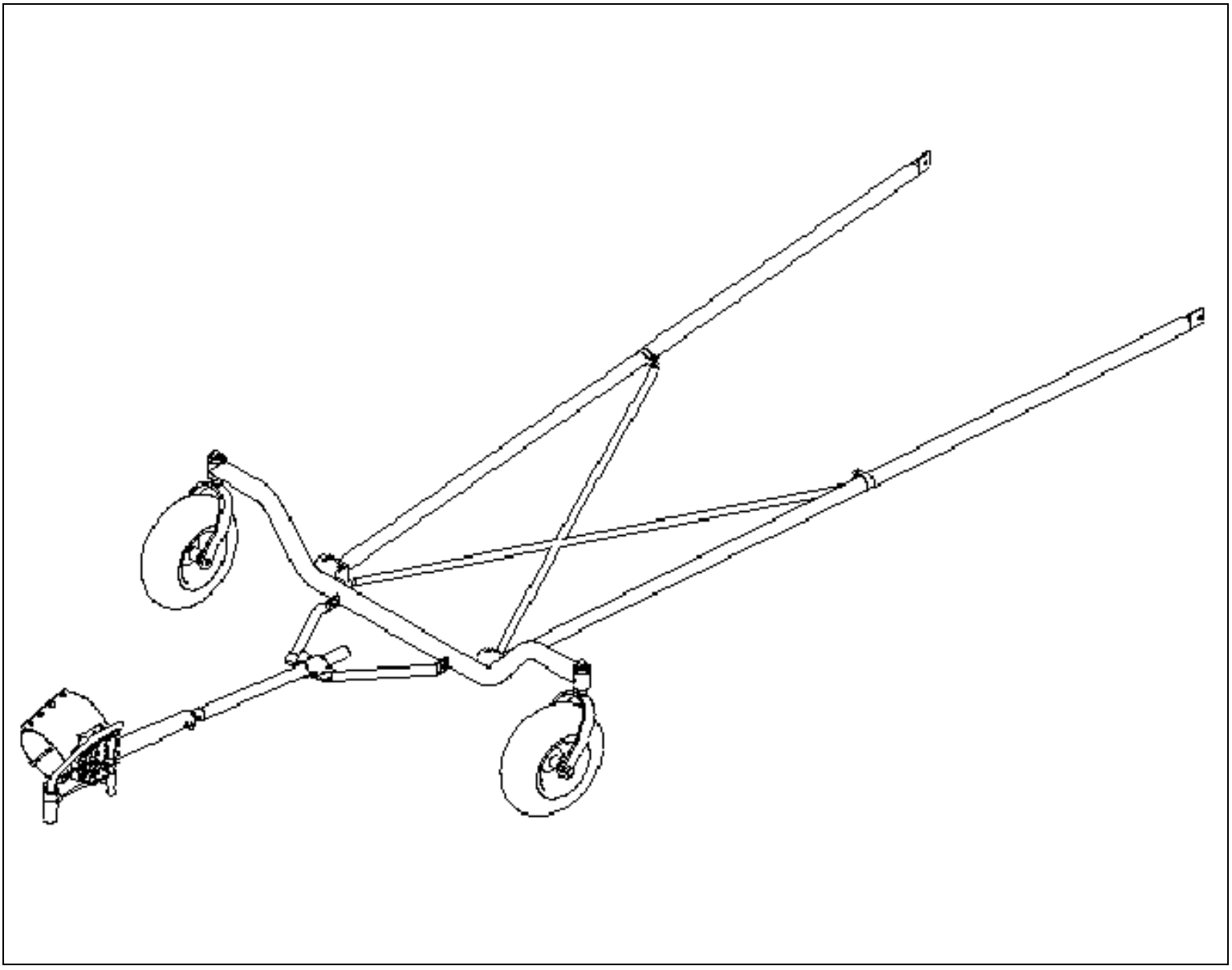
Wheatheart

SELF-PROPELLED AUGER KIT

WHEATHEART & COMPETITOR MODELS
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: IM3 R2

Revised: Feb/10

This product has been designed and constructed according to general engineering standards[a]. Other local regulations may apply and must be followed by the operator. We strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this product. Periodic reviews of this manual with all employees should be standard practice. For your convenience, we include this sign-off sheet so you can record your periodic reviews.

Date	Employee Signature	Employer Signature

a. Standards include organizations such as the American Society of Agricultural and Biological Engineers, American National Standards Institute, Canadian Standards Association, International Organization for Standardization, and/or others.

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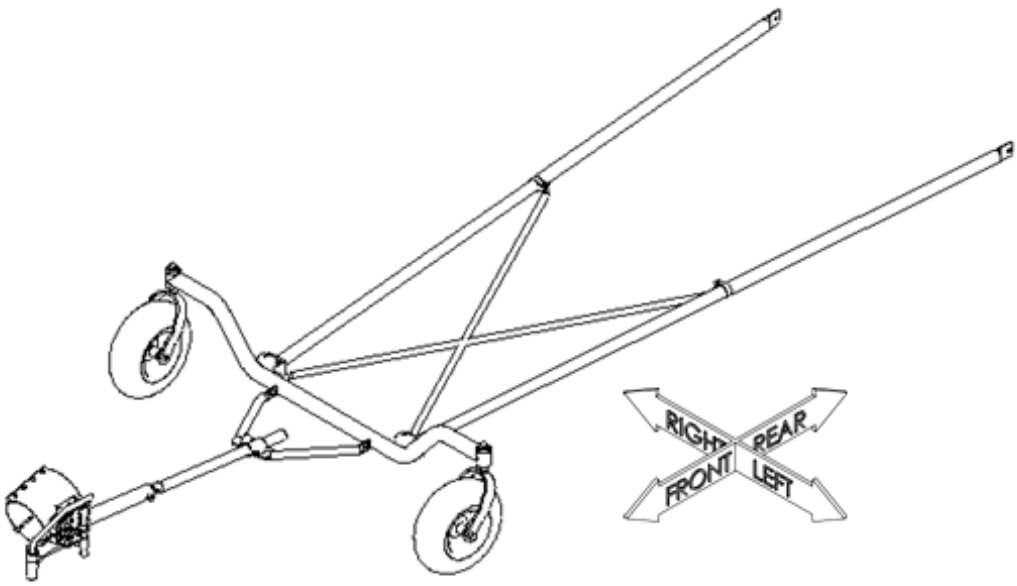
1. Introduction

Congratulations. As the new owner of a Wheatheart self-propelled auger, 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 Wheatheart distributor or dealer if you need assistance, information, or additional copies of the manual.

OPERATOR ORIENTATION—The directions left, right, front, and rear, as mentioned throughout the manual, are as seen from the tractor or towing vehicle's driver's seat, and facing in the direction of travel when the unit is being transported.



SERIAL NUMBER:_____

DATE PURCHASED:_____

DEALER NAME: _____

2. Safety First

The Safety Alert symbol to the left 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 to you?

Three big reasons:

- 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.

The Safety Alert symbol means ATTENTION, BE ALERT!, YOUR SAFETY IS INVOLVED.

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.

2.1. GENERAL SAFETY

Important: *The general safety section includes instructions that apply to all safety practices. Any instructions specific to a certain safety practice (e.g., assembly 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.*

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.

- It is the equipment owner and the operator's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them before assembling, operating, or maintaining the equipment. All accidents can be avoided.

- Equipment owners must give instructions and review the information initially and anually 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. Unauthorized modification may impair the function and/or safety, and could affect the life of the equipment. Any modification to the equipment voids the warranty.

- Do not allow children, spectators, or bystanders within the work area.
- Have a first-aid kit available for use should the need arise, and know how to use it.

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.
- Wear appropriate protective gear. This list includes, but is not limited to:
  - a hard hat
  - gloves
  - protective shoes with slip-resistant soles
  - protective goggles
  - hearing protection

- For Powered Equipment: before servicing, adjusting, or repairing powered equipment, unplug, place all controls in neutral or off position, stop the engine or motor, remove ignition key or lock out power source, and wait for all moving parts to stop.

- Follow good shop practices:
  - keep service area clean and dry
  - be sure electrical outlets and tools are properly grounded
  - use adequate light for the job at hand
  - Think SAFETY! Work SAFELY!

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

- 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.

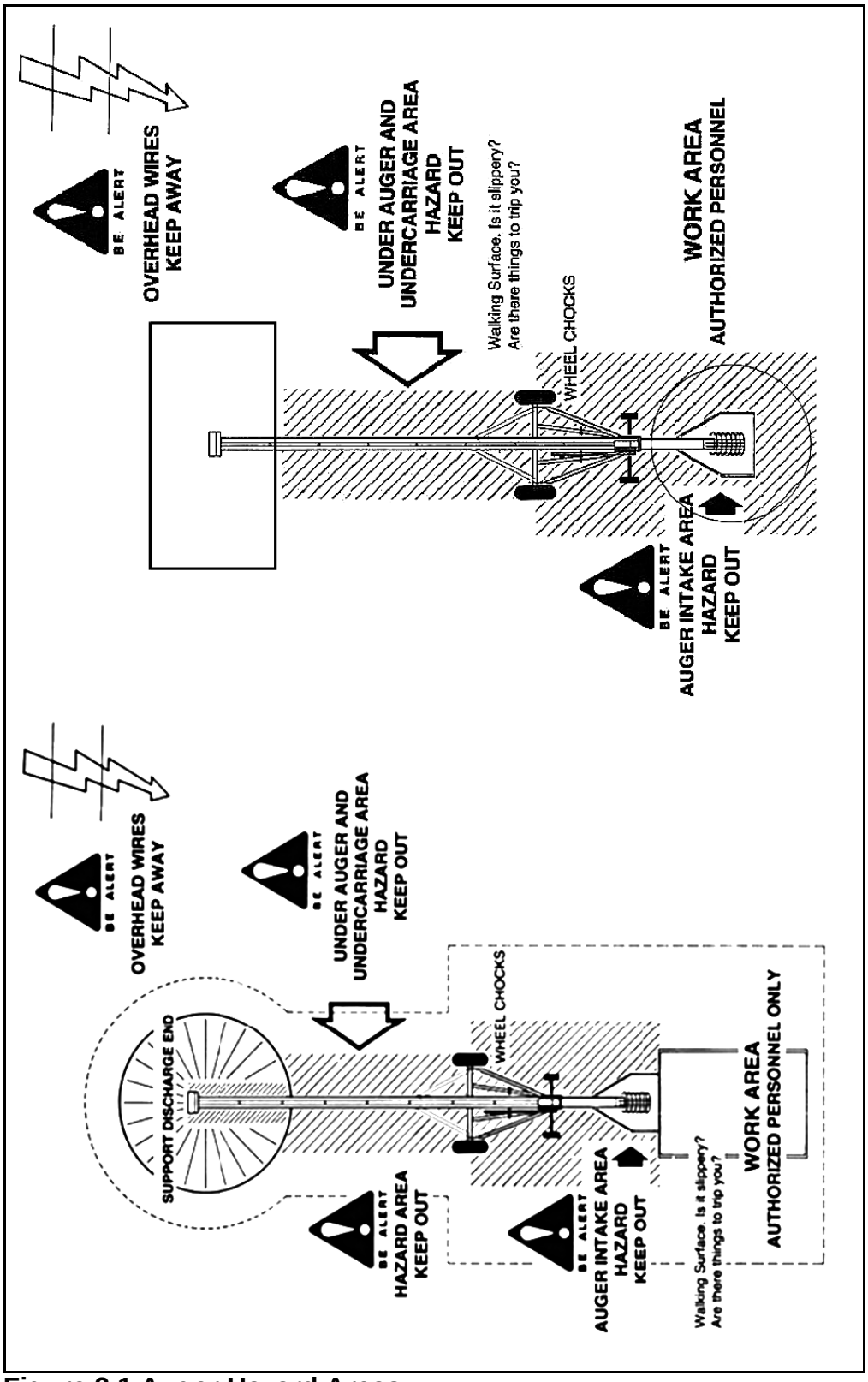


Figure 2.1 Auger Hazard Areas

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.

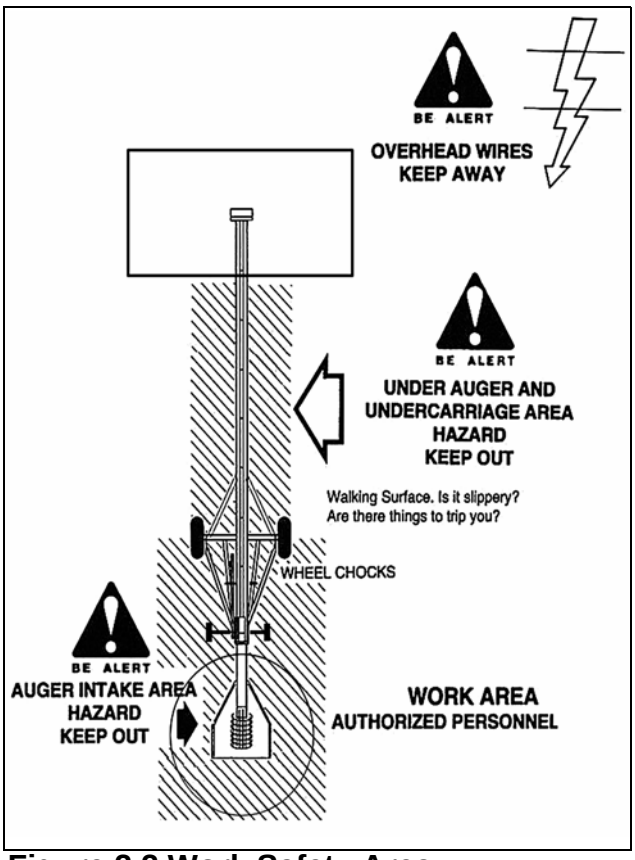


Figure 2.2 Work Safety Area

- 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. Electrocution 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 tight and that hoses and couplings are in good condition.
- 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 Wheatheart replacement parts or equivalent. Replacement parts must meet ASAE standards or serious injury may result. Use of unauthorized parts will void the warranty. If in doubt, contact Wheatheart or your Wheatheart 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 and in good condition and clean.
- 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 concrete. 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.

WARNING	
	Hydraulic fluid can cause serious injury if it penetrates the skin. If it does, see a doctor immediately. • Relieve pressure before disconnecting hydraulic line. • Wear proper hand and eye protection and use wood or cardboard, not hands, when searching for leaks.

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 manufacturers's recommended pressure.

2.10. SAFETY DECAL LOCATIONS

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

2.10.1. DECAL INSTALLATION

1. Decal area must be clean and dry, with a temperature above 10°C (50°F).
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. DECAL LOCATIONS

Replicas of the safety decals that are attached to the equipment are shown below. Good safety 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.

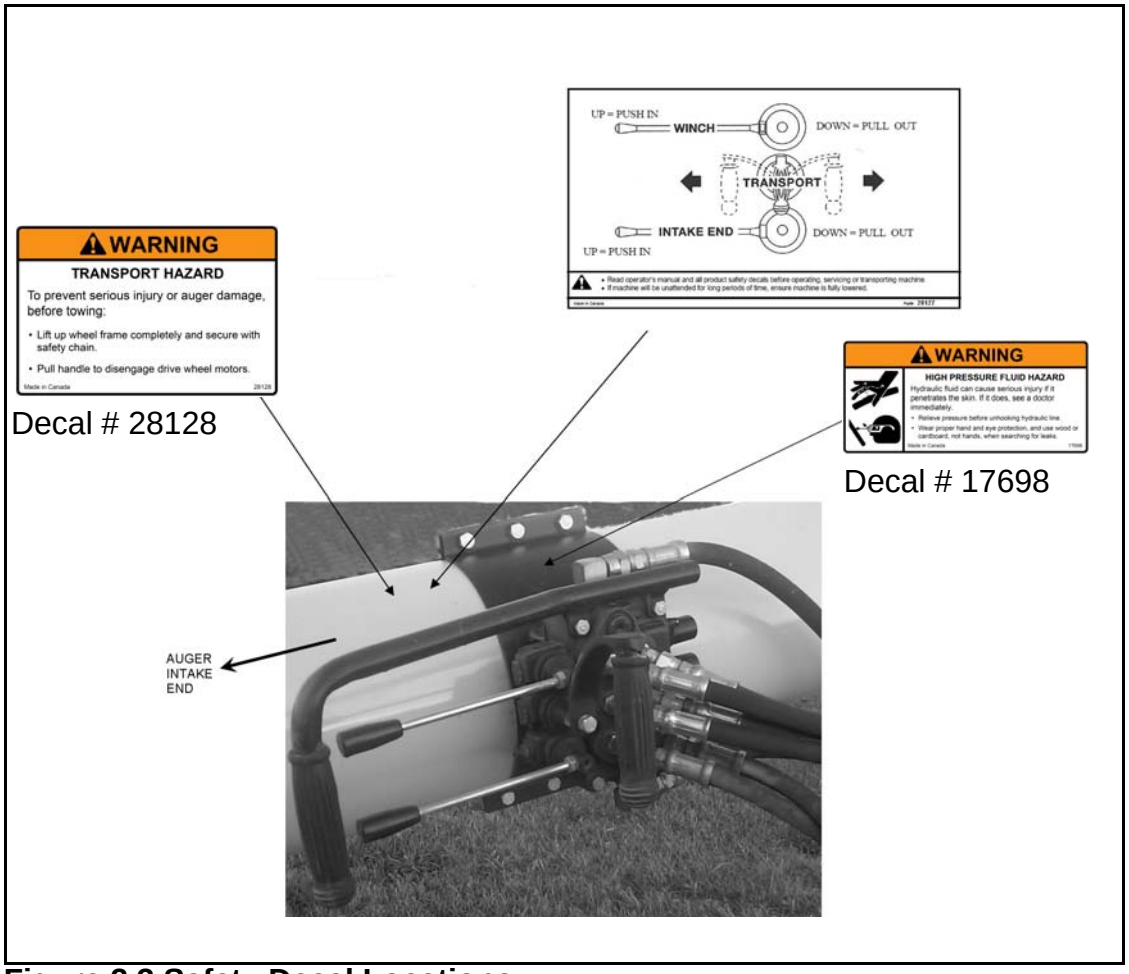


Figure 2.3 Safety Decal Locations

3. Assembly

Warning: Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in 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. GEAR PUMP ASSEMBLY

Refer to Figure 3.1 for assembly.

Note: *The engine pulley guard is removed from Figure 3.1 for illustrative purposes only.*

1. The over-center (o/c) pump bracket comes pre-assembled and is attached to the engine block with two 3/8” bolts. Use 1” pump shims to provide a flat mounting surface for the o/c pump bracket (Figure 3.1).
2. Install the single groove engine pulley and 1/2” x 4-1/2” pump pulley so they are in line.
3. Install the belt and slide the over-center bracket back to increase tension on the belt.
4. Tighten the 2 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 shift approximately 3/4” to 1” at the center.

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

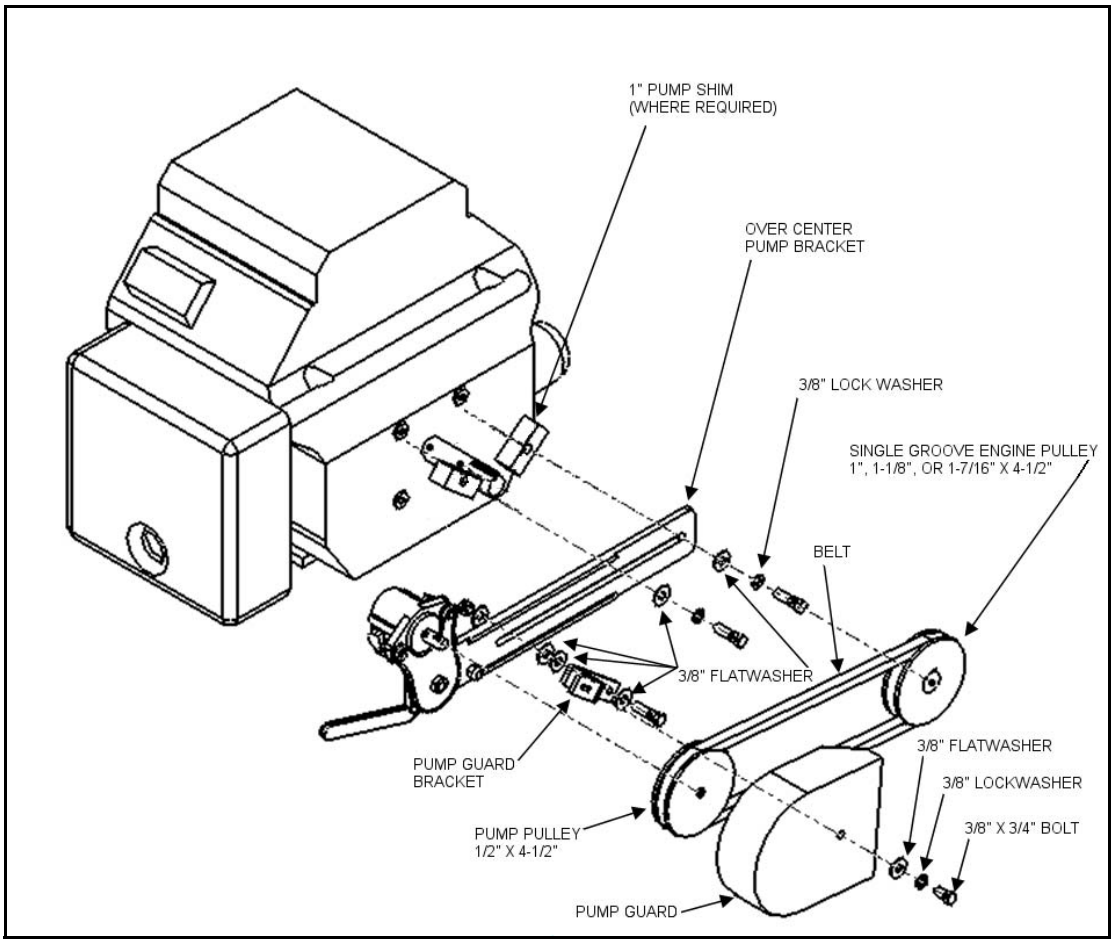


Figure 3.1 Gear Pump Installation Guard

3.2. PUMP GUARD ASSEMBLY

1. Bolt the pump guard bracket to the over-center pump bracket (Figure 3.1).
   - Install the pump guard bracket at the pump end of the long, adjustable slot, through the middle of the over-center bracket.
   - Place 2 washers between the pump guard bracket, and the over-center bracket so that the angle of the bracket may be adjusted to the belt.
2. 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.

3.3. OIL RESERVOIR ASSEMBLY

1. Bolt the double tank mount brackets to the frame with 3/8” x 2-5/8” u-bolts and 3/8” nylock nuts (Figure 3.2).
2. Secure the 22L oil reservoir to the tank mount brackets using the 32” clamps provided. The optional 43 L oil reservoir is attached to the double tank mount brackets using two 25” gear clamps joined together.

- Take care not to crush the oil reservoir when tightening hose clamps.
- The reservoir must be mounted so that the oil level remains above the gear pump (use general purpose ISO 32 oil).
- To reduce weight at the intake end, mount the tank as close as possible to the axle of the auger.

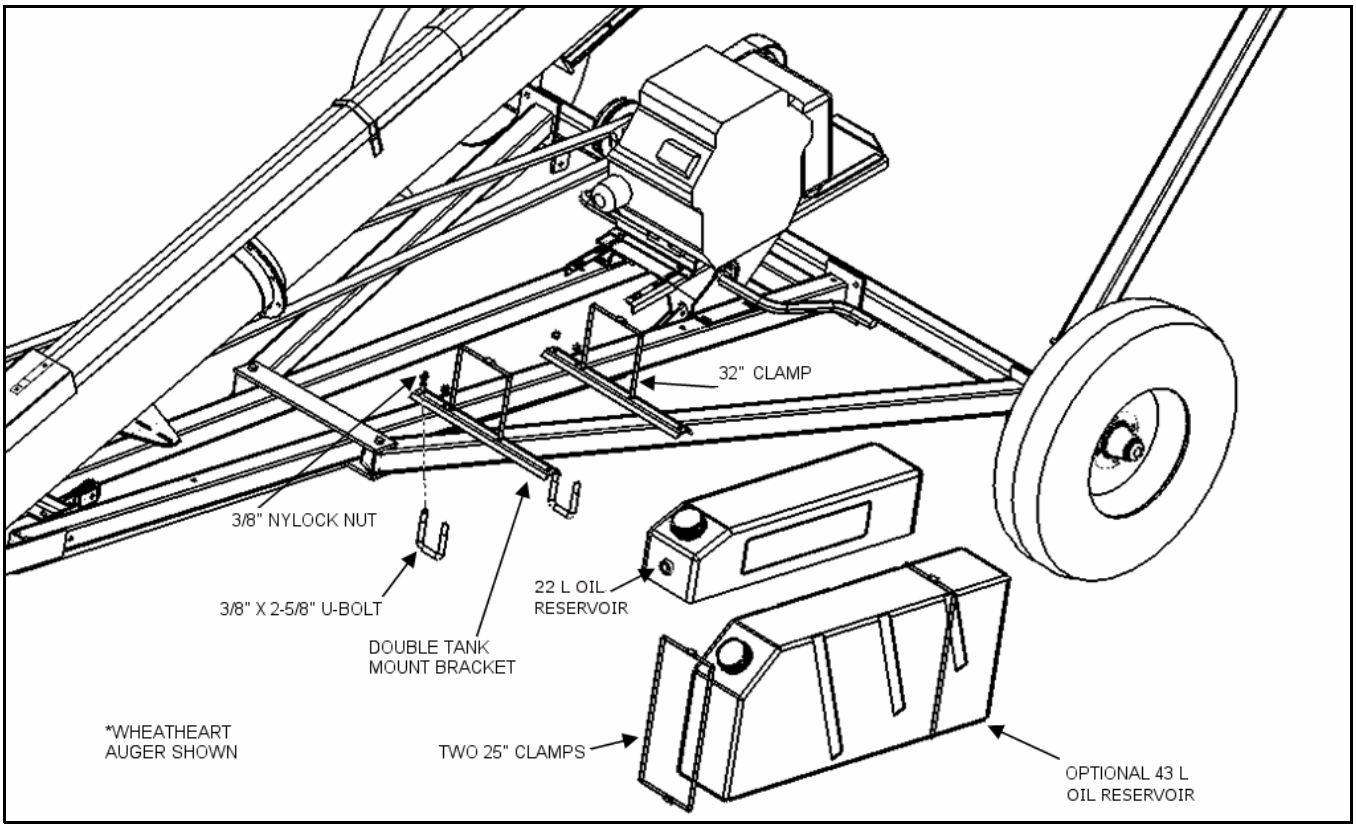


Figure 3.2 Hydraulic Reservoir Installation

3.4. GEAR DRIVE ASSEMBLY

CAUTION

Before removing the tires from the auger, ensure the auger is in the fully lowered position. Position the auger on a flat level surface and block the axle to fully support the auger while removing the wheels.

1. Remove tires from auger.
2. Insert ring gear into rim (Figure 3.3). Use a hammer to be sure the ring gear seats evenly into the rim.
3. Tighten the 4 set screws in rotation to lock gear evenly into place.
4. Hit the ring gear with a hammer again at each set screw and retighten in rotation.
5. After tightening, use a hammer and punch to deep set the screws by giving a blow beside each screw.
6. Retighten set screws.
7. Put tires back on auger.

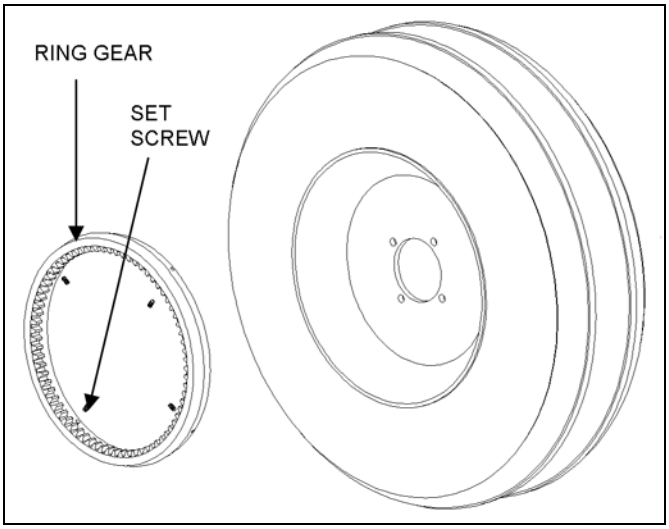


Figure 3.3 Ring Gear Installation

3.5. OVER-CENTER DRIVE ASSEMBLY—ROUND AXLES

1. Ensure shims fit on round axle. On some augers, shims are welded to hub; this can be checked by lining up with the tire rim. Shims are normally sized and supplied by the factory for individual augers.
2. Weld fitted shims to each axle cap (Figure 3.4).
3. Bolt axle cap axle near wheels, but do not tighten bolts. Use level to ensure axle caps are straight and flush.
4. Bolt the drive assembly on the axle caps. Adjust position until pinion gear is flush with ring gear (Figure 3.5).
5. Weld shims to axle, and weld axle hubs solid.
6. Reassemble the tires. Bolt on the drive clamp with the handle down when the gear is disengaged.

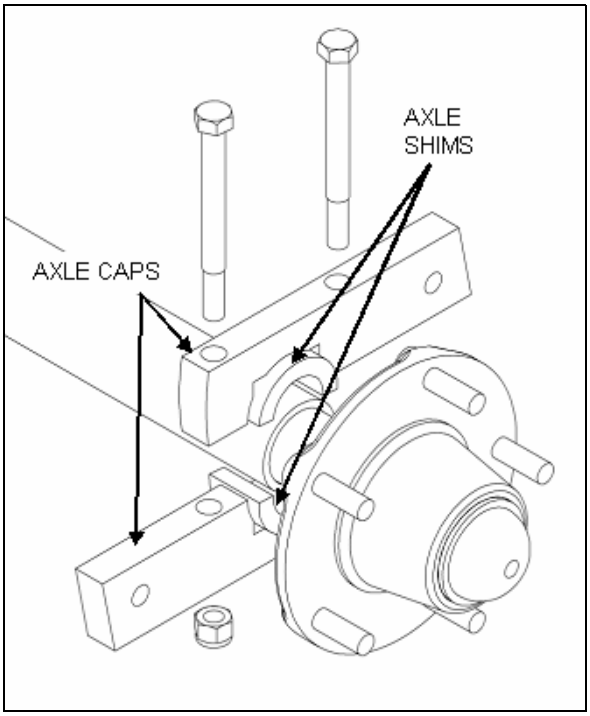


Figure 3.4 Axle Shims

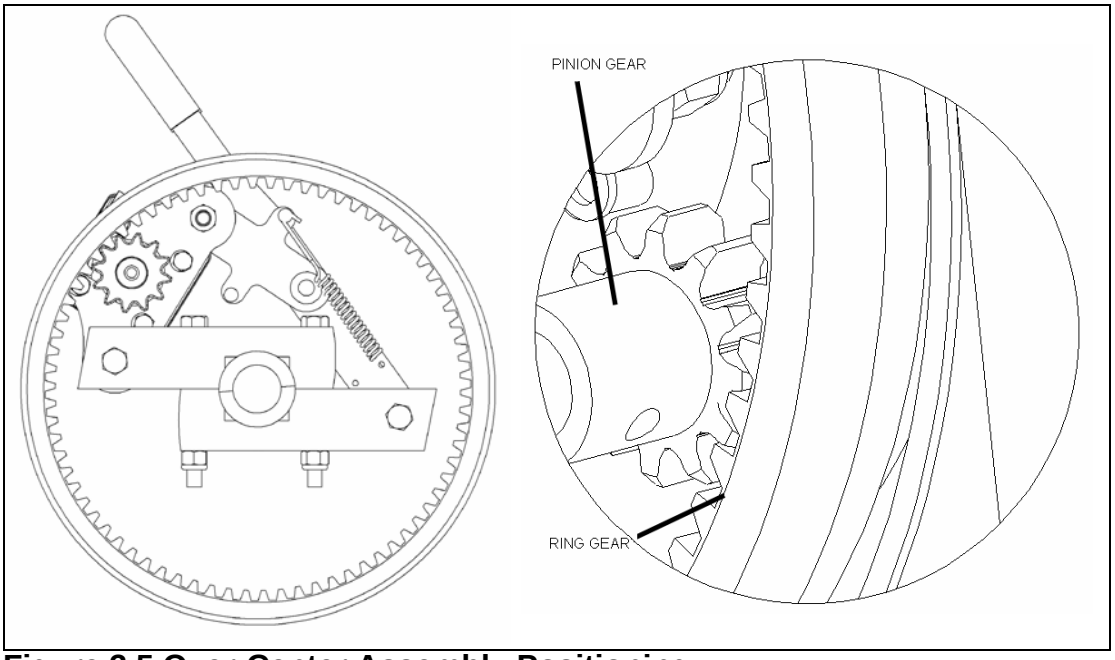


Figure 3.5 Over-Center Assembly Positioning

3.6. OVER-CENTER DRIVE ASSEMBLY—SQUARE AXLES

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 3.6.
3. With the pinion gear flush with the ring gear (Figure 3.6), weld the axle cap to the axle tube.

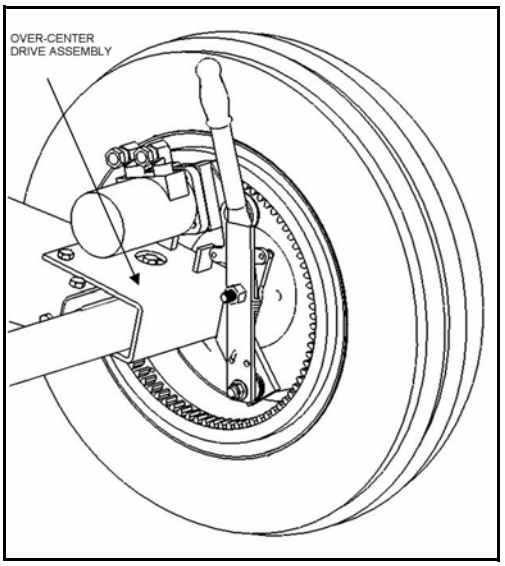


Figure 3.6 Over-Center Assembly Positioning

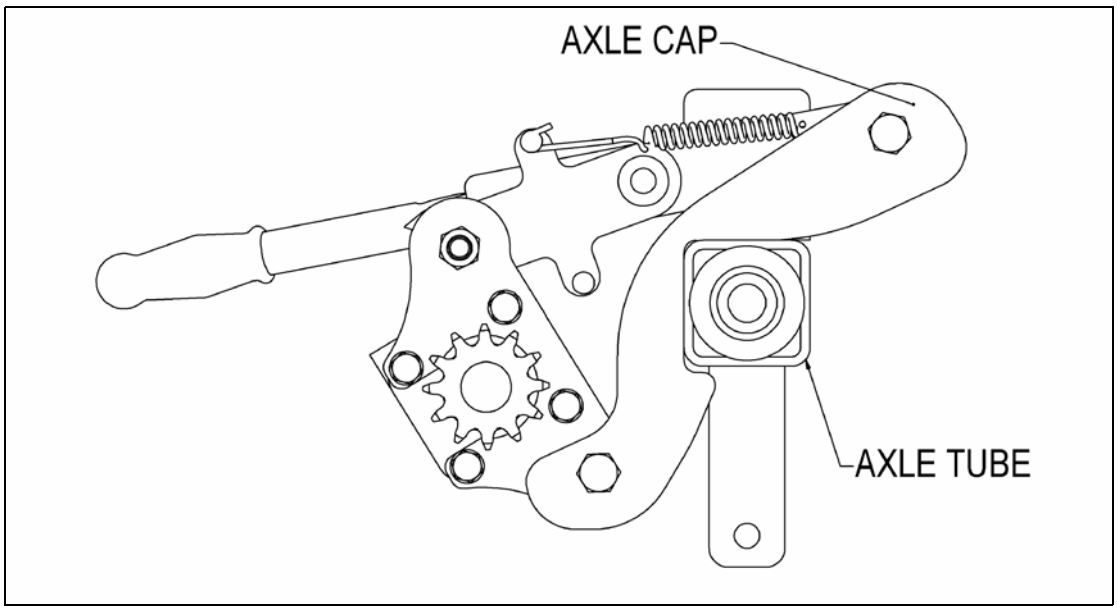


Figure 3.7 Square Axle over-Center for Competitor Models

3.7. OVER-CENTER DRIVE ASSEMBLY—WHEATHEART BH AUGERS

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 3.6.
3. With the pinion gear flush with the ring gear (Figure 3.5), bolt the axle cap to the axle tube.

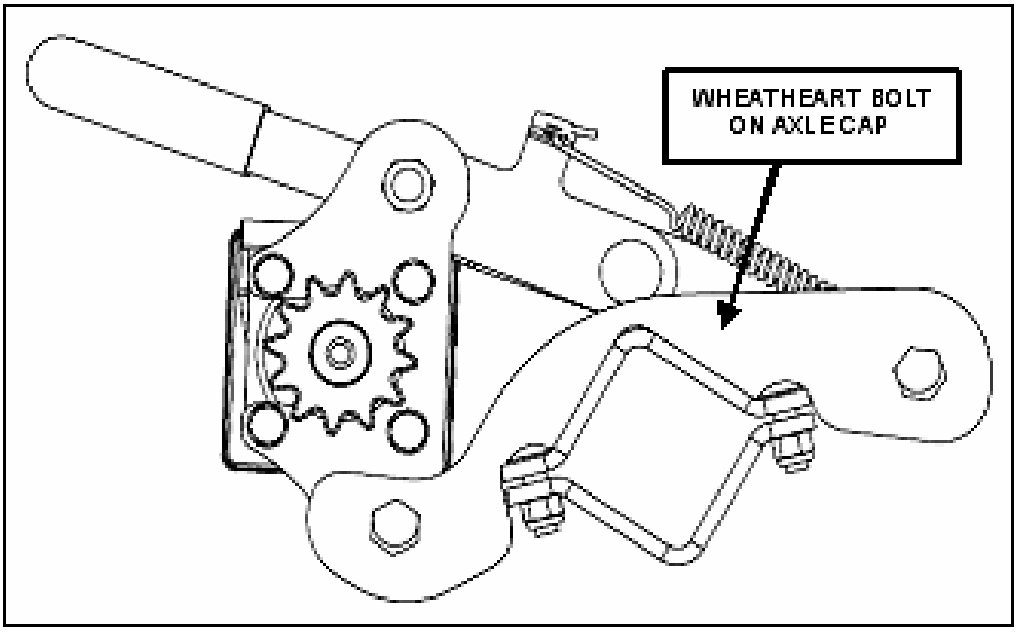


Figure 3.8

3.8. PINION GEAR ADJUSTMENT

For gear depth alignment, refer to Figure 3.9.

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 3.5).

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 3.9).

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.

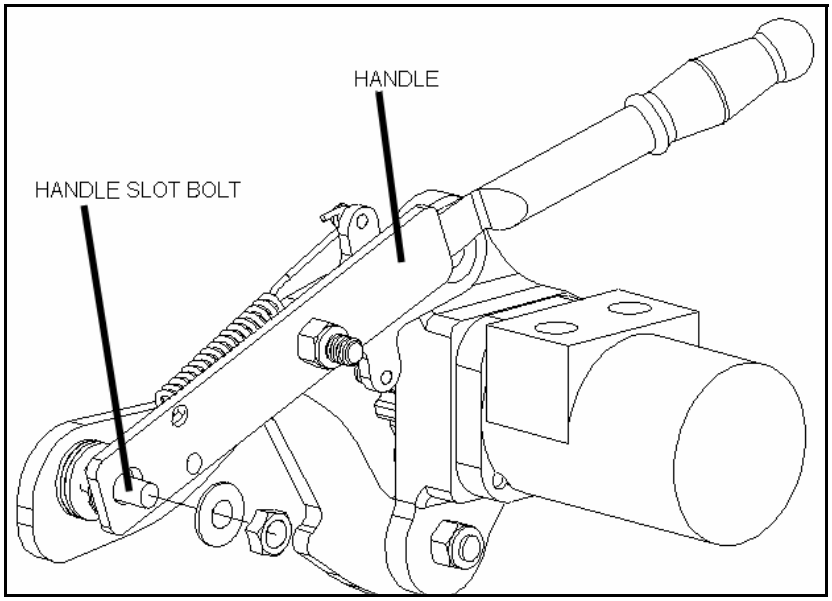


Figure 3.9 Over-Center Assembly Adjustment

3.9. UNDERCARRIAGE INSTALLATION

Important: ***Pre-Assembly:*** *When assembling the frame pipes, ram extension, and cylinder under the auger, the components should form a straight line from the axle to the ram mount ring when the auger is fully lowered. If the frame components prevent the transport frame pipes from forming a straight line, then the frame pipes and axle tabs must be mounted on the auger support arms.*

1. Lower the auger completely.
2. Install axle tabs by clamping (not welding) on axle.
3. Make sure that tabs are square to axle and oriented straight down.
4. Attach transport frame pipes to axle tabs on the auger axle frame as shown in Figure 3.11 using the bolts and locknuts provided.
5. The clevis end of the transport pipe fits inside the clevis on the V-frame. Attach using the bolts and locknuts provided.
6. In the location noted in Figure 3.10, bolt the control panel ring to the auger tube approximately 9’ from the intake cage. Do not tighten the bolts yet.

Note: *The hydraulic ram is normally mounted to a separate ram mount ring, not the control ring (Figure 3.10). The only exception to this is if the straight line path from the axle to the tube intersects the control ring.*

7. Mount the ram mount ring to the tube as indicated ahead of the control ring; refer to Figure 3.10.
8. Connect the fully retracted cylinder to the tab on the ram mount ring and the ram extension.
9. The ram extension slides into the A-frame attached to the tabs on the V-frame as shown in Figure 3.12. The ram extension length must be set at the proper distance from the ram mounting A-frame for proper operation of the transport kit. To set the ram extension length, elevate the V-frame to adequately clear the ground, but not interfere with the auger support arms.
10. Elevate the V-frame, undercarriage pipes, and ram assembly to form a straight line (transport position) as shown in Figure 3.10. Tighten the control ring and ram mount ring bolts.
11. If the frame components prevent the transport frame pipes from forming a straight line, then the frame pipes and axle tabs must be mounted on the auger support arms. To do this, slide the ram mount ring, cylinder, ram extension, and frame pipes toward the hopper until they form a straight line and can be attached to the support arms. The transport frame pipes should not have to be moved more than 2’ in most circumstances.
12. Make sure that the tabs are square and oriented straight down before the final welding.

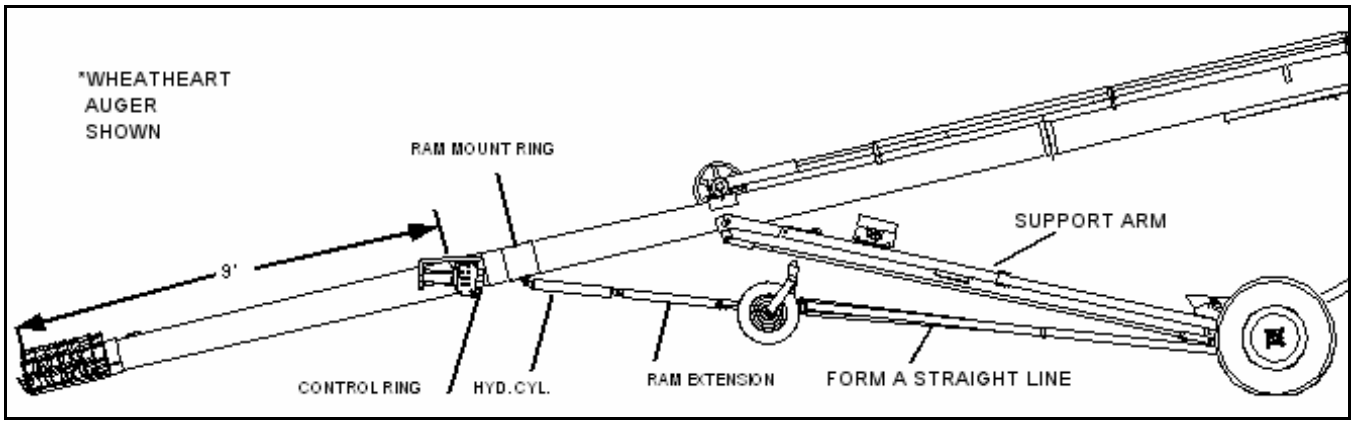


Figure 3.10 Control Ring Installation

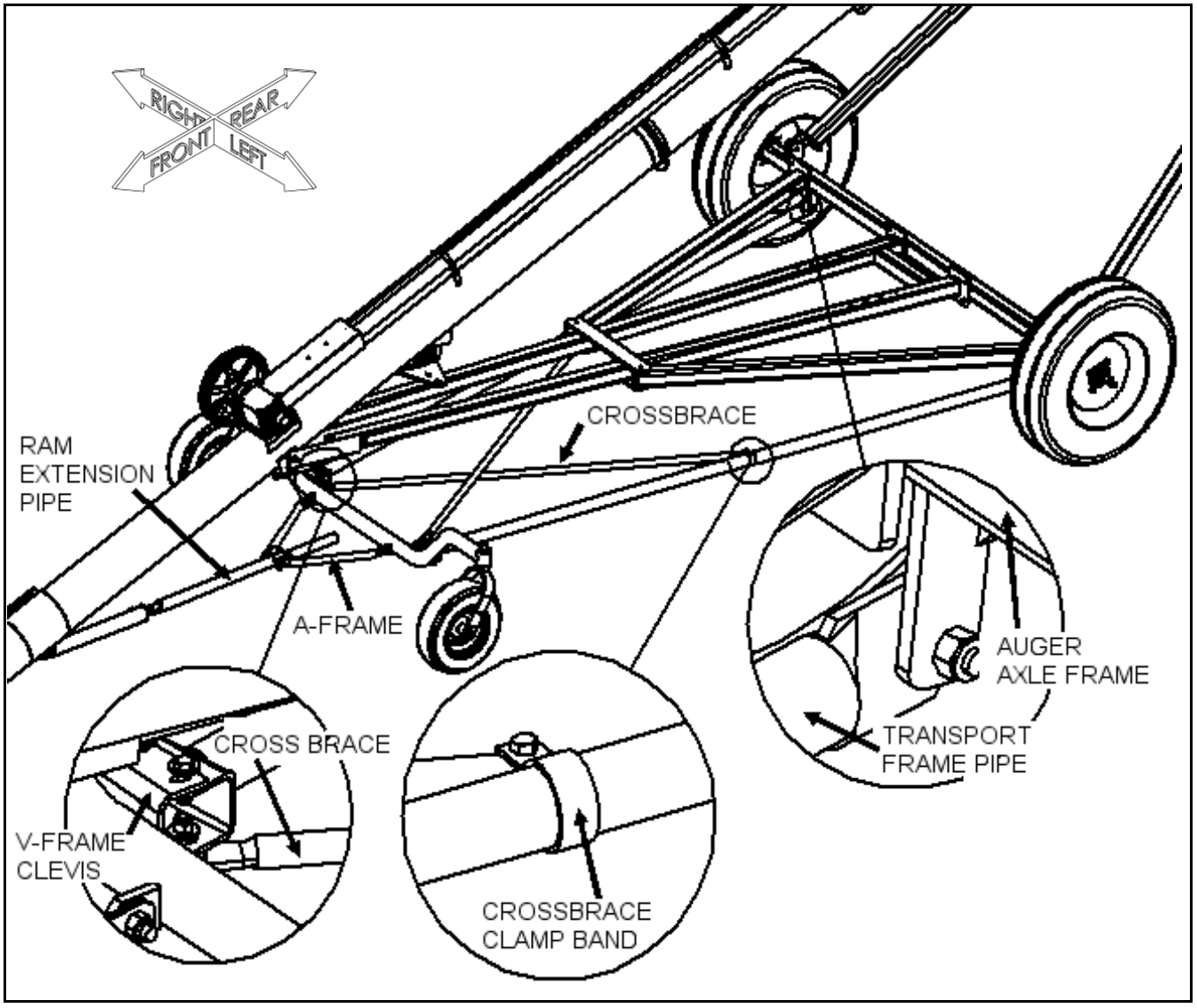


Figure 3.11 Self-Propelled Auger Frame Installation

13. One end of the crossbrace is attached to the V-frame clevis, the other is attached to the transport tube using clamp bands (Figure 3.11).
14. When attaching to the V-frame, be sure to mount one crossbrace to the top side of the V-frame clevis, and the other to the bottom.

3.10. RAM EXTENSION INSTALLATION

The ram extension slides into the A-frame attached to the tabs on the V-frame.

The ram extension length must be set at the proper distance from the ram mounting A-frame for proper operation of the transport kit (see Table 3.1 or 3.2, and Figure 3.12).

Table 3.1 Recommended Transport Pipe Length, Wheatheart Models

Auger Tube Length	Ram Extension Length	Transport Pipe Length
8”/10” x 36’	3-1/2”	86”
8” x 41’	10”	101”
8” x 46’	17”	120”
8” x 51’	17”	144”

Table 3.2 Recommended Transport Pipe Length, Competitor Models

Auger Tube Length (ft)	Ram Extension Length	Transport Pipe Length
30’-36’	6”-20”	76”
35’-41’	7”-23”	86”
40’-46’	8”-27”	101”
47’-60’	14”-38”	120”

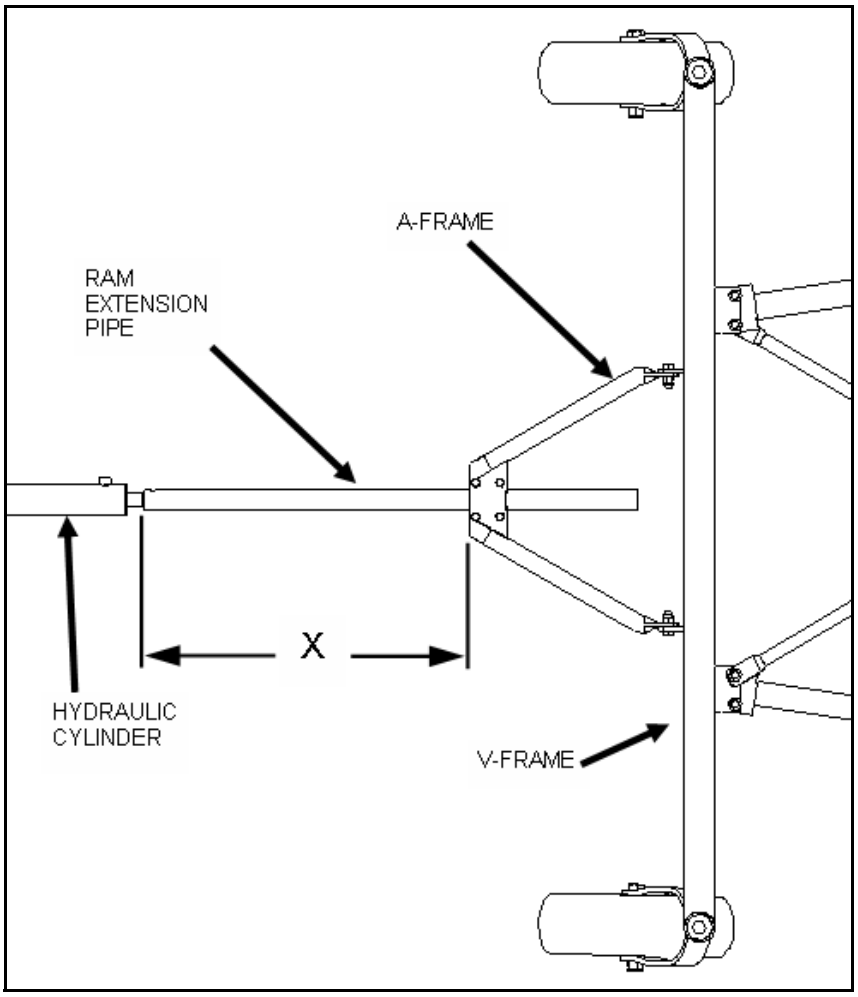


Figure 3.12 Ram Extension Installation

3.11. WINCH ASSEMBLY

1. Lower auger completely and remove the hand winch on the lower auger frame.
2. Place the winch on the frame as shown in Figure 3.13 using the measurements in Table 3.3.

Important: *The hydraulic winch position should be adjusted until the drum is 1" away from the auger tube when in transport position. On Wheatheart models, use Table 3.3 to position winch.*

3. Attach 2 u-bolts to frame and secure to hydraulic winch. Do not tighten.
4. Angle the winch so it lines up with the cable wrapping around the track roller. Tighten all nuts.

3.11.1. 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.

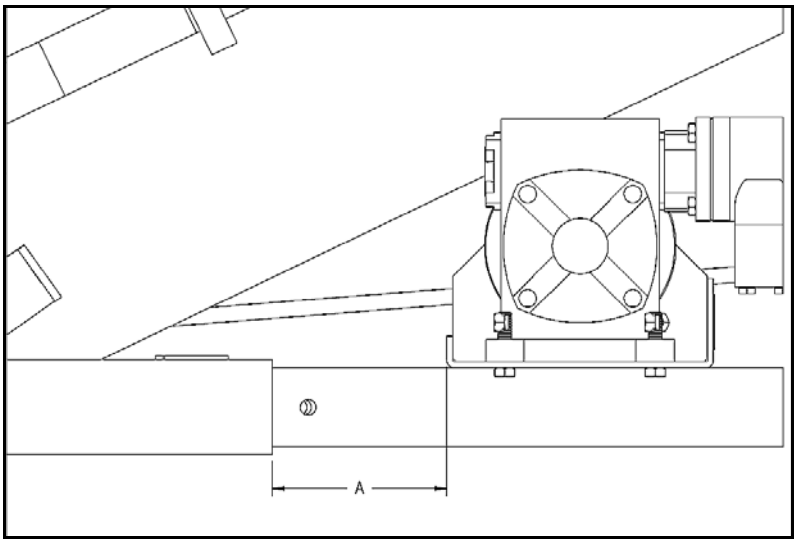


Figure 3.13 Winch Positioning

Table 3.3 Winch Positioning, Wheatheart Models

AUGER	DIM 'A'
8” x 51’	5-1/2"
8” x 36’	3-3/4"
10” x 36’	1/2"
10” x 46’	5-7/8"
10” x 41’	6-5/8"

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.

3.12. 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 (Figure 3.13).

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 3.14).

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 3.14).*

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 3.14). Tighten cable clamps securely.
4. Rotate drum until cable is taut. Ensure drum is rotating in direction shown in Figure 3.13 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.

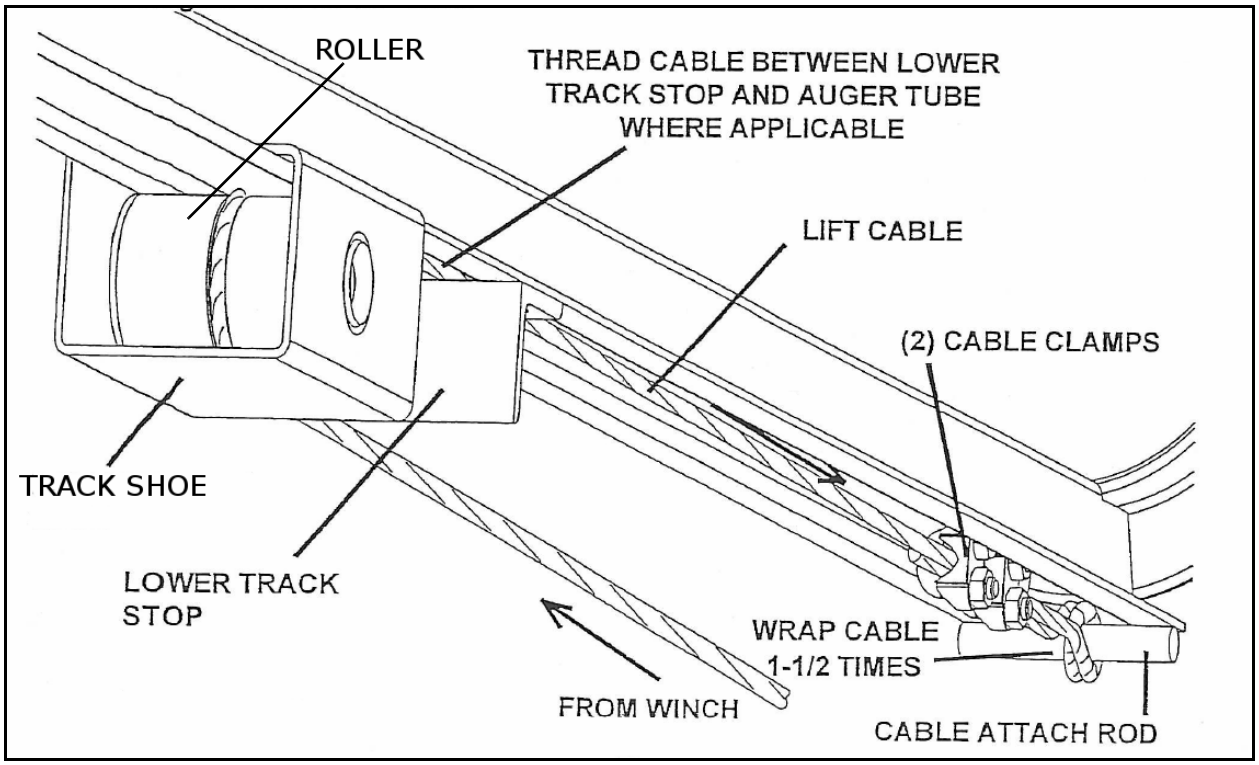


Figure 3.14

3.13. HOSE KIT LAYOUT—NO BIN SWEEP

Refer to Table 3.4, and Figure 3.15 and 3.16.

SP TRANSPORT INCLUDES:

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

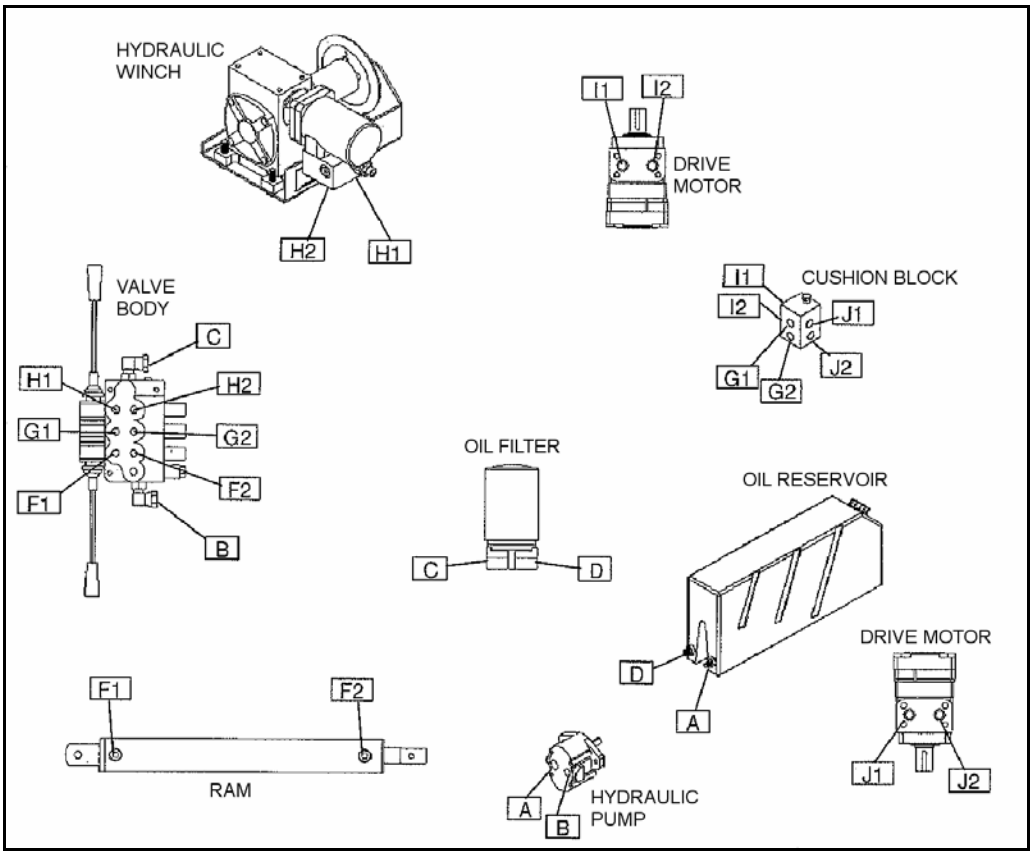


Figure 3.15 Wheatheart Hydraulic Schematic, SP Transport Kit without Bin Sweep Option

Table 3.4 Wheatheart Hydraulic Hose Lengths, SP Transport Kit without Bin Sweep Option

Item	Description	8x51	8x46	8/10 x 41	8/10 x 36
A	Hose, HYD, 3/4 x 52, no ends, 1W	1	1	1	1
B	Hose, HYD, 1/2 x 279, 1/2MNPT x 1/2MNPT, 1W	1	-	-	-
B	Hose, HYD, 1/2 x 247, 1/2MNPT x 1/2MNPT, 1W	-	1	-	-
B	Hose, HYD, 1/2 x 201, 1/2MNPT x 1/2MNPT, 1W	-	-	1	-
B	Hose, HYD, 1/2 x 173, 1/2MNPT x 1/2MNPT, 1W	-	-	-	1
C	Hose, HYD, 1/2 x 204, 1/2MNPT x 1/2MNPT, 1W	1	-	-	-
C	Hose, HYD, 1/2 x 150, 1/2MNPT x 1/2MNPT, 1W	-	1	-	-
C	Hose, HYD, 1/2 x 112, 1/2MNPT x 1/2MNPT, 1W	-	-	1	-
C	Hose, HYD, 1/2 x 80, 1/2MNPT x 1/2MNPT, 1W	-	-	-	1
D	Hose, HYD, 1/2 x 60, 1/2MNPT x 1/2FNPSM, 1W	1	1	1	1
F1	Hose, HYD, 3/8 x 49, 6FJIC x 3/8MNPT, 1W	1	-	-	-
F1	Hose, HYD, 3/8 x 31, 6FJICS x 3/8MNPT, 1W	-	1	-	-
F1	Hose, HYD, 3/8 x 23, 6FJICS x 3/8MNPT, 1W	-	-	1	1
F2	Hose, HYD, 3/8 x 63, 6FJIC x 3/8MNPT, 1W	1	-	-	-
F2	Hose, HYD, 3/8 x 47, 6FJICS x 3/8MNPT, 1W	-	1	-	-
F2	Hose, HYD, 3/8 x 33, 6FJICS x 3/8MNPT, 1W	-	-	1	1

Table 3.4 Wheatheart Hydraulic Hose Lengths, SP Transport Kit without Bin Sweep Option

Item	Description	8x51	8x46	8/10 x 41	8/10 x 36
G1,G2	Hose, HYD, 3/8 x 267, 6FJIC x 3/8MNPT, 1W	2	-	-	-
G1,G2	Hose, HYD, 3/8 x 231, 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 148, 6FJIC x 1/2MNPT, 1W	2	-	-	-
H1,H2	Hose, HYD, 3/8 x 122, 6FJICS x 1/2MNPT, 1W	-	2	-	-
H1,H2	Hose, HYD, 3/8 x 96. 6FJICS x 1/2MNPT, 1W	-	-	2	-
H1,H2	Hose, HYD, 3/8 x 84, 6FJICS x 1/2MNPT, 1W	-	-	-	2
I1	Hose, HYD, 3/8 x 65, 3/8MNPT x 3/8MNPT, 1W	2	2	2	2
J1	Hose, HYD, 3/8 x 35, 3/8MNPT x 3/8MNPT, 1W	2	2	2	2

Figure 3.16 Hydraulic Hose Routing

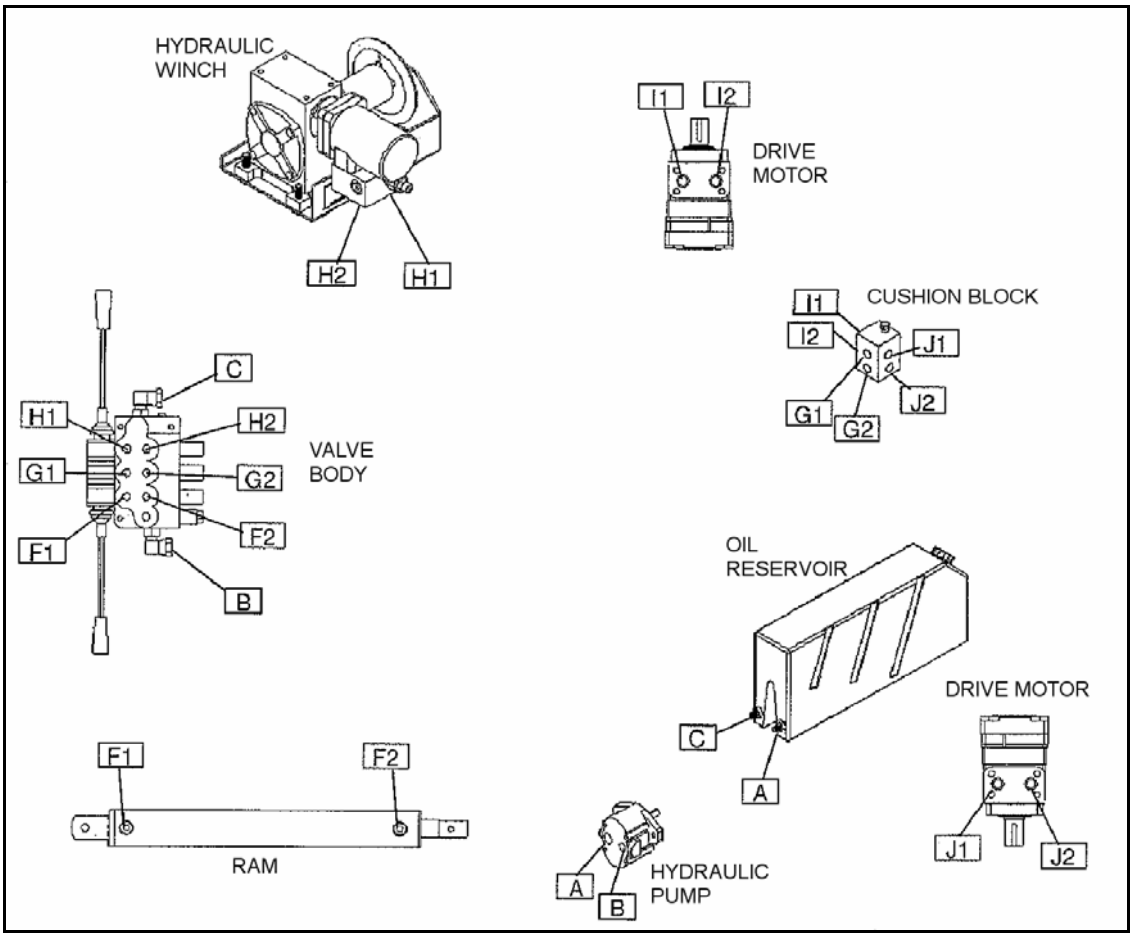


Figure 3.17 Competitor Auger Hydraulic Schematic—SP Transport Kit w/out Bin Sweep Option

Table 3.5 Competitor Auger Hydraulic Hose Lengths - SP Transport Kit w/out Bin Sweep Option

		3/8” Hoses				1/2” Hoses				
		H1, H2	F1	F2	G1, G2	I1, I2	J1, J2	B	C	A
Brandt	Supercharger 52 x 8	156	59	47	246	38	48	250	164	48
Brandt	Supercharger 47 x 8	112	20	30	206	34	46	196	130	48
Brandt	Supercharger 42 x 8	80	20	30	172	38	48	170	110	48
Brandt	60 x 8	146	60	74	279	54	60	258	180	48
Brandt	50 x 7 or 8	144	42	52	232	48	38	236	166	48
Brandt	45 x 7 or 8	98	20	30	186	38	48	180	114	48
Brandt	35 x 7	80	20	30	144	38	48	158	106	48
Brandt	30 x 8	92	30	20	132	32	24	126	60	48
Farm King	51 x 7	192	42	26	250	58	42	258	122	48
Farm King	46 x 7 or 8	312	24	34	212	80	14	186	84	48

Table 3.5 Competitor Auger Hydraulic Hose Lengths - SP Transport Kit w/out Bin Sweep Option

		3/8” Hoses				1/2” Hoses				
Farm King	41 x 7 or 8	300	20	30	206	14	72	186	92	48
Farm King	31 x 8	204	20	30	194	14	72	174	96	48
Sakun-diak	HD1800 x 8	272	94	108	330	56	74	340	276	48
Sakun-diak	HD1600 x 7 or 8	210	66	80	278	48	62	288	226	48
Sakun-diak	HD1400 x 7 or 8	170	38	52	236	46	60	288	178	48
Sakun-diak	HD1200 x 7 or 8	120	20	30	186	50	60	192	122	48
Sakun-diak	HD1000 x 7 or 8	88	20	30	152	50	60	166	96	48
Sakun-diak	49 x 7 or 8	188	54	70	280	40	50	288	220	48
Sakun-diak	45 x 7 or 8	160	50	62	234	34	44	244	170	48
Sakun-diak	41 x 7 or 8	120	38	54	200	40	30	204	122	48
Sakun-diak	37 x 7 or 8	82	20	30	168	36	46	180	106	48
West-field	J 51 x 7 or 8	202	20	30	236	68	12	240	174	48
West-field	J 46 x 7	166	20	30	208	68	16	220	148	48
West-field	J 41 x 8	156	20	30	192	12	68	196	106	48

3.14. HOSE KIT LAYOUT WITH BIN SWEEP

Refer to Table 3.6, Figure 3.16 and 3.18.

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

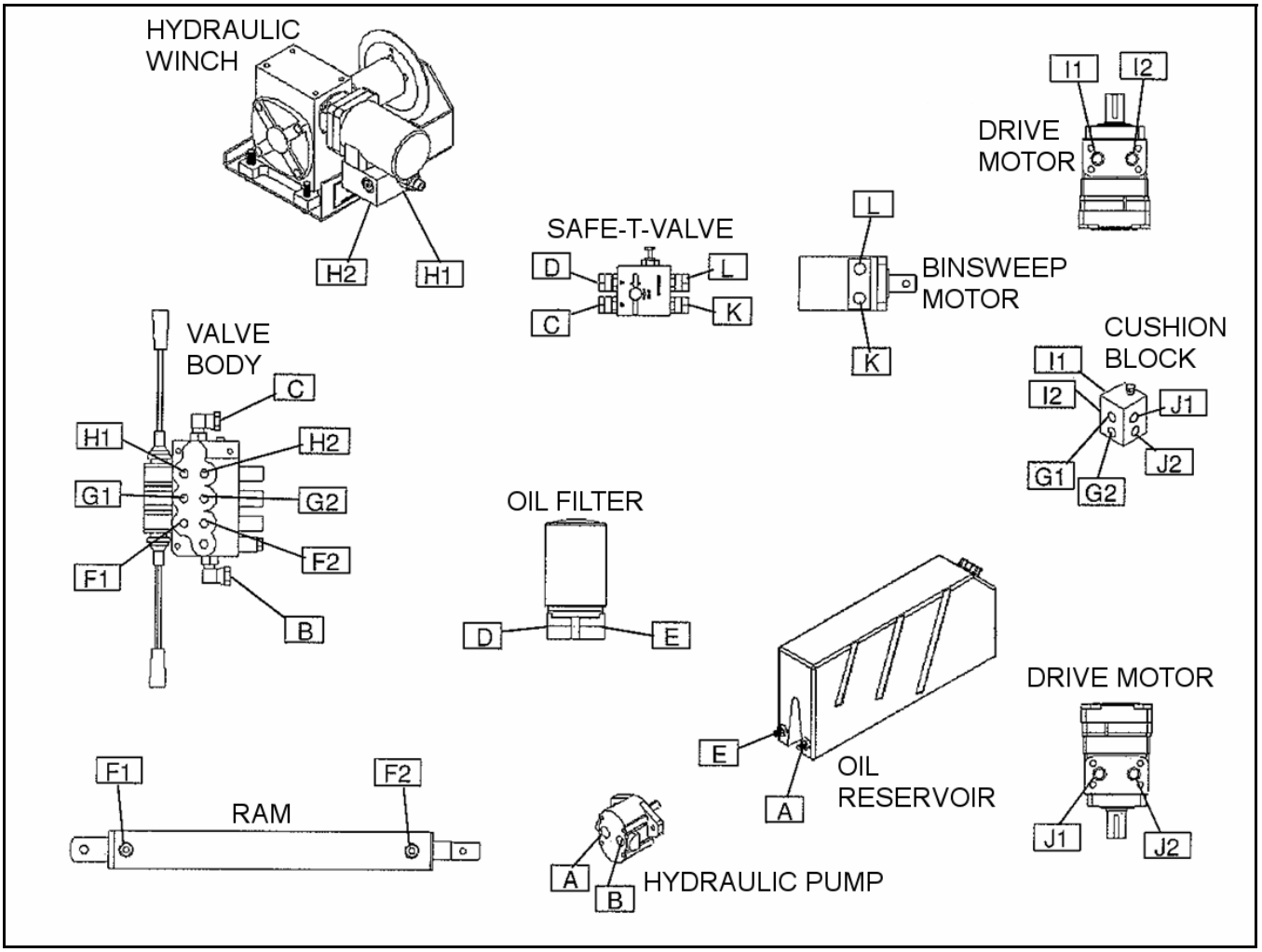


Figure 3.18 Wheatheart Hydraulic Schematic - SP Transport Kit with Bin Sweep Option

Table 3.6 Wheatheart Hydraulic Hose Lengths - SP Transport Kit with Bin Sweep Option

Item	Description	8x51	8x46	8/10x 41	8/10x 36
A	Hose, HYD, 3/4 x 52, no ends, 1W	1	1	1	1
B	Hose, HYD, 1/2 x 279, 1/2MNPT x 1/2MNPT, 1W	1	-	-	-
B	Hose, HYD, 1/2 x 247, 1/2MNPT x 1/2MNPT, 1W	-	1	-	-
B	Hose, HYD, 1/2 x 201, 1/2MNPT x 1/2MNPT, 1W	-	-	1	-
B	Hose, HYD, 1/2 x 173, 1/2MNPT x 1/2MNPT, 1W	-	-	-	1
C,D	Hose, HYD, 3/8 x 120, 3/8MNPT x 3/8MNPT, 1W	2	-	-	-
C,D	Hose, HYD, 3/8 x 94, 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	1
F1	Hose, HYD, 3/8 x 49, 6FJIC x 3/8MNPT, 1W	1	-	-	-
F1	Hose, HYD, 3/8 x 31, 6FJICS x 3/8MNPT, 1W	-	1	-	-
F1	Hose, HYD, 3/8 x 23, 6FJICS x 3/8MNPT, 1W	-	-	1	1
F2	Hose, HYD, 3/8 x 63, 6FJIC x 3/8MNPT, 1W	1	-	-	-
F2	Hose, HYD, 3/8 x 47, 6FJICS x 3/8MNPT, 1W	-	1	-	-
F2	Hose, HYD, 3/8 x 33, 6FJICS x 3/8MNPT, 1W	-	-	1	1
G1,G2	Hose, HYD, 3/8 x 267, 6FJIC x 3/8MNPT, 1W	2	-	-	-
G1,G2	Hose, HYD, 3/8 x 231, 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 148, 6FJIC x 1/2MNPT, 1W	2	-	-	-
H1,H2	Hose, HYD, 3/8 x 122, 6FJICS x 1/2MNPT, 1W	-	2	-	-
H1,H2	Hose, HYD, 3/8 x 96, 6FJICS x 1/2MNPT, 1W	-	-	2	-
H1,H2	Hose, HYD, 3/8 x 84, 6FJICS x 1/2MNPT, 1W	-	-	-	2
I1,I2	Hose, HYD, 3/8 x 65, 3/8MNPT x 3/8MNPT, 1W	2	2	2	2
J1,J2	Hose, HYD, 3/8 x 35, 3/8MNPT x 3/8MNPT, 1W	2	2	2	2
K,L	Hose, HYD, 3/8 x 16, 3/8MNPT x 3/8MNPT, 1W	2	2	2	2

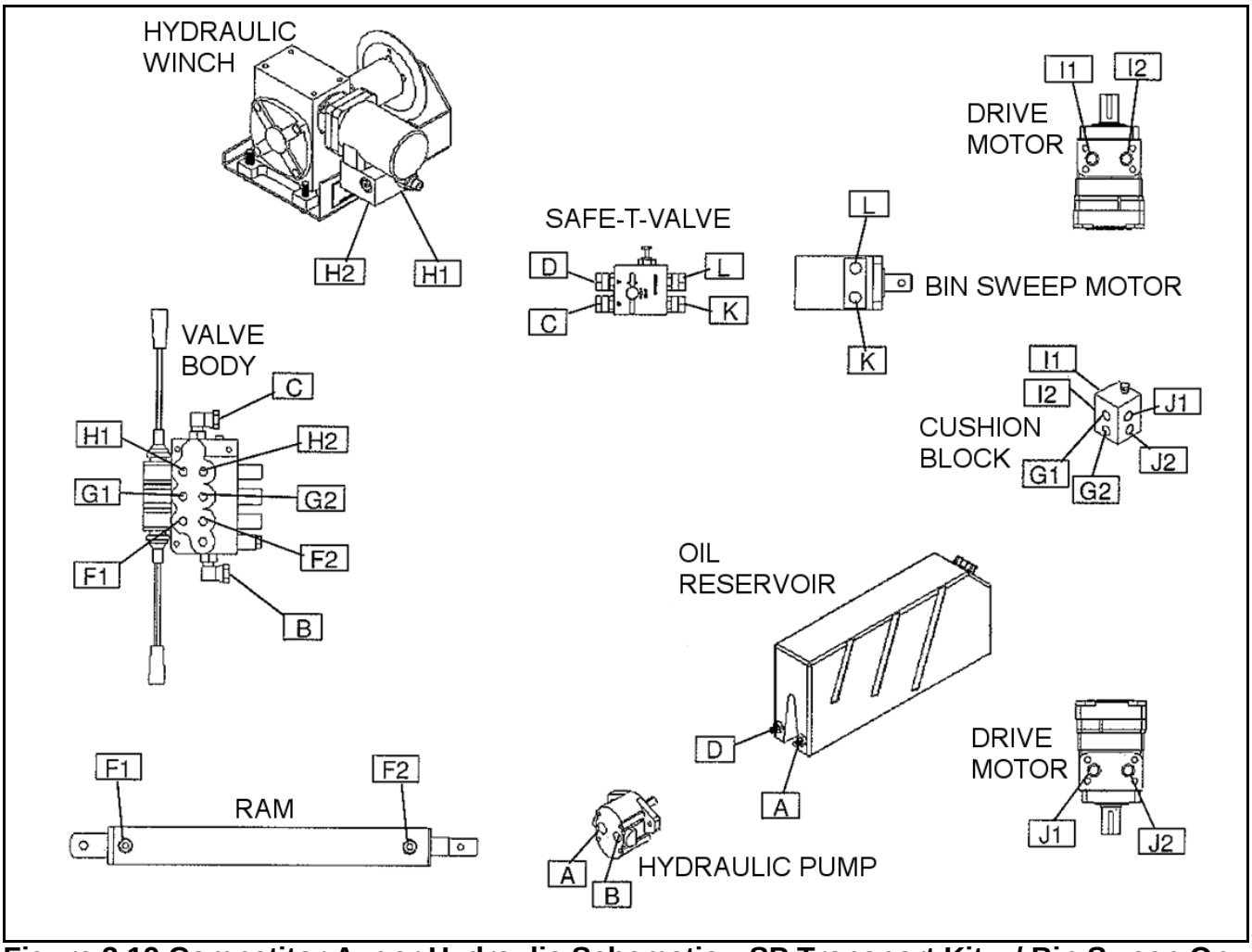


Figure 3.19 Competitor Auger Hydraulic Schematic—SP Transport Kit w/ Bin Sweep Option

Table 3.7 Competitor Auger Hydraulic Hose Lengths—SP Transport Kit w/ Bin Sweep Option

		3/8" Hoses				1/2" Hoses						
		H1, H2	F1	F2	G1, G2	I1, I2	J1, J2	B	C	K, L	D	A
Brandt	Supercharger 52 x 8	156	59	47	246	38	48	250	14	116	178	48
Brandt	Supercharger 47 x 8	112	20	30	206	34	46	196	28	96	158	48
Brandt	Supercharger 42 x 8	80	20	30	172	38	48	170	16	120	126	48
Brandt	60 x 8	146	60	74	279	54	60	258	60	102	240	48
Brandt	50 x 7 or 8	144	42	52	232	48	38	236	20	100	186	48
Brandt	45 x 7 or 8	98	20	30	186	38	48	180	16	114	130	48

Table 3.7 Competitor Auger Hydraulic Hose Lengths—SP Transport Kit w/ Bin Sweep Option

		3/8" Hoses				1/2" Hoses						
		H1, H2	F1	F2	G1, G2	I1, I2	J1, J2	B	C	K, L	D	A
Brandt	35 x 7	80	20	30	144	38	48	158	32	74	138	48
Brandt	30 x 8	92	30	20	132	32	24	126	18	15	78	48
Farm King	51 x 7	192	42	26	250	58	42	258	147	20	90	48
Farm King	46 x 7 or 8	312	24	34	212	80	14	186	16	104	100	48
Farm King	41 x 7 or 8	300	20	30	206	14	72	186	16	84	108	48
Farm King	31 x 8	204	20	30	194	14	72	174	16	72	112	48
Sakun-diak	HD1800 x 8	272	94	108	330	56	74	340	24	110	300	48
Sakun-diak	HD1600 x 7 or 8	210	66	80	278	48	62	288	24	88	250	48
Sakun-diak	HD1400 x 7 or 8	170	38	52	236	46	60	288	16	112	194	48
Sakun-diak	HD1200 x 7 or 8	120	20	30	186	50	60	192	22	108	144	48
Sakun-diak	HD1000 x 7 or 8	88	20	30	152	50	60	166	22	104	118	48
Sakun-diak	49 x 7 or 8	188	54	70	280	40	50	288	16	134	236	48
Sakun-diak	45 x 7 or 8	160	50	62	234	34	44	244	24	110	194	48
Sakun-diak	41 x 7 or 8	120	38	54	200	40	30	204	24	102	146	48
Sakun-diak	37 x 7 or 8	82	20	30	168	36	46	180	32	108	138	48
West-field	J 51 x 7 or 8	202	20	30	236	68	12	240	32	110	206	48
West-field	J 46 x 7	166	20	30	208	68	16	220	16	110	164	48
West-field	J 41 x 8	156	20	30	192	12	68	196	16	94	122	48

3.15. HOSE KIT ASSEMBLY

Refer to Figures 3.15 - 3.20.

1. Assemble hoses as illustrated.
2. Keep free of dirt while assembling.
3. Keep pressure and return sides aligned.
4. Tighten after being satisfied that the hoses are in the proper position.
5. Check operation.
6. 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.

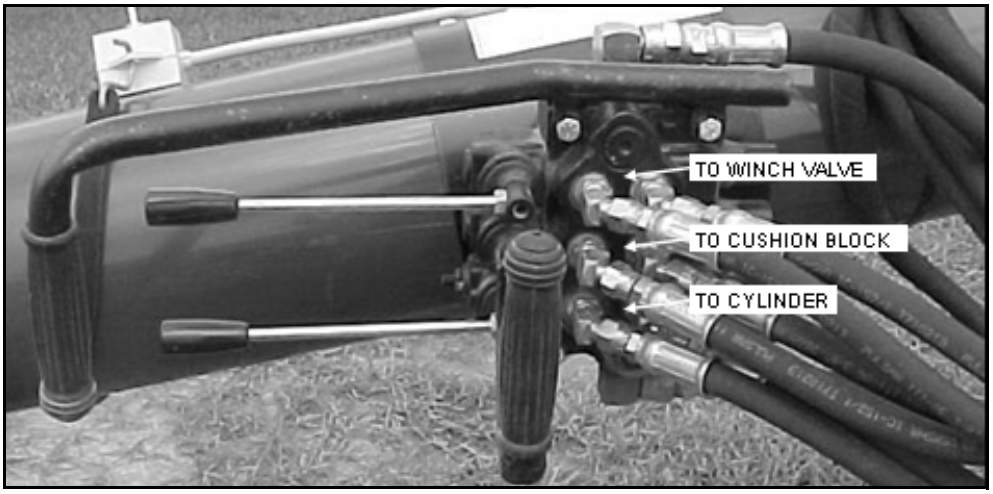


Figure 3.20 Control Ring Hydraulic Hose Connections

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.

3.16. CUSHION VALVE INSTALLATION

Connect the hoses as shown in Figure 3.21 and 3.22, 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.

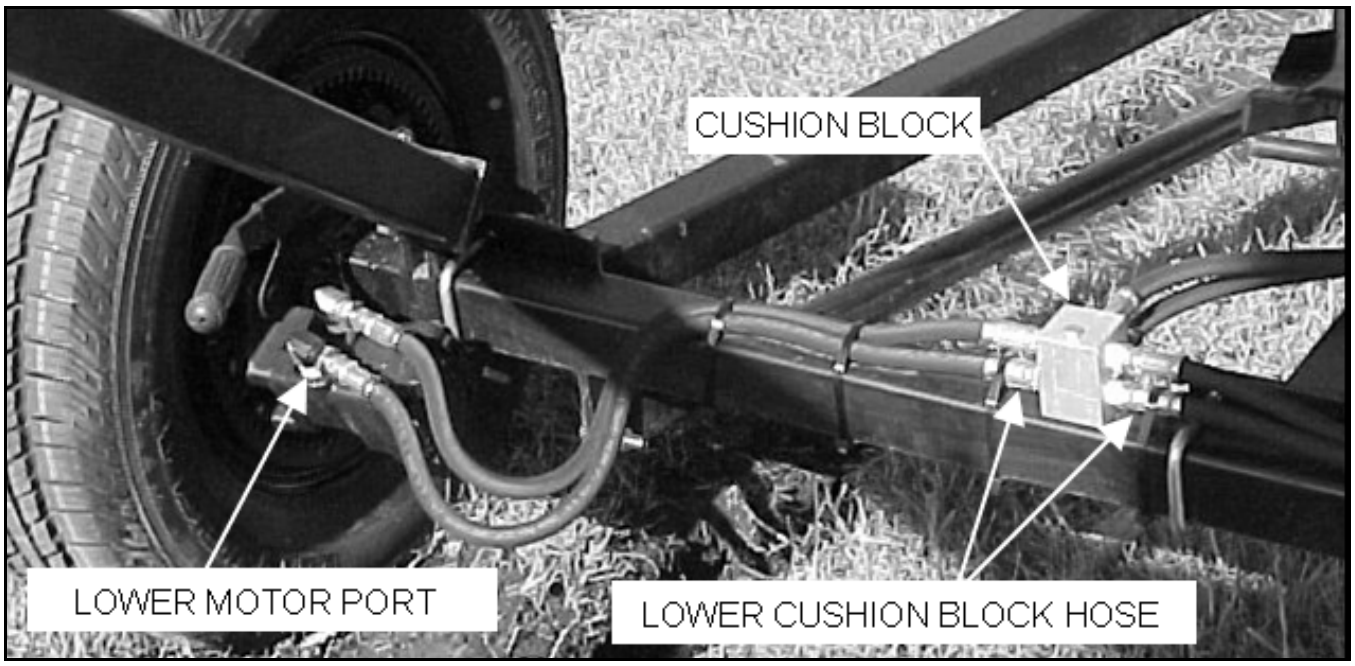


Figure 3.21 Cushion Block Installation

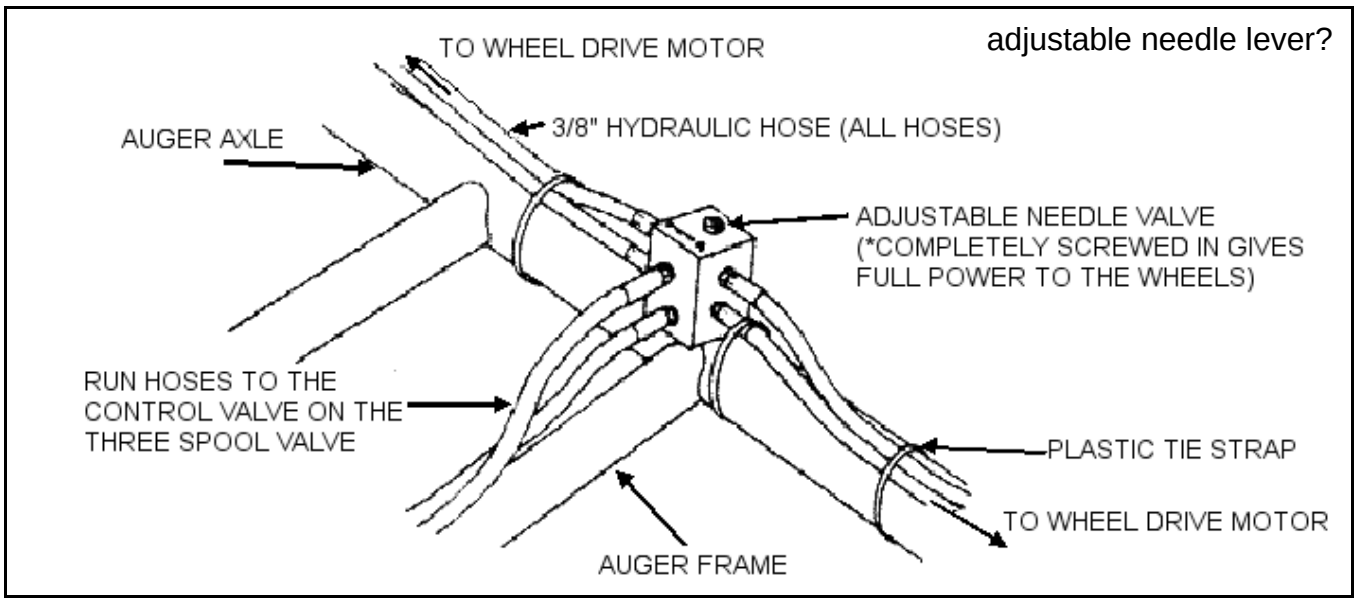


Figure 3.22 Cushion Block Installation Schematic

3.17. HYDRAULIC FILTER INSTALLATION

WHEATHEART MODELS ONLY

When connecting the hydraulic filter, make sure that it is properly installed. An arrow is engraved in the filter head indicating the direction of oil flow. The filter MUST be installed with the oil flowing in the same direction as the arrow indicates.

The filter goes in the return line right before the tank.

Figure 3.23 Hydraulic Filter (Wheatheart only)

4. Transport & Placement

Warning: Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in 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 auger intake to the towing vehicle with a minimum 1/2” diameter pin with retainer clip and safety chain.
2. Fully raise the V-frame assembly by retracting the hydraulic cylinder. For transportation on public roadways, secure the V-frame to the auger frame to prevent it from accidentally dropping.
3. Before transporting, disengage the over-center handle at each wheel (Figure 4.1) by pulling up on the handle.

Figure 4.1 Over-Center Transport and Working 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

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.

WHEN PLACING UNDER HOPPER BOTTOM BINS:

1. The wheel u-frame can easily pass through the hopper bin vertical legs.
2. The wheel u-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. The auger gearbox will not contact the hopper cone when in it’s final position.

WHEN PLACING INTO FLAT BOTTOM BINS:

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

5. Operation

Warning: Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in 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.

WARNING	
	Shut off and remove key or lock out power source before inspecting or servicing the machine.

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 3.8. 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 with the **winch control** lever on the valve before moving the auger into position.
2. Raise the auger intake end off the ground using the **hydraulic ram control** lever on the valve.
3. Move the auger into place by moving the **wheel move control** forward or backward to control the direction of travel. Steering is accomplished by grasping the **handle bar** and either leaning in or pulling away from the auger. Steering is easier if the auger is in motion.
4. When unloading a bin, aim the auger intake into the bottom of the center of the bin. Use the **winch control** lever and **hydraulic ram control** lever to help position the auger.
5. When loading a bin, use the **winch control** to raise the auger to the desired height. Use the **hydraulic ram control** to raise the intake of the auger off the ground as the auger is winched up. Turn the **wheel move control** to change the direction of travel. Leave extra clearance for making 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.

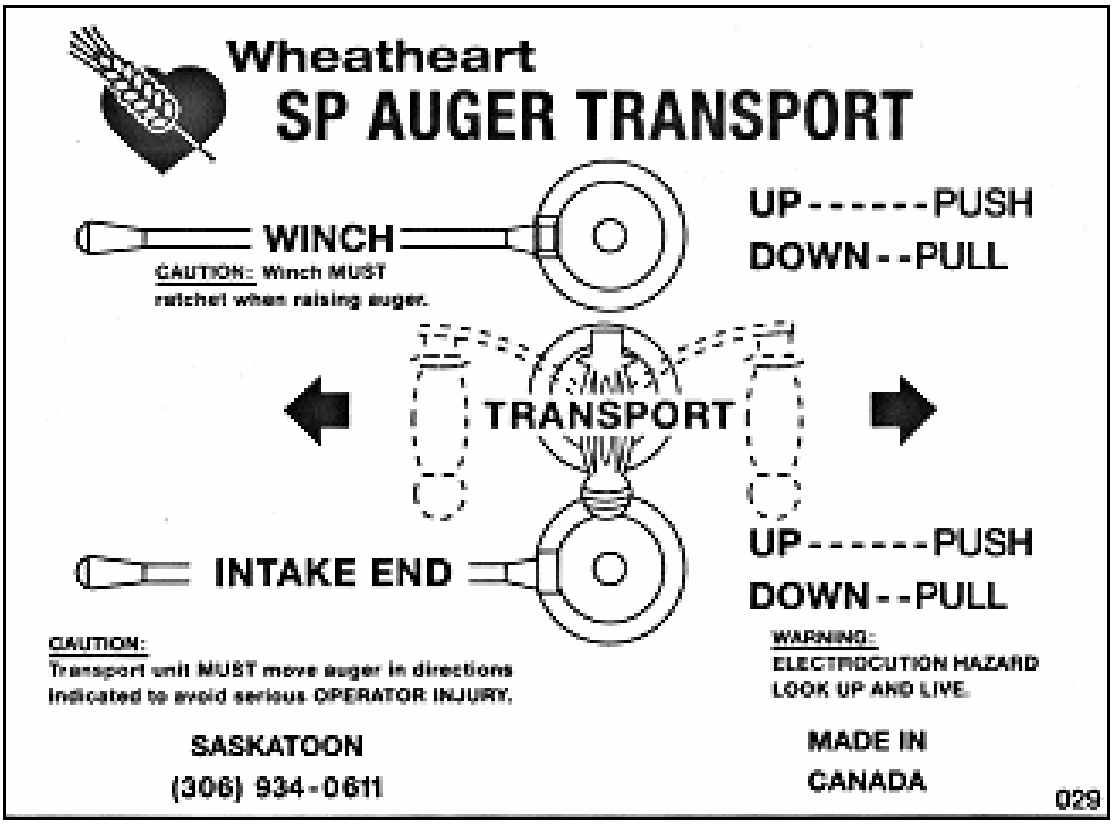


Figure 5.1 Hydraulic Control Valve Decal

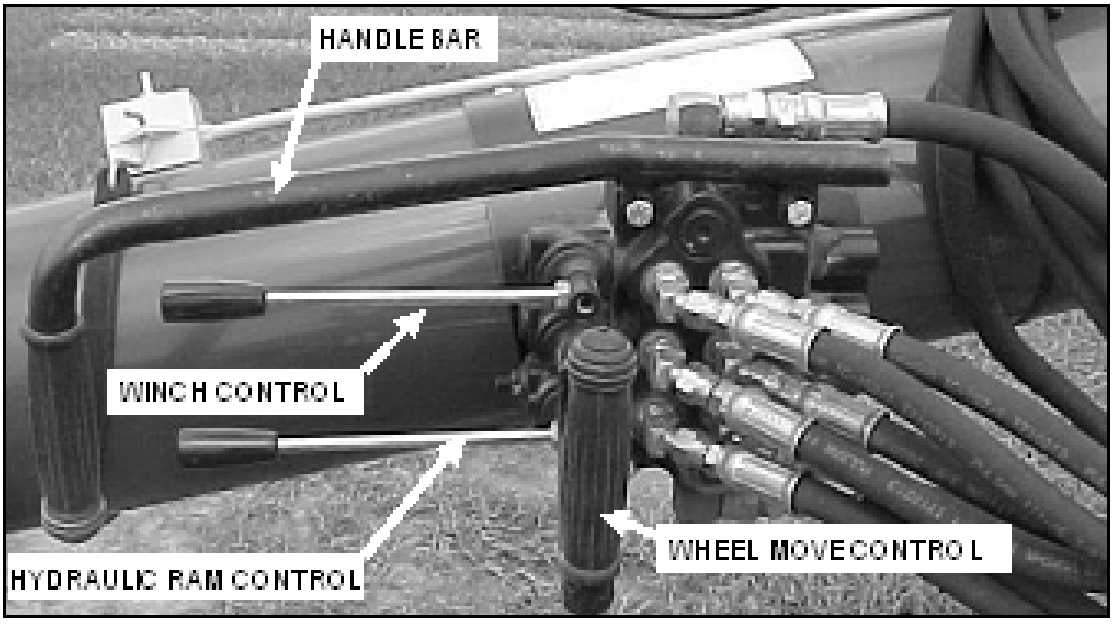


Figure 5.2 Hydraulic Control Valve

6. Maintenance & Storage

Warning: Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in 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 3.8.
2. Change oil annually to remove any accumulation of dirt or condensation in the system. Replace with Type A automatic transmission 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 VALVE

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.*

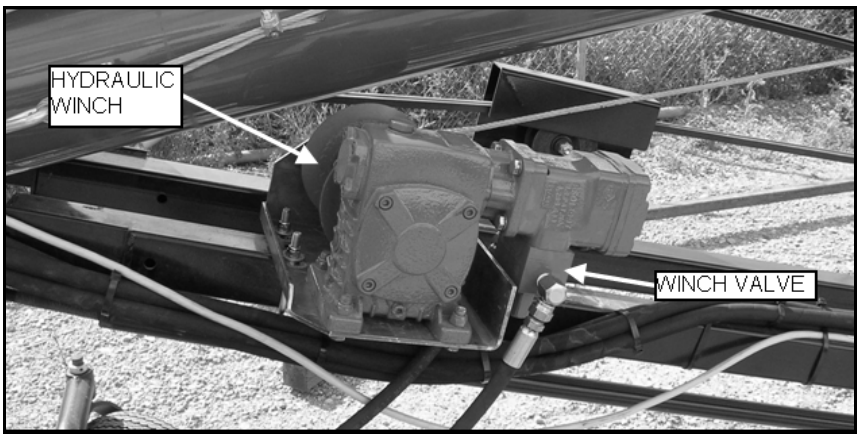


Figure 6.1 Hydraulic Winch

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.

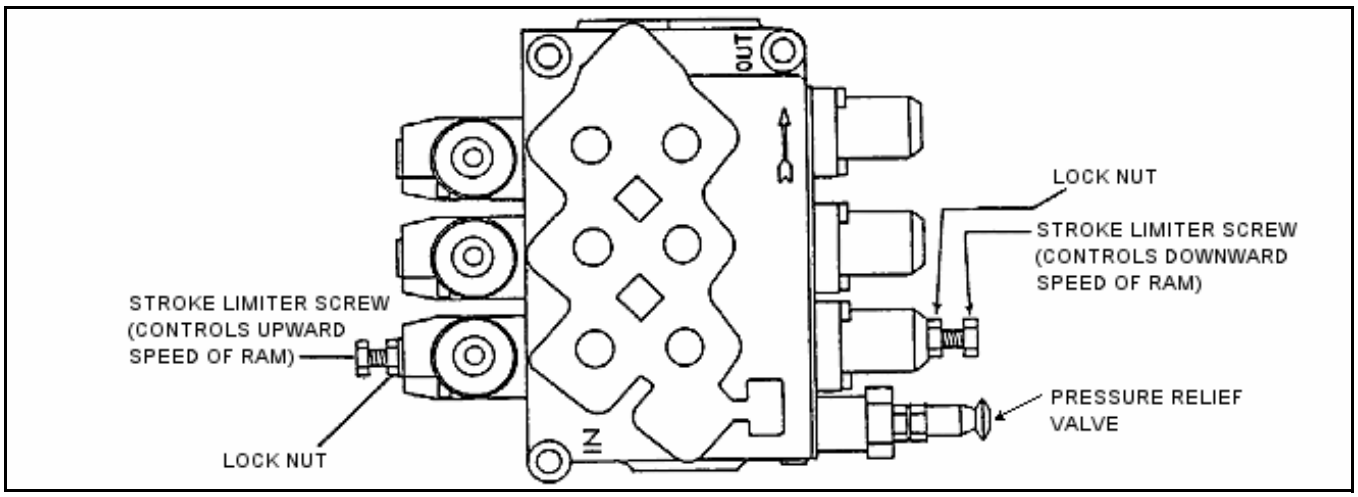


Figure 6.2 Three Spool Valve Adjustment

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 flighting 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)

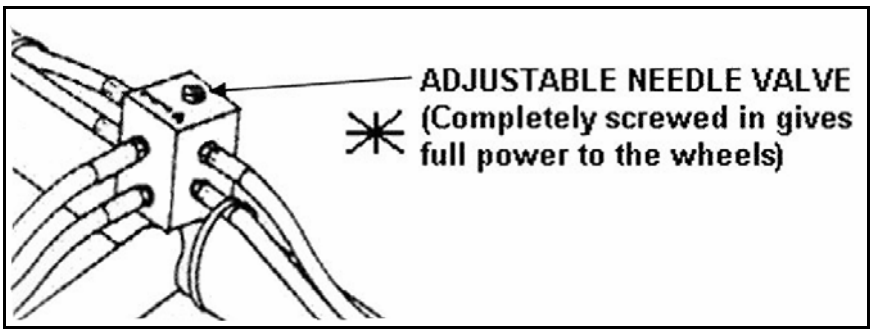


Figure 6.3 Cushion Valve Adjustment

6.2. STORAGE

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

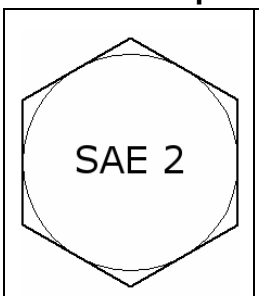
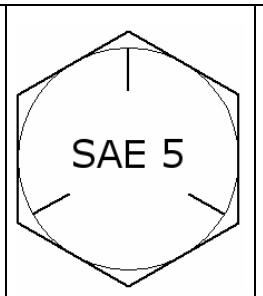
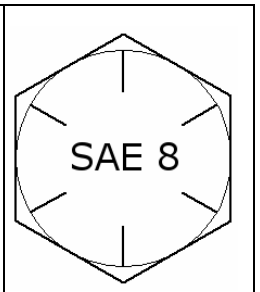
PROBLEM	CAUSE	SOLUTION
Valve is leaking.	• loose/cracked fittings	• tighten/replace fittings
	• worn hose	• replace hose
	• valve spools are worn	• replace valve
Machine operates slowly.	• oil is hot	• check oil level and add oil if required (use general purpose ISO 32 hydraulic oil)
	• blockage in hydraulic 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 49
	• Filter plugged (if equipped)	• Change filter.
Hydraulic winch will not raise auger.	• relief valve pressure set too low	• adjust relief valve pressure, refer to “Hydraulic Pressure Relief Valve Adjustment” on page 48
	• oil level is too low	• check oil level
	• pump is worn out	• replace pump
Hydraulic cylinder leaking.	• 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 49.
Pinion gear slipping or binding.	• pinion gear not adjusted properly	• Adjust the pinion gear. See “Pinion Gear Adjustment” on page 22.

8. Appendix

8.1. BOLT TORQUE VALUES

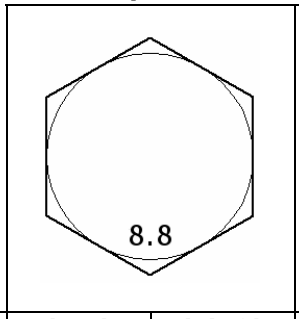
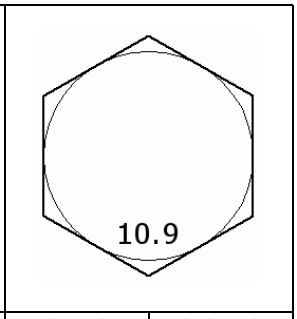
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torque specified in the chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as your guide. Replace hardware with the same strength bolt.

Table 8.1 Imperial Bolt Torque

						
BOLT DIAMETER	**(Nm)**	**(Lb-ft)**	**(Nm)**	**(Lb-ft)**	**(Nm)**	**(Lb-ft)**
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

Torque figures indicated above 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 8.2 Metric Bolt Torque

				
BOLT DIAMETER	**(Nm)**	**(Lb-ft)**	**(Nm)**	**(Lb-ft)**
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

8.2. TIGHTENING O-RING FITTINGS

1. Inspect o-ring and seat for dirt or obvious defects.
2. On the angle fittings, back the lock nut off until washer bottoms out at top of groove.
3. Hand-tighten fitting until back up washer or washer face (if straight fitting) bottoms on face and o-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fittings to torque shown.
6. Tighten while holding body of fitting with a wrench.

Table 8.3 “O” Ring Fittings

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Values[a] (Nm)	Torque Values[a] (Lb-ft)	# of Turns to Tighten (Flats)	(After Finger Tightening) (Turn)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
7/8	2-1/8	217	160	1/2	1/12

a. The torque values shown are based on lubricated connections as in reassemble.

8.3. PARTS

8.3.1. SELF-PROPELLED AUGER KIT

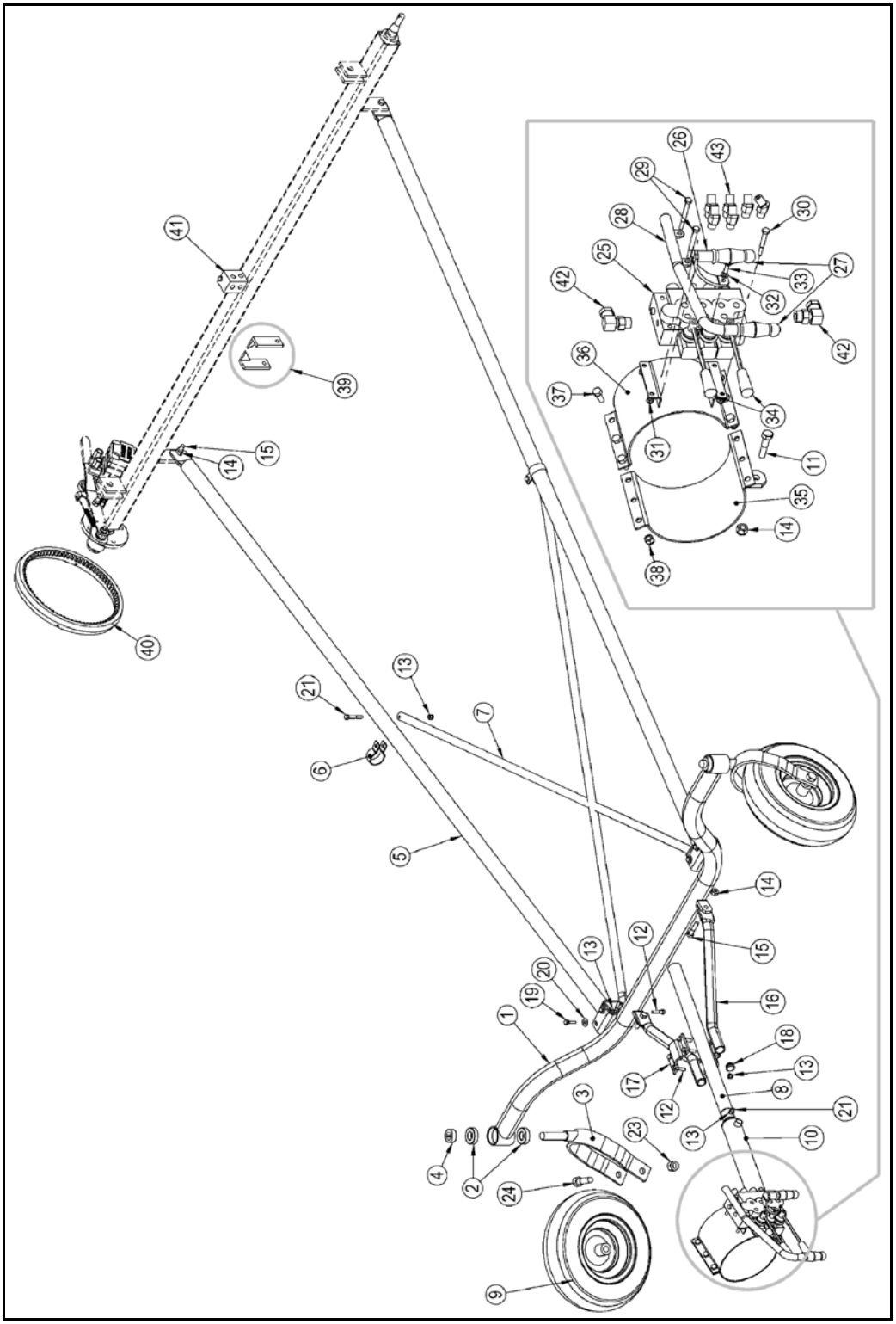


Table 8.4

Item	Part No.	Description	Qty
1	0200311	Wheel V-Frame Assy. w/Bearings	1
2	0200006	1” ID Ball Bearing	4
	0200317	Bearing, 1” ID Ball Bearing) O/S	*
3	0200314	Wheel Yoke w/Collar	2
4	9900248	Locking Collar, 1”	1
5	0200319	Transport Frame Pipe	2
6	0200321	Crossbrace, Clamp band	2
7	0200320	Crossbrace Pipe	2
8	0200306	Ram Extension Pipe	1
9	9900316	Tire and Rim (4.8 - 8”)	2
10	0200308	Cyl, 2” x 15.625” x 1.125” Rod, 1 @ end	1
11	9900535	Bolt, 1/2” x 2-1/4” UNC GR5 Pld	*
12	9900694	Bolt, 3/8” x 1-1/2” UNC GR5 Pld	*
13	0601007	Nut Nylock 3/”8 UNC Plt	*
14	9900538	Nut Nylock 1/2” UNC Plt	*
15	9900559	Bolt, Hex 1/2” x 2” UNC GR5 Plt	*
16	0202065-3	Ram Mount A-Frame	1
17	0202065-2	Ram Mount A-Frame Clamp, w/ Weld Bead	1
17A	0202065	Ram Mounting A-Frame, Assembly (Items 16, 17, 18)	*
18	9900339	Plug, Rnd. Poly, 1” (Fits Pipe 5)	2
19	9900531	Bolt, 3/8” x 1-1/4” UNC GR5 Pld	*
20	0601008	Washer Flat 3/8” Plt	*
21	9900510	Bolt, 3/8” x 2-1/4” UNC GR5 Pld	*
22	9900560	Bolt, 1/2” x 2-1/4” UNC GR5 Pld	*
23	9900695	Nut Nylock 3/4” UNC Plt	*
24	9900115	Bolt Hex 3/4” x 6” UNC GR5 Plt	*
25	1600006	Valve, 3 Spool, 2 Handles, No Ftgs	1
26	0200303	Control Handle w/ Grip	1
27	0200007-4	Handle Grip	1
28	0200305	Bar Handle	1
29	2300022	Bolt Hex 5/16” x 3” UNC GR5 Plt.	*
30	9900524	Bolt Hex 5/16” x 2-1/2” UNC GR5 Plt	*
31	9900520	Nut Nylock 5/16” UNC Plt	*
32	9900523	Washer Lock 5/16” Plt	*
33	9900852	Bolt Hex M8 x 1.25” x 25” GR8.8 Plt	*
34	1600007	Control Lever, SD5 Valve	2
35	0200301H	Half Clamp Ram Mount, 8”	1
36	0200301F	Half Clamp, Valve Mount, 8”	1
37	4500068	Bolt, 7/16” x 1” UNC GR5 Pld	*
38	9900643	Nut Nylock 7/16” UNC Plt	*

Table 8.4

Item	Part No.	Description	Qty
39	9900042	SP Tab Pair, 3/8” x 1-1/2” x 4” w/ Gus, Sak/WH, Weld	*
	9900042A	SP Tab Pair, Brandt (SQ Axle, L&R), Weld-On	*
	9900042B	SP Tab, WH, Old FK, WF, Weld-On	*
	9900042C	Sp Tab Pair, Brandt (Rnd Axle), Weld-On	*
40	0200334	Ring Gear w/ Set Screws	1
41	0200350	Cushion Block, Complete	1
42	9900330	Ftg, Stl, Elb, 1/2MNPT x 3/8FNPSM	2
43	0200326	Ftg, Stl, Elb 45, 6MORB x 6MJIC	6

8.3.2. WHEEL MOTOR

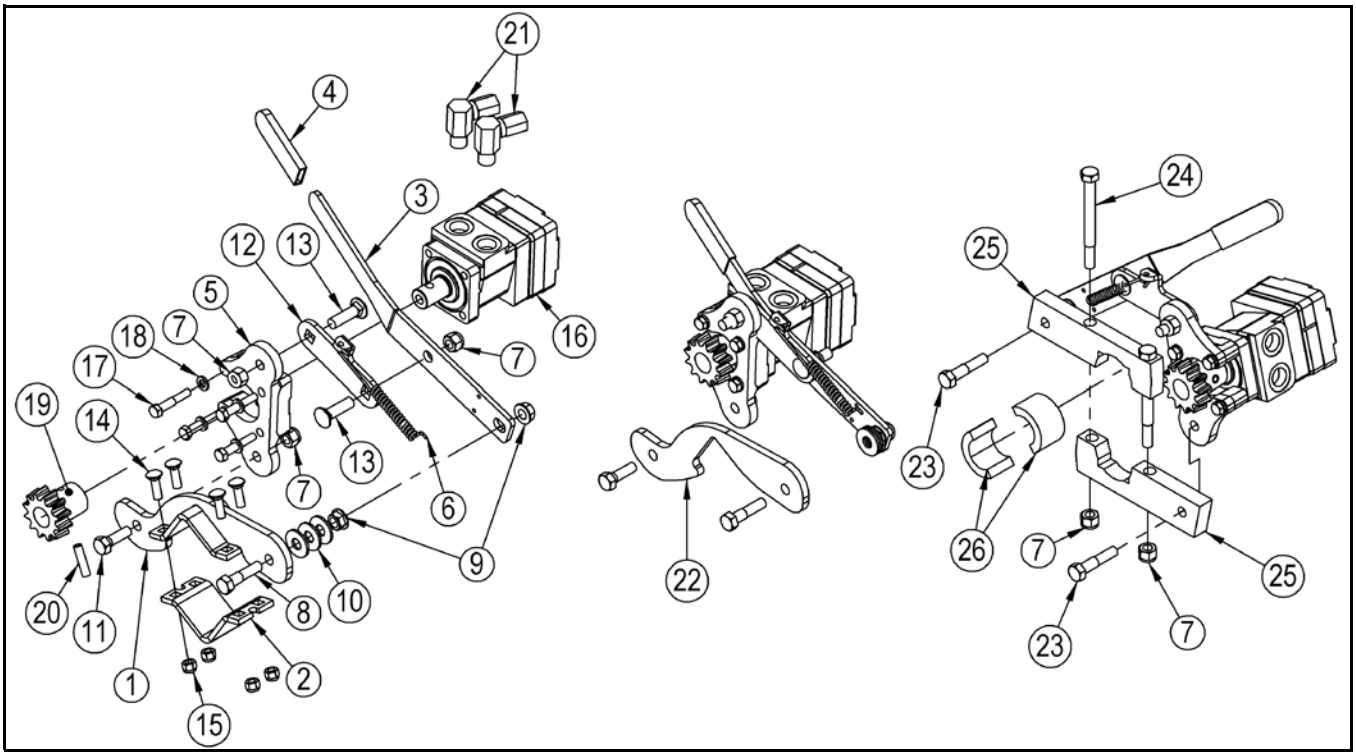


Table 8.5

Item	Part No.	Description	Qty
1	0200348	SQR Axle Cap for O/Center (Bolt on)	1
2	0200347	Axle Clamp, Bolt on for 2-1/2" SQR Tubing	2
3	0200007-1	Handle No Grip, SP O/C	1
4	P1211303	Rubber Handle Cover 1/4” x 1”	1
5	0200338A	Motor Bracket Drilled	1
6	0200009	Spring, Over Center	1
7	9900538	Nut Nylock 1/2” UNC Plt	3
8	9900559	Bolt Hex 1/2” x 2” UNC GR5 Plt	1
9	9900946	Nut Flange 1/2”	2

Table 8.5

Item	Part No.	Description	Qty
10	9900565	Washer Flat, 1/2”, Plt	3
11	9900536	Bolt Hex 1/2” x 1-1/2” UNC GR5 Plt	1
12	0200008-2	Over-Center Link SP Wheel Move, Bent	1
13	9900913	Carriage Bolt 1/2” x 1-1/2”	2
14	9900980	Carriage Bolt - FT 3/”8 x1-1/4”	4
15	0601007	Nut Nylock 3/8” UNC Plt	4
16	9901001PRP	Motor, HYD, 4.6 RS, 1/2NPTF, 3/8" Hole	1
17	9900664	Bolt Hex 3/8” x 2” UNC GR5 Plt	4
18	9900528	Washer, 3/8” Lock, Plt	4
19	0200332A	Pinion Gear, Drilled	*
	0200333A	Pinion Gear, Keyed	*
20	9901242-2	Pin, Roll, 3/8” x 1-1/2” Spring	1
21	9900330	FTG, STL, ELB, 1/2MNPT x 3/8FNPSM	2
22	0200340A	Axle Cap for O/C Weld-On	1
23	9900560	Bolt, 1/2” x 2-1/4” UNC GR5 Plt	2
24	9900564	Bolt, 1/2” x 5” UNC GR5 Plt	2
25	0200340B	Axle Cap Drilled	2
26	0200014	Shim, Axle, Sakundiak, Top & Bottom (Pair)	2
27	0200015D	Bolt on O.C ASY, SQR, No Motor/Pinion	*
	0200015E	Bolt on O.C ASY, SQR, Complete W/MTR/Pinion	*

8.3.3. TANK UPGRADE KIT, 43 L

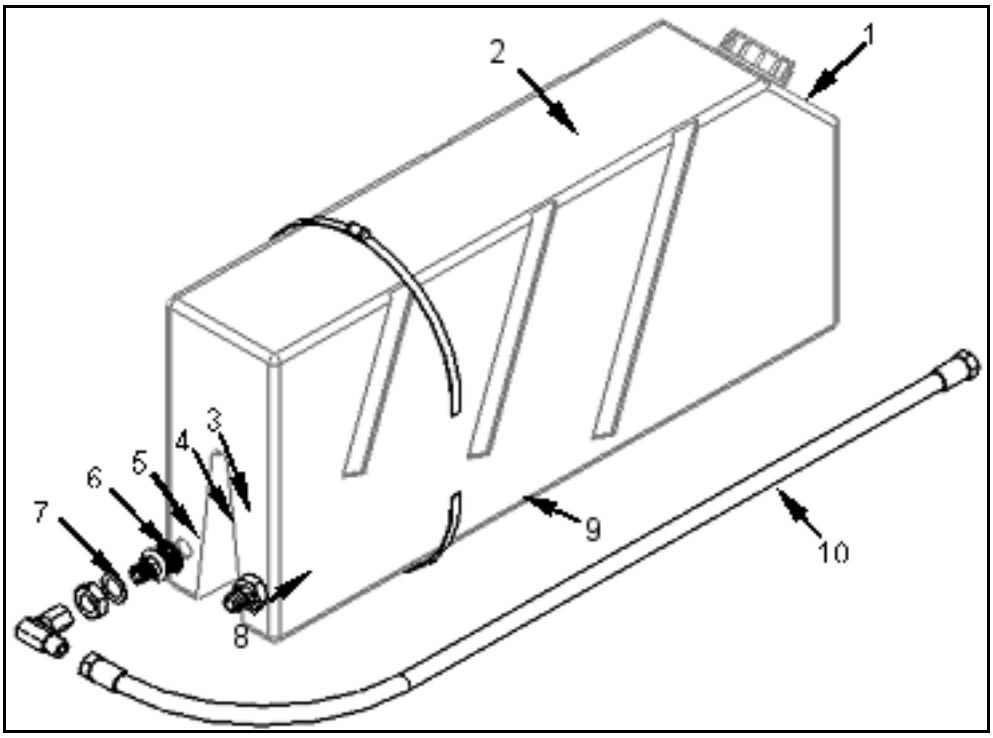


Table 8.6

Item	Part No.	Description	Qty
1	1200011	Cap, Reservoir and Gas Tank	1
2	9900233	Tank, 43 L Reservoir, Drilled, no Cap	1
	9900237	Tank, 43 L Reservoir, w/FTGS/Cap	*
3	9900232	FTG, AL, 1BLKHD x 1/2MNPT	1
4	9900240	O-Ring, #318	2
5	9900052-2	Bushing, 1” Machinery 18GA	2
6	9900760	Nut Jam 1” UNF Plt	2
7	9900331	FTG, STL, ELB, 1/2MNPT x 1/2FNPSM	1
8	9900021	FTG, AL, 1” BLKHD x 3/4” HB	1
9	9900216-1	Clamp, Reservoir #116, 25”	4
10	H12X42PS	Hose, HYD, 1/2 x 42,1/2FNPSM x1/2FNPSM,1W	1
11	0200025	Tank Upgrade Kit, Complete	*

8.3.4. IN-LINE HYDRAULIC OIL FILTER

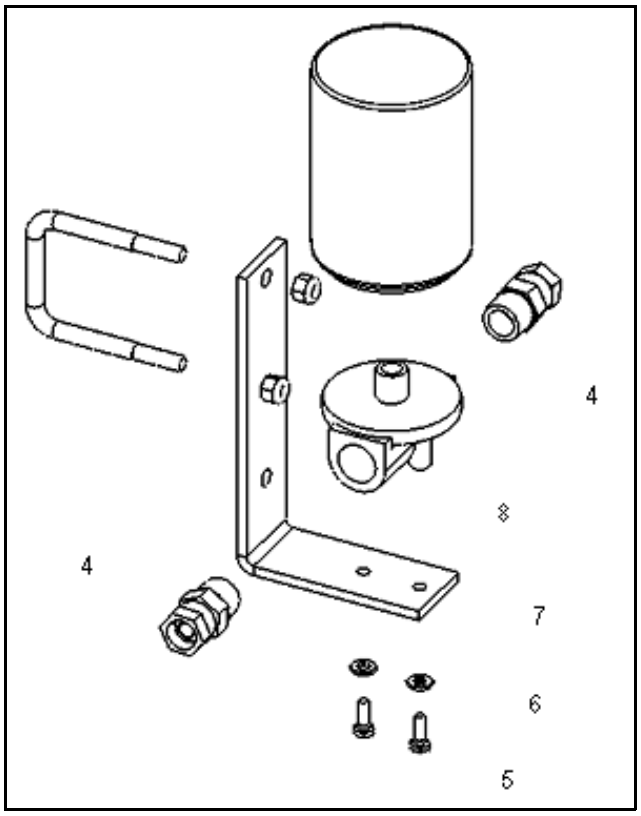


Table 8.7

Item	Part No.	Description	Qty
1	9900994	Filter HYD, 10 Micron, 3/4" FNPT	1
2	0601007	Nut Nylock 3/8” UNC Plt	2
3	9900038	U-Bolt SQ 3/8”NC x 2-5/8” x 3-3/4” x 1-1/4” Thd	1
4	2300053	FTG, STL, 3/4MNPT x 1/2FNPSM	2
5	9900800	Bolt Hex 1/4” x 3/4” UNC GR5 Plt	2
6	9900783	Washer Lock 1/4” Plt	2
7	2300202	Filter Mount	1
8	9900993	Filter Head, In-line, 3/4" FNPT	1

8.3.5. HYDRAULIC WINCH & CONTROL VALVE

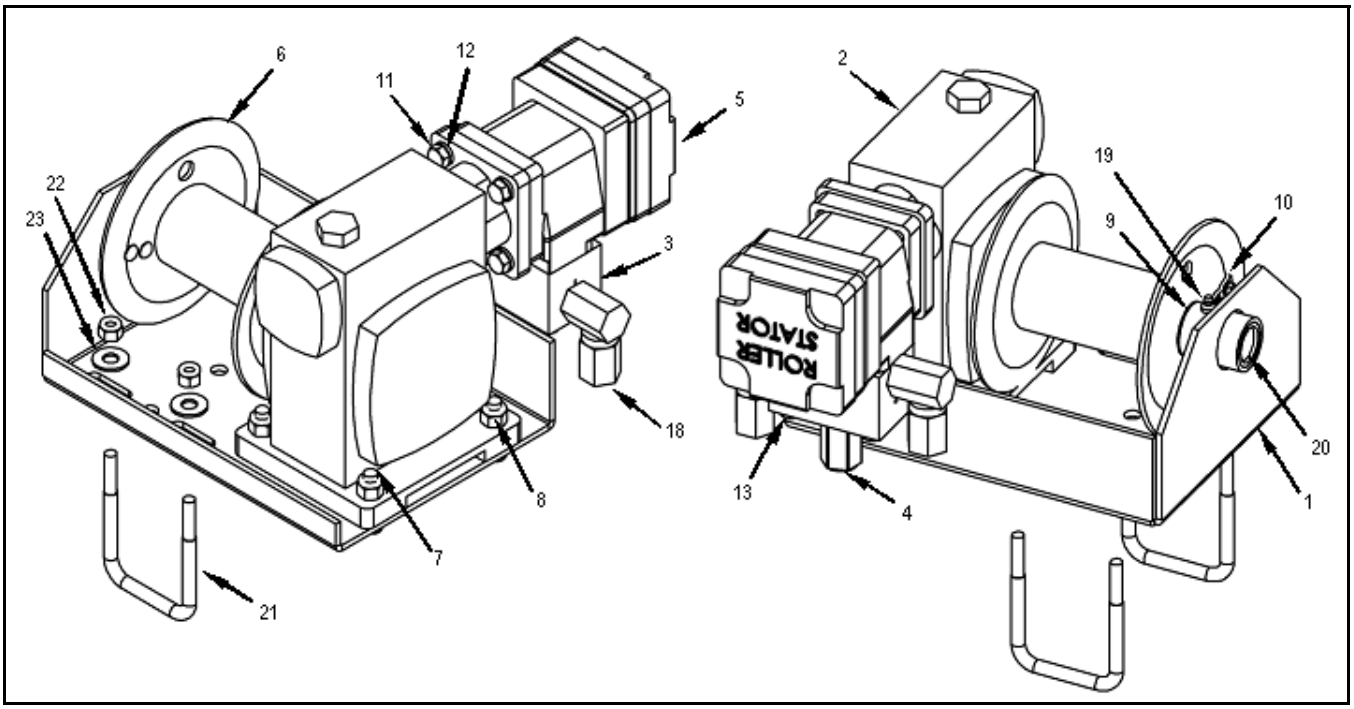


Table 8.8

Item	Part No.	Description	Qty
1	14096	Winch Frame Weld't	1
2	17625	Gearbox, 20:1, 60WPuds	1
3	0700023	Valve, Winch, Relief Block, Manifold	1
4	0700024	Valve, Winch, Non-Adj Relief (Manifold)	1
5	9901000MANK	Motor, HYD, 3.2 RS, Man, 1/4" Key	1
6	14080	Winch Drum Wldt	1
7	9900584	Bolt, 7/16” x 1-1/2” UNC GR5 Pld	4
8	9900643	Nut Nylock 7/16” UNC GR5 Plt	4
9	18097	1" Rim Washer	1
10	18496	Rope Keeper Kit	1
11	9900699	Bolt, 3/8” x 1” UNC GR5 Pld	4
12	9900528	Washer, 3/8” Lock, Plt	4
13	9900524	Bolt, 5/16” x 2-1/2” UNC GR5 Pld	4
14	17105	DCL, Warn, Rotating Cable Sheaves (not shown)	1
15	17108	DCL, Warn, Inspect Cable (not shown)	1
16	17698	DCL, Warn, High-Pressure Fluid HAZ (not shown)	1
17	28129	DCL, Warn, Falling Auger Hazard (not shown)	1
18	1100625	FTG, ELB, 3/8MNPT x 1/2FNPSM	2
19	2300028	Zerk, 5/16”, Press-in Style (Yellow Zinc)	1
20	19149	Bushing, BRS, 1”ID x 1-1/4”OD x 1-3/4” WF	1
21	9900038	U-Bolt SQ 3/8” NC x 2-5/8” x 3-3/4” x 1-1/4” Thd GR5 Plt	2
22	0601007	Nut Nylock 3/8” UNC GR5 Plt	4

Table 8.8

Item	Part No.	Description	Qty
23	0601008	Washer Flat 3/8” Plt	4

8.3.6. HYDRAULIC WINCH (DUTTON) & CONTROL

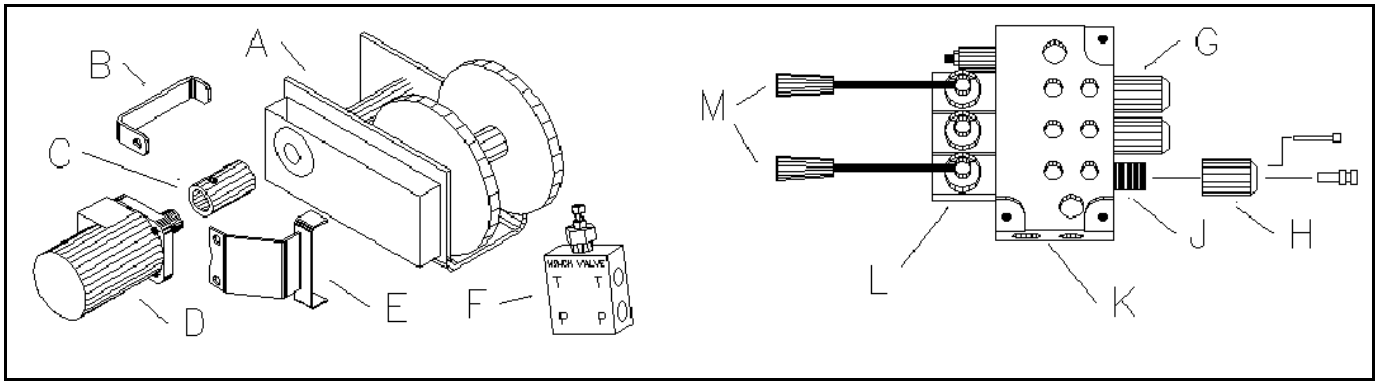


Table 8.9

Item	Part No.	Description	Qty
A	0707001	2503 Winch	1
B	0707003A	Safety Bracket	1
C	0700001B	Motor Coupler w/Roll Pin	1
D	9901001PRP	Motor, Hyd 4.6 cu. In.	1
E	0707002	Motor Bracket	1
F	0700008	Winch Valve	1
G	1600023	End Cap	2
H	1600024	End Cap with Bolt	1
J	1600025	Cap Spring	3
K	1600006	Valve, 3 Spool, 2 Handles, no Fittings	1
L	1600026	Lever Pivot Box, with Lever Arm, Lever Pin, Rubber Boot	1
M	1600007	Control Lever, 3 Spool Valve	2
	0700009	Shaft for 2503 Dutton	
	0700011	Reel Bolt 2503 Dutton	
N	1600026B	Boot, 3 Spool Lever	3

WARRANTY REGISTRATION

Wheatheart congratulates you on your new equipment purchase.
The warranty registration form must be filled out within thirty (30) days from delivery date and sent to:
Wheatheart Manufacturing
3455 Idylwyld Dr. N., Saskatoon, Saskatchewan S7L 6B5

CUSTOMER COPY (Retain this card for warranty and record purposes.)	
PRODUCT:	DEALER'S NAME:
SERIAL #:	ADDRESS:
DELIVERY DATE:	
OWNER'S NAME:	PHONE #:
ADDRESS:	SIGNATURE:
	INVOICE #:
PHONE #:	(Please refer to invoice # when filing claim)

DEALER COPY (Retain this card for warranty and record purposes.)	
PRODUCT:	DEALER'S NAME:
SERIAL #:	ADDRESS:
DELIVERY DATE:	
OWNER'S NAME:	PHONE #:
ADDRESS:	SIGNATURE:
	INVOICE #:
PHONE #:	(Please refer to invoice # when filing claim)

WARRANTY REGISTRATION (Must be filled out and returned to Wheatheart within 30 days of delivery.)	
OWNER'S NAME:	DEALER'S NAME:
ADDRESS:	ADDRESS:
PHONE #:	PHONE #:
SIGNATURE: (I acknowledge the product to be whole and in proper working order.)	SIGNATURE: (I acknowledge the product to be whole and in proper working order. The owner has been given an operation manual and has been informed on proper operation and maintenance.)
PRODUCT: SERIAL #: INVOICE #:	DELIVERY DATE: GAS MOTOR SERIAL #:

LIMITED WARRANTY

Wheatheart warrants to the buyer that the new machinery is free from defects in material and workmanship.

This warranty is only effective for any new machinery that has not been altered, changed, repaired, or treated since its delivery to the buyer, other than by Wheatheart or its authorized dealers or employees, and does not apply to accessories, attachments, tools, or parts sold or operated with the new machinery if they have not been manufactured by Wheatheart.

Wheatheart shall only be liable for defects in the material or workmanship attributed to faulty material or bad workmanship that can be proved by the buyer, and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery or in any other manner whatsoever, and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Wheatheart operation manual, specifications, or printed instructions.

A Warranty Registration Form and Inspection Report must be completed at the time of delivery and returned to Wheatheart Manufacturing within thirty (30) days.

Warranty Period

Private Farm Use	One (1) year from date of purchase.
Commercial, Custom, or Rental Use	Ninety (90) days from date of purchase.
Replacement Parts	Ninety (90) days from date of replacement

Defective parts are subject to inspection by a Wheatheart representative prior to approval of a warranty claim. All returned parts must be sent to the factory, freight pre-paid, in order to qualify for warranty replacement. Repaired or replaced parts will be returned freight collect.

If these conditions are fulfilled, Wheatheart shall at its own cost and its own option either repair or replace any defective parts provided that the buyer shall be responsible for all expenses incurred as a result of repairs, labor, parts, transportation, or any other work, unless Wheatheart has authorized such expenses in advance. Normal wear and service items such as belts, hoses, flashing, etc. are excluded from warranty.

The warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Wheatheart or its authorized dealers or employees.

This warranty extends only to the original owner of the new equipment.

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether expressed or implied, and without limiting the generality of the foregoing, excluded all warranties, expressed or implied, or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment, Wheatheart disclaims all liability for incidental or consequential damages.

This machine is subject to design changes and Wheatheart shall not be required to retro-fit or exchange items on previously sold units except at its own option.

WARRANTY VOID IF NOT REGISTERED

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