Fisher Engineering

94750, 94751

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UTS 696 Under Tailgate Spreader

Installation Instructions

⚠ CAUTION

Read this document before installing or operating the spreader.

These Installation Instructions are for FISHER® UTS 696 Under Tailgate Spreaders with serial numbers 0216 and higher.

SAFETY DEFINITIONS

⚠ WARNING

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

⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

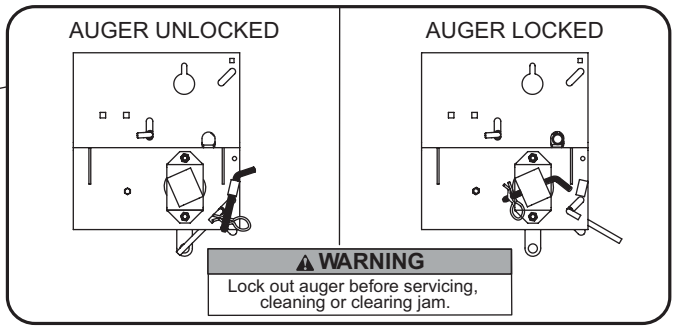
NOTE: Indicates a situation or action that can lead to damage to your spreader and vehicle or other property. Other useful information can also be described.

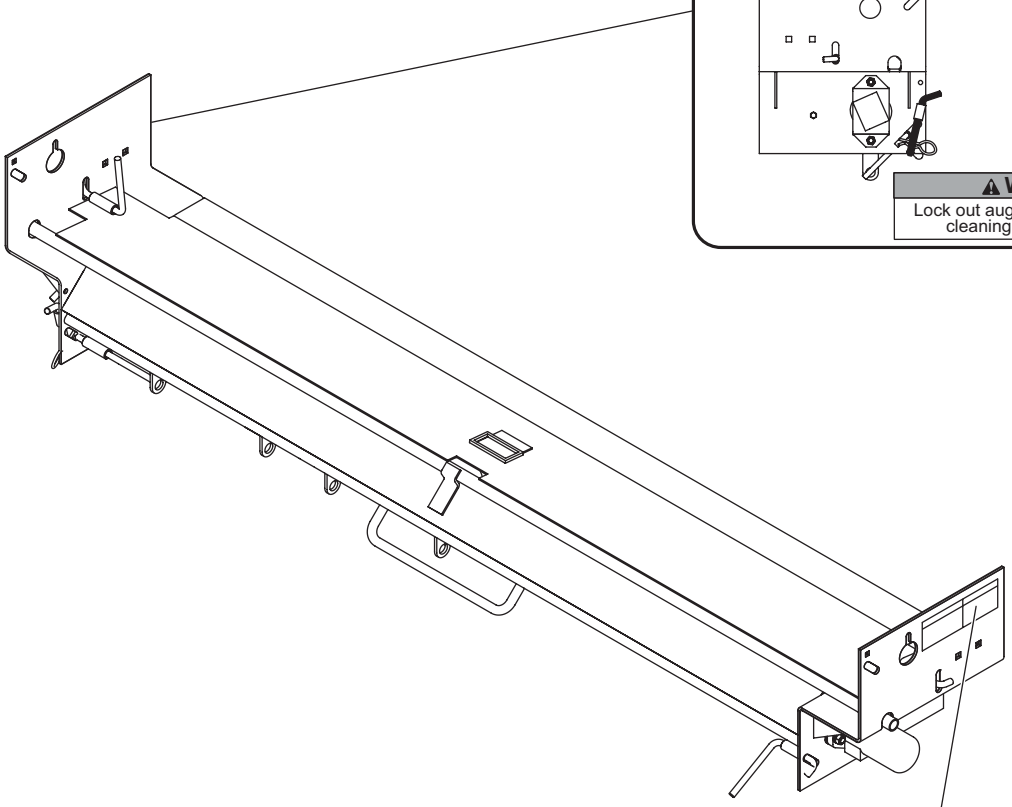
WARNING/CAUTION LABELS

Become familiar with and inform users about the warning and caution labels on the spreader.

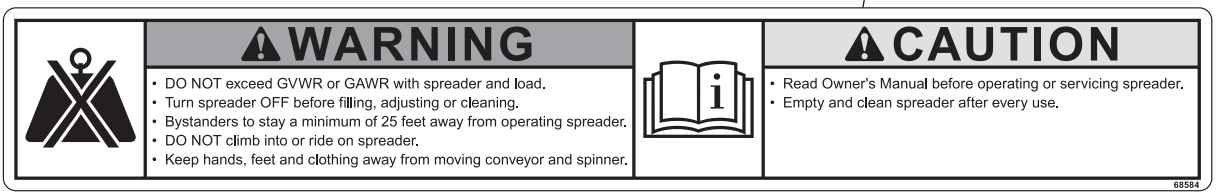
NOTE: If labels are missing or cannot be read, see your sales outlet.

Lock Out Procedure Label





Warning/Caution Label



SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating, or making adjustments.

⚠ WARNING

- **Driver to keep bystanders minimum of 25 feet away from operating spreader.**
- **Before working with the spreader, secure all loose-fitting clothing and unrestrained hair.**
- **Before operating the spreader, verify that all safety guards are in place.**
- **Before servicing the spreader, wait for conveyor, auger, and spinner to stop.**
- **Do not climb into or ride on spreader.**

⚠ WARNING

Overloading could result in an accident or damage. Do not exceed GVWR or GAWR ratings as found on the driver-side vehicle door cornerpost. See Loading section to determine maximum volumes of spreading material.

⚠ WARNING

Do not install the control for this product in the deployment path of an air bag. Refer to vehicle manufacturer's manual for air bag deployment area(s).

⚠ WARNING

Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.

⚠ CAUTION

If rear directional, CHMSL light, or brake stoplights are obstructed by the spreader, the lights shall be relocated, or auxiliary directional or brake stoplights shall be installed.

⚠ CAUTION

During the hopper installation we recommend the addition of an OSHA compliant Backup Alarm. This alarm is required for OSHA governed employers.

⚠ CAUTION

- **Do not operate a spreader in need of maintenance.**
- **Before operating the spreader, reassemble any parts or hardware removed for cleaning or adjusting.**
- **Before operating the spreader, remove materials such as cleaning rags, brushes, and hand tools from the spreader.**
- **Before operating the spreader, read the engine owner's manual, if so equipped.**
- **While operating the spreader, use auxiliary warning lights, except when prohibited by law.**
- **Tighten all fasteners according to the Torque Chart. Refer to Torque Chart for the recommended torque values.**

⚠ CAUTION

Disconnect electric and/or hydraulic power and tag out if required before servicing or performing maintenance.

⚠ CAUTION

DO NOT leave unused material in hopper. Material can freeze or solidify, causing unit to not work properly. Empty and clean after each use.

NOTE: Lubricate grease fittings after each use. Use a good quality multipurpose grease.

FUSES

The electrical system contains several blade-style automotive fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

PERSONAL SAFETY

- Remove ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or spreader.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt, and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses, and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

FIRE AND EXPLOSION

⚠ WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers, or two-way radios.

VENTILATION

⚠ WARNING

Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.

BATTERY SAFETY

⚠ CAUTION

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks, or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.

- **Batteries contain sulfuric acid, which burns skin, eyes, and clothing.**
- **Disconnect the battery before removing or replacing any electrical components.**

NOISE

Airborne noise emission during use is below 70 dB(A) for the spreader operator.

VIBRATION

Operating spreader vibration does not exceed 2.5 m/s^2 to the hand-arm or 0.5 m/s^2 to the whole body.

TORQUE CHART

⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the Torque Chart. Use standard methods and practices when attaching spreader, including proper personal protective safety equipment.

Recommended Fastener Torque Chart

Inch Fasteners Grade 5 and Grade 8

Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	Grade 5	Grade 8		Grade 5	Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995

Metric Fasteners Class 8.8 and 10.9

Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	Class 8.8	Class 10.9		Class 8.8	Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701

These torque values apply to fasteners except those noted in the instructions.

This Owner's Manual covers vehicles that have been recommended for carrying the hopper spreader. Please see your local dealer for proper vehicle applications.

CERTIFICATION

⚠ WARNING

New untitled vehicle installation of a spreader requires National Highway Traffic Safety Administration altered vehicle certification labeling. Installer to verify that struck load of snow or ice control material does not exceed GVWR or GAWR rating label and complies with FMVSS.

⚠ WARNING

Overloading could result in an accident or damage. Do not exceed GVWR or GAWR as found on the driver-side cornerpost of vehicle.

⚠ CAUTION

Read and adhere to manufacturer's ice-control material package labeling, including Material Safety Data Sheet requirements.

MATERIAL WEIGHTS

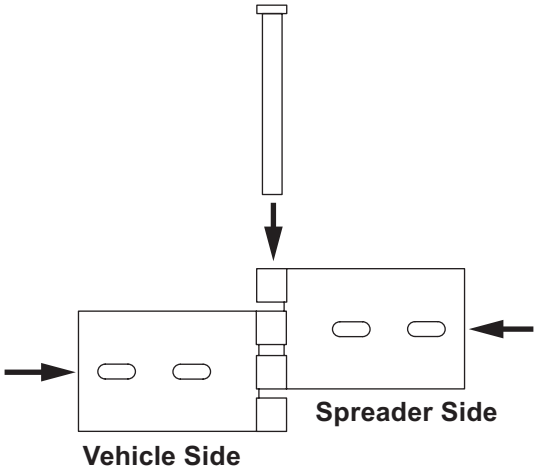
Material	Density		
	(lb/ft^3)	(lb/yd^3)	(kg/m^3)
Salt	80	2160	1282
Sand	100	2700	1602

Material densities are approximate and are based on dry, loose material. It is the responsibility of the operator to know the weight of the material to be spread and the vehicle carrying capacity.

Mounting the Spreader

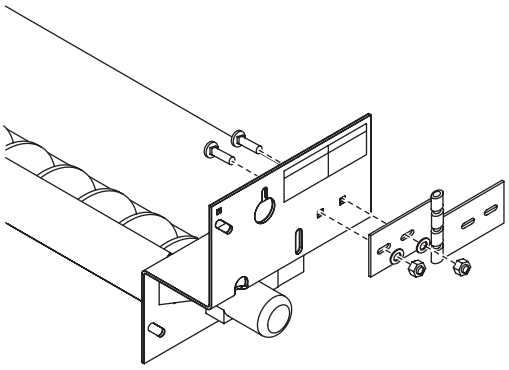
NOTE: Periodically throughout the snow and ice control season, verify that mounting devices are secure.

1. Assemble the mounts by first mating the two halves together as shown. Next, insert the hinge pin and secure it with the supplied hairpin cotter. Repeat this step to assemble both mounts.



(Preferred)

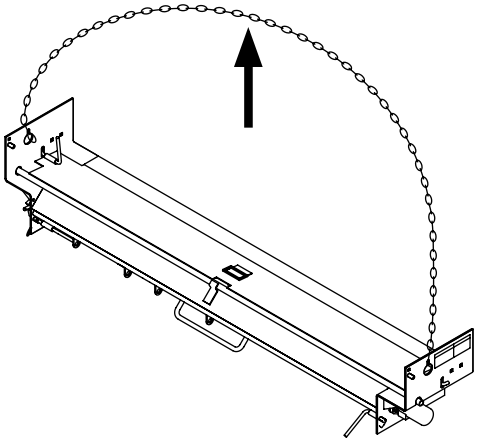
2. Bolt the mount assemblies to the spreader with two 1/2" carriage bolts and 1/2" locknuts per side. The recommended configuration for the mounts is to position the spreader mount above the truck mount.



⚠ CAUTION

Before lifting, verify that the hopper is empty of material. The lifting device must be able to support the spreader's weight.

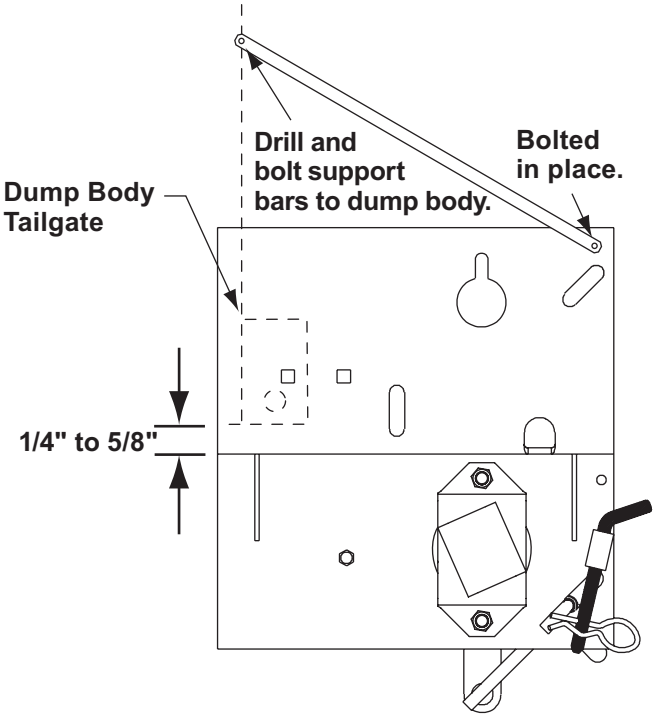
3. Lift the spreader into position, clamp the spreader in place, and verify proper lid movement.



⚠ CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

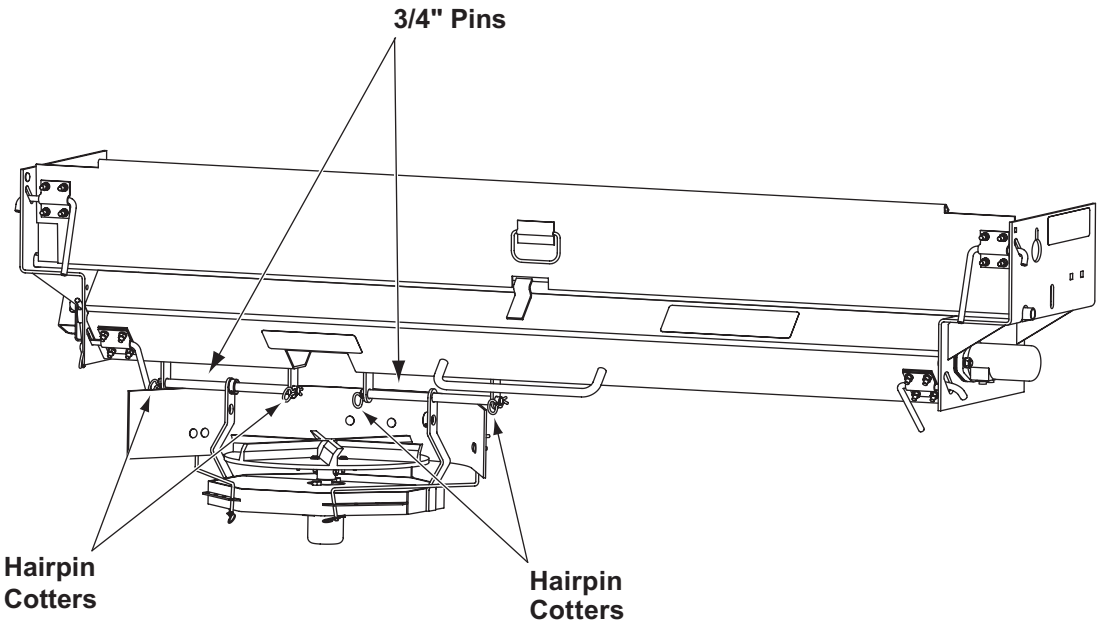
4. Drill and bolt or weld the remaining half of the mounts to the rear cornerpost of the dumpbody. The clearance from the bottom of the tailgate or tailgate latch (whichever is lower) to the top of the spreader lid should be between 1/4" and 5/8". If dumping over tailgate, please check for clearance of tailgate over spreader lid. Also install the support bars from the spreader to the rear cornerpost of the dump body.



NOTE: Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.

Spinner Assembly Instructions

1. Pin the spinner assembly to the main trough assembly using two 3/4" pins and four hairpin cotters.

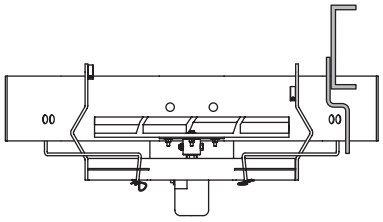


(Continued on next page.)

2. Install the parallel brackets to the truck frame.

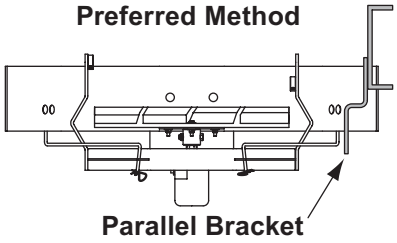
   Sequence of assembly is as follows:

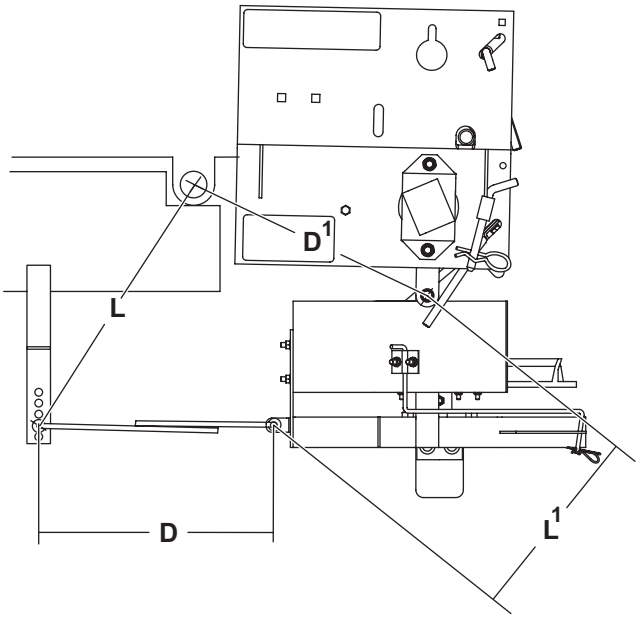
   a. Position the parallel bracket(s) to line up with the spinner frame edge. With the spinner level, position the parallel bracket such that "D" is equal to "D1" and "L" is equal to "L1." The closer to equal the dimensions, the closer to level the spinner will stay to the road throughout the range of dumping angle. Clamp the bracket(s) in place.



or

Preferred Method





   b. Attach the parallel rods through the spinner bow and parallel bracket using washers and cotter pins. After attaching, clamp the parallel rods together.

   c. Verify leveling action by raising the dump. Be alert to any potential interference. Verify that the motor does not contact the road with the dumpbody fully raised. After checking, weld or bolt the parallel bracket in place, and weld or permanently fix the parallel bars together.

Alternate To Parallel Bar Use:
Weight front of spinner until it is level.

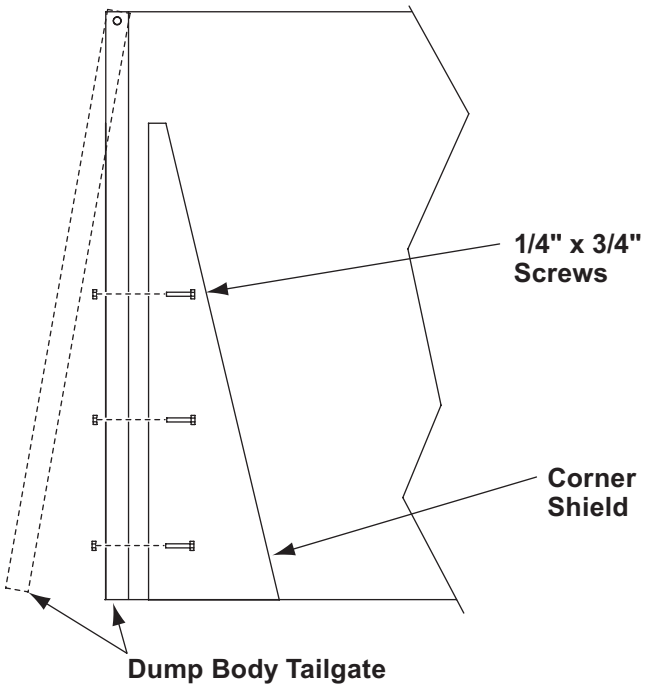
For more ground clearance, cut top holes off of spinner supports and use lower holes.

Corner Shield Installation Instructions

1. Install the corner shields as shown. Either weld or bolt them in place using the 1/4" x 3/4" self drilling and tapping screws.

2. Keep the bottom of the shield clear of the corner radius.

3. Verify clearance and dumpbody tailgate operation before permanently attaching the corner shields.



Hydraulic Unit Installation

Recommended sequence of installation is as follows:

1. Pump (not provided).
2. Install hydraulic reservoir (not provided).
3. Install cab control valve (optional).
4. Install hydraulic hoses (not provided).
5. Fill hydraulic reservoir and check system.

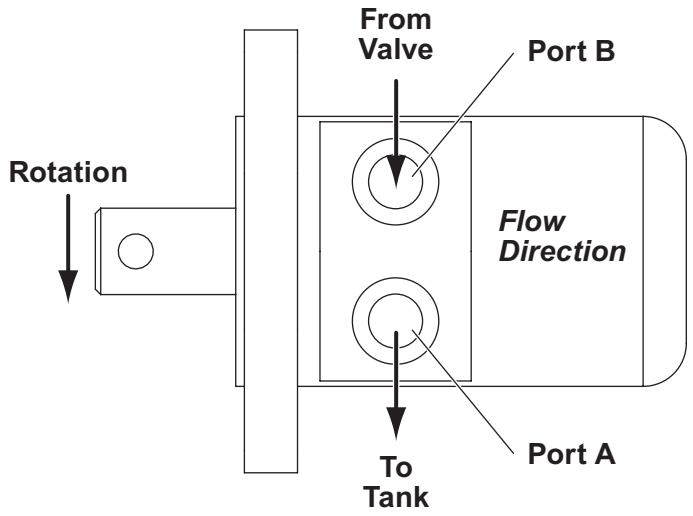
Pump

Because of the wide range of possible installations of this spreader, no pump is supplied with the unit. If your truck does not have a pump suitable to your application, one may be purchased from a local truck equipment supplier. This pump should produce 25 GPM at 1,500 psi at normal operating speed and have 1" NPT suction and discharge ports.

Hydraulic Reservoir Installation

Position the reservoir outlet as high, or higher than, the pump inlet. Keep the hose distance as short as possible. (Reservoir used should have a capacity of 1-1/2 to 2 times the pump maximum flow rate in GPM.)

Auger Hydraulic Motor Plumbing



(View from the ground, looking up.)

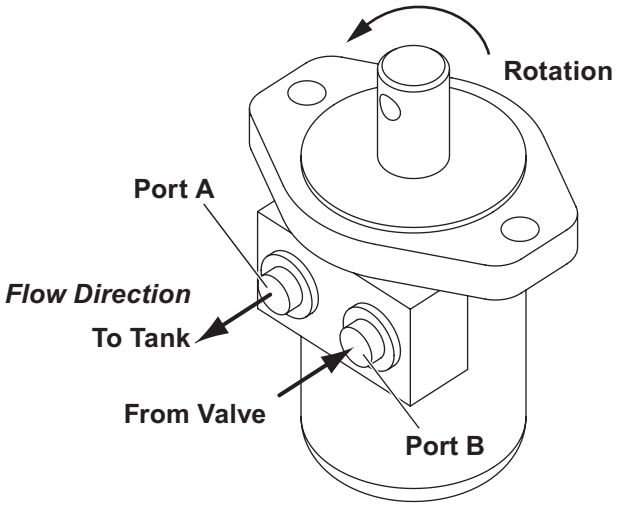
⚠ WARNING

Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.

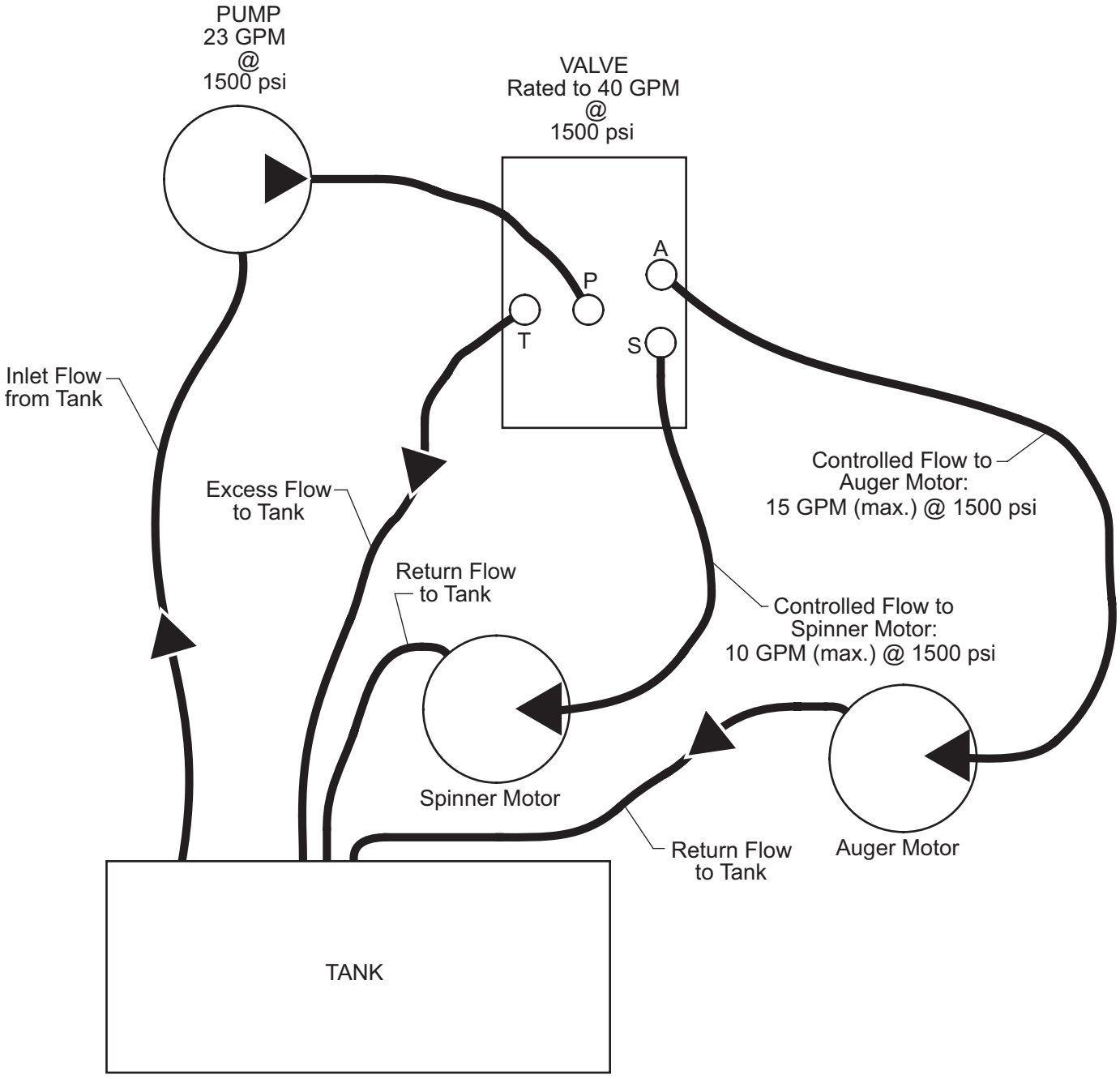
Cab Control Valve Installation

1. With the seat fully forward, select a suitable location to mount the cab control valve allowing for the operator to adjust the control and to turn it ON and OFF.
2. Check for clearance with ALL controls in the cab.
3. Under the cab, check for interference with transmission, etc.
4. Check to see that the cab control valve location does not interfere with entering or leaving cab.
5. Fabricate a bracket to mount cab control valve in selected location.
6. Insert a grommet into all holes drilled for this installation.
7. Mount valve and plumb pump and motor to valve. Plumb port "T" to reservoir, Port "P" to pressure side of pump, Port "A" of the valve to Port "B" of the auger motor, and Port "S" of the valve to Port "B" of the spinner motor.
8. Check machine for proper rotation of drive shafts and hydraulic leaks.

Spinner Hydraulic Motor Plumbing



Typical Hydraulic Circuit
Dedicated Fixed Displacement Pump



PRE-DELIVERY CHECK LIST

- ☐ Verify all nuts and bolts are tight.
- ☐ Verify spinner is level and has adequate clearance through the entire range of dumping motion.
- ☐ Verify hydraulic hoses are properly routed and do not drag or interfere with dump body action.
- ☐ Verify proper spinner and auger rotation.
- ☐ Ensure there are no hydraulic leaks.
- ☐ Verify proper flow control valve function.
- ☐ Verify hydraulic oil tank level.
- ☐ Verify all factory warning labels and instructions are in place and are readable.
- ☐ Ensure that Warranty Card and Owner's Manual Kit are given to purchaser.

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