Art’s-Way Manufacturing Co., Inc.

Portable Grain Auger
8, 10, 12, And 14 Inch

Operator’s Manual
SD205153

Issued September 2009
IF THIS MACHINE IS USED BY AN EMPLOYEE, IS LOANED, OR IS RENTED, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE TWO INSTRUCTIONS BELOW.

BEFORE THE OPERATOR STARTS THE ENGINE:

1. GIVE INSTRUCTIONS TO THE OPERATOR ABOUT SAFE AND CORRECT USE OF THE MACHINE.
2. MAKE SURE THE OPERATOR READS AND UNDERSTANDS THE OPERATOR’S MANUAL FOR THIS MACHINE.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THE OPERATOR’S MANUAL.
2. READ ALL SAFETY DECALS ON THE MACHINE.
3. CLEAR THE AREA OF OTHER PERSONS.

LEARN AND PRACTICE SAFE USE OF MACHINE CONTROLS IN A SAFE AND CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.

It is your responsibility to observe pertinent laws and regulations and to follow manufacturer’s instructions on machine operation and maintenance.

See your Authorized Art's-Way Manufacturing Co., Inc. dealer or Art's-Way Manufacturing Co., Inc. for additional operator’s manuals, illustrated parts catalogs, and service manuals.
TO THE OWNER

Congratulations on the purchase of your new Art's-Way Portable Grain Auger. You have selected a top quality machine that is designed and built with pride to ensure you have many years of efficient and reliable service.

Many people have worked on the design, production, and delivery of this Portable Grain Auger. The information in this manual is based on the knowledge, study, and experience through years of specializing in the manufacturing of farm machinery. This manual is designed to provide you with important information regarding safety, maintenance, and machine operation so you can and will get the best possible performance from your Portable Grain Auger.

Even if you are an experienced operator of this or similar equipment, we ask that you read this manual before operating the Portable Grain Auger. The way you operate, adjust, and maintain this unit will have much to do with its successful performance. Any further questions you may have about this product of Art's-Way equipment should be directed to your local Art's-Way dealer or to Art's-Way Manufacturing Co., Inc., Armstrong, Iowa, (712) 864-3131.

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Art's-Way Manufacturing Co., Inc. is continually making product improvements. In doing so, we reserve the right to make changes and/or add improvements to our products without obligation for the equipment previously sold.

Modifications to this Portable Grain Auger may affect the performance, function, and safety of its operation. Therefore, no modifications are to be made without the written permission of Art's-Way Manufacturing Co., Inc. Any modification made without the written permission of Art's-Way Mfg. Co. shall void the warranty of this product.

In the interest of continued safe operation of this Portable Grain Auger, pay particular attention to the safety alert symbol(s) throughout this Manual.

ART’S-WAY MANUFACTURING CO., INC. STATEMENT OF PRODUCT LIABILITY

Art's-Way Manufacturing Co., Inc. recognizes its responsibility to provide customers with a safe and efficient product. Art's-Way Manufacturing Co., attempts to design and manufacture its products in accordance with all accepted engineering practices effective at the date of design. This statement should not be interpreted to mean that our products will protect against the user’s own carelessness or failure to follow common safety practices nor will Art's-Way Manufacturing Co., be liable for any such act. In addition, Art's-Way Manufacturing Co. assumes no liability for any altered product or any modified product by users or anyone other than an authorized dealer.

IMPORTANT WARRANTY INFORMATION

The warranty for this Portable Grain Auger appears on page 5 of this manual. In order to establish proper warranty registration, the Warranty Registration must be completed and returned to the factory within 30 days. Failure to comply with this requirement may result in reduced warranty allowances.

LIMITATIONS OF THIS MANUAL

This manual contains operating instructions for your Portable Grain Auger only. Any mention of other machinery in this manual other than the Portable Grain Auger is for reference only. This manual does not replace nor is it to be used for any machinery that may be attached to or used in conjunction with the Portable Grain Auger.
PARTS & SERVICE

As the purchaser of your new Portable Grain Auger, it is very important to consider the following factors:

A. Original Quality
B. Availability of Service Parts
C. Availability of Adequate Service Facilities

Art’s-Way Manufacturing Co., Inc. has an excellent dealership network ready to answer any questions you may have about your Portable Grain Auger. Parts for your machine may be ordered through our dealers. When placing a parts order, please have the model and serial number ready. This will allow the dealer to fill your order as quickly as possible.

For your convenience, we have provided this space for you to record your model number, serial number, and the date of purchase, as well as your dealer’s name and address.

Owner’s Name: ______________________________________________________________________

Owner’s Address: _____________________________________________________________________

Purchase Date: _______________________________________________________________________

Dealership Name: _____________________________________________________________________

Dealership Address: ___________________________________________________________________

Dealership Phone No.: __________________________________________________________________

Machine Serial Number Location

The placard containing the serial and model number is located on the front left-hand side of the Portable Grain Auger.

Enter the serial number and model of your Portable Grain Auger within the space provided.

Figure 1 - Serial and Model Number Placard
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### GENERAL

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## ART’S-WAY MANUFACTURING CO., INC.

TECHNICAL MANUALS

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SAFETY FIRST

“A careful operator is the best insurance against an accident”

(National Safety Council)

Most accidents can be prevented if the operator:

- Fully understands how the machine functions
- Can anticipate situations which may produce problems
- Can make necessary corrections before problems develop

Figure 2 - Universal Safety Alert Symbol

The American Society of Agricultural Engineers has adopted the Universal Safety Alert Symbol as a way to identify areas of potential danger if the equipment is not operated correctly. Please be alert whenever you see this symbol in the manuals or on your auger.

Art’s-Way Manufacturing Co., Inc. strives to make our equipment as safe as possible. The Art’s-Way Portable Grain Auger conforms to applicable safety standards at the time of manufacturing. A safety conscious equipment operator makes an effective accident-prevention program complete.

Safety features and instructions for the portable grain auger are detailed in the Safety Guidelines section of this Operator’s Manual. It is the responsibility of the owner to ensure that all operators read and understand the manual before they are allowed to operate the portable grain auger. (Occupational Safety and Health Administration (OSHA) regulations 1928.57.)

NOTICES OF DANGER, WARNING, AND CAUTION

Signal Words: Note the use of signal words DANGER, WARNING, and CAUTION on the portable grain auger and in this manual. The appropriate signal word for each has been selected using the following guidelines:

<table>
<thead>
<tr>
<th>SIGNAL WORD</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Immediate and specific hazard which will result in severe personal injury or death if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Specific hazard or unsafe practice could result in severe personal injury or death if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>A reminder of good safety practices. Personal injury could result if proper procedures are not followed.</td>
</tr>
</tbody>
</table>
SAFETY GUIDELINES

Remember:
“The Best Operator is a Safe Operator”

CAUTION: BEFORE YOU ATTEMPT TO OPERATE THIS PORTABLE GRAIN AUGER, READ AND STUDY THE FOLLOWING SAFETY INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS. ART’S-WAY MFG. CO. PROVIDES GUARDS FOR EXPOSED MOVING PARTS FOR THE OPERATOR’S PROTECTION; HOWEVER, SOME AREAS CANNOT BE GUARDED OR SHIELDED IN ORDER TO ASSURE PROPER OPERATION. THE OPERATOR’S MANUAL AND DECALS ON THE MACHINE ITSELF WARN YOU OF DANGERS AND SHOULD BE READ AND OBSERVED CLOSELY.

CAUTION: SOME PHOTOGRAPHS USED HEREIN MAY SHOW DOORS, GUARDS AND SHIELDS OPENED AND REMOVED. BE SURE THAT ALL DOORS, GUARDS AND SHIELDS ARE FASTENED IN THEIR PROPER POSITION BEFORE MACHINE IS OPERATED.

BEFORE OPERATING

ELECTROCUTION HAZARD. The auger is not insulated. Keep away from overhead electrical wires and devices. Electrocution can occur without direct contact. FAILURE TO KEEP AWAY WILL RESULT IN SERIOUS INJURY OR DEATH.

Once in place, the auger should be anchored at the intake end and/or supported at the discharge end. The wheels should be chocked on both sides of auger and power source. Do not attempt to increase auger height by positioning wheels on lumber, blocks, or by other means.

DO NOT alter or mount additional weight to the portable grain auger in any way that will cause an imbalance or overload in the unit. An overload or imbalance situation may result in a mechanical or structural failure of the lifting mechanism.

DURING OPERATION

Maximum elevation is determined by interference between track car and auger structure. The operator MUST STOP RAISING the auger BEFORE track car reaches the end of the track. Continued lift will cause failure to the winch, lift cage, or auger supports, causing auger to collapse, resulting in SERIOUS INJURY OR DEATH.

On 12 and 14 inch (60 to 82 ft) driveline augers, the operator MUST STOP RAISING the auger BEFORE extending member is fully extended. Continued lift will cause failure of the winch, lift cable, or auger supports, causing the auger to collapse, resulting in SERIOUS INJURY OR DEATH.

Keep all shields in place during operation.

MAINTENANCE SAFETY

After doing any service work, be sure to replace all shields and guards.

When ordering parts, please specify part number, length, and diameter of auger, type of drive, and serial number.

HYDRAULIC SAFETY

Never check for hydraulic leaks using any part of the human body. Oil injection can occur causing serious injury.

TRANSPORTATION SAFETY

Always transport the auger in the full down position. The lift arm of the undercarriage should be seated against the down position stop with slight tension on the winch cable and at least five (5) complete wraps of cable around the winch drum.

Never allow persons to stand underneath or ride on the auger when it’s being transported.

Move the auger slowly into working position with towing vehicle and not by hand. Make certain everyone is clear of the work area.

UPENDING HAZARD – FAILURE TO FOLLOW THESE GUIDELINES MAY CAUSE UPENDING, WHICH MAY RESULT IN SERIOUS INJURY OR DEATH.

Never move the auger manually – use a vehicle.

Always have downward weight on the intake end of the auger.

Always test the downward weight before releasing the auger from the vehicle or holddown.

Always lift the intake slowly and keep it no higher than the tractor tow bar when attaching or releasing it.

Never push on the undercarriage.

Never move the auger with grain in the auger tube.

Always lower the auger to transport position before moving.
Operating and Safety Equipment

Caution: Become familiar with and know how to use all safety devices and controls before attempting to operate this equipment. Know how to stop the unit before starting it.

Art's-Way Mfg. Co. portable grain augers are designed primarily to convey grain to and from grain storage bins or buildings. This machine must have a break-in period with different operating conditions than for normal use. The tube and flighting must get a polished surface through use. Once the new auger has polished (some need 20 bushels and some need several hundred bushels) it will run smooth at recommended speed. Refer to Trouble Shooting on page 31.

During the break-in period, run the tractor at slow idle until the grain begins to flow from the discharge. For the first 500 bushels, operate at a slow speed and restrict the flow of grain at the intake. Gradually increase the speed until operating at full PTO speed. Do not run empty during break-in period.

After the break-in period, always operate at PTO speeds between 500 and 540 RPM (between 900 and 1000 RPM for some 12 inch models and 14 inch 55 ft and longer). Never run tractor at slow idle when full feeding the auger. Do not operate when empty as unnecessary wear occurs.
SAFETY LABEL LOCATION

Each portable grain auger has been produced and assembled with the operator’s safety in mind. As a reminder to the operator of proper operation of the machine, several labels of warning and instruction have been attached. Information on labels is, by necessity less than in the operator’s manual. Do not depend solely on the labels for safe and proper operation. Use your operator’s manual.

---

CAUTION: DO NOT REMOVE ANY OF THESE LABELS. THEY ARE FOR YOUR PROTECTION. TAKE NOTE OF THEIR MESSAGES AND OBSERVE.

CAUTION: PERIODICALLY CHECK ALL LABELS AND REPLACE ANY THAT ARE MISSING, WORN, OR ILLEGIBLE. WHEN REPLACING, CLEAN MACHINE SURFACE THOROUGHLY USING SOAP AND WATER OR CLEANING SOLVENT TO REMOVE DIRT AND GREASE. CONTACT YOUR DEALER OR ART’S-WAY MFG. CO. IF ANY LABELS ARE NOT UNDERSTOOD.

CAUTION: THE PORTABLE GRAIN AUGER WAS DESIGNED AS A PORTABLE GRAIN AUGER. DO NOT USE FOR OTHER PURPOSES.

CAUTION: REPLACE ALL WORN, DAMAGED, UNUSABLE OR MISSING SAFETY SHIELDS AND GUARDS. CONTACT YOUR DEALER.

CAUTION: CLOSE OR REPLACE ALL COVERS, DOORS OR SHIELDS BEFORE STARTING THE PORTABLE GRAIN AUGER!
SAFETY DECALS FOR PORTABLE GRAIN AUGERS

SD205536

SD205538

SD205535

SD205539

SD205533

SD205541

SD205540

SD205537

SD205534

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IMPORTANT NOTICES

An operator's manual is furnished with each auger. Additional or replacement manuals are available.

- Read and understand the operator's manual before operating this unit. Break-in period instructions, safety warnings, operating instructions and maintenance instructions are included in the manual.
- Initial break-in of the unit is extremely important. Before operating this unit, read and perform the break-in operating instructions.
- Do not run the auger empty for extended periods. Running empty for more than 20 seconds at a time may cause damage to the auger flight and/or tube.
- Do not operate at reduced PTO RPM when full feeding the auger. This will cause excessive stress on the auger and may result in excessive shear bolt failures and/or plugged auger and/or damage to the auger drive components.
- Avoid over feeding or plugging. Shear bolt failure indicates an overload on the auger. Verify that the correct PTO speed is maintained during maximum capacity. Wet grain requires more power. Restricting flow of wet grain at the intake may be necessary to prevent shear bolt failure.
- Avoid force-feeding the hopper. Do not open the grain gate on hopper bottom trailers fully causing a force-feed situation. Force-feeding will overload the hopper, causing possible damage to the hopper and/or auger.

DANGER

SHIELD MISSING OR OPEN
DO NOT OPERATE

467430

IMPORTANT

FOR 540 R.P.M. / P.T.O. OPERATION

121170

WARNING

HIGH PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on system before servicing.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all hydraulic components in good repair.
### Table 1 - PORTABLE GRAIN AUGER SAFETY DECALS

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD205536</td>
<td>Decal</td>
<td>WARNING: Do not operate the unit before reading the operator’s manual</td>
</tr>
<tr>
<td>SD205538</td>
<td>Decal</td>
<td>WARNING: Keep shield in place during operation</td>
</tr>
<tr>
<td>SD205535</td>
<td>Decal</td>
<td>DANGER: Electrocution hazard.</td>
</tr>
<tr>
<td>SD205533</td>
<td>Decal</td>
<td>DANGER: Contact with rotating flighting</td>
</tr>
<tr>
<td>SD205541</td>
<td>Decal</td>
<td>DANGER: Contact with moving parts may result in injury or death</td>
</tr>
<tr>
<td>SD205539</td>
<td>Decal</td>
<td>NOTICE: Use a 5/16 inch diameter Grade 2 bolt</td>
</tr>
<tr>
<td>SD205537</td>
<td>Decal</td>
<td>NOTICE: Do not operate when empty during break-in period</td>
</tr>
<tr>
<td>SD205540</td>
<td>Decal</td>
<td>NOTICE: Do not tow over 20 MPH</td>
</tr>
<tr>
<td>SD205534</td>
<td>Decal</td>
<td>NOTICE: Avoid over feeding</td>
</tr>
<tr>
<td>SD205629</td>
<td>Decal</td>
<td>IMPORTANT NOTICES: Operators Manual</td>
</tr>
<tr>
<td>467430</td>
<td>Decal</td>
<td>DANGER: Shield missing – Do not operate</td>
</tr>
<tr>
<td>121170</td>
<td>Decal</td>
<td>IMPORTANT: 540 PTO operation</td>
</tr>
<tr>
<td>268860</td>
<td>Decal</td>
<td>DANGER: Rotating Driveline – Keep away</td>
</tr>
<tr>
<td>346310</td>
<td>Decal</td>
<td>WARNING: Hydraulic pressure</td>
</tr>
<tr>
<td>* 146670</td>
<td>Decal</td>
<td>Grease gun Silhouette</td>
</tr>
<tr>
<td>* SD205631</td>
<td>Decal</td>
<td>STOP LIFT</td>
</tr>
<tr>
<td>* SD205624</td>
<td>Decal</td>
<td>Notice: Gear box must be checked for proper oil level</td>
</tr>
<tr>
<td>* SD205630</td>
<td>Decal</td>
<td>Damage right here</td>
</tr>
<tr>
<td>* Not shown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ASSEMBLY INSTRUCTIONS

8 AND 10 INCH (34 FT) AUGER

1. Clamp the intake cage to the tower tube. Be sure to have 1/2 inch clearance between the flight core and the bearing. Thrust load must be carried at the top of the auger.

2. Install track car onto the track (with the end containing the cable anchor towards the intake end of the auger) and install the 3/8 x 3/4 inch bolt in the end of the track.

3. Attach the brake winch to the mount on the underside of the lower tube using the 3/8 x 1 inch bolt, nut, and lock washer combination.

4. Add #90 gear lube to gear box until half full. The gear box is shipped dry from the factory.

5. Assemble the undercarriage, as follows:
   a. Attach the front support arms to the front undercarriage mount by sliding arms over the rod and inserting two (2) 3/16 x 1-1/2 inch cotter pins. Secure the arms by inserting a 1/2 X 1 inch bolt, nut, and lock washer combination into the cross bracing of the arms.
   b. Attach the rear support arms to the track car by using two (2) 3/16 x 1-1/2 inch cotter pins. Secure the arms by inserting a 1/2 x 1 inch bolt, nut, and lock washer combination into the cross bracing.
   c. Connect the rear arms to the front arms by lifting the auger tube, moving the rear arms until sleeves on all the arms line up. Slide the pivot rod through the arms and insert a 1 inch x 14 gauge bushing and a 1/4 x 2 inch cotter pin on each end of the rod.
   d. Connect the axle to the front arms, using two (2) 3/8 x 3-3/16 inch U-bolts for each of the front arms. Mount the wheels.

6. Fasten the lift cable to the anchor on the track car with two (2) cable clamps and fasten to the winch.

   NOTE: The winch must be aligned with cable so that the cable does not stack on one side of the drum. (See DANGER statement).

   DANGER: WINCH MUST BE ALIGNED WITH CABLE SO THAT THE CABLE DOES NOT STACK ON ONE SIDE OF THE DRUM. DO NOT ALLOW THE CABLE TO BECOME SLACK ON WINCH DRUM. THE CABLE MAY RECOIL AND SLIP OVER THE SIDE OF THE DRUM. IN EITHER CASE, THE CABLE WILL WIND ON DRUM SPINDLE AND CAUSE THE WINCH OR CABLE TO FAIL, ALLOWING AUGER TO DROP, WHICH MAY CAUSE PHYSICAL DAMAGE TO THE AUGER OR MAY CAUSE PERSONAL INJURY.

7. Mount the Owner’s Manual container to the driveline shield using two #10 self drilling screws. This provides storage for the Owner’s Manual.

8. See separate assembly instructions for the different drive packages.

9. Refer to the Safe Operating Instructions on page 7.

10. There are several decals on the portable grain auger and its attachments with safety instructions, read and understand these safety alerts before operating. Also read and understand the Owner’s Manual before operating.

11. Do not operate the auger empty during the break-in period. For the best results, do not full feed the intake for the first 500 bushels. After break-in, never run auger at slow idle when full feeding the auger.

10 INCH (62 TO 72 FT) AUGER

1. Lay the top and bottom auger tubes flat with the center joint spaced two feet apart. Mount the 4-bolt cast flange bearing onto the discharge end of the top tube using (4) 1/2 x 1-1/2 inch bolts and lock nuts.

2. Fasten the flighting assemblies together with two fine thread nuts and bolts. For the 10 inch (62 ft) model, fasten the flighting assemblies so that the lower assembly overlaps the upper assembly. For the 10 inch (72 ft) models, the upper and center assemblies are already connected, but the center and lower assemblies must be connected. Be sure that the lower assembly overlaps the center assembly.

3. Be sure the top and lower tubes are straight in line. Slide the tubes together and connect at flange rings using the 1/2 x 1-1/2 inch bolts and lock nut.

   NOTE: Do not fully tighten bolts in flange ring connection the first time. Work around the flange at least twice to gradually pull the connection together. Fully tightening the bolts on one side will pull the auger tubes out of alignment.
Attach the top end of the cable to the base of the 3rd truss using the truss anchor bar and the same bolt that holds on the top truss riser as shown below.

To string the trussing on 10-62 and 10-72 augers start with the first set of eyebolts attaching to the tube as shown above. Run the lower set of cables over the lower 2 truss risers as shown below.

String the 2nd set of cables starting with the eyebolts connecting to the anchor bar with the 90 degree bend in it and attaching it to the base of the first truss riser as shown (top left). String this cable through the top 2 truss risers and anchor it to the tube as shown above.
4. Assemble the truss risers, as shown, using two supports, two 3/8 x 1 inch bolts, and lock nuts, one cross brace, and two 3/8 inch x 1-1/4 inch bolts and lock nuts. Mount the truss riser assemblies on the mounts located on the tubes using a 3/8 x 1 inch bolts and lock nuts. Install the truss cables using two cable clamps and one cable thimble for each cable. Be sure to run the cables through the truss as shown. On the 10 inch (62 ft) models, install 4 upper cables. On the 10 inch (72 ft) models, install 2 lower cables and four upper cables.

5. Attach the drive section to the lower tube using the 1/2 x 1-1/2 inch bolts and lock nuts. Adjust the fighting discharge end shaft so the thrust is carried on the 4-bolt cast flange bearing by bottoming the fighting out on the splined shaft, then threading the 1-1/2 inch nut onto the fighting end shaft until finger tight. Then tighten the nut two more full turns. Do not let the fighting bottom out on the spline shaft at the intake end after adjustment. The thrust load must be carried at the discharge end of the auger. Tighten the set screw in the keyway to lock the nut. Attach the shield using two 3/8 x 3/4 inch bolts and lock nuts. Mount the truss cables using two cable clamps and thimble.

6. Remove the track stop bolt from the end of the track, install the track car onto the top end of the track, and then replace the track stop bolt prior to using the auger. Failure to do so could cause the auger to collapse. Install all items this step along with the following before tightening any bolts.
   a. Attach the rear lift arms to the track car using one 1/2 x 8 inch bolt, one nut, and two washers.
   b. Attach the front lift arms to the front undercarriage mount on the lower tube using one 5/8 x 1-1/2 inch bolt, bushing, washer, and nut for each arm.
   c. Install the cross-brace weldment using six 5/8 x 1-1/2 inch bolts and nuts. Leave the top hole on each side open.
   d. Connect the rear arms to the front arms and cross-brace weldment by lifting the auger tube, moving the rear arms so that the top holes on the cross-brace and the holes in the rear arms line up. Attach the rear arms using 5/8 x 2 inch bolt, bushings, washer, and nut for each arm.
   e. Attach the axle using six 5/8 x 1-1/2 inch bolts and lock nuts.
   f. Install the front cross-brace weldment using eight 1/2 x 1-1/2 inch bolts, and lock nuts.
   g. Install the two rear cross-braces using five 1/2 x 1-1/2 inch bolts and lock nuts.

7. Mount the wheels. Align the tube so that it’s centered over the undercarriage and tighten the bolts installed in Step 6. Tighten the bolts at each joint on the left and right side before going to the next joint to avoid the undercarriage pulling to one side by tightening all the bolts on one side first.

8. Mount the hydraulic worm winch onto the lower tube using 3/8 x 1 inch bolts and lock nuts. Loosen the set screw in the motor mount sleeve, rotate the motor about 90 degrees to install the hydraulic hoses (not furnished) and tighten the set screw. The hydraulic motor has two #10 O-rings (7/8 inch – 14 O-ring) female ports.

9. Attach the lift cable to the winch by feeding the cable into the top of the drum nearest the auger tube, making sure to have the cable extend a minimum of 2 inches past the cable keeper. The nuts for the cable keeper should be on the outside of the drum. Maintain at least 5 wraps on the drum.

   NOTE: Cable winch must be aligned with cable line so that the cable doesn’t stack on one side of drum. Thread the cable under the center track stop, around, and through the sheave in the track car, back past the center track stop, and fasten the cable to the tube by the tube splice with two cable clamps and thimble.

10. Attach the stop flags to the stop flag arms using the #10 x 3/4 inch screw and lock nuts. The lettering must face the auger tube when the arms are parallel to the tube. These flags will swing out when the track car approaches the end of the track.

   NOTE: The operator must stop raising the auger when these swing out (See DANGER statement near SAFE OPERATING INSTRUCTIONS and recommendations).

11. Remove the four bolts from the front of the gearbox. Be careful not to break the seal on the front of the gearbox. Install the poly implement end PTO shield and re-install the gearbox bolts. Attach the implement input drive (IID) to the lower gear box using a 1/4 inch key and 1/4 x 2-1/4 inch spiral pin. Tighten the set screw in the IID. Mount the IID support bracket to the drive section using 2-3/8 inch bolts and lock nuts. Use the rubber strap to support the IID for transport.

12. Install the hopper telescoping power shaft onto the gearbox in the hopper head using 3/8 x 3 inch bolt and self-locking nut. Be sure to mount the hopper power shaft with the outer half to the upper gearbox. Place the swing drive hopper on the pivot ring centered on the drive section pivot place. Secure the hopper to the drive section using four bushings, washers, and lock nuts. The hopper can be mounted on either side of the auger. Install the hopper telescoping power shaft onto the lower gearbox in the drive section using 5/16 x 3 inch Grade 2 bolts and self-locking nut. Close all access doors and keep in place during operation.
13. Attach the swing over arm to the mount on the lower tube using the 5/8 x 4-1/2 inch pin and securing with the 1/8 inch hairpin. Mount the hopper winch to the winch mount using the 3/8 inch x 1 inch bolt and lock nut. This winch can be mounted on either side of the auger. Thread the 3/16 inch x 35 ft hopper cable through the swing over arm and attach to the winch. The cable hook is attached to the hook located on the outside of the hopper for transporting.

14. Hitch the auger to the tractor and adjust the hitch so that the IID does not bottom out. Check for clearance as the auger is raising.

15. Refer to the Safe Operating Instructions on page 7.

16. There are several decals on the portable grain auger and its attachments with safety instructions, read and understand these safety alerts before operating. Also read and understand the Owner’s Manual before operating.

17. Do not operate the auger empty during the break-in period. For the best results, do not full feed the intake for the first 500 bushels. After break-in, never run auger at slow idle when full feeding the auger.

**12 INCH (72, 82, AND 92FT) AUGER**

One must use extreme caution when assembling this auger. Two (2) lifting devices (ie. Loader tractor, forklift, etc) are required as well as various wrenches and tools. Assemble the auger on a flat surface. Right, left, front, and back refer to looking at the auger from the intake end.

1. Set tubes approximately two (2) feet apart. Note the location and sequence of the tubes (ie. 30 and 40 ft) and bolt the flighting together, as shown below, with 1/2 x 3-1/2 inch fine thread bolt and lock nut and 3/8 x 7/8 button head screw and lock nut. Slide the tubes together and attach with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts.

   **NOTE:** Do not fully tighten bolts in flange ring connection the first time. Work around the flange at least twice to gradually pull the connection together. Fully tightening the bolts on one side will pull the auger tubes out of alignment.

2. Lay drive section assembly flat with flange joint spaced two (2) feet away from the center auger tube. Fasten the flighting assemblies together, as shown above, with 1/2 x 3-1/2 inch fine thread bolt, lock nut, 3/8 x 7/8 button head screw and lock nut. Fasten flighting assemblies so that the drive section flight overlaps the lowest flight assembly. Make sure tubes are straight. Slide drive section and tube together and connect at flange ring with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts.

3. Attach drop spout by sliding the flight shaft through the 1-1/2 inch bearing on the head. Connect drop spout to tube with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts. Align the female spline on the drive section flight with the male spline on the gearbox. Push flight toward the drive section until the splines bottom out on each other. Thread the 1-1/2 inch nut onto the flighting until finger tight. Tighten the nut two (2) full turns.

4. Assemble truss risers with 3/8 x 1 inch bolts and 3/8 inch lock nut. Ensure that the correct holes are being used for the correct tube size. Attach truss risers to tubes with 5/8 x 1-1/2 inch bolts and 5/8 inch lock nuts. Note proper truss mount location for each auger length shown on the next page. String truss cables and attach to tubes with 5/8 inch eyebolts and anchor bars. Preload the tubes by raising the discharge end four (4) inches. Tighten the nuts on the eyebolts until the discharge end raises slightly.

5. Lay out axle (on 82 and 92 ft) and attach left and right lower arms to axle with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts. Leave attaching hardware loose. **NOTE:** There are six (6) holes in the mount brackets. The 62 and 82 ft augers use the inside four (4) holes while the 72 and 92 ft augers use the outside four (4) holes. Attach cross braces to front arms (loose) with 5/8 x 2-1/2 inch bolts and lock nuts. Attach X-braces to front arms with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts. Working around the pattern at least twice, tighten the nuts on the bolts for front arms and cross braces in a cross pattern. Do not tighten the bolts fully the first time around.

6. Attach transport rest halves to the axle with 1/2 x 1-1/2 inch bolts and 1/2 lock nuts.

7. Attach top arm to lower arms with 1-1/4 x 3-3/4 inch pin, bushing, and 1/4 x 2 inch cotter pins.

8. Note location of undercarriage to tube connections. Attach top arm to tube support bracket with 5/8x2-1/2 inch bolts, 5/8 inch bushing, and 5/8 inch lock nuts. Attach front arms to axle and to tube with 5/8 inch x 2-1/2 inch bolts, 5/8 inch bushings, washers, and 5/8 inch lock nuts. Discharge end of auger may need to be raised or lowered to align holes for assembly. Attach cross brace to front arms with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts. Attach swing over arm to tube with 1/8 inch hairpin.

**CAUTION:** After the top tube is fastened to the center tube, the auger may overbalance with the discharge end falling to the ground unless restrained by a lifting device. Before removing lifting devices, anchor the intake end.
9. Mount the wheels on the hubs using the wheel bolts in the hubs. Valve stems should point away from the axle. There are 12 holes on each rim. Be sure to use the set of holes with the proper taper (i.e., Taper pointing in).

10. Attach base end of lift cylinder to top arm with 1-1/4 x 6-1/2 pin and 1/4 x 2 inch cotter pin. Attach hitch on drive section to tractor. Check tractor hydraulic reservoir to ensure proper oil level. Run hoses to tractor. Cycle cylinder full stroke at least four (4) times to ensure that the cylinder is full of oil and that air is purged from the system. Recheck tractor hydraulic reservoir for proper oil level. Attach rod end of cylinder to front arm with 1-1/4 x 4-7/8 inch pin and 1/4 x 2 inch cotter pin. Ensure that no one is near the auger, raise the auger all the way up, and then lower to transport position. Check for hose binding or stretching. Repeat the lift and lower operation.

11. Recheck the flighting thrust load. The thrust load must be carried at the discharge end of the auger. If the flight spline is bottomed out on the gearbox, turn the 1-1/2 inch nut until they are separated by approximately 1/8 inch. Tighten the set screw in the keyway to lock the nut. Tighten the bearing lock collar. Attach the shield with 3/8 inch lock nut.

12. Remove the four (4) bolts from the front of the gearbox. NOTE: Be careful not to break the seal on the front of the gearbox. Install the poly implement end PTO shield and re-install the gearbox bolts. Mount the implement input driveline (IID) shaft to the lower gearbox with 1/4 x 2-1/4 inch spiral pin. Tighten setscrew on IID. Mount the IID hanger with 3/8 x 1 inch bolts and lock nuts. Hang IID from hanger with rubber strap.

CAUTION: BEFORE REMOVING LIFTING DEVICES, ANCHOR THE INTAKE END. AT THIS STAGE OF ASSEMBLY, THE AUGER MAY OVERBALANCE AND DISCHARGE END WILL FALL TO THE GROUND.

13. Line up the hopper CV joint with the hopper discharge flighting and attach with 3/8 x 3 inch bolt and lock nut. Connect the hopper tube to the hopper body with 1/2 x 1-1/2 inch bolts, 1/2 inch lock nuts, and 1/2 inch flat washers. Attach the hopper access door. Install belting with 1/4 x 3/4 inch bolts, flat washers, and lock nuts. Mount hopper wheels with 3/4 x 8-3/4 inch pins and bushings.

14. Attach the hopper head assembly to tube with 1/2 x 1-1/2 inch bolts and 1/2 inch lock nuts.

15. Install bushings on the inlet pivot ring. Set hopper on drive section by putting discharge head into pivot ring and attaching with 1/2 inch lock nuts. Install the hopper power shaft between the gearboxes using 3/8 x 3 inch bolt and nut on top and 5/16 x 3 inch bolt and nut on the bottom. Note: Be sure to mount the hopper power shaft with the outer half to the upper gear box. The hopper can be mounted on either side of the auger. Close access door and keep in place during operation. Hopper height may be adjusted by removing hair pin (under hopper) from hopper wheel axle. Then remove hopper wheel axle from socket and reinstall in alternate socket.

16. Mount the winch to quick switch hopper winch mount using 3/8 x 1 inch bolts and 3/8 inch lock nuts. This winch can be mounted on either side of the auger. Thread the hopper lift cable through the swing over arm and attach to winch. The cable hook is attached to the hook located on the outside of the hopper for transporting. Raise and lower hopper to ensure proper operation. Attach the transport safety cable with 1/8 inch hairpin.

17. Adjust hitch on tractor. See page 24 for hitch adjustment.

18. Refer to the Safe Operating Instructions on page 7.

19. There are several decals on the portable grain auger and its attachments with safety instructions, read and understand these safety alerts before operating. Also read and understand the Owner's Manual before operating.

Do not operate the auger empty during the break-in period. For the best results, do not full feed the intake for the first 500 bushels. After break-in, never run auger at slow idle when full feeding the auger.
Most Art's-Way Mfg. Co. augers can be set up with a power take off drive. Some Art's-Way Mfg. Co. augers can be set up with a gasoline engine drive, electric motor drive, or hydraulic drive.

It is essential to inspect your drive before adding power and know how to shut down in an emergency. Whenever you must service or adjust your equipment, make sure you shut down and lock out your power source.

When a gasoline engine drive is used, fill with gasoline only when the motor is shut off and cool. Direct the exhaust pipe away from all flammable material. Do not run gasoline engine exhaust in a building where carbon monoxide could become a hazard.

For the electric motor driven auger, be sure all electrical cables are grounded, of the approved size, and meet all local electrical codes.

For most models you may purchase an additional auger drive to convert PTO drive to electric drive and vice-versa. Gas engine drive models cannot be converted.
**SHEAR BOLT**

When the specified size and grade of shear bolt shears, it is the operator’s warning that an extreme condition exists and that a reduction of flow into the hopper is necessary.

Do not replace with a higher grade of shear bolt. Using other than recommended grade shear bolt may result in damage to drive components.

<table>
<thead>
<tr>
<th>Model Description</th>
<th>Bolt Size and Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch (34 ft) models</td>
<td>5/16 inch x 2-1/2 inch Grade 2 shear bolt located at output of gear box.</td>
</tr>
<tr>
<td>8 inch (41 ft thru 72 ft) models</td>
<td>5/16 inch x 2-1/2 inch Grade 2 shear bolt located at output of gear box.</td>
</tr>
<tr>
<td>10 inch (34 ft thru 44 ft) models</td>
<td>5/16 inch x 2-1/2 inch Grade 2 shear bolt located at output of gear box.</td>
</tr>
<tr>
<td>10 inch (55 ft thru 60 ft) models</td>
<td>5/16 inch x 1-1/4 inch Grade 2 shear bolt located at shear clutch on implement input drivelines.</td>
</tr>
<tr>
<td>10 inch (66 ft and 76 ft) models</td>
<td>3/8 inch x 1-1/4 inch Grade 2 shear bolt located at shear clutch on Implement Input Driveline (IID).</td>
</tr>
<tr>
<td>12 inch (34 ft) models</td>
<td>5/16 inch x 2-1/2 inch Grade 2 shear bolt located at output of gear box.</td>
</tr>
<tr>
<td>12 inch (40 ft and 46 ft) models</td>
<td>3/8 inch x 1-1/4 inch Grade 5 shear bolt located at shear clutch on Implement Input Driveline (IID).</td>
</tr>
<tr>
<td>14 inch (40 ft) models</td>
<td>3/8 inch x 1-1/4 inch Grade 5 shear bolt located at shear clutch on Implement Input Driveline (IID).</td>
</tr>
<tr>
<td>12 inch (55 ft and longer) models with 540 RPM Input</td>
<td>3/8 inch x 1-1/4 inch Grade 5 shear bolt located at shear clutch on Implement Input Driveline (IID).</td>
</tr>
<tr>
<td>12 inch and 14 inch (55 ft and longer) models with 1000 RPM</td>
<td>5/16 inch x 1-1/4 inch Grade 5 shear bolt located at shear clutch on Implement Input Driveline (IID).</td>
</tr>
</tbody>
</table>
INTAKE SECTIONS

The intake is guarded to provide a deterrent from accidental contact with the rotating flighting. DO NOT STEP OR STAND ON THE INTAKE CAGE OR HOPPER. DO NOT OPERATE THE AUGER IF THE INTAKE GUARD HAS BEEN REMOVED. REPAIR OR REPLACE a damaged intake guard before operating. One pin removes the low hitch for use in hoppers and cramped areas.

CAUTION: DO NOT STEP OR STAND ON THE INTAKE SECTION. CONTACT WITH ROTATING FLIGHTING WILL CAUSE SERIOUS INJURY OR DEATH.

When the specified size and grade of shear bolt shears, it is the operator’s warning that an extreme condition exists and that a reduction of flow into the hopper is necessary.

Do not replace with a higher grade of shear bolt.

Using other then recommended grade shear bolt may result in damage to drive components.
WINCH AND CABLE

Always inspect the straps, rope, cable, and hook before each use. Never use strap, rope, or cable that is worn, frayed, or kinked. Never let anyone stand near or under any equipment being winched. Do not stand near the winch strap, rope, or cable because it can whip violently if it should break.

Read and understand all instructions before using product. Never allow anyone unfamiliar with the operating instructions to use this product.

If you cannot crank the winch with one hand, you are probably overloading the winch.

High forces may be created by the use of a winch thereby creating potential safety hazards.

Never let go of the handle until you are sure the ratchet pawl is properly set and supporting the load. If not, the handle can spin dangerously backwards. A clicking ratchet pawl when lowering the load will not support the load.

Winches that are equipped with a two-way ratchet pawl system allow the conveniences of being able to wind the line or strap onto either the top or bottom of the winch drum. IN NO CASE WILL THE RATCHET PAWL SYSTEM HOLD THE LOAD WHEN IT IS BEING LET OUT OR LOWERED.

This winch is not designed to be a human or equipment hoist and should never be operated when there are persons positioned on or under the load being moved.

The cable keeper or rope threading alone will not support the load. Never let the cable or rope all the way out. Always keep a minimum of five (5) complete wraps of the cable or rope around the drum hub.

On two speed winches make sure that the ratchet pawl is properly engaged to hold the load before attempting to change gears.

Failure to follow these instructions may result in serious injury and/or property damage.

Maintain at least five (5) full wraps of cable on the winch drum. Be sure cable has no kinks or sharp bends. Be sure cable clips are properly installed. Be sure that the cable on the winch is a diameter as furnished to support the load to be lifted.

Always inspect the cable before each use to make sure it is not damaged. Replace the cable if it is frayed or kinked.

Never permit anyone on or under the load that is being lifted.

Never stand alongside the winch cable or guide the cable with your hands. If the cable breaks, it can act as a whip and can inflict serious injury to anyone in the path of the cable.

FULTON K1051/KX1051 STANDARD WORK Winch

1. Apply automotive type grease to both the pinion and drum gear teeth and to the OD of drum bearings. Keep this light film of grease on gear teeth at all times.
2. Keep ratchet pawl pivot, bushings, and pinion threads lubricated with automotive engine oil at all times.
3. Check break friction disc for wear. If less than 1/16 of an inch thick, cracked, or broken, it should be replaced.
4. During each usage, check for proper ratchet operation as follows: When cranking cable in, a loud clicking sound should be heard. When cranking cable out, there is not clicking and the ratchet pawl should be fully engaged into the ratchet gear teeth.

FULTON K1550/KX1550 STANDARD WORK Winch

1. Apply automotive type grease to both the pinion and drum gear teeth and to the OD of drum bearings. Keep this light film of grease on gear teeth at all times.
2. Keep ratchet pawl pivot, bushings, and pinion threads lubricated with automotive engine oil at all times.
3. Check break friction disc for wear. If less than 1/16 of an inch thick, cracked, or broken it should be replaced.
4. During each usage, check for proper ratchet operation as follows: When cranking cable in, a loud clicking sound should be heard. When cranking cable out, there is not clicking and the ratchet pawl should be fully engaged into the ratchet gear teeth.

ART’S-WAY HYDRAULICALLY DRIVEN WORM Winch

A winch driven by a hydraulic motor is normally controlled by a valve in the tractor. Because of this situation, several additional warnings must be observed.

The winch must be aligned with the cable so that the cable does not stack on one side of the winch drum. Do not allow the cable to become slack on the winch drum. The cable may recoil and slip over the side of the drum. In either case, the cable will wind on the drum spindle and cause the winch or cable to fail, allowing the auger...
to drop, which may cause physical damage to the auger or may cause personal injury.

Always disconnect the hydraulic hoses from the tractor after the auger is raised or lowered to the desired position. Inadvertent movement of the hydraulic valve on the tractor may cause damage or personal injury.

Maximum elevation is determined by interference between track car and auger structure. The operator MUST STOP RAISING the auger BEFORE track car reaches the end of the track. Continued lift will cause failure to the winch, lift cable, or auger supports, causing auger to collapse, resulting in SERIOUS INJURY OR DEATH.

ON 12 and 14 inch (60 to 82 ft) driveline augers, the operator MUST STOP RAISING the auger BEFORE extending member is fully extended. Continued lift will cause failure of the winch, lift cable, or auger supports, causing the auger to collapse, which can result in physical damage and possible INJURY OR DEATH.

Never check for hydraulic leaks using any part of the human body. Oil injection can occur, causing serious injury.

Continued running of the winch after the auger is lowered to transport position may allow the cable to become totally loose. As a result, the cable may snarl or loop on the outside of the winch drum or wrap improperly (backwards), causing the cable to rub or catch on an object. Either situation could cause cable failure and collapse of the auger.

**Notice**

This winch is of a general purpose design and the load rating (2500 pounds) is based on an intermittent duty cycle. This winch is not designed to be a human hoist and should never be operated when there are persons positioned on or under the load being moved.

Feed cable over the top of the drum nearest the auger tube, through the hole and extend the cable a minimum of two (2) inches past the cable keeper. All nuts for the cable keeper must be on the outside of the drum.

**Lubrication**

Grease at the start of each season and every 25 cycles using common gun grease. Five grease zerk are located on the winch.

Never exceed the maximum rated capacity of 2500 pounds.

Maintain at least five full wraps of cable on the drum at all times.

Always inspect the cable before each use to make sure the cable is not worn, kinked, or frayed. These conditions are unsafe. Replace the cable immediately.

Be sure that the cable is strong enough to support the load to be lifted. Maximum cable size is 5/16 inch dia. 7 x 19 galvanized aircraft cable.

Never stand alongside the winch cable or guide the cable with your hands. If the cable breaks, it can act as a whip and can inflict serious injury to anyone in the path of the cable.

Never permit anyone on or under the load that is being lifted.

**Worm Winch Break-In**

If during the first few uses of the worm winch, the worm winch becomes very hot, stop and allow it to cool down before continuing. This is part of the normal break-in process.

Manual No. SD205153 - Issued June 2009
OPERATING INSTRUCTIONS

Art's-Way portable grain augers are designed primarily to convey grain to and from grain storage bins or buildings. This machine must have a break-in-period with different operating conditions than for normal use. The tube and flighting must get a polished surface through use. Once the new auger has polished (some need 20 bushels and some need several hundred bushels) it will run smooth at recommended speed.

1. Adjust the tractor hitch as shown on page 24.

2. It is essential to inspect your drive before adding power.

3. During the break-in period, run the tractor at slow idle until grain begins to flow from the discharge. For the first 500 bushels, operate at the slow speed and restrict the flow of grain at the intake. Gradually increase the speed until operating at full PTO speed. Do not run empty during break-in period.

4. After the break-in period always operate at PTO speeds between 500 and 540 RPM. Never run tractor at slow idle when full feeding the auger. Do not operate when empty as unnecessary wear occurs.

5. Do not open the grain gate on hopper bottom trailers fully as force-feeding may occur, causing an overload condition with possible damage to the unit.

6. Do not operate at slow PTO speed unless the flow of grain is also reduced. (Refer to the Trouble Shooting Section on page 31.)

7. After completing the transfer of grain, run the unit until the grain has been emptied from it.
MOVING INSTRUCTIONS

1. Connect the hydraulic hose to the tractor, raise/lower the auger to clear any obstructions.
2. Raise the hopper into transport position before moving the auger.
3. Remove the implement input drive (IID) from the tractor whenever moving the auger. Failure to do this every time may cause damage to the CV joint in the IID.
4. Only transport the auger in the fully down position.
5. Do not tow over 20 mph.
HITCH ADJUSTMENT FOR AUGERS WITH ROLLING HOPPERS

CAUTION: IT IS IMPORTANT TO ADJUST YOUR HITCH. THE ILLUSTRATION ABOVE IS YOUR GUIDE TO PROPER HITCH ADJUSTMENT. IMPROPER ADJUSTMENT CAN CAUSE DAMAGE AND/OR EXCESSIVE WEAR ON U-JOINT ASSEMBLIES.

NOTE: The shielding has been removed in the illustration for parts demonstration only. Install all shielding before operating the unit.

The tractor should be positioned to the auger so that the distance from the end of the tractor PTO shaft is 14 inches from the hitch pin. Use the tractor drawbar length adjustment. This is so the implement input driveline (IID) does not bottom out when the auger is raised to maximum position. Vertical adjustment is a trial and error process. The goal is to have an equal angle on the IID U-joints in the operating position.

The IID should be disconnected from the tractor while positioning the auger, otherwise physical damage may result to the IID or auger.

The result of improper hitch adjustment is breaking the ball inside the CV joint. Bending in excess of 50 degrees on the CV joint will also break the ball inside the CV joint. Constant angle applications require more frequent greasing. See page 27 for greasing procedures.

NOTE: 3/8 x 1.0 inch Grade 5 shear bolt is located on the implement input driveline. 5/16 x 3 inch Grade 2 shear bolt is located on the hopper input driveline.

CAUTION: USING OTHER THEN A SPECIFIED GRADE SHEAR BOLT MAY RESULT IN DAMAGE TO THE DRIVE COMPONENTS.
CYLINDER LIFT

12 Inch (72, 82, and 92 ft) commercial auger with rolling hopper is equipped with a hydraulic cylinder to provide lift.

Any settling of auger is due to hydraulic oil leaking past the cylinder piston. If the auger will not lower, dirt in the counterbalance valve may have blocked the piston from operating the valve. The “downside” of the counterbalance valve should be removed and cleaned.

Always disconnect the hydraulic hoses from the tractor after the auger is raised or lowered to the desired position. Inadvertent movement of the hydraulic valve on the tractor may cause damage or personal injury.

Never check for hydraulic leaks using any part of the human body. Oil injection can occur, causing serious injury.

Refer to page 20 for full details on the Fulton Winch.
MAINTENANCE

Proper maintenance on the auger means a longer life for the machine and a safer and more efficient operation.

**CAUTION: KEEP CHILDREN AWAY WHEN PERFORMING MAINTENANCE.**

**CAUTION: BEFORE PERFORMING ANY MAINTENANCE, ENSURE THAT POWER IS SHUT DOWN AND LOCKED OUT.**

**CAUTION: WHERE POSSIBLE, PERFORM MAINTENANCE WITH AUGER IN FULL DOWN POSITION.**

**CAUTION: REPLACE ALL SHIELDS.**

**GENERAL MAINTENANCE PROCEDURE**

We recommend the following steps for the general maintenance of this auger:

1. Observe the safety guidelines and checklist in this manual on a daily basis when auger is in use.
2. Check all operating, lifting and transport components. Replace damaged or worn parts before using auger.

**Intake Hopper Angle Drive**

Lubricate the angle-drive after every 8 hours of operation. Use high temperature grease.

NOTE: If the angle drive in hopper runs hot AFTER an appropriate break-in period, this may mean the angle drive is not properly aligned. To correct, first lock out power, then loosen bolts securing the angle drive and adjust or shim up until the flight can fairly easily be rotated by hand.

**Hydraulic Hose**

Check hose and hose coupler frequently for leaks, wear or damage. Replace if necessary. Use cardboard when searching for leaks.

**Lift Cable**

Check and replace if frayed or damaged. Make certain that cable clamps are secure.

**Cable Sheaves**

Oil sheave pins on lift cylinder twice a year.

**Truss Cables**

Adjust as needed to keep auger tube reasonably straight.

**Wheel Hubs**

Repack every two or three years with lithium based grease.

**Tire Pressure**

Check with a pressure gauge monthly or when pressure seems low. We recommend that pressure be maintained at 18 to 24 PSI (124 to 165 kPa).

**Hopper Lift Cable**

Check and replace if frayed or damaged.

**Hopper Lift Cable Pulleys**

Oil lightly several times a year for easier raising of hopper.

**Winch**

Keep a film of grease on gears. Occasionally oil the bushings, drum shaft and ratchet.

**Low Profile Hopper**

Frequently: Open door - then grease the bushings and the u-joints. Close door.

**PTO Driveline**

Lubricate all FIVE grease fittings regularly with good quality LITHIUM SOAP BASE E.P. GREASE meeting the NLGI #2 specifications and containing no more than 1% molybdenum disulfide. (Example: SHELL SUPER DUTY or EQUIVALENT)

Grease fittings No. 2 and 3 can be reached through hole in implement end portion of the driveline shield.

Grease fitting No. 4 can be reached through hole in center portion of the driveline shield.

The first lube interval should be 16-24 hours of operation after initial start-up, and then follow the schedule.
## Lube Recommendations

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>LOCATION</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 HRS.**</td>
<td>CROSS &amp; BEARING</td>
<td>1 PUMP</td>
</tr>
<tr>
<td>8 HRS.</td>
<td>TELESCOPING MEMBERS</td>
<td>4-8 PUMPS</td>
</tr>
<tr>
<td>8 HRS.**</td>
<td>CV BALL &amp; SOCKET</td>
<td>1-2 PUMPS</td>
</tr>
</tbody>
</table>

** Constant angle applications must have lube interval of 4 hours.

---

### Gear Box

The gear box is shipped dry. Use SAE No. 90 grease. For best results, maintain the gearbox at half (1/2) full.

<table>
<thead>
<tr>
<th>Driveline Augers</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch (34 ft)</td>
<td>18 oz</td>
</tr>
<tr>
<td>8 inch (41 ft thru 72 ft)</td>
<td>18 oz</td>
</tr>
<tr>
<td>10 inch models</td>
<td>18 oz</td>
</tr>
<tr>
<td>12 inch (34 ft thru 46 ft)</td>
<td>18 oz</td>
</tr>
<tr>
<td>14 inch (40 ft)</td>
<td>18 oz</td>
</tr>
<tr>
<td>12 inch (55 ft thru 82 ft)</td>
<td>74 oz</td>
</tr>
<tr>
<td>14 inch (55 ft thru 82 ft)</td>
<td>74 oz</td>
</tr>
</tbody>
</table>

Head drives and chain cases are serviced with all-purpose grease at the factory. Maintain the grease to just below the lower bearings. Add 1 pound of grease at the start of each season.

Implement Input Drivelines (IID) should be lubricated periodically.

---

### Servicing of Mechanical Drive Systems

#### Bottom Chain Drive

Keep drive chain tension adjusted to about 1/4" deflection by loosening the four bolts on lower bearing, then retighten. Oil chain frequently enough to keep film of oil on chain (this can be done through hole in top of sprocket shield). Replace sprocket shield after maintenance.

#### Universal Joint

Flip up safety discharge door and lubricate grease fitting in the u-joint every 8 hours of operation. Check setscrews and retighten if necessary.

#### Bearing

Lubricate grease fitting on lower flight bearing. Replace sprocket shield after maintenance.
ROLLING HOPPER LUBRICATION

**Rolling Hopper**

The CV joint in the hopper has three (3) grease zerks. Lubricate the IID every 4 hours with NLGI #2 E.P grease containing no more than 1 % molybdenum disulfide.

The hanger bearing in the hopper must be greased every 8 hours of operation with all-purpose grease.

The chain case, located at the end of the hopper, is serviced with all-purpose grease at the factory. Maintain the grease to just below the lower bearings. Add one (1) pound of grease at the start of each season.

**Internal Power Shaft**

12 inch commercial augers with rolling hoppers use a power shaft between the two gearboxes. The grease zerks need to be lubricated every 8 hours with NLGI #2 E.P grease containing no more than 1 % molybdenum disulfide.

**Gear Box**

The gearboxes are filled at the factory. Leakage may occur during shipment. Check lube level before using. Use SAE #90 grease. All 12 inch models take 12 oz in each gear box. For best results, maintain gear boxes at 1/2 full.

**Oil Level**

To check the oil level, remove the level plug located below. The oil should be level with the bottom of this opening. If more oil is needed, use SAE 80-90 grease.

**Oil Change Information**

The winch vent/fill and drain plugs are located as shown. Oil should be changed after the first 24 hours of operating time. Then the oil should be changed every 100 hours of operating time, or every six months, whichever comes first.
TRANSPORT

TRANSPORTING
When transporting the auger, remember to:

1. Ensure that all unauthorized personnel are clear of transport zone.
2. Be alert to overhead obstructions and electrical wires and devices. The augers have minimum clearances from 12 to 14 feet (3.66 m to 4.30 m), with auger hitch at 20 inches.
3. Do not transport auger at speeds greater than 20 mph (32 km/h).
4. Observe all regulations concerning marking, towing, and maximum width.
5. Equip the auger with the necessary lights where required by law.
6. Do not transport auger on slopes greater than 20 degrees.
7. Use extreme caution in turning and cornering when towing auger.

PRE-TRANSPORT
Before transporting auger:

1. Make sure the auger is in full down-position with PTO driveline disconnected from tractor. The lift-assist arm must be seated against the track and the trackshoe against the trackstop with slight tension on the lift cable.

2. Make sure that the hitch pin and safety chain are in place and secure. Place safety chain through clevis welded to auger hitch tube and bolt together before attaching to tractor.

3. Make sure that the intake feed hopper is raised into transport position and secured with saddle pin and hairpin.

4. Make sure that the swivel jack (on side of hitch) is in transport position and locked.

5. The transport tongue must be securely fastened to the intake cage before moving the auger.

6. Make sure some tension is applied to the lift cable during transport.
STORAGE

GOING TO STORAGE

To protect auger in storage during the off-season, perform the following:

1. Lower the auger to full down position with slight tension on the cable.
2. Lubricate all grease fittings per the maintenance section.
3. Inspect auger for damage and note any repairs required. Order replacement parts from your dealer.
4. Check tire pressure and inflate to 24 PSI (165 kPa).
5. Clean and re-lubricate the spline on PTO driveline. Cover PTO driveline with a plastic bag to protect it from the weather and place it in the transport saddle.
6. Tow auger to storage area. Park and chock wheels.

RETURNING TO SERVICE FROM STORAGE

To prepare auger for use after storage, perform the following:

1. Check tire pressure and inflate to 24 PSI (165 kPa) if necessary.
2. Tow auger to worksite, being mindful of electrical wires overhead.
3. Remove waterproofing from spline of PTO driveline and re-lubricate.
4. Replace any damaged parts and decals.
5. Conduct general maintenance procedure before using auger.
6. Before raising auger after storage, make certain cable is in good condition, replacing it if frayed or damaged. In addition, ensure that cable is properly seated in cable sheaves on lift cylinder and that cable clamps are secure.
TROUBLE SHOOTING

If the new auger is vibrating and "jumping up and down" the operator has violated the above "break in" rules and may already have damaged the auger. Once the new auger has polished (some need 20 bushels and some need several hundred bushels) it will run smooth at recommended speeds. After break in, run the tractor PTO at 540 RPM (1000 RPM for some 12 inch models and 14 inch 55 ft and longer) to obtain the required flighting speed for near capacity.

Plugging. Grain build-up under the spout from an over-filled bin should cause the relief discharge to open. Snow or ice mixed with grain during difficult harvest seasons can cause the relief discharge to freeze and fail to function. Check this frequently when operating under such conditions.

Plugging can occur when overfeeding the intake with slow auger flighting speed. This permits the flights to overfill. Refer to Trouble Shooting No 1. Plugging can also be caused by foreign objects (such as rags, sacks, cans, etc.) which go part way up the tube and wedge between the flights. This can restrict or completely stop the flow of grain.

When the flighting will not turn:

If no foreign object is present
If the bin is not over-filled
If the grain is dry

You should remove the flighting and check it. Also check the flighting connection for damage (on 34 ft through 82 ft models) to be sure the lower half flighting laps the upper half flighting. Refer to the diagram on the assembly instructions.

A rare and unexplainable plugging can occur when temperatures, humidity, and moisture contents of the grain reach a certain level, along with ice or snow. Under these conditions, sometimes the auger will freeze. Then placing in an environment above 32° F (0° C) may loosen the auger. Most of the time the auger plugs due to these conditions. It plugs so tight you may damage the auger clearing it. Pliers, pipe wrenches, chains, and patience are necessary to clear the machine. Problems seem to be greater when operating in snow or ice. The only solution seems to be by limiting intake by covering some of the intake cage.

Plugging can occur in a situation like removing grain (wet or dry) from a full bin or a deep pit, causing force feeding, and creating an overload. This situation becomes more apt to cause problems when auger flighting speed is very low, permitting the flights to over-fill.

A shear bolt is used to prevent damage to the auger. A shear bolt, like a slip clutch, works well when a shock load is transmitted. Many times when an auger plugs, the build-up is slow and smooth and sometimes damage can be done before the bolt shears. There is also the possibility of the coupler by the gear box on the shaft so tight the bolt does not have a chance to shear. Refer to page 18 for location and grades of the shear bolts.

If you hear any unusual noises after the initial break-in period, you should remove the flighting and inspect it. It is easy to remove the flighting. Simply remove the cross pin (visible through discharge spout), remove the intake cage guard and tow hitch, and take the flight out of the intake end. Be sure to replace the intake guard before operating the auger again.

If power requirements seem excessive, check the line voltage and ampere rating of the motor or speed of the gasoline engine. Refer to assembly instructions for proper pulley size on motor, gasoline engine, and auger. A partially plugged auger will require excessive amounts of horsepower.

Grease working out of bearings on the driveline is nothing to be concerned about, and will stop when excess has worked out. Grease working out of enclosed head drive is a small amount of liquid that separates from the all-season gun grease. The grease needed for lubricating will remain in the case.

Capacity problems. Extreme conditions will reduce capacity. The degree of angle, moisture content, and speed of flighting are the main factors. Dirty grain or high moisture grain will not flow as well and is usually restricted some by the intake guard, thus reducing the capacity substantially.

Do not run the auger when empty, as unnecessary wear occurs.
TORQUE SPECIFICATIONS

Use these torque values when tightening hardware (excluding: locknuts, self-tapping, thread forming, and sheet metal screws) unless specified.

All torque values are in lb-ft except those marked with an asterisk (*) which are lb-in. For metric torque value Nm, multiply the lb-ft or lb-in value by 0.113.

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<th></th>
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<tr>
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<td>20&quot;</td>
<td>15&quot;*</td>
<td>31&quot;</td>
<td>23&quot;*</td>
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<td>43&quot;</td>
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<td>75&quot;*</td>
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<td>540</td>
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<td>900</td>
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<td>270</td>
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<td>710</td>
<td>530</td>
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<td>117.5</td>
<td>223.5</td>
<td>165.5</td>
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</tr>
</tbody>
</table>
TIGHTEN HYDRAULIC FITTINGS

**CAUTION:** ESCAPING FLUID UNDER PRESSURE CAN PENETRATE THE SKIN CAUSING SERIOUS INJURY. RELIEVE PRESSURE BEFORE DISCONNECTING HYDRAULIC OR OTHER LINES. TIGHTEN ALL CONNECTIONS BEFORE APPLYING PRESSURE. KEEP HANDS AND BODY AWAY FROM PIN HOLES AND NOZZLES WHICH EJECT FLUIDS UNDER HIGH PRESSURE. USE A PIECE OF CARDBOARD OR PAPER TO SEARCH FOR LEAKS. DO NOT USE YOUR HAND.

**Tightening Flare Type Fittings**

Check flare and flare seat for defects that might cause leakage.

Align hose end with fitting before tightening.

Lubricate connection and hand tighten swivel nut until snug.

To prevent twisting the hose, use two wrenches. Place one wrench on the hose end body and with the second wrench, tighten the swivel nut to the torque shown in this chart.

<table>
<thead>
<tr>
<th>Tube Size OD (in.)</th>
<th>Nut Size Across Flats (in.)</th>
<th>Torque Value* (Nm)</th>
<th>Recommended Turns To Tighten (After Finger Tightening)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>7/16</td>
<td>8 6</td>
<td>1 1/6</td>
</tr>
<tr>
<td>1/4</td>
<td>9/16</td>
<td>12 9</td>
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</tr>
<tr>
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<td>5/8</td>
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<td>1</td>
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<td>1 1/6</td>
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<td>3/4</td>
<td>1-1/4</td>
<td>102 75</td>
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<tr>
<td>7/8</td>
<td>1-3/8</td>
<td>122 90</td>
<td>3/4 1/8</td>
</tr>
</tbody>
</table>

**Tightening O-Ring Fittings**

Inspect O-ring and seat for dirt or obvious defects.

On angle fittings, back the locknut off until washer bottoms out at top of groove.

Hand tighten fitting until backup washer or washer face (if straight fitting) bottoms on face and O-ring is seated.

Position angle fittings by unscrewing no more than one turn.

Tighten straight fittings to torque shown.

<table>
<thead>
<tr>
<th>Tube Size OD (in.)</th>
<th>Nut Size Across Flats (in.)</th>
<th>Torque Value* (Nm)</th>
<th>Recommended Turns To Tighten (After Finger Tightening)</th>
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</thead>
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<tr>
<td>3/8</td>
<td>1/2</td>
<td>8 6</td>
<td>2 1/3</td>
</tr>
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<tr>
<td>1/2</td>
<td>5/8</td>
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<td>7/8</td>
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<td>1</td>
<td>62 46</td>
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<td>2-1/8</td>
<td>217 160</td>
<td>1/2 1/12</td>
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</tbody>
</table>

NOTE: Torque values shown are based on lubricated connections as in reassembly.
SPECIFICATIONS

GENERAL

Model
8 inch (34, 41, 46, 55, 60, 66, and 72 ft length)
10 inch (34, 44, 55, 60, 66, and 76 ft length)
12 inch (34, 40, 46, 55, 60, 66, 72, 76, and 82 ft length)
14 inch (40, 55, 66, 76, and 82 ft length)

Height
8 inch – 21 ft to 50 ft
10 inch – 23 ft 6 inch to 49 ft 6 inch
12 inch – 21 ft to 55 ft 10 inch
14 inch – 26 ft 8 inch to 55 ft 10 inch

Power Source
PTO Drive
Gas Drive – 8 inch (34 ft) and 10 inch (34 ft)
Electric -
Hydraulic – 8 inch (34 ft) and 10 inch (34 ft)

Capacity
8 inch –
10 inch –
12 inch – Up to 6,000 bph (dry corn)
14 inch – Up to 9,000 bph (dry corn)

SAE Bolt Identification
Identification of SAE Bolt Grades; Head Markings

- Grades 0, 1, and 2 - No markings
- Grade 5: 3 radial dashes 120° apart
- Grade 8: 6 radial dashes 60° apart
NOTES
ART’S-WAY MANUFACTURING CO., INC.
TECHNICAL MANUALS

Manuals are available from your local dealer or Art’s-Way Manufacturing Co., Inc. for the operation, service, and repair of your machine. For prompt convenient service, contact your local dealer for assistance in obtaining the manuals for your machine.

Your local dealer can expedite your order for operator manuals, illustrated parts catalogs, service manuals, and maintenance records.

Always give the Machine Name, Model, and Serial Number so your local dealer can provide the correct manuals for your machine.

Art’s-Way Manufacturing Co., Inc. reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

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