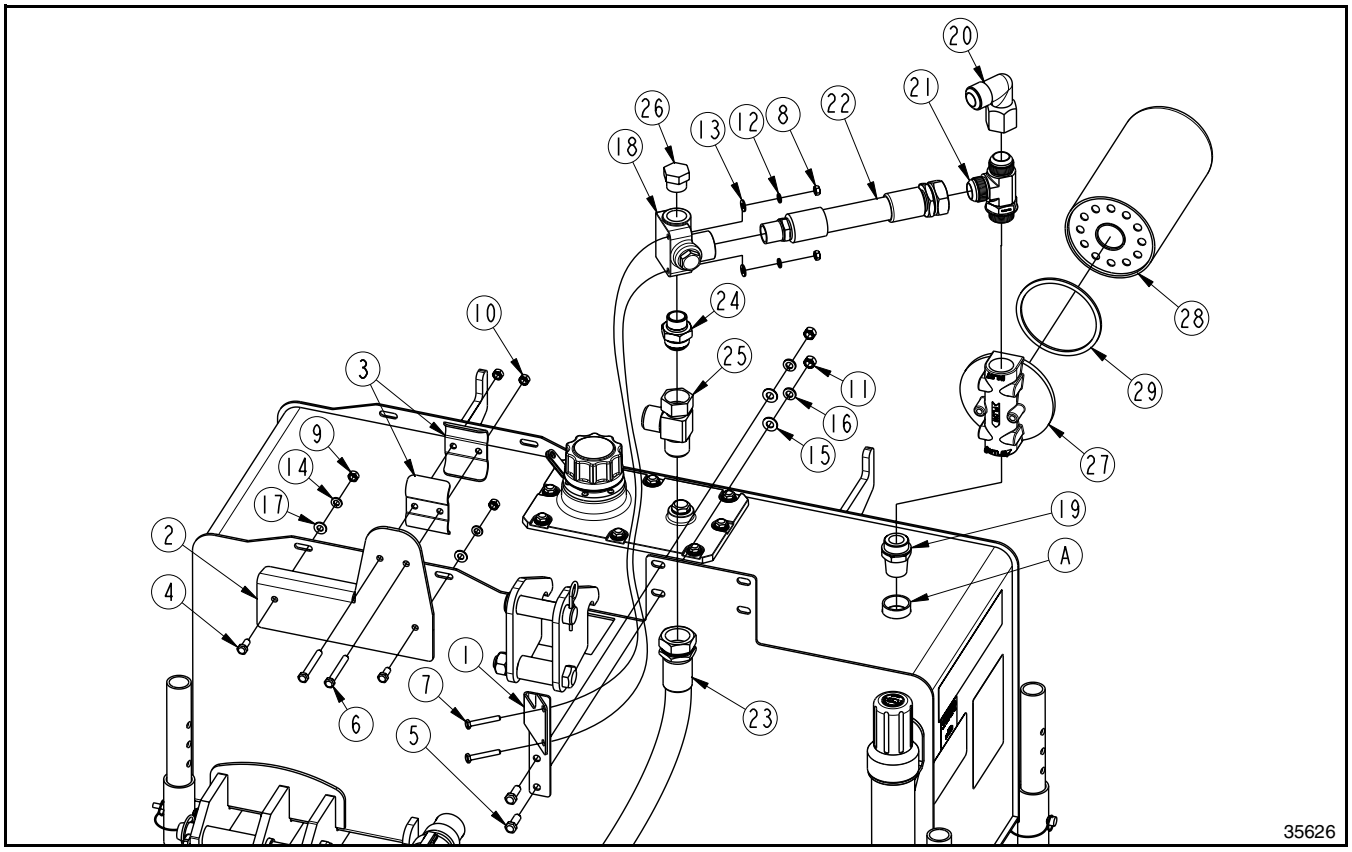
Pump & Gearbox Assembly
Figure 1-3

13. Attach pump rear guard (#3) to high speed pump mount (#2) with 3/8"-16 x 1 1/4" GR5 hex head cap screws (#5), spring lock washers (#9), and nuts (#7). Tighten nuts to the correct torque.

No Valve No Cooler Option

Refer to Figure 1-4:

14. Apply Teflon tape to pipe threads on 1 5/16" MORB x 1" MNPT adapter (#19).
15. Remove plug from pipe nipple “A” and screw adapter fitting (#19) to pipe nipple “A” until tight.
16. Screw spin-on filter head (#27) to adapter (#19) until snug. Position filter head facing back as shown and tighten adapter (#19) against filter head (#27).
17. Apply oil to both sides of square shoulder ring (#29). Screw filter (#28) and shoulder ring (#29) onto filter head (#27) until snug. Hand tighten filter 1/2 turn.
18. Screw O-ring end of 1 5/16" MJIC x 1 5/16" MJIC x 1 5/16" MORB tee (#21) to filter head (#27) until snug.
19. Attach 1 1/16" MORB plug (#26) to top side of pressure relief valve (#18) and tighten.
20. Attach 1 1/16" MORB x 1 5/16" MJIC adapter (#24) to underside of pressure relief valve (#18) and tighten.
21. Screw tee (#25) to adapter (#24) until snug.
22. Attach mounting bracket (#1) to pressure relief valve (#18) with 1/4"-20 x 1 3/4" GR5 cap screws (#7), flat washers (#13), lock washers (#12), and hex nuts (#8). Tighten nuts to the correct torque.
23. Attach mounting bracket (#1) to reservoir tank with 3/8"-16 x 1" GR5 cap screws (#5), flat washers (#15), spring lock washers (#16), and hex nuts (#11). Draw hex nuts up snug.
24. Rotate tee (#25) until facing right as shown and tighten against adapter (#24).
25. Screw hydraulic hose (#22) to pressure relief valve (#18) until tight.
26. Adjust mounting bracket (#1) as needed and screw hydraulic hose (#22) to tee fitting (#21) until tight.
27. Tighten tee (#21) to filter head (#27).
28. Screw 1 5/16" FJIC x 1 5/16" MJIC elbow (#20) to tee (#21). Rotate elbow in the direction shown and tighten.
29. Tighten mounting bracket nuts (#11) to the correct torque.
30. Screw hydraulic hose (#23) to tee (#25) until tight.
31. Attach hose clamp mount (#2) to reservoir with 5/16"-18 x 3/4" GR5 cap screws (#4), flat washers (#17), lock washers (#14), and hex huts (#9). Tighten nuts to the correct torque.
32. Attach hydraulic hose clamps (#3) to hose clamp mount (#2) with 5/16"-18 x 2 1/2" GR5 bolts (#6) and lock nuts (#10). Screw on lock nuts only 2 or 3 full turns. Do not tighten until after hydraulic hoses are mounted in the clamps. See **“Hook-up Hoses to The Reservoir”** on page 20.



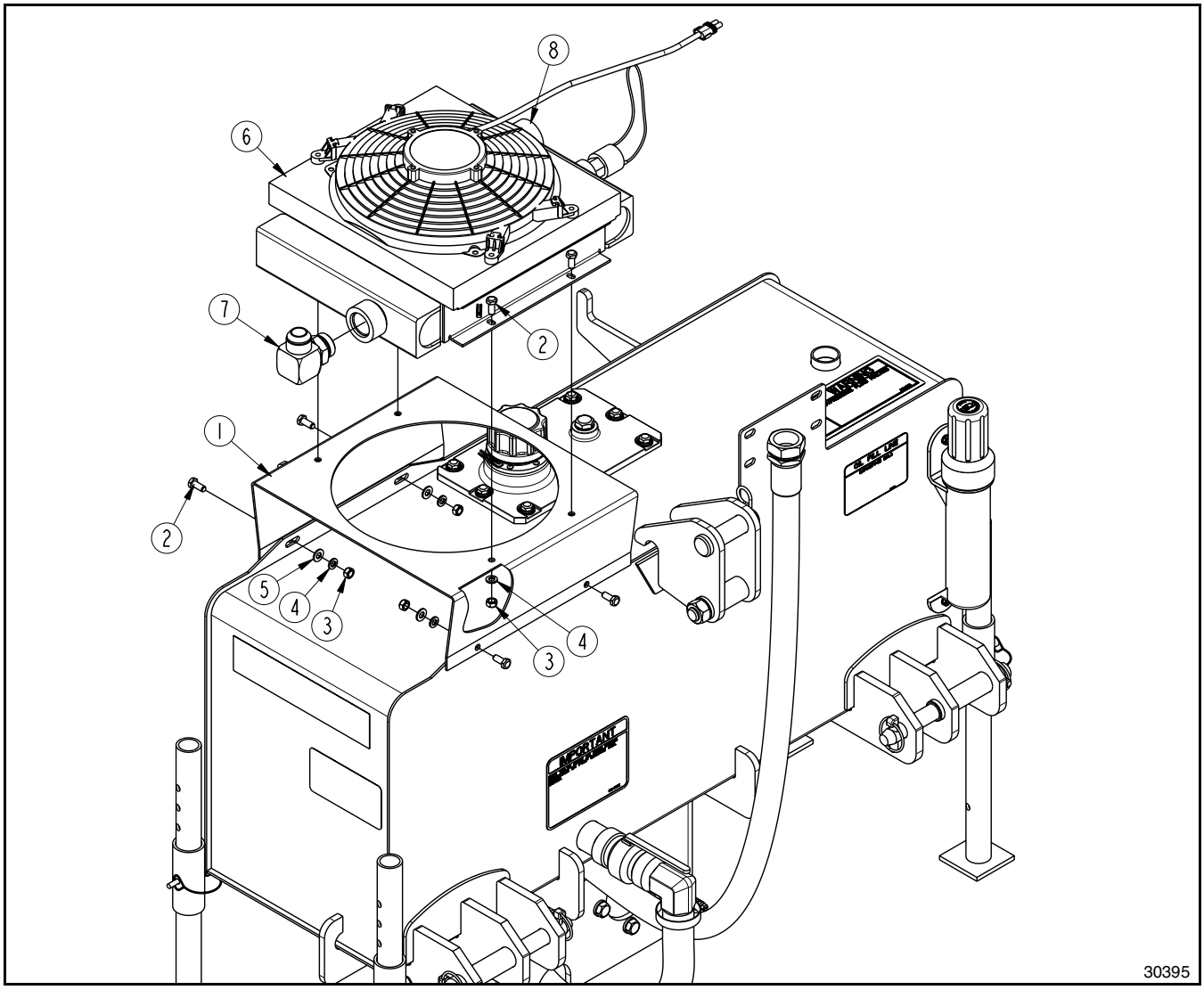
No Valve No Oil Cooler Assembly
Figure 1-4

Oil Cooler

Refer to Figure 1-5:

The oil cooler is not a stand alone option. It is included with **"No Valve With Cooler Option"**, **"Manual Valve With Oil Cooler Option"**, and **"Solenoid Valve Option W/ Cooler"**. The oil cooler must be installed first per the instructions below before installing any of the above options.

1. Attach oil cooler mount (#1) to reservoir with 5/16"-18 x 3/4" GR5 hex head cap screws (#2), flat washers (#5), spring lock washers (#4), and hex head nuts (#3). Draw nuts up snug, do not tighten until after a hydraulic hose is attached to port (#8) and filter base (not shown).
2. Attach oil cooler (#6) to oil cooler mount (#1) with 5/16"-18 x 3/4" GR5 hex head cap screws (#2), spring lock washers (#4), and hex head nuts (#3). Tighten nuts to the correct torque.
3. Screw 1 5/16" MJIC x 1 5/16" MORB elbow (#7) to oil cooler until snug. Do not tighten until after hydraulic hose is attached to elbow (#7).



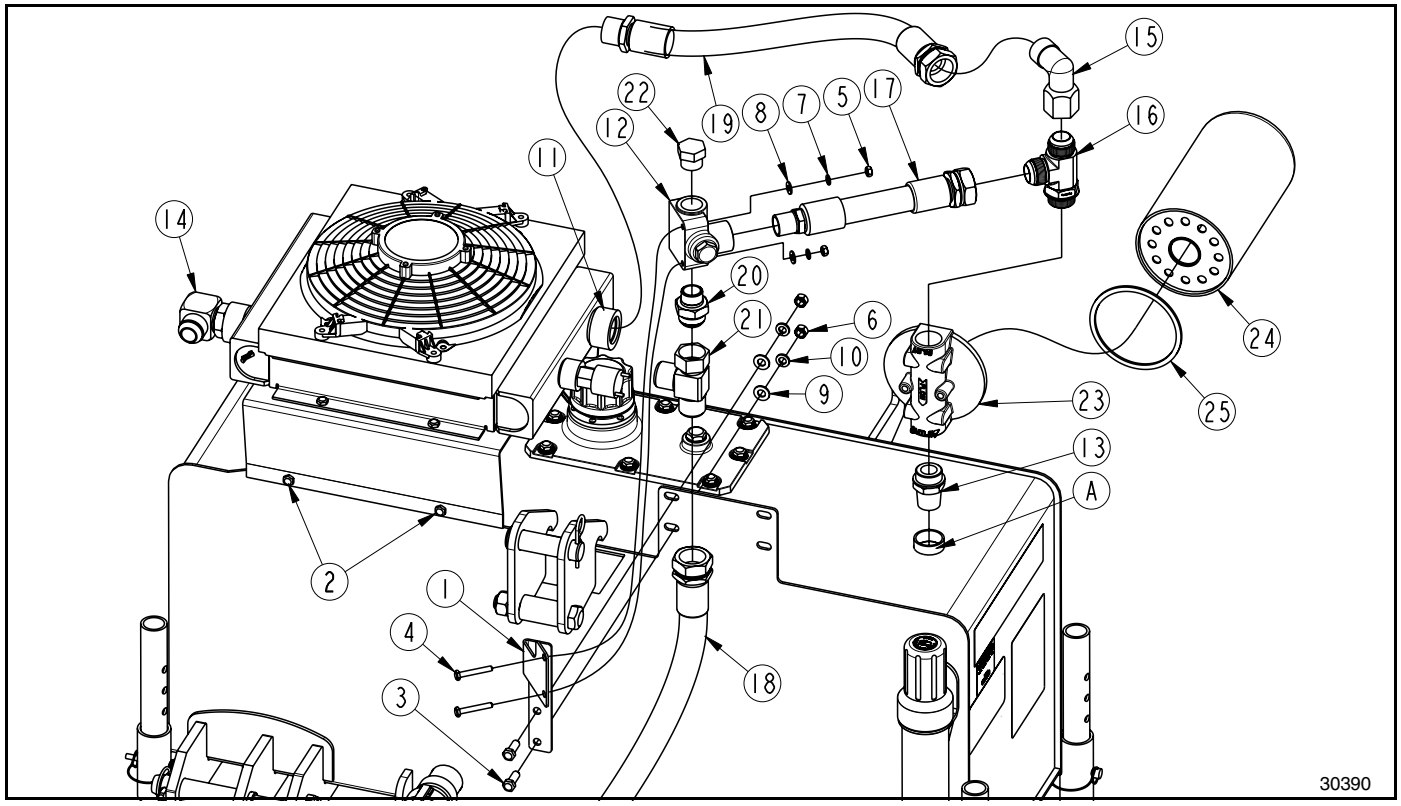
Oil Cooler Assembly
Figure 1-5

No Valve With Cooler Option

The Hydraulic Reservoir System is supplied with one of three valve options. See **"Valve Options"** on page 24 for complete description of valve options.

Refer to Figure 1-6:

1. Install oil cooler using instructions on page 12.
2. Rotate elbow (#14) forward as shown and tighten.
3. Apply Teflon tape to pipe threads on 1 5/16" MORB x 1" MNPT adapter (#13).
4. Remove plug from pipe nipple "A" and screw adapter fitting (#13) to pipe nipple "A" until tight.
5. Screw spin-on filter head (#23) to adapter (#13) until snug. Position filter head facing back as shown and tighten adapter (#13) against filter head (#23).
6. Apply oil to both sides of square shoulder ring (#25). Screw oil filter (#24) and shoulder ring (#25) onto filter head (#23) until snug. Continue tighten oil filter past snug by hand tightening filter 1/2 more of a turn.
7. Screw O-ring end of 1 5/16" MJIC x 1 5/16" MJIC x 1 5/16" MORB tee (#16) to filter head (#23) until snug.
8. Attach 1 1/16" MORB plug (#22) to top side of pressure relief valve (#12) and tighten.
9. Attach 1 1/16" MORB x 1 5/16" MJIC adapter (#20) to underside of pressure relief valve (#12) and tighten.
10. Screw tee (#21) to adapter (#20) until snug.
11. Attach mounting bracket (#1) to pressure relief valve (#12) with 1/4"-20 x 1 3/4" GR5 cap screws (#4), flat washers (#8), lock washers (#7), and hex nuts (#5). Tighten hex nuts to the correct torque.
12. Attach mounting bracket (#1) to reservoir tank with 3/8"-16 x 1" GR5 cap screws (#3), flat washers (#9), spring lock washers (#10), and hex nuts (#6). Draw hex nuts up snug.
13. Rotate tee (#21) until facing right as shown and tighten against adapter (#20).
14. Screw hydraulic hose (#17) to pressure relief valve (#12) until tight.
15. Adjust mounting bracket (#1) as needed and screw hydraulic hose (#17) to tee fitting (#16) until tight.
16. Tighten mounting nuts (#6) to the correct torque.
17. Screw hydraulic hose (#18) to tee (#21) until tight.
18. Tighten tee (#16) to filter head (#23).
19. Screw 1 5/16" FJIC x 1 5/16" MJIC elbow (#15) to tee (#16) until snug.
20. Screw 1" x 21" long hydraulic hose (#19) to elbow (#15) until tight.
21. Loosen oil cooler bolts (#2) and adjust cooler as need to attach hydraulic hose (#19) to oil cooler port (#11). Tighten hose (#19) to port (#11).
22. Tighten elbow (#15) to tee (#16).
23. Tighten oil cooler bolts (#2) to the correct torque.



No Valve With Oil Cooler Assembly
Figure 1-6

Manual Valve With Oil Cooler Option

Refer to Figure 1-7:

1. Install oil cooler using instructions on page 12.
2. Attach manual valve (#8) to **upper slots** in mounting plate. with 3/8"-16 x 2" GR5 cap screws (#1), flat washers (#4), lock washers (#5), and hex nuts (#3). Draw nuts up snug, do not tighten.
3. Screw 1 1/16" MORB x 1 5/16" MJIC 45° elbow (#14) to top side of manual valve (#8). Do not tighten.
4. Screw three 1 1/16" MORB x 1 5/16" MJIC adapter fittings (#6A & #6B) to manual valve (#8) until tight.
5. Attach hydraulic hose (#11) to oil cooler elbow (#10). Draw up snug, do not tighten.
6. Adjust manual valve in mounting slots as needed and attach hydraulic hose (#11) to 45° elbow (#14).
7. Tighten elbow (#10) to oil cooler, elbow (#14) to manual valve, and hose (#11) to elbows (#10 & #14).
8. Tighten 3/8"-16 x 2" GR5 cap screws (#1) to the correct torque.
9. Attach hydraulic hose (#13) to adapter fitting (#6B) and tighten.
10. Apply Teflon tape to the pipe threads on the 1 5/16" MORB x 1" MNPT adapter (#9).
11. Remove plug from pipe nipple “A” and screw adapter fitting (#9) to pipe nipple “A” until tight.
12. Screw spin-on filter head (#15) to adapter (#9) until snug. Position filter head facing back as shown and tighten adapter (#9) against filter head (#15).
13. Apply oil to both sides of square shoulder ring (#17). Screw filter (#16) and shoulder ring (#17) onto filter head (#15) until snug. Continue tighten the filter past snug by hand tightening it 1/2 more of a turn.
14. Screw O-ring end of 1 5/16" MORB x 1 5/16" MJIC 90° elbow (#10) to spin-on filter head until snug.
15. Attach O-ring end of 1" x 21" long hydraulic hose (#12) to oil cooler port (#7) and tighten.
16. Loosen oil cooler bolts (#2) and adjust oil cooler mount in its slots as need to attach hose (#12) to elbow (#10). Tighten hose (#12) to elbow (#10).
17. Tighten elbow (#10) to spin-on filter head (#15).
18. Tighten oil cooler bolts (#2) to the correct torque.

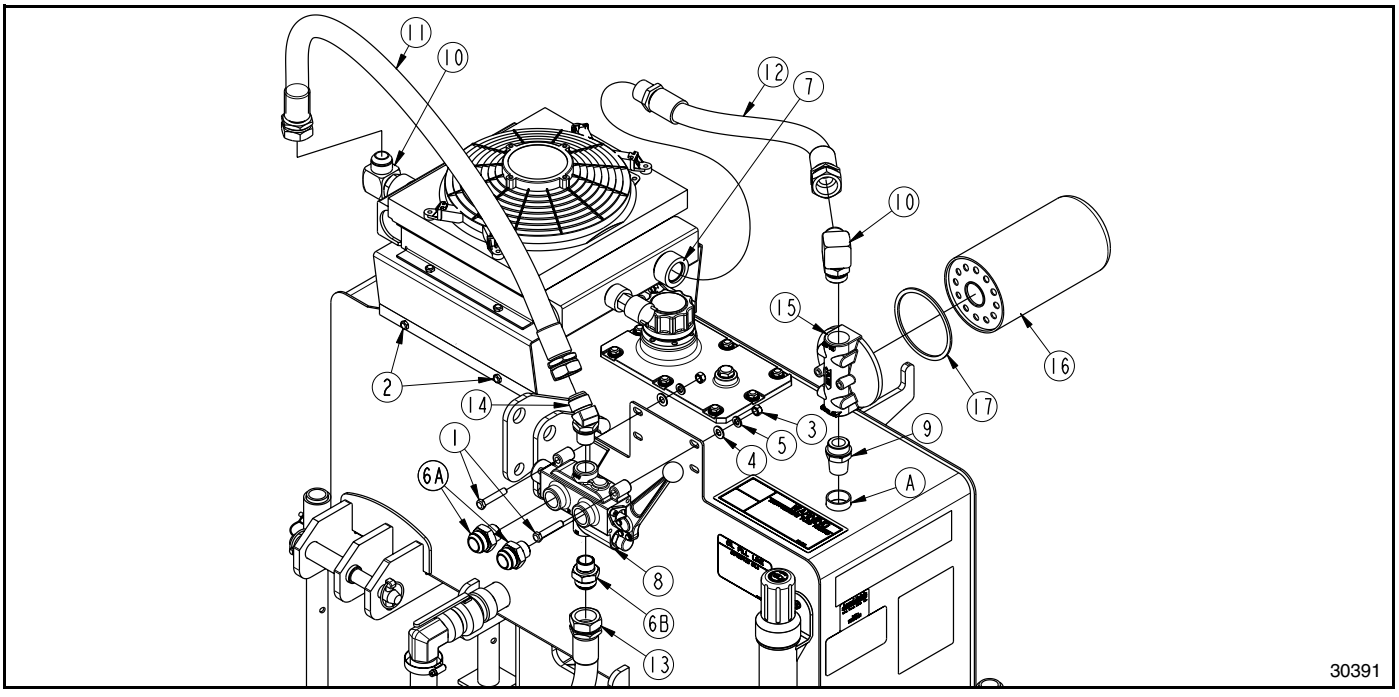
Solenoid Valve W/ Oil Cooler Option

Refer to Figure 1-9 on page 15:

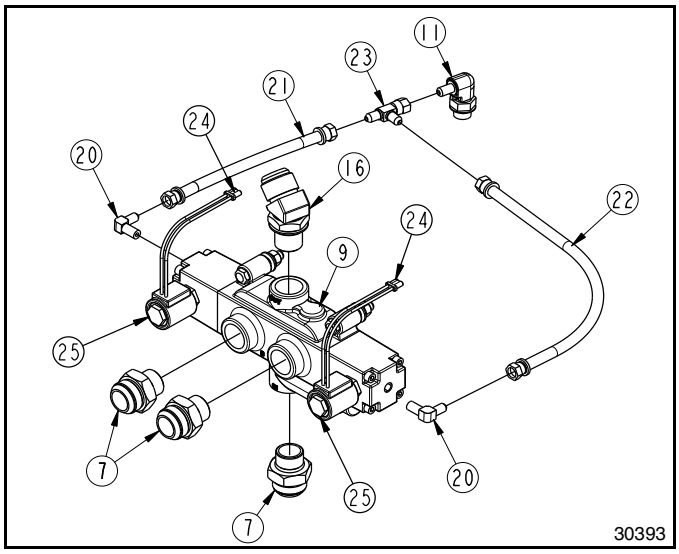
1. Install oil cooler using instructions on page 12.
2. Attach solenoid valve (#9) to **upper slots** in mounting plate with 3/8"-16 x 2" GR5 cap screws (#3), flat washers (#5), lock washers (#6), and hex nuts (#4). Draw nuts up snug, do not tighten.
3. Remove plug (#1) and screw 3/4" MORB x 7/16" MJIC elbow (#11) to reservoir tank until snug.

Refer to Figure 1-8 on page 15:

4. Screw 1 1/16" MORB x 1 5/16" MJIC 45° elbow (#16) to top side of solenoid (#9). Do not tighten.
5. Screw three 1 1/16" MORB x 1 5/16" MJIC adapter fittings (#7) to solenoid valve (#9) until tight.
6. Apply Teflon tape to one end of elbow fittings (#20) and attach to both ends of solenoid valve (#9). Tighten elbows until oriented as shown.
7. Screw 1/4" x 9 1/2" lg. hydraulic hose (#21) to elbow fitting (#20). Do not tighten.



Manual Valve With Oil Cooler Assembly
Figure 1-7

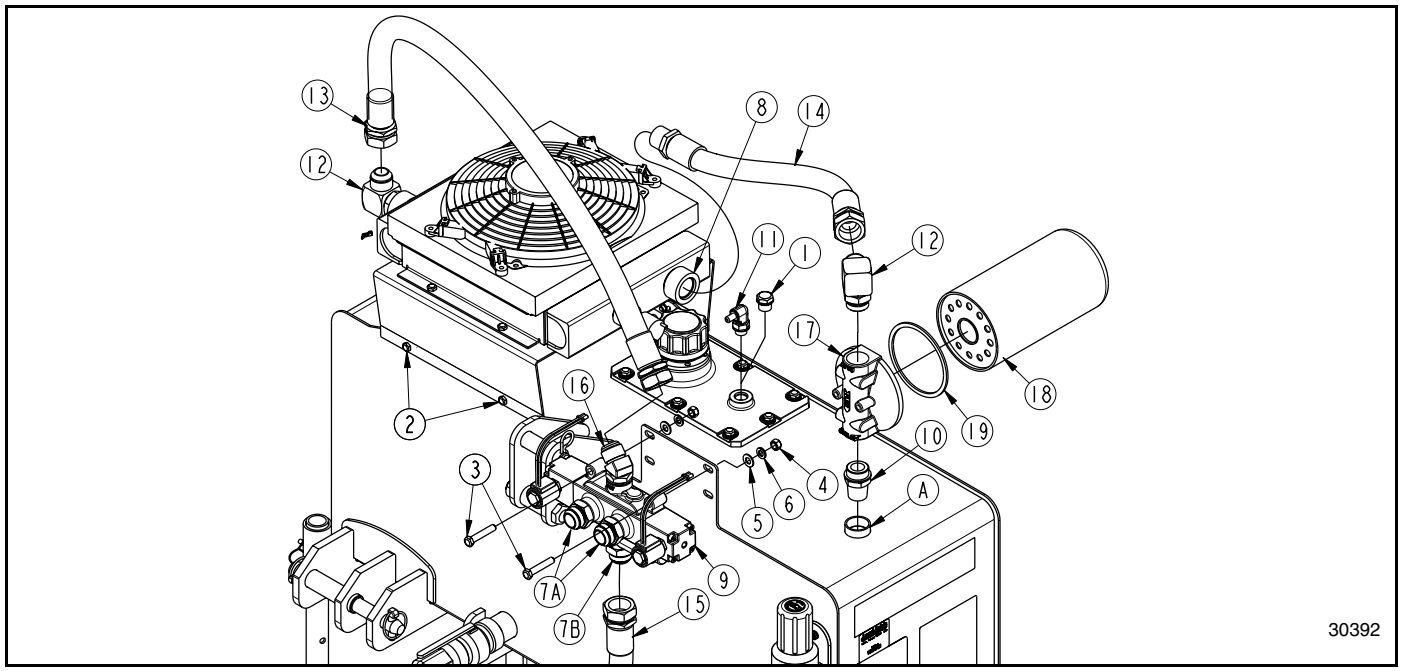


Solenoid Valve Assembly
Figure 1-8

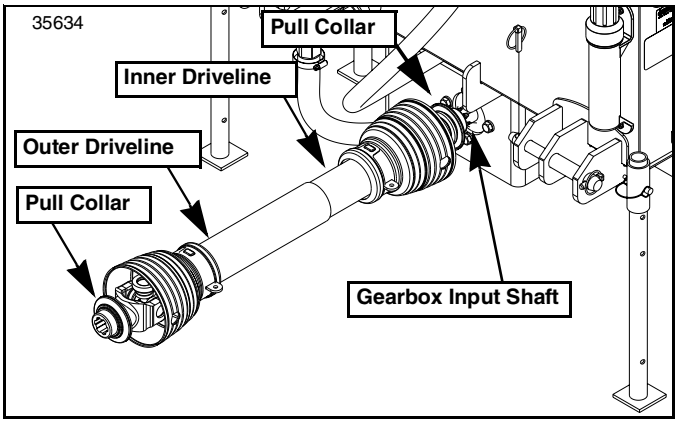
8. Screw 1/4" x 17 1/2" lg. hydraulic hose (#22) to elbow fitting (#20). Do not tighten.
9. Screw hydraulic hoses (#21 & #22) to tee (#23). Do not tighten.
10. Screw tee fitting (#23) to elbow (#11) until tight.
11. Tighten hydraulic hoses (#21 & #22) to tee (#23) and elbows (#20) until tight.
12. Tighten elbow (#11) to reservoir tank.
13. Rotate solenoid wires (#24) up as shown and hand tighten nuts (#25) to secure wires to solenoids.

Refer to Figure 1-9:

14. Attach 1" x 40" long hydraulic hose (#13) to oil cooler elbow (#12). Draw up snug, do not tighten.
15. Adjust solenoid in upper mounting slots as needed and attach hydraulic hose (#13) to 45° elbow (#16).
16. Tighten 90° elbow (#12) to oil cooler, 45° elbow (#16) to solenoid, and hose (#13) to elbows (#12 & #16).
17. Tighten 3/8"-16 x 2" GR5 cap screws (#3) to the correct torque.
18. Attach 1" x 34" long hydraulic hose (#15) to adapter fitting (#7B) and tighten.
19. Apply Teflon tape to the pipe threads on the 1 5/16" MORB x 1" MNPT adapter (#10).
20. Remove plug from pipe nipple “A” and screw adapter fitting (#10) to pipe nipple “A” until tight.
21. Screw spin-on filter head (#17) to adapter (#10) until snug. Position filter head facing back as shown and tighten adapter (#10) against filter head (#17).
22. Apply oil to both sides of square shoulder ring (#19). Screw filter (#18) and shoulder ring (#19) onto filter head (#17) until snug. Continue tighten the filter past snug by hand tightening it 1/2 more of a turn.
23. Screw O-ring end of 1 5/16" MORB x 1 5/16" MJIC elbow (#12) to filter head (#17) until snug.
24. Attach 1" x 21" long hydraulic hose (#14) to oil cooler port (#8) and tighten.
25. Loosen oil cooler bolts (#2) and adjust oil cooler mount in its slots as need to attach hose (#14) to elbow (#12). Tighten hose (#14) to elbow (#12).
26. Tighten elbow (#12) to spin-on filter head (#17).
27. Tighten oil cooler bolts (#2) to the correct torque.



Solenoid Valve With Oil Cooler Assembly
Figure 1-9



Hydraulic Reservoir 3-Point Hitch
Figure 2-1

Driveline Installation

IMPORTANT: The driveline must be lubricated before putting it into service. Refer to **"Lubrication Points"** on page 34.

Refer to Figure 2-1:

The driveline is coupled to the tractor power take-off shaft and reservoir gearbox shaft with pull collars:

1. Align yoke splines on the inner driveline with gearbox shaft splines.
2. Pull back on the pull collar and push yoke partway onto the gearbox input shaft.
3. Release pull collar and continue to push driveline yoke forward until pull collar locks in place.
4. Move driveline yoke back and forth several times to make sure pull collar has locked in place and cannot slip off the shaft.

Tractor Shutdown Procedure

The following are basic tractor shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your tractor's Operator's Manual before leaving the operator's seat.

1. Reduce engine speed and disengage power take-off if engaged.
2. Park tractor and reservoir on level, solid ground.
3. Operate 3-point control lever to fully lower the Hydraulic Reservoir.
4. Lower front loader arms fully down.
5. Put tractor in park or set park brake, turn off engine, and remove switch key to prevent unauthorized starting.
6. Relieve all hydraulic pressure to auxiliary hydraulic lines.
7. Wait for all components to come to a complete stop before leaving the operator's seat.
8. Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.

3-Point Hook-Up

Refer to Figure 2-2 on page 17:

DANGER

To avoid serious injury or death:

A crushing hazard exists while hooking-up and unhooking the implement. Keep people and animals away while backing-up to the implement or pulling away from the implement. Do not operate hydraulic controls while a person or animal is directly behind the power machine or near the implement.

WARNING

To avoid serious injury or death:

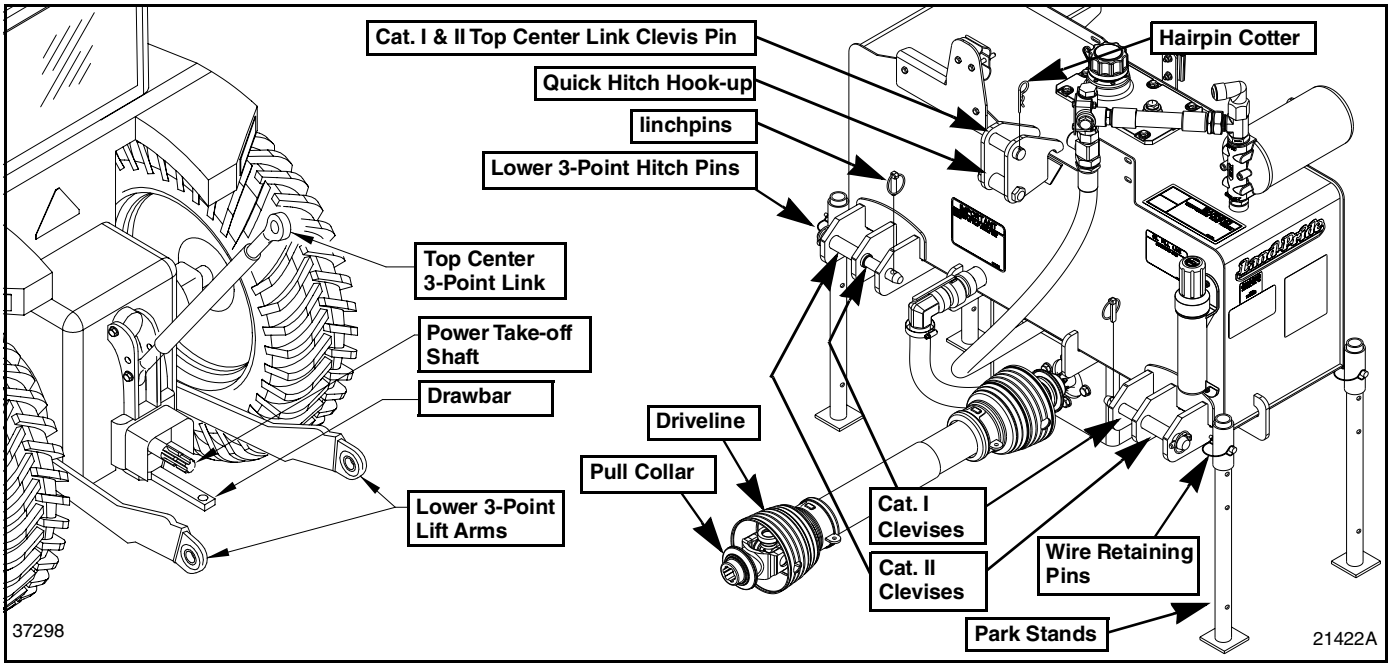
Lightweight tractors with rear attached implements may need weights added to the front to maintain steering control. Consult your tractor Operator's Manual to determine proper weight requirements and maximum weight limitations.

NOTE: Land Pride's Quick Hitch can be attached to the tractor to provide quick and easy 3-point hook-up and detachment. See your nearest Land Pride dealer to purchase a Quick-Hitch.

A 3-point Category I or Category II hitch is required. The lower 3-point arms of the 3-point hitch must be stabilized to prevent side-to-side movement. Most tractors have sway blocks or adjustable chains for this purpose.

A 3-point Category I or Category II hitch is required. The lower 3-point arms of the 3-point hitch must be stabilized to prevent side-to-side movement. Most tractors have sway blocks or adjustable chains for this purpose.

1. Slowly back tractor to the Hydraulic Reservoir while using tractor's 3-point hydraulic controls to align lower lift arm hitch holes with reservoir clevis lug holes.
2. Shut tractor down before dismounting. Refer to **"Tractor Shutdown Procedure"** on this page
3. With tractor's lower hitch arms aligned and positioned in the clevises, insert lower 3-point hitch pins through clevis lugs and lower arm holes. Secure hitch pins with linchpins.
4. Connect top center link to top center clevis lugs using clevis pin and hairpin cotter.
5. Ensure that the lower hitch arms are blocked to prevent excessive side movement.
6. Using tractor's 3-point lift, raise reservoir up until park stands are 1" or 2" off the ground.
7. Remove wire retaining pins and raise park stands fully up. Re-insert wire retaining pins and secure by making sure wire retainers are caught over the pins.



3-Point Hook-Up
Figure 2-2

Driveline Hook-Up

Refer to Figure 2-2:

DANGER

To avoid serious injury or death:

- *Tractor power take-off shaft shield, driveline shields, and gearbox shaft shields must be installed and in good working condition to avoid driveline entanglement and projectiles flying off of the driveline.*
- *Do not engage power take-off while hooking-up or unhooking the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.*
- *Do not use a power take-off adapter. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.*
- *Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably causing implement damage and bodily injury or death to anyone nearby.*

WARNING

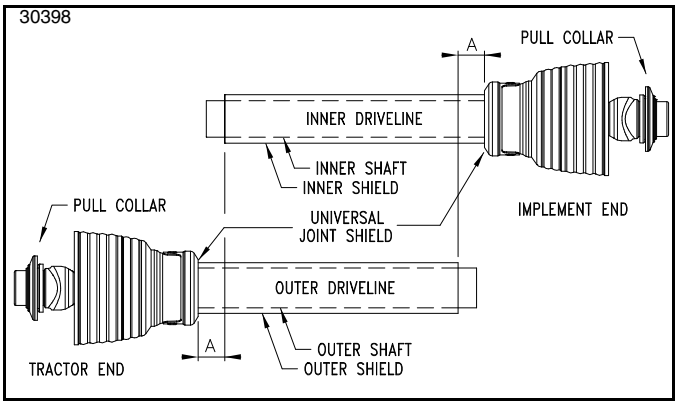
To avoid serious injury or death:

- *Always follow "Tractor Shutdown Procedure" provided in this manual before dismounting the tractor.*
- *Check driveline when lowering implement to make sure it does not interfere with the tractor drawbar at maximum depth. If needed, shut tractor off and move or remove drawbar to prevent driveline damage.*

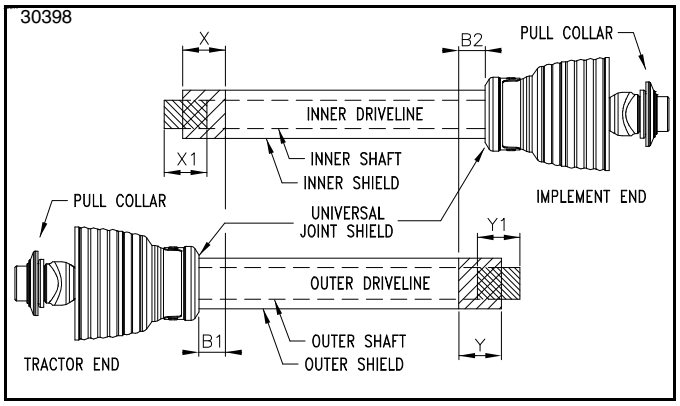
IMPORTANT: An additional driveline may be required if implement is attached to more than one tractor or if a Quick Hitch is used.

IMPORTANT: Check driveline minimum collapsible length before completing **"Driveline Hook-Up"**. Structural damage to the tractor and reservoir can occur if this check is not made. Refer to **"Check Driveline Collapsible Length"** on page 18.

1. If driveline collapsible length has not been checked, go to **"Check Driveline Collapsible Length"** on page 18. Otherwise, continue with step 2 below.
2. Park tractor and reservoir on a level surface.
3. Shut tractor down before dismounting. Refer to **"Tractor Shutdown Procedure"** on page 16.
4. If tractor drawbar interferes with the driveline during hook-up, disconnect driveline and move drawbar forward, to the side, or remove.
5. Collapse driveline by pushing tractor end of driveline toward the reservoir's gearbox.
6. Pull back on the driveline pull collar and push yoke onto the tractor power take-off shaft. Release pull collar and continue to push driveline yoke forward until pull collar pops out and locks in place.
7. Pull on driveline yokes at the tractor and reservoir end to make sure they are secured to the tractor power take-off shaft and reservoir's gearbox shaft.
8. The tractor's lower 3-point arms should be adjusted for lateral float. Please consult your tractor's manual.
9. Continue with **"Check Driveline Interference"** on page 19.



Check Driveline Minimum Length
Figure 2-3



Driveline Shortening
Figure 2-4

Check Driveline Collapsible Length

Refer to Figure 2-3:

IMPORTANT: A driveline that is too long can bottom out causing structural damage to the tractor and implement. Always check driveline minimum length during initial setup, when connecting to a different tractor, and when alternating between using a quick hitch and a standard 3-point hitch. More than one driveline may be required to fit all applications.

IMPORTANT: The power take-off shaft and gearbox input shaft must be aligned and level with each other when checking driveline minimum length. A driveline that is too long can damage tractor and implement.

1. With driveline attached only to the 3-point implement, remove outer driveline (tractor end) from inner driveline to separate the two profiles.
2. Park tractor and implement on a level surface.
3. Raise implement until its gearbox input shaft is level with the tractor's power take-off shaft.
4. Without changing the 3-point lift height, shut tractor down using **"Tractor Shutdown Procedure"** on page 16.
5. Lower park stands to the lowest position allowed and secure them in this position with the wire retaining pins. If park stands are not resting on the ground, add support blocks under the park stands to keep the gearbox input shaft level with the tractor's output shaft.
6. Attach outer driveline to the tractor's power take-off shaft. Refer to steps 6-7 under **"Driveline Hook-Up"** on page 17.
7. Hold inner and outer drivelines parallel to each other. If dimension "A" is greater than or equal to 1" (2.5 cm), then skip to **"Check Driveline Maximum Length"** on page 18. Otherwise continue with step 8.

Refer to Figure 2-4:

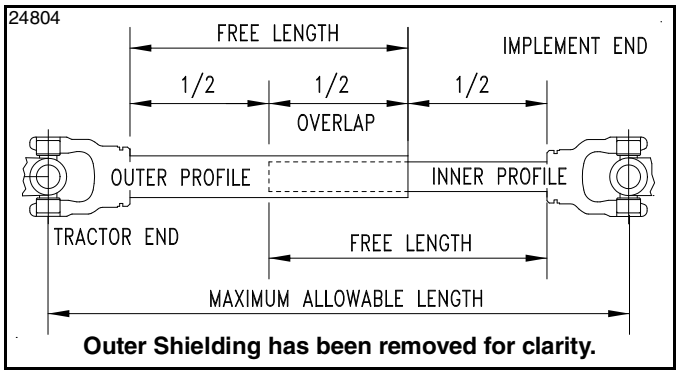
8. If dimension "A" was less than 1" (2.5 cm), shorten driveline as follows:
   a. Measure 1" (2.5 cm) (**"B1"** dimension) back from outer driveline shield and make a mark at this location on the inner driveline shield.
   b. Measure 1" (2.5 cm) (**"B2"** dimension) back from the inner driveline shield and make a mark at this location on the outer driveline shield.
9. Remove outer driveline from the tractor power take-off shaft and inner driveline from the implement's gearbox shaft.
10. Cut off non-yoke end of inner driveline as follows:
    a. Measure from end of inner shield to scribed mark (**"X"** dimension) and record.
    b. Cut off inner shield at the mark. Cut same amount off the inner shaft (**"X1"** dimension).
11. Cut off non-yoke end of outer driveline as follows:
    a. Measure from end of outer shield to scribed mark (**"Y"** dimension) and record.
    b. Cut off outer shield at the mark. Cut same amount off the outer shaft (**"Y1"** dimension).
12. Remove all burrs and cuttings.
13. Continue with **"Check Driveline Maximum Length"** on page 18.

Check Driveline Maximum Length

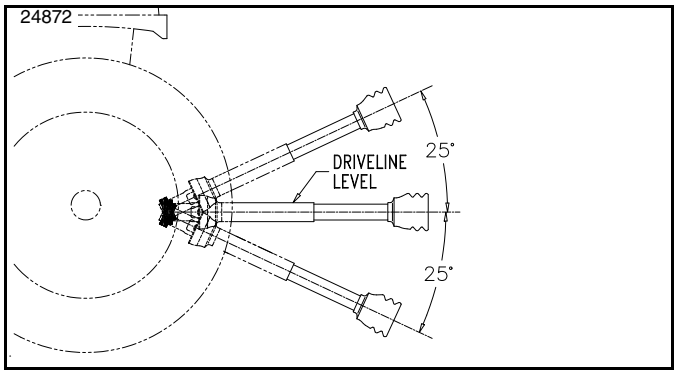
Refer to* "Figure 2-5" *on page 19

The driveline maximum allowable length must, when fully extended, have a minimum overlap of profile tubes by not less than 1/2 the free length with both inner and outer profile tubes being of equal length.

1. Apply multi-purpose grease to the inside of the outer shaft and reassemble the driveline.
2. Assemble the two driveline profiles together with just 1/2 overlapping of the profile tubes as shown. Once assembled, measure and record maximum allowable length here. _____



Driveline Maximum Extended Length
Figure 2-5



Maximum Allowable Driveline Movement
Figure 2-6

3. Reattach driveline to the tractor power take-off shaft and gearbox input shaft. Refer to **"Driveline Installation"** on page 16 and **"Driveline Hook-Up"** on page 17.
4. Continue with **"Check Driveline Interference"** below.

Check Driveline Interference

Refer to Figure 2-6:

DANGER

To prevent serious injury or death:

Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to hydraulics is off.

WARNING

To avoid serious injury or death:

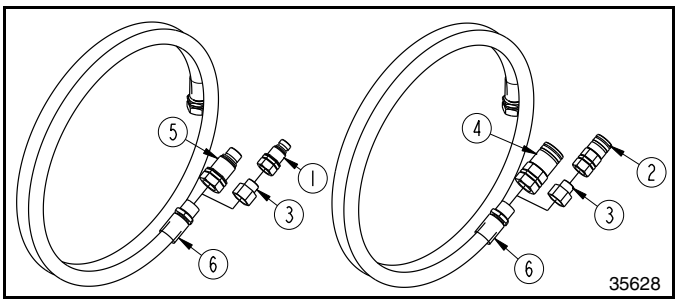
A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send projectiles.

1. Raise reservoir slightly off the ground.
2. Without changing the 3-point lift height, shut tractor down using **"Tractor Shutdown Procedure"**.
3. Raise park stands fully up and secure in the up position with wire retaining pins.
4. Slowly lower and raise the reservoir to ensure the tractor drawbar, tires, and other equipment on the tractor do not contact the reservoir's frame. If there is an interference:
   a. Park tractor on a level hard surface. Raise the reservoir enough to adjust the park stands down to the minimum height.
   b. Without changing the 3-point lift height, shut tractor down using **"Tractor Shutdown Procedure"** on page 16.
   c. Adjust park stands down to the minimum height. For detailed instructions, see **"Park Stands"** on page 27.
   d. Starting tractor and lower the 3-point arms until the park stands support the reservoir.
   e. Shut tractor down before dismounting. Refer to **"Tractor Shutdown Procedure"** on page 16
   f. Move or remove the drawbar if it interferes with the reservoir.
   g. Make any other necessary corrections to the 3-point hook-up and reservoir.
   h. Repeat steps 4a-4g to verify the reservoir does not interfere with the tractor.
5. Start tractor and raise implement fully up.
6. Without changing the 3-point lift height, shut tractor down using **"Tractor Shutdown Procedure"** on page 16.
7. Support the reservoir at the raised height.
8. Check to make sure the driveline does not exceed any of the limits listed below:
   - Driveline does not exceed maximum length recorded in step 2 under **"Check Driveline Maximum Length"** on this page.
   - Driveline angle does not exceed 25° above horizontal.
9. If the driveline exceed the maximum allowable length or an angle of 25 degrees up, do the following:
   a. Start tractor and lower the implement to an acceptable driveline angle. To do this, supports placed under the reservoir will need lowering.
   b. Adjust tractor 3-point lift limiter to that height or make a mark with tape or other means on the 3-point lift to indicate the maximum lift height.
10. Shut hut tractor down using **"Tractor Shutdown Procedure"** on page 16.

Hydraulic Hose Assembly

DANGER

Hydraulic fluid under high pressure can penetrate the skin. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Use a piece of cardboard or wood rather than hands when searching for hydraulic leaks. If hydraulic fluid is injected into the skin or eyes, it must be treated by a doctor familiar with this type of injury within a few hours or gangrene may result. DO NOT DELAY.



Hydraulic Hoses
Figure 2-7

Refer to Figure 2-7:

There are two 23'-9" long hydraulic hoses (#6) provided to connect the Hydraulic Reservoir to the front loader attachment. The large flat face couplers (#4 & #5) or small flat face couplers (#1 & #2) are optional and must be attached to hydraulic hoses (#6).

Large Face Coupler Option

1. Screw male coupler (#5) to one of the two hydraulic hoses (#6) until tight.
2. Screw female coupler (#4) to the other hydraulic hose (#6) until tight.

Small face Coupler Option

1. Screw adapters (#3) to hydraulic hoses (#6) until tight.
2. Screw male coupler (#1) to one of two adapters (#3) until tight.
3. Screw female coupler (#2) to the other adapter (#3) until tight.

Hook-up Hoses to The Reservoir

Review Figure 2-8, Figure 2-9, & Figure 2-10 on page 21 to determine which figure represents the valve arrangement your Hydraulic Reservoir is set-up with.

No Valve No Oil Cooler Option

Refer to Figure 2-8 on page 21:

a. Determine which line on your front loader attachment is the pressure line. Select the hydraulic hose with the coupling that mates with the attachment's pressure line coupling.

b. Screw that hydraulic hose to tee "A" on the reservoir until tight.

c. Screw remaining hydraulic hose to elbow "B" at the oil filter until tight.

d. Route both hydraulic hoses through hose clamps "C" & "D" and tighten 5/16" lock nuts "E."

No Valve With Oil Cooler Option

Refer to Figure 2-9 on page 21:

a. Determine which hydraulic line on your front loader attachment is the pressure line. Select the hydraulic hose with the coupler that mates with the attachment's pressure line coupler.

b. Screw that hydraulic hose to tee "A" on the reservoir until tight.

c. Screw remaining hydraulic hose to elbow "B" at the oil cooler until tight.

Manual Valve & Solenoid Valve Options

Refer to *Figure 2-10 on page 21:*

NOTE: The manual and solenoid valves can deliver pressure to either port "A" or "B". The operation of your reservoir will determine which port each hose is attached to.

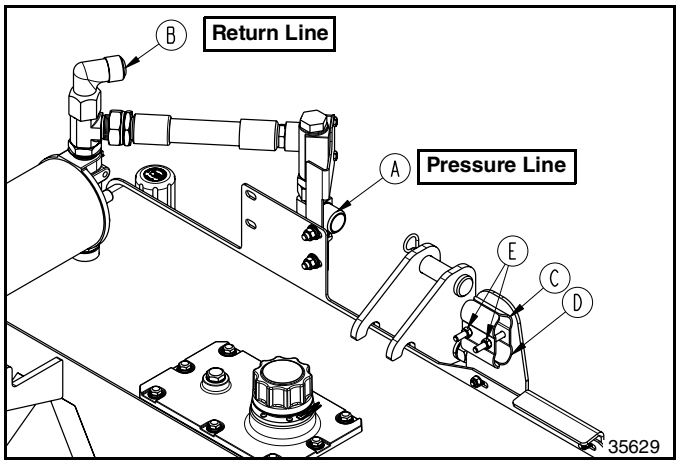
a. Screw hydraulic hoses (#6) shown in Figure 2-7 to adapter fittings ("A" & "B") at the manual valve or solenoid until tight.

Hook-up Hoses to The Attachment

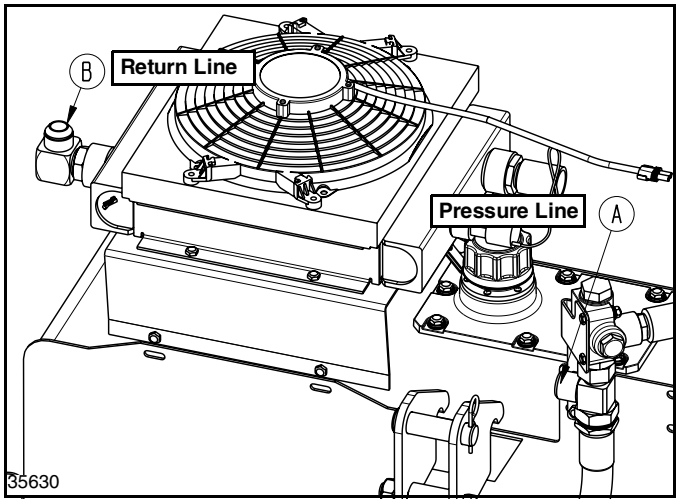
DANGER

Make sure hydraulic hoses are properly routed without twists to prevent becoming pinched or kinked while operating. A pinched or kinked hose can burst and leak hydraulic fluid.

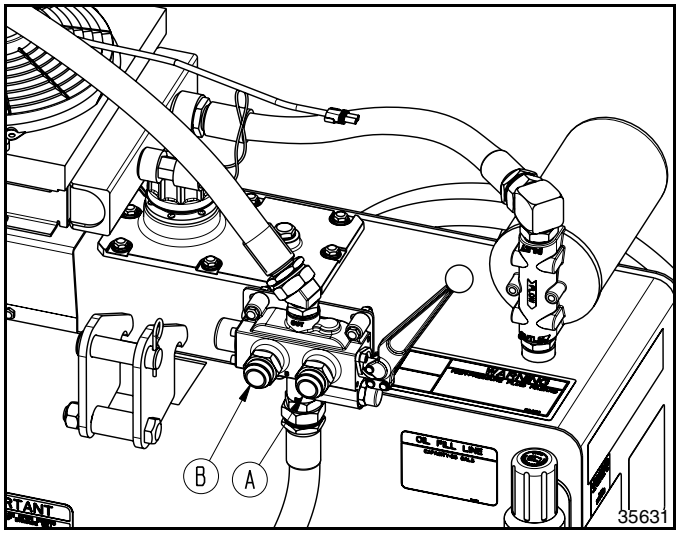
1. Route hydraulic hoses to the tractor's front loader attachment.
2. Connect male and female couplers to the attachment's couplers. Pull on the couplers to make sure they are securely locked.
3. Secure hydraulic hoses along the route with ties provided by the customer. Make sure all kinks, twists, and pinch points are removed.



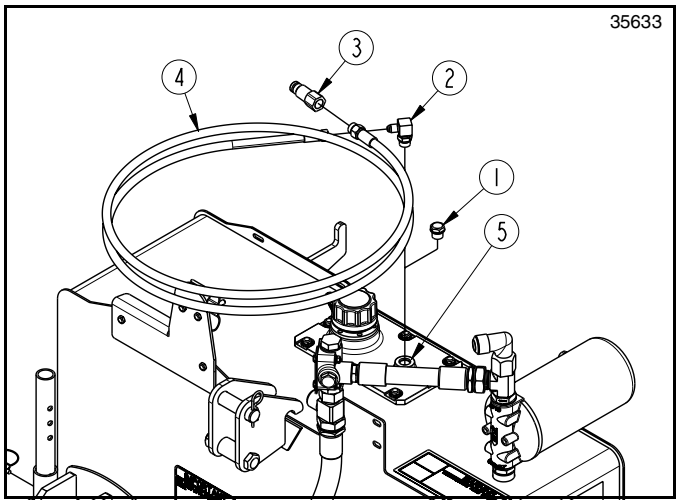
No Valve Option Without Oil Cooler
Figure 2-8



No Valve Option with Oil Cooler
Figure 2-9



Hydraulic Hook-up to Manual or Solenoid Valve
Figure 2-10



Case Drain Kit
Figure 2-11

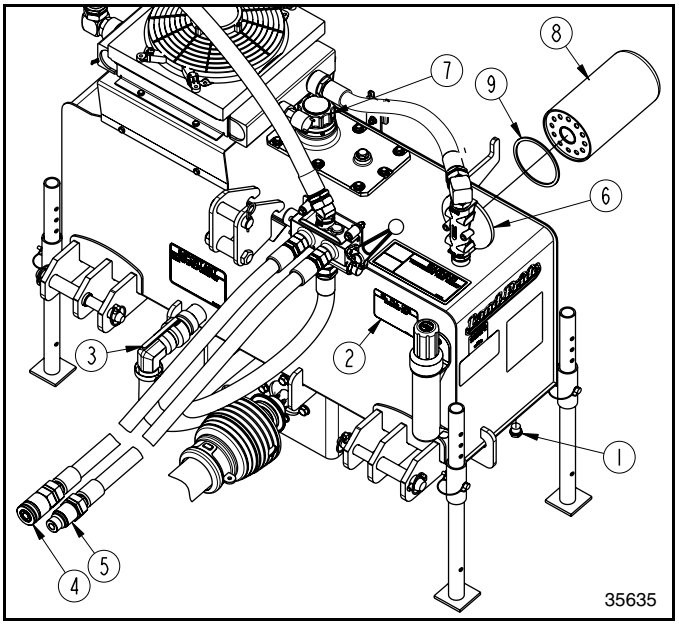
Case Drain Option

Refer to Figure 2-11:

A 3/4"-16 UNF port (#5) is available for attachments requiring a case drain line.

NOTE: Solenoid valve option will need a customer supplied adapter to use solenoid valve drain and case drain.

1. Screw 3/4" FORB x 9/16" FJIC elbow (#2) to case drain hose (#4) until tight.
2. Screw 3/4" FORB flat face QD coupler to case drain hose (#4) until tight.
3. Remove plug (#1) and store in a safe location.
4. Route optional case drain line to the attachment alongside main lead hoses.
5. Screw 3/4" MORB x 9/16" MJIC elbow (#2) to port (#5) until tight.
6. Secure case drain line with ties provided by the customer. Make sure all kinks, twists, and pinch points are removed.



Fill Reservoir With Hydraulic Fluid
Figure 2-12

Fill Hydraulic Reservoir

The unit is shipped without hydraulic fluid.

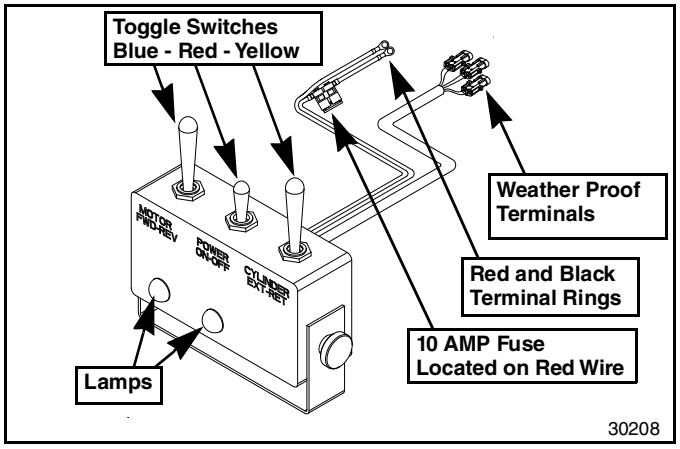
Refer to Figure 2-12:

1. Make sure all four park stands are properly pinned at the same height and properly support the tank on a hard level surface. Make sure bottom drain plug (#1) is screwed in tight and ball valve lever (#3) is turned off (90° to the valve).

NOTE: Any high quality mineral based hydraulic fluid such as Mobil Fluid 424 with a viscosity rating of 10W-30 is acceptable.
See www.mobil.com for alternate fluids.

2. Remove fill cap (#7) and add 35 gallons of Mobil 424 with viscosity rating of 10W-30 to the empty hydraulic reservoir. Use care to ensure that dust or other foreign particles do not contaminate the fluid.
3. Remove filler cap with dipstick (#3) from reservoir and wipe clean. Fully insert filler cap with dipstick and remove. Check oil level on dipstick.
4. Fill with recommended oil to full mark if low. Replace filler cap and dipstick.

IMPORTANT: Ball valve (#3) must be open as shown during pump operation or damage will occur.



Control Box Hook-up
Figure 2-13

Control Box Hook-up

Refer to Figure 2-13:

If Hydraulic Reservoir System is equipped with a solenoid valve or oil cooler, then an electrical control box with wiring harness is included. Make sure the control box wiring is connected to a 12 volt electrical system.

The center red toggle switch turns power to the unit on when pushed and off when pulled to neutral position. A red lamp below the switch illuminates when switch is on.

The blue toggle switch is for continuous operation such as a hydraulic motor. Push on the toggle switch to run a hydraulic motor in one direction and pull to run the motor in the opposite direction. Return switch to center position to stop motor operation. A red lamp below the switch illuminates while toggle switch is on.

The yellow toggle switch on the control box is for momentary operation such as a hydraulic cylinder. Push and hold the toggle switch to move the cylinder rod. Release the toggle switch to stop movement. Push and hold toggle switch in the other direction to reverse cylinder rod movement.

The oil cooler is equipped with an oil temperature sensing switch that turns on the fan when oil temperatures reach 140° F.

Two of the weather proof terminals on the wiring harness are for connecting to the solenoid and the other weather proof terminal is for connecting to the oil cooler.

1. Locate and mount control box in a convenient location for the operator.
2. Route wiring harness with ring terminals to a 12 volt battery. Secure wiring harness with ties. Make sure harness will not become pinched along the route.
   a. Connect red terminal ring to the 12 volt positive post (+) on the battery.
   b. Connect black terminal ring to ground.

3. Route wiring harness with three weather proof terminals to the solenoid valve and/or oil cooler. Secure wiring harness with ties. Make sure harness will not become pinched along the route.
   a. Attach black and white weather proof terminal to one of the solenoid's terminals and black and red weather proof terminal to the other solenoid terminal. The terminals can be switched if toggle switches operate opposite of what is desired. If there is no solenoid valve, wrap terminals with electrical tape to keep moisture and dust out.
   b. Attach black and green weather proof terminal to the oil cooler. If an oil cooler is not included, wrap terminal with electrical tape to protect it.

Valve Options

The Hydraulic Reservoir System can be set-up with one of three different valve arrangements. Because each arrangement operates a little differently, it is important to know how they operate and which arrangement is best for the work at hand. See your nearest Land Pride dealer should you want to change your valve set-up.

No Valve No Cooler Option

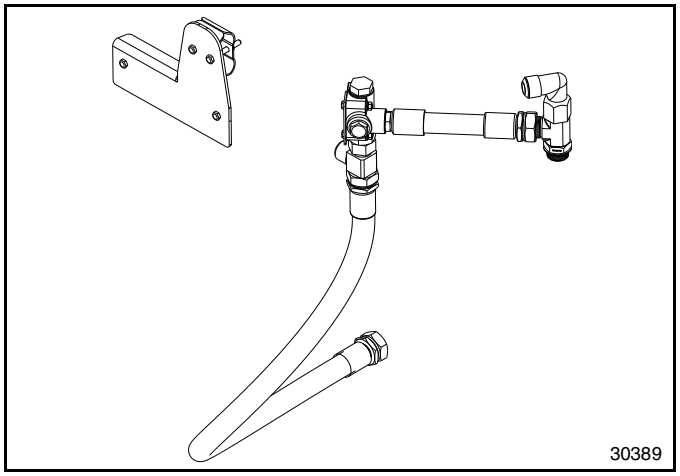
316-250A No Valve & No Cooler Option

Refer to Figure 3-1:

This arrangement is recommended for snow blowers only and can over heat from continuous use in warm temperatures.

This option powers hydraulic motors by turning the power take-off shaft on and off at the tractor controls. Flow to the hydraulic motor is one direction only; meaning the motor cannot be run in reverse. A pressure relief valve is provided to protect the pump and lines from high pressures.

This arrangement is not good for operating hydraulic cylinders as they are bi-directional.



No Valve Option Without Cooler
Figure 3-1

No Valve With Cooler Option

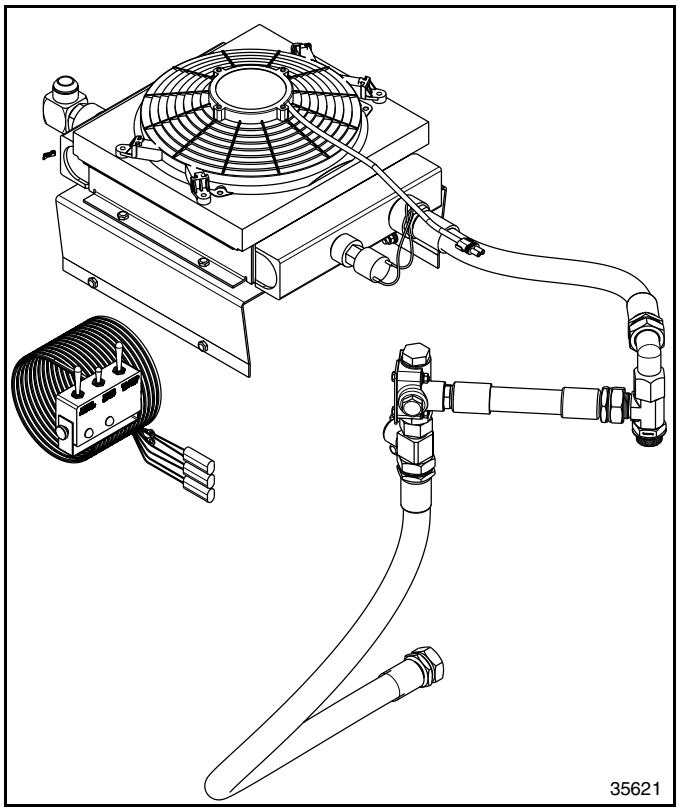
316-281A No Valve & No Cooler Option

Refer to Figure 3-2:

This option powers hydraulic motors by turning the power take-off shaft on and off at the tractor controls. Flow to the hydraulic motor is one direction only meaning the motor cannot be run in reverse. A pressure relief valve is provided to protect the pump and lines from high pressures.

An oil cooler with a temperature switch that turns the cooler on when oil temperature reaches 140^{o} F is included to protect against overheating.

This arrangement is not good for operating hydraulic cylinders as they are bi-directional.



No Valve Option With Cooler
Figure 3-2

Manual Valve Option With Cooler

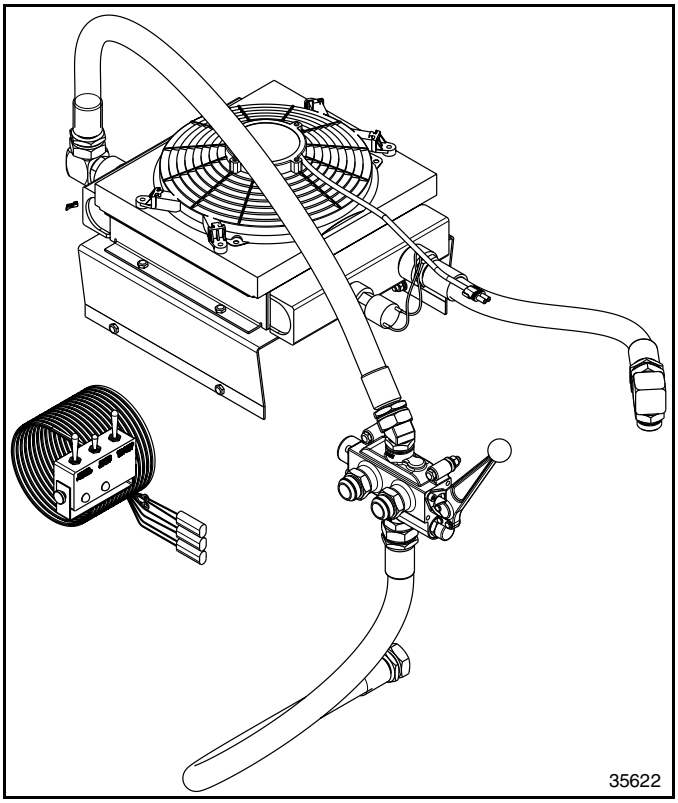
316-282A Manual Valve Option With Cooler

Refer to Figure 3-3:

The manual valve is equipped with a spring return lever for changing flow through the hydraulic lines that are attached to the front loader attachment. With this arrangement, the tractor power take-off can remain running. The valve, when in neutral, dumps hydraulic fluid back to the tank allowing the pump to run continuously. It also opens when the pressure becomes too high dumping fluid back into the tank.

An oil cooler with a temperature switch that turns the cooler on when oil temperature reaches 140° F is included to protect against overheating. The control box will power the oil cooler.

This valve is particularly good for hydraulic cylinders on equipment such as log splitters. It is not recommended for operating equipment designed for continuous operation such as hydraulic motors.



Manual Valve Option With Cooler
Figure 3-3

Solenoid Valve Option W/ Cooler

316-280A Solenoid Valve Option With Cooler

Refer to Figure 3-4:

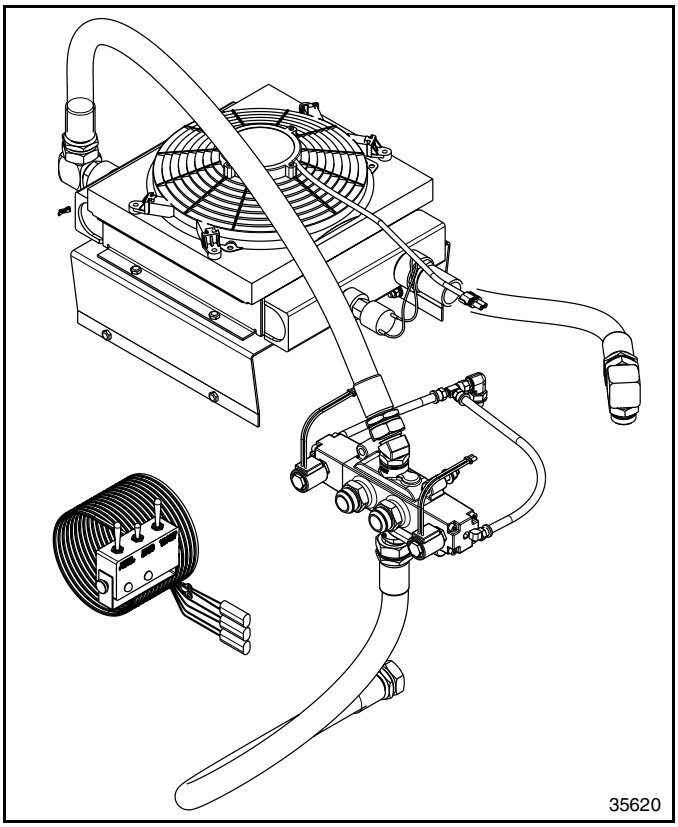
The solenoid valve is electrically activated from a control box mounted near the operator or remotely located for operating while standing near the equipment.

An oil cooler with a temperature switch that turns the cooler on when oil temperature reaches 140° F is included to protect against overheating.

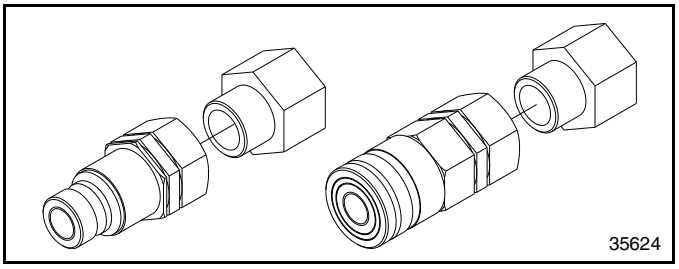
The control box has one toggle switch for power on, one for momentary operation, and one for continuous operation.

Push and hold the yellow toggle switch to move a hydraulic cylinder rod. Pull and hold the toggle switch to move the cylinder rod in the opposite direction. Release the toggle switch to stop cylinder rod movement.

Push blue toggle switch on to run hydraulic motor in one direction. Pull blue toggle switch on to run hydraulic motor in the opposite direction. Manually return toggle switch to neutral (center) position to stop hydraulic motor operation. The solenoid valve, when in neutral, dumps hydraulic fluid back to the tank allowing the pump to run continuously. It also opens when pressure becomes too high dumping fluid back into the tank.



Solenoid Valve Option With Cooler
Figure 3-4



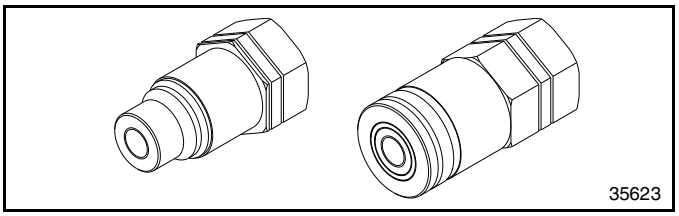
Small Flat Face Couplers
Figure 3-5

Small Flat Face Couplers

316-290A Small Flat Face Couplers

Refer to Figure 3-5:

These couplers with adapter are designed to attach to hoses with 1 5/16" threads and have 1/2" body size. They are not available for **"No Valve No Cooler Option"**.



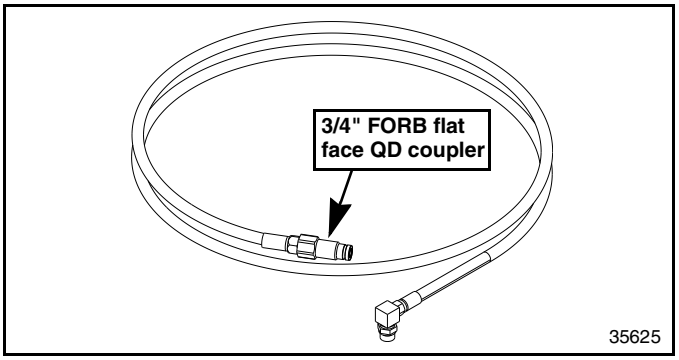
Large Flat Face Couplers
Figure 3-6

Large Flat Face Couplers

316-289A Large Flat Face Couplers

Refer to Figure 3-6:

These couplers are designed to attach to hoses with 1 5/16" threads and have 3/4" body size.



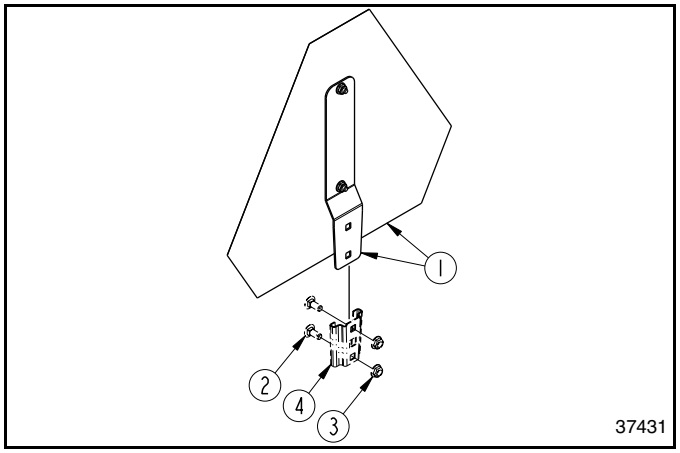
Case Drain Kit With Coupler
Figure 3-7

Case Drain Kit With Coupler

316-291A CASE DRAIN KIT W/ COUPLER

Refer to Figure 3-7:

Case drain hose is complete with 3/4" MORB x 9/16" MJIC elbow, 23'-9" of 3/8" hydraulic hose, and one 3/8" body flat face low spill quick coupler male tip. Attach the elbow end of the hose to the reservoir tank and coupler end to the equipment's case drain coupler.



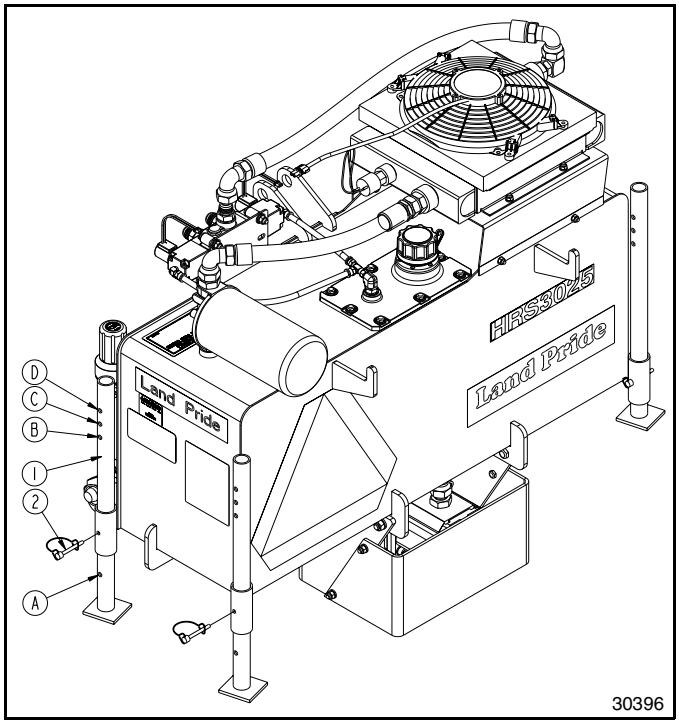
Slow Moving Vehicle Sign
Figure 3-8

Slow Moving Vehicle Sign (Accessory)

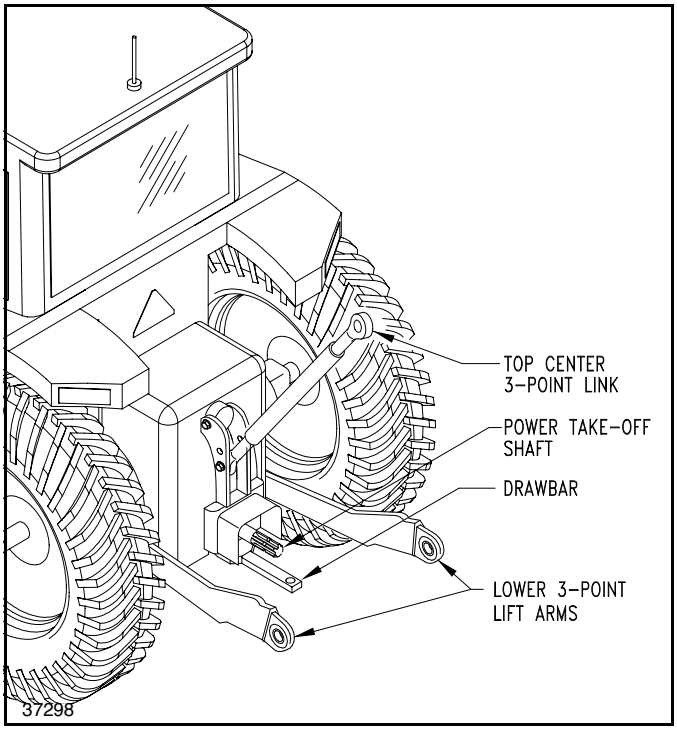
Refer to Figure 3-8:

Land Pride offers the slow moving vehicle sign (#1) as an accessory should your tractor not be equipped with a removable sign that fits Land Pride's SMV mounting socket (#4). Also, mounting components (#2, #3, & #4) can be purchased from your nearest Land Pride dealer should you want to mount this sign on other equipment.

Item	Part No.	Description
1	316-362S	SMV Sign
2	802-092C	RHSNB 5/16-18X3/4 GR5
3	803-177C	NUT HEX FLG TP LK 5/16-18ZNYCR
4	890-401C	SMV MOUNTING SOCKET



Parking Stand Adjustments
Figure 4-1



Tractor 3-Point Hitch
Figure 4-2

Park Stands

Refer to Figure 4-1:

WARNING

Be careful not to pinch fingers or hand while raising and lowering park stands. Hands and fingers can become pinched in the slide tubes or caught between the reservoir tank and stands.

The four park stands (#1) should be fully raised for working and while transporting. Make sure wire retaining pins (#2) are fully inserted in hole (A) and wire retainers are caught over the pins.

The four park stands (#1) should be lowered and pinned with the wire retaining pins (#2) when unhooking for storage. Because the unit contains 35 gallons of hydraulic fluid, it is best to secure park stands in hole “B”. The unit will be more stable in this hole. If this height is too low for unhitching and re-hitching, then use holes “C” or “D” as needed. Make sure hitch pins are in the same holes on all four legs.

Leveling Adjustments

Refer to Figure 4-2:

CAUTION

Always keep your feet and legs out from under the Hydraulic Reservoir System. Never work under the Hydraulic Reservoir System without properly blocking the reservoir up.

NOTE: See Tractor Operator’s Manual for instructions on how to adjust tractor’s lower 3-point arms and top center link.

Check for levelness by parking tractor on a level surface. Lowering Hydraulic Reservoir down until unit is 2 to 3 feet off the ground. Place tractor in park or set park brake, shut tractor off, and remove switch key.

1. Place a level across the reservoir tank. Manually adjust one of the two lower lift arms up or down to level the Hydraulic Reservoir from left to right.
2. Rotate level 90 degrees. Manually adjust the length of the top center 3-point link to level the Hydraulic Reservoir from front to rear.

Startup Checklist

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the Hydraulic Reservoir System. Therefore, it is absolutely essential that no one operates the Hydraulic Reservoir System unless they are age 16 or older and have read, fully understood, and are totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

Perform the following inspections before using your Hydraulic Reservoir System.

Operating Checklist

✔	Check	Page
	Read and follow all Safety Rules carefully. Refer to "Important Safety Information".	1
	Make sure all guards and shields are in place. Refer to "Important Safety Information".	1
	Make sure there are no hydraulic leaks on the unit. See "Avoid High Pressure Fluid Hazards".	3
	Read and follow hook-up instructions. Refer to "Section 2: Hook-up to Reservoir".	16
	Read and make all required adjustments. Refer to "Section 4: Adjustments".	27
	Read and follow all operating procedures. Refer to "Section 5: Operating Procedures".	28
	Read and follow all maintenance instructions. See "Section 6: Maintenance & Lubrication".	31
	Read and follow all lubrication instructions. Refer to "Lubrication Points".	34
	Check initially and periodically for loose bolts and pins. Refer to "Torque Values Chart".	38

Operating Safety

DANGER

To avoid serious injury or death:

- *Do not engage power take-off while hooking-up or unhooking the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.*
- *Make sure when hooking up to a non reversing attachment that the hydraulic hoses are properly connected and that the hydraulic controls toggle in the correct direction. Running non reversing attachments in reverse can damage the equipment and cause injury.*
- *Make adjustments to the implement after it has been properly attached to a tractor and secured with solid non-concrete supports in the up position. Never work around or under equipment supported by hydraulics. Hydraulics can drop equipment instantly if controls are actuated or if hydraulic lines burst even when power to hydraulics is shut off.*
- *Do not use a power take-off adapter. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.*

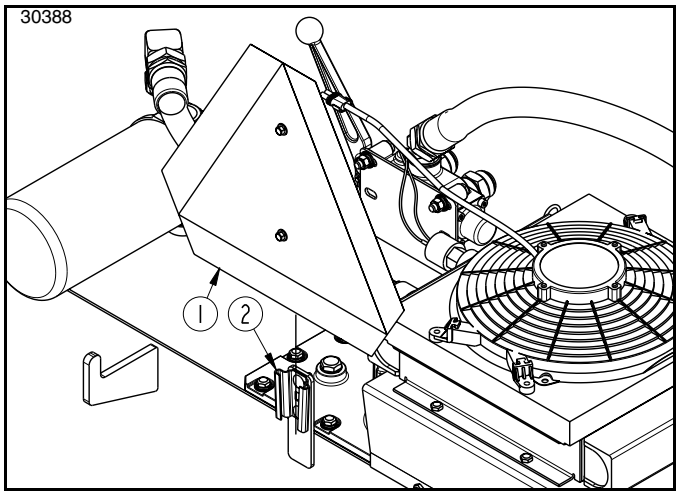
WARNING

To avoid serious injury or death:

- *Allow only persons to operate this implement who have fully read and comprehended this manual, who have been properly trained in the safe operation of this implement, and who are age 16 or older. Serious injury or death can result from the inability to read, understand, and follow instructions provided in this manual.*
- *Never carry riders on the implement or tractor. Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, fall off and be run over, etc.*
- *Do not operate Hydraulic Reservoir System without first hooking the unit to a tractor. The hydraulic reservoir can become unstable if not properly secured to a tractor during operation.*
- *Never make contact with underground utilities such as electrical power lines, gas lines, phone lines, etc. They can cause serious injury or death from electrocution, explosion, or fire. If in doubt, call 811 (USA) before digging so that they can mark the location of underground services in the area. For contact information, see Dig Safe in the "Important Safety Information" starting on page 1.*
- *Make sure hydraulic hoses are properly routed without twists to prevent becoming stretched, pinched, or kinked. A damaged hydraulic hose can burst and leak hydraulic fluid.*
- *Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.*
- *Do not use the Hydraulic Reservoir System for a purpose for which it was not designed.*
- *Do not use equipment to lift objects; to pull objects such as fence posts, stumps, etc; or to push objects. The unit is not designed or guarded for these uses.*
- *Do not use implement to tow other equipment. Doing so can result in loss of control and damage the equipment.*
- *Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before allowing anyone including the operator to hook-up and unhook implement.*

IMPORTANT: Ball valve (#3) as shown in Figure 6-1 on page 32 must be open during pump operation or damage will occur.

IMPORTANT: Use this Hydraulic Reservoir System only with equipment that matches its rated hydraulic flow and pressure. Damage may occur to the unit and to the equipment it is powering.



Slow Moving Vehicle Sign
Figure 5-1

Transporting

CAUTION

To avoid minor or moderate injury:

- *When traveling on public roadways, travel in such a way that faster moving vehicles may pass safely. Use accessory lights, clean reflectors, and a slow moving vehicle sign that is visible from the back to warn operators in other vehicles of your presence. Always comply with all federal, state, and local laws.*
- *Avoid catching hydraulic hoses on brush, posts, tree limbs, and other protrusions that could damage and/or break them.*

Refer to Figure 5-1:

1. If the tractor's slow moving vehicle sign (SMV) (#1) is not visible to operators in approaching vehicles from the back, then relocate the sign from the back of the tractor to mounting bracket (#2) on the rear of the reservoir.

   If needed, a slow moving vehicle sign can be purchased from your nearest Land Pride dealer. Refer to **"Slow Moving Vehicle Sign (Accessory)"** on page 26
2. Always raise park stands and insert wire retaining pins before traveling.
3. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely. Use lights to make yourself more visible on roadways.
4. Select a safe ground speed when transporting from one area to another. Maximum transport sped for the reservoir is 20 mph (32 km/h). DO NOT EXCEED,
5. Reduce tractor ground speed when turning and leave enough clearance so the equipment does not contact obstacles such as buildings, trees, or fences.
6. Shift to a lower gear when traveling over rough or hilly terrain.

General Operating Instructions

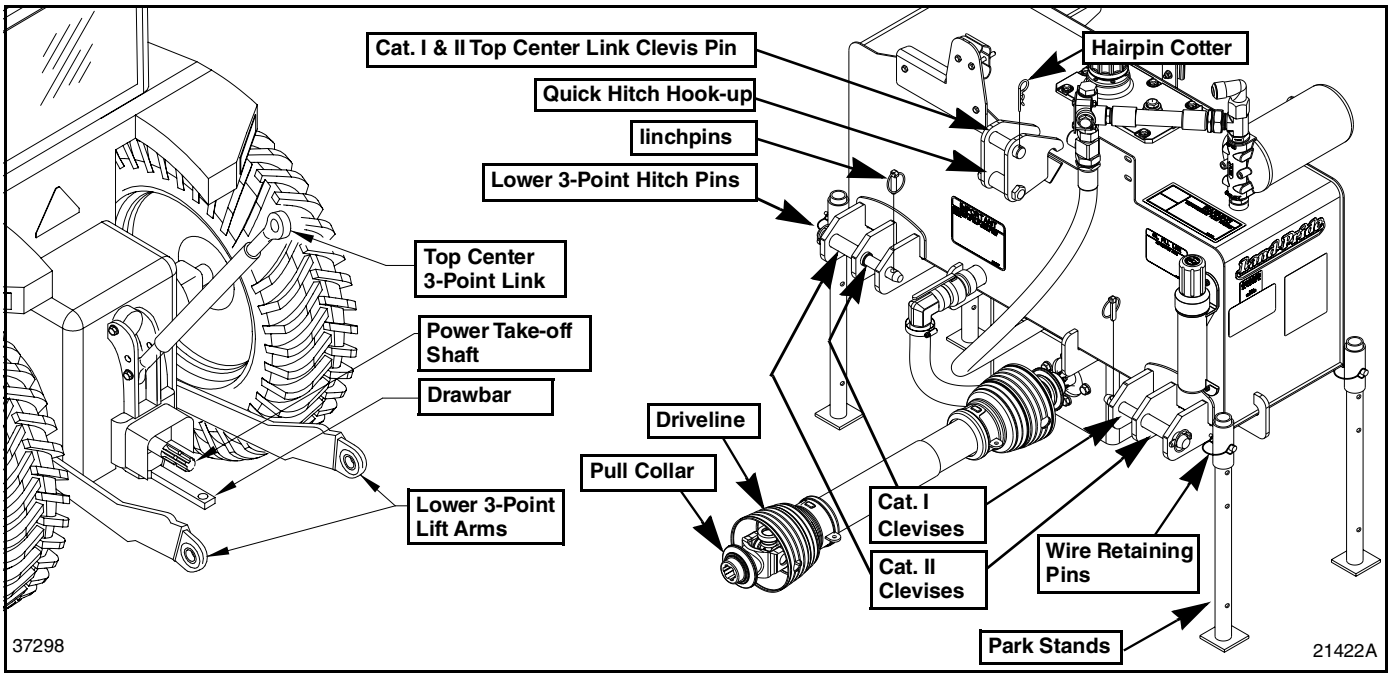
This system is specifically intended to provide hydraulic operating capability to hydraulic driven attachments on the tractors that do not having enough hydraulic system capacity to drive those attachments.

By now you should have thoroughly read your Operator's Manual, properly installed your Hydraulic Reservoir System onto your tractor, fully opened the ball valve, and performed your pre-start and operational running checklist. Make sure you have reviewed safety and operating instructions for the Hydraulic Reservoir and front loader attachment you are about to operate, you have made appropriate hydraulic connections to the mating attachment, fully opened the ball valve, and the attachment you will be operating is in a position to run in static mode without causing damage.

Once you are ready to begin, you will want to increase the tractors engine rpm to about mid range. With the tractor in neutral gear and the park brake in the on position, engage the 540 rpm rear power take-off while carefully observing for hydraulic leaks, safety hazards, or obstructions to normal attachment operation. If any such malfunctions do occur, disengage the power take-off, turn off the tractor, and take appropriate corrective action. If no malfunctions are observed, engage power take-off and increase engine rpm to normal power take-off speed and again observe for proper operating function. If everything is operating properly, you may commence with normal operation of your attachment. Disengage the power take-off immediately if at any time a malfunction of the attachment is observed.

The HRS3025 with 3000 psi at 25 gpm and 35 gallon self contained hydraulic reservoir is designed to provide plenty of clean hydraulic flow for just about any attachment in these operating ranges. With a little practice, you will very soon learn how user friendly Land Pride's Hydraulic Reservoir System is to operate.

See Features and Benefits section for additional information.



Unhook Hydraulic Reservoir
Figure 6-2

Unhook Hydraulic Reservoir

Refer to Figure 6-2:

1. See **"Long Term Storage"** on page 33 if unit is to be stored for a long time.
2. Park tractor on a level hard surface and with the 3-point lift lever, raise the reservoir high enough to adjust the park stands down.
3. Without changing the 3-point lift height, shut tractor down using **"Tractor Shutdown Procedure"**.
4. Adjust park stands to the minimum height available that will allow the tractor to unhook from the unit. For detailed instructions, see **"Park Stands"** on page 27.
5. Starting the tractor and lower the 3-point arms until the park stands are supporting the unit.

NOTE: Leave the 23'-9" long hydraulic hoses attached to the reservoir. Disconnect the hoses from the front loader attachment only.

6. Unhook hydraulic hoses from the attachment on the tractor's front loader and coil the hoses onto the storage hooks located at the back of the reservoir.
7. At the tractor, pull back on the driveline pull collar and hold while pulling the driveline from the tractor.
8. Collapse the driveline by pushing it towards the reservoir.
9. Support the collapsed driveline off the ground to keep dirt away from the pull collars and bearings.
10. Remove the hairpin cotter and top center hitch pin. If provided, place center 3-point link in the tractor's holding clip.
11. Remove linchpins and lower 3-point hitch pins from the lower 3-point lift arms.
12. Restart tractor and drive forward several feet while making sure the lower 3-point arms do not catch on the reservoir.
13. Place gear selector in park or set park brake, shut tractor engine off, remove switch key, and dismount tractor.
14. Reinstall hitch pins, linchpins, and hair pin cotters in the Hydraulic Reservoir hitch for safe keeping.

Refer to Figure 5-1 on page 29:

1. Remove slow moving vehicle sign (#1) from mounting bracket (#2).
2. Reinsert slow moving vehicle sign in mounting bracket on the back of the tractor.

Proper servicing and adjustments are key to the long life of any implement. With careful inspection and routine maintenance, you can avoid costly downtime and repair.

Check all bolts and pins after using the cutter for several hours and on a regular basis thereafter to ensure they are tight and secured. Tighten all loose hardware as indicated in the **"Torque Values Chart"** on page 38. Replace worn, damaged, or illegible safety labels by obtaining new labels from your Land Pride dealer.

Periodically, disengage power take-off, stop tractor, place gear selector in park or set park brake, turn off tractor, remove switch key and wait for blades to stop rotating before dismounting tractor. Dismount tractor and check for objects wrapped around blade spindles. Block deck up before removing objects.

DANGER

To avoid serious injury or death:

Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to hydraulics is off.

WARNING

To avoid serious injury or death:

- *Always follow "Tractor Shutdown Procedure" provided in this manual before dismounting the tractor.*
- *Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.*
- *Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.*

Hydraulic System

Refer to Figure 6-1 on page 32:

One of the most important things you can do to prevent hydraulic system problems is to ensure your hydraulic reservoir remains free of dirt and other contaminations.

Use a clean cloth to wipe hose ends clean before attaching them to your tractor. Replace tractor hydraulic filter element at the prescribed intervals. These simple maintenances will go a long way to prevent occurrence of control valve and hydraulic cylinder problems.

Check for signs of damaged or worn hydraulic hoses, fittings and cylinders before each use of the cutter. Replace damaged components as needed. Order only genuine Great Plains parts from your local Great Plains dealer.

WARNING

To avoid serious injury or death:

Hydraulic fluid under high pressure can penetrate the skin and/or eyes causing a serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Use a piece of cardboard or wood rather than hands when searching for leaks. A doctor familiar with this type of injury must treat the injury within a few hours or gangrene may result. DO NOT DELAY.

IMPORTANT: Any high quality mineral based hydraulic fluid such as Mobil Fluid 424 with a viscosity rating of 10W-30 is acceptable. See www.mobil.com for alternate fluids.

Dispose of used oil and filter in a manner that is compatible with the environment. Do not throw used oil in the trash, pour it on the ground, or down a drain.

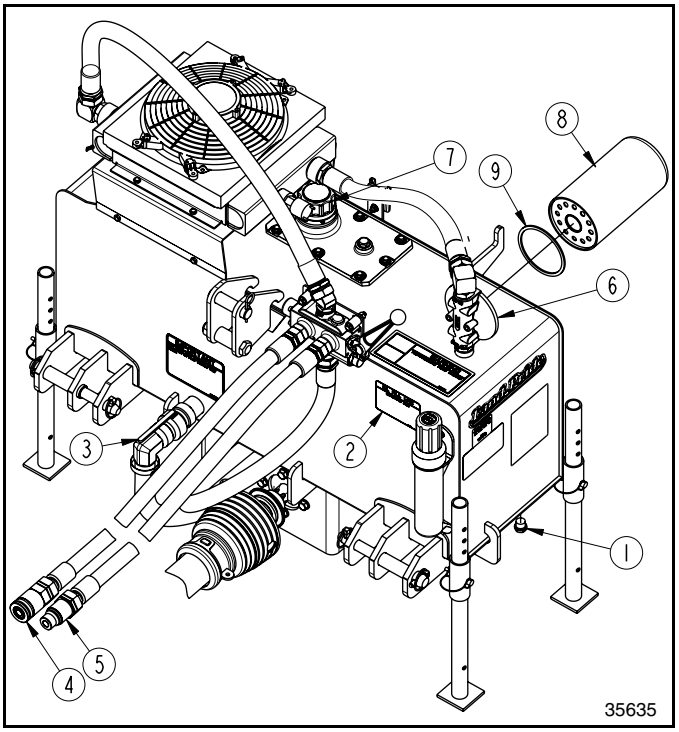
IMPORTANT: Always disengage power take-off and shut tractor engine off before checking fluid level.

Check Fluid Level

Refer to Figure 6-1 on page 32:

Check fluid level every 8 hours or when a leak or spill has occurred.

1. Level Hydraulic Reservoir.
2. Clean dirt from around fill cap (#7) and remove twist lock filler cap. Fluid level is OK if oil shows on the dipstick. Also decal (#2) Indicates oil level when full.
3. Add Mobil Fluid 424 to the reservoir until oil shows on filler cap dipstick. See Important Note above.



Hydraulic Fluid and Filter Maintenance
Figure 6-1

Replace Filter Element

Refer to Figure 6-1:

Replace filter element (#8) after every 75 hours of operating or if contamination occurs.

1. Place a drip pan under filter head (#6) to catch spilled hydraulic fluid.
2. Unscrew filter element (#8) and drain fluid from filter element. Dispose in a manner compatible with the environment.
3. Clean filter head (#6).
4. Replace oil filter with a conventional 10 micron filter (#8) and O-ring (#9). Coat O-ring with clean hydraulic fluid. Do not use grease.
5. Hand tighten oil filter (#8) until O-ring seats. Finish tightening by turning oil filter another 1/2 of a turn.

Change Hydraulic Fluid

Refer to Figure 6-1:

Change hydraulic fluid every 150 operating hours or after 2 years of service, whichever comes first.

1. Place a container capable of holding 35 gallons under drain plug (#1).
2. Remove drain plug and fill cap (#7).
3. Allow hydraulic fluid to completely drain from unit and then replace drain plug. Tighten plug.
4. Fill reservoir with 35 gallons of Mobil Fluid 424. See Important Note on left side of this page.
5. When full, replace fill cap (#7) and tighten.

Hydraulic Pump

Refer to Figure 6-1:

IMPORTANT: Ball valve (#3) must be open as shown during pump operation or damage will occur.

1. Always use a clean cloth to wipe couplers (#4 & #5) and attachment couplers (not shown) clean before attaching hydraulic hoses to the attachment.
2. Make sure lever on ball valve (#3) is **OPEN** (handle turned in-line with valve as shown).
3. Operate hydraulic pump at full 540 rpm and check oil filter, hose connections, and hoses for leaks. Never check high pressure leaks with hands or other body parts. Use cardboard or wood to check leaks.
4. If oil filter has a slight leak, shutdown system and then tighten oil filter (#8) an additional 1/4 turn.
5. Make necessary repairs before putting Hydraulic Reservoir System into operation.

Long Term Storage

Clean, inspect, service, and make necessary repairs to the hydraulic reservoir when storing it for long periods and at the end of the season. This will help ensure the unit is ready for field use the next time you hook-up to it.

⚠ CAUTION

To avoid minor or moderate injury:

Park Hydraulic Reservoir on a solid hard level surface. Surfaces that are soft or prone to becoming soft from moisture or from sun heat can allow the unit to tip over causing damage to the unit and injury.

Touch-Up Paint

Part No.	Part Description
821-070C	Gloss black enamel spray can
821-070CTU	Gloss black enamel bottle with brush
821-070CQT	Gloss black enamel quart
821-070CGL	Gloss black enamel gallon

1. Park unit on a solid level surface. Make sure the surface will remain solid and not become soft from moisture or heat. Asphalt has a tendency to become soft from being heated by the sun.
2. Make sure park stands are secured with wiring retaining pins before unhooking.
3. Clean off any dirt and grease that may have accumulated on the reservoir. Wash surface thoroughly with a garden hose.
4. Inspect for loose, damaged, or worn parts and adjust or replace as needed.
5. Lubricate as noted in **"Lubrication Points"** starting on page 34.
6. Replace all damaged or missing decals.
7. Store Hydraulic Reservoir System on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer life.
8. Follow all unhooking instructions on this page when disconnecting tractor from the Hydraulic Reservoir System.
9. Repaint parts where paint is worn or scratched to prevent rust.

Lubrication Points

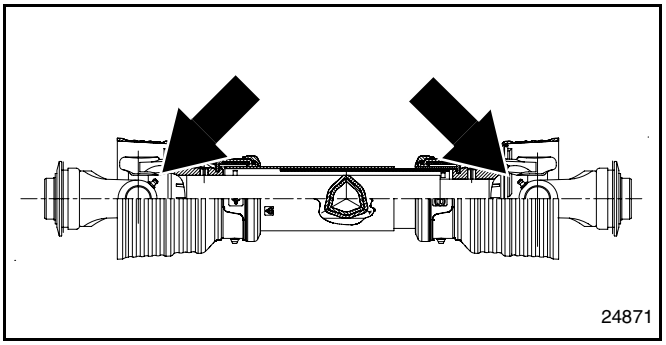
Lubrication Legend

Multi-purpose spray lube

Multi-purpose grease lube

Multi-purpose oil lube

50 Hrs — Intervals in hours at which lubrication is required

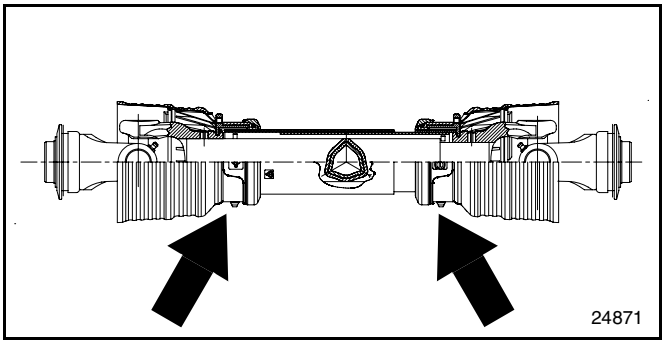


25 Hours

Driveline Shaft U-Joints

Type of lubrication: Multi-purpose grease

Quantity - 4 to 8 Pumps

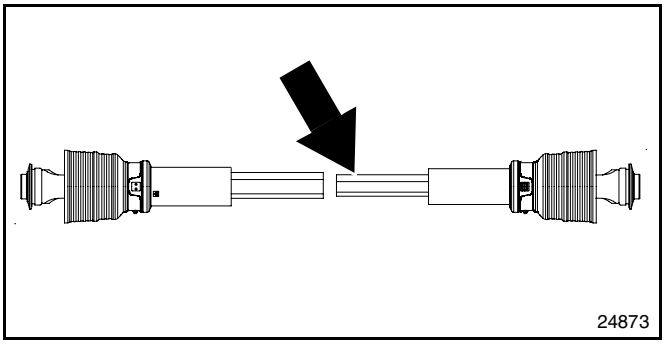


25 Hours

Inner Tube Bearings

Type of lubrication: Multi-purpose grease

Quantity - As Required

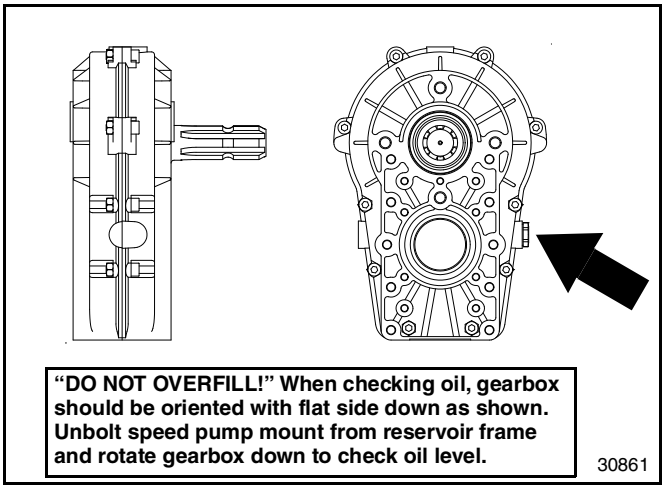


25 Hours

Driveline Profiles

Type of lubrication: Multi-purpose grease

Quantity - Clean & coat inner profile tube of driveline with a light film of grease and then reassemble.



As Needed

Gearbox

NOTE: Check oil if gearbox is leaking. Do not overfill! Gearbox should be oriented as shown when checking oil. Always check oil level when gearbox is cold.

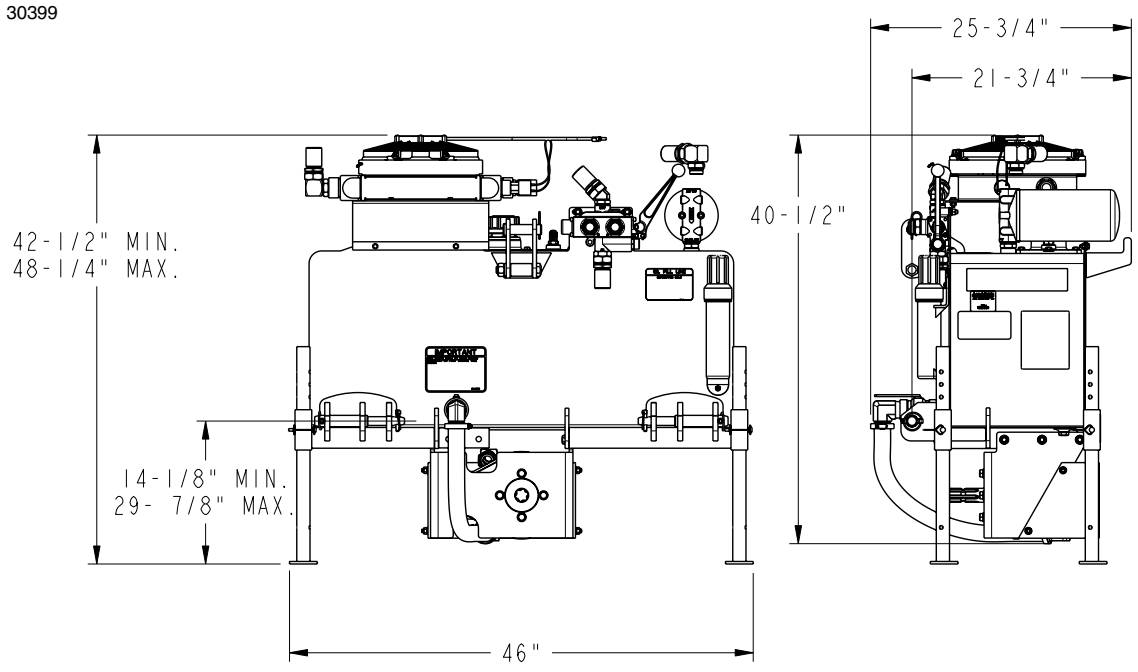
If oil is below bottom of site gauge/plug hole (See arrow), remove site gauge/oil plug and add recommended gear lube through plug hole until oil flows out of plug hole. Reinstall and tighten site/gauge/oil plug.

Type of lubrication: 80-90W EP gear lube

Quantity = Fill until oil begins to flow out of plug hole.

HRS3025

Specifications & Capacities		
Minimum tractor horsepower		52 hp
Maximum hydraulic horsepower output		43 hp
Pump capacity		Approx. 25 gpm @ 540 rpm at 3000 PSI
Power take-off input speed		540 rpm
Hydraulic fluid type		Mobil Fluid 424 (See www.mobil.com for alternate fluids)
Reservoir capacity		35 Gallons
Filter type		LE 10 Micron filter
Oil level check		Oil fill cap with dipstick
Overload protection		Hydraulic relief valve
Hitch		3-Point Cat. I & II with clevis style lower hitch, Quick hitch adaptable
Driveline		ASAE Category 2
Pressure & return hose lengths		24 Feet each
Case drain port		3/4"-16 UNF
		Optional & Accessory Equipment
Flow control	**Option** **Option** **Option** **Option**	No Valve No Cooler (Pressure relief valve provided for protection) No Valve With Cooler (Pressure relief valve provided for protection) Manual Operated Valve With Oil Cooler (Pressure relief is built into the valve) Solenoid Operated Valve With Oil Cooler (Pressure relief is built into the valve)
Small flat face couplers	**Option**	1/2" body size (Includes adapter for attaching to hoses with 1 5/16" threads)
Large flat face couplers	**Option**	3/4" body size (Attach to hoses with 1 5/16" threads)
Case drain kit	**Option**	Complete with 3/4" MORB x 9/16" MJIC elbow, 23'-9" of 3/8" hydraulic hose, and one 3/8" body flat face low spill quick coupler male tip



HRS3025

Features	Benefits
540 rpm Cat I & II three-point mounting	Adapted for service on a wide range of tractors.
Low horsepower requirements	52 Horsepower requirement for approximately 25 gpm @ 3000 PSI and 540 rpm
35 Gallon self contained reservoir with 10 micron filter	Provides more than ample amounts of clean and cool hydraulic fluid for even the most demanding applications.
Steel construction on Hydraulic Tank	Provides for long service life in harsh environments.
Standard reversing solenoid	Allows powered attachments, motors, and cylinders to be reversed for expanded range of performance capabilities.
Standard pressure relief valve	Protects hydraulic system from overloads or unanticipated stalls.
Standard case drain port	Enables usage of attachments requiring case drain return lines.
Standard compliment of hydraulic fittings & two 23'-9" of hydraulic hoses supplied	Enables ready attachment and adaptation to a wide range of tractors and applications.
Multi-functional electronic remote tether control	Enables forward and reverse continuous flow or intermittent forward or reverse flow from the tractor seat or on the ground.
Driveline connected	Easy hook-up to rear power take-off tractor shaft.
Oil cooler	For oil cooling when necessary. Included with hand valve & solenoid valve options. Optional with no valve option.
Integral storage stands	Provides for easy installation and removal from the tractor and clean and convenient long term storage.

Troubleshooting Chart

Problem	Cause	Solution
Hydraulic fluid is operating at too high a temperature.	One or more hydraulic hoses are twisted, kinked, or pinched.	Locate twist, kink, or pinch points and remove.
	Reservoir does not have an oil cooler.	Add a Land Pride oil cooling system to the reservoir.
	The power on/off red toggle switch at the control box is not turned on.	Turn power toggle switch on.
	Temperature switch for the oil cooler is malfunctioning.	Replace temperature switch.
	Fan motor is malfunctioning.	Replace fan motor.
Hydraulic Reservoir System does not develop enough oil pressure to power the front loader attachment.	Attachment requires more than 43 horsepower to operate.	Only use with attachments not requiring more than 43 horsepower to operate.
	Tractor power take-off is not operating at 540 rpm.	Increase power take-off speed to 540 rpm.
	One or more hydraulic hoses are twisted, kinked, or pinched.	Locate twist, kink, and/or pinch points and remove.
	Oil filter is plugged.	Replace oil filter.
	Hydraulic pump is worn.	Replace hydraulic pump.
	Attachment requires more than 3,000 PSI to operate.	Do not use attachments with an operating pressure rating exceeding 3,000 PSI.
Hydraulic hose leaks oil.	Fittings are not tight.	Tighten fittings.
	Hydraulic hose has developed a pin hole or has become damaged from being twisted, kinked, or pinched.	Replace hydraulic hose and make sure hose cannot become twisted, kinked, or pinched.
Hydraulic motor at the attachment runs backward.	Manual valve lever is activated in the wrong direction.	Activate manual valve lever in the other direction.
	Wiring at the solenoid is hooked up backwards.	Switch connections at the solenoid terminals.
	No control valve & no oil cooler: Pressure hose from the attachment is not connected to the reservoir tee located below the relief valve.	Reconnect pressure hose from the attachment to the reservoir tee located just below the pressure relief valve and return line to the oil filter elbow. Refer to page 11.
	No control valve & with oil cooler: Pressure hose from the attachment is not connected to the reservoir tee located below the relief valve.	Reconnect pressure hose from the attachment to reservoir tee located below the pressure relief valve and return line to oil cooler elbow. Refer to page 13.
Hydraulic cylinder at the attachment operates backwards.	Wiring at the solenoid is hooked up backwards.	Switch connections at the solenoid terminals.
	Manual valve lever is activated in the wrong direction.	Activate manual valve lever in the other direction.
Hydraulic cylinder operates only in one direction.	System is not set-up with a manual operated valve or a solenoid operated valve.	Add a manual operated or solenoid operated valve to the hydraulic reservoir.
Driveline is bent. Tractor power take-off shaft should be repaired or replaced if bent.	Driveline is contacting draw bar or is bottoming out.	Reposition drawbar. Replace driveline profiles and cut profiles to correct length.
Pump oil seal leaking.	Hydraulic hose between the pump and attachment has been pinched or is collapsed.	Replace lower seal of pump. Check hydraulic hose for twists, kinks, pinch points, or collapsed condition.
Tractor battery discharges electricity when switch key is turned off.	Toggle Switches on the control box are not in neutral position (off).	Turn all toggle switches at the control box to neutral position (off).
	Electrical wiring harness has a short.	Repair wiring harness or replace.

Torque Values Chart for Common Bolt Sizes

Bolt Size (inches)	Bolt Head Identification Grade 2		Grade 5		Grade 8	
in-tpi [1]	N · m [2]	ft-lb [3]	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1-1/8" - 12	540	395	1210	890	1960	1440
1-1/4" - 7	680	500	1520	1120	2460	1820
1-1/4" - 12	750	555	1680	1240	2730	2010
1-3/8" - 6	890	655	1990	1470	3230	2380
1-3/8" - 12	1010	745	2270	1670	3680	2710
1-1/2" - 6	1180	870	2640	1950	4290	3160
1-1/2" - 12	1330	980	2970	2190	4820	3560

Bolt Size (Metric)	Bolt Head Identification 5.8 Class 5.8		8.8 Class 8.8		10.9 Class 10.9	
mm x pitch [4]	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

[1] in-tpi = nominal thread diameter in inches-threads per inch

[2] N· m = newton-meters

[3] ft-lb= foot pounds

[4] mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torque values. Unless otherwise specified use torque values listed above.
All locknuts or lubricated fasteners: Use 75% of torque value. (i.e. 1/2"-13 GR5 = 76 ft-lb; 75% of 76 or .75 x 76 = 57 ft-lb)

Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit and Driveline: One year Parts and Labor.

Hydraulic Cylinder: One year Parts and Labor.

Hydraulic Pump: Two years Parts and Labor. **Solenoid**

Controlled Valves: One year Parts and Labor.

This Warranty is limited to the repair or replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Land Pride dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of purchase by the end user.

IMPORTANT: The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

Model Number _____ **Serial Number** _____

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