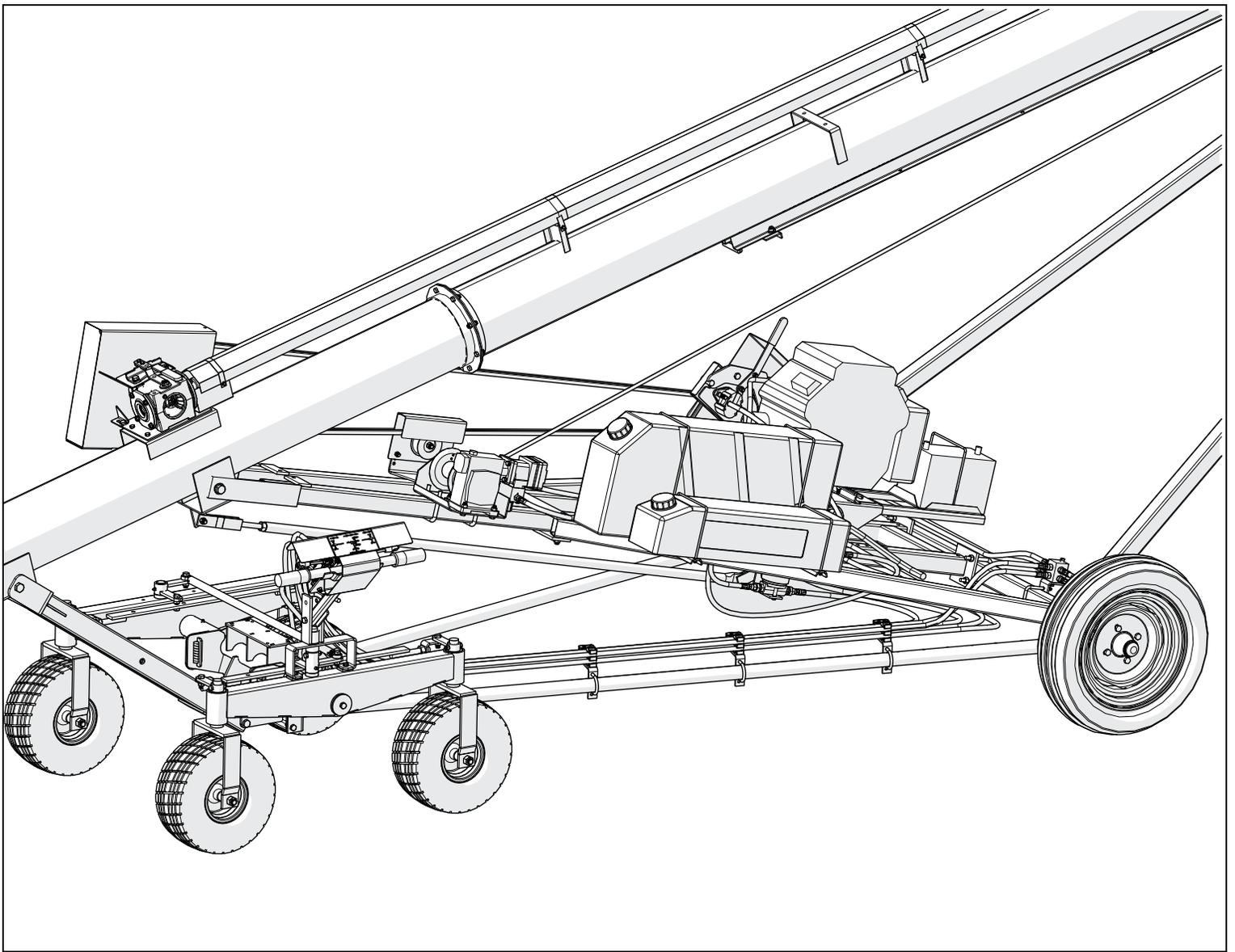




# HD SELF-PROPELLED AUGER KIT

## WESTFIELD STX SERIES

### ASSEMBLY & OPERATION MANUAL



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 30974 R1

Revised: May/17





## New in this Manual

The following changes have been made in this release of the manual:

- Section 3.1 “Installing the Hydraulic Pump Bracket” (page 17) has been updated to provide clearer installation detail.
- Section 3.5.1 “Manual Steering” (page 26) has been added.
- Section 3.5.2 “Hydraulic Steering” (page 28) has been added.
- Section 3.6 “Transport Chain Installation” (page 30) has been added to reflect the addition of the transport chain to the design.
- Section 3.7 “Hydraulic Winch Installation” (page 31) has been updated to specify a 1” clearance between the winch drum and the auger tube when the tube is fully lowered.
- Table 3.1 “Hydraulic Hose Lengths, HD SP Kit without Bin Sweep Option” (page 35) has been updated with new hose lengths for hoses I1/I2 and J1/J2.
- Table 3.2 “Hydraulic Hose Lengths - HD SP Kit with Bin Sweep” (page 37) has been updated with new hose lengths for hoses I1/I2 and J1/J2.
- Table 3.3 “Hydraulic Hose Lengths - HD SP Kit with Hyd Steering, no Bin Sweep” (page 39) has been updated with new hose lengths for hoses I1/I2 and J1/J2, and new hoses K1/K2.
- Table 3.4 “Hydraulic Hose Lengths - HD SP Kit with Hyd Steering and Bin Sweep” (page 41) has been updated with new hose lengths for hoses I1/I2 and J1/J2, and new hoses M1/M2.
- Section 3.15 “Hydraulic Oil Filter installation” (page 45) has been updated to reflect the updated filter bracket design and filter orientation.
- Section 3.16 “Offset Hitch And Hitch Mount Installation” (page 46) has been created to reflect the addition of the offset hitch and hitch mount to the design.
- Section 4.1 “Transport Procedure” (page 47) has been updated to reflect use of the offset hitch and transport chain for transport.
- Section 4.2 “Placement Procedure” (page 49) has been updated to reflect the requirement to stow the offset hitch before operation.
- Section 6.1 “Maintenance” (page 55) has been updated to recommend ISO 32 hydraulic oil instead of Type A automotive transmission oil.





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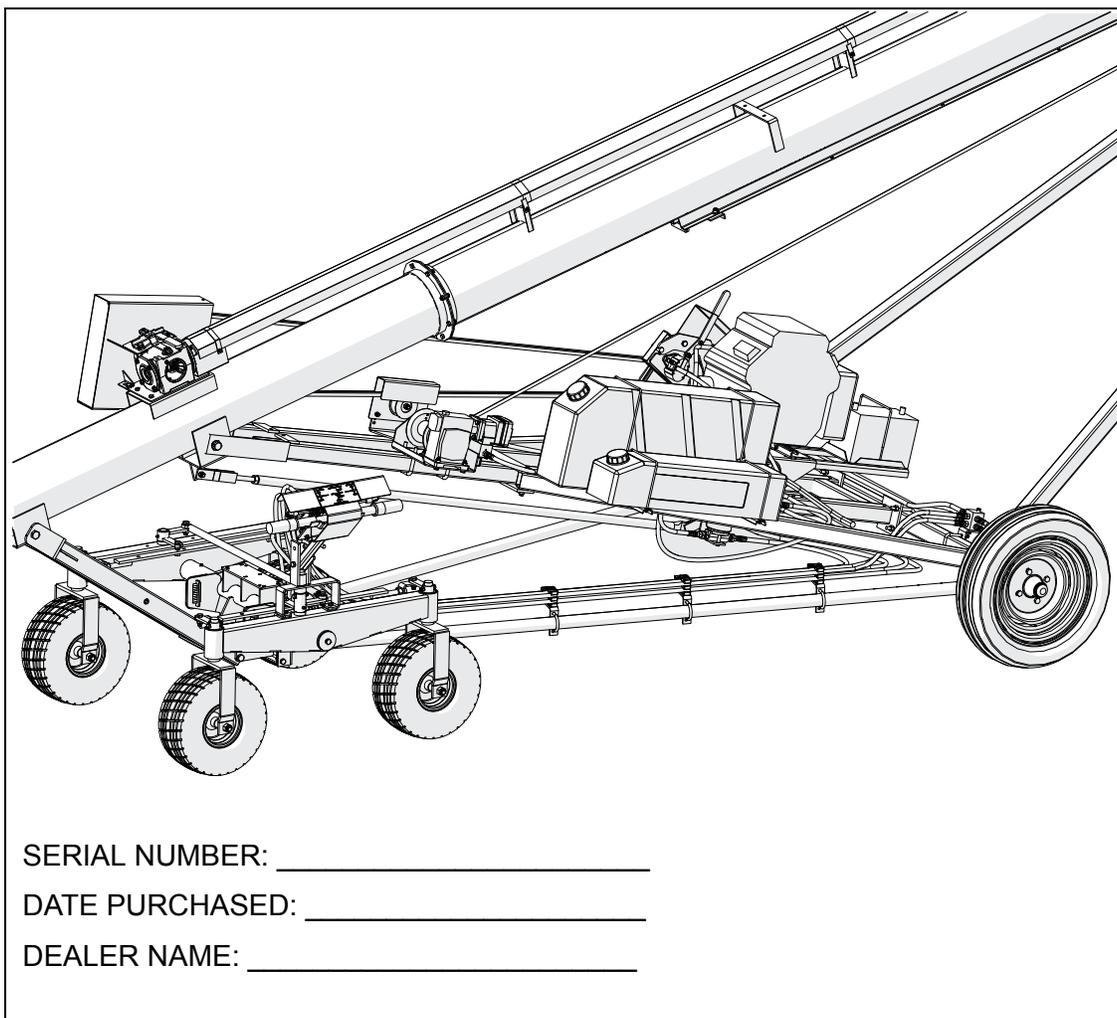
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# 1. Introduction

Congratulations. As the new owner of a Westfield HD Self-Propelled Auger Kit, you will be working with equipment especially designed to complement and improve your farming operation. Before using this auger, we recommend that you read this manual to familiarize yourself with the various features of the machine, and the necessary precautions for efficient and safe operation. In addition, we suggest that anyone using this auger be required, as a matter of record, to be familiar with all safety precautions. A sign-off form is supplied on the inside cover for your convenience and permanent records.

Keep this manual handy for frequent reference and to review with new personnel. Call your Westfield distributor or dealer if you need assistance, information, or additional copies of the manual.





# 2. Safety

## 2.1. General Safety Information



The Safety Alert symbol identifies important safety messages on the product and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety messages.

Why is SAFETY important?

- Accidents disable and kill.
- Accidents cost.
- Accidents can be avoided.

**SIGNAL WORDS:** Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.

### DANGER



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

### WARNING



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

### CAUTION



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

### NOTICE

Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

**YOU** are responsible for the **SAFE** use and maintenance of your equipment. **YOU** must ensure that you and anyone else who is going to work around the equipment understands all procedures and related **SAFETY** information contained in this manual.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program.

**Important:**

Below are general instructions that apply to all safety practices. Any instructions specific to a certain safety practice (e.g., Operational Safety), can be found in the appropriate section. Always read the complete instructional sections and not just these safety summaries before doing anything with the equipment.



- It is the equipment owner, operator, and maintenance personnel's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when assembling, operating, or maintaining the equipment. All accidents can be avoided.
- Equipment owners must give instructions and review the information initially and annually with all personnel before allowing them to operate this product. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use this equipment for its intended purposes only.
- Do not modify the equipment in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the equipment. Any unauthorized modification of the equipment voids the warranty.
- Do not allow any unauthorized person in the work area.

## 2.2. Assembly Safety

---

- Read the instructions and familiarize yourself with the subassemblies and hardware making up the equipment.
- The components are large, heavy, and can be hard to handle. Be sure to use the proper tools, stands, jacks, and hoists for the job.
- Have 2 people handle the heavy, bulky components.
- Place safety stands or large blocks under the machine or components before going beneath the component for assembly.
- Stay away from overhead power lines and obstructions when lifting the machine during assembly. Electrocution can occur without direct contact. Contact with obstructions can damage components or cause them to fail.
- Tighten all fasteners to their specified torque before using the machine.

## 2.3. Operation Safety

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- Have another person nearby who can shut down the equipment in case of accident.
- Do not operate with any of the safety guards removed.
- Keep body, hair, and clothing away from moving parts. Stay away from intake during operation.

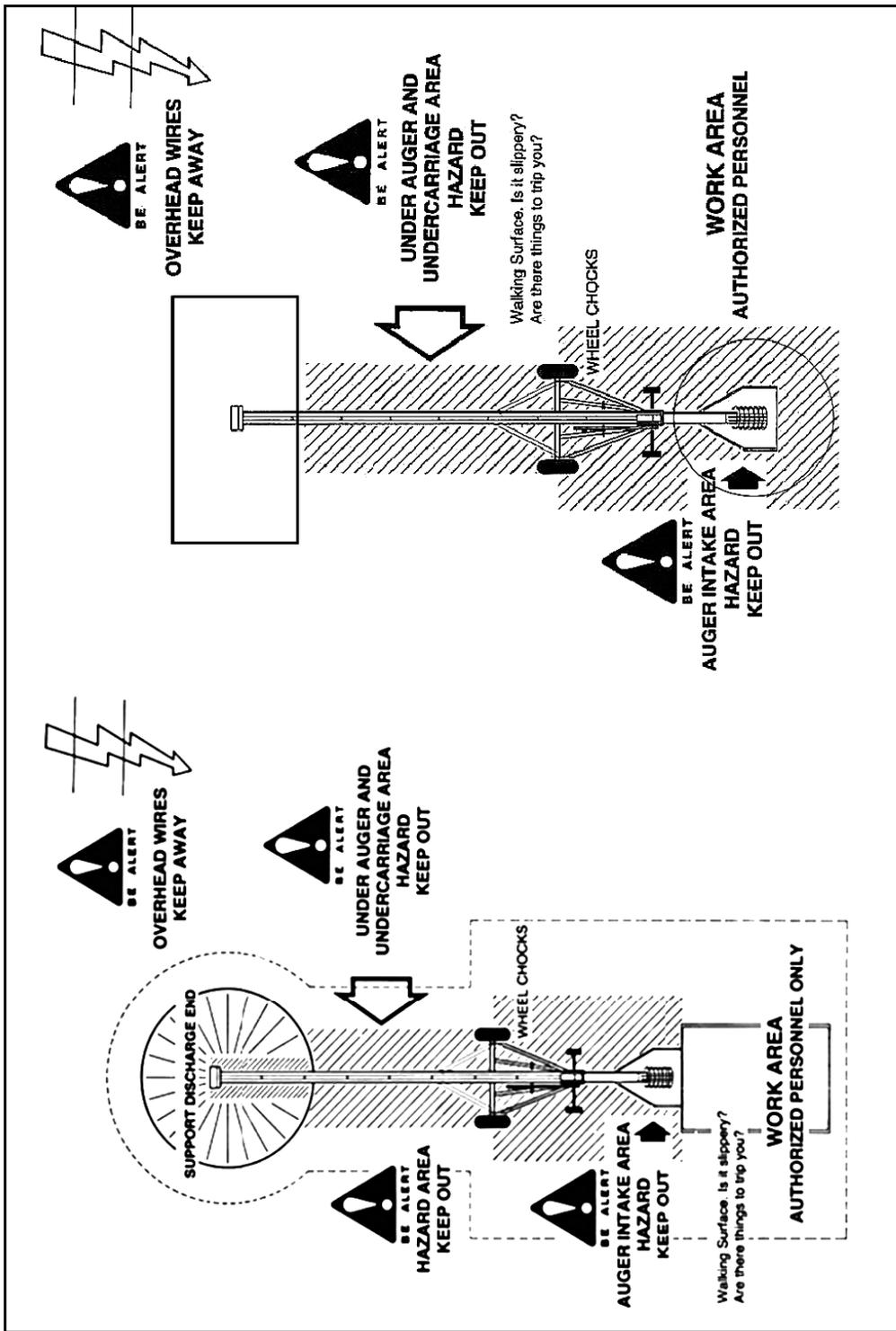


Figure 2.1 Auger Hazard Areas

## 2.4. Transport & Placement Safety

- Before raising/lowering/moving the auger, make sure the area around the auger is clear of obstructions and/or unauthorized personnel. Never allow anyone to stand on or beneath auger while transporting or placing auger.
- Wheels must be free to move when raising or lowering auger.
- Do not stand between towing vehicle and grain auger when hitching.
- Make certain that the hitch pin is in place and the safety chain is properly attached. Use a type of hitch pin that will not permit auger to separate from towing vehicle.
- Use extreme care and minimum ground speed when operating or transporting on hillsides, over rough ground, or near ditches or fences.

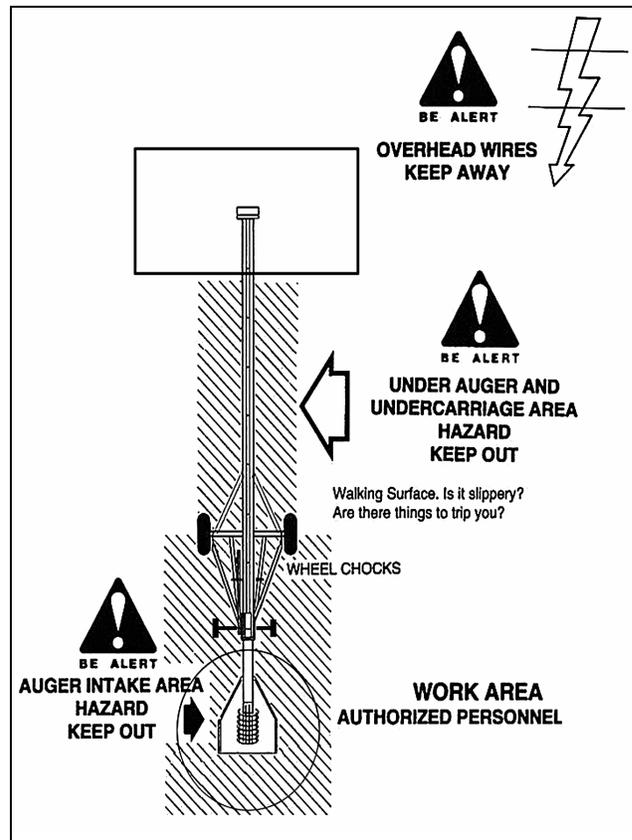


Figure 2.2 Work Safety Area

- Always attach an SMV (slow moving vehicle) sign before transporting auger, and equip the auger with the necessary lights for transportation where required by law. Always use hazard warning flashers on the tractor/towing vehicle when transporting unless prohibited by law.
- Do not allow riders on the machine, towing vehicle, tractor, or skid steer during transport.
- Stay away from overhead obstructions and power lines when operating and transporting. Electrocutation can occur without direct contact.
- Ensure that tires are inflated to the manufacturer's recommended pressure.
- Review the work safety area diagram before starting work.
- Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
- Always travel at a safe speed, never exceeding 15 mph (24 km/hr). Reduce speed on rough surfaces and use caution when turning corners or meeting traffic.
- Transport auger in full down position with slight tension on cable.
- Ensure that the wheel drive motors are disengaged before towing.

## 2.5. Storage Safety

- Store in an area away from human activity.
- Do not permit children to play on or around the stored machine.

## 2.6. Maintenance Safety

---

- Before applying pressure to a hydraulic system, make sure all components are secure, hoses are in good condition, and couplings are tightly connected and undamaged.
- Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
- Place stands or blocks under the frame before working beneath the machine.
- After maintenance is complete, replace and secure all safety guards and safety devices, and if applicable, service doors and cleanout covers.
- Remove all tools and unused parts from machine before operation.
- Remove buildup of grease, oil, and debris.
- Inspect all parts. Ensure parts are in good condition and installed properly.

Use only genuine Westfield replacement parts or equivalent. Replacement parts must meet ASABE standards or serious injury may result. Use of unauthorized parts will void the warranty. If in doubt, contact Westfield or your Westfield dealer.

## 2.7. Hydraulic Safety

---

- Always place all hydraulic controls in neutral and relieve system pressure before disconnecting or working on hydraulic system.
- Keep all components in the hydraulic system tightly secured, clean and in good condition.
- Replace any worn, cut, abraded, flattened, or crimped hoses.
- Do not attempt any makeshift repairs to the hydraulic fittings or hoses with tape, clamps, or adhesive. The hydraulic system operates under extremely high pressure; such repairs will fail suddenly and create a hazardous and unsafe condition.
- Before moving a hydraulic cylinder, ensure that the attached component is safely secured.

<b>WARNING</b>	
	<p>Hydraulic fluid can cause serious injury if it penetrates the skin. If it does, see a doctor immediately.</p> <ul style="list-style-type: none"><li>• Relieve pressure before disconnecting hydraulic line.</li><li>• Wear proper hand and eye protection and use wood or cardboard, not hands, when searching for leaks.</li></ul>

## 2.8. Engine Safety

---

- Be sure to stop engine and remove key or lock out power before inspecting or servicing engine
- Refer to engine operation manual for further details.

## 2.9. Tire Safety

---

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion that may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications. Never undersize the replacement tire.
- Do not weld to the tire rim with the tire mounted on the rim. This action may cause an explosion which could result in serious injury or death.
- Inflate tires to the manufacturer's recommended pressure.

## 2.10. Safety Decals

---

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory.

### 2.10.1. Decal Installation/Replacement

---

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.

### 2.10.2. Safety Decal Locations and Details

---

Replicas of the safety decals that are attached to the equipment and their messages are shown in the figure(s) that follow. Safe operation of the equipment requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

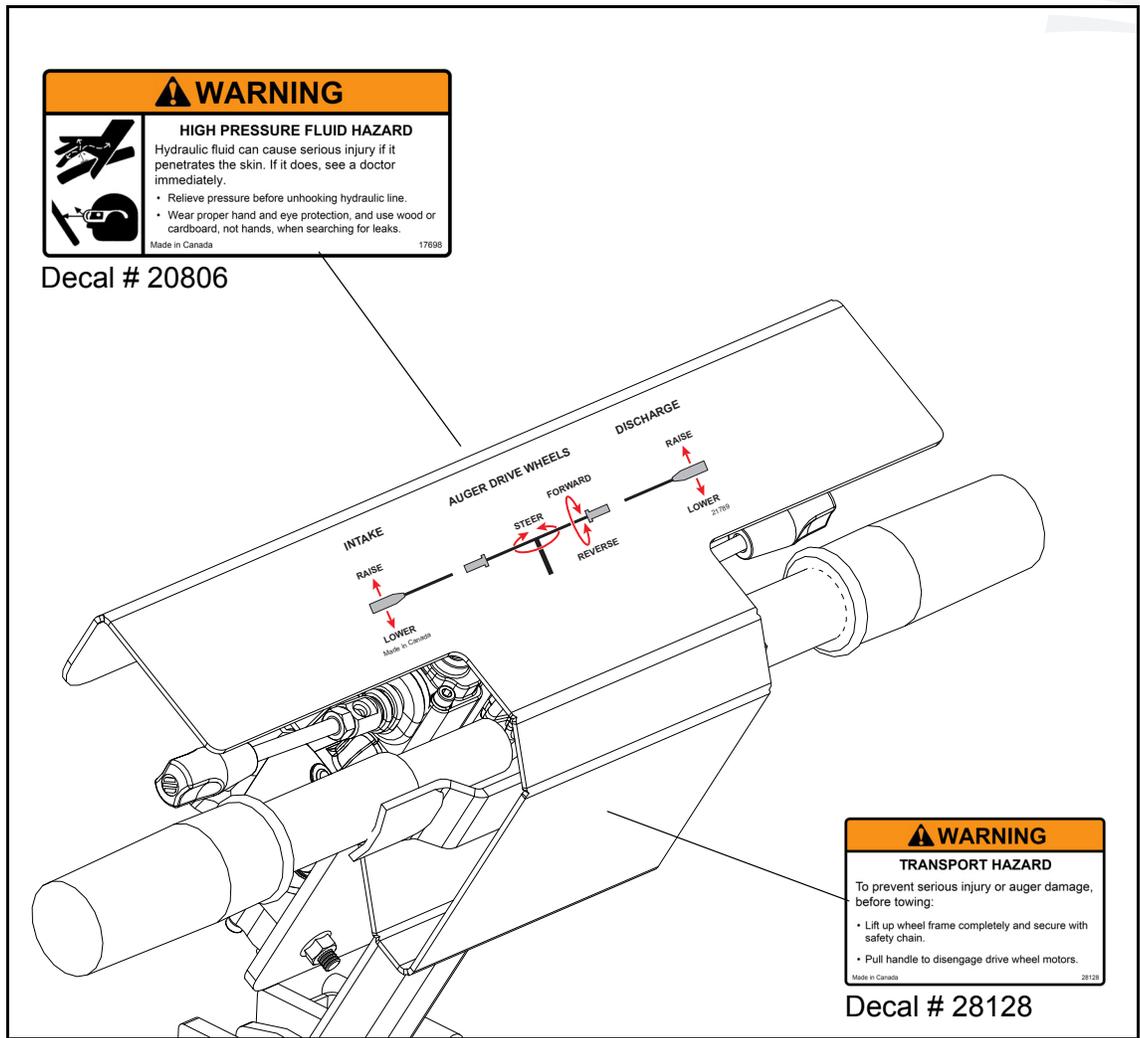


Figure 2.3 Safety Decal Locations (Manual Steering)

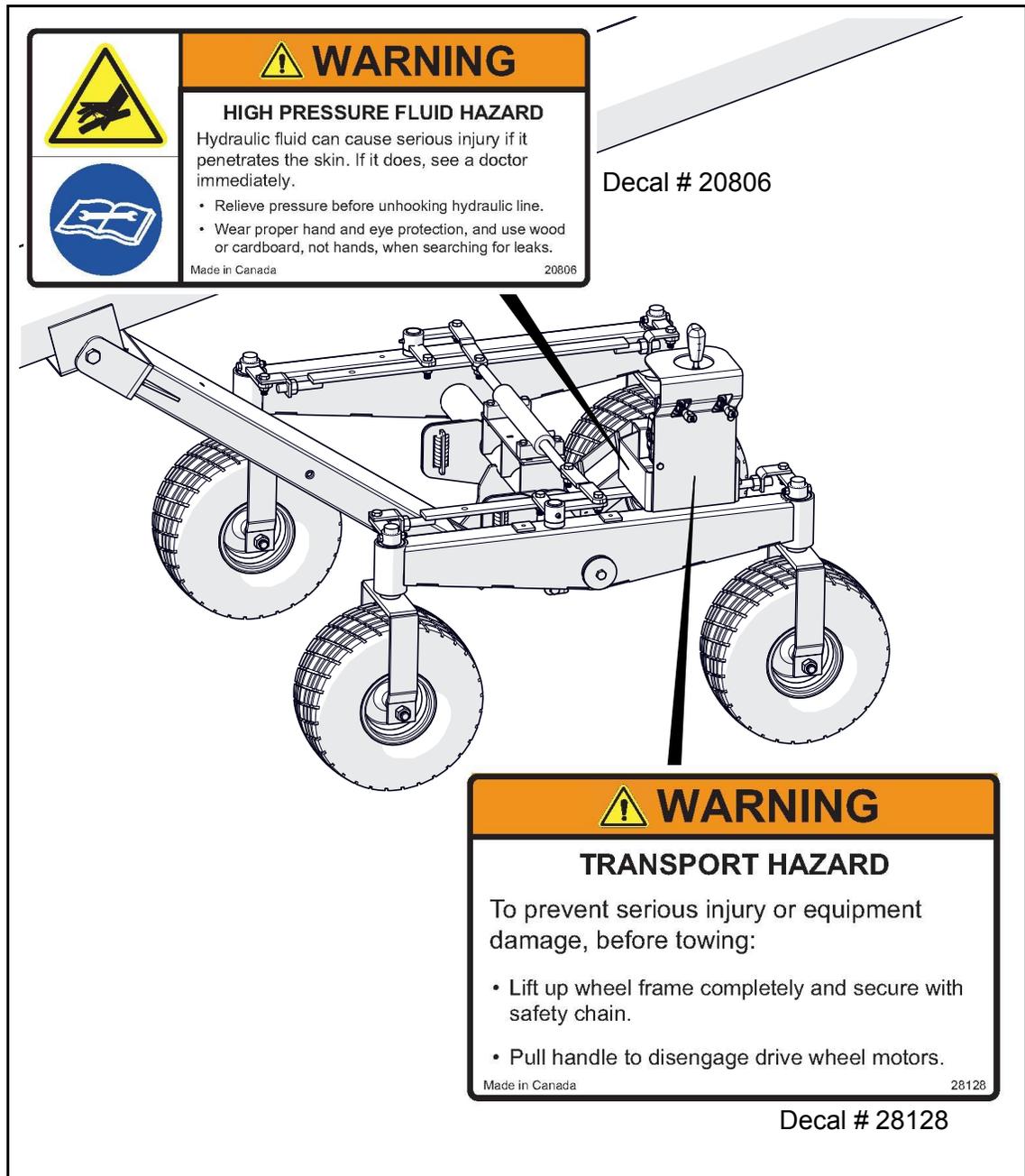


Figure 2.4 Safety Decal Locations (Hydraulic Steering)

# 3. Assembly

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

## CAUTION



Ensure the auger is in the fully lowered position and on a level surface with the wheels chocked before proceeding with any assembly.

## 3.1. Installing the Hydraulic Pump Bracket

**Important:** The gear pump placement may be changed, but the pump **MUST** run counterclockwise (when facing pump) at a maximum of 3600 rpm.

- Refer to Figure 3.1 for installation detail for typical engines.
- Refer to Figure 3.2 for installation detail for Vanguard engines.

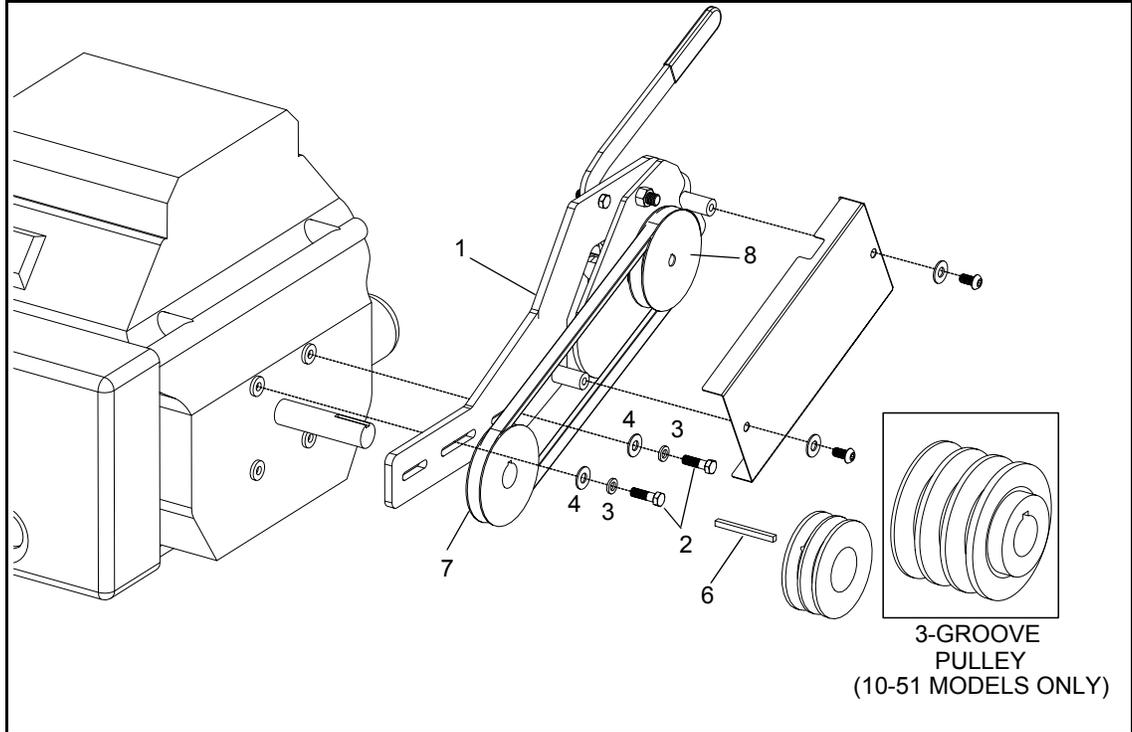
1. Mount the hydraulic pump bracket (1) to the engine plate using two 3/8" x 1-1/4" bolts (2), lock washers (3) and flat washers (4).



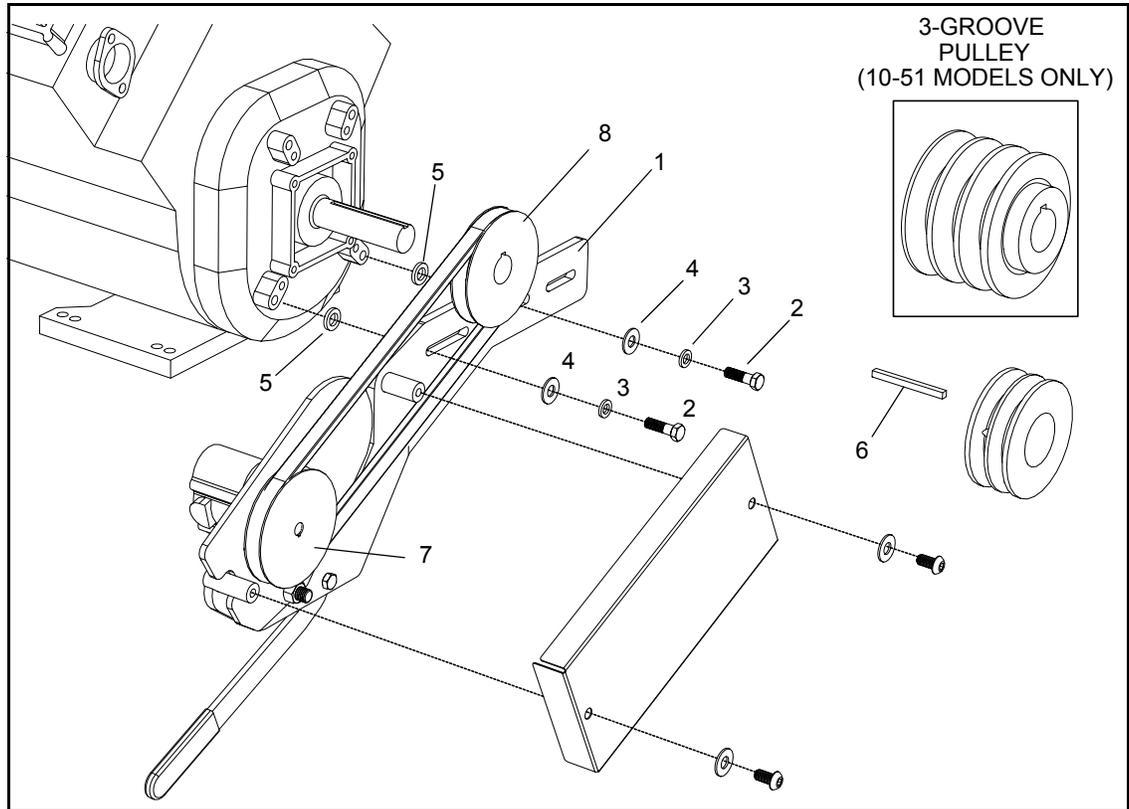
- **For Vanguard engines:** Install two 1/2" lock washers (5) to create a level mount between the engine block and pump bracket. The stop bracket shares a mounting point with the pump bracket. Use the pump bracket hardware to mount the clutch stop loosely to the pump bracket.

2. Slide the square shaft key (6) onto the engine shaft.
3. Install the engine shaft pulley (7) and 1/2" x 4-1/2" pump pulley (8) so they are in line.
4. Install the belt and slide the over-center bracket back to increase tension on the belt.
5. Tighten the two bolts holding the over-center bracket to the engine, then push down on the over-center handle to lock the belt in place. Allow belt to deflect approximately 3/4" to 1" at the center.
6. Attach the pump guard to the pump guard bracket.
  - Align the pump guard with the belt that runs between the pump and the engine.
  - Ensure that the belt does not contact the pump guard with belt engaged and disengaged.

**Figure 3.1 Gear Pump Installation Guard (Typical)**



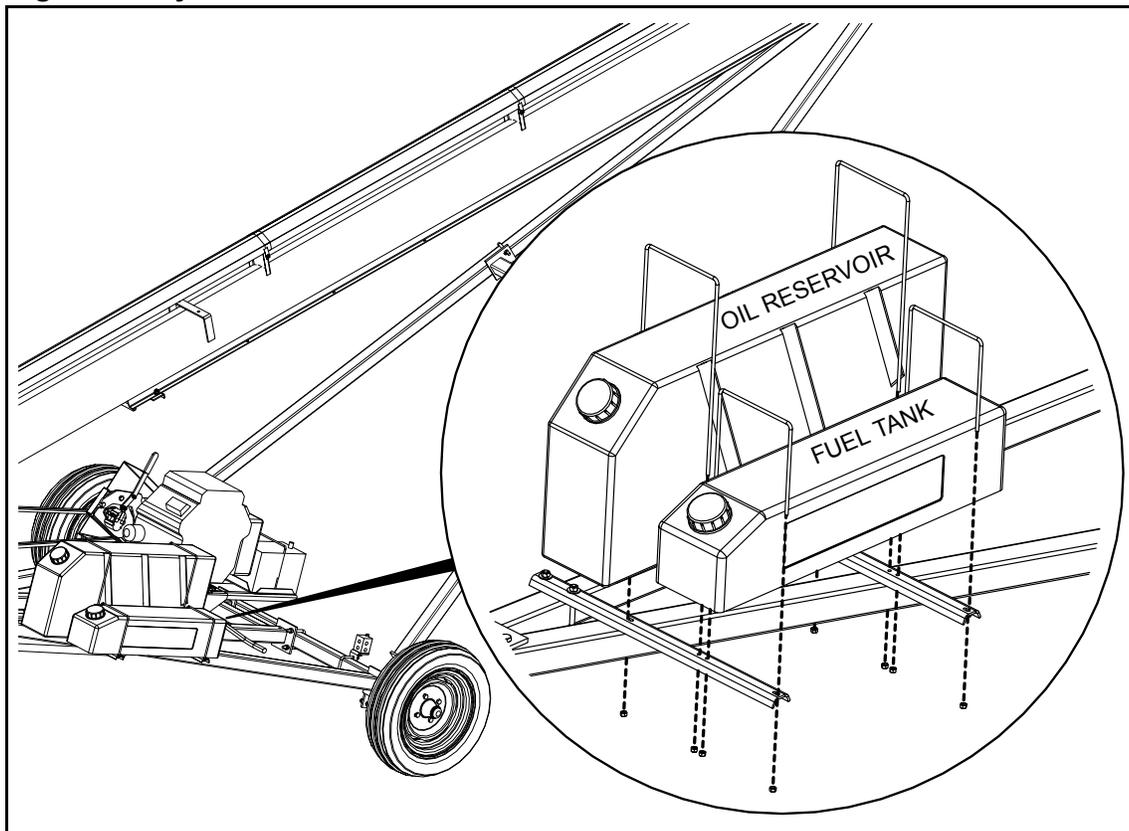
**Figure 3.2 Gear Pump Installation Guard (Vanguard Engine)**



## 3.2. Hydraulic Oil Reservoir and Fuel Tank Assembly

1. Bolt the double tank mount brackets to the frame with 3/8" x 2-5/8" u-bolts and 3/8" locknuts.
2. Install the hydraulic oil reservoir and fuel tank to the a-frame using the tank u-bolts. Secure with 1/4" flat washers and locknuts.
  - Take care not to crush the oil reservoir or fuel tank when tightening.
  - The oil reservoir must be mounted so that the oil level remains above the gear pump (use general purpose ISO 32 hydraulic oil).
  - To reduce weight at the intake end, mount the oil reservoir as close as possible to the axle of the auger.

**Figure 3.3 Hydraulic Oil Reservoir and Fuel Tank Installation**

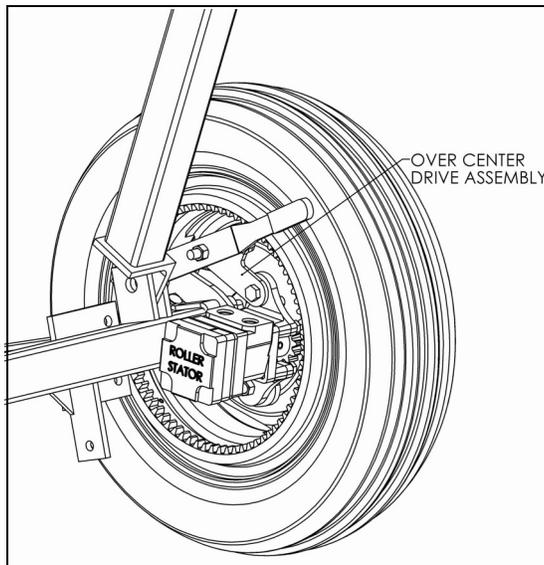


### 3.3. Over-Center Drive

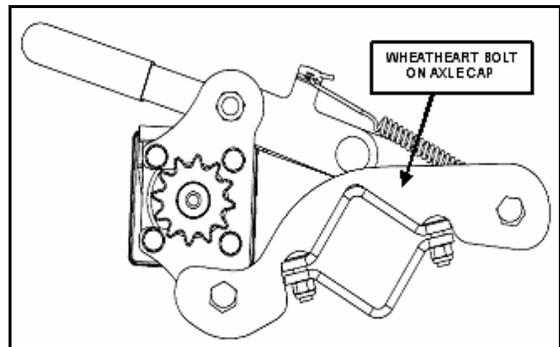
**Note:** Once the wheel is bolted to the hub, the over-center drive assembly can be installed.

1. Once the wheel is bolted to the hub, the over-center drive assembly can be installed.
2. Position the axle cap of the over-center drive assembly squarely on the axle tube as shown in Figure 3.4 and Figure 3.5

**Figure 3.4**

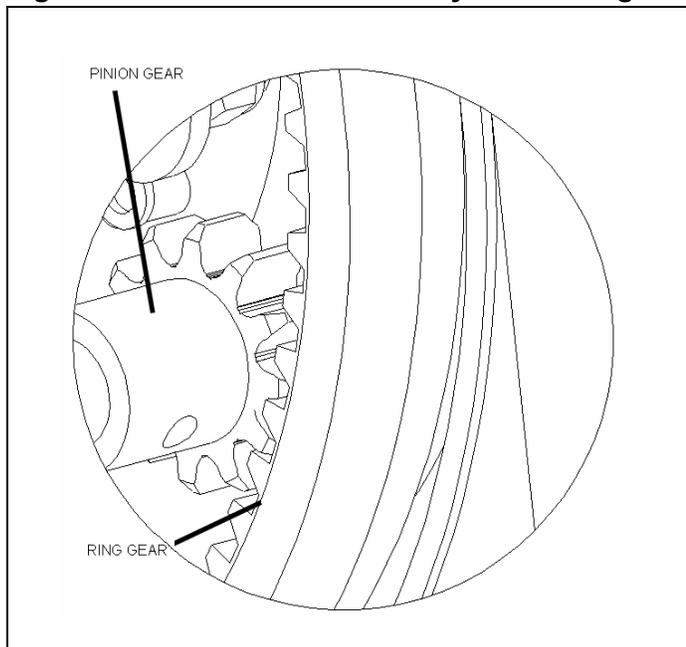


**Figure 3.5**



3. With the pinion gear flush with the ring gear (Figure 3.6), bolt the axle cap to the axle tube with four carriage bolts and lock-nuts.

**Figure 3.6 Over-Center Assembly Positioning**



## 3.4. Pinion Gear Adjustment

For gear depth alignment, refer to Figure 3.7.

### NOTICE

Failure to ensure proper gear meshing will result in gear damage.

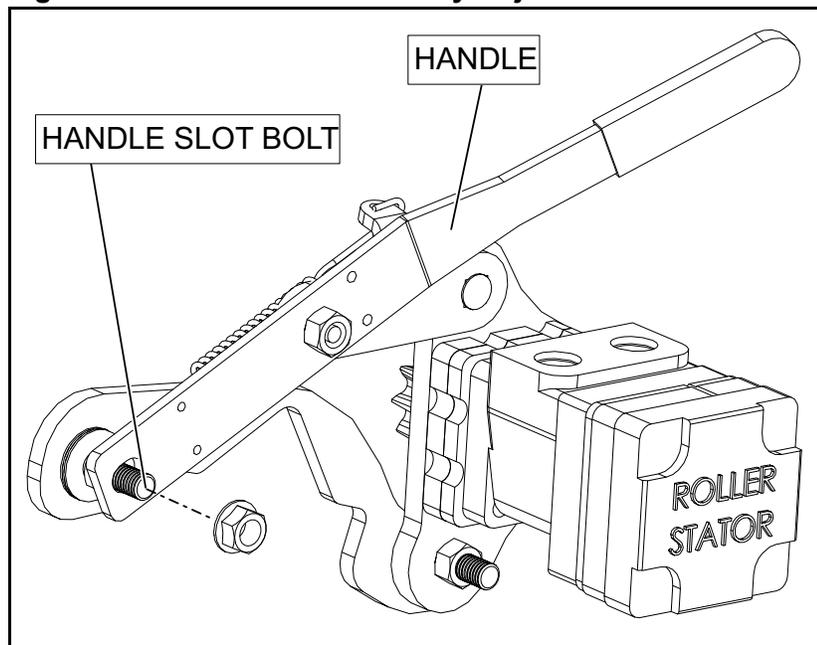
The pinion gear should mesh with the ring gear to provide maximum tooth contact (Figure 3.6).

If the pinion gear does not mesh fully with the ring gear, adjust the handle slot bolt (which bolts to the drive mount clamp) so full meshing of pinion gear is achieved when handle is in over-center position (Figure 3.7).

**Gear teeth binding:** If the handle will not 'lock' into over-center position, loosen the slot bolt nuts and slide the handle away from the tire.

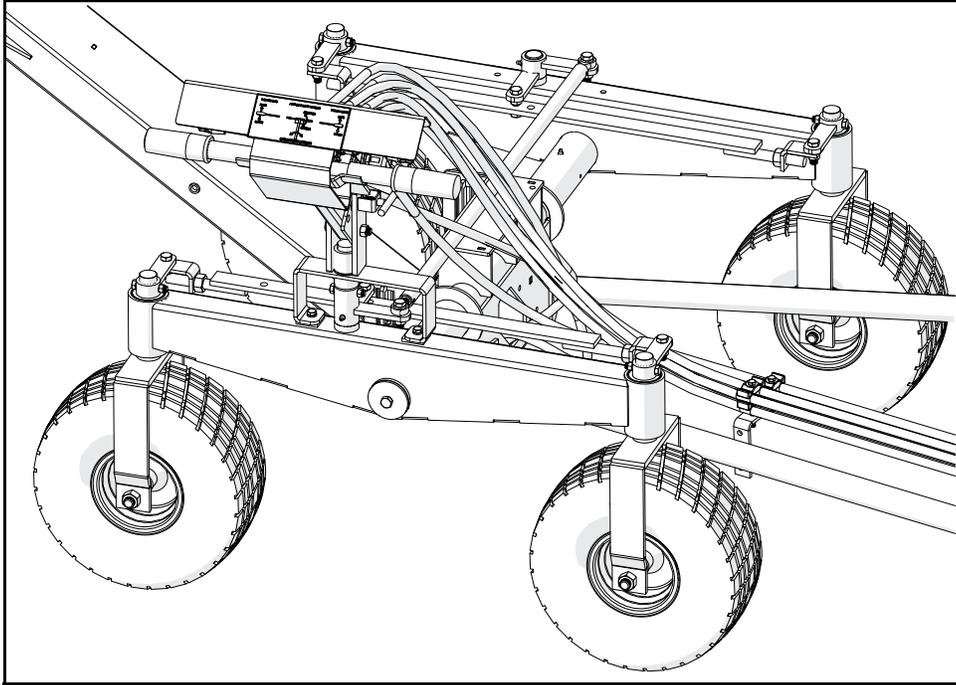
**Insufficient Meshing:** If the pinion gear will barely mesh with the ring gear, loosen the slot bolt jam nuts and slide the handle towards the tire until the pinion gear teeth mesh with the ring gear teeth without binding.

**Figure 3.7 Over-Center Assembly Adjustment**



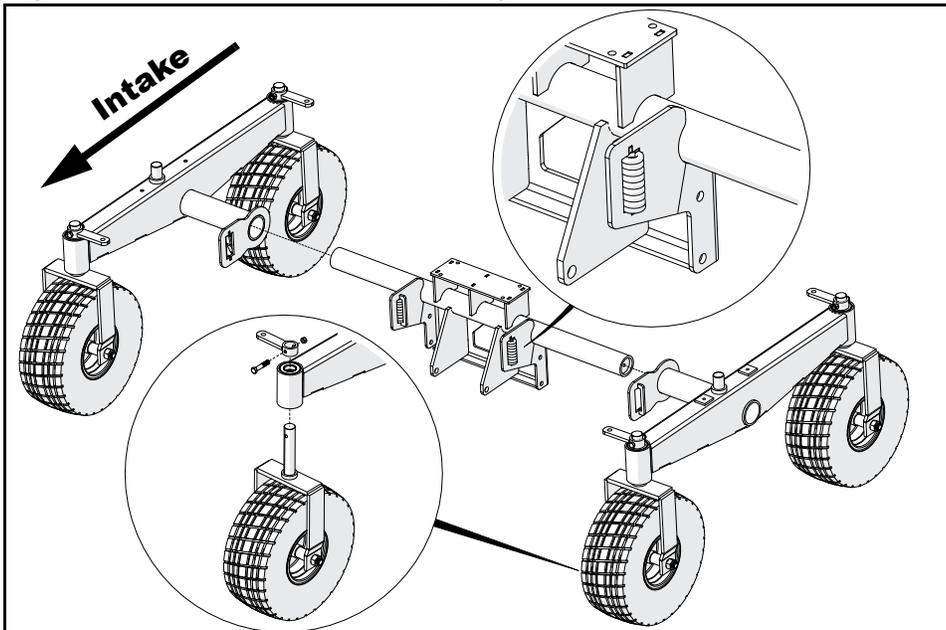
## 3.5. Undercarriage Assembly

Figure 3.8 HD SP Kit Undercarriage



1. Lower the auger completely.
2. Insert the casters through the bearings at each end of walking beam. Secure each caster with the caster steering link using a  $3/8"$  x  $2-1/4"$  bolt and locknut (see Figure 3.9).
3. Insert the pivot springs into the spring pockets on the main axle body where the walking beam and axle body meet (see Figure 3.9).

Figure 3.9 Install Casters and Springs



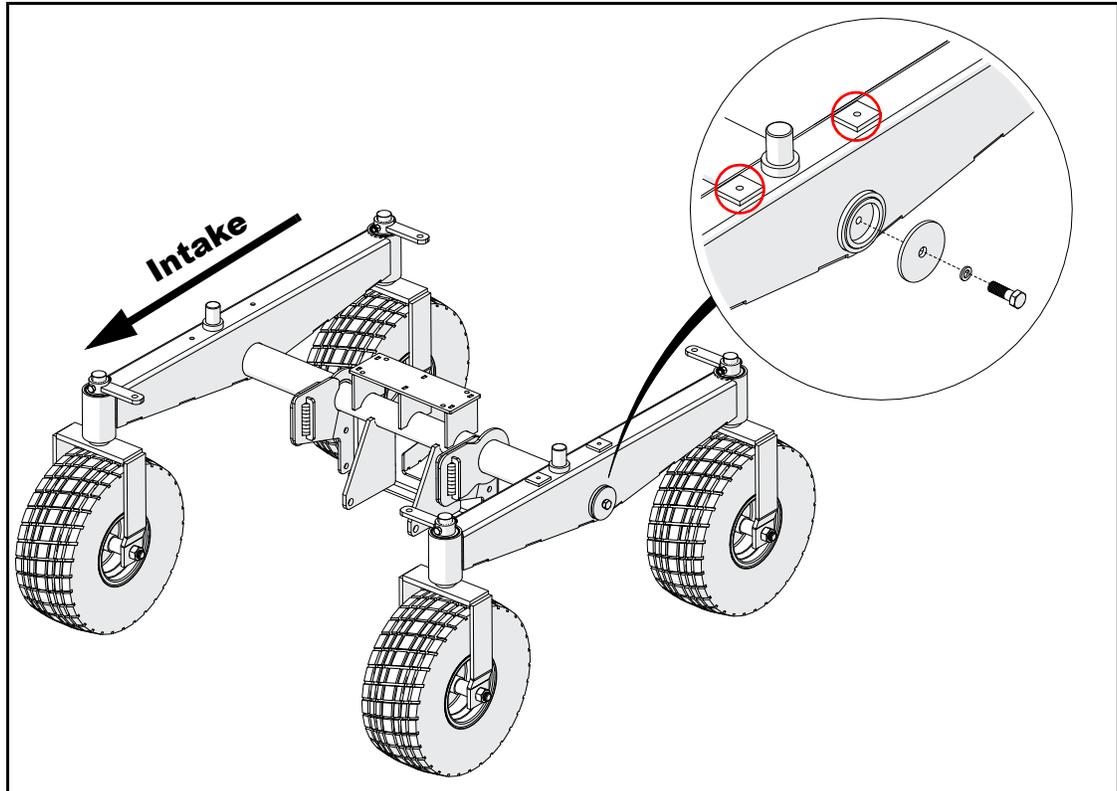
- Slide the walking beams onto the main axle body. Ensure the flanges where the walking beams and main axle meet are all aligned toward the intake end of the auger (see Figure 3.10).

**Important:** Identify the walking beam that includes threaded plates on the top surface. Install this beam on the same side as the fuel/oil tanks.

- Secure the walking beams to the axle ends with a 1/2" x 1-1/2" bolt, 1/2" washer, and axle end cap on each side (see Figure 3.10).

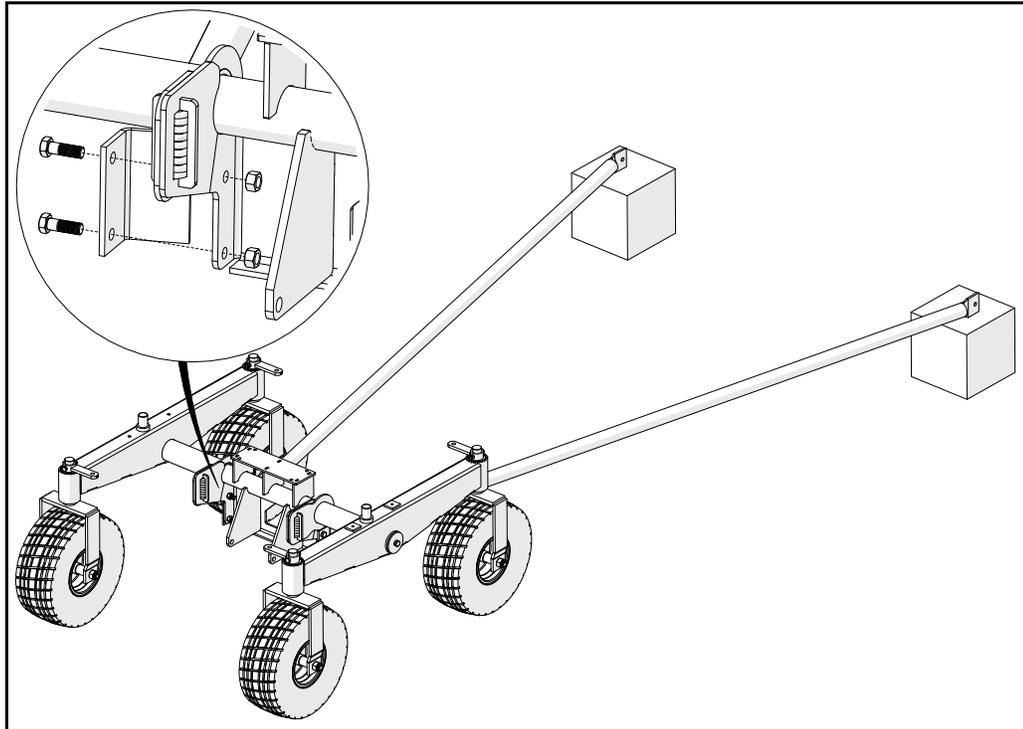
**Note:** This joint must pivot - do not over-tighten.

**Figure 3.10 Fasten Walking Beams to Axle Assembly**



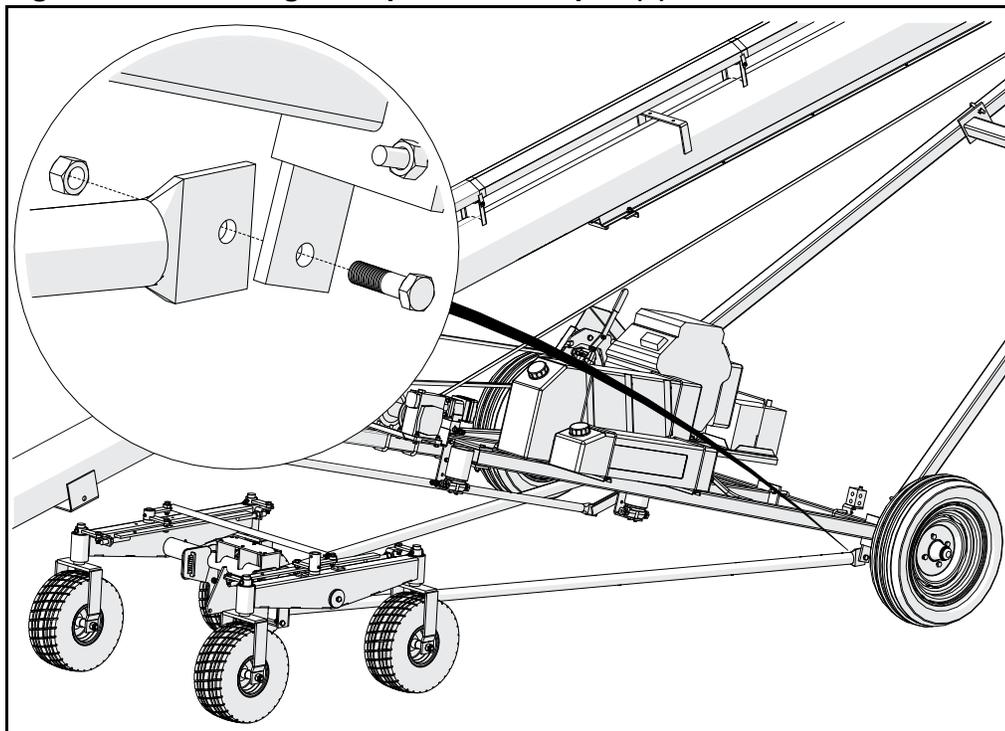
6. Attach the right-angle flanged ends of the transport frame pipes to the tabs on the auger axle frame using two  $\frac{1}{2}$ " x 1-1/2" bolts and locknuts per side (see Figure 3.11).

**Figure 3.11 Attaching Transport Frame Pipes (1)**



7. Attach the tabbed ends of the transport pipes to tabs on both ends of the rear axle body using a  $\frac{1}{2}$ " x 1-3/4" bolt and locknut per side (see Figure 3.12).

**Figure 3.12 Attaching Transport Frame Pipes (2)**



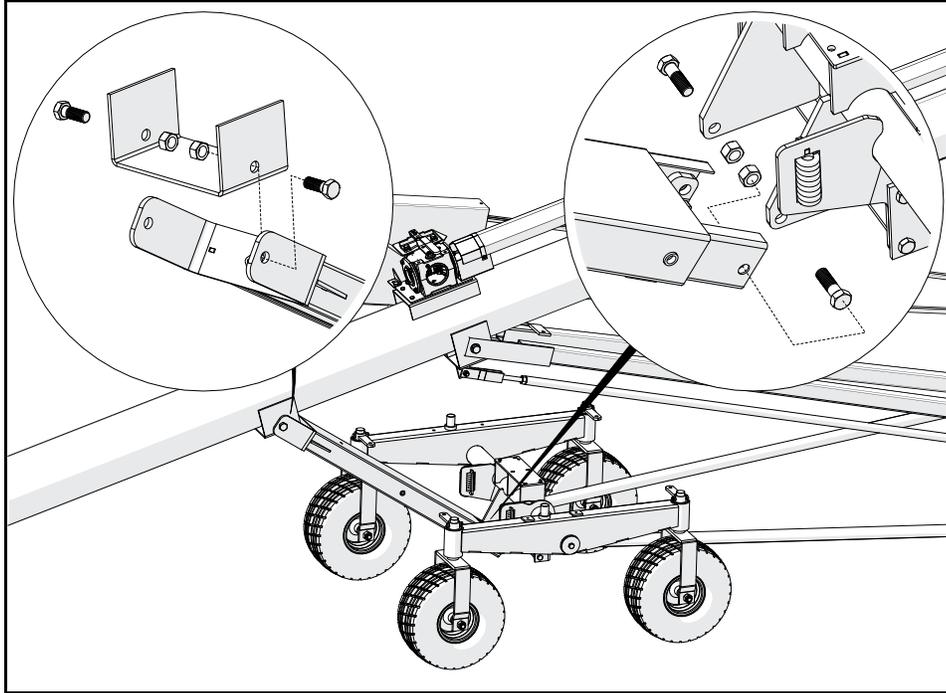
8. Attach the wide clevis end of the slider to the tube bracket using two  $\frac{3}{4}$ " x 2" bolts and locknuts. Ensure slider orientation is correct (see Figure 3.13).

**Note:** This joint must pivot - do not over-tighten.

9. Attach the lower end of the slider to the axle body using two  $\frac{5}{8}$ " x 2" bolts and locknuts.

**Note:** This joint must pivot - do not over-tighten.

**Figure 3.13 Attaching the Slider**



10. Use a piece of angle iron and clamp it onto the wheel forks on a walking beam to ensure both wheels are straight and parallel.
11. Thread the steering link end onto the steering link.
12. Attach the steering link to the caster steering link on the walking beam using four  $\frac{1}{2}$ " x 1- $\frac{1}{2}$ " bolts and locknuts. Adjust length until all wheels are parallel.

**Note:** This joint must pivot - do not over-tighten.

13. Install the steering pivot to each walking beam.

- Ensure the orientation of each steering pivot is correct.



- **Manual steering only:** The walking beam with the steering bracket must use the taller steering pivot.

14. Attach the lower tab of the steering pivot to the steering link using two  $\frac{1}{2}$ " x 1- $\frac{3}{4}$ " bolts and locknuts.

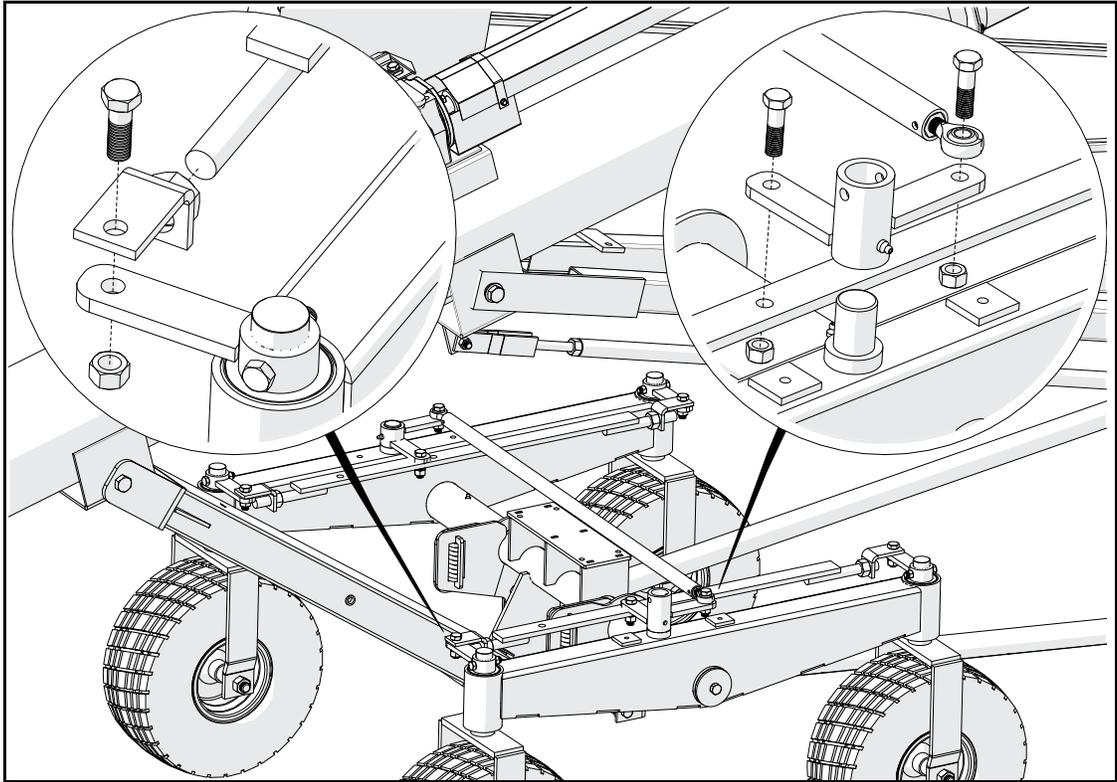
**Note:** This joint must pivot - do not over-tighten.

**Note:** Refer to Section 3.5.1. Manual Steering on page 26 to complete the manual steering assembly. Refer to the Section 3.5.2. Hydraulic Steering on page 28 to complete the hydraulic steering assembly.

### 3.5.1. Manual Steering

1. Attach the upper tab of the steering pivot to the steering tube to span between both walking beams using two  $\frac{1}{2}$ " x  $1\frac{3}{4}$ " bolts and locknuts. Use the threaded ball ends to adjust the length until all wheels are parallel.

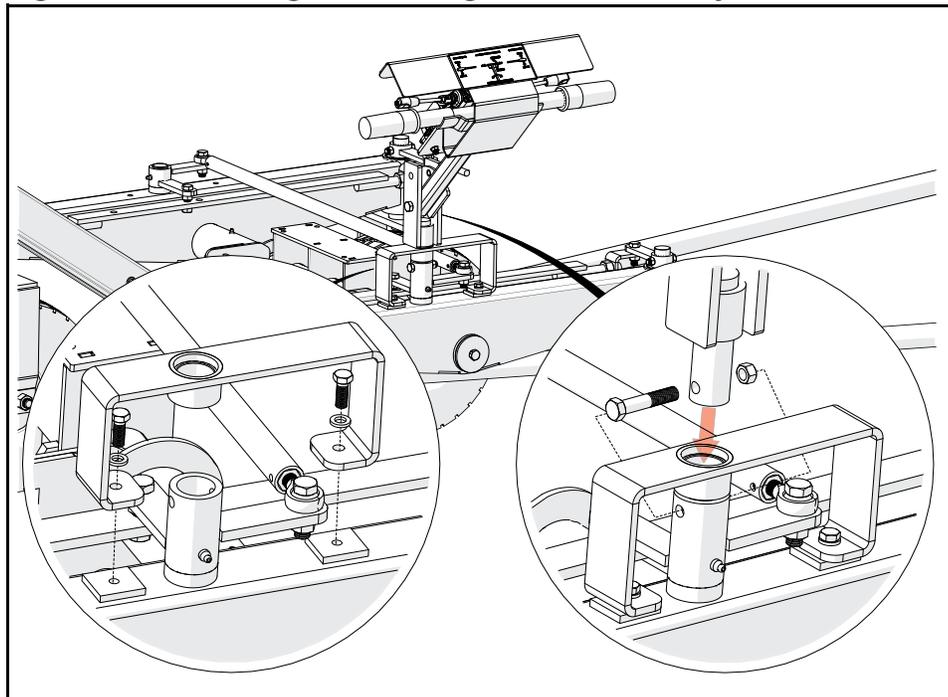
**Figure 3.14 Attaching Steering Linkage Components**



2. Apply paint on top of pivot shafts to prevent rust.
3. Remove the angle bar attached on the walking beams.
4. Position the steering bracket on the two walking beam threaded weldments using two  $\frac{3}{8}$ " x 1" bolts and  $\frac{3}{8}$ " washers.
5. Mount the steering handle assembly to the steering bracket using a  $\frac{3}{8}$ " x  $2\frac{1}{4}$ " bolt and locknut.
6. Ensure that all wheels are engaged and the linkage functions smoothly.

7. Check for clearance between the tires and transport frame pipes in all steering positions.

**Figure 3.15 Attaching the Steering Handle Assembly**



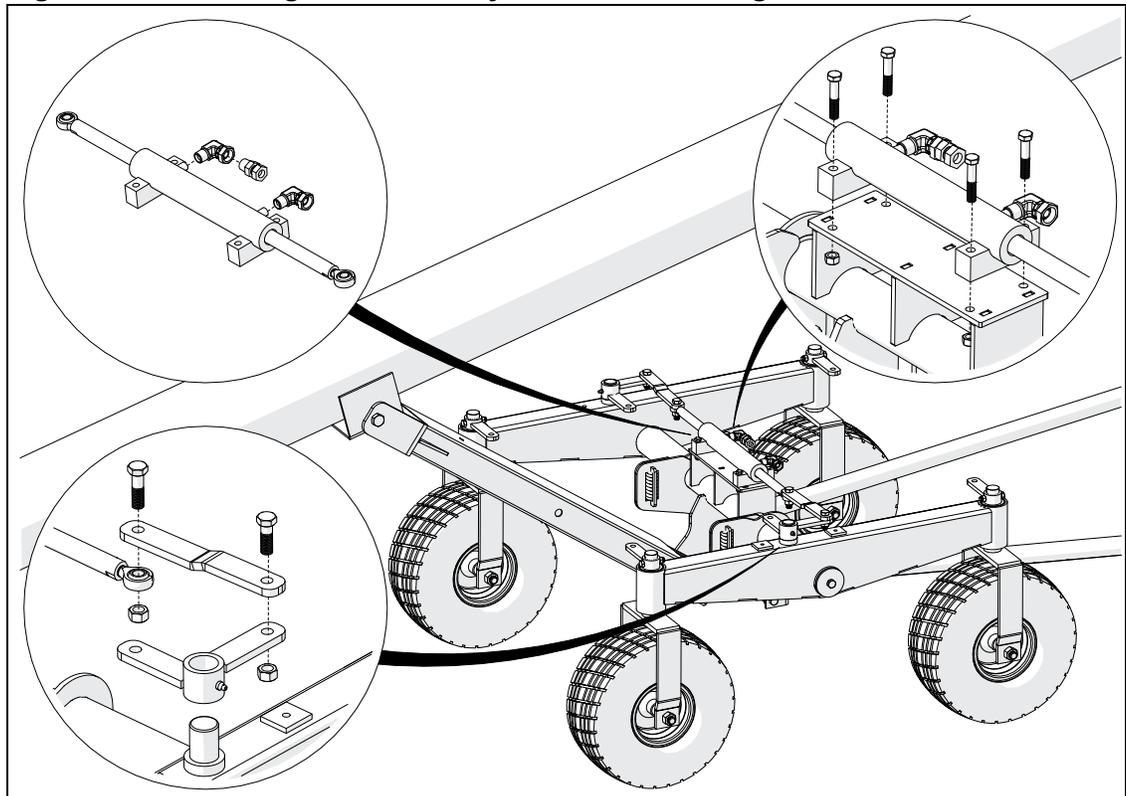
### 3.5.2. Hydraulic Steering

1. Attach the fittings to the hydraulic double cylinder as shown.
2. Mount the hydraulic double cylinder on the axle weldment using four 3/8" x 2" bolts and locknuts.
3. Attach one end of the cylinder link to the cylinder tie rod and attach the other end to the upper tab of the steering pivot. Secure using 1/2" x 1-1/2" bolts and locknuts. Use the tie rod on each end of the cylinder to adjust the length.

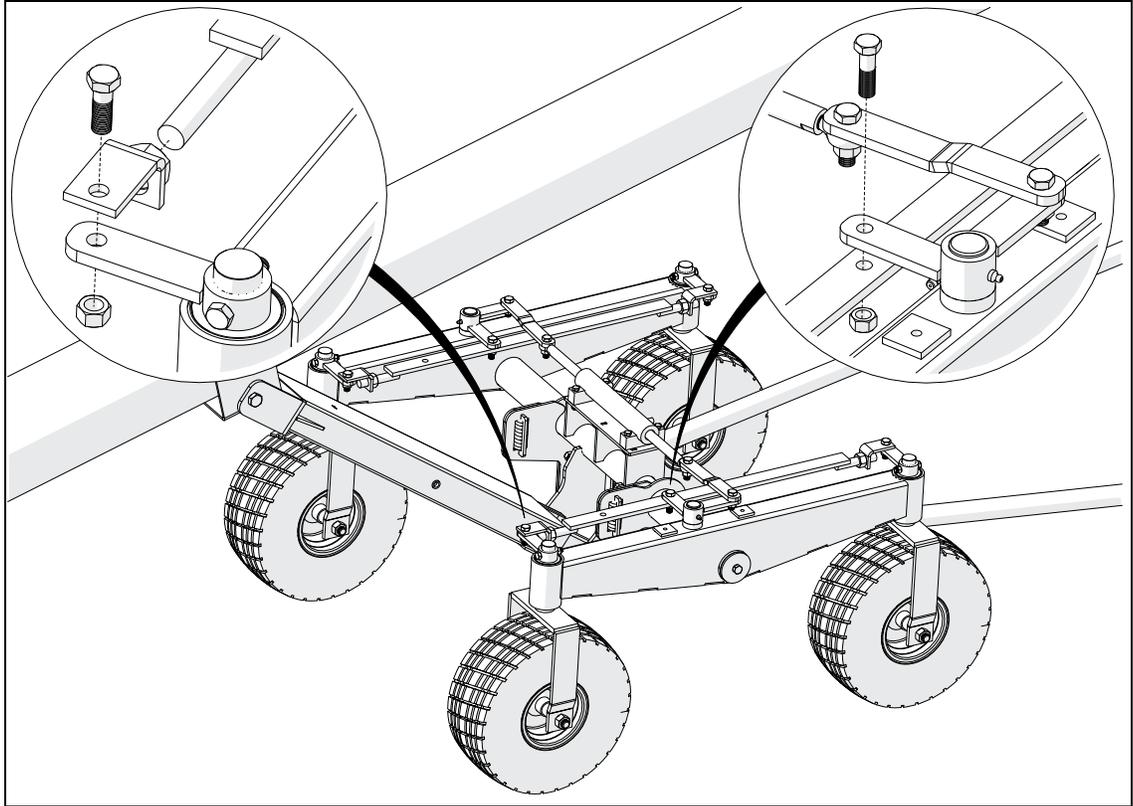
**Note:** This joint must pivot - do not over-tighten.

4. Tighten the bolts that hold the cylinder and then tighten all other hardware.
5. Apply paint on top of pivot shafts to prevent rust.
6. Install the control arm assembly to the axle weldment using four 3/8" x 1" bolts and locknuts.
7. Ensure that all wheels are engaged and the linkage functions smoothly. Check for clearance between the tires and transport frame pipes in all steering positions.
8. Attach the fittings to the valve as shown.

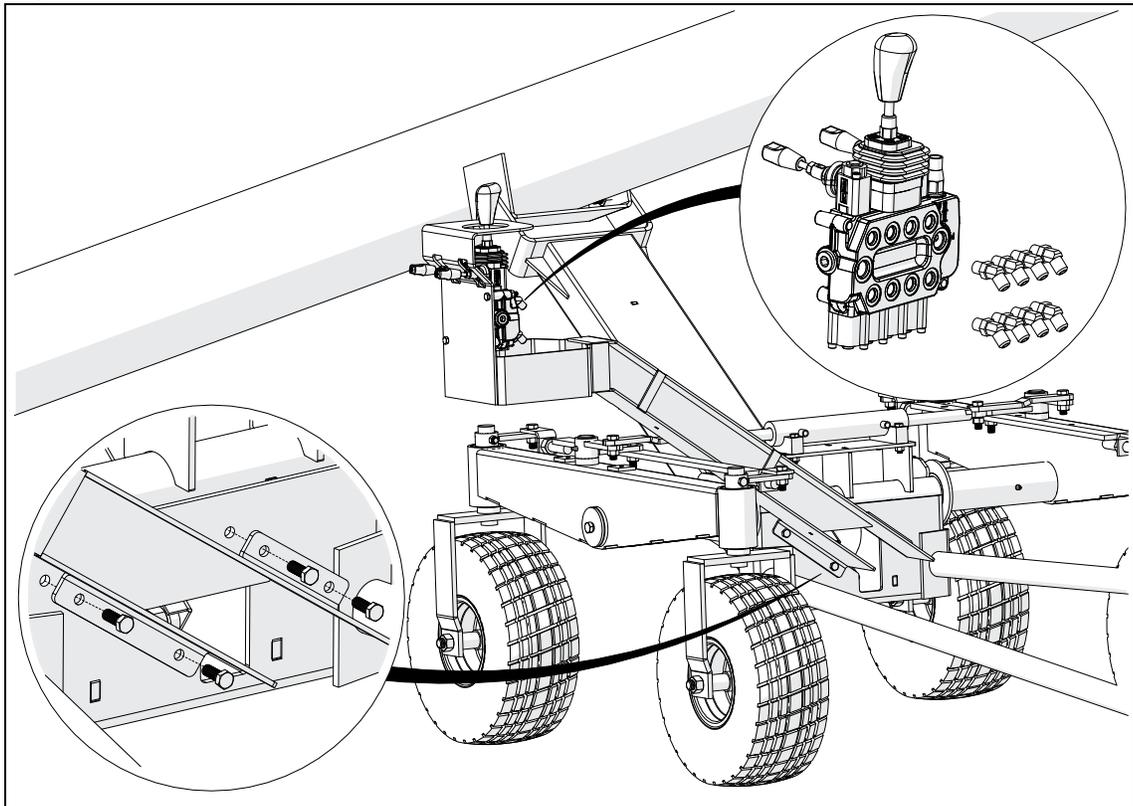
**Figure 3.16 Mounting the Double Cylinder and Steering Pivots**



**Figure 3.17 Connecting the Steering Pivots to the Steering Link Arms**



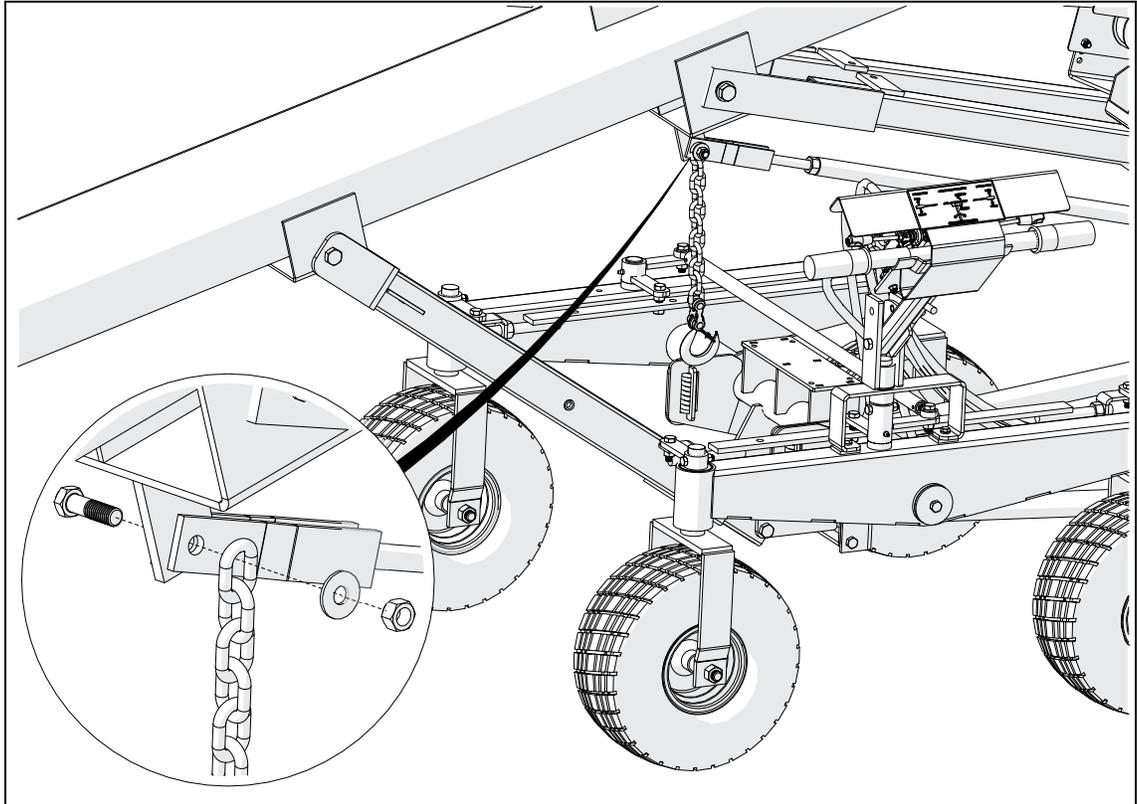
**Figure 3.18 Mounting the Control Arm and Valve**



## 3.6. Transport Chain Installation

1. Remove the bolt and locknut from the leveler bar clevis.
2. Attach the transport chain assembly to the leveler bar clevis using a 1/2" x 2" bolt, a 1/2" flat washer and the existing locknut.

**Figure 3.19** Installing the Transport Chain



## 3.7. Hydraulic Winch Installation

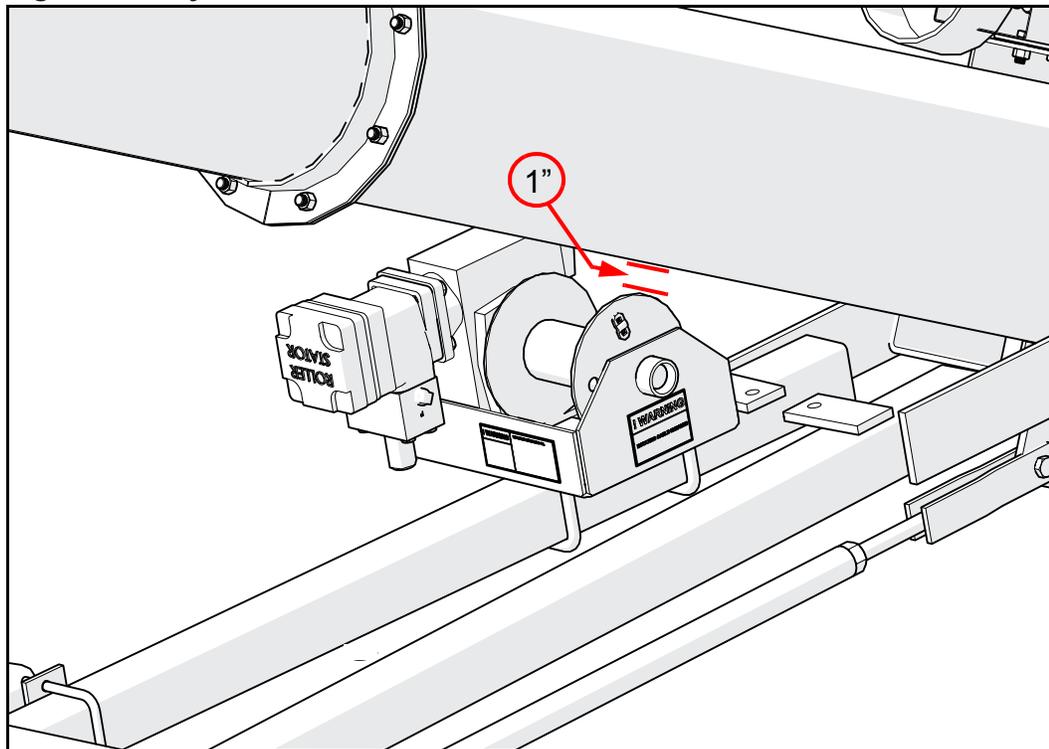
**Note:** If the auger is equipped with a manual winch pulley mount, remove and discard this part prior to installing the hydraulic winch.

1. Lower auger completely and remove the hand winch on the lower auger frame.
2. Place the winch on the frame under the tube as close as is practical to the intake end, in order to minimize the angle of the winch cable.

**Important:** The hydraulic winch position should be adjusted until the drum is 1" away from the auger tube when in transport position.

3. Secure the hydraulic winch to the frame using two u-bolts, four locknuts, and four flat washers. Do not tighten.
4. Angle the winch so it lines up with the cable wrapping around the track roller. Tighten all nuts.

**Figure 3.20 Hydraulic Winch Installation**



## 3.8. Lift Cable Installation

1. Loop cable over top of drum, through hole in drum end, through cable clamp, and then tighten with two 3/8" set screws.

**Important:** Cable must enter winch on the top side of drum and must have a minimum of 3 wraps on the drum when auger is in the transport position.



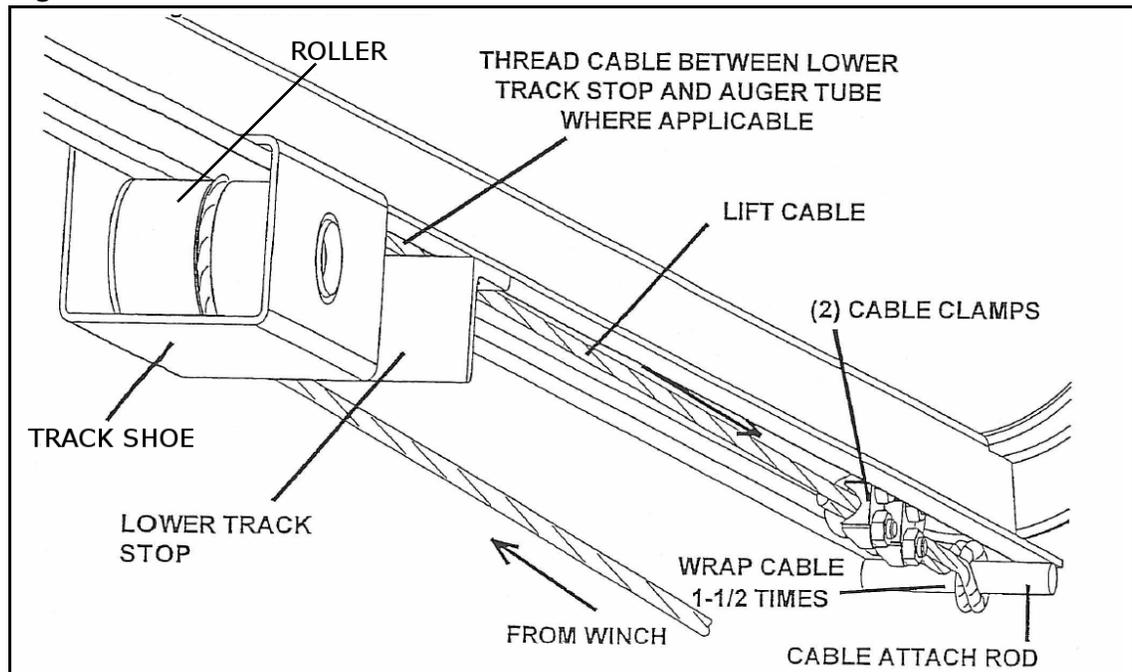
### FOR NEW INSTALLATIONS, USE STEPS 2 AND 3

2. Thread lift cable under and around roller on track shoe then back to the cable-attach rod welded to lower end of track (Figure 3.21).

**Note:** On augers equipped with a lower angle-iron track stop, the cable must be threaded between track stop and auger tube so the cable rests on top of the track stop (Figure 3.21).

3. Wrap cable 1-1/2 times around the cable attach rod and secure with two 1/4" cable clamps. Position cable clamps as shown (Figure 3.21). Tighten cable clamps securely.
4. Rotate drum until cable is taut. Ensure drum is rotating in direction shown in Figure 3.21 when raising auger.
5. Tie up winch motor hydraulic hose as needed to prevent damage to the hose.
6. Check gearbox for oil—make certain it is half full.

Figure 3.21



### 3.8.1. Winch Alignment

---

To check the alignment of the winch, watch the cable wrapping on the drum as the auger is raised. Proper alignment is achieved when the cable indexes properly, meaning that it fills each row on the drum evenly and does not pile up against one side.

If the cable does not index properly, lower the auger fully until there is slack in the cable. Loosen the nuts on the u-bolts. Adjust the winch, retighten nuts, and retest.

#### WARNING



Falling auger hazard.

To prevent serious injury or death while winching, ensure winch cable is fed onto the winch drum as shown above, and replace cable if frayed or damaged.

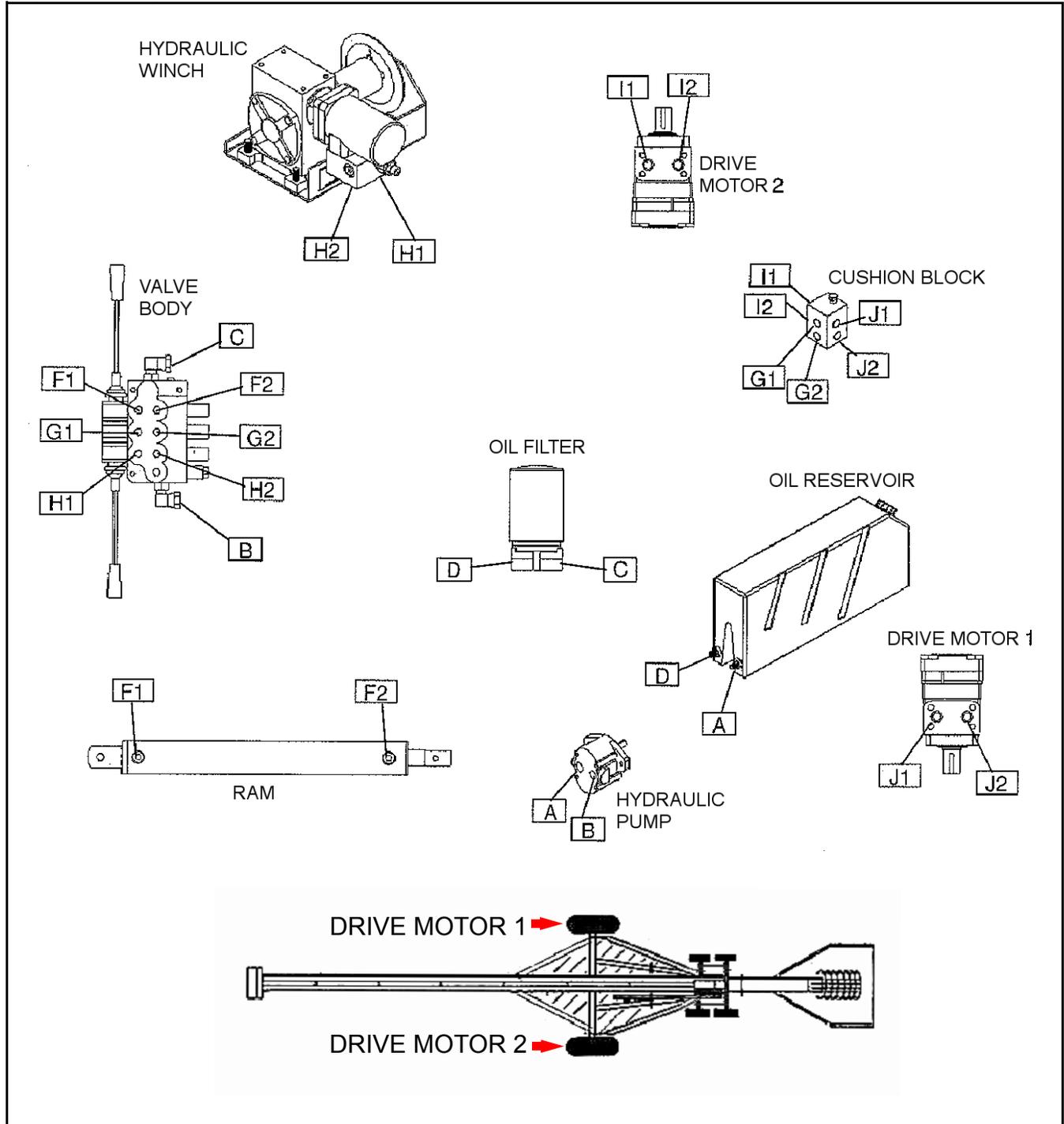
### 3.9. Hose Layout: Manual Steering, No Bin Sweep

Refer to Figure 3.22 and Table 3.1.

**SP Transport includes:**

- hoses (A, B, C, D, F1, F2, G1, G2, I1, I2, J1, J2), winch valve, winch hoses (H1, H2)

**Figure 3.22 Hydraulic Schematic - HD SP Kit without Bin Sweep Option**





**Table 3.1 Hydraulic Hose Lengths - HD SP Kit without Bin Sweep Option**

Item	Description	10-51	10-41	10-36
A	Hose, HYD, 3/4 x 30", no ends, 1W	1	1	1
B	Hose, HYD, 1/2 x 226", 1/2MNPT x 1/2MNPT, 1W	1	-	-
B	Hose, HYD, 1/2 x 192", 1/2MNPT x 1/2MNPT, 1W	-	1	1
C	Hose, HYD, 1/2 x 220", 1/2MNPT x 1/2MNPT, 1W	1	-	-
C	Hose, HYD, 1/2 x 168", 1/2MNPT x 1/2MNPT, 1W	-	1	1
D	Hose, HYD, 1/2 x 20", 1/2MNPT x 1/2FNPSM, 1W	1	1	1
F1	Hose, HYD, 3/8 x 60", 6FJIC x 3/8MNPT, 1W	1	1	1
F2	Hose, HYD, 3/8 x 74", 6FJIC x 3/8MNPT, 1W	1	1	1
G1,G2	Hose, HYD, 3/8 x 144", 6FJICS x 3/8MNPT, 1W	-	2	-
G1,G2	Hose, HYD, 3/8 x 187", 6FJICS x 3/8MNPT, 1W	2	-	-
G1,G2	Hose, HYD, 3/8 x 159", 6FJICS x 3/8MNPT, 1W	-	-	2
H1,H2	Hose, HYD, 3/8 x 288", 6FJIC x 1/2MNPT, 1W	2	-	-
H1,H2	Hose, HYD, 3/8 x 240", 6FJICS x 1/2MNPT, 1W	-	2	-
H1,H2	Hose, HYD, 3/8 x 222", 6FJICS x 1/2MNPT, 1W	-	-	2
I1, I2	Hose, HYD, 3/8 x 48", 3/8MNPT x 3/8MNPT, 1W	2	2	2
J1, J2	Hose, HYD, 3/8 x 24", 3/8MNPT x 3/8MNPT, 1W	2	2	2



### 3.10. Hose Layout: Manual Steering, Bin Sweep

Refer to Figure 3.23 and Table 3.2.

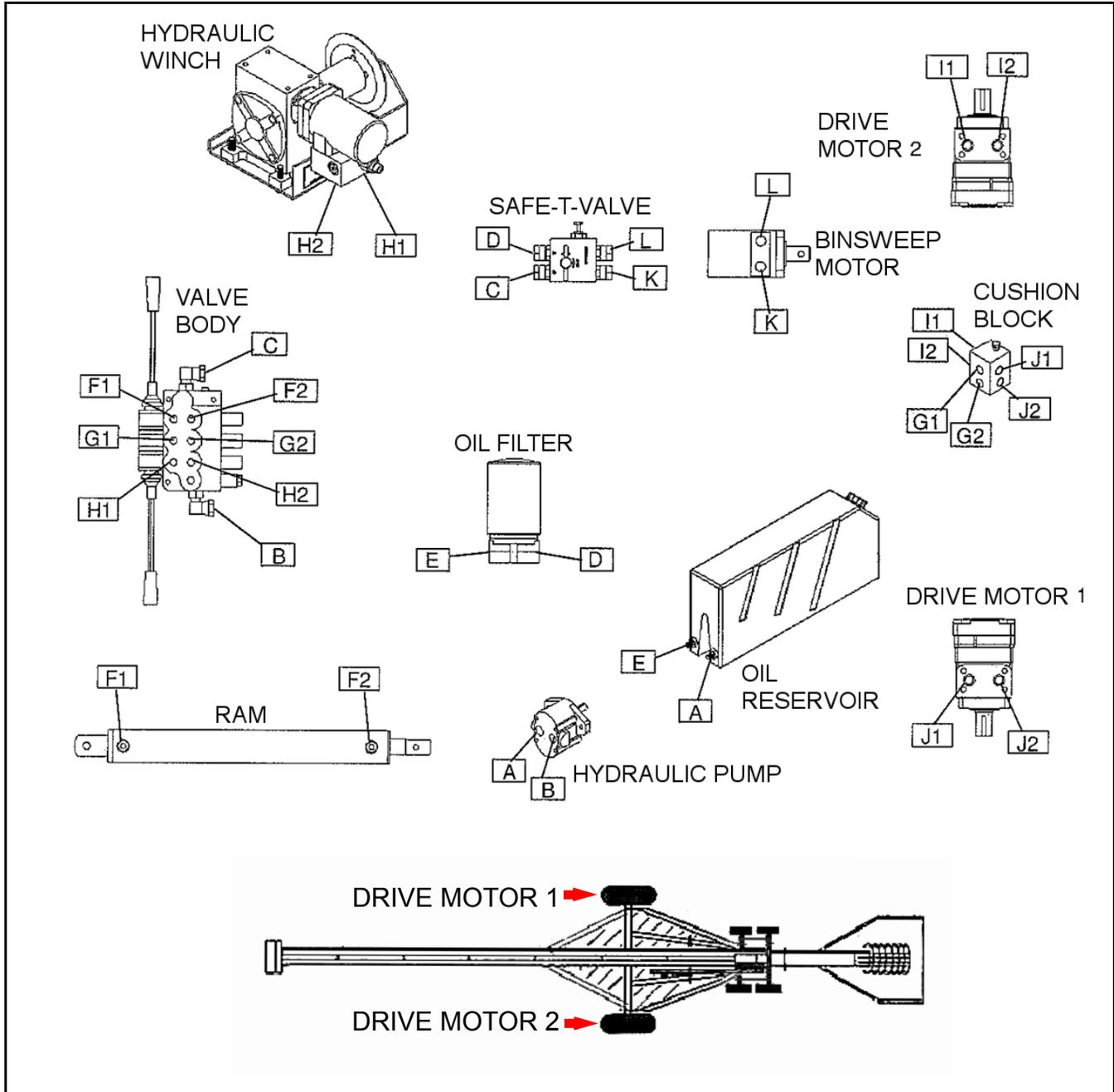
**SP Transport Kit includes:**

- hoses (A, B, E, F1, F2, G1, G2, H1, H2, I1, I2, J1, J2), winch valve, winch hoses (H1, H2)

**Bin Sweep option includes:**

- hoses (D, C, L, K), relief valve

**Figure 3.23 Hydraulic Schematic - HD SP Kit with Bin Sweep**





**Table 3.2 Hydraulic Hose Lengths - HD SP Kit with Bin Sweep**

Item	Description	10-51	10-41	10-36
A	Hose, HYD, 3/4 x 30", no ends, 1W	1	1	1
B	Hose, HYD, 1/2 x 226", 1/2MNPT x 1/2MNPT, 1W	1	-	-
B	Hose, HYD, 1/2 x 192", 1/2MNPT x 1/2MNPT, 1W	-	1	1
C,D	Hose, HYD, 3/8 x 120, 3/8MNPT x 3/8MNPT, 1W	2	-	-
C,D	Hose, HYD, 3/8 x 68, 3/8MNPT x 3/8MNPT, 1W	-	2	-
C,D	Hose, HYD, 3/8 x 56, 3/8MNPT x 3/8MNPT, 1W	-	-	2
E	Hose, HYD, 1/2 x 60, 1/2MNPT x 1/2FNPSM, 1W	1	1	1
F1	Hose, HYD, 3/8 x 60", 6FJIC x 3/8MNPT, 1W	1	1	1
F2	Hose, HYD, 3/8 x 74", 6FJIC x 3/8MNPT, 1W	1	1	1
G1,G2	Hose, HYD, 3/8 x 144", 6FJICS x 3/8MNPT, 1W	-	2	-
G1,G2	Hose, HYD, 3/8 x 187", 6FJICS x 3/8MNPT, 1W	2	-	-
G1,G2	Hose, HYD, 3/8 x 159", 6FJICS x 3/8MNPT, 1W	-	-	2
H1,H2	Hose, HYD, 3/8 x 288", 6FJIC x 1/2MNPT, 1W	2	-	-
H1,H2	Hose, HYD, 3/8 x 240", 6FJICS x 1/2MNPT, 1W	-	2	-
H1,H2	Hose, HYD, 3/8 x 222", 6FJICS x 1/2MNPT, 1W	-	-	2
I1,I2	Hose, HYD, 3/8 x 48", 3/8MNPT x 3/8MNPT, 1W	2	2	2
J1,J2	Hose, HYD, 3/8 x 24", 3/8MNPT x 3/8MNPT, 1W	2	2	2
K,L	Hose, HYD, 3/8 x 16, 3/8MNPT x 3/8MNPT, 1W	2	2	2



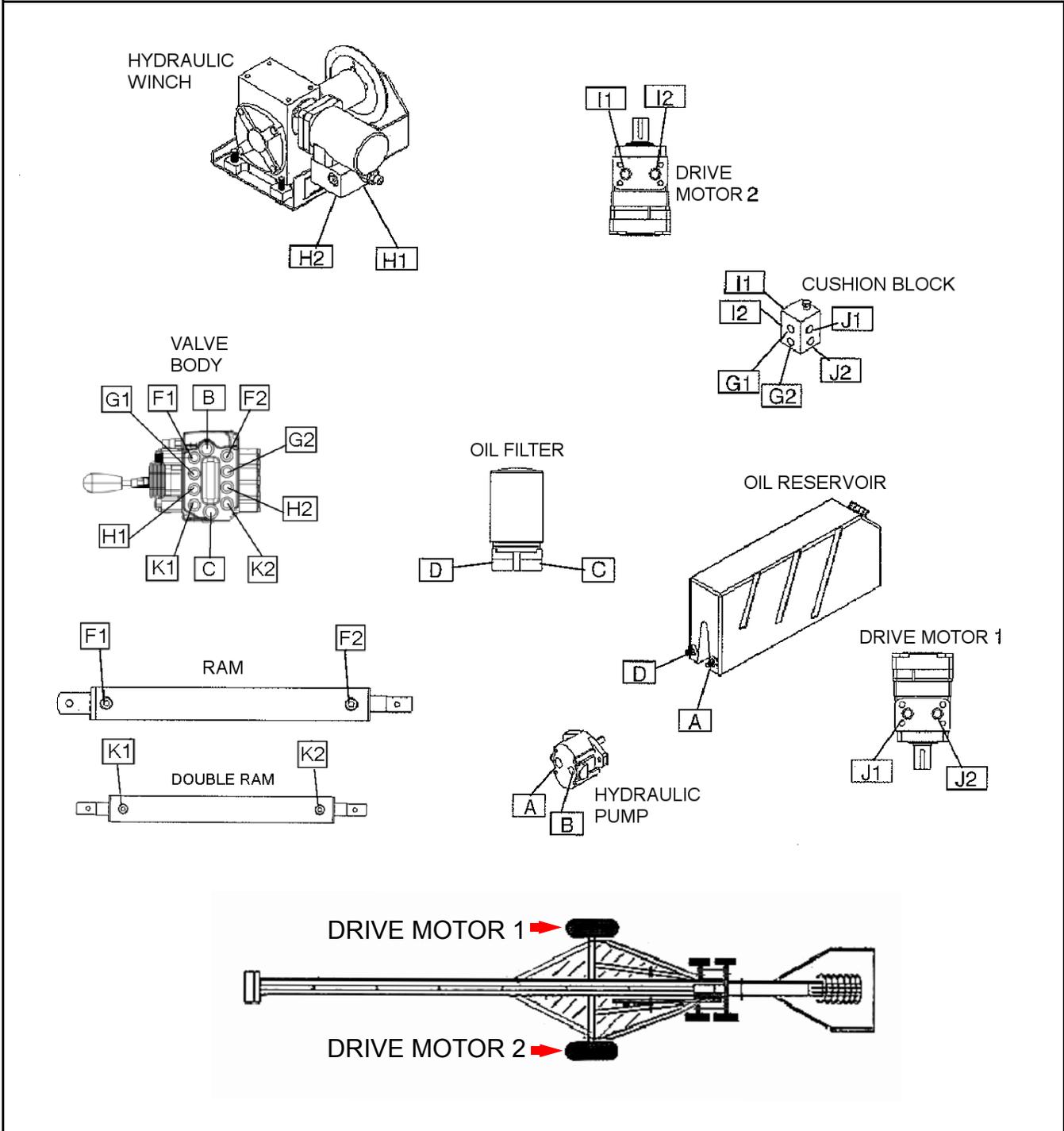
### 3.11. Hose Layout: Hyd. Steering, No Bin Sweep

Refer to Figure 3.24 and Table 3.3.

**SP Transport includes:**

- hoses (A, B, C, D, F1, F2, G1, G2, I1, I2, J1, J2, K1, K2), winch valve, winch hoses (H1, H2)

**Figure 3.24 Hydraulic Schematic - HD SP Kit with Hyd Steering, no Bin Sweep**





**Table 3.3 Hydraulic Hose Lengths - HD SP Kit with Hyd Steering, no Bin Sweep**

Item	Description	10-51	10-41	10-36
A	Hose, HYD, 3/4 x 30", no ends, 1W	1	1	1
B	Hose, HYD, 1/2 x 226", 1/2MNPT x 1/2MNPT, 1W	1	-	-
B	Hose, HYD, 1/2 x 192", 1/2MNPT x 1/2MNPT, 1W	-	1	1
C	Hose, HYD, 1/2 x 220", 1/2MNPT x 1/2MNPT, 1W	1	-	-
C	Hose, HYD, 1/2 x 168", 1/2MNPT x 1/2MNPT, 1W	-	1	1
D	Hose, HYD, 1/2 x 20", 1/2MNPT x 1/2FNPSM, 1W	1	1	1
F1	Hose, HYD, 3/8 x 60", 6FJIC x 3/8MNPT, 1W	1	1	1
F2	Hose, HYD, 3/8 x 74", 6FJIC x 3/8MNPT, 1W	1	1	1
G1,G2	Hose, HYD, 3/8 x 144", 6FJICS x 3/8MNPT, 1W	-	2	-
G1,G2	Hose, HYD, 3/8 x 187", 6FJICS x 3/8MNPT, 1W	2	-	-
G1,G2	Hose, HYD, 3/8 x 159", 6FJICS x 3/8MNPT, 1W	-	-	2
H1,H2	Hose, HYD, 3/8 x 288", 6FJIC x 1/2MNPT, 1W	2	-	-
H1,H2	Hose, HYD, 3/8 x 240", 6FJICS x 1/2MNPT, 1W	-	2	-
H1,H2	Hose, HYD, 3/8 x 222", 6FJICS x 1/2MNPT, 1W	-	-	2
I1, I2	Hose, HYD, 3/8 x 48", 3/8MNPT x 3/8MNPT, 1W	2	2	2
J1, J2	Hose, HYD, 3/8 x 24", 3/8MNPT x 3/8MNPT, 1W	2	2	2
K1, K2	Hose, HYD, 3/8" X 66", 6FJIC x 3/8MNPT, 1W	2	2	2



### 3.12. Hose Layout: Hydraulic Steering, Bin Sweep

Refer to Figure 3.23 and Table 3.4.

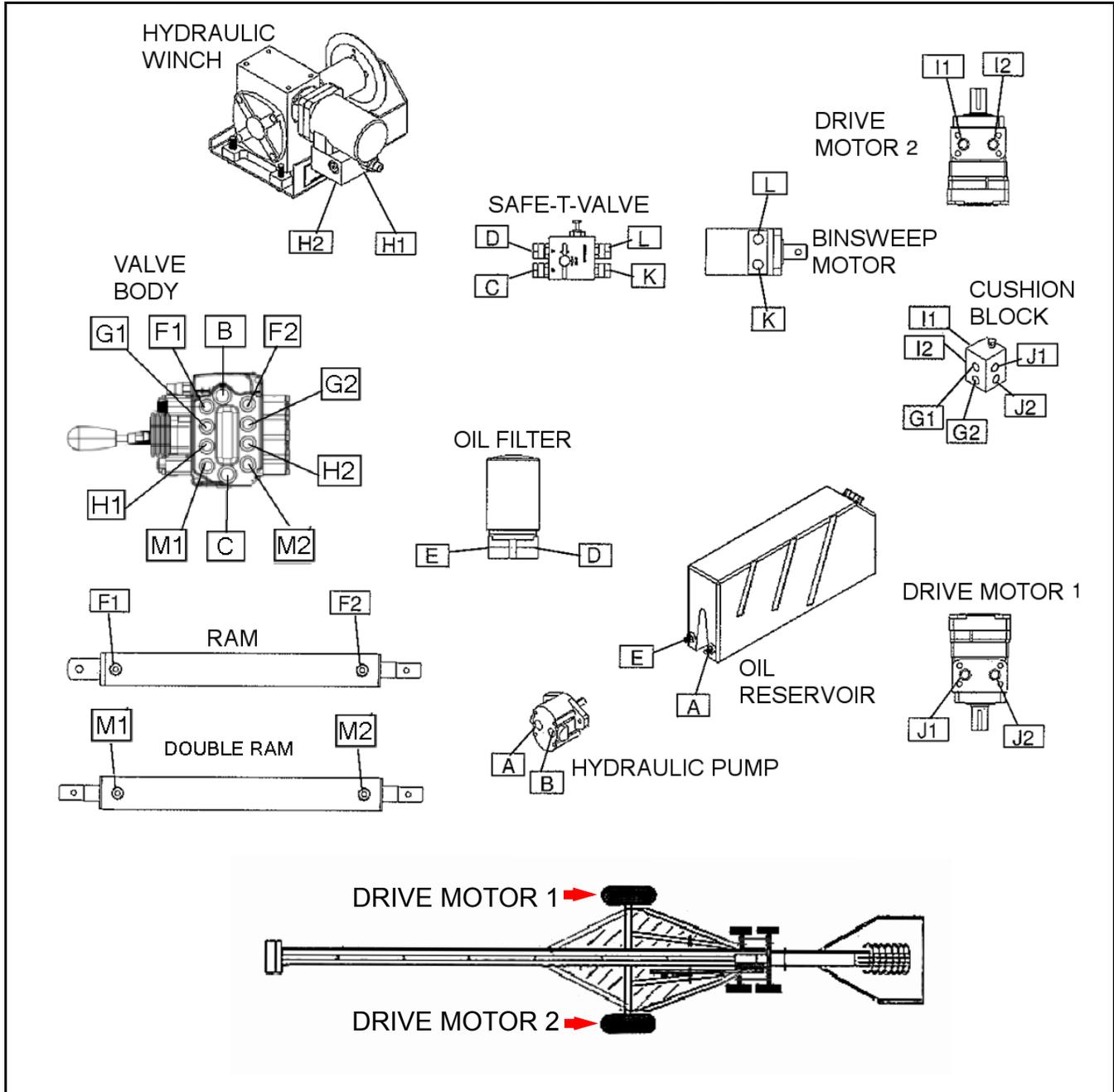
**SP Transport Kit includes:**

- hoses (A, B, E, F1, F2, G1, G2, H1, H2, I1, I2, J1, J2, M1, M2), winch valve, winch hoses (H1, H2)

**Bin Sweep option includes:**

- hoses (D, C, L, K), relief valve

**Figure 3.25 Hydraulic Schematic - HD SP Kit with Hyd Steering and Bin Sweep**





**Table 3.4 Hydraulic Hose Lengths - HD SP Kit with Hyd Steering and Bin Sweep**

Item	Description	10-51	10-41	10-36
A	Hose, HYD, 3/4 x 30", no ends, 1W	1	1	1
B	Hose, HYD, 1/2 x 226", 1/2MNPT x 1/2MNPT, 1W	1	-	-
B	Hose, HYD, 1/2 x 192", 1/2MNPT x 1/2MNPT, 1W	-	1	1
C,D	Hose, HYD, 3/8 x 120, 3/8MNPT x 3/8MNPT, 1W	2	-	-
C,D	Hose, HYD, 3/8 x 68, 3/8MNPT x 3/8MNPT, 1W	-	2	-
C,D	Hose, HYD, 3/8 x 56, 3/8MNPT x 3/8MNPT, 1W	-	-	2
E	Hose, HYD, 1/2 x 60, 1/2MNPT x 1/2FNPSM, 1W	1	1	1
F1	Hose, HYD, 3/8 x 60", 6FJIC x 3/8MNPT, 1W	1	1	1
F2	Hose, HYD, 3/8 x 74", 6FJIC x 3/8MNPT, 1W	1	1	1
G1,G2	Hose, HYD, 3/8 x 144", 6FJICS x 3/8MNPT, 1W	-	2	-
G1,G2	Hose, HYD, 3/8 x 187", 6FJICS x 3/8MNPT, 1W	2	-	-
G1,G2	Hose, HYD, 3/8 x 159", 6FJICS x 3/8MNPT, 1W	-	-	2
H1,H2	Hose, HYD, 3/8 x 288", 6FJIC x 1/2MNPT, 1W	2	-	-
H1,H2	Hose, HYD, 3/8 x 240", 6FJICS x 1/2MNPT, 1W	-	2	-
H1,H2	Hose, HYD, 3/8 x 222", 6FJICS x 1/2MNPT, 1W	-	-	2
I1, I2	Hose, HYD, 3/8 x 48", 3/8MNPT x 3/8MNPT, 1W	2	2	2
J1, J2	Hose, HYD, 3/8 x 24", 3/8MNPT x 3/8MNPT, 1W	2	2	2
K,L	Hose, HYD, 3/8 x 16, 3/8MNPT x 3/8MNPT, 1W	2	2	2
M1, M2	Hose, HYD, 3/8" X 66", 6FJIC x 3/8MNPT, 1W	2	2	2

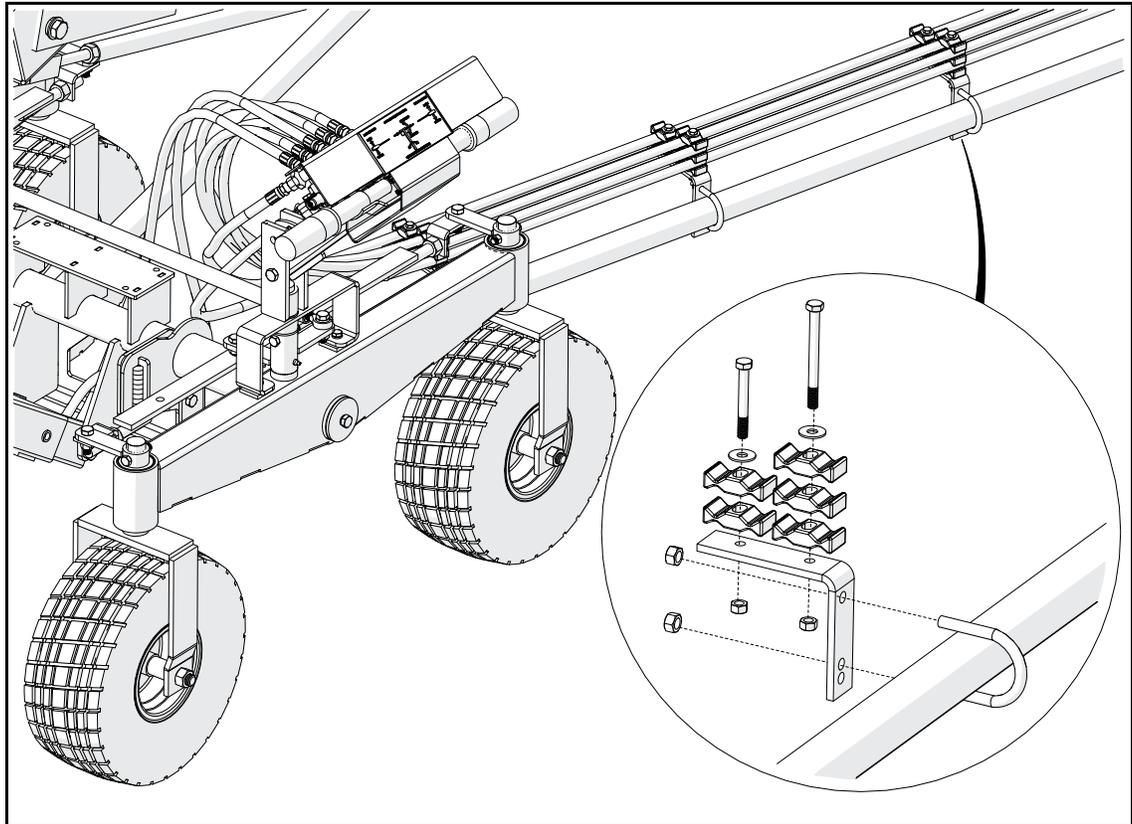


## 3.13. Hose Kit Assembly

Refer to Figures 3.22 - 3.25.

1. Attach the hydraulic hose brackets to the transport frame tubes using 3/8" u-bolts. Space brackets evenly along the tube.
2. Assemble hoses as illustrated.
  - Attach the hydraulic hoses to the brackets using five line blocks, one 5/16" x 2-1/2" bolt, one 5/16" x 3-1/2" bolt, two 5/16" flat washers and two 5/16" locknuts.

**Figure 3.26 Hydraulic Hoses and Hose Brackets**



3. Keep hoses and connectors free of dirt while assembling.
4. Keep pressure and return sides aligned.
5. Tighten after being satisfied that the hoses are in the proper position.
6. Check operation.
7. Secure hoses in place with the cable ties supplied

**Important:** Before disassembling the hoses, fully lower the auger and relieve the oil pressure.

### WARNING



The SP Transport unit **MUST** operate as indicated on the control panel decal. The auger **MUST** move in the direction that the handle is moved.

**SERIOUS OPERATOR INJURY** could occur if the transport unit and hydraulic hoses are not assembled correctly. If necessary, disconnect the hoses and re-assemble.

### NOTICE

**Do not over-tighten!**

Over-tightening hose fittings can crack the fitting or motor body and cause the fittings to leak, and will void the motor warranty.

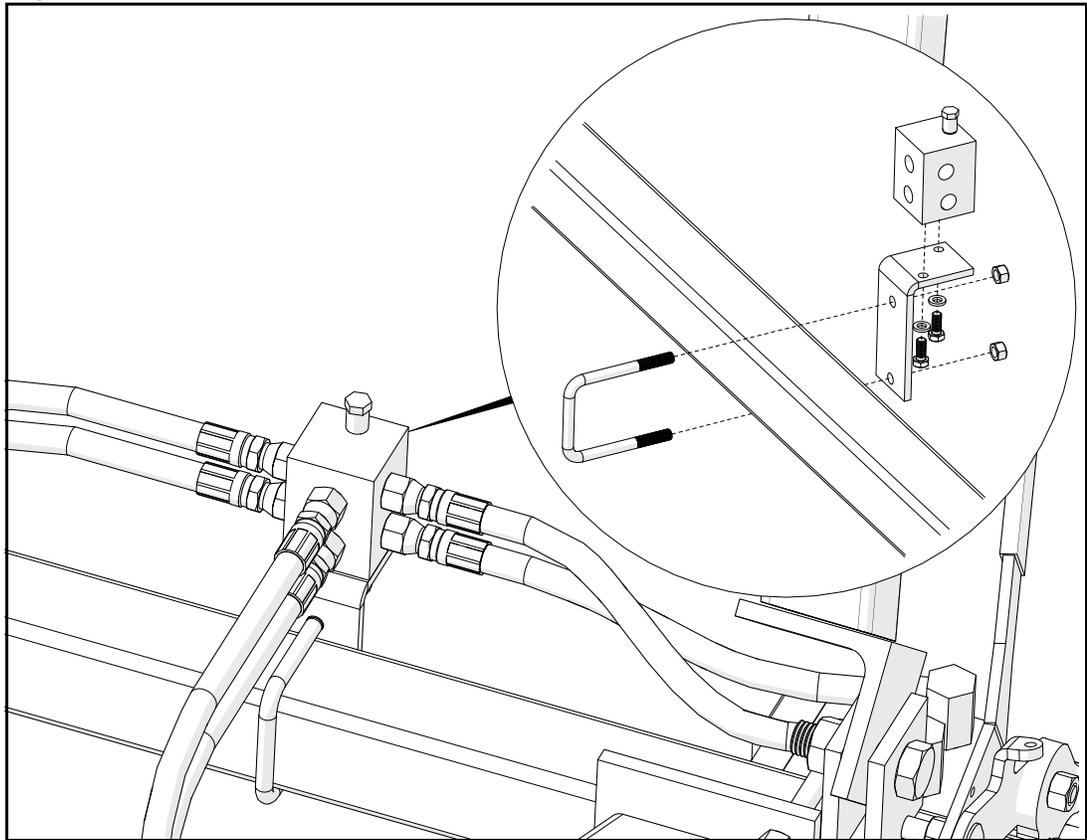
## 3.14. Cushion Block and Hose Installation

1. Attach cushion block to bracket using two 5/16" x 3/4" bolts and lockwashers.
2. Secure cushion block to axle using a 3/8" square u-bolt and two 3/8" locknuts.
3. Connect the hoses as shown in Figure 3.27, ensuring that the hoses are not crossed. Connect the lower cushion block hoses to the lower ports on each hydraulic motor as shown.

### NOTICE

Do not over-tighten fittings! Over-tightening hose fittings can crack the fittings or motor body and will void the warranty.

Figure 3.27 Cushion Block Installation

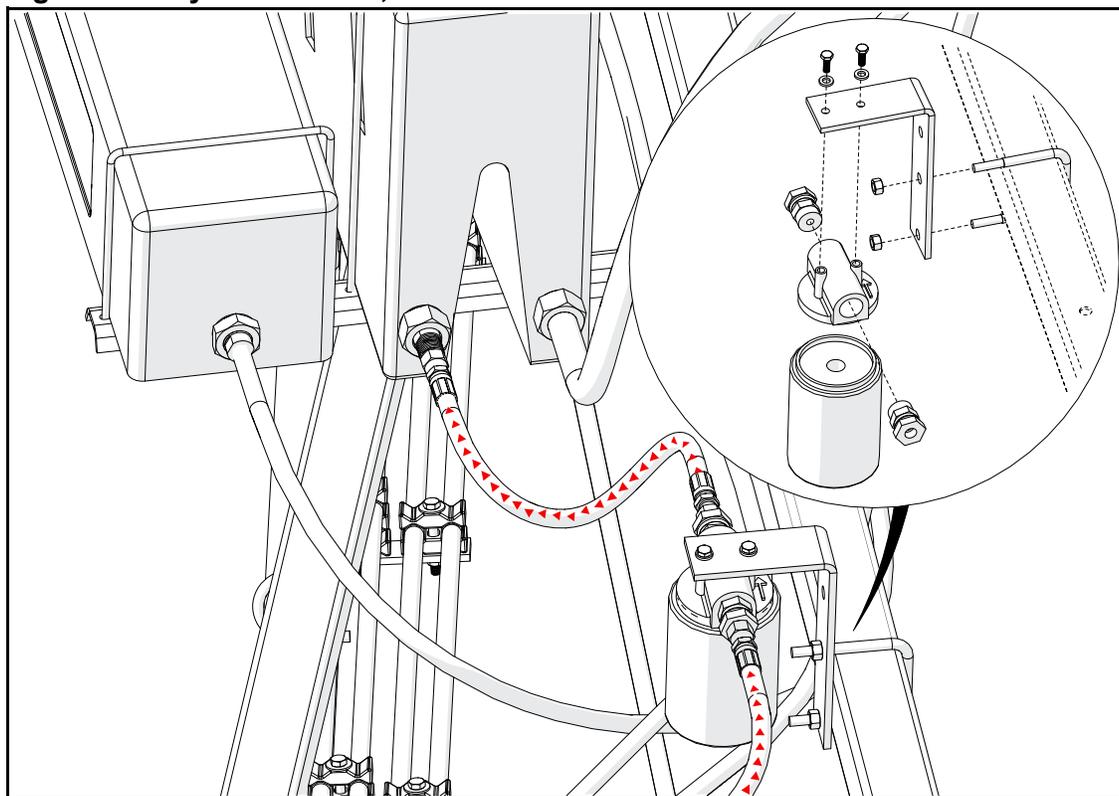


## 3.15. Hydraulic Oil Filter installation

When connecting the hydraulic oil filter, make sure that it is properly installed. An arrow is engraved in the filter head indicating the direction of oil flow.

**Important:** The filter installs on the return line right before the hydraulic oil reservoir. The hydraulic hoses MUST be installed to ensure that the oil flows to the reservoir, in the same direction as the arrow on the filter head.

**Figure 3.28 Hydraulic Filter, Direction of Oil Flow**



1. Attach filter mount to A-frame using a 3/8" square u-bolt and two 3/8" locknuts.
2. Secure filter head to the mounting bracket using two 1/4" x 3/4" bolts and 1/4" lockwashers.
3. Connect the hydraulic filter to filter head.
4. Attach two hydraulic fittings to the filter head ports.
5. Attach hydraulic hoses as shown above.

## 3.16. Offset Hitch And Hitch Mount Installation

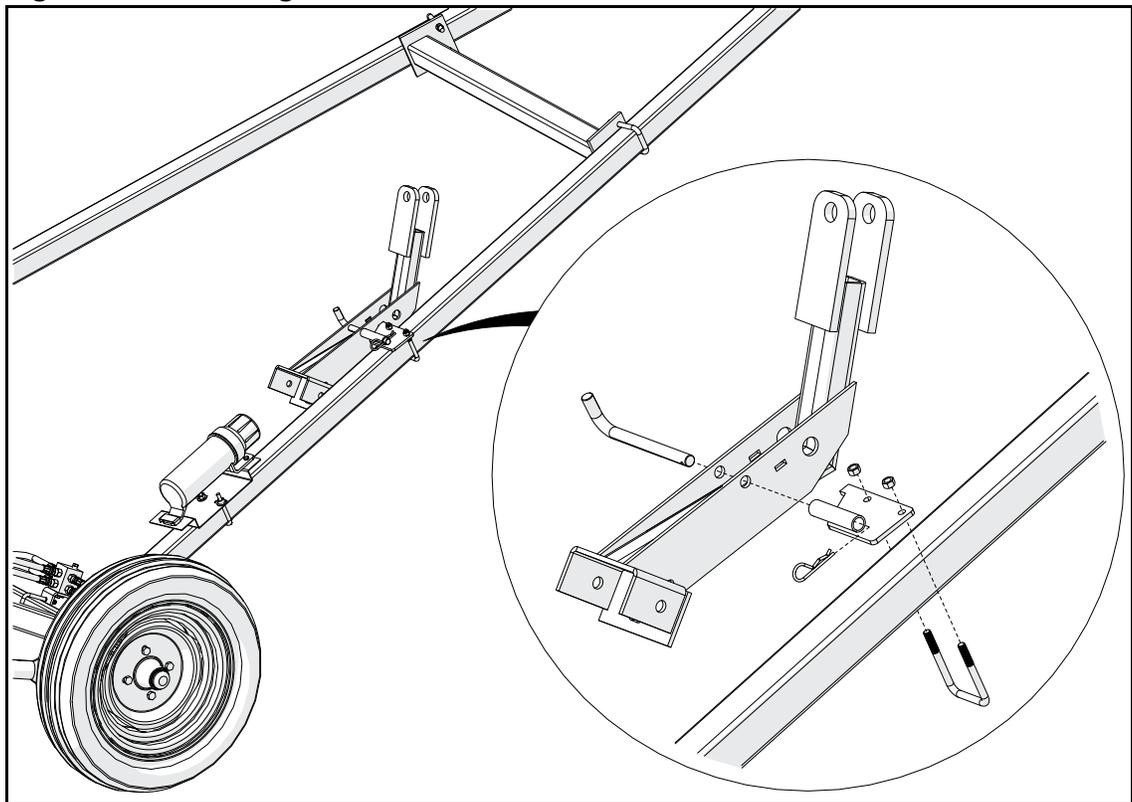
The offset hitch replaces the stock hitch that was originally supplied with the auger.

The offset hitch provides better road clearance when towing, and must be used in place of the stock hitch.

Discard the stock hitch and install the offset hitch and hitch mount on the frame arm as shown.

1. Mount the hitch mount to the auger upper frame using a 3/8" x 2-5/8" u-bolt and two locknuts.
2. Attach the offset hitch to the hitch storage mount using a 5/8" clevis pin and a hairpin.

**Figure 3.29** Installing the Offset Hitch and Hitch Mount



**Note:** Attach the offset hitch to the hitch mount when not in transport.

# 4. Transport & Placement

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

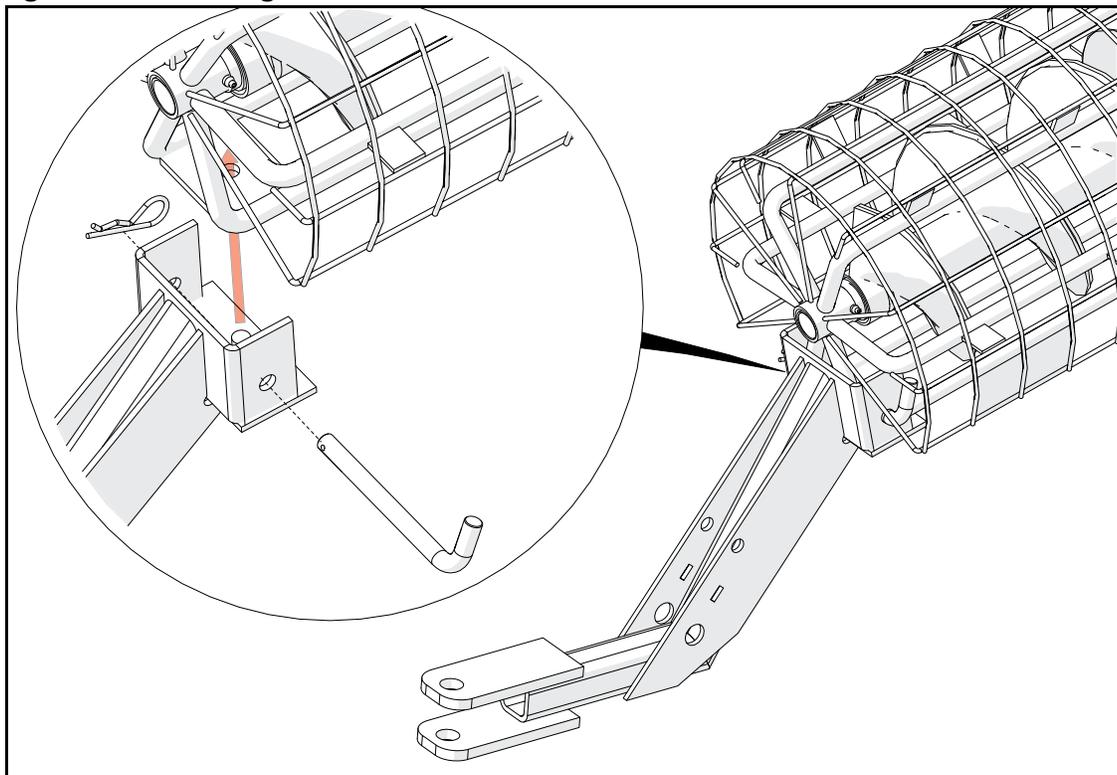
## 4.1. Transport Procedure

**Note:** Use only a tractor or towing vehicle of adequate power and capacity to transport the machine.

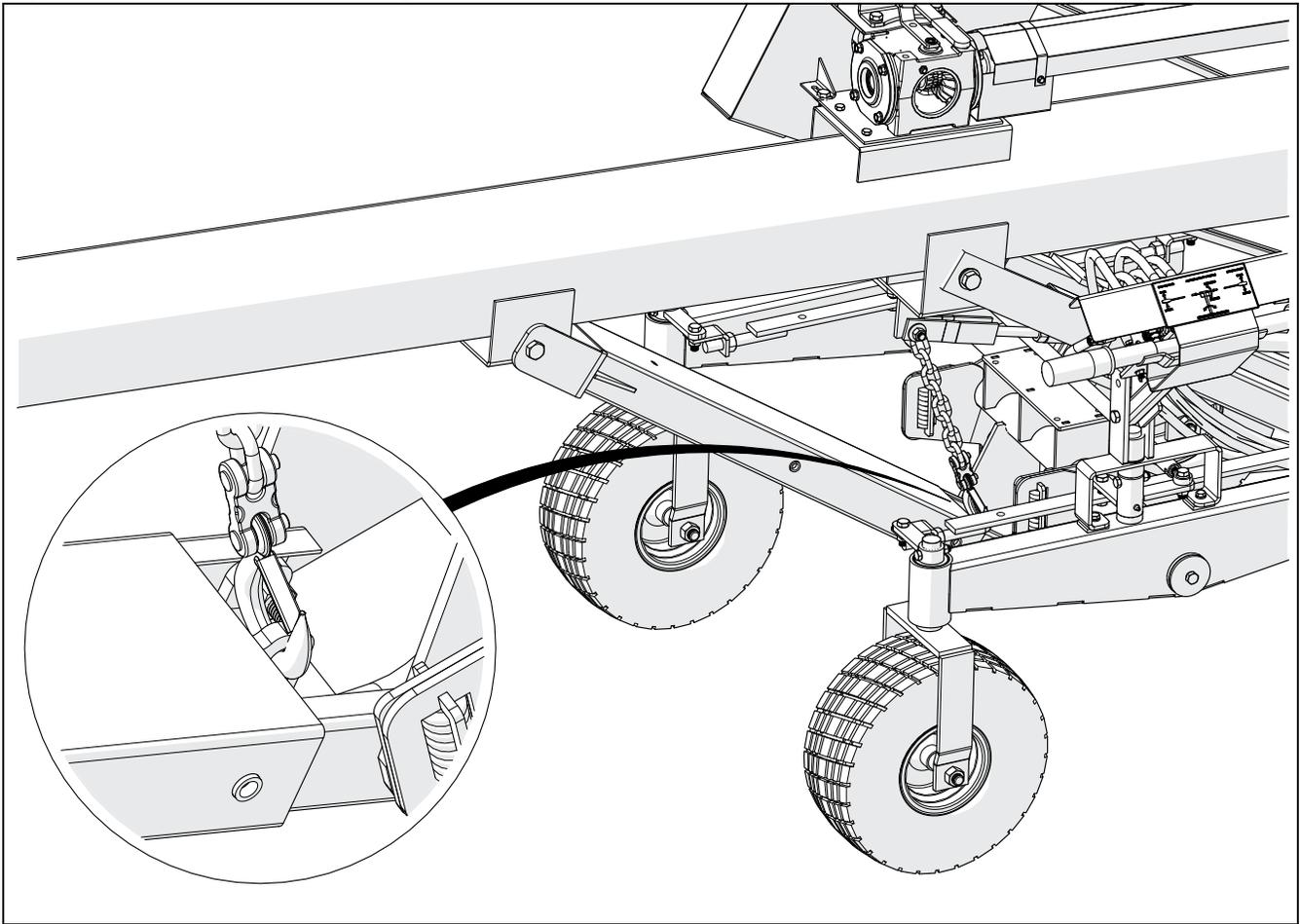
Follow this procedure when placing the unit into its transport position:

1. Attach the hitch to the auger intake (see Figure 4.1).
2. Attach the auger intake to the towing vehicle with a minimum 1/2" diameter pin with retainer clip and safety chain.
3. Fully raise the mover axle by retracting the hydraulic cylinder. For transportation on public roadways, attach the transport chain to the connector tab on the slider assembly to prevent the axle from accidentally dropping (Figure 4.2).
4. Before transporting, disengage the over-center handle at each wheel (Figure 4.3) by pulling up on the handle. Secure the handle with the attached pin (Figure 4.4).

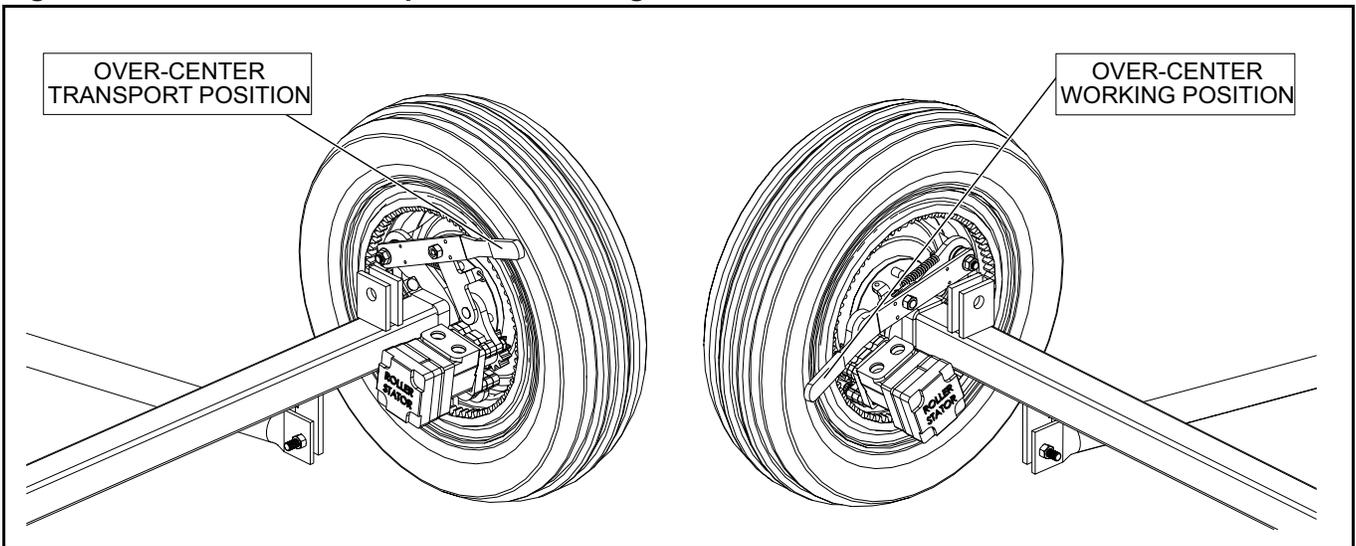
Figure 4.1 Attaching the Hitch



**Figure 4.2 Securing the Transport Chain**



**Figure 4.3 Over-Center Transport and Working Position**



**Figure 4.4 Pin Position**



### **NOTICE**

Ensure that the over-center bolts are tight enough to prevent the handle from engaging. If they are not tight enough, damage to the gears and motor will result.

## **4.2. Placement Procedure**

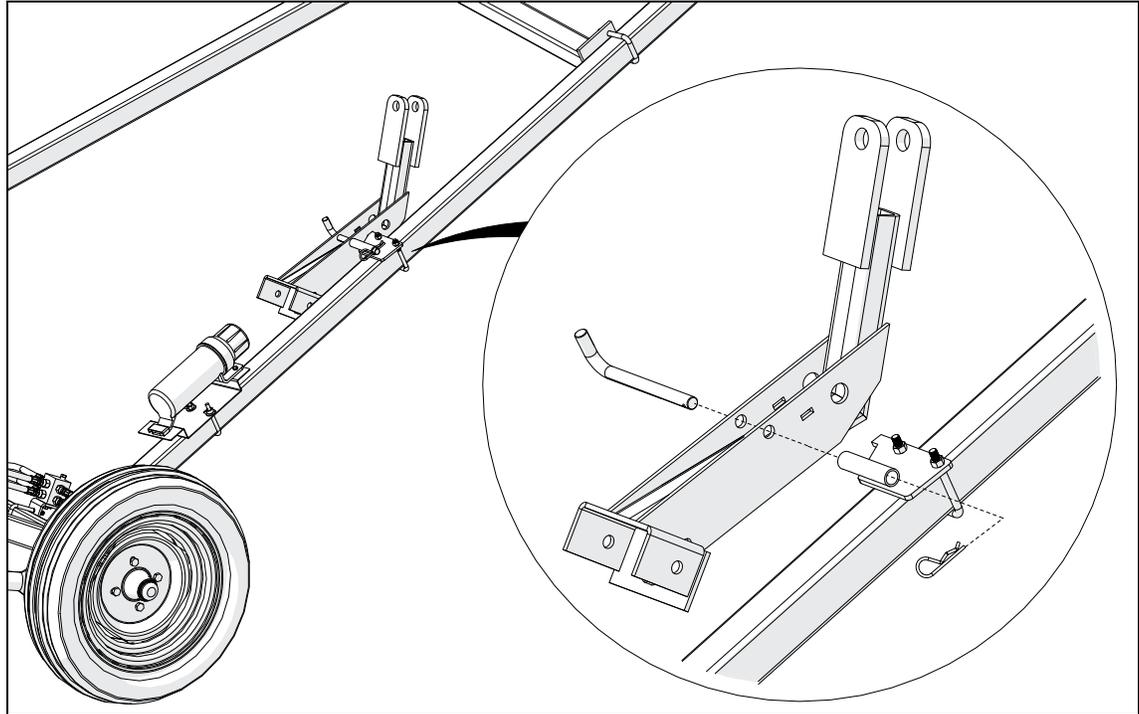
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Follow this procedure when placing the machine into its working position:

1. Be sure there is enough clearance from overhead obstructions, power lines, or other equipment to move the machine into its working position.
2. Position machine in the desired area. For operating instructions, see Section 5.2.

3. Detach the Offset Hitch from the intake guard, and stow it on the hitch mount bracket on the frame arm (see figure below).

**Figure 4.5 Stowing the Offset Hitch on the Hitch Mount Bracket**



**When Placing Under Hopper Bottom Bins:**

1. Ensure the wheel v-frame can easily pass through the hopper bin vertical legs.
2. Ensure the wheel v-frame does not have to travel over an obstruction.
3. Auger intake is centered between the hopper bin vertical legs. This ensures that the operator has adequate clearance for auger operation.
4. Ensure the auger gearbox will not contact the hopper cone when in its final position.

**When Placing Into Flat Bottom Bins:**

1. Ensure the wheel v-frame won't contact the side of the bin when auger is in its final position.
2. Ensure the door of the bin is not obstructed.
3. Ensure the auger intake will fit through the bin access door.

# 5. Operation

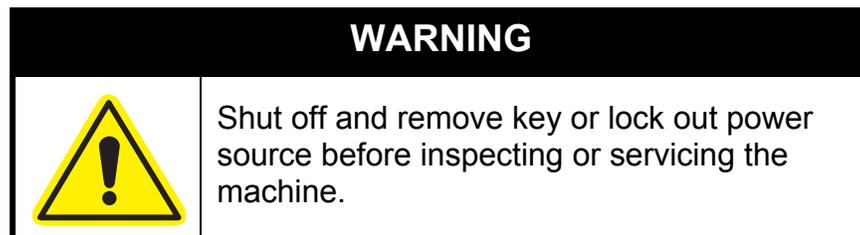
**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

Operators must observe safety procedures at all times and follow the pre-operational checklist before each start-up.

## Pre-Operation Checklist

Before operating each time, the operator must follow the checklist, which should confirm the following:

- Follow the service schedule.
- Check hydraulic system oil level.
- Ensure that all hydraulic lines are free from damage, and that all fittings are tight.
- Visually inspect the unit for damage to components. Replace or repair any damaged or questionable parts.
- Check that all guards are installed, secured, and functioning as intended.
- Check the worksite and clean up the area, if needed.
- Ensure that the auger is securely attached to the towing vehicle or tractor.



## 5.1. Start-Up

Although there are no operational restrictions on the machine when used for the first time, it is recommended that the following mechanical items be checked:

### Before Starting:

- Read power unit operational manual.
- Inspect hydraulic hose fittings for leaks. Tighten if necessary, and replace worn or damaged hoses.
- Inspect hydraulic mount bolts for tightness.

### During the First Few Minutes:

- Ensure unit is running properly.
- Some air may be trapped in the hydraulic system; slowly activate hydraulic control valves to ensure all air is out of the system.

### After Operating or Transporting For 1/2 Hour:

- Retorque all wheel bolts (if applicable).
- Retorque all fasteners and hardware.
- Check all safety decals are installed and legible. Apply new ones if needed.

- Check all guards are installed and working as intended.

**After 3 Hours:**

- Change oil for best results.

**After 5 and 10 Hours:**

- Check all hydraulic hoses and fittings for leaks. Tighten fittings where required, and replace worn or damaged hoses.
- Retorque all wheel bolts (if applicable), fasteners, and hardware.

## 5.2. Operating Procedure

---

**Important:** Ensure the over-center handle at each wheel is fully engaged by pushing down on the handle at each wheel and checking that the gears fully mesh (see Section 3.7. for adjustment if necessary).

1. With the engine at idle, use the hydraulic controls (Figure 5.1, and 5.2) to fully lower the auger tube before moving the auger into position.
2. Raise the auger intake end off the ground.
3. Ensure drive lock pins at each wheel are not engaged.
4. Move the auger into place:



- **Manual Steering:** twisting the **wheel move control** forward or backward to control the direction of travel. Steering is accomplished by turning the **handle bar**. Steering is easier if the auger is in motion.



- **Hydraulic steering:** use the hydraulic controls to control direction of travel, as well as to steer.

5. When grain augering is complete, ensure that the engine is set to an idle before operating the hydraulic controls.

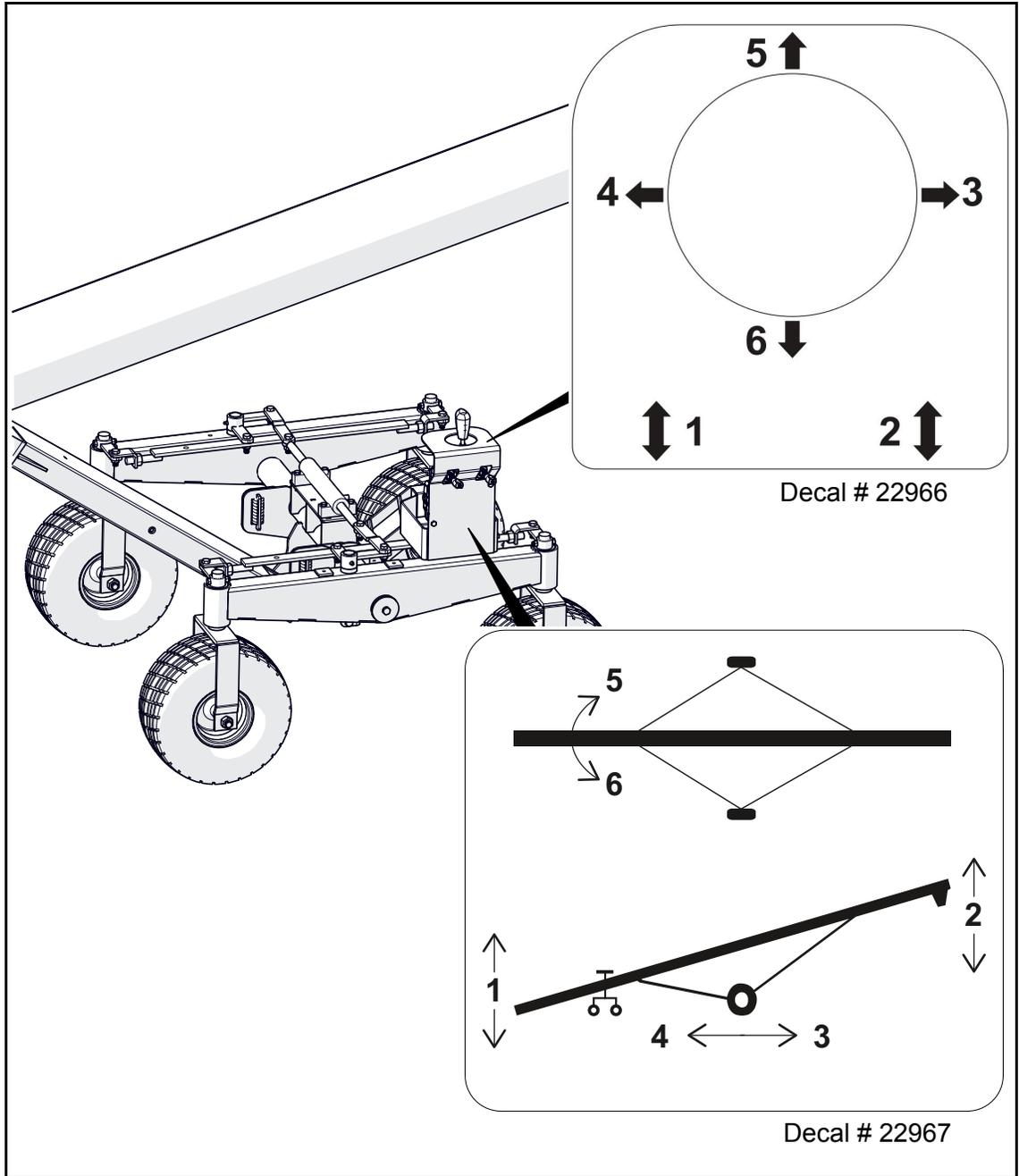
**Note:** Leave extra clearance to accommodate wide turns.

**Note:** Refer to Section 6.1.1. for winch valve kickout adjustment, 6.1.4. for cushion valve adjustment, and 6.1.2. for adjustment of the ram speed.

CAUTION	
	Do not attempt to move the auger on uneven or hilly terrain. The mover will not perform well under these conditions and could damage the machine or injure the operator.



Figure 5.3 Hydraulic Controls (Hydraulic Steering)



# 6. Maintenance & Storage

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

## 6.1. Maintenance

Before performing any maintenance on this unit, shut off and remove key or lock out power source.

1. Periodically check for wear and proper meshing of the ring gear and pinion. See Section 3.7.
2. Change oil annually to remove any accumulation of dirt or condensation in the system. Replace with ISO 32 hydraulic oil. Do not over-fill reservoir. Leave 1/2 quart (0.47L) space to allow for level fluctuation.
3. Inspect hoses and fittings. Replace as required.

### 6.1.1. Hydraulic Winch

The hydraulic winch option allows the operator to safely and easily lower and raise the auger.

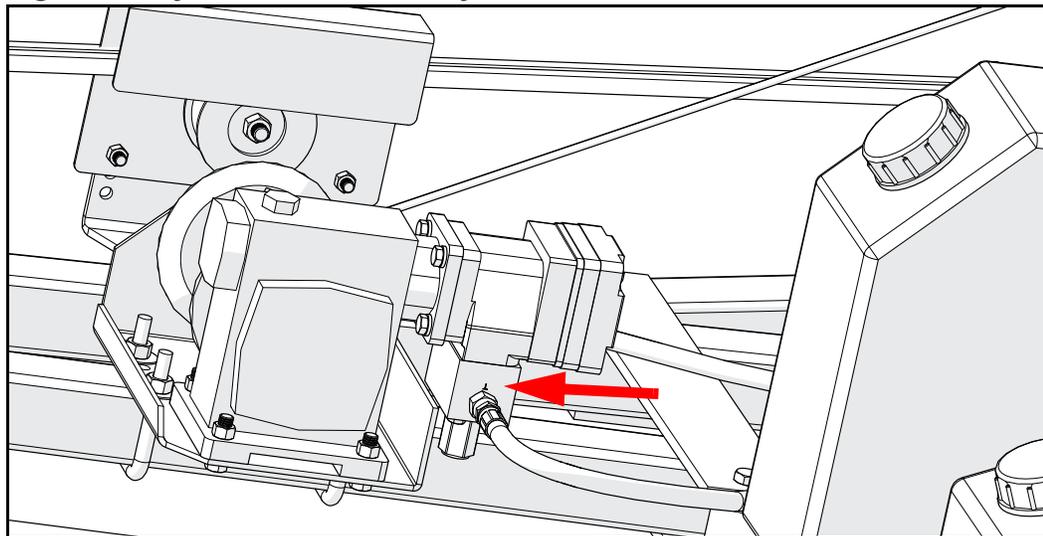
The winch is equipped with a factory preset safety valve that allows the winch to completely raise the auger, but it will stop once the auger is fully raised.

The safety valve is non-adjustable and does not require any maintenance.

The only item that an operator must inspect is the cable, and if this cable is frayed or worn, it must be replaced.

**Important:** Winch speed is adjusted at the factory. Cold temperatures may cause the winch to operate slowly.

**Figure 6.1 Hydraulic Winch Safety Valve**



WARNING	
	Winch cable must be wound onto the drum of the winch from the top of the drum. This ensures the safe and proper operation of the hydraulic winch.

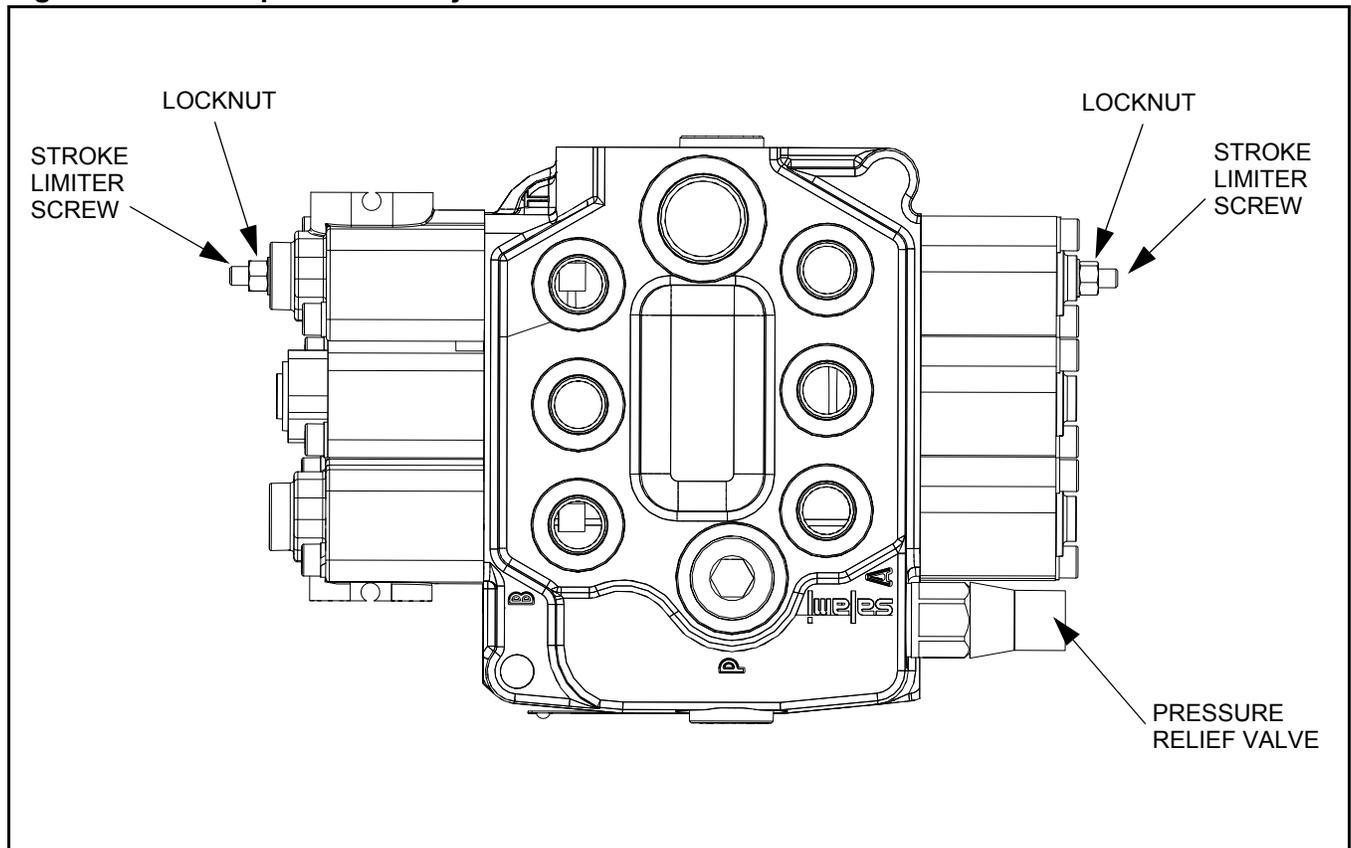
### 6.1.2. Ram Speed Adjustment

Ram speed is regulated at the control valve. The adjustable stroke limiter screws and lock nuts set the speed of ram travel individually in each direction (Figure 6.2).

Adjust the stroke limiter screws and lock nuts until the desired rate of travel is achieved.

- Turning the screws in results in a slower speed.
- Turning the screws out results in a faster speed.

Figure 6.2 Three Spool Valve Adjustment



### 6.1.3. Hydraulic Pressure Relief Valve Adjustment

**Note:** Before adjusting, ensure auger is fully lowered (intake and discharge ends) and that the auger is on a level surface.

If the controls are “jerky” or act too fast, it may be necessary to increase the hydraulic pressure on the self-propelled auger kit. To do this, follow the steps below (Figure 6.2).

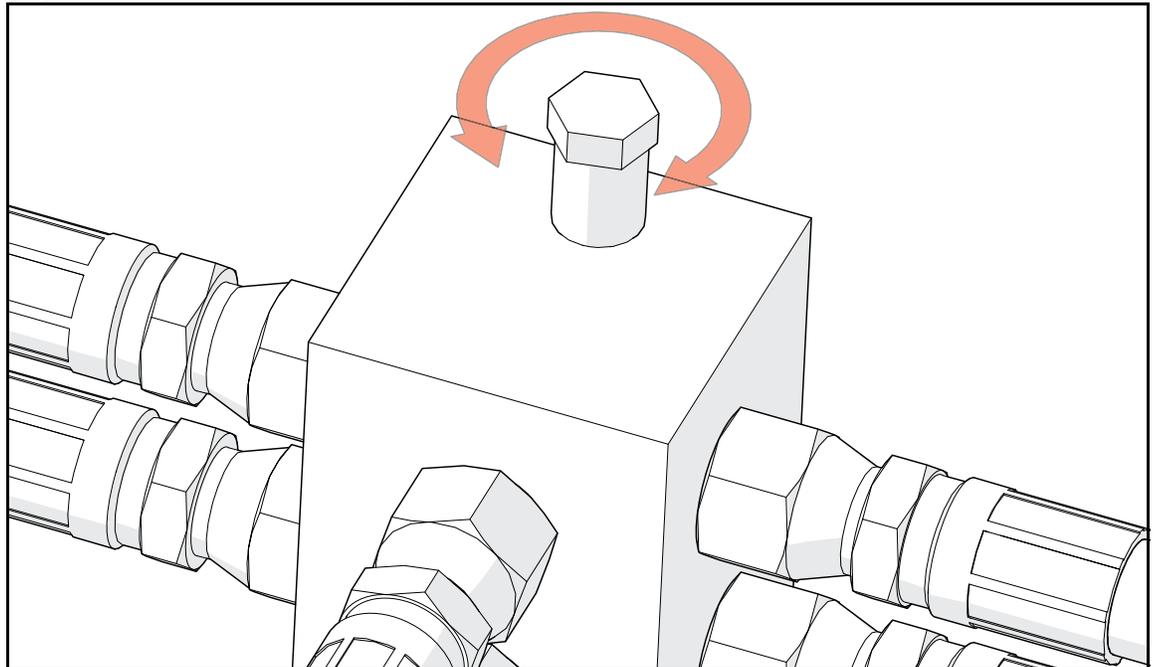
1. Ensure auger engine is idling and that the auger fighting is disengaged before adjusting.
2. **To decrease hydraulic pressure:** loosen jam nut on 3 spool valve (bottom right side of valve) and turn adjustment screw out (counter-clockwise) 1/4 turn. Tighten jam nut.
3. **To increase hydraulic pressure:** repeat step 2. except turn adjustment screw in (clockwise) 1/4 turn. Tighten jam nut.

### 6.1.4. Cushion Valve Adjustment

To control the speed of the mover, the adjustable needle valve (Figure 6.3) can be:

- screwed in for increased speed (adjust by 1/8 turn increments)
- screwed out for decreased speed (adjust by 1/8 turn increments)

**Figure 6.3 Cushion Valve Adjustment**



## 6.2. Storage

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To ensure a long, trouble-free life, prepare unit for storage after the season's use following the procedure below:

- Store the machine on a level surface, free of debris, and in an area away from human activity. Store in a dry place, or use a tightly secured tarp to protect the equipment from the weather.
- Ensure that the unit is in transport position.
- Remove all residual material and clean the machine thoroughly.
- Inspect the unit at stress points for cracks.
- Repair or replace any worn or damaged components to prevent any unnecessary downtime at the start of the next season.
- Touch up paint nicks and scratches to prevent rusting.
- Check hydraulic fittings, hoses, lines, couplers, and valves. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded, or is separating from the crimped end of the fitting. Secure the hoses to the machine.
- Inspect and tighten all fasteners; replace fasteners if required.
- Check tire inflation.
- Retract all cylinders or grease exposed shafts.
- Inspect hydraulic cylinders for leaks; replace seals if necessary



# 7. Troubleshooting

PROBLEM	CAUSE	SOLUTION
Valve is leaking.	loose/cracked fittings	tighten/replace fittings
	worn hose	replace hose
	valve spools are worn	replace valve
Machine operates slowly.	oil is hot	check oil level and add oil if required (use general purpose ISO 32 hydraulic oil)
	blockage in hydraulic lines	suction hose blocked or kinked
	power source is not producing enough oil volume and/or pressure	speed up the engine to produce more flow/pressure the power unit may not have enough capacity to operate properly
	cushion block needs adjusting	adjust valve on cushion block by turning inward 1/8 of a turn at a time, refer to "Cushion Valve Adjustment" on page 55
Hydraulic winch will not raise auger.	filter plugged (if equipped)	change filter.
	relief valve pressure set too low	adjust relief valve pressure, refer to "Hydraulic Pressure Relief Valve Adjustment" on page 55
	oil level is too low	check oil level
Hydraulic cylinder leaking.	pump is worn out	replace pump
	worn seal	replace seal
Winch coupler spins off (Dutton winch).	internal winch parts worn	replace worn parts
	damage or obstruction on tracking	check tracking for damage or obstructions
Auger doesn't drive.	cushion block needs adjusting	adjust needle valve by turning clockwise 1/8 of a turn - try and repeat if necessary, refer to "Cushion Valve Adjustment" on page 55.
Pinion gear slipping or binding.	pinion gear not adjusted properly	Adjust the pinion gear. See "Pinion Gear Adjustment" on page 19.





# 8. Appendix

## 8.1. Bolt Torque Values

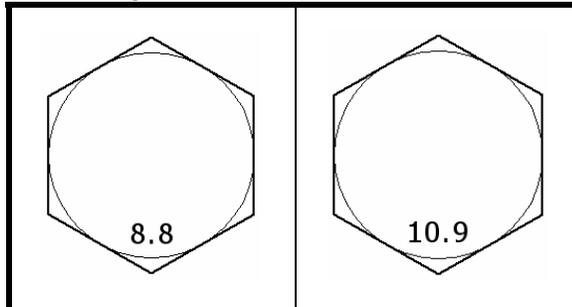
Tables 8.1 and 8.2 give correct torque values for various bolts and capscrews. The bolt diameter is measured to the outside of the threads. When tightening all bolts, tighten the nut on the bolt to the torque specified in the tables, unless otherwise specified. Do not replace or substitute bolts, nuts, or other hardware that is of lesser strength than the hardware supplied by the manufacturer.

Torque values indicated below are valid for non-greased or non-oiled threads and head, unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

**Table 8.1 SAE Bolt Torque**

Bolt Diameter	SAE 2		SAE 5		SAE 8	
	(N·m)	(ft·lb)	(N·m)	(ft·lb)	(N·m)	(ft·lb)
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970

**Table 8.2 Metric Bolt Torque**



<b>Bolt Diameter</b>	<b>(N·m)</b>	<b>(ft·lb)</b>	<b>(N·m)</b>	<b>(ft·lb)</b>
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

# WARRANTY

Westfield Industries Ltd. warrants products of its manufacture against defects in materials or workmanship under normal and reasonable use for a period of one year after date of delivery to the original purchaser.

Our obligation under this warranty is limited to repairing, replacing, or refunding defective part or parts which shall be returned to a distributor or a dealer of our Company, or to our factory, with transportation charges prepaid. This warranty does not obligate Westfield Industries Ltd. to bear the cost of labor in replacing defective parts. Any defects must be reported to the Company before the end of the one year period.

This warranty shall not apply to equipment which has been altered, improperly assembled, improperly maintained, or improperly repaired so as to adversely affect its performance. Westfield Industries Ltd. makes no express warranty of any character with respect to parts not of its manufacture.

The foregoing is in lieu of all other warranties, expressed or implied, including any warranties that extend beyond the description of the product, and the IMPLIED WARRANTY of MERCHANTABILITY is expressly excluded.

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