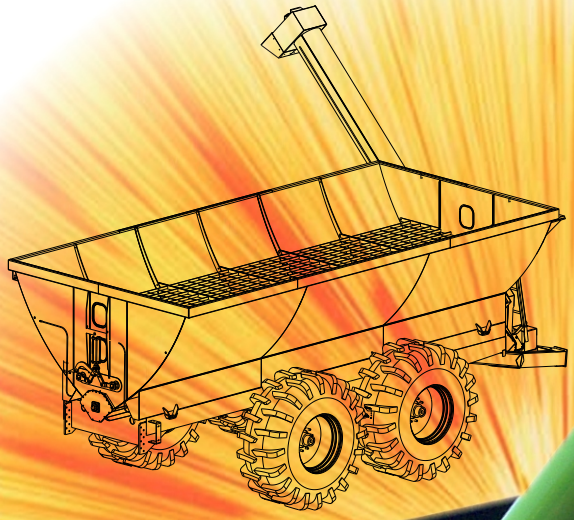
STEWARDS FOR AG ENVIRONMENTS

BALZER INC.

GRAIN CART



USER MANUAL

November 2002

County Road 27 Box 458 Mountain Lake, MN 56159

Phone Number:	**(800) 795-8551**
	(800) 727-3133
Main:	**(507) 427-3133**
Fax Number:	**(507) 427-3640**
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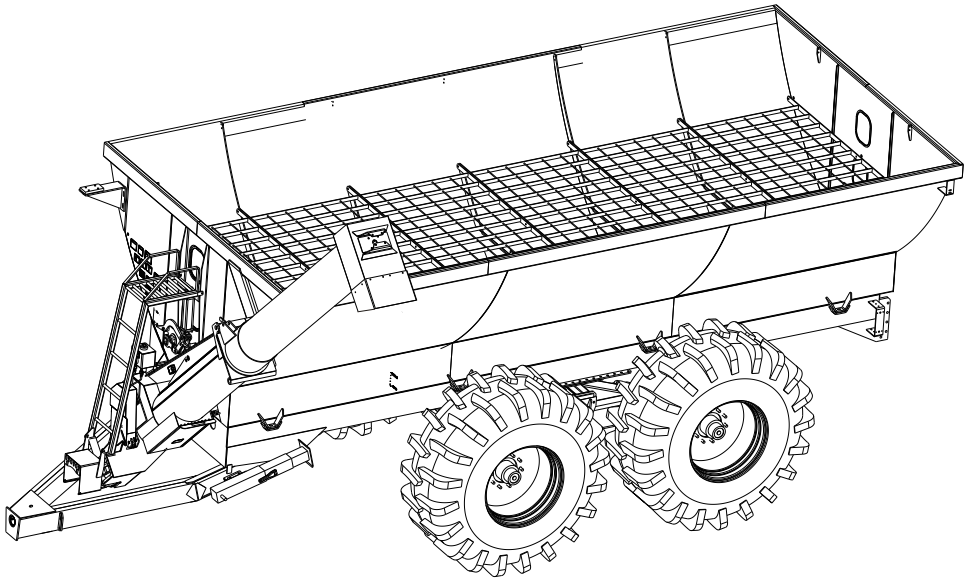

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To the Purchaser

This is the safety alert symbol. It is used to alert the operator to an instruction concerning the personal safety and risk factor of this equipment. Always observe and heed these very important instructions to promote a safe operation with good preventive maintenance habits.

This new Balzer Inc. product is designed and manufactured to give years of very dependable service when used for the purpose for which it is intended, and when properly maintained.

NEVER OPERATE THIS EQUIPMENT UNTIL USER FULLY UNDERSTANDS THE COMPLETE CONTENTS OF THIS MANUAL. FOR OWNERS WHO DO NOT OPERATE THIS EQUIPMENT, IT IS THE OWNER'S RESPONSIBILITY THAT THE USER IS PROPERLY INSTRUCTED AND IS FULLY AWARE OF THIS MANUAL'S CONTENTS.

This is important in the safe handling of this equipment and promoting an efficient operation. If there are any questions about areas in this manual, it is important to contact your dealer for clarification.

This machine is warranted as stated on the next page. A registration card is to be filled in by your dealer with your name and address, and promptly returned to the factory. The card provides a ready reference to help you in securing warranty and in answering questions that you may have at some later date.

Operating instructions and parts book are shipped with this machine. If parts of this book are missing or become unreadable, contact your dealer for a new set.

The serial number and identification tag is located to the front of the frame. Please refer to these numbers when parts or warranty communication is necessary.

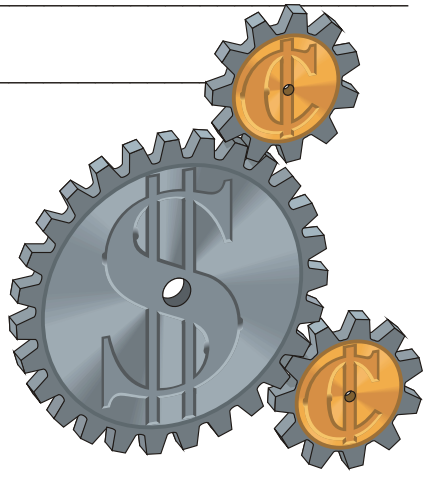
PLEASE FILL IN THE FOLLOWING INFORMATION FOR YOUR RECORDS:

Date of purchase _____

Owner's name _____

Dealer's name _____

Serial # Identification # _____



Warranty

WARRANTY MANUFACTURER

Dealer or Distributor understands and agrees that the Manufacturer extends only the following Warranty to customers. In the event Dealer or Distributor extends any additional warranty (such as by enlarging the scope or period of warranty or undertaking a warranty of merchantability or fitness for any particular purpose) or any other obligation whatsoever, Dealer or Distributor shall: (1) be solely responsible therefore (2) have no recourse against Manufacturer thereof and (3) defend, indemnify and hold Manufacturer harmless against any claim or cause of action whatsoever arising out of, or occasioned by, Dealer or Distributor's extension of said additional warranty or obligation.

CERTIFICATE OF GENERAL EQUIPMENT WARRANTY

Balzer Inc. warrants new Products sold by it to be free from defects in material or workmanship for a period of one (1) year after date of delivery to the first user and subject to the following conditions. Balzer Inc.'s obligation and liability under this Warranty is expressly limited to repairing or replacing at Balzer Inc.'s option, any parts which appear to Balzer Inc. upon inspection to have been defective in material or workmanship. Such parts shall be provided at no cost to user, at the business establishment of the authorized Balzer Inc. dealer or distributor of the Product during regular working hours. This Warranty shall not apply to component parts or accessories of Products not manufactured by Balzer Inc. and which carry the warranty of the manufacturer thereof, or to normal maintenance (such as tune-up) or normal maintenance parts (such as oil filters). Replacement or repair parts installed in this Product covered by this Warranty are warranted only for the remainder of this Warranty as if such parts were original components of said Product. **BALZER INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

Balzer Inc.'s obligation under this Warranty shall not include any transportation charges, cost of installation, duty taxes or any other charges whatsoever, or any liability for direct, indirect, incidental or consequential damage or delay. If requested by Balzer Inc. products or parts for which a warranty claim is made are to be returned transportation prepaid to Balzer Inc. Any improper use, including operation after discovery of defective or worn parts, operation beyond rated capacity, substitution or parts not approved by Balzer Inc. company or any alteration or repair by others in such manner as in Balzer Inc. company's judgment affects the Products materially and adversely, shall void this Warranty.

"NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY AN OFFICER OF BALZER INC. AT ITS HOME OFFICE."

LIABILITY FOR DELAYS

No liability shall attach to Manufacturer direct, or indirect, incidental or consequential damages or expenses due to loss, damage, detention of delay in delivery of Products resulting from acts or delays beyond its control.

Safety Signs

SAFETY SIGNS ARE IMPORTANT
Safety signs or decals provide very important information and instructions designed to alert you to dangers and hazards that can be present during operation of this equipment. However, safety sign instructions must be read, understood and followed to be effective.

REPLACEMENT OF SAFETY SIGNS
Safety signs or decals must be kept clean and readable. If they become unreadable for any reason, they must be replaced with an identical replacement decal. Safety decals must also be replaced if parts are repaired or replaced with new parts that do not already include the necessary safety decals.

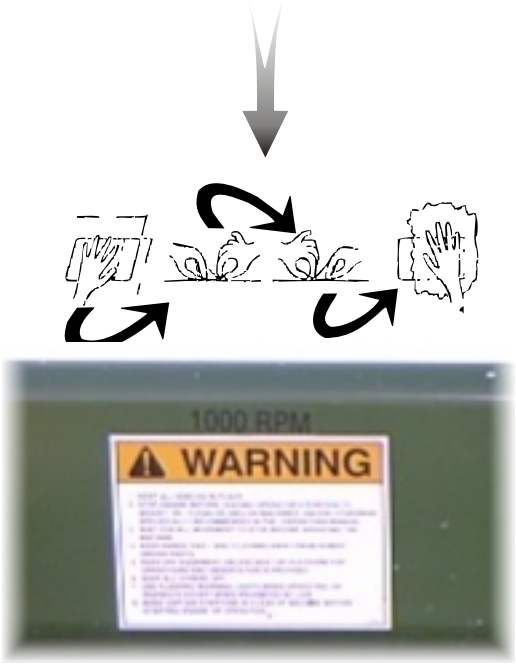
APPLICATION OF SAFETY DECALS
Surface preparation is very important for safety decals to properly adhere. Grease, oil and dirt must be removed and the surface must be smooth and dry.
Most decals have a split backing which is meant to be removed from the split outward. To apply the decals follow these procedures:

1. Position the decal in the proper location and hold firmly over the largest portion of backing.

2. Use one hand to hold the decal in position, with the other hand carefully roll the loose end over and peel the backing outward. When the backing is removed as described and shown (Fig. 1), with even and gradual pulling, the decal will roll onto the surface smooth and wrinkle free.

3. With the smallest portion of the decal attached, the same procedure can be applied to the other half.

4. When the decal has been attached in place, use a cloth or soft paper towel to burnish the decal onto the cleaned surface. Work gently from the middle outwards to avoid creating any wrinkles.



REPLACEMENT DECALS
Order replacement decals by part number through your nearest dealer. Part numbers are printed on each decal.

Safety

OBSERVE AND FOLLOW ALL SAFETY PROCEDURE TO PREVENT PERSONAL INJURY OR DAMAGE TO THE MACHINE

Avoid excessive road speed.

Never operate this unit until user is familiar with all controls, and has read and understands operators manual.

Read and follow the instructions on all decals.

Never lubricate, adjust or repair unit while it is in operation. Power unit engine must be shut off and all movement stopped.

Never operate this unit with any guards or shields not in place. Replace any missing or damaged ones.

Keep hands and feet away from all moving parts.

Never wear loose clothing while working around moving parts.

Never leave unit running unattended.

Before loading make sure that the unit does not have any foreign objects or material in it that can cause equipment damage or personal injury.

Never allow anyone to ride on the unit at anytime.

Safety grates inside box protect users from accidental contact with augers and help prevent possible suffocation from grain. Never operate this equipment with these grates missing. Rotating augers can cause serious injury or death!

Be sure the rear of the unit has a clean SMV emblem properly displayed if towing less than 25 MPH on any public roadway. At night proper warning and running lights are necessary as required by state law.

Always use a safety chain between the towing vehicle and cart on public roadways.

Hydraulic pressure can be very dangerous and can cause serious personal injury and death. Be sure to relieve all pressure before disconnecting hydraulic lines.

Hydraulic fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, not your hands, to search for leaks.

If injured by escaping hydraulic fluid, seek medical attention immediately. Serious infection or reaction may develop.

Never assume that everybody is as safety conscious as you are.

Always use a hitch pin that has a safety clip pin.

Danger!

DANGER

MOVING PARTS HAZARD

- Keep hands, clothing, and hair away from moving belts and parts.
- Replace guard before operating.

21730

DANGER

STOP: WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING OR OPENING OF SHIELDS.

LOOK: THE IGNITION KEY IS REMOVED.

LISTEN: FOR ALL MOVEMENT TO STOP, ROTATING PARTS CONTINUE TO ROTATE AFTER POWER IS SHUT OFF.

14175

Operation Instructions

PRE OPERATION CHECK

- Make sure safety shields are in places.
- Make sure there is no frozen material to obstruct the grain doors or augers.
- Make sure tractor draw bar matches standards shown in draw bar adjustment diagram.

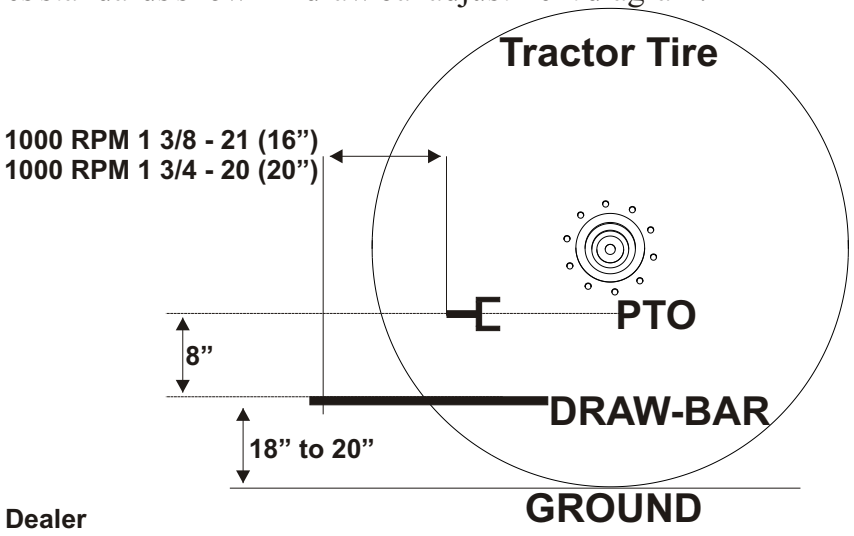
HOSE COLOR MARKINGS

RED -Brake cylinders
YELLOW - Steering Lock-Out
BLUE - Grain Doors
GREEN - Clean-Out Doors
ORANGE - Auger Folding
NO COLOR - Clutch

DRAW-BAR ADJUSTMENT

PTO STYLE	DIM "A"
1 3/8" - 21 SPLINE	16"
1 3/4" - 20 SPLINE	20"

If this dimensions are not possible on your tractor, contact your Balzer Dealer



Suggested Draw-Bar Adjustment

ATTACHING TO TRACTOR

- Attach tractor draw bar to auger cart hitch with properly sized hitch pin that has a retainer device.
- Crank trailer jack to slowly place pressure on draw bar. Move Jack to storage location and secure.
- Check that tractor and PTO have proper size splines. Check that PTO slides freely and is not damaged. Attach PTO shaft to tractor securely as required by its locking mechanism. PTO should have approximately 1/3 over-lap.
- Attach hydraulic lines making sure the connectors are clean and in good repair. See hose color code list above.

INITIAL START-UP

- Never operate this machine if shields are missing or if persons are in or on this machine. Do not leave tractor seat. Keep everyone away while operating this machine.
- Operate all hydraulic controls to become familiar with the function of each tractor lever and to visually see that the auger cart is responding correctly.
- Engage PTO Slowly with tractor throttle at fast idle. Watch and listen to confirm that the auger cart is operating properly. Run at fast idle for 5 minutes disengage PTO and shut off tractor engine and remove keys from ignition. Make all Adjustments before any further operating is attempted.

IN FIELD PROCEDURES

- Always close grain doors before disengaging PTO and always engage PTO before opening grain doors.
- Be sure grain doors are closed before loading.
- Always engage steering lock-out cylinders before attempting to back-up this auger cart.
- Always load Grain Cart evenly front to back to avoid excessive tongue cut.

Operation - PTO / JACK

PTO

The PTO has 1 3/8 - 21 or 1 3/4-20 tractor ends and 1 3/4-20 implement ends. The implement end provides a friction clutch which protects the gear box and drive from overload.

JACK

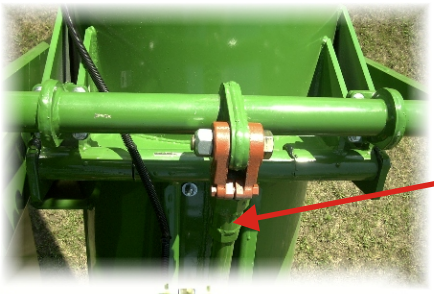
The jack storage location is shown in picture below. This location keeps it out of the way of tires and removes the possibility of dragging.

Operation - Auger Folding

Vertical Auger

The hydraulic hoses with orange marking band control the vertical auger folding.

This valve prevents the auger from falling if the hose to the tractor would accidentally get ruptured. It also acts as a lock once auger is unfolded, preventing possible oil, seepage back to the tractor. It also has flow restrictions which control the speed that the auger unfolds. If the speed is inadequate, consult Balzer for recommendations.



This provides a mean of adjustment if needed. Hydraulic cylinder must be completely extended and hinge totally closed. See trouble shooting for more informations.

The upper bearing is spring loaded to allow auger to ride up as the lower and upper augers engage. It must return to its proper position as power is applied.

Operation - Front Clean-Out

Front Clean-Out Door

This door is available for clean-out when needed.

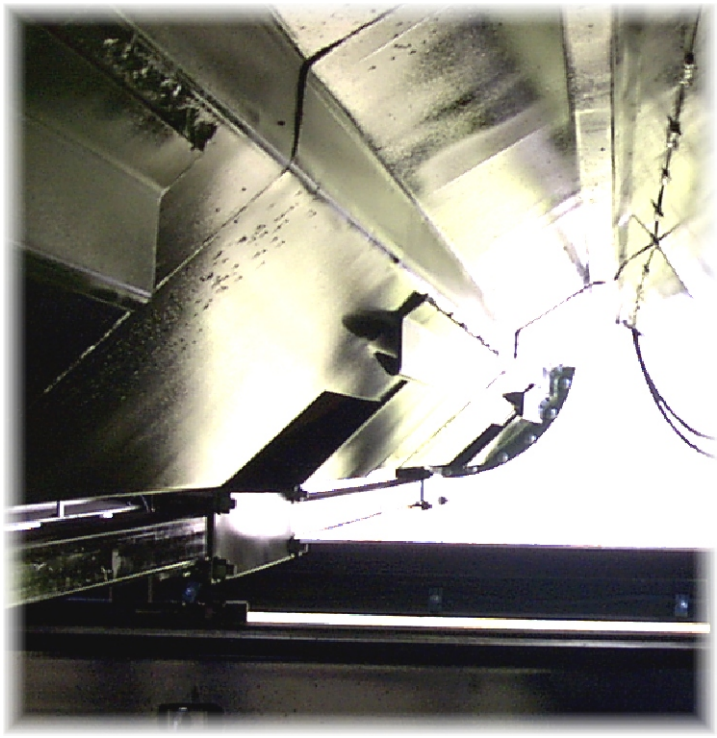
Warning! Never open for clean-out until and unless all movement has stopped and equipment is completely shut down. Do not remove or distort safety bars.

Operation - Bottom Clean-Out

Clean-Out Doors

The clean-out doors are controlled by the hydraulic hoses marked with the green color band. These doors are located under the horizontal auger trough.

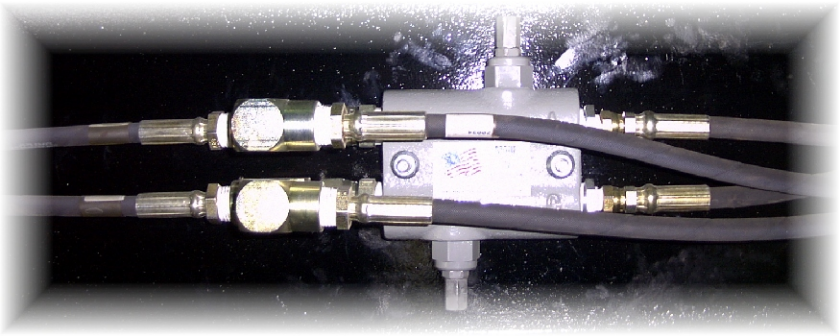
The picture below shows the hydraulic cylinder which control the clean-out doors. A valve is provided which when closed prevents these doors from accidental opening.



Operation - Grain Doors

Grain Doors, Hydraulic Control

The two hydraulic hoses with the blue markings controls the grain doors.
These doors are the primary means of starting, stopping and regulating grain flow to the horizontal auger. For most common grains the doors do not need to be completely open for full capacity discharge. It is recommended that "donut" style stops be added as required to all 4 grain door cylinders. These are readily available from most implement or farm stores.



The picture above shows a valve that is located inside the frame channel. It controls the amount of oil pressure sent to close and open the doors.

Manual Control

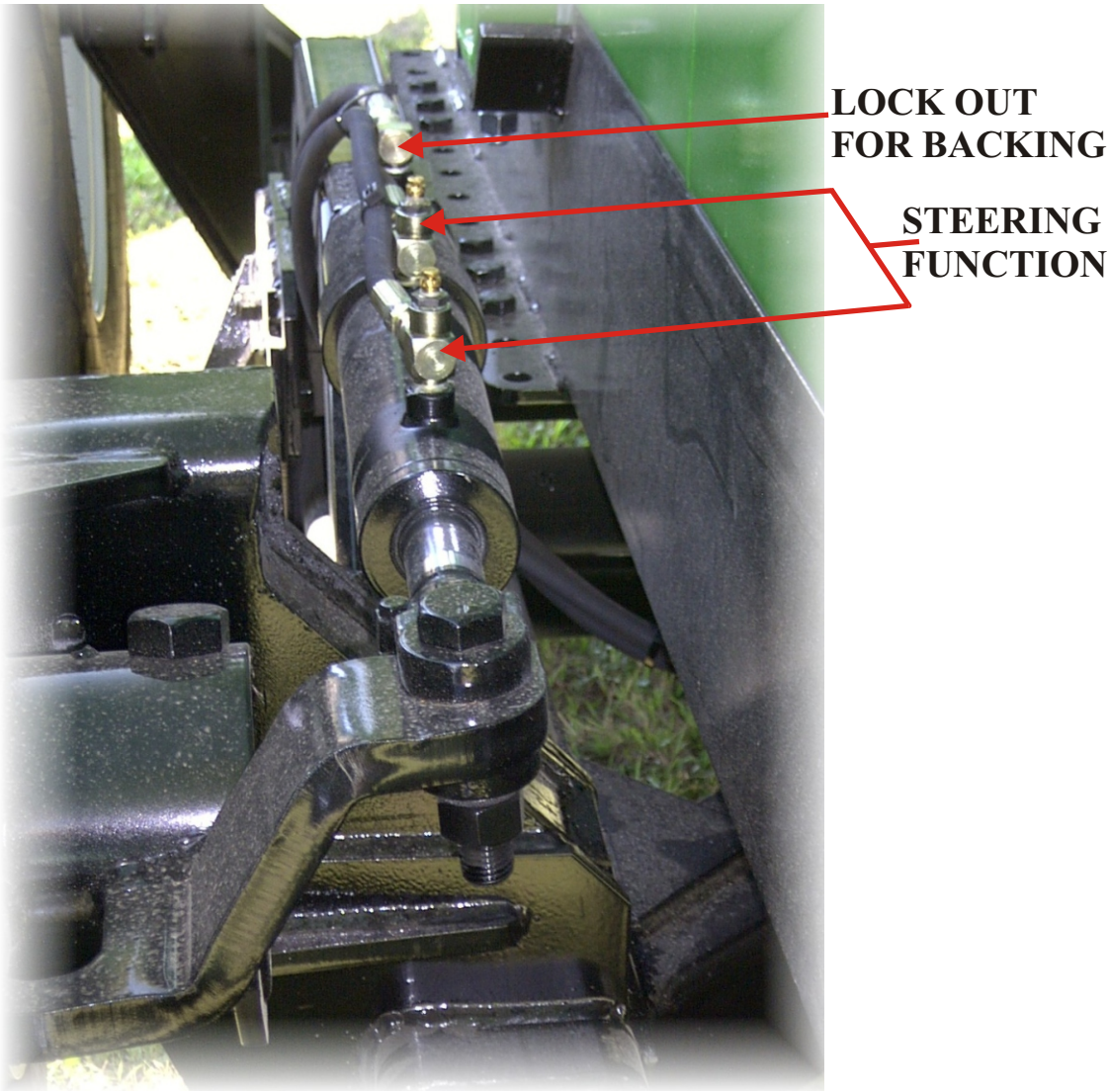
The doors can be manually control with common ratchet jacks or control bars. Both are shown on the options part page. These do not allow on the go control, but require total shut-down and physically adjusting each door individually.

Operation - Steering

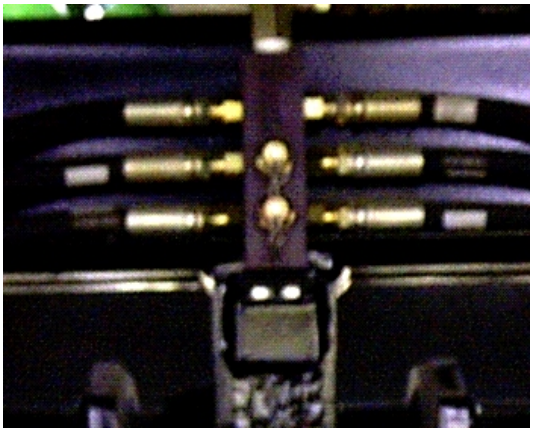
Steering System

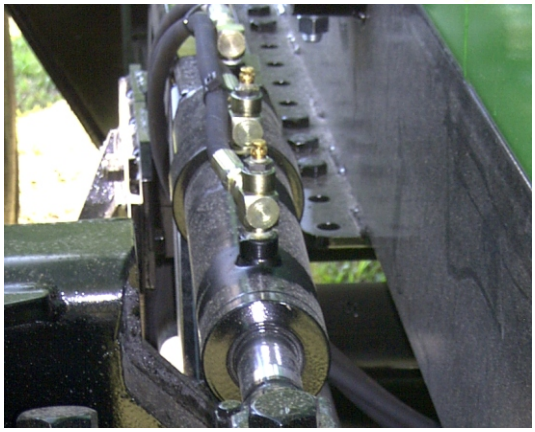
The hydraulic hose marked by the yellow band must be connected to a hydraulic outlet that has a float position. The hydraulic lever must be in the float position for the steering to function. Moving the lever into a position that forces oil through the hose will lock the wheels straight for backing up. The steering cylinders have two internal functions, locking the wheels straight for backing is one function and was discussed earlier. The second function is the steering. This part of the steering cylinders is connected by hydraulic hoses from one cylinder to the other, and is self contained. As one wheel turns, oil is moved through the hoses to create an identical movement in the other cylinder's wheel. The System hoses must be full of oil and no air. If oil is lost or air enters the system, it must be bled. See the maintenance section for the proper bleeding procedure.

Important: make mental or physical notes concerning which way to move lever to get the desired result!



Bleeding Procedure Steering





BLEEDING, ADJUSTMENTS AND RE-ALIGNMENT FOR TANDEM AND TRIDEM STEERING

Air in the system is the major cause for wheel mis-alignment. If the tires do not follow in parallel during forward travel, follow the steps outlined below. Have someone assist with this procedure, for both ease and safety.

THIS IS AN EXCELLENT TIME TO GREASE KINGPINS COMPLETELY

1. **Lock the steering straight.**

A single hydraulic hose is provided to connect to a free outlet at the tractor. This line supplies hydraulic pressure to a portion of the steering cylinder which forces the wheels to steer straight. Once the wheels are completely straight, the tractor lever must be put into neutral position to hold pressure in the line.

2. **Jack axles or arms up until steering wheels are just off the ground.**

Both steering tires must be off the ground, for tridems, do one axle at a time. Be extremely careful while jacking, use a bottle jack rated for atleast 2 ton on each wheel, use proper blocking and choose appropriate locations to place the jack.

3. **Connect steering distributer to tractor hydraulics**.

If the equipment has brakes, a service port is provided close to the tee at the center between the brake hoses. If there are no brakes, a separate hose must be used to supply hydraulic pressure. Jumper hose p/n 37524, should be hooked either to the service port if available or to a temporary separate hose to a hydraulic outlet at the tractor. Connect the other end of the jumper hose to steering distributer center port which is in line with hose that runs to middle port on steering cylinder.

4. **Applying pressure.**

Apply hydraulic pressure through either the brake system or through the temporary hose. After pressure is applied, open bleeder valve in line with the middle port on both steering cylinders. When no more oil or air is escaping, close bleeder valve and open the other bleeder valve at the rod end of cylinder. This last procedure will allow the steering completely, close the rod end bleeder on both steering cylinders.
Move the tractor lever controlling flow to the service port into neutral position.

Bleeding Procedure Steering

5. **Change the connection from tractor hydraulics to steering distributer**.
Disconnect the jumper hose from the steering distributer and connect it to the port just above the previous location.

6. **Applying pressure**.
Engage the tractor lever controling the flow to the hose connected to the service port to provide pressure to the new location on the steering distributer. Open the rod end bleeder valve on each steering cylinder until no air is escaping and re-close. Open the middle bleeder valve, this will cause the steering cylinders to retract and the tires to return to parellel and inline with the other tires. When movement stops, close bleeeder valve, hold pressure for 20 seconds and move tractor lever to neutral position.

7. **Change the connection from tractor hydraulics to steering distributer**.
Disconnect the jumper hose from the steering distributer and connect it to the port just below the previous location.

8. **Hold the pressure.**
Engage the tractor lever controling the flow to the hose connected to the service port to provide pressure to the new location on the steering distributer, hold pressure for 20 seconds and then move tractor lever into neutral. Remove jumper hose from steering distributer.

NOTE: TRIDEM UNIT PERFORM THIS PROCEDURE ON REMAINING AXLE.

9. **Final alignment.**
The toe on all steering axles should be adjusted to mintain 1/8” toe-in at a distance of 18 inches from the axle center. The cylinder rod end is threaded to the clevis for adjustment. Both tandem and tridem equipment should have the same toe-in. After proper toe-in has been achieved, the jacks can be lowered and the jacks and blocks removed.

Horizontal Auger Shut-Off Clutch

SEQUENCE OF CLUTCH OPERATION

1) Use the clutch to disengage the Horizontal Auger and run only the vertical auger for 3 to 5 seconds.

2) Engage the Horizontal Auger - now all augers are running.

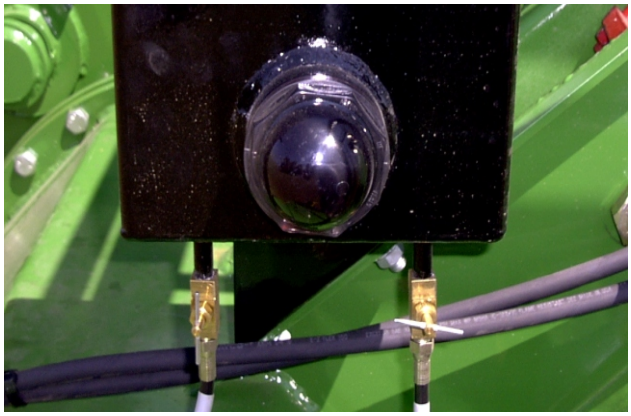
REPEAT THE SEQUENCE AT EVERY START-UP

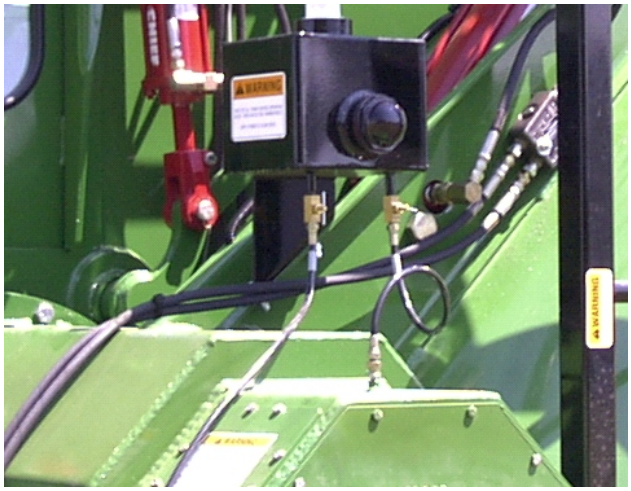
The hydraulic hose which controls the clutch is a 3/8” hose and has no color marking.

Important!
Make mental or physical notes concerning which way to move lever to get the desired results.

Warning
This clutch will not tolerate more than 2500 PSI oil pressure. If your tractor relief is set higher, it must be reduced or add a relief valve to the system. Contact Balzer for information on acquiring this valve and proper installation.

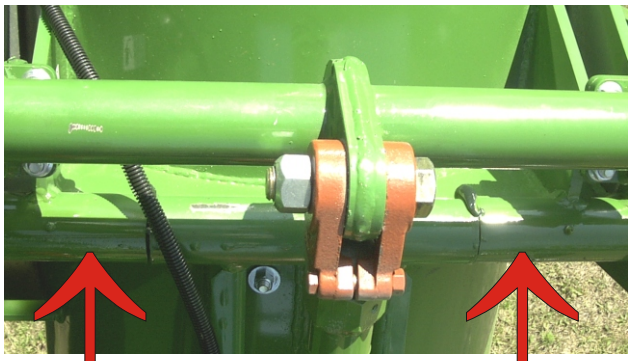
Lubrication - Chain Oilier



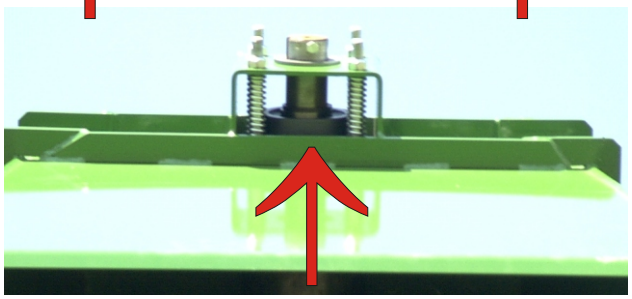


The oil reservoir to lubricate both drive chains holds about 1 gallon. Use a good lubricating oil that flows easily. To determine the amount of oil flow, it is best to unscrew one or both lines and visually see the oil flow. Frequency of lubrication should be based on current field conditions. Duration of lubrication should be based on volume of oil flowing through hoses. Under normal field conditions and weather conditions the chains should be lubricated with approximately 1 ounce of oil every 4 loads.

Lubrication - Vertical Auger



Two grease fittings are located on the auger folding hinge. These should be greased every day. Pump grease until old grease is visible.

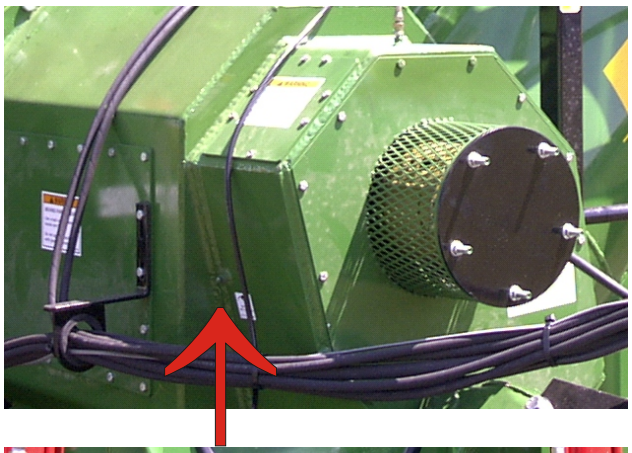


The bearing located at the end of the vertical auger should get 1 to 2 careful pumps of grease every day of constant use. Excessive pressure applying grease can be harmful to the bearing seals.

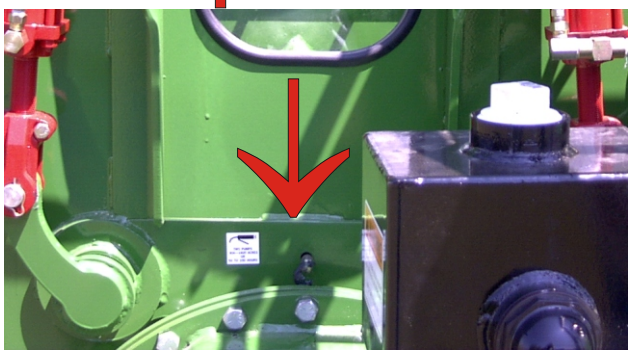
The mid bearing on the vertical auger has a grease fitting that is accessible with the auger folded. Grease at this location liberally every day of operation under normal conditions and more frequent if dusty or hot.

The bearing at the bottom end of the vertical auger has a grease line and fitting that permits greasing externally. This location should get 1 to 2 careful pumps of grease every day of constant use. Excessive pressure applying grease can be harmful to the bearing seals.

Lubrication - Horizontal Auger

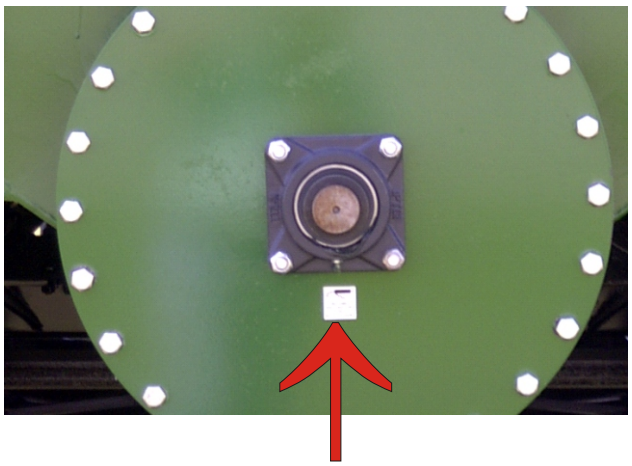


The bearing at the front end of the horizontal auger has a grease line and fitting that permits greasing externally. This location should get 1 to 2 careful pumps of grease every day of constant use. Excessive pressure applying grease can be harmful to the bearing seals.



The middle bearing for the horizontal auger has a grease line and fitting that permits greasing externally. This location should get liberal greasing every 3 hours of constant use in normal conditions. In dusty or dry conditions more frequent greasing is recommended.

Middle horizontal auger bearing, arrow is pointing to grease line which runs to front of grain cart.



The bearing at the rear end of the horizontal auger. This location should get 1 to 2 careful pumps of grease every 2 day of constant use. Excessive pressure applying grease can be harmful to the bearing seals.

Lubrication - Steering

Grease fittings are located in two positions on tandem arms at the bottom of the round center pivot tube.

Grease each location on both arms until new grease can be seen being pushed out.

Greasing should be done daily as a minimum and more often as conditions warrant.

Do not open petcocks unless bleeding the system. Opening petcocks can allow air to enter the system, which will cause improper steering action.

Grease fittings are located at the top and bottom of the steering hinge kingpins.

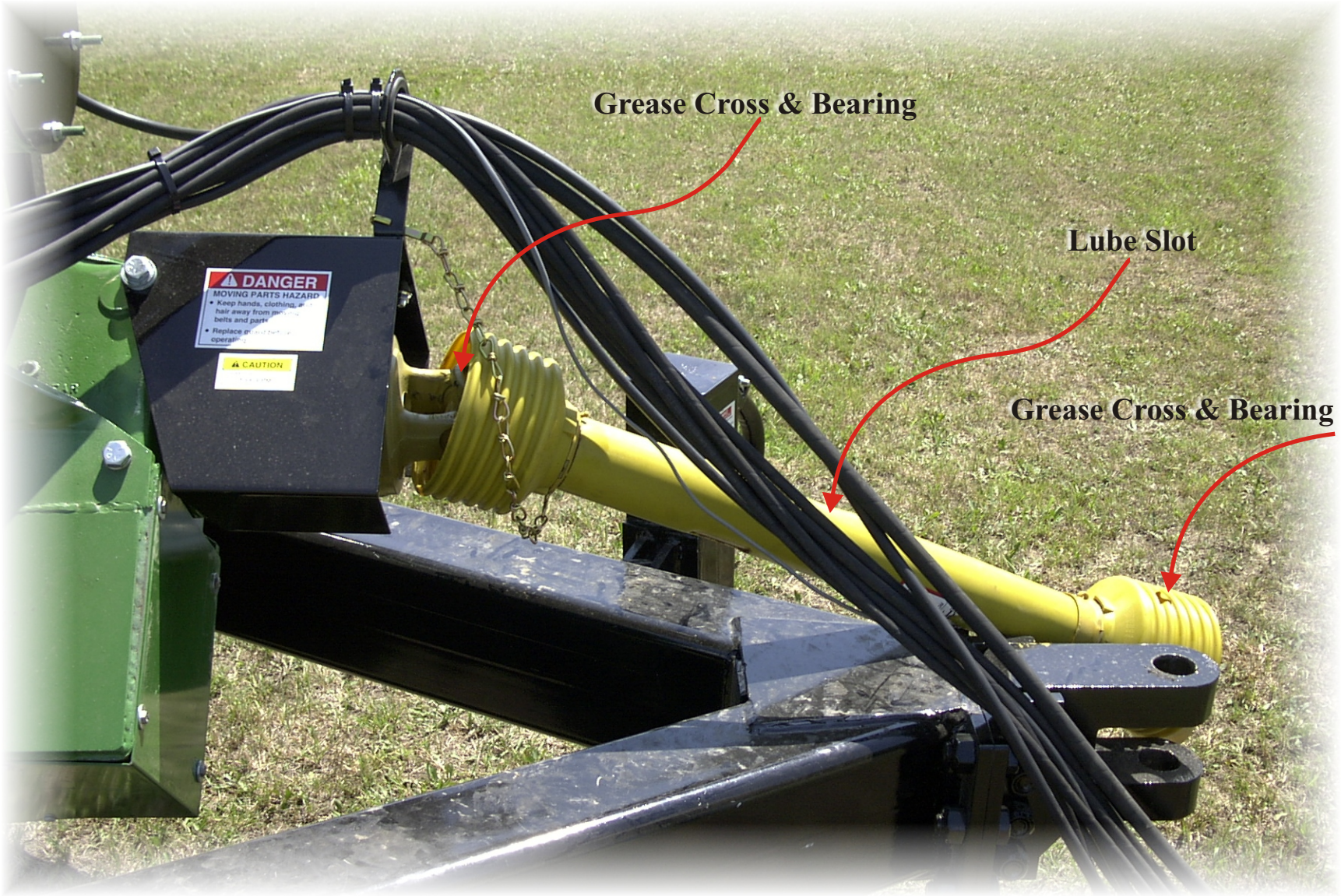
To grease the hinge kingpins, it is best to have the wheels steering straight one time, to the left the next time and finally to the right. This process insures that grease is getting to all areas of the kingpin.

IMPORTANT !! Grease thoroughly before pressure washing near kingpins.

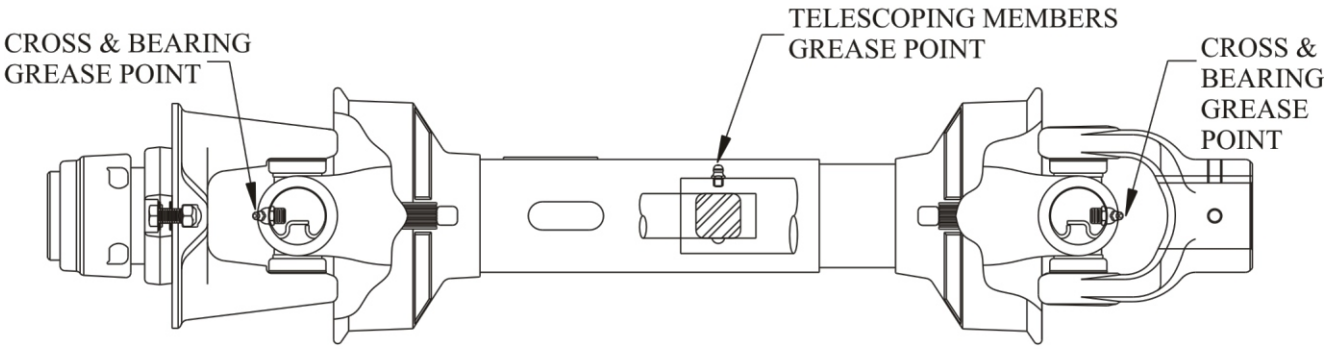
Proper steering is dependant upon adequate greasing. When conditions are dry and dusty, the tandem arms and kingpins will require grease more often.

Informational and instructional decals are located above the axle on both sides of trailer frame. These provide information that must be heeded for safe trouble free operation.

Lubrication PTO Locations



PTO Lubrication Specifications



LUBRICATE ALL FITTINGS WITH A GOOD QUALITY LITHIUM SOAP BASE E.P. GREASE MEETING THE N.L.G.I. #2 SPECIFICATIONS AND CONTAINING NO MORE THAN 1% MOLYBDENUM DISULFIDE. (EX. SHELL SUPER DUTY OR EQUIVALENT)

AN E.P. GREASE MEETING THE N.L.G.I. #2 SPECIFICATIONS AND CONTAINING 3% MOLYBDENUM DISULFIDE MAY BE SUBSTITUTED IN THE TELESCOPING MEMBERS ONLY. (EX. MOBIL OIL COMPANY, "MOBILGREASE COMPANY", SHELL OIL COMPANY, "RETINAX AM". TEXACO, "MOLYTEX EP #0 AND #2".)

GREASE RECOMMENDATIONS

INTERVAL	LOCATION	AMOUNT
8 HRS.**	CROSS & BEARINGS	1 PUMP
8 HRS.**	TELESCOPING MEMBERS	4-8 PUMPS

** CONSTANT ANGLE APPLICATIONS MUST HAVE A LUBE INTERVAL OF 4 HOURS.

CAUTION!! REPLACEMENT PARTS ARE NOT LUBRICATED

REPLACEMENT PARTS MUST BE LUBRICATED AT TIME OF ASSEMBLY. USE AMOUNT LISTED ABOVE PER LOCATION THEN FOLLOW LUBE RECOMMENDATIONS OUTLINED ABOVE FOR LUBING INTERVALS.

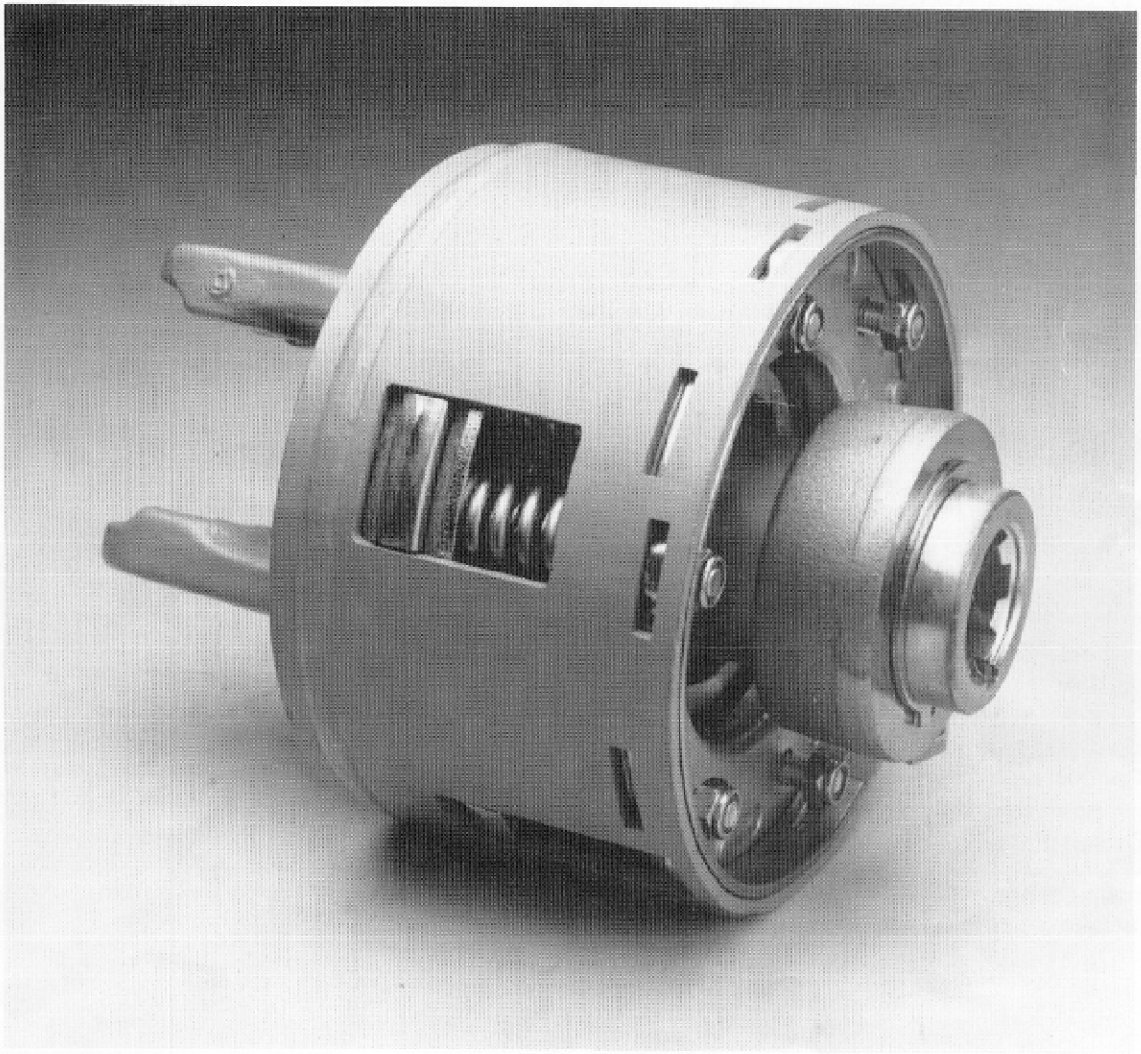
Maintenance - Tire Air Pressure

Balzer Suggested Maximum Allowable Tire Pressure

TIRE SIZE	PSI
18.4 x 46 -12 ply	26
28L-26 R3 -12 ply	26
30.5L -32 R3 - 12 ply	33
850/50-30.5 - 8 ply	40

Maintenance - Friction Clutch

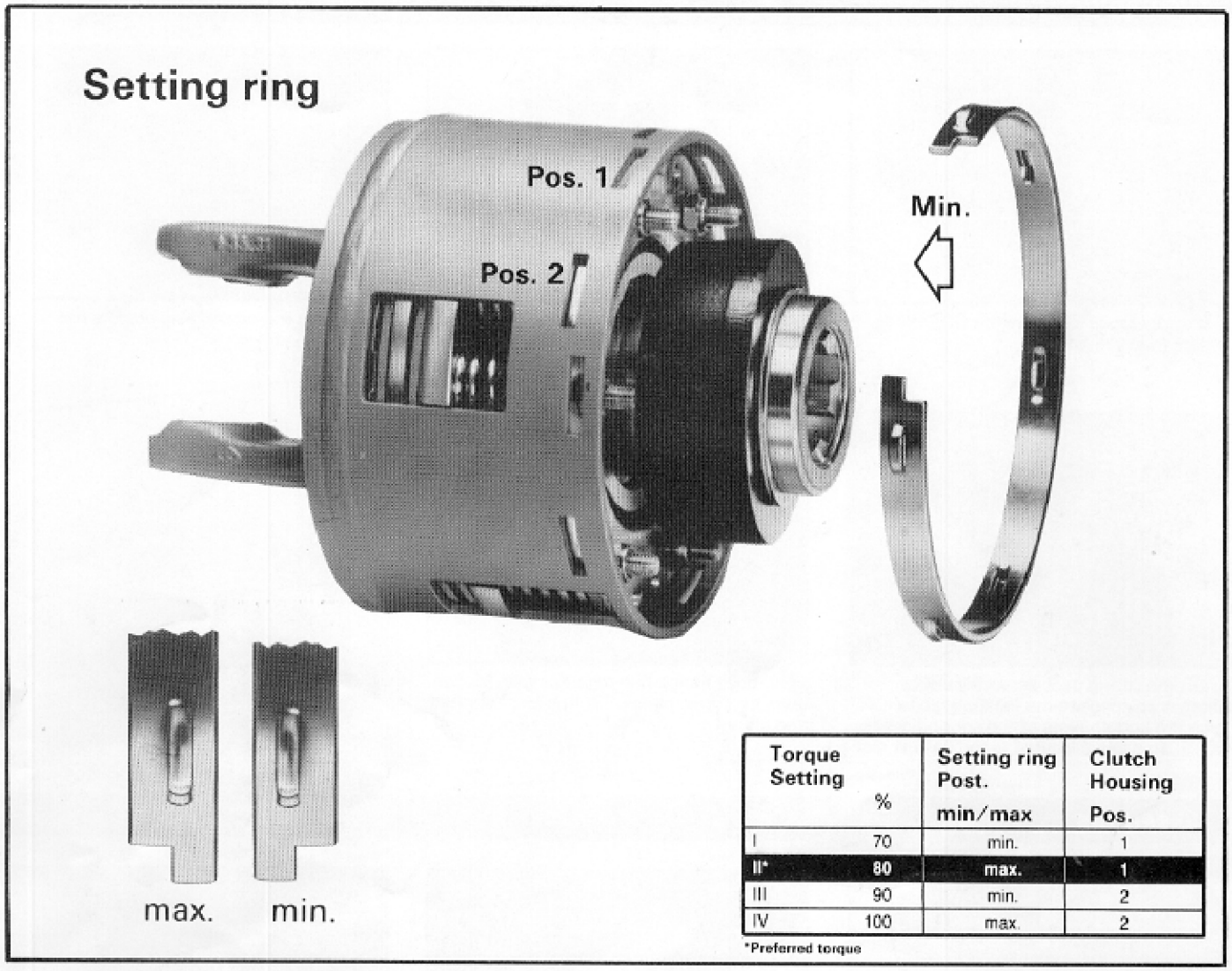
Friction clutch K96-K96/4



Assembly/Dismantling instructions

Make sure that the Clutch is set is at the highest position

Maintenance - Friction Clutch



Torque Setting %	Setting ring Post. min/max	Clutch Housing Pos.
I 70	min.	1
II* 80	**max.**	**1**
III 90	min.	2
IV 100	max.	2

*Preferred torque

The torque setting can be modified with the aid of a setting ring and two alternative location slots in the clutch housing.

1. The setting ring provides for a **min.** position and a **max.** position.
2. The clutch housing incorporates two locating positions for the setting ring (1 and 2) which are situated at different levels.

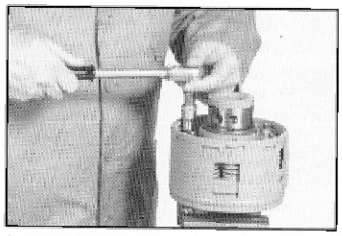
For each power pack **four** torque settings are possible (see table).

The setting ring can only be removed in relieved condition which is obtained by tightening the nuts.

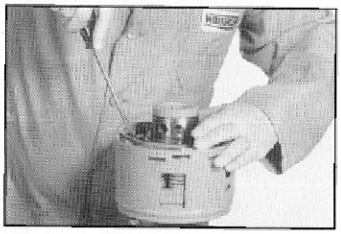
Maintenance - Friction Clutch

Dismantling

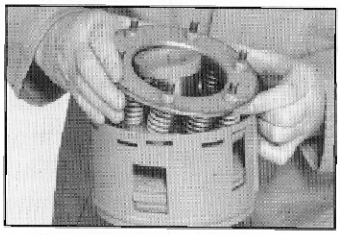
1. If so equipped - remove the QD locking collars from the hub.



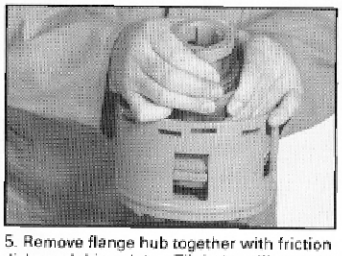
2. To begin dismantling - mount clutch in a vise and tighten down the 6 nuts in even sequence until the spring pack assembly is loose.



3. Remove the setting ring using a flat blade screwdriver.

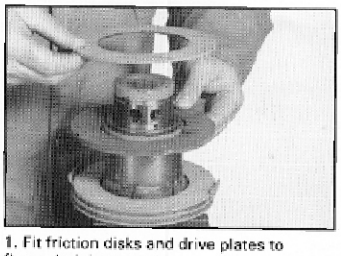


4. Lift the spring pack assembly out by tilting it up opposite the locating tab which is on the bottom plate of the spring pack. NOTE: This tab is located to the narrow slot.

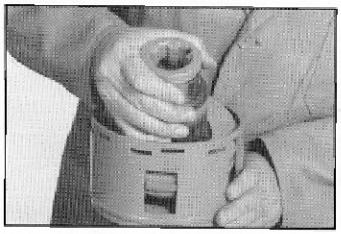


5. Remove flange hub together with friction disks and drive plates. Tilt hub as illustrated and lift out.

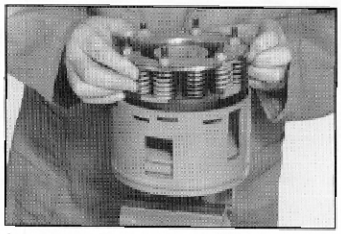
Assembly



1. Fit friction disks and drive plates to flange hub in correct sequence as illustrated. One friction disk is mounted in the bottom of the clutch housing along with the fiber hub pilot bearing.

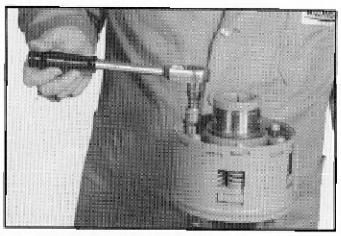


2. Insert the flange hub with friction disks and drive plates into the clutch housing - lining up the tabs of the drive plate.



3. Replace spring pack assembly.

4. Replace setting ring to proper location. Noting position window and setting ring to min./max. location.

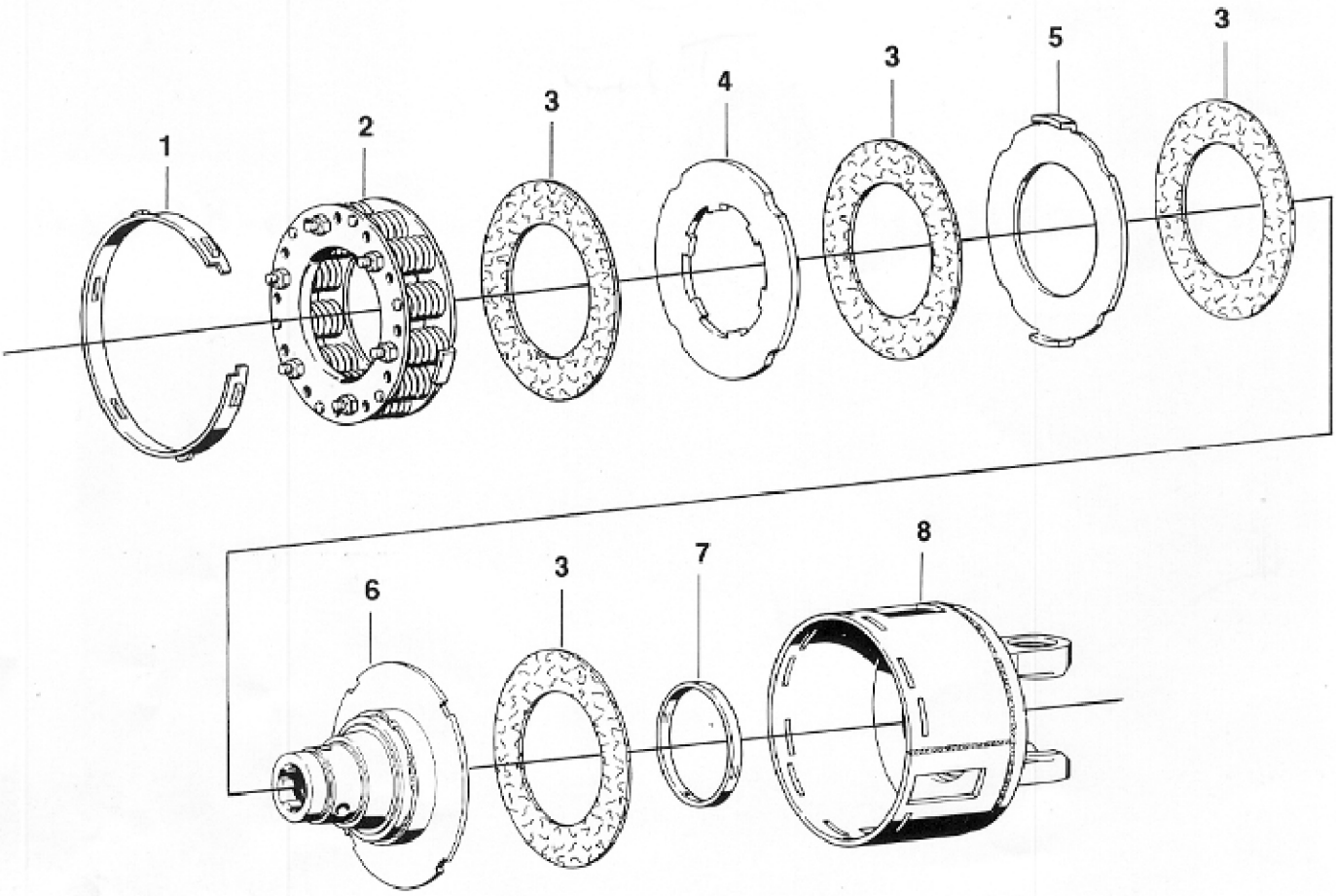


5. Back off the 6 nuts to the end of the studs. In this position the spring pack is at the pressure controlled by the location of the setting ring.

Maintenance -Friction Clutch

Friction clutch K96-K96/4

(K96/4 Illustrated Below)
(For K96 having two friction disks: items 4 and 5 are not used and only two of item 3.)



1 Setting ring	5 Drive plate
2 Spring pack assembly	6 Flange hub
3 Friction disk	7 Hug bearing ring
4 Driven plate	8 Clutch housing

Torque setting:
Please take instructions at page 4 into account.

Trouble Shooting Guide

1)Trouble with steering of rear axles on tandem or front and rear of tridem models.

A) Ensure hydraulic line for the steering (yellow color) is in the right side of the tractor's hydraulic bank.

B) Grease the king pin assemblies two(2) grease fittings on both side in the straight position and in the turned position. This king pin assembly must be greased daily in order for the steering system to function properly. Grease the king pin assemblies two(2) grease fittings on both side in the straight position and in the turned position. This king pin assembly must be greased daily in order for the steering system to function properly.

C) System may have air trapped inside resulting in malfunction. This requires the hydraulic steering system to be bled. See Steering system bleeding instructions.

D) System still not steering properly then call Balzer's service department at 800-795-8551 Extension 134 or 0 for the operator.

2)Automatic chain oiler doesn't appear to let oil drain.

A) Unscrew the cap of the oil reservoir and then open valve.

B) If this doesn't work then call Balzer's service department at 800-795-8551 Extension 134 or 0 for the operator.

3)Trouble figuring out which hydraulic hoses go where.

A) RED marked hose = brake cylinders (Note: if option is available on your cart)

B) YELLOW marked hose = Steering System

C) BLUE marked hose = Inside Grain Doors

D) GREEN marked hose = Underside Clean-Out Doors

E) ORANGE marked hose = Unload Auger Fold

Grain Door Timing
In most cases, each time the grain doors are closed, they will re-open evenly. If this is not occurring and is considered a problem contact Balzer for information & help solving the situation.

4)Unload auger has abnormal vibration

A) Ensure the hydraulic fold is extended to the full stroke position. This is needed to lock the two halves together by having the cylinder go past the center position.

B) May require the locking nut on the high end of the hydraulic cylinder to be adjusted to ensure system is being locked when the cylinder is in the full stroke position.

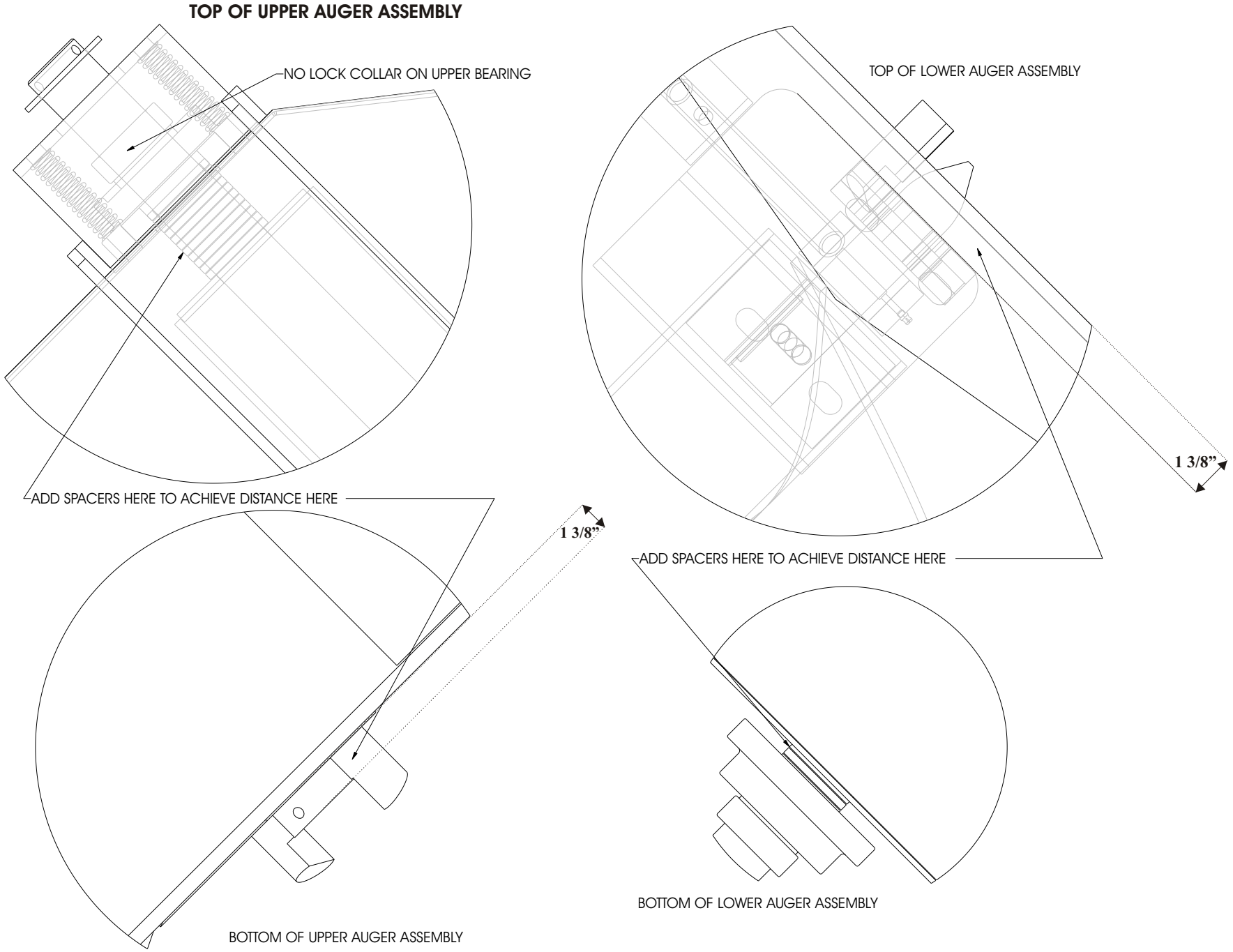
C) Ensure drive chain tensioner has been properly adjusted to take the slake out of the chain.

D) System still not steering properly then call Balzer's service department at 800-795-8551 Extension 134 or 0 for the operator.

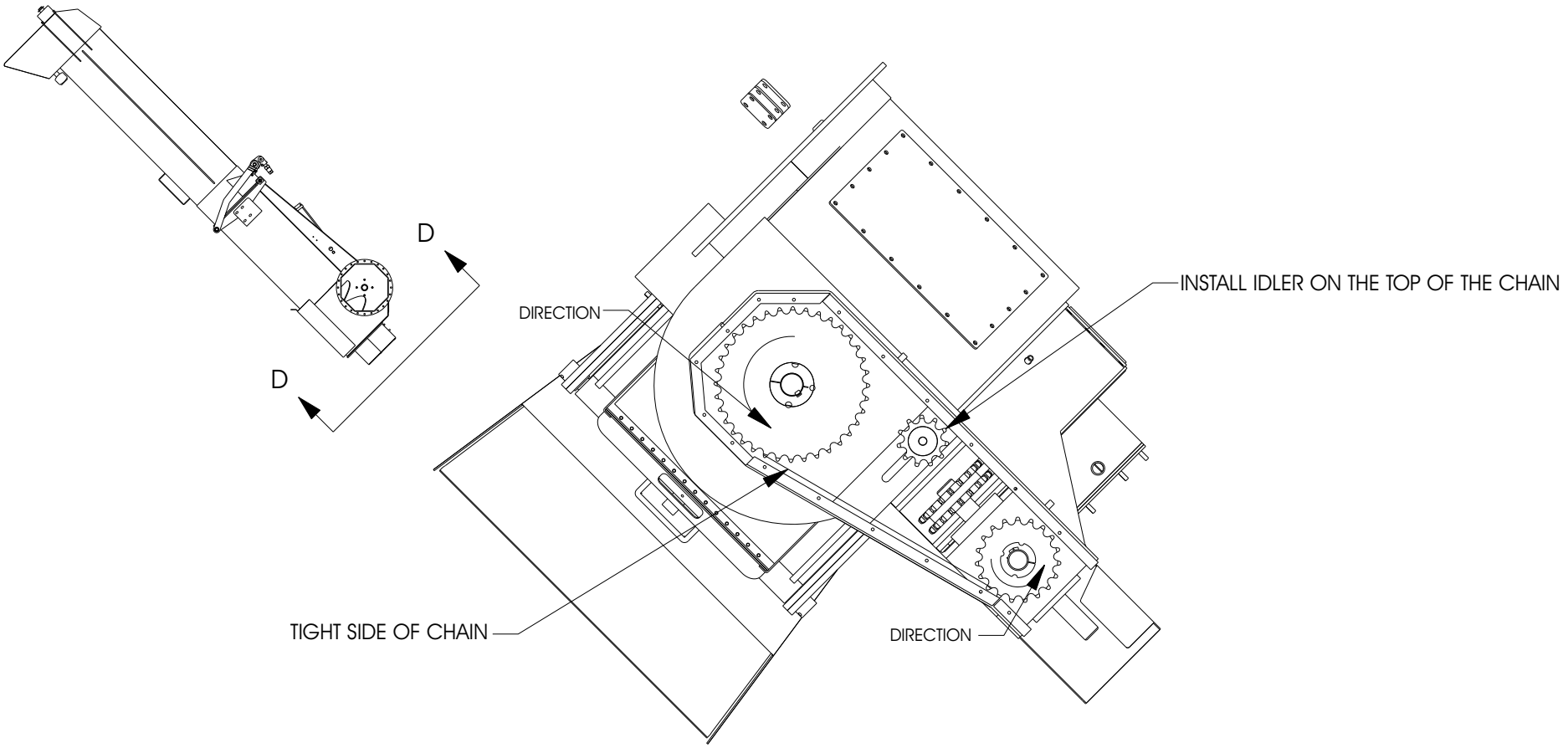
5)Trouble backing up with steering wheels going the wrong direction {Note: this may occur in extreme conditions such as mud, ice, and/or snow}

A) Take the hydraulic line out of the float position and then move the lever to pressurize the cylinders. This will straighten the tires and then lock them.

Trouble Shooting - Vertical Auger Engagement



Vertical Drive Service Information



Parts

IT IS THE POLICY OF BALZER COMPANY TO CONSTANTLY IMPROVE ITS PRODUCTS WHENEVER IT IS PRACTICAL TO DO SO. THEREFORE, BALZER COMPANY RESERVES THE RIGHT TO REDESIGN OR CHANGE ITS EQUIPMENT OR COMPONENT PARTS THEREOF WITHOUT INCURRING THE OBLIGATION TO INSTALL OR FURNISH SUCH CHANGES ON EQUIPMENT PREVIOUSLY DELIVERED.

INSTRUCTIONS FOR ORDERING PARTS

To enable our customer service department to provide you with the correct replacement parts promptly and accurately, follow the ordering instructions as listed below.

Identify your equipment by serial number whenever possible.

Use part numbers and descriptions from the illustration drawings furnished to assist in identifying the needed parts.

Owners, order all parts through your local dealer.

Dealers must indicate company name, shipping point and mailing address for notification if different from shipping point. State whether freight, express, parcel or other handling is desired.

Send all parts to:

BALZER INC.

County Road 27 Box 458

Mountain Lake, MN 56159

INSTRUCTIONS FOR RETURNING PARTS FOR ADJUSTMENT

Dealers should inspect all parts when received. Shortages or damage should be noted by the carrier agent at the time the parts are accepted. Shippers responsibility ceases upon delivery of shipment to customer in good order. Claims for damage, loss, or malfunction are to be reported within thirty (30) days for warranty considerations.

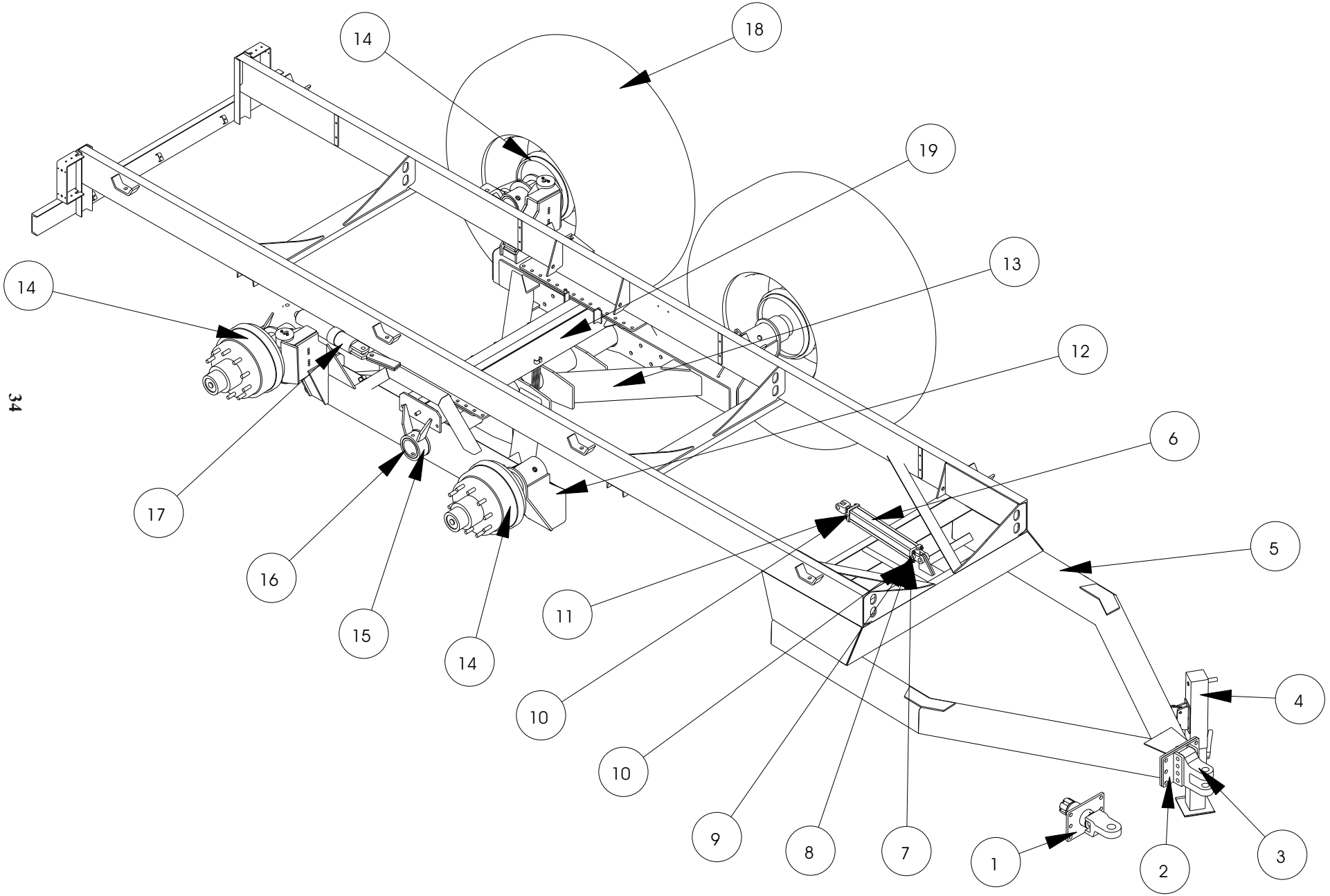
All returned parts must have return authorization, a copy of the original packing list and transportation prepaid.

For replacement parts contact:

Ken Classen	Extension 104
Doug Wellman	Extension 108

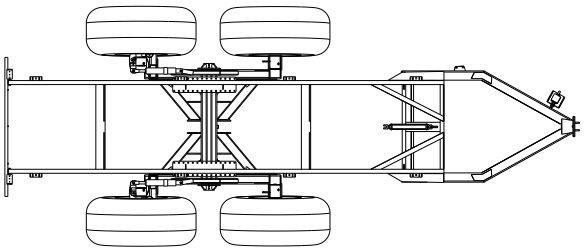
For service contact Dave Bennet at Extension 134 or at his mobile number: (612) 839-9968

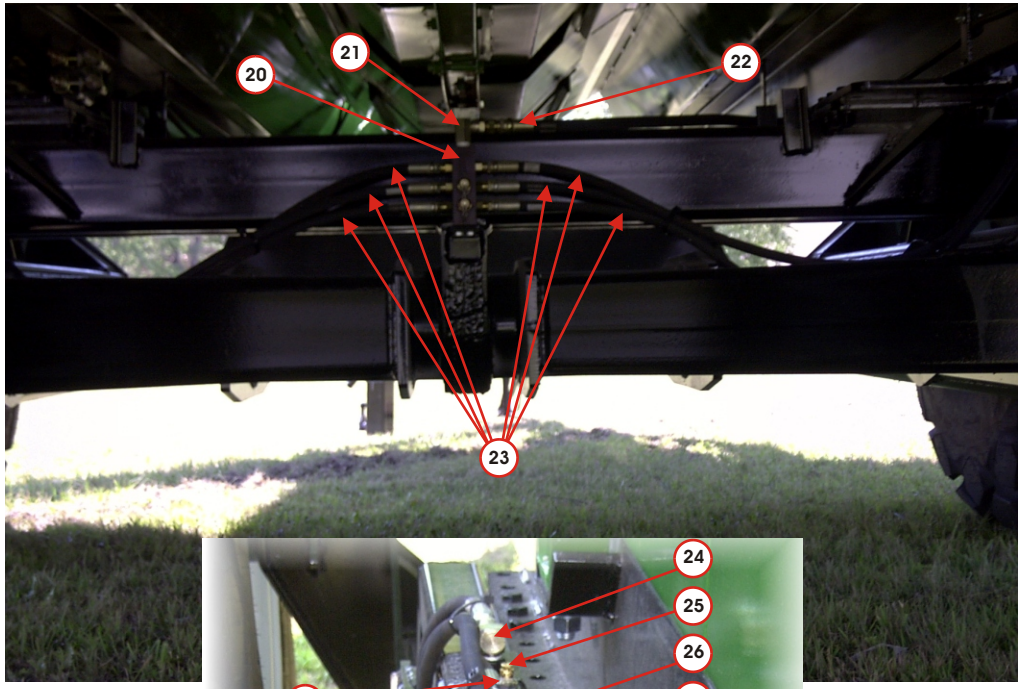
Trailer Assembly

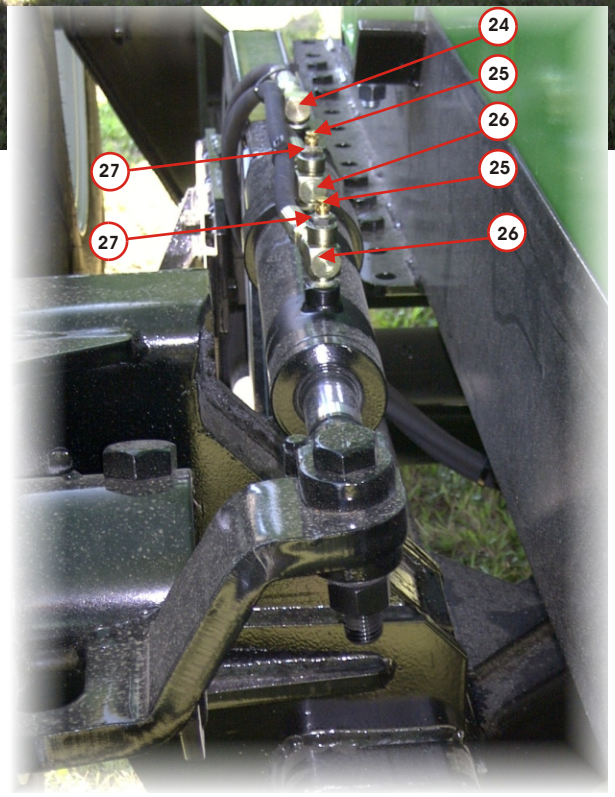


Trailer Part List

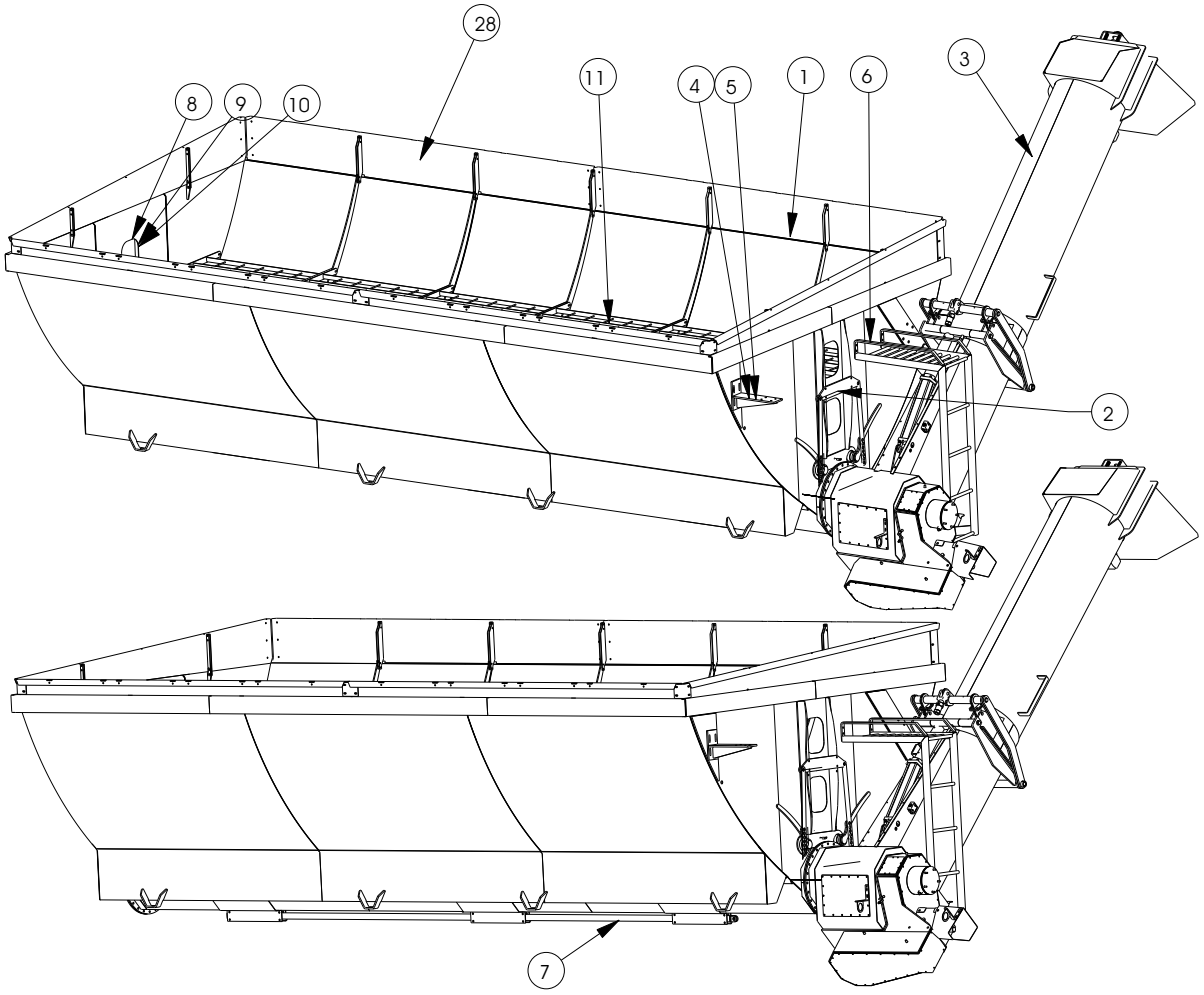
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	Ref	90680	Hitch Swivel 2 1/4
2	Ref	90472	Hitch Mount
3	Ref	28388	Hitch Rigid 1 3/8
4	1	90112	Jack 10,000 1b
5	1	90454	Trailer ASBY Corn Tandem
6	1	22182	HYD. Cylinder 3x20 Tierod
7	1	25470	Valve Ball .37
8	1	9862	Reduce HX Bush .37 X .25FP
9	1	8619	Nipple HX .37MP X .37MP
10	2	20034	Hose HYD .25 X 220
11	1	21171	Elbow 90deg. SWVL Adaptor .37MP X .25FP
12	1	90440	Tandem Arm RH 5.75 Grain Cart
13	1	90441	Tandem Arm LT 5.75 Grain Cart
14	4	25216	Hub & Spindle 5.75 IMT w/o BRK
15	2	26271	Axle End Cup
16	1	80767	Pipe 5.0 X Sch120 x 82" W/Holes
17	2	40761	Cylinder, HYD
18	4	27674	Tire 30.5x32 (12PLY)
19	1	90456	Axle 4200-4800w/120" Track
20	1	37520	Block Steer
21	1	33166	Elbow 90 deg. Swul Adaptor. 5MP x 5.FPS
22	1	33293	Hose HYD .5 x 340"
23	6	37526	Hose HYD .37 x 72"
25	4	25466	Bleeder Plug .12MP
26	4	25372	Tee Service .37
27	4	25467	Reducer HX Bush .37MP x .12FP





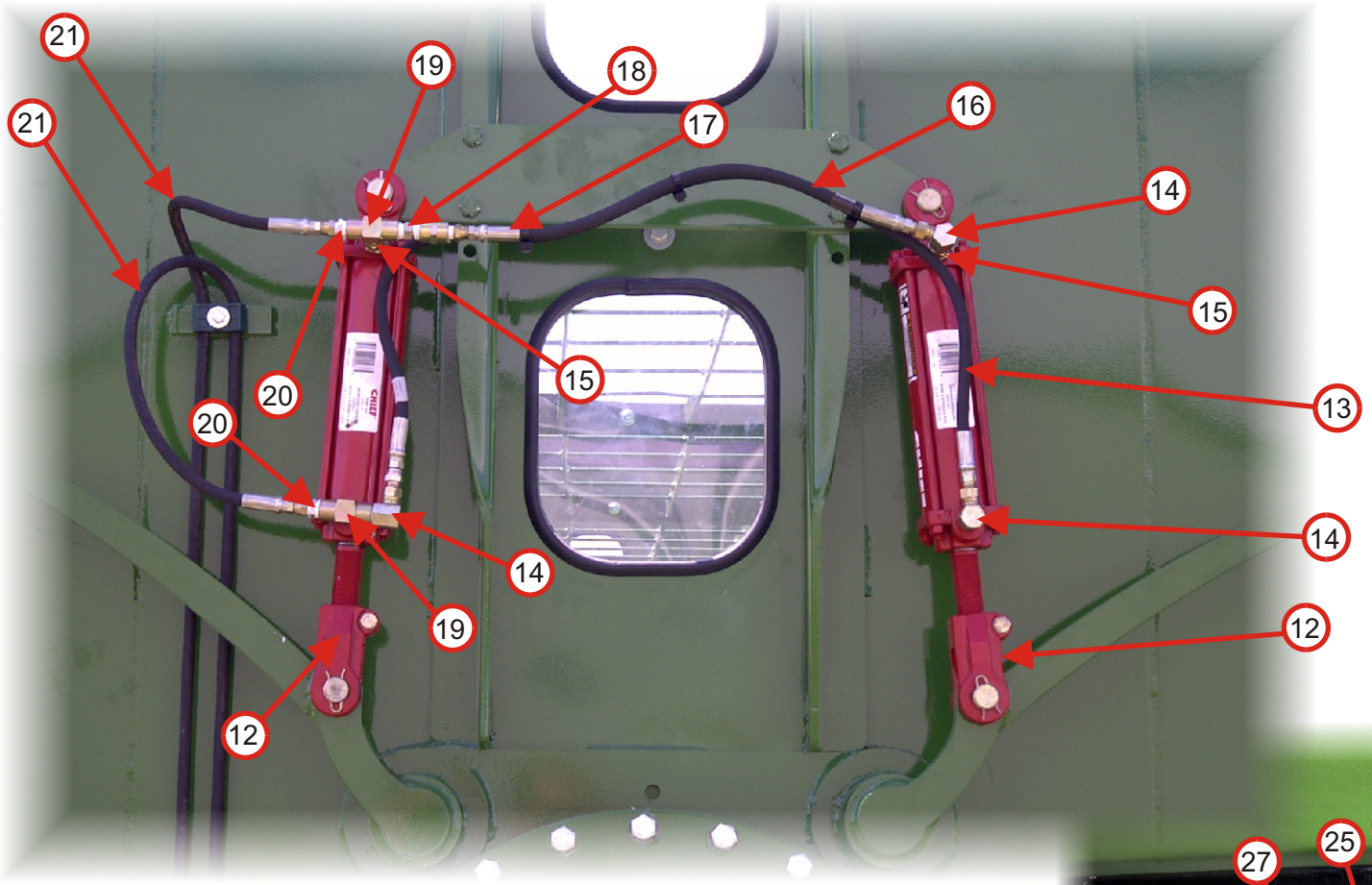


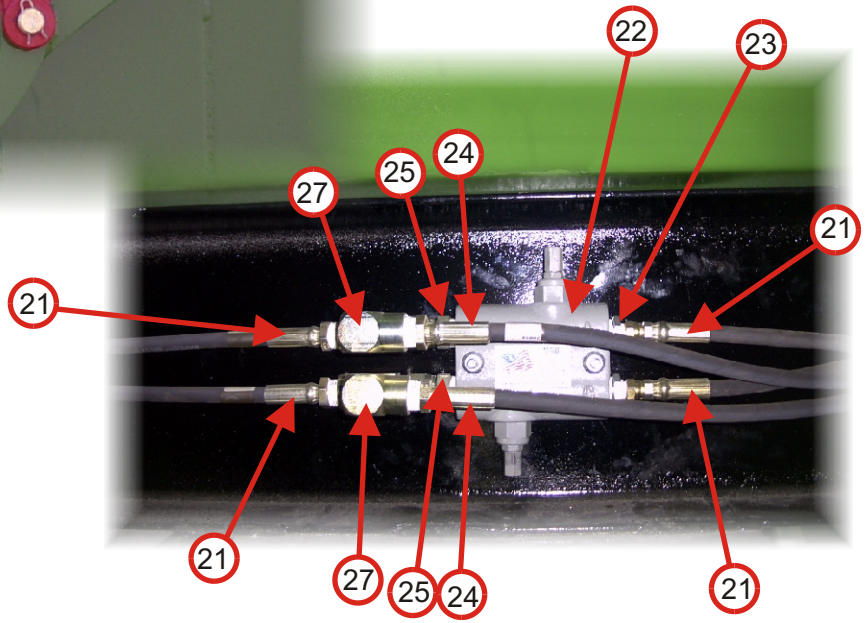
Grain Cart Assembly



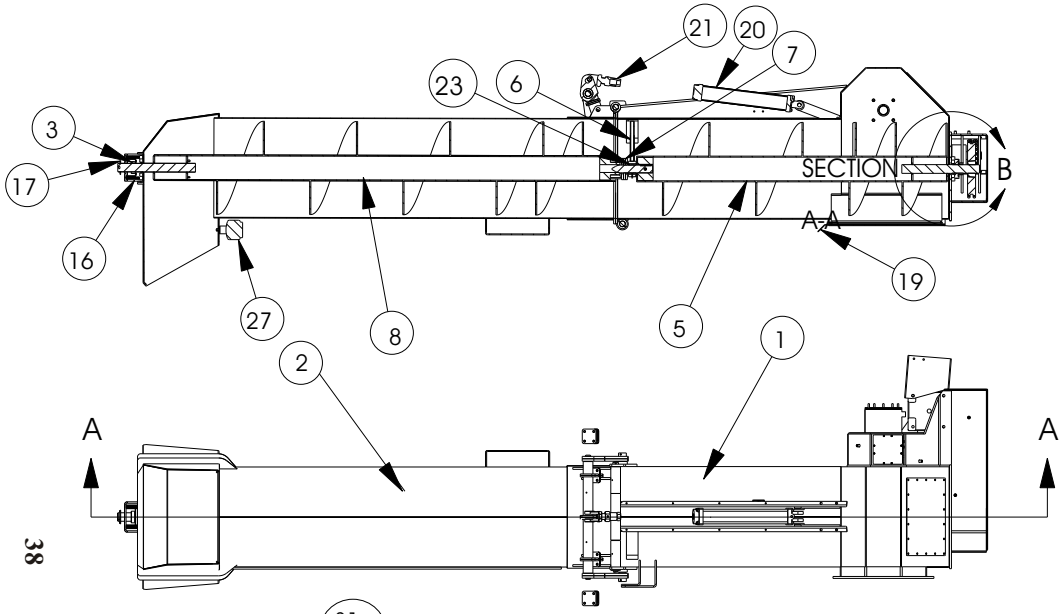
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	90981	CORN CART 24" WELD
2	1	90586	COUPLER SHAFT 2"IDx4.5 .5KY
3	1	90480	AUGER ASBY 24" COMPLETE
4	1	24178	HOSE, HYD 1/8" x 10 GREASE LINE
5	1	90654	AUGER SUPPORT 24"
6	1	90670	LADDER WELDMENT 24" AUGER
7	1	80419	CONTROL TUBE BOTTOM DUMP 24"
8	2	22430	HOSE SUPT /43" LAGOON PUMP
9	1	80815	HOSE1/4" x 96" W/
10	1	80814	ADAPTER, FEMALE 16mm
11	6	25921	Grate Weldment
12	4	21139	HYD CYL 2.5x8
13	2	10989	HOSE HYD 1/4 x 42"
14	6	21171	ELBOW 90 SWL ADAPT .37MPx.25FPS
15	4	90693	RESTRICTOR HYD .37x.37-.03
16	2	21658	HOSE HYD 1/4x20"
17	2	21180	COUPLING .37FP x .25FP
18	2	8619	NIPPLE .37x.37 HEX
19	4	90695	TEE .37FP x .37FP x .37MP
20	4	9862	REDUCER HEX BUSH .37MPx.25FP
21	4	20034	HOSE HYD 1/4x220"
22	1	80813	VALVE CROSS OVER REIEF
23	2	12190	REDUCER HEX BUSH .5MPx.25FP
24	2	18472	HOSE HYD 1/4x360"
25	2	8609	COUPLER .5MPS
26	2	11543	TEE STREET .5MP x .5FP x .5FP
27	2	8613	ELBOW 90 .5MP x .5FP
28	1	90350	EXTENSION BOARD KIT 1250

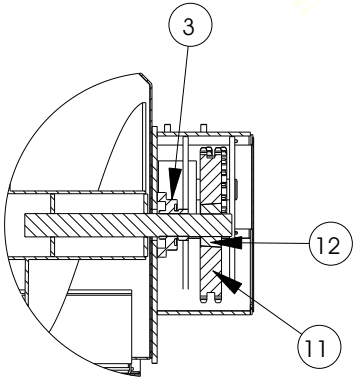
Grain Cart Assembly

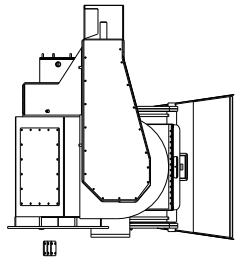


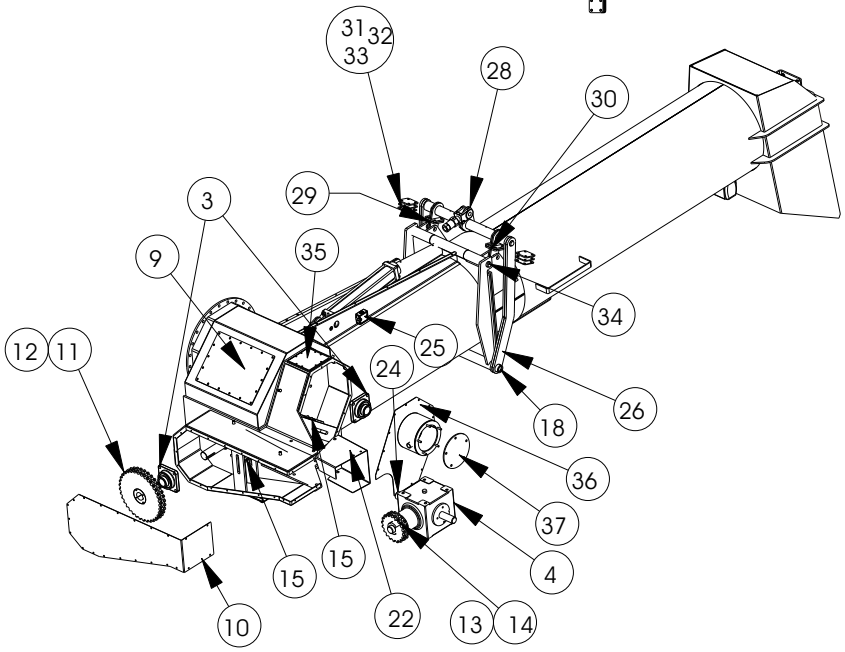


Vertical Auger & Housing









INSTALLATION INSTRUCTIONS

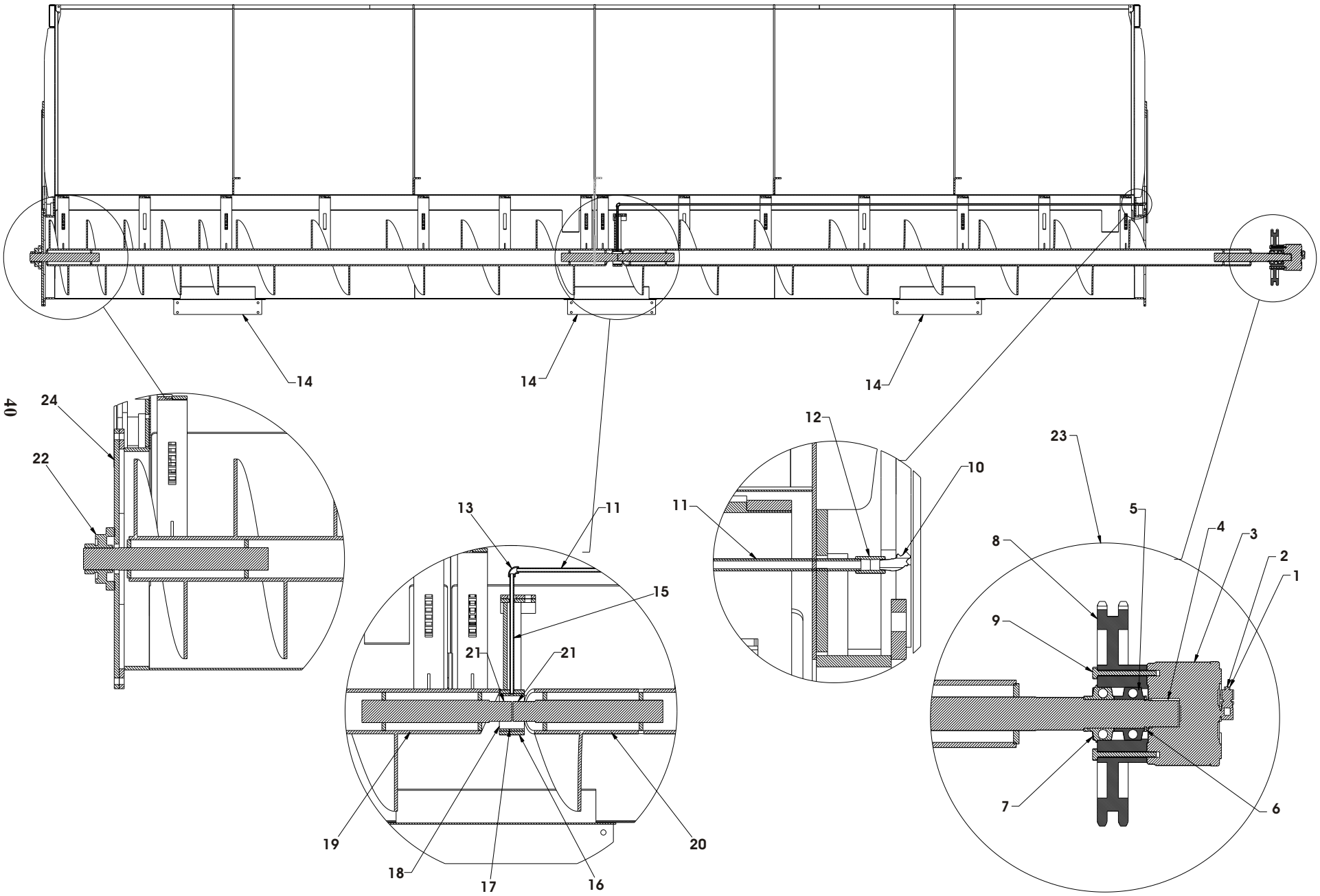
1. Add spacers to lower auger shaft:
   a. So lower auger bearing carries all augers weight.
   b. Top of lower housing & top of power coupler must be 1 3/8" inward.
2. Add spacers to the top auger shaft:
   a. So bearing pushs the auger down.
   b. So the distance between bottom of upper housing & bottom of upper auger sticks out 1 3/8" when in its lowest position.

SEE TROUBLE SHOOTING PAGE

Vertical Auger & Housing

ITEM #	QTY	PART #	DESCRIPTION
1	1	90481	AUGER HOUSING LOWER 24"
2	1	90482	UPPER AUGER HOUSING-WELD
3	3	26872	BEARING 2 3/16"
4	1	80500	GEAR BOX
5	1	90445	AUGER 24" LOWER WELDMENT
6	1	90575	Mid Bearing Weld
7	1	25850	Power Transfer Coupler
8	1	90447	AUGER UPPER 24"
9	1	90588	COVER CLEAN OUT 24" AUGER
10	1	90590	COVER VERT DRIVE 24" AUGER
11	1	80506	SPROCKET
12	1	80512	BUSHING,TAPERLOCK1 3/4"BORE
13	2	80511	BUSHING, TAPERLOCK 1.75"BORE
14	2	80502	SPROCKET, D100-18
15	2	80508	SPROCKET, IDLER DOUBLE
16	4	90596	SPRING COMPRESSION .71 ID x 3.5"
17	1	90598	WASHER 7ga 2.25"ID x 3.5"OD
18	1	80415	SHAFT 1.44" x 33.125"
19	1	80414	CLEANOUT DOOR
20	1	28296	HYD. CYLINDER 4 x 20 TIE ROD
21	1	80928	ADJUSTABLE CLEVIS (4x20 CYL)
22	1	90738	SHIELD GEARBOX 24' AUGER
23	1	8379	BUSHING BRONZE 2"ID
24	1	80505	SPROCKET D100-18 1.75 BORE 1/2"KY
25	1	37068	HYD VALVE P.O. CHECK DBL 3:1
26	1	90542	PIVOT ARM
27	1	60984	WORK LIGHT 4x6 HALOGEN
28	1	60231	BUSHING 1.25x1x1
29	1	90649	LINKAGE ARM LH ADJUSTABLE
30	1	90648	LINKAGE ARM RH ADJUSTABLE
31	AS REQ'D	90644	PLATE, SPACER LINKAGE ARM
32	AS REQ'D	90645	PLATE, SPACER LINKAGE ARM
33	AS REQ'D	90647	PLATE, SPACER LINKAGE ARM
34	1	41706	HINGE PIN WELDMENT
35	1	41704	COVER, ACCESS HOLE
36	1	41729	FRONT COVER VERT AUGER
37	1	17354	PLATE, COVER (CLEAN OUT)

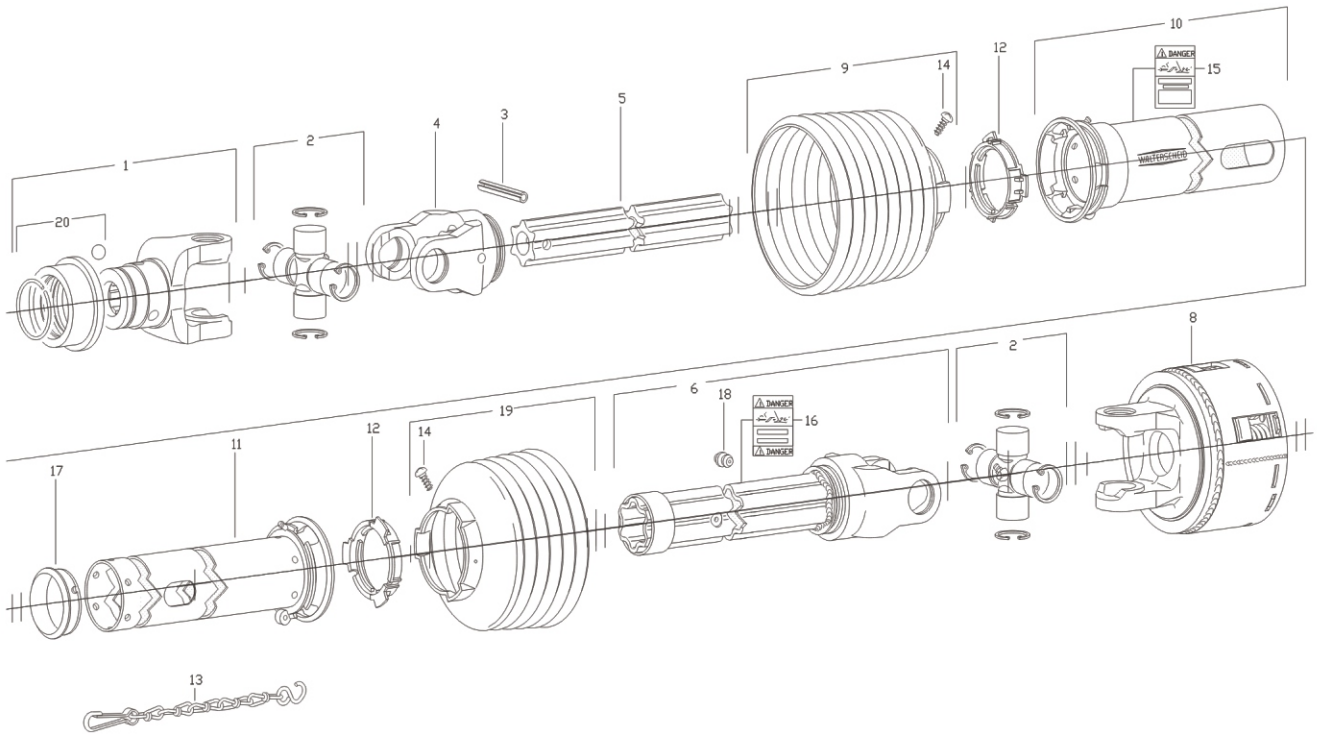
Horizontal Auger



Horizontal Auger Parts list

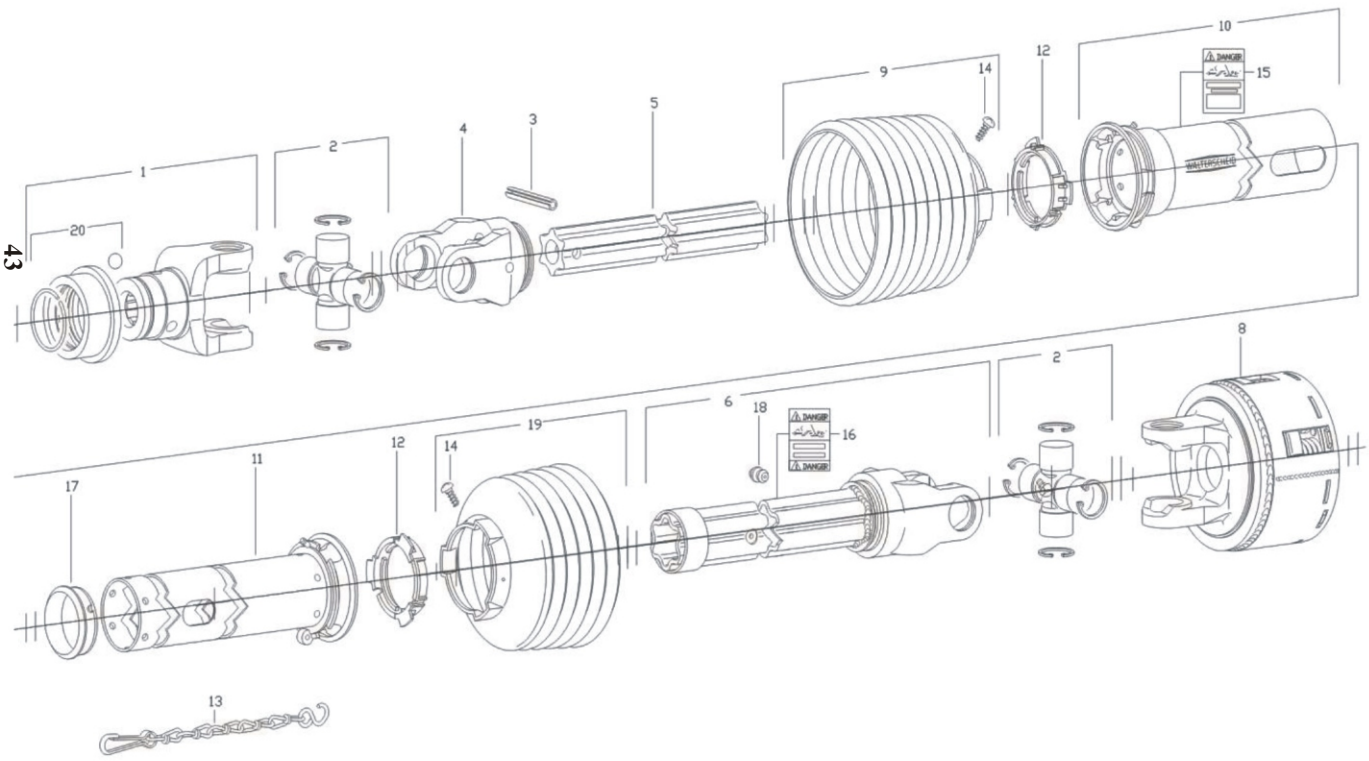
litem #:	Qty	Part #	Description
1	1	90696	Hose HYD 1/4 x 969/16 Jic Female to 1/4 MP
2	1	90697	Reducer Hex Swul M16x1.5 Female to 9/16 Jic Male
3	1	90886	Clutch HYD
4	1	80793	Key 9mm x 14mm x 45mm
5	1	90898	Bearing w/ Retainer Ring
6	1	61124	Snap Ring 1.78 ID x .122 thick
7	1	90896	Bearing w/ retainer ring
8	1	90894	Sprocket D100-36T Machined
9	6	80812	Bolt Hex HD M12 x 1.75 X 100
10	1	2292	Zerk Grease 1/8 NPT x 45 deg.
11	1	90677	Pipe 1/8 NPT Sch 40" x 139"
12	1	12333	Coupling 1/8 NPT Steel
13	1	90676	Elbow 90deg 1/8 NPT
14	3	90724	Door Bottom Clean-Out
15	1	90667	Pipe 1/8 NPT Sch40 x 12"
16	1	90661	Bearing Hanger w/ bushing
17	1	90664	Bushing Bronce 3.25" ID x 4" od x 2.5
18	1	90586	Coupler Shaft 2" ID x 4.5" LG
19	1	90451	Auger 20" Horizontal Rear
20	1	90906	Auger 20" Horizontal Front
21	2	12894	Key ½ x ½ x 2
22	2	26872	Bearing 2 3/16 eccentrical 4-Bolt Flange
23	Ref	90895	Sprocket w/ bearings D100-36T (Complete)

PTO Exploded # 25705



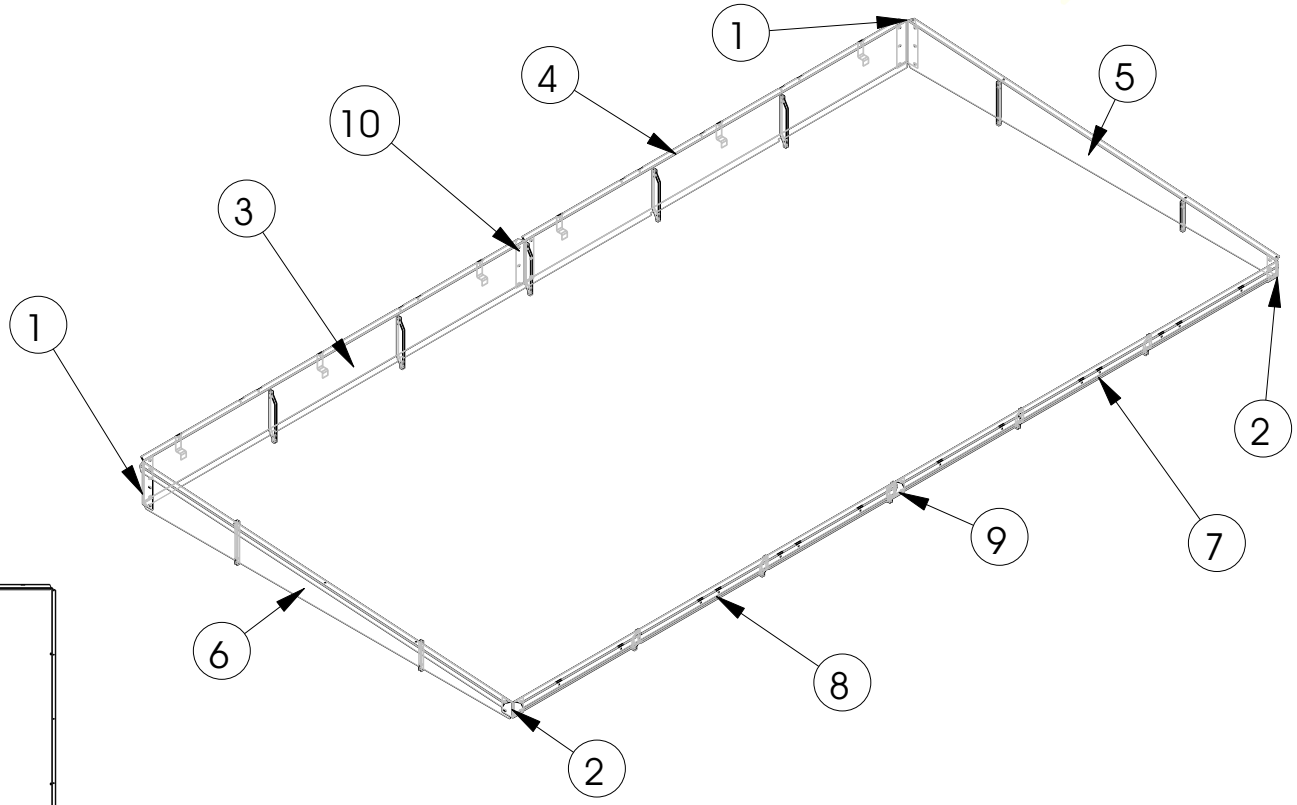
/	QTY	VAL NUMBER	CUSTOMER	DESCRIPTION
1	1		**17200**	YOKE 1 3/4"-20 SPL. ASG
2	2		**17157**	CROSS & BEARING KIT
3	1		**17158**	SPRING PIN 10 X 90
4	1		**17159**	INBOARD YOKE S4
5	1			INNER PROFILE S4
6	1		**17162**	I.B. YOKE,
/	/			
8	1			FRICTION/OVERRUNNING CLUTCH
9	1		**17163**	SHIELD CONE 7 RIB
10	1			OUT. SHIELD TUBE OVL.
11	1		**50463**	INN. SHIELD TUBE RND.
12	2			BEARING RING SC25
13	1			SAFETY CHAIN
14	2		**16818**	SCREW-IN ITEM 9 & 19
15	1		**16816**	DECAL OUT.-IN ITEM 10
16	1		**16817**	DECAL INN.-IN ITEM 6
17	1		**17171**	SUPPORT BEARING
18	1		**16820**	ZERK-IN ITEM 6
19	1			SHIELD CONE 6 RIB
20	1		**17173**	ASG COL. KIT-IN ITEM 1

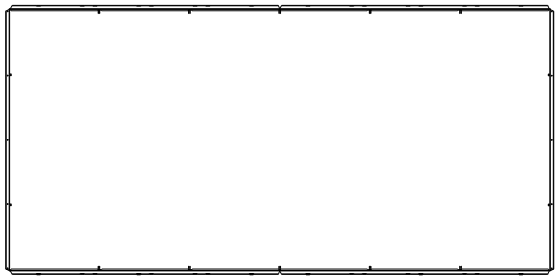
PTO Exploded # 25704

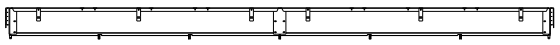


1	1	/	**17479**	YOKE 1 3/8"-21 SPL. ASG
2	2	/	**17157**	CROSS & BEARING KIT
3	1	/	**17158**	SPRING PIN 10 X 90
4	1	/	**17159**	INBOARD YOKE S4
5	1	/		INNER PROFILE S4
6	1	/		I.B. YOKE, PROFILE &
/	/	/	**17162**	SLEEVE W.A.
8	1	/		FRICTION/OVERRUNNING CLUTCH
9	1	/	**17163**	SHIELD CONE 7 RIB
10	1	/		OUT. SHIELD TUBE OVL.
11	1	/		INN. SHIELD TUBE RND.
12	2	/	**16814**	BEARING RING SC25
13	1	/	**16815**	SAFETY CHAIN
14	2	/	**16818**	SCREW-IN ITEM 9 & 19
15	1	/	**16816**	DECAL OUT.-IN ITEM 10
16	1	/	**16817**	DECAL INN.-IN ITEM 6
17	1	/	**17171**	SUPPORT BEARING
18	1	/	**16820**	ZERK-IN ITEM 6
19	1	/		SHIELD CONE 6 RIB
20	1	/	**17172**	ASG COL. KIT-IN ITEM 1

Extinction Assembly





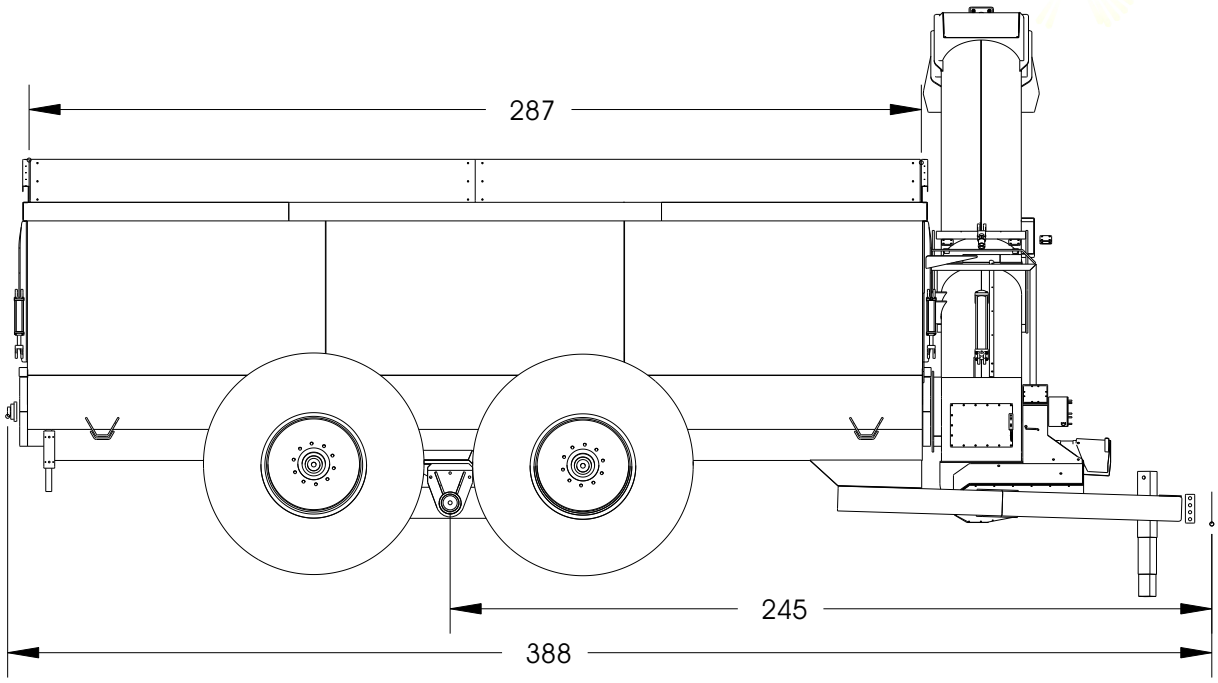


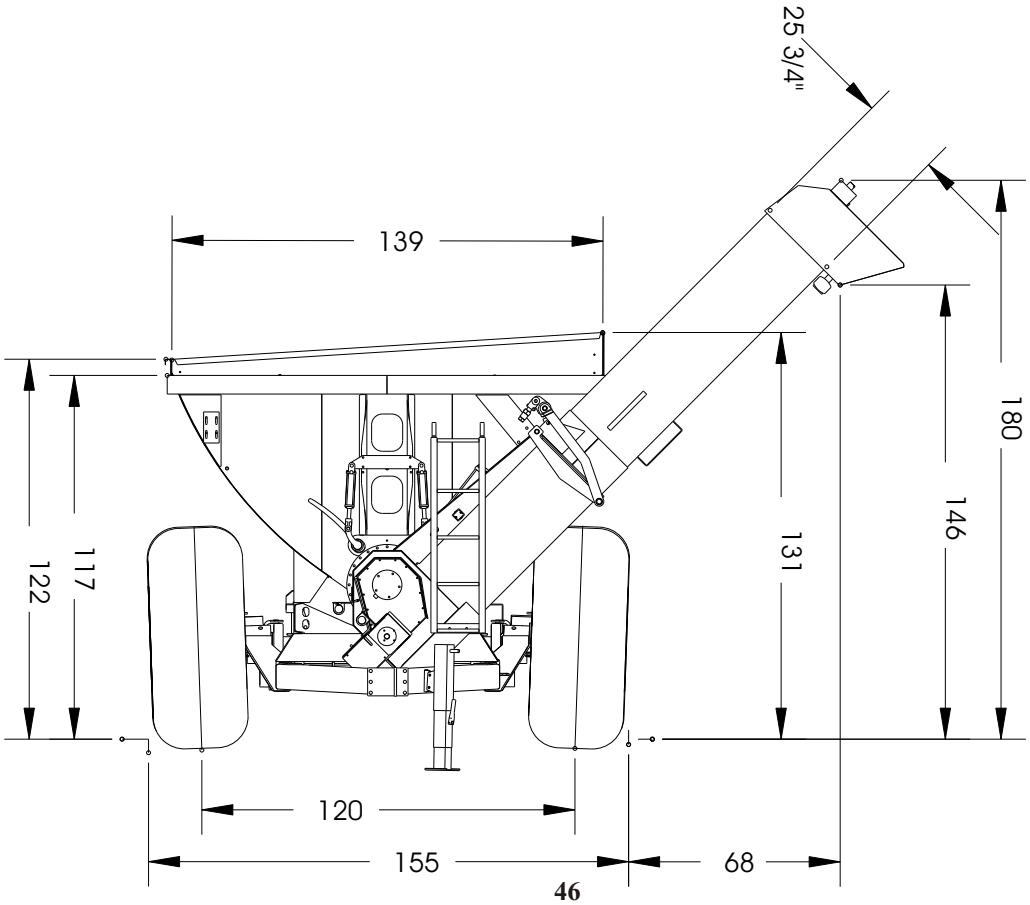
ITEM #	QTY	PART #	DESCRIPTION
1	2	90344	CORNER ANGLE RH SIDE
2	2	90345	CORNER ANLGLE LH SIDE
3	1	90338	EXTENSION BOARD RH SIDE FRONT
4	1	90339	EXTENSION BOARD RH SIDE REAR
5	1	90351	EXTENSION BOARD END REAR
6	1	90348	EXTENSION BOARD END FRONT
7	1	90340	EXTENSION BOARD LH SIDE FRONT
8	1	90341	EXTENSION BOARD LH SIDE REAR
9	1	90357	SPUCE PLATE LH SIDE
10	1	90356	SPUCE PLACE RH SIDE

Specifications

	1000	1250	1500
TOTAL CAPACITY	1000 BUSHELS	1250 BUSHELS	1500 BUSHELS
UNLOAD TIME		Up to 1090 BUSHES / MINUTE	
VERTICAL AUGER 24"		24" FULL PITCH RH	
FLIGHTING-----24"		3/8" THICK THROUGH-OUT	
TUBE----VERTICAL AUGER		25 1/2" I.D.--7 GA(.179) WALL	
BEARINGS--VERTICAL AUGER		2 3/16" SELF-ALIGNING	
HORIZ. AUGER------FRONT 20"		20" FULL PITCH LH	
HORIZ. AUGER------REAR 20"		20" FULL PITCH LH (8 FT) 20" - 1/2 PITCH LH (4 FT)	
FLIGHTING-----20"		3/8" THICK THROUGH-OUT	
BEARINGS--HORIZ. AUGER		2 3/16" SELF-ALIGNING	
GEARBOX		CAST IRON / 1:1.35 RATIO	
DRIVE ROLLER CHAIN		DOUBLE #100 w/ LUBE RESERVOIR	
HORIZ. DRIVE SPROCKETS		SOLID ONE PIECE w/ SET SCREW LOCKING / 15t TO 36t	
VERT. DRIVE SPROCKETS		SOLID SPROCKET w/ TAPER LOCK HUB / 18t TO 36t	
PTO--------1000 RPM		220 HP RATED w/ OVERRUNNING CLUTCH & FRICTION OVERLOAD	
PTO YOKE		SPECIFY 1 3/8-21 OR 1 3/4-20 SPLINE	
HYD GRAIN FLOW DOORS		STANDARD ON ALL	
HUB & SPINDLE 5"--10-BOLT		AVAILABLE ON ALL UNITS	
HUB & SPINDLE 5 3/4"--10-BOLT		AVAILABLE ON ALL UNITS	
TIRE & TRACK OPTIONS		**COMPACTION DATA**	
28L-26 R3 12PLY	TRIDEM 14.43	TRIDEM 18.03	----------
700/50-30.5 8PLY	TANDEM 12.04 TRIDEM 8.20	TANDEM 15.05 TRIDEM 10.25	TRIDEM 12.30
30.5L-32 R3 12PLY	TANDEM 16.97 TRIDEM 11.59	TANDEM 21.21 TRIDEM 14.49	TRIDEM 17.39
850/50-30.5 8PLY	TANDEM 9.70 TRIDEM 6.63	TANDEM 12.13 TRIDEM 8.28	TRIDEM 9.94
18.4R46	TANDEM 25.2 ----------	TANDEM 30.0 ----------	----------
RUBBER TRACKS 24.5"	12	----------	----------
RUBBER TRACKS 27.5"	10.7	----------	----------
RUBBER TRACKS 30"	9.8	----------	----------
AVAILABLE HITCH STYLES	SPECIFIY 1 7/8" OR 2 1/4" PIN HOLE / SINGLE OR DOUBLE TANG / RIGID OR SWIVEL		
TIRE OR TRACK CTR TO CTR	TIRES 120" / TRACKS 106"		
OVER-ALL WIDTH	TIRES 120" + TIRE WIDTH / TRACKS 106" + TRACK WIDTH		
GRAIN TANK OUTSIDE WIDTH	142"	142"	142"
GRAIN TANK OUTSIDE LENGTH	291"	291"	291"
GRAIN TANK OUTSIDE HEIGHT	120" (DEPENDS ON TIRE)	129" (DEPENDS ON TIRE)	138" (DEPENDS ON TIRE)
OVER-ALL LENGTH	390"	390"	390"
SPOUT HEIGHT	160" (DEPENDS ON TIRE)	160" (DEPENDS ON TIRE)	160" (DEPENDS ON TIRE)
WEIGHT EMPTY	TAN 19,850 LBS / TRI 22,350 LBS	TAN 20,150 LBS / TRI 22,850 LBS	23,350 LBS
HITCH WEIGHT EMPTY	TAN/TRACKS ADJ 1,961 TO 2,925	TAN ADJ 1,970 TO 2,956	----------
	TRIDEM 2,030 LBS	TRIDEM 2,040 LBS	TRIDEM 2,052 LBS
HITCH WEIGHT LOADED	TAN/TRACKS ADJ 2,887 TO 6,452	TAN ADJ 3,127 TO 7,366	----------
	TRIDEM 3,341 LBS	TRIDEM 3,681 LBS	TRIDEM 4,021 LBS

Grain Cart Dimensions





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