1210 Chief Grain Cart
Operator's Manual

Orthman
AGRICULTURAL

1210 Grain Cart
PREDELIVERY/DELIVERY CHECKLIST

TO THE DEALER

Predelivery service includes assembly, lubrication, adjustment and test. This service ensures cart is delivered to retail customer/end user ready for field use.

PREDELIVERY CHECKLIST

Use this checklist to inspect cart after it is completely assembled. Check off each item as it is found satisfactory or after proper adjustment is made.

- ☐ Wheel nuts torqued to 340 ft-lb.
- ☐ Tires inflated to specified air pressure.
- ☐ All grease fittings lubricated and gearbox oil level checked.
- ☐ All safety decals and SMV sign are correctly located and legible. Replace if damaged.
- ☐ SMV decal is in place and shipping cover removed.
- ☐ Safety/warning lights working properly.
- ☐ Test run augers. Do not operate tractor PTO above 750 PTO RPM with augers empty.
- ☐ Check driveline. See “Driveline Inspection” in Operation section.
- ☐ V-belts aligned and properly tensioned.
- ☐ Check track alignment. See Camoplast track manual. (If Applicable)
- ☐ Safety screens over drag auger are in place and properly secured.
- ☐ Auxiliary safety chains are properly installed and hardware torqued to specification.
- ☐ Paint all parts scratched in shipment.

This wagon has been thoroughly checked and to the best of my knowledge is ready for delivery to the customer.

(Signature Of Set-Up Person/Dealer Name/Date)

Machine Preparation

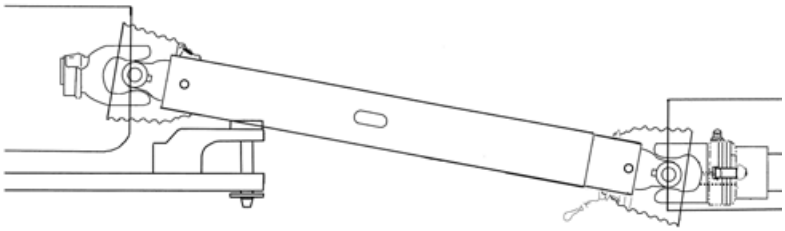
Lubricate grain cart per lubrication information in this manual prior to initial operation and at prescribed intervals. Make sure all tires are properly inflated or track tension is properly adjusted before each use. Check drive V-belts for proper tension and alignment. Torque all wheel lug nuts to specified torque.

Tractor Requirements

Consult your dealer for information on horsepower requirements and tractor compatibility. Four SCV's are required for standard cab operation . A 12 volt DC electrical system is required on all sizes to operate safety/warning lights, auger-mounted work light, optional electronic scale
system, or electronic roll tarp.

Tractor Preparation and Hookup

1. Slide tractor drawbar in as far as possible and still allow PTO shaft to have sufficient clearance to prevent damage to driveline components when making sharp turns and operating over uneven ground.



Avoid clevis hitch interference

NOTICE
Clevis hitch (hammer strap style) drawbars may need to be removed to prevent damage to PTO assembly.

NOTICE
Adjust tractor drawbar to prevent severe bends in PTO U-joint angles and to allow sufficient clearance between tractor drawbar/ hitch pin and PTO shaft.

2. Position PTO as far right of hitch as possible until parking jack is raised.

3. Remove jack and jack handle from storage location.

4. Install jack and jack handle on jack shaft and raise cart.

NOTICE
Clean and grease PTO shaft coupling each time PTO is installed. Apply coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease, that meets AGMA CG-1 and CG-2 standards to extend shaft spline life.

5. Connect cart to tractor hitch. Use a high quality hitch pin of sufficient length and strength and secure pin with a locking device.

6. Raise jack. Return jack and jack handle to storage location and install pin.

7. Attach cart PTO connecting yoke to tractor PTO shaft. Spring loaded yoke pin must engage groove in tractor PTO shaft. Slip tube grease fitting must be visible through hole of outer tube.

8. Transport safety chain must be used to ensure connection is retained between cart and tractor in the event of a hitch pin/drawbar failure. Torque attaching hardware according to torque specification chart at end of manual.

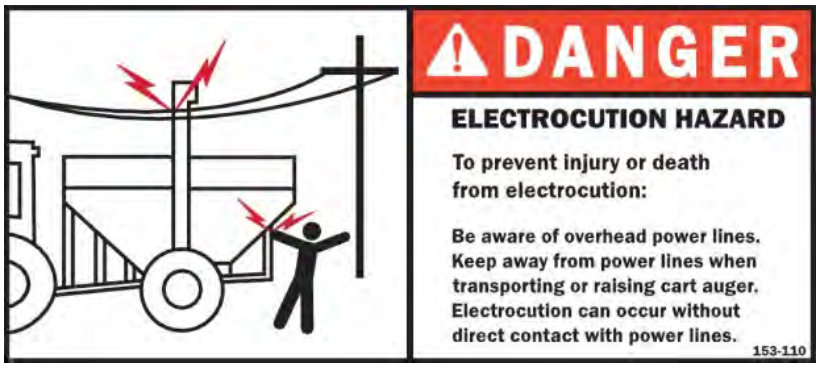
NOTICE
Wipe hose ends to remove any dirt before connecting couplers to tractor ports or contamination may cause equipment failure.

9. Connect hydraulic hoses to tractor. Orthman grain carts require 4 SCV's for manual operation.

Hydraulic Controls		
Control	**Hose End Color**	**Function**
SCV1	Red	Auger Fold
SCV2	Yellow	Spout Tilt
SCV3	Blue	Drag Auger
SCV4	Green	Flow Gates

10. Connect seven terminal breakaway connector for the lighting system on cart to seven pin connector on tractor. If your tractor is not equipped with SAE Standard 7 terminal connector, obtain through your local tractor supply dealer. Check clearance lights, signal lights, and auxiliary work light are working properly.

11. Connect optional electric roll tarp and camera harnesses. Check for proper operation.



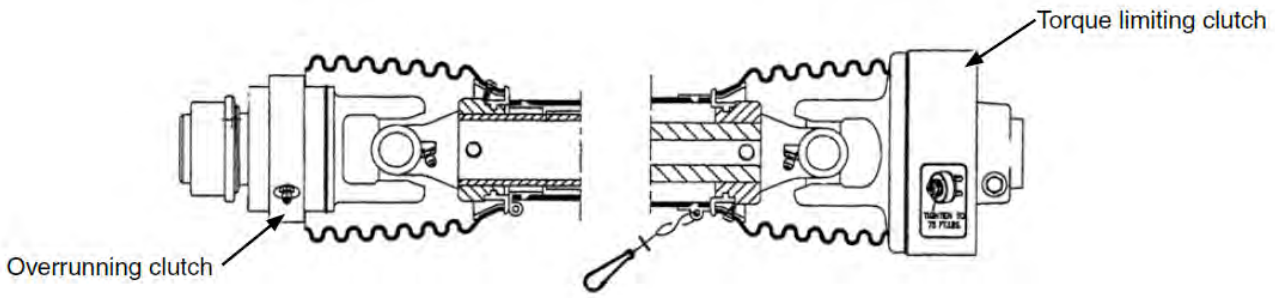
Unload Grain Cart

NOTICE
Do not operate tractor PTO above 750 PTO RPM with augers empty or equipment may be damaged.

NOTICE
Roll tarp must be completely open during unloading operations or suction will damage equipment.

1. Open roll tarp completely.
2. Unfold vertical auger.
3. Engage PTO at low tractor RPM.
4. Engage drag auger.
5. Start to open flow gate and increase tractor RPM.
6. Set grain flow and tractor RPM to desired level.
7. Adjust auger tip spout.
8. Slow tractor RPM as cart reaches empty
9. Close flow gate.
10. Disengage drag auger.
11. Allow vertical auger to clean out and disengage PTO.
12. Fold auger to storage position.

PTO Torque Limiting/Overrunning Clutch Protection



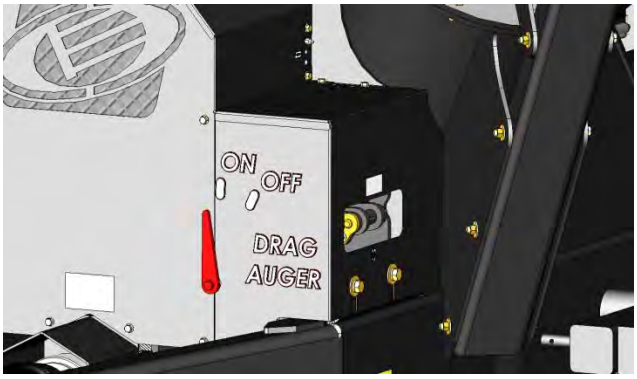
The torque limiting clutch disengages if auger becomes obstructed to prevent driveline and gearbox damage. The torque limiting clutch resets automatically when PTO RPM is reduced.

The overrunning clutch allows auger system to freewheel and protects tractor and cart from shock damage with PTO brake-equipped tractors.

Belt Engagement Indicator

An indicator pointer on front side of belt housing shows if drag auger is engaged (ON) or disengaged (OFF).

Indicator should be OFF when PTO is engaged to reduce start up torque requirements.



Hydraulic Flow Gate

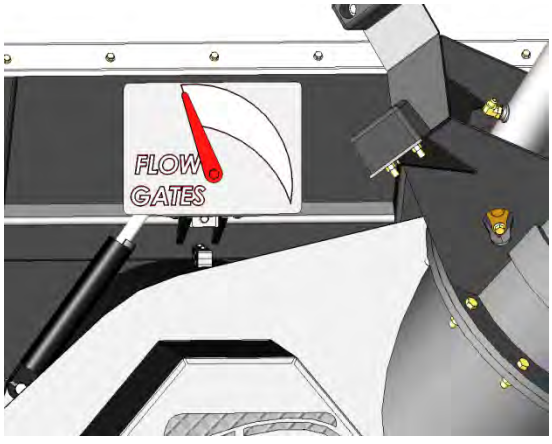
Hydraulic flow gate controls volume of grain to drag auger. An indicator on front of cart shows position of flow gate.

1. Engage PTO for the vertical auger at low RPM.

2. Engage belt drive clutch to start the drag auger.

3. Open gate half way.

4. Adjust flow gate to desired unloading rate.



ELECTRONIC SCALE - GT 400

Electronic scale option includes two load cells, one hitch weigh beam, a tractor-mounted scale indicator console and cables, brackets, and mounting hardware.

To measure what is unloaded, press "TARE" before starting to unload. Weight being unloaded displays as a negative value. Record this information and press "NET/GROSS" to return to gross weight.

To measure what is loaded (For example when doing a field yield check.), press "ZERO" to zero cart weight before loading.

NOTE: Scale is most accurate when cart is sitting still on level ground when weighing.

GT 400 Indicator

Suggested Operating Procedures

NOTE: Movement of cart causes scale indicator reading to fluctuate.

Step 1 Press ON/OFF to turn on scale.

NOTE: Allow one (1) minute for scale to warm up (allow 5-10 minutes in cold weather).

Step 2 Press and hold →0← to zero balance.

NOTE: Zero balance indicator when empty at least once a day or more as required. If zero balance is not correct it only affects gross weight reading, not accuracy of displayed net weight.

Step 3 Load cart.

Step 4 Press START/STOP to begin unloading.

Display reads zero. Arrows point to Net and Unload.

Step 5 Unload cart. Negative reading on scale indicator is pounds unloaded.

Step 6 Press START/STOP when unloading is complete.

Indicator displays remaining weight left on scale. Data is automatically added to accumulator and saved to Printer or DDL (data downloader kit).

Repeat Steps 4 - 6 each time cart is unloaded.

Entering Field ID

A user-entered, 6 character identification number is used for referencing fields, trucks, owners or other information.

Step 1 Press FIELD.

FIELD displays and a flashing cursor or character displays in the first position.

Step 2 Press FIELD to scroll available characters.

Hold for 4 seconds to increase scroll rate.

Step 3 Press →0← to scroll back.

Press START/STOP to move to next character.

Step 4 Press ON/OFF to accept and save.

See GT 400 manual provided and Maintenance Section of this manual for additional information.

ELECTRONIC SCALE - GT 460

Electronic scale option includes two load cells, one hitch weigh beam, a tractor-mounted scale indicator console and cables, brackets, and mounting hardware.

To measure weight, press START/STOP button before and after unloading. Weight, date, time, and additional notes are stored automatically using only the START/STOP button.

USB Port allows easy data transfer to and from your office PC using a flash drive. Records can be stored for an entire season in the indicator memory and on one 256 Megabyte USB Flash drive.

Provided Grain Tracker software allows generation of a variety of reports on your PC. Reports can be read by programs such as Microsoft Excel, Adobe Acrobat, and Microsoft Internet Explorer

NOTE: Scale is most accurate when cart is sitting still on level ground when weighing.

Suggested Operating Procedures

NOTE: Movement of cart causes scale indicator reading to fluctuate.

Step 1 Press (ON).

Step 2 Press and hold (ZERO) to zero balance if cart is empty.

Step 3 Press (FIELD) to select field name.

Step 4 Press (ID) to select ID.

NOTE: Make sure active screen displays.

Step 5 Press (START STOP) before unloading grain from cart.
Scale reads Zero and enters net mode.

Step 6 Unload grain. Upper Display shows amount unloaded. Gross value (total amount left on cart) displays on second line of Lower Display.

Step 7 Press (START STOP) when unloading complete.

See GT 460 manual provided and Maintenance section of this manual for additional information.

GT 460 Indicator

NOTE: Indicator must be on active screen as shown above before loading or unloading.

Entering Field Names

Note: Field and ID names can be uploaded from a PC using a USB flash drive. Field names are a maximum of 26 characters long and can be changed using keypad before unloading.

Step 1 Press (FIELD) to modify or select field.

Field number is shown in upper display. Three lines are displayed in Lower Display Window. Top line of the three is current, editable, and is used for next data record.

Step 3 Press ▲ or ▼ to scroll through fields (150 maximum). Hold arrow to scroll faster.

Use ◀ or ▶ to move cursor within data line.

Step 4 Use keypad to enter or update field names.

Press (BACK SPACE) to delete characters to left.

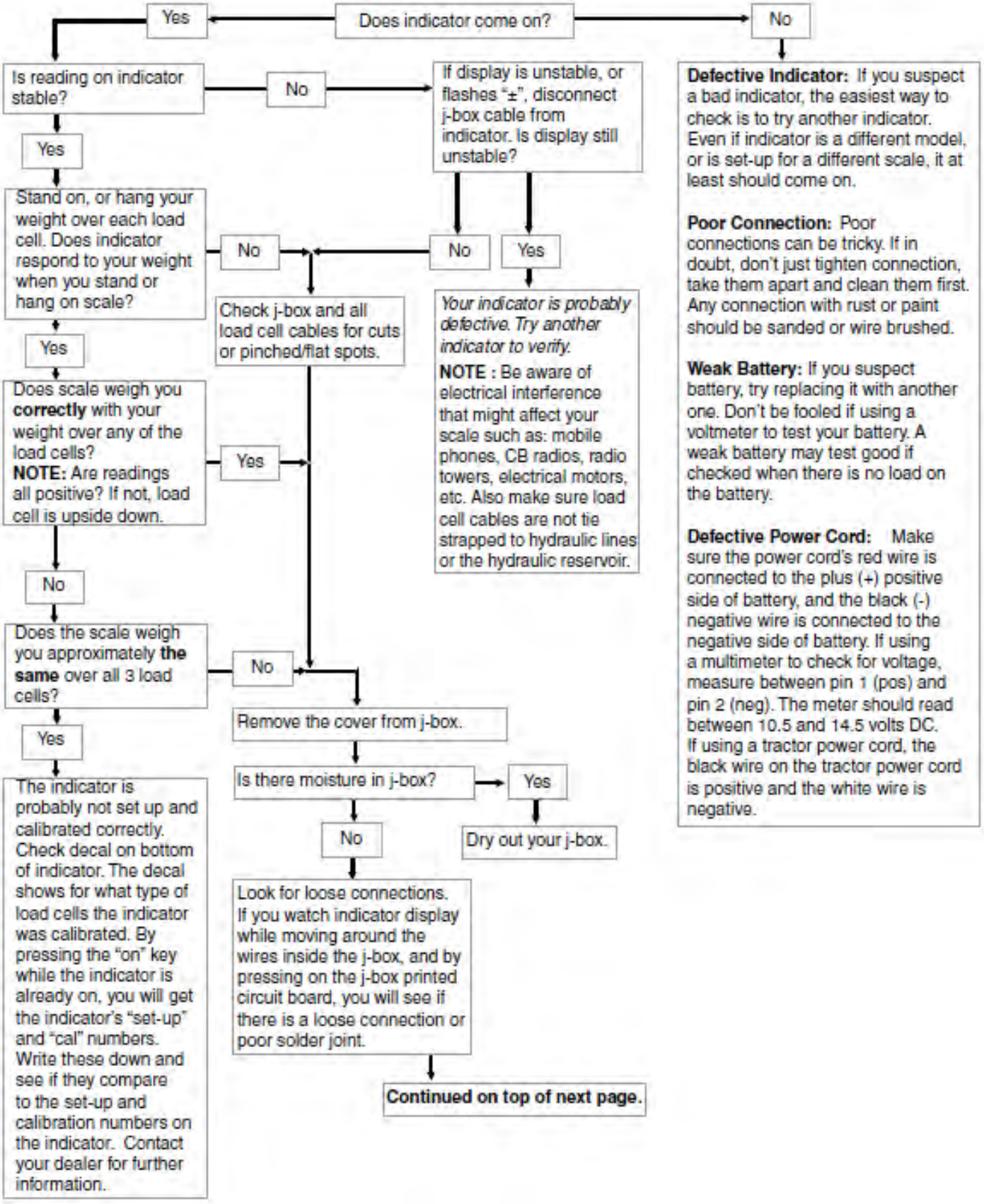
Press (CLEAR) to delete selected character or hold down to delete entire line.

Press (ESC) to reset line to last saved data.

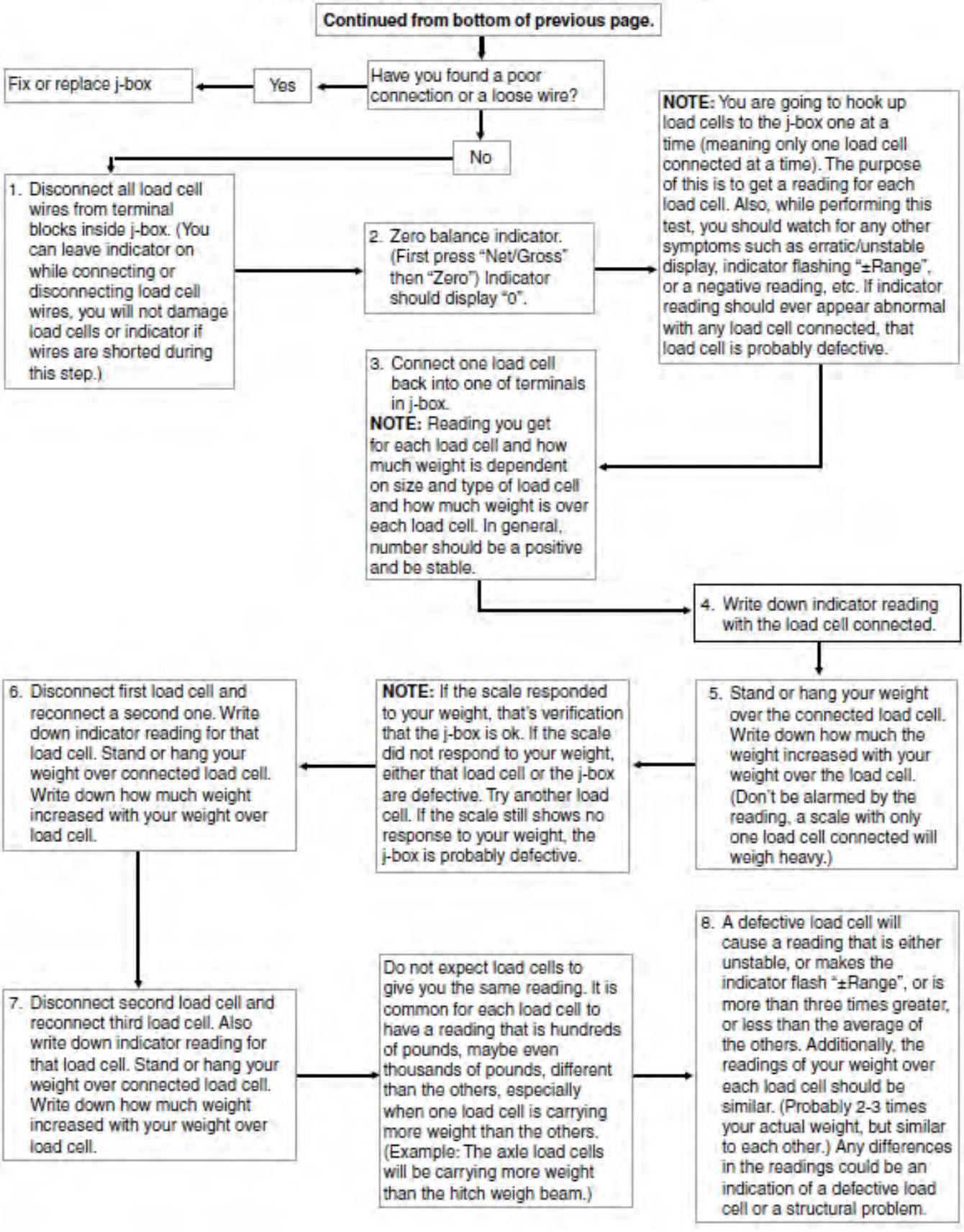
Step 5 Press and release (SHIFT LOCK) for special characters. Then press key with desired special character. Repeat for each special character

Step 6 Press (ENTER) or (FIELD) to exit.

ELECTRONIC SCALE TROUBLESHOOTING



ELECTRONIC SCALE TROUBLESHOOTING



Lubrication and Maintenance

Proper lubrication of all moving parts will help ensure efficient operation of your Orthman Grain Cart and prolong the life of friction producing parts.

Splines

Clean and grease all splines before assembly to prolong life, and to prevent damage and ease disassembly when removing.

NOTICE: To extend life of shaft splines, apply a coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease, that meets AG MA CG-1 and CG-2 Standards.

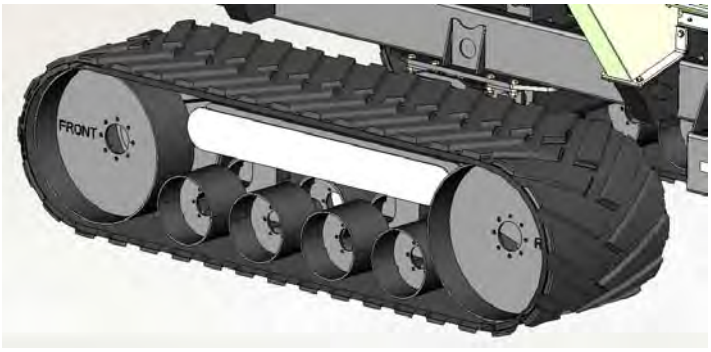
Wheel Bearings

Wheel bearings should be checked and lubricated annually. Raise wheel off the ground and remove the dust cap. Check for endplay in bearings by moving tire in and out. Rotate tire to check for roughness in bearings. If bearings sound rough, the hub should be removed and bearings inspected and replaced if necessary. See “Wheel Bearing Replacement” in Maintenance section of this manual.

If bearing replacement is not necessary, while wheel is raised and dust cap removed, pump grease into hub until grease comes out through bearing rollers. Replace dust cap.

Track Endwheel and Midwheel Bearings

Refer to Camoplast track manual for lubrication and maintenance Information.



Drag Auger Bearings

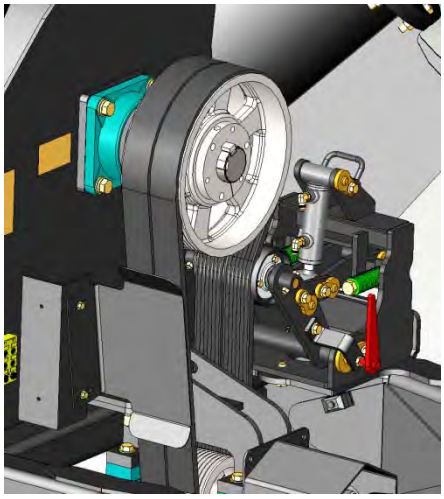
Check and lubricate bearings weekly.

NOTICE: Remove any grease purged through grease seal on V-belt side of forward drag auger bearing.

Drive Belts and Pulleys

NOTICE

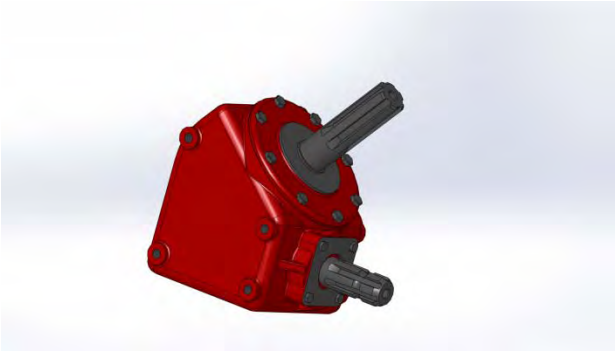
Keep all oil and grease off V-belts and belt pulleys. Do not use belt dressing on V-belts.



Gearbox Oil Level

Gearbox Oil Capacity . . . . . .2.8 Lt. . . . .SAE 90 weight oil.

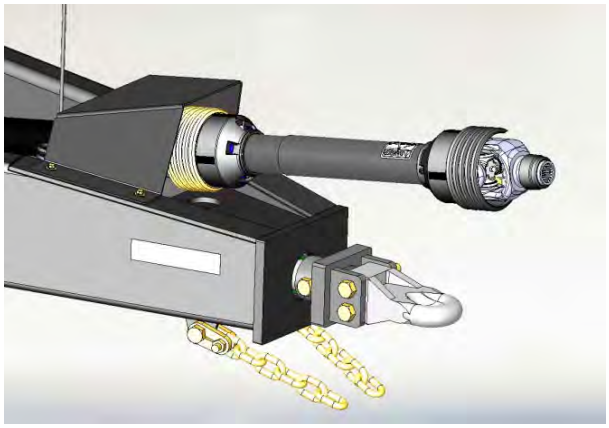
Remove plug from fill/check plug hole on the gearbox. Oil level should be even with fill/check plug hole. Inspect oil at end of each annual season of use for moisture and contaminates, if found, change oil before storage.



PTO Shaft Coupling

Clean and grease PTO shaft coupling each time PTO is installed.

Apply a coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease meeting AGMA CG-1 and CG-2 Standards to extend life of shaft splines.

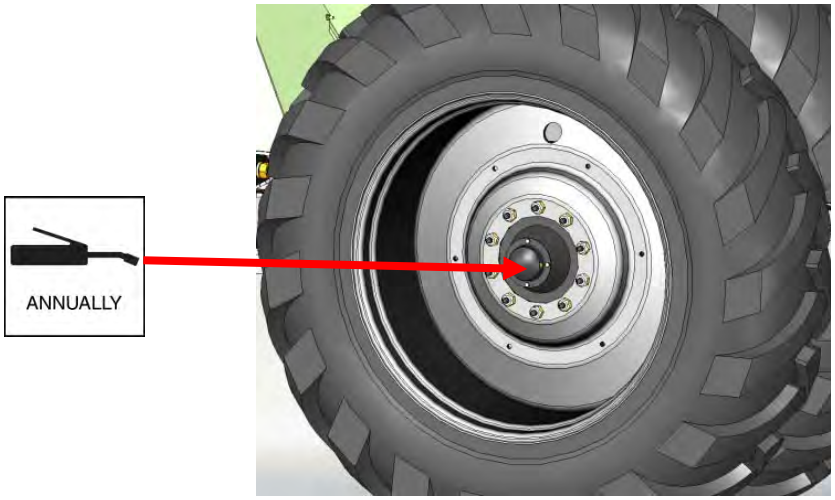


Grease Fittings

Those parts equipped with grease fittings should be lubricated at the frequency indicated with an SAE multipurpose grease. Be sure to clean the fitting thoroughly before using grease gun. The frequency of lubrication recommended on the following pages is based on normal operating conditions. Severe or unusual conditions may require more frequent attention.

NOTICE
Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication.

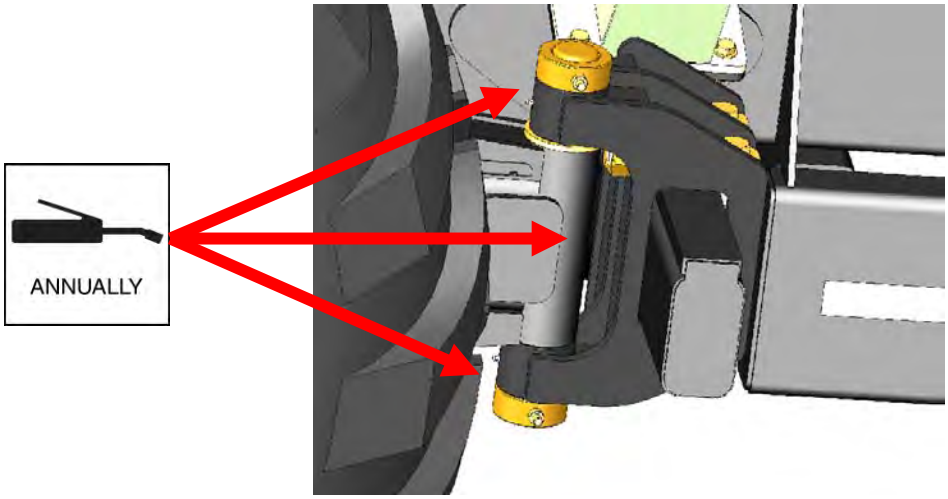
NOTE: Disconnect PTO from tractor. Retract PTO assembly and rotate shield to expose grease fitting on PTO slide.



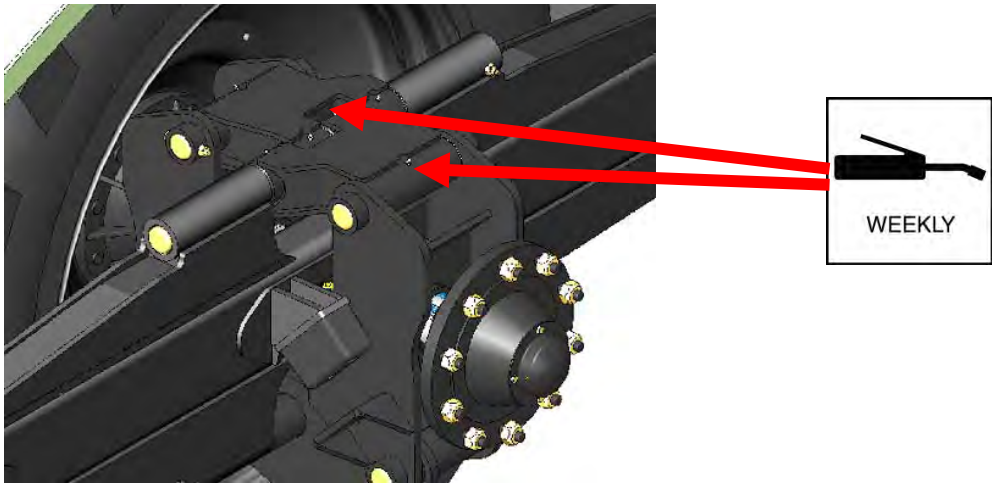
Row Crop Cart

NOTICE
Dust cap must be loosened or removed to while greasing, to prevent damage to seal.

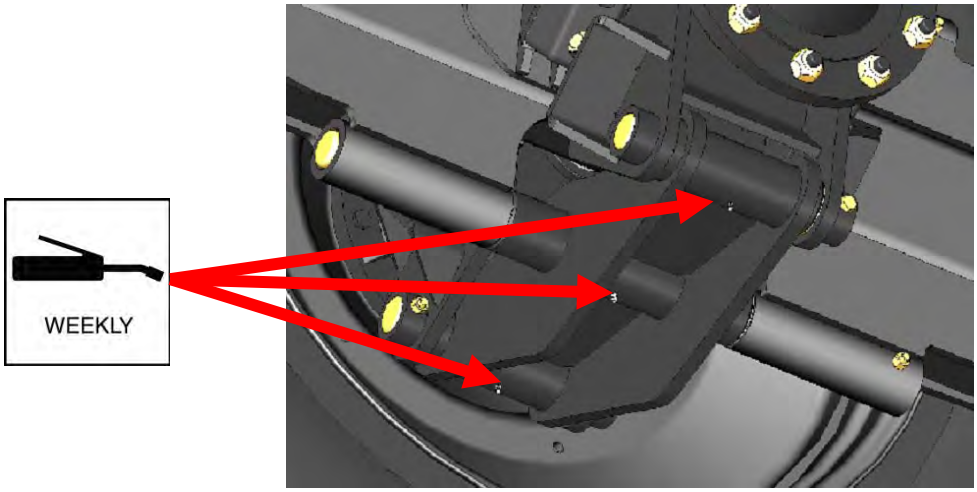
Row Crop Linkages



Row Crop Swingout

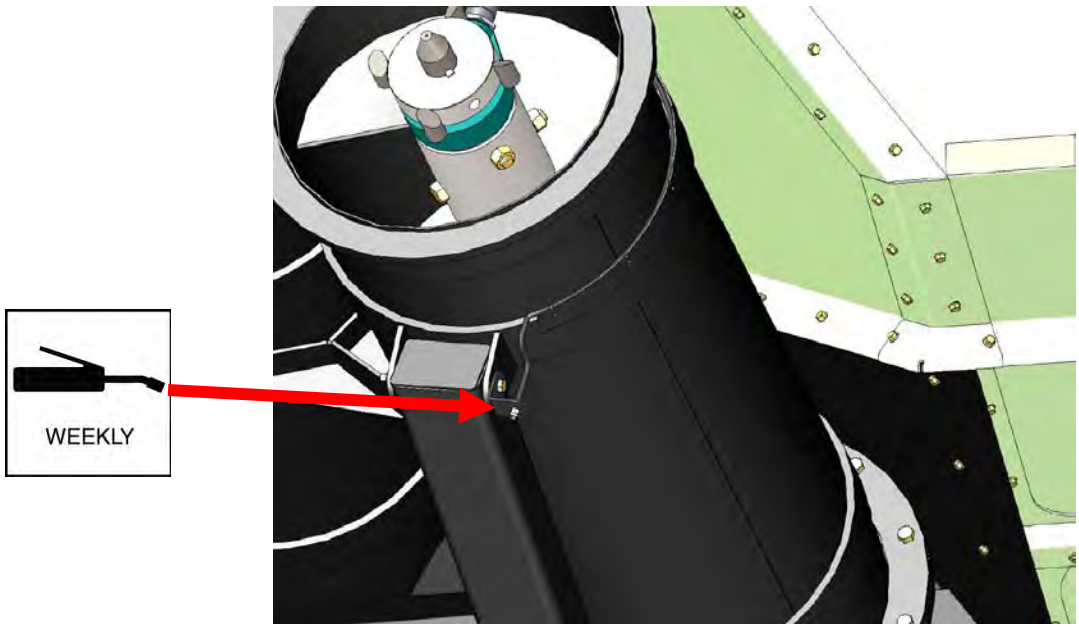


Row Crop Top Links

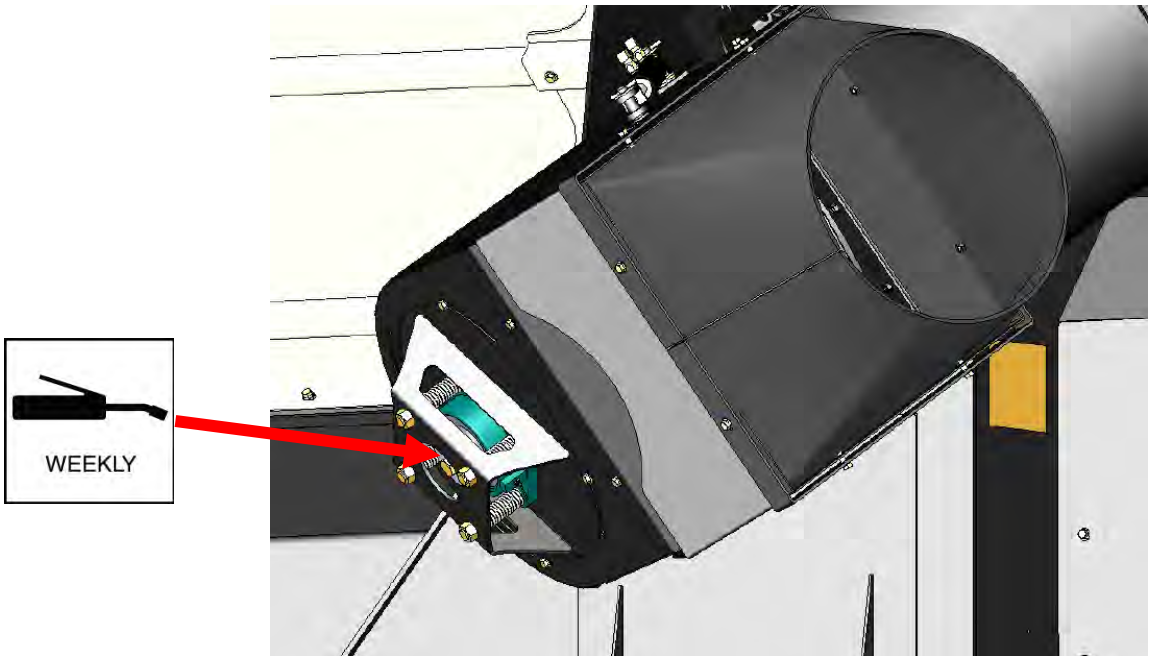


Row Crop lower Links

Unload Auger

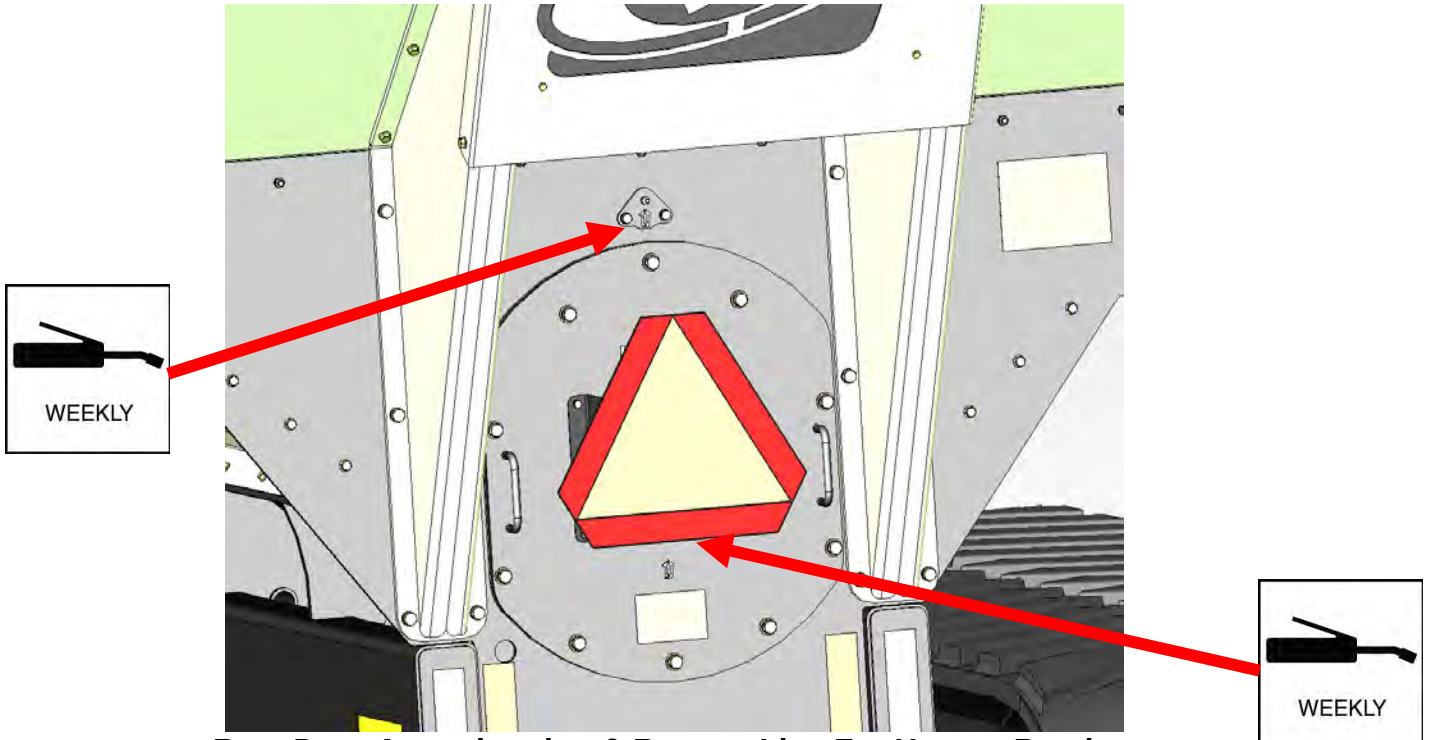


Hanger Bearing

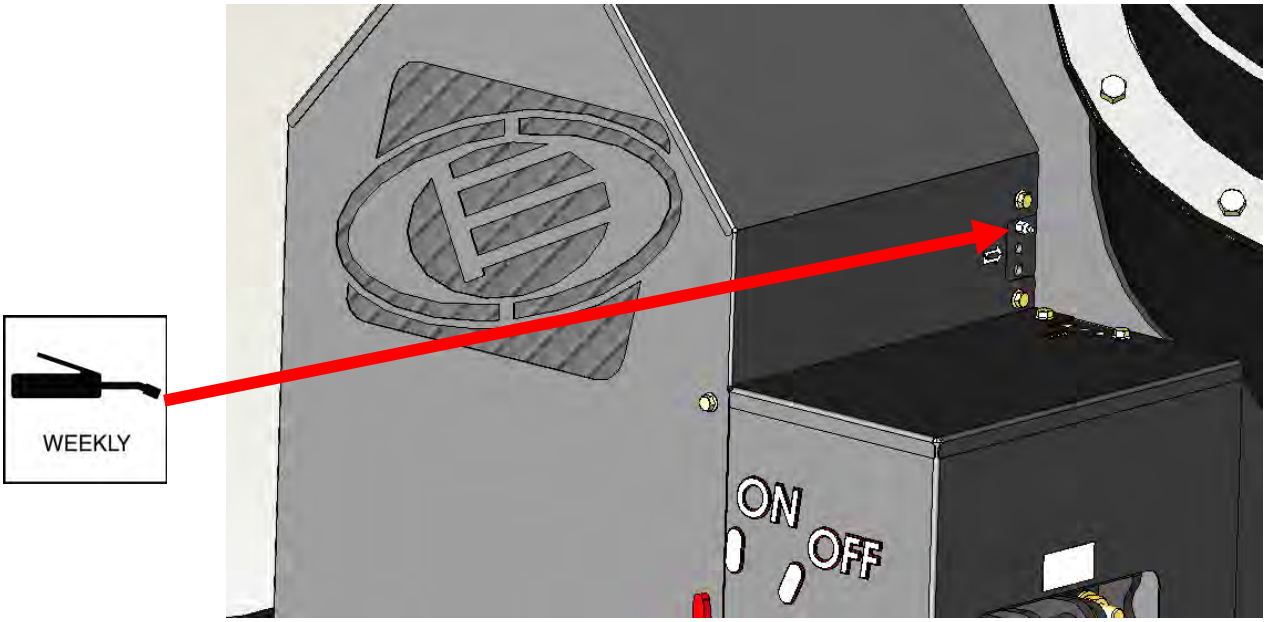


Top Auger Bearing

Drag Auger

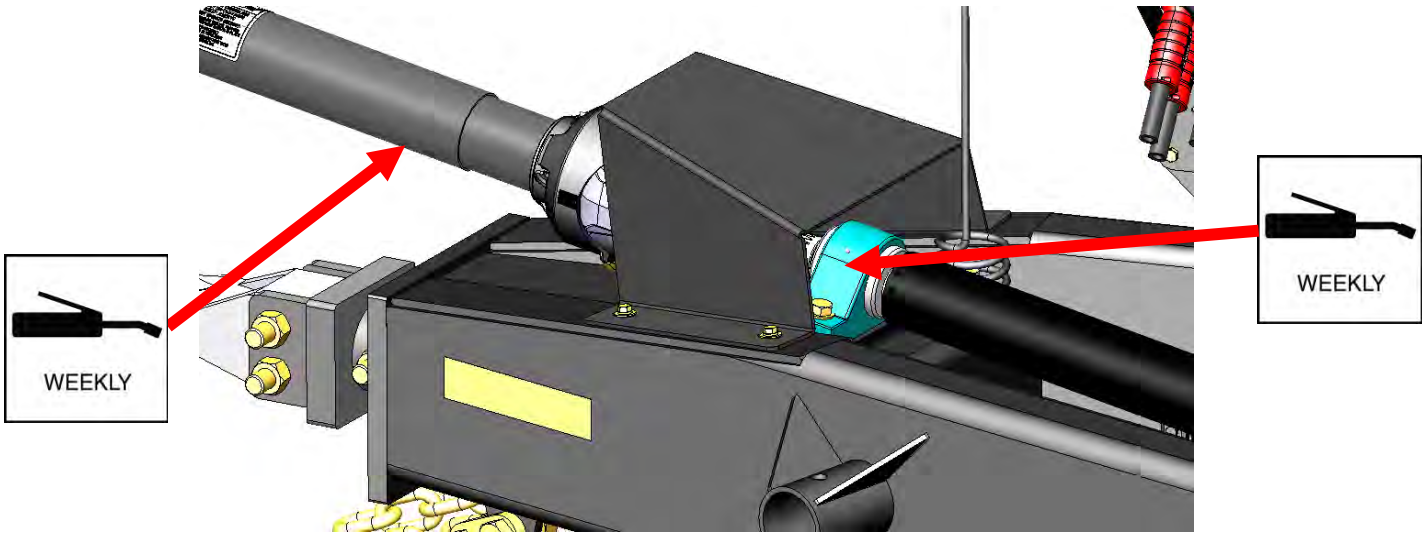


Rear Drag Auger bearing & Remote Line For Hanger Bearing

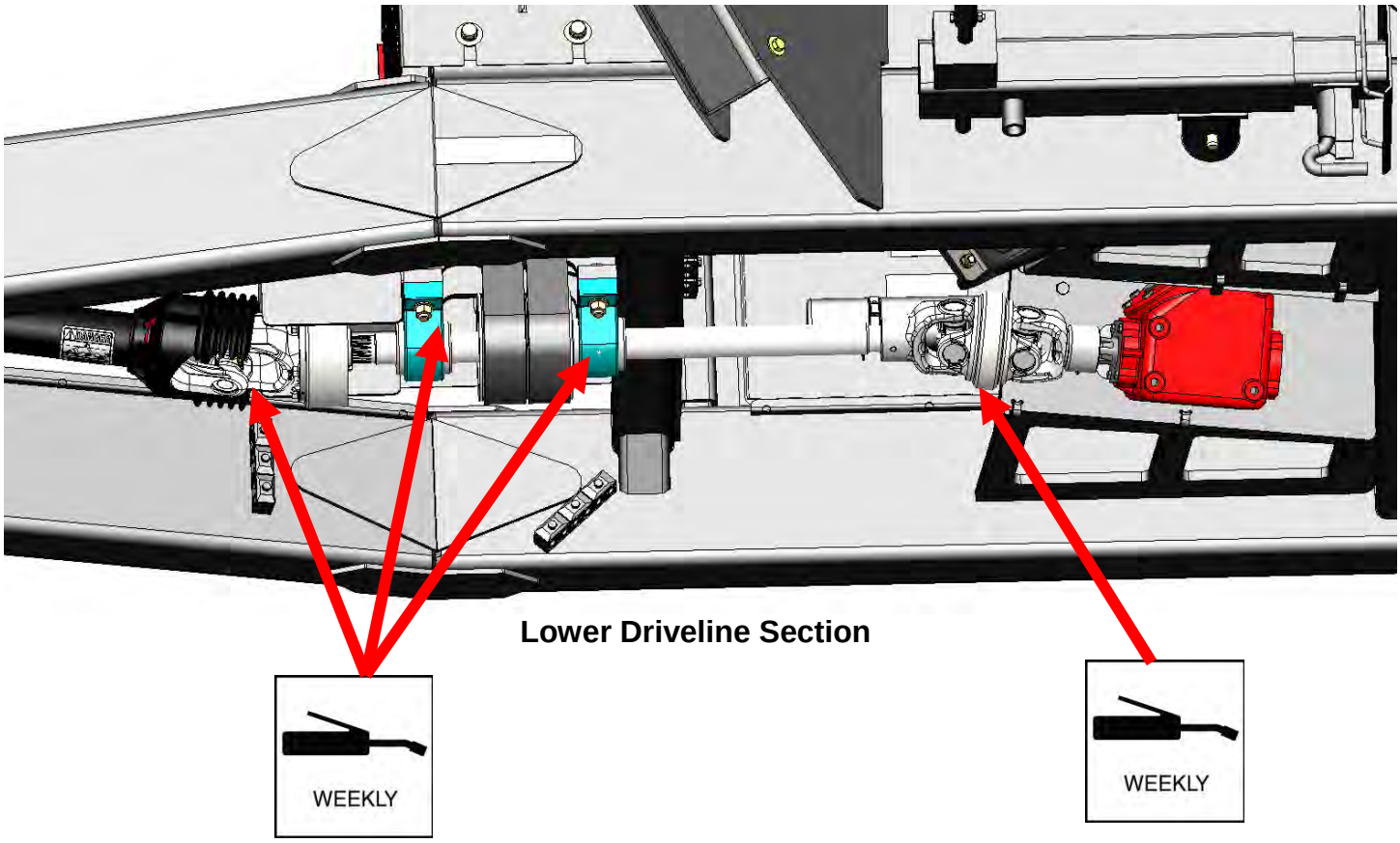


Remote Grease Line For Front Drag Auger Bearing

Driveline

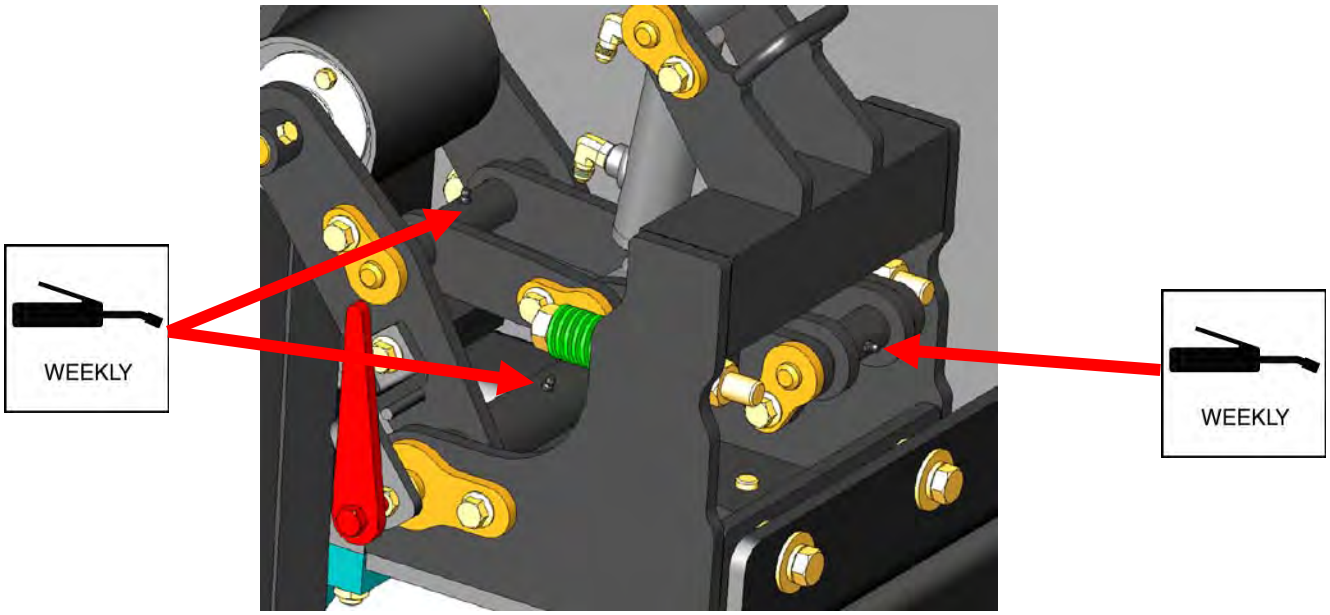


Front Driveline Bearing

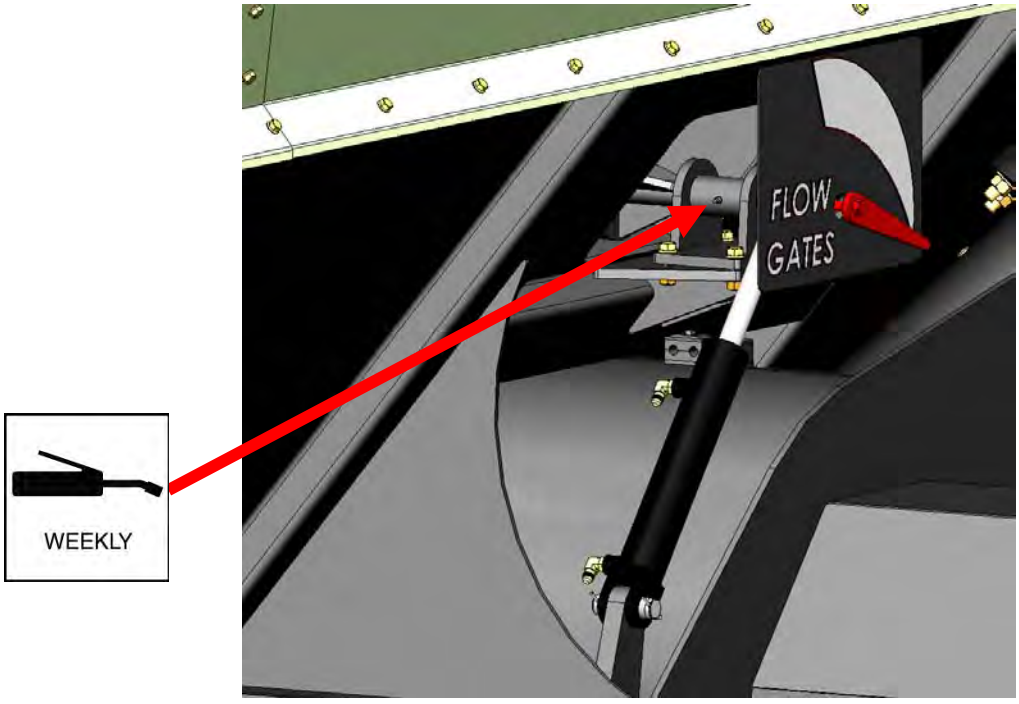


Lower Driveline Section

Belt Tensioner & Flow Gates

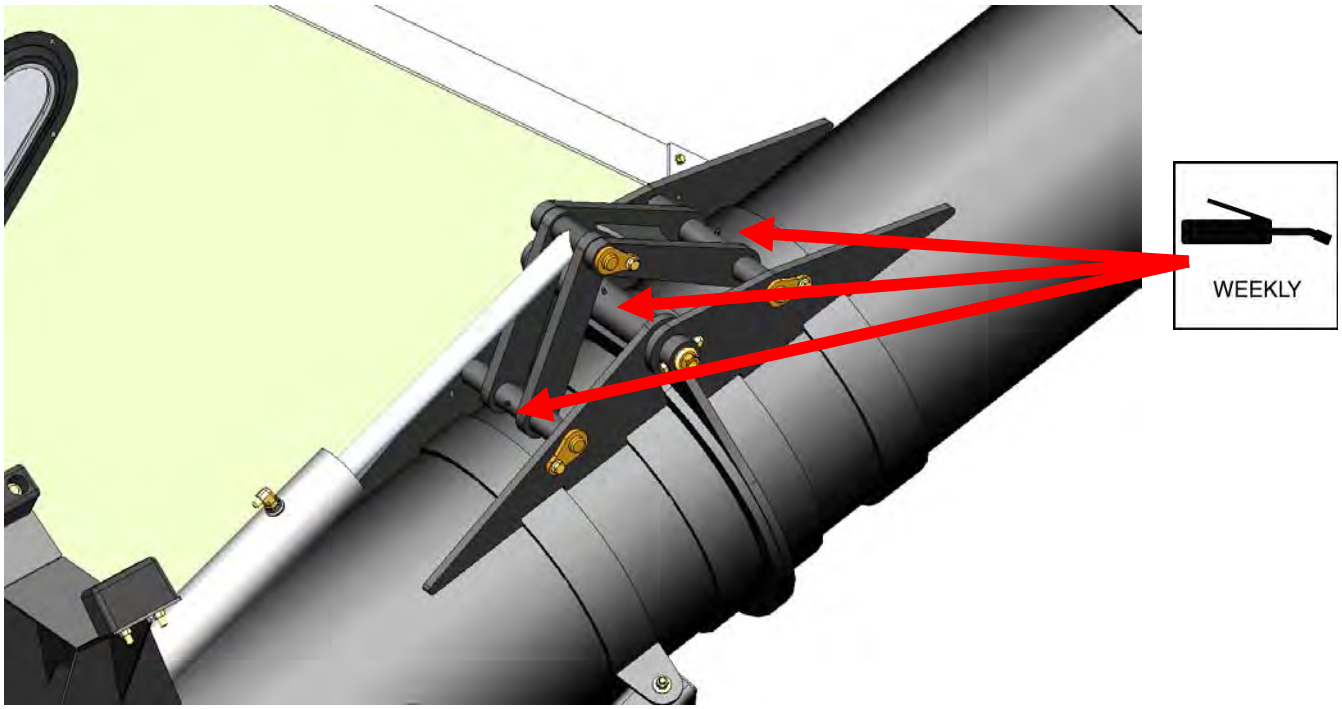


Belt Tensioner (Cover Removed)



Internal Flow Gate Shaft

Unload Auger Hinge



Auger Fold Linkages

Wheel Nuts

Row Crop Tire With Ten Bolt Hubs Shown

Wheels are attached to hubs with ten press fit studs through hub flanges and wheel nuts. Clean threads with a wire brush and oil lightly to retard corrosion when removing and installating wheels.

Torque wheel nuts to 340 ft. lbs. and retorque daily during first 3 days of use and weekly thereafter.

WARNING

Explosive separation of rim and tire parts can result in death or serious injury. Rim and tire servicing, improper use of rims and tires, or worn or improperly maintained tires can cause tire explosion.

To prevent tire explosions:

• Maintain proper tire pressure. Inflating a tire above or below the recommended pressure can cause tire damage.

• Mount tires only by properly trained personnel using proper equipment.

• Replace tires with cuts or bubbles. Replace damaged rims. Replace missing lug bolts and nuts.

• Do not weld or heat wheel assembly. Heating increases tire pressure.

Inflation Specifications

WARNING

Over-inflation of tires can result in explosive separation of rim and tire and cause death or serious injury. Different size rims are designed for different tire pressures. Inflate to correct pressure for specific rim size.

Check tire pressure before each use.

Follow inflation guidelines listed on tire.

Driveline Inspection

Inspect driveline **after first 20 loads, at beginning of each season, and after every 150 loads or annually thereafter.**

Remove inspection cover and proceed as follows:

☐ Make a general inspection of driveline looking for loose hardware.
☐ Inspect belt alignment and tension.
☐ Inspect the three cap screws in each belt pulley bushing and tighten evenly to torque specifications.
☐ Inspect pulley drive keys making sure they are properly located and tight.
☐ Inspect all grease hoses for damage and proper routing.
☐ Lubricate all grease fittings. See Lubrication section of this manual.
☐ Check gearbox oil level.
☐ Inspect bearings and seals in gearbox.
☐ Inspect PTO attaching hardware and safety shields.
☐ Repair or replace worn or damaged parts.

Preparation for Storage

Store machine in a dry sheltered area.

Remove all trash that may be wrapped on shafts and remove dirt that can draw moisture.

Remove auger inspection cover at front of cart and dump door on underside of grain tank at rear of cart. Clean out all accumulated grain and debris from auger chamber.

Wash machine inside and out.

Lubricate machine at all lubrication points.

If possible, remove weight from all tires, particularly if unit is stored outdoors.

Repaint any areas where paint has been removed. This is particularly important in the inside of grain tank. Rust in this area will shorten cart life and prevent grain from smoothly sliding to bottom of tank.

Inspect machine for parts in need of replacement and order during “off” season.

Coat exposed surface of all cylinder piston rods with grease or rust preventative spray.