
Art's-Way Manufacturing Co., Inc.

Model S/N 233105+
U-II Pickup Reel

Operator's Manual & Illustrated Parts List
620680

Issued April 2016



This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about your safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.

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:

GIVE INSTRUCTIONS TO THE OPERATOR ON SAFE AND CORRECT USE OF THE MACHINE.

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.
4. 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 U-II Pickup Reel. 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 U-II Pickup Reel. 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 U-II Pickup Reel.

Even if you are an experienced operator of this or similar equipment, we ask that you read this manual before operating this U-II Pickup Reel. 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, 50514, (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 U-II Pickup Reel 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. Inc. shall void the warranty of this product.

In the interest of continued safe operation of this U-II Pickup Reel, 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 U-II Pickup Reel appears on page 6 of this manual. In order to establish proper warranty registration, the Warranty Registration must be completed and returned to the factory. Failure to comply with this requirement may result in reduced warranty allowances.

LIMITATIONS OF THIS MANUAL

This manual contains operating instructions for your S/N 233105+ U-II Pickup Reel only. Any mention of other machinery in this manual other than the S/N 233105+ U-II Pickup Reel 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 S/N 233105+ U-II Pickup Reel.

PARTS & SERVICE

As the purchaser of your new Reel, 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 Reel. 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.



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LIMITED WARRANTY FOR NEW ART'S WAY MANUFACTURING CO. FARM MACHINERY (U.S. ONLY)

- A. GENERAL PROVISIONS:** Art's Way Manufacturing Co., Inc. (Art's Way Mfg.) warrants the products it sells to be free from defects in material and workmanship for the periods of time set forth in the Warranty Table below. Art's Way Mfg. obligation and liability under this limited warranty, is to repair or replace (at Art's Way Mfg. option) any part(s) that upon manufacture were defective in material or workmanship. Warranty service shall be performed by an authorized Art's Way Mfg. dealer or authorized service center and will be completed using Art's Way Mfg. supplied parts. Parts supplied by Art's Way Mfg. are shipped F.O.B. Art's Way. The original purchaser shall be responsible for service calls and transportation of the farm machinery to and from their dealer or service center. The original purchaser is also responsible for any expedited repair charges (i.e., overtime and "next day air" deliveries) requested by the original purchaser. The original purchaser is also responsible for any repair service, parts, and labor on repairs made to the farm machinery at the time the warranty service was being performed.
- B. SECURING WARRANTY SERVICE:** The original purchaser must (1) contact their authorized dealer and report the break-down. (2) The authorized dealer shall provide objective evidence of the farm machinery's warranty status to Art's Way Mfg. (3) The authorized dealer shall provide all documentation to Art's Way Mfg. which supports that the farm machinery was thoroughly inspected prior to set-up and delivery to the original purchaser. (4) The original purchaser shall make the farm machinery available to their Art's Way Mfg. authorized dealer and/or Art's Way Mfg. authorized service center within 30 days of the reported break-down. All parts or assemblies replaced under the limited warranty must be held for inspection for ninety (90) days, or until credit has been issued, or a claim has been returned to a dealer. When a claim is returned to a dealer with instructions to return and/or hold the part(s) for inspection, parts must be handled as instructed or the claim may be denied.
- C. SPARE PARTS WARRANTY:** Art's Way Mfg. warrants that it will replace or repair (excluding labor) as Art's Way Mfg. elects, without charge, any genuine spare part purchased from Art's Way Mfg. which is defective in material or workmanship within ninety (90) days of the date of installation. This warranty applies to parts that, in Art's Way Mfg. judgement, prove to be defective in either material or workmanship. All parts to be shipped F.O.B. Art's Way Mfg. All spare parts replaced under the spare parts warranty must be held for inspection for ninety (90) days or until credit has been issued, or a claim has been returned to a dealer. When a claim is returned to a dealer with instructions to return and/or hold the part(s) for inspection, parts must be handled as instructed or the claim may be denied.
- D. LIMITATIONS:** Art's Way Mfg. Limited Warranty does not extend coverage to product being used in a commercial application (i.e. rented equipment). Art's Way Mfg. Limited Warranty does not extend to parts and elements not manufactured by Art's Way Mfg., and which carry the warranty of another manufacturer. Art's Way Mfg. makes no other warranty expressed or implied and makes no warranty of merchantability or fitness for any particular purpose beyond that expressly stated in this warranty. Art's Way Mfg. liability is limited to the terms set forth in this warranty and does not include any liability for direct, indirect, incidental or consequential damages or expenses of delay and Art's Way Mfg. liability is limited to the repair and replacement of defective parts as set forth herein. Any improper use and/or maintenance, including operation after the discovery of defective or worn parts, operation beyond the rated capacity, substitution of parts not approved by Art's Way Mfg. or any alteration or repair by others than the authorized Art's Way Mfg. dealer or authorized service center which affect the product materially and adversely, shall void the warranty. No dealer, employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Art's Way Mfg. Some states do not allow limitations on how long an implied warranty lasts or exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you the specific legal rights, and you may have other rights that vary from state to state.

NOTE: As of April 1, 2015, all previously distributed information concerning the limited warranty coverage of any Art's Way Manufacturing Company, Inc. manufactured product is to be considered null and void and replaced by this document.

Art's Way Mfg. Farm Machinery	Warranty Coverage
Grinder / Mixer – Model 6520, 6530, 6140, 6105, and Portable and Stationary equipment	1 (one) Year from Date of Delivery to Original Purchaser
Manure Spreader	1 (one) Year from Date of Delivery to Original Purchaser
Graders and Land Planes	1 (one) Year from Date of Delivery to Original Purchaser
Beet Harvesting Machinery	1 (one) Harvest Season from Date of Delivery to Original Purchaser
Shredders – Model 180C and 240C	1 (one) Year from Date of Delivery to Original Purchaser
Plows	1 (one) Year from Date of Delivery to Original Purchaser
Forage Blowers – Model 1060 and 2060	1 (one) Year from Date of Delivery to Original Purchaser
Forage Boxes/Receivers – Model 5300 and 1250	1 (one) Year from Date of Delivery to Original Purchaser
Rakes	1 (one) Year from Date of Delivery to Original Purchaser
Dump Boxes	1 (one) Year from Date of Delivery to Original Purchaser
Augers	1 (one) Year from Date of Delivery to Original Purchaser
Running Gear	1 (one) Year from Date of Delivery to Original Purchaser
Snow Blowers	1 (one) Year from Date of Delivery to Original Purchaser
Harvester Reel	1 (one) Year from Date of Delivery to Original Purchaser

SAFETY FIRST

SAFETY INSTRUCTIONS

"A careful operator is the best insurance against an accident." Quote from the National Safety Council.

Most accidents can be prevented if the operator:

1. Fully understands how the machine functions.
2. Can anticipate situations which may produce problems.
3. Can make necessary corrections before problems develop.

**THIS SYMBOL MEANS ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**



- 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 Reel.

Art's-Way Manufacturing Co., Inc. strives to make our equipment as safe as possible. The Art's-Way S/N 233105+ U-II Pickup Reel 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 Reel 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 U-II Reel. (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 Reel and in this manual. The appropriate signal word for each has been selected using the following guidelines:

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

SAFETY INSTRUCTIONS

Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

Note: Contains additional information important to a procedure and will be found within the regular text body of this manual.

GENERAL

SAFETY INSTRUCTIONS

Most work related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you operate and maintain the U-II Reel you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly procedure.

Improper operation and/or maintenance of this unit could cause a dangerous situation that results in injury or death.

Do not use this unit until you read and understand the information contained in this manual. Do not use this equipment for anything other than its intended purpose.



Safety precautions and warnings are provided in this manual and on the unit. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

Art's-Way Manufacturing Co., Inc. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product are, therefore, not all-inclusive. If a method of operation not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and can change at any time.

Safety Alert Symbols



death.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or

This manual contains DANGERS, WARNINGS, CAUTIONS, NOTICES, SAFETY INSTRUCTIONS, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers attention to potential hazards.

Hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as "DANGER", "WARNING", or "CAUTION".

SAFETY INSTRUCTIONS

Remember:

"The Best Operator is a Safe Operator"

CAUTION



Read and understand the operator's manual and all the safety decals before operating the Reel. Review all safety instructions with all operators annually.

BEFORE OPERATING

SAFETY
INSTRUCTIONS

Do not wear loose fitting clothing as it may catch in moving parts.



Make sure all guards and shields are installed, including the tractor power take-off (PTO) master shield, before starting or operating the Reel.



Be sure that the correct implement driveline parts are used and that they are properly secured.

Lower the lifter wheels when the Reel is not in use.

Install safety chain when attaching the Reel to the tractor.



Clear the area of bystanders, especially children, when making repairs, adjustments, or performing maintenance on the Reel.



Do not allow riders.

Put all tractor and machine controls in “neutral” and disengage the PTO before starting. Follow the starting instructions according to the OEM tractor manual.



Operate the Reel only while seated on the tractor seat.



Make sure the unit is adequately supported with safety blocks or safety stands when changing tires or performing maintenance.

DURING OPERATION

CAUTION



Entanglement Hazard
Keep hands, feet, hair, and clothing away from moving parts. Wait for all movement to stop before approaching equipment. Before making adjustments:

1. Shut off the tractor,
2. Set parking brake,
3. Put machine in neutral, and
4. Remove key while making adjustments.



Keep all shields and guards in place and in good working condition.



Keep all bystanders, especially children, away from the Reel while in operation.



Do not allow riders while the Reel is in operation.



Do not attempt to unclog, clean, or adjust the Reel while it is running.



Stay away from overhead power lines. Electrocution can occur even without direct contact.



Keep all hydraulic lines, fittings, and couplers tight and free of leaks. (Refer to Safety Guidelines – Hydraulic Safety).



Use caution when ascending or descending on the Reel. Wet shoes or boots are slippery.

MAINTENANCE SAFETY

SAFETY
INSTRUCTIONS

Follow all operating, maintenance, and safety instructions found in this Manual.



Before servicing, adjusting, repairing, or unclogging the machine, always make sure the tractor engine is stopped, key in your pocket, the machine is lowered to the ground, all controls are placed in neutral, the parking brake is set, and all the moving parts have stopped.



Use sufficient tools, jacks, and hoists that have the capacity for the job.



Use support blocks or safety stands when changing tires or performing maintenance.



Follow good shop practices of keeping the service area clean and dry, and use adequate light for the job at hand.



Before applying pressure to the hydraulic system, make sure all lines, fittings, and couplers are tightly secured and in good condition.



Make sure all shields/guards are in place and properly secured when performing maintenance.

HYDRAULIC SAFETY

SAFETY INSTRUCTIONS

Follow all operating, maintenance, and safety instructions found in this Manual.

Make sure components in the hydraulic system are kept clean and in good working condition.



Relieve pressure from the hydraulic system before servicing or disconnecting from the tractor.



Keep all hydraulic lines, fittings, and couplers tightly secured and free of leaks.



Replace any worn, cut, abraded, flattened, or crimped hoses.



Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or cement. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.



Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to identify and isolate a leak. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop if hydraulic fluid penetrates the surface of the skin.



Before applying pressure to the system, make sure all components are tight and that the hydraulic lines, hoses, and couplings are not damaged.

TRANSPORTATION SAFETY

SAFETY INSTRUCTIONS

Follow all operating and safety instructions found in this manual when transporting this equipment.

Make sure the Reel complies with all local regulations regarding transporting equipment on public roads and highways.



Make sure the Slow Moving Vehicle (SMV) emblem and all lights and reflectors required by local highway and transportation authorities are properly in place, clean, and clearly visible to traffic.



Do not allow riders on any machinery during transport.

Make sure the Reel is securely attached to the tractor and install a safety chain to the Reel.

Make sure the tractor brake pedals are latched together.

Do not exceed 20 mph (32 km/h) when transporting the Reel. Always reduce speed on rough roads and surfaces, or when going down inclines.

Use caution when turning and always use the turn signals on the tractor to indicate your turning intentions to the other traffic.

The weight of the trailed machine should NEVER exceed the weight of the towing vehicle.

Check all clearances carefully whenever the machine is towed.

Lower the elevator into the transport position before transporting the Reel on the highway.



Stay away from overhead obstructions and power lines during transport. Electrocution can occur even without direct contact.

STORAGE SAFETY

SAFETY INSTRUCTIONS

Follow all operating and safety instructions found in this manual when storing this equipment.



Store the Reel in an area away from human activity.



Do not permit children to play on or around the stored machine at any time.

Make sure that the Reel is stored in an area with a firm and level base to prevent the machine from tipping or sinking into the ground.



Block the wheels to prevent the machine from rolling.

TIRE SAFETY**SAFETY
INSTRUCTIONS**

Follow all operating and safety instructions found in this manual when working around tires.

Have only a qualified tire dealer or tire repair service perform tire repairs.

Do not attempt to install a tire on a wheel or rim unless you have the proper equipment and experience to do the job.

Do not substitute tires with a lesser road rating and/or capacity for the original equipment tires.

⚠ WARNING

Explosive Force Hazard
Tire replacement, repair, and/or maintenance should be done by a qualified tire dealer or qualified repair service.

Failure to follow proper procedures when installing a tire on a wheel or rim can produce an explosive force that will result in serious injury or death.

Do not attempt to install a tire without proper equipment and experience to perform the job.

ASSEMBLY SAFETY**SAFETY
INSTRUCTIONS**

Follow all assembly, operating, and safety instructions found in this manual when assembly this equipment.



Use adequate manpower to perform assembly procedures safely.

Assemble the Reel in an area with sufficient space to maneuver the largest components and allow easy access to all sides of the machine.



Use only forklifts, lift cranes, jacks, and tools with sufficient capacity for the loads.



Do not allow spectators, especially children, in the working area.

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OPERATOR'S INSTRUCTIONS: U-II REEL

SAFETY PRECAUTIONS

These instructions cover the U-II Pickup Reels used on grain and rice Combine headers and draper type Swather headers.

Five-bat Reels are available for draper type Swather headers. Six-bat Reels are available for grain or rice Combine headers.

Reels may be equipped for mechanical or hydrostatic drive by installing the appropriate stub drive in the Reel center shaft. Double end drive may be achieved by installing stub shafts in both ends of the Reel center shaft.

BE CAREFUL: when cutting the steel bands or straps used to pack the reel bundles for shipping. Use heavy-duty work gloves and the proper band cutters. Keep face and body clear when cutting bands to avoid possible injury as the bands spring outward when cut.

PARTICULAR CARE: must be taken at all times when handling reel bats due to the projection of tines, to avoid personal injury and injury to personnel in the vicinity.

PARTICULAR CARE: must be taken when approaching the reel, or when in the vicinity of the reel, after it is assembled and mounted on the reel arms of the Combine (or Swather) to avoid accidental contact with the tines. If careless, the tines can be particularly hazardous to the eyes and face.

FOR EXTRA SAFETY: it is recommended that safety glasses or goggles be worn when assembling or working in the vicinity of the reel.

MAKE SURE: no one is allowed to crawl under, climb over, or through, the reel assembly when it is mounted on the header. See following "Special Safety Note".

SPECIAL SAFETY NOTE

It is STRONGLY RECOMMEND-ED that the reel bats be removed from the reel assembly whenever: Any repair or maintenance is required on the header in the vicinity of the reel. | The reel is to be removed from the Combine (or Swather). | The reel is to be out of use for a considerable time.

OBSERVE ALL SAFETY PRECAUTIONS DETAILED IN THE COMBINE OR SWATHER OPERATOR'S MANUAL WHEN ASSEMBLING AND/OR OPERATING THE REEL.

NOTE: Reference to left-hand and right-hand, used throughout these instructions, refers to position standing behind header (assuming the reel is installed) and facing toward the front.

ASSEMBLY

CONTROL RINGS & CENTER TUBE

The control ring assemblies are reversed and mounted to the center tube for shipping purposes only. Remove the control ring assemblies from the center tube, and set them aside for installation later. Remove the center tube from the shipping bundle.

FIG. 1

The components of the control ring assemblies are identical for the left and right sides. However, the left and right rings are assembled on their support rollers differently. Arrows, 1, are cast into the control rings, 2, to indicate the direction of Reel rotation. The control ring mechanisms must be installed onto the center tube with the arrows pointing in the direction of Reel rotation.

IMPORTANT: Failure to observe the rotation direction of the control rings will allow the reel bats to rotate "overcenter" during operation. This causes the Reel to operate with a jerking motion and eventually "lock up".

NOTE: The center tube is not directional. Either end of the center tube may be used as the reel drive end.



Figure 1 - Control Ring Assembly.

FIG. 2

Install one 2" (51 mm) inside diameter flat washer, 1, onto the hollow shafts at both ends of the center tube, 2. Install the left and right control ring assemblies with a polymer liner, 3, in each end of the control plate tube, onto the center tube shafts. The decals and control cam clamp brackets should be located away from the reel center tube.

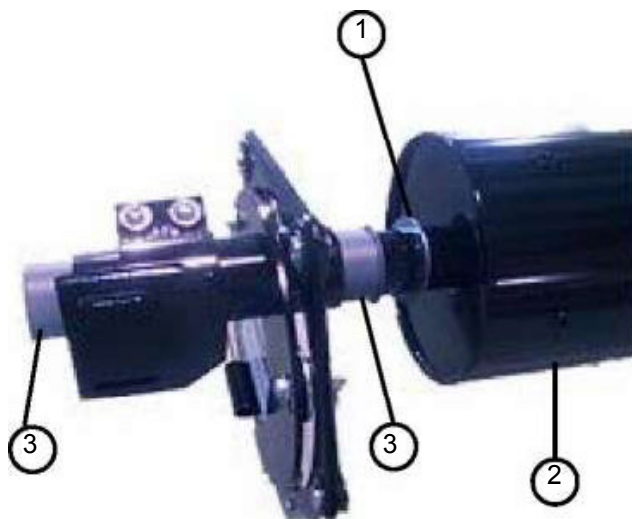


Figure 2 - End Center Tube Assembly.

FIG. 3

At both ends of the reel, install another 2" (51 mm) diameter flat washer, 1, onto the center tube shafts.

Install the reel drive stub shaft, 2, into the center tube shaft at the drive end of the Reel (both ends for double end drive). Retain the control ring assemblies and stub shaft(s) to the center tube by installing a 1/2" x 2" (51 mm) spring pin, 3, through the holes in the hollow center tube shafts and stub shaft(s). Through the center of the spring pin, insert a 1/4" x 2-1/2" hex bolt and secure with washers under the bolt head and 2-way lock nut provided.

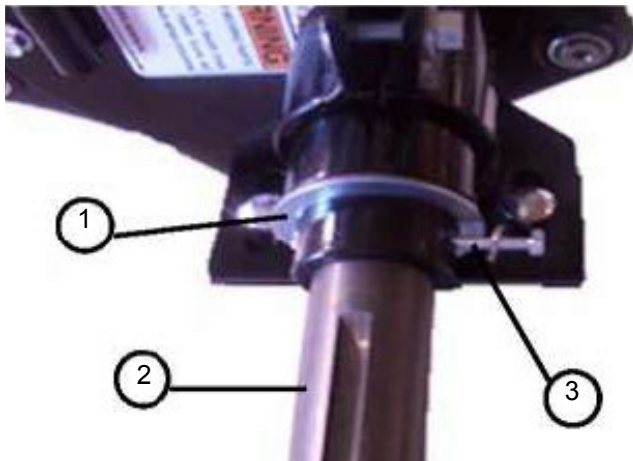


Figure 3 - End Reel Assembly.

FIG. 4

To complete the assembly of the Reel, the center tube must be supported in a manner which will allow the Reel to rotate as it is assembled.

If possible, the reel center tube should be mounted on the header at this time. The control cam clamp brackets incorporate the reel mounting brackets. Fasten the mounting brackets to the header's reel arms using the brackets supplied with the header and two 3/8" x 1" (25 mm) bolts, flat washers and locking nuts at each end. Center the reel center tube on the header before tightening. Adapting parts, such as reel lift cylinder extensions or special mounting brackets, should be installed at this time. Refer to the header assembly instructions or the instructions for the specific reel mounting kit for more information.

If the Reel is not to be mounted on a header at this time, support the center tube at the reel mounting brackets using suitable stands.



Figure 4 - Center Tube Support Assembly.

⚠ CAUTION

Be sure the reel center tube is well supported and cannot fall during assembly.

REEL ARMS ("SPIDERS")

FIG. 5

The reel arm assemblies are shipped folded accordion style in the bundle. Remove the assemblies, keeping them collapsed.

The bolts in the reel arm assemblies have been tightened for shipping. Loosen the bolts to allow the arms to unfold for assembly.



Figure 5 - Reel Arm Assembly.

FIG. 6

The reel arm assemblies must be installed on the tube with the LONG arm LEADING in the direction of Reel rotation.

IMPORTANT: All reel arm assemblies MUST be installed with the LONG arms LEADING in the direction of Reel rotation for proper Reel operation.



Figure 6 - Star Assembly.

FIG. 7

Reel arm rotation arrows are stamped on the reel bat bearing attachment plates, 1. These arrows **MUST** coincide with the arrows cast into the reel control rings for proper Reel rotation.



Figure 7 - Corner Star Assembly.

FIG. 8

The 5/16" attaching bolts for the reel arms, screw into blind nuts, 1, imbedded in the reel center tube.

Follow these procedures when assembling the reel arms:

When installing the reel arm attaching bolts, start the bolts by hand to be sure they are straight and not "cross-threaded"

Leave all bolts loose until the reel arm assembly has been completely installed.

DO NOT over-torque the bolts.

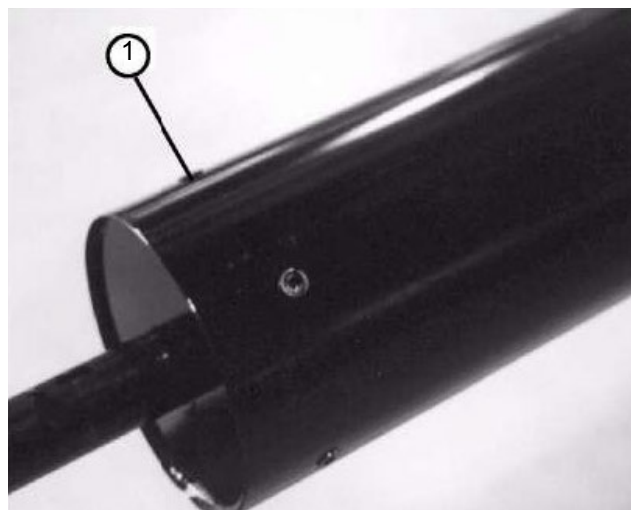


Figure 8 - Center Tube Assembly.

FIG. 9

Locate the 5/16" x 1-3/4" (44 mm) lock bolts(with locking compound patch on the threads) and the 1" (25 mm) outside diameter flat washers in the sundry bag. They are used to fasten the reel arms to the center tube.

Unfold the arm assembly around the center tube as shown, making sure the arms are being assembled correctly in relation to Reel rotation. Connect the first and last arms of the assembly together with a 1/4" x 1-1/2" bolt and star washer nut at the joining plates. Install the 5/16" x 1-3/4" (44 mm) lock bolts, 1, with 1" (25 mm) O.D. flat washers to attach the long reel arms to the center tube. Partially unfold the short arms to provide bolt clearance.

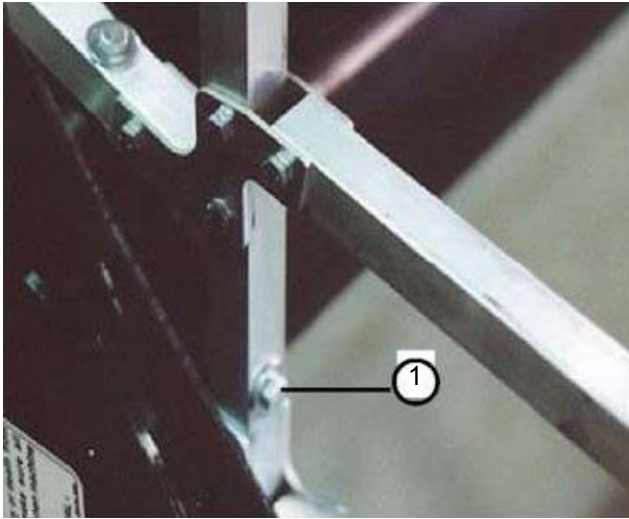


Figure 9 - Arm Assembly.

FIG. 10

Continue the assembly by unfolding the short reel arms and attaching them to the joining plates, 1, with 1/4" x 1-1/2" (38 mm) bolts and star washer nuts.

Install the remaining reel arm assemblies in the same manner. When complete, torque all bolts to 9 ft. lbs. (12 N.m).

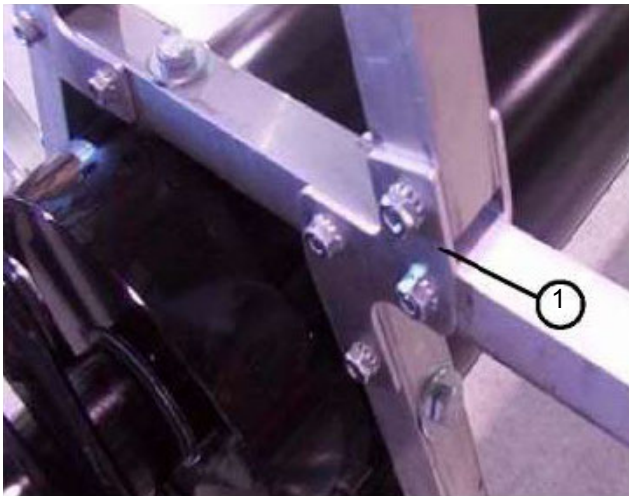


Figure 10 - Joining Plate Assembly.

FIG. 11

The reel bats, 1, are installed on the reel arms, 2, so that the tines, 3, are bolted on the side of the bat which leads in the direction of Reel rotation.

⚠ CAUTION

To avoid personal injury and injury to personnel in the vicinity, care must be taken at all times when handling reel bats, due to the projection of the reel tines.

Attach the reel bats, 1, to the reel arms, 2, with 5/16" x 1-3/4" (44 mm) bolts and lock nuts through the bearing assemblies, 4, and the reel bat bearing attachment plates, 5. As each bat is installed, refer to Fig. 12, and install the control arms for the bat. Then install the bat on the opposite side of the Reel to keep the reel in balance as it is being assembled.

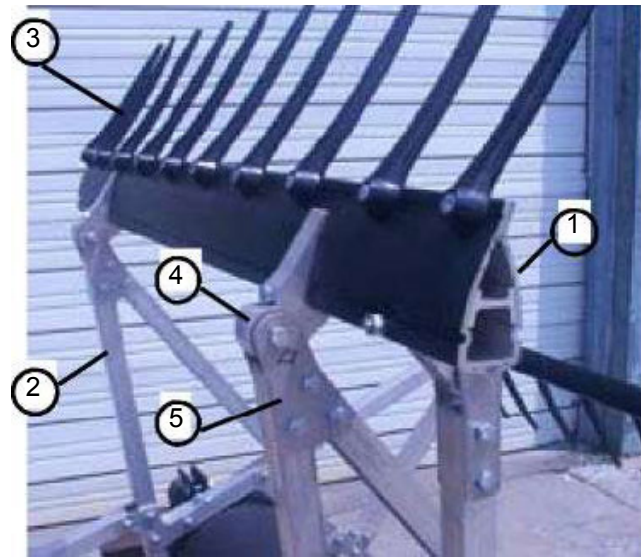


Figure 11 - Bat Assembly.

CONTROL ARMS

FIG. 12

The control arms attach to the bearing assemblies on the trailing side of the reel bats, and to the control rings. One pair of fixed control arms, 1, which are bolted to the control rings, 2, are supplied with the Reel. The remaining control arms pivot at both ends.

At both ends of the reel, attach the fixed arm, 1, to one of the bat bearing holders, 3, using a 5/16" x 1-3/4" (44 mm) bolt and lock nut. Attach the other end of the fixed arm to the control ring using 5/16" x 1-3/4" (44 mm) bolts and lock nuts with a 1" O.D. washer between the aluminum arm and the bolt head or nut.

IMPORTANT: The fixed arm **MUST** be connected to the **SAME** reel bat at both ends of the Reel.

The remaining control arms attach to the bearing assemblies on the bats and in the control ring with 5/16" x 1-3/4" (44 mm) bolts and nuts at both ends of each control arm.

NOTE: The control cams at each end of the Reel may not have the same tine pitch setting, causing difficulties when installing the control arms. If this occurs, loosen the clamp bracket at one end of the Reel, and turn the control cam to facilitate control arm installation.



Figure 12 - Control Arm Assembly.

REEL END SHIELDS

NOTE: Reel end shields reduce the possibility of crop and weeds wrapping on and being carried around the reel ends. The Reel may be operated without the end shields, but they are highly recommended, especially when harvesting viny crops such as soybeans or in weedy conditions.

FIG. 13

Install the reel end shields, 1, between the bats so, when viewed from the end of the header, the shields overlap toward the rear of the Reel when the Reel is rotating.

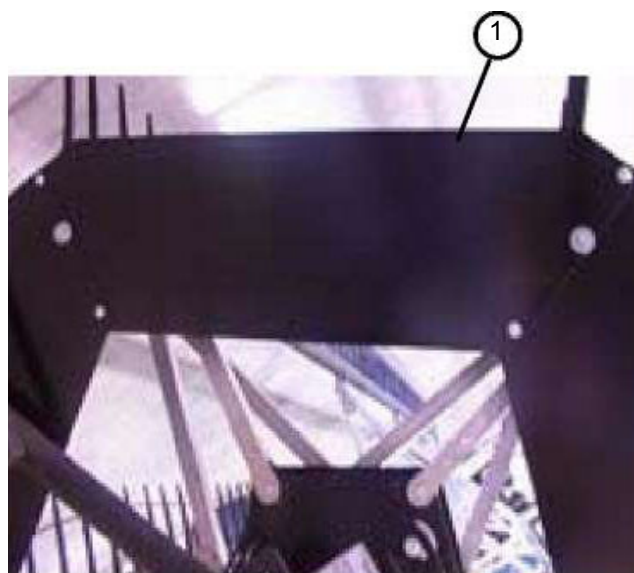


Figure 13 - Reel End Shield Assembly.

FIG 14

Install a 5/16" x 1-3/4" (44 mm) bolt, 1, with a 1" (25 mm) outside diameter flat washer, 2, through the end shield sections, 3.

Place a second 1" (25 mm) O.D. flat washer, 4, on the bolt so that there is a flat washer on both sides of the shield sections. Insert the bolt through the bearing assembly on the end of the reel bat, and secure with a lock nut, 6.

Install the 1/4" x 3/8" (12 mm) slotted head machine screws, 7, through the shield sections with their heads to the inside and nuts to the outside of the shields as shown.

After all the end shield sections and hardware are assembled, center the shields on the Reel and tighten the bolts and nuts securely.

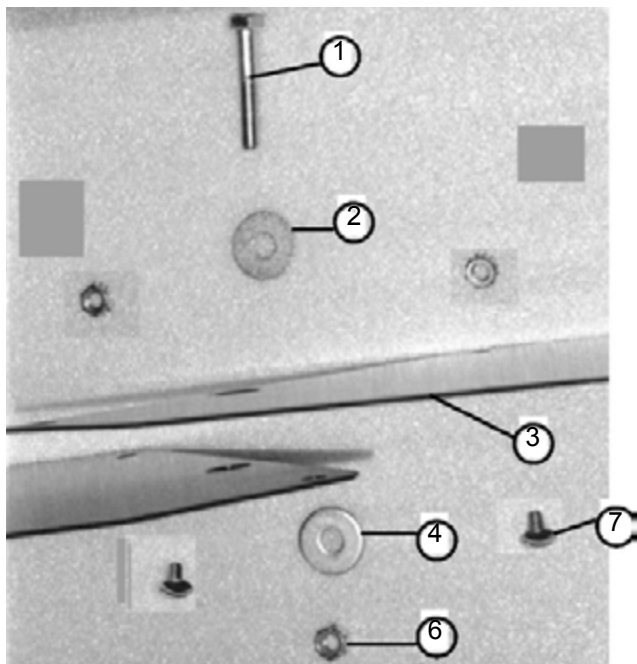


Figure 14 - Hardware Assembly.

REEL DRIVE

The reel drive components may be installed at this time. Refer to the header assembly instructions or the instructions for the specific reel mounting kit for installation information.

OPERATION**TINE PITCH ADJUSTMENT****FIG. 15**

The pitch of the tines may be adjusted by loosening bolts, 1, at BOTH ends of the Reel and inserting a suitable tool in tube, 2, and partially rotating the control ring assembly.

To increase the pitch of the tines, turn in direction of Reel rotation.

To decrease the pitch of the tines, turn in opposite direction to Reel rotation.

Adjust the pitch initially so tines are perpendicular to the cutterbar. Too great a pitch causes the Reel to carry the cut crop around the Reel, because the tines do not release the crop after it is cut. The cut crop must be delivered to underside of the header auger and not pushed over the top of the auger.

IMPORTANT: The pitch MUST be adjusted the SAME at BOTH ends of the Reel. After tine adjustment, the control plate must be situated so the adjusting tube, 2, is toward the front of the machine for proper operation.



Figure 15 - Tine Pitch Assembly.

LEVELING REEL

Always keep the Reel level with the cutterbar. On headers with multiple mounting holes for the reel lift cylinders, the cylinders must be located in the appropriate hole at both ends of the header. Fine adjustments are usually made by changing the length of the cylinders at the rod end or by moving the attaching points for the cylinders on the reel arms.

MINIMUM REEL HEIGHT

The minimum Reel height is determined by the position of the reel lift cylinders on the header, the minimum (retracted) length of the reel lift cylinders, and the position of the reel lift cylinder attaching points on the reel arms.

IMPORTANT: A 1" (25 mm) minimum clearance between the tips of the pickup reel tines and the cutterbar MUST be maintained with the reel lift cylinders in their fully retracted position. Inadequate clearance can result in damage to the knife sections, guards, other cutterbar parts, and reel tines. On floating cutterbar headers, this clearance must be checked with the cutterbar raised to its highest position on the header and the reel lift cylinders in their fully retracted position. Refer to the header operating instructions for further information.

REEL SPEED

! CAUTION

The Reel is heavy. It must be adequately supported when repositioning reel lift cylinders.

REEL POSITION IN DOWN CROPS

The pickup reel height in down crops should be low so the tines can lift the crop up and onto the cutterbar. The tines should be adjusted so they pick up the crop and lift it onto the cutterbar with a minimum of the crop carrying around the Reel.

The fore and aft position of the Reel should be adjusted so the reel center tube is about a foot in front of the cutterbar so the crop is lifted before it gets to the cutterbar.

IMPORTANT: Care must be taken to assure that the reel tines do not come in contact with the cutterbar. Tine contact will cause damage to the knife sections, guards, and other cutterbar parts. At no time should the reel tines contact the ground. Ground contact will cause damage to the tines, pivot points and stars.

REEL POSITION IN STANDING CROPS

The Reel height in standing crops is usually correctly adjusted when the bats of the Reel touch the crop about midway between the cutoff point and the top of the crop. Adjust the Reel height during operation for variations in the height of the crop.

The fore and aft position of the Reel should be adjusted so the reel center tube is slightly ahead of the cutterbar.

If the Reel is too far forward, the crop will not be pushed against the cutterbar and a portion of the cut crop will fall to the ground.

If the Reel is too far back, the crop is pushed down too low when it is cut and some of the heads will be missed.

REEL SPEED

Reel speed must be adjusted according to ground speed. The Reel should turn approximately 25% faster than the Combine is traveling. Adjust the Reel speed so it looks like the Reel is pulling the Combine through the field.

If the Reel speed is too slow, the crop will not be pushed against the cutterbar and a portion of the cut crop will fall to the ground because the Reel doesn't push it onto the header.

If the Reel speed is too fast, the crop may be shattered by the impact of the Reel. The crop also may be pushed down before it can be cut and the uncut grain will be left in the field.

MAINTENANCE

LUBRICATION

FIG. 16

Reel Shaft Bearings - Lubricate every 10 hours of operation (or daily) with multi-purpose lithium base type grease.

Lubricate one grease fitting at each end of the reel shaft.

Yearly, remove and examine the polymer liners in the control plate tubes and replace if worn. Daily lubrication will greatly extend liner life.



Figure 16 - Reel Shaft Bearing Assembly.

REEL TINES

FIG. 17

Reel tines are attached to the leading side of the reel bats with 1/4" bolts and nuts. Either spring steel or plastic ("Delrin") tines may be installed on the bats.

NOTE: Plastic tines are attached with 1/4-20 x 1" hex head cap screws. Wire tines are attached with 1/4- 20 x 3/4" truss head screws.

REEL BUSHINGS FOR REELS PRIOR TO SERIAL NUMBER 216200

Worn bushings, at the reel pivot points, will cause the Reel to operate roughly or with a jerking motion. The bronze bushings should be replaced before the split spacer bushings wear through the bearing material.

Check the bushings at the end of each season and anytime the Reel does not operate smoothly.

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Figure 17 - Reel Tine Assembly.

CONTROL RINGS

FIG. 18

The control ring assemblies each have three rollers mounted in adjusting lots. To compensate for wear to the control ring, the rollers may be adjusted outward in the slots so that all three rollers are lightly in contact with the control ring.

All three rollers at each end of the Reel must be moved the same amount so that all three roller bolts are in the same position in the slot. Do not take up the slack by moving only one roller.



Figure 18 - Reel Tine Assembly.

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ILLUSTRATED PARTS LIST: U-II REEL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SPECIFY ON ORDER	8" CENTER SHAFT ASSEMBLY	-
2	UH2921	ROLL PIN 1/2 X 2	-
3	UH2250	TIP PLATE	-
4	UH2350	BALL BEARING	-
5	UH2410	BEARING HOLDER ASSEMBLY (W/ BEARING)	-
6	UH2520	5 X 42 - 10 LONG ARM	-
7	UH2530	5 X 42 - 10 BRACE ARM	-
8	UH2130	INNER PLATE 5 X 42 - 10	-
9	UH2450	5 BAT RING ASSEMBLY (W/ BEARINGS)	-
10	UH2900	CONTROL PLATE ROLLER	-
11	UH2801.2	CONTROL PLATE ASSEMBLY (REGULAR)	-
	UH2803.2	CONTROL PLATE ASSEMBLY (HONEY BEE)	-
	UH3363.4	CONTROL PLATE ASSEMBLY (GLENER 8200)	-
	UH2794	CONTROL PLATE ASSEMBLY (WP SHORT)	-
	UH2795	CONTROL PLATE ASSEMBLY (WP LONG)	-
12	UH2550A	42 FIXED ARM	-
13	UH2560A	42 REGULAR ARM	-
14	UH2260	END PLATE	-
15	UH2100	PLASTIC TINE	-
	UH2110	WIRE TINE	-
16	SPECIFY ON ORDER	DRILLED BAT	-
17	UH2652	5 BAT SHIELD SECTION	-
18	UH2810	REGULAR MOUNTING CLAMP ASSEMBLY	-
	UH2820	HESSTON/CIH MOUNTING CLAMP ASSEMBLY	-
	UH2830	CCIL/MF 220 MOUNTING CLAMP ASSEMBLY	-
	UH2770K	HONEY BEE MOUNTING CLAMP ASSEMBLY	-
19	UH4085	5/16 RIVNUT	-
20	UH4065	5/16 SPECIAL WASHER (11/32 X 1)	-
21	UH4020	5/16 X 1-3/4 HHCS	-
22	UH4094	5/16 2-WAY LOCK NUT	-
23	UH4040	3/8 X 1-3/4 FLANGE-HEAD	-
24	UH4045	3/8 2-WAY LOCK NUT	-
25	UH4012	1/4-20 X 1 HEX HEAD (PLASTIC TINE)	-
	UH4031	1/4-20 X 3/4 TRUSS HEAD SCREW (WIRE)	-
26	UH2380	5/16 X 2-3/4 HEX HEAD	-
27	UH4030	1/4-20 X 3/8 TRUSS HEAD	-
29	UH4025	5/16 X 1-3/4 PATCHLOCK	-
30	SPECIFY ON ORDER	DRIVE STUB	-
31	UH4070	SHAFT WASHER	-
32	UH2802	CONTROL PLATE LINER	-
33	UH2923	1/4 SAE WASHER	-
34	UH4095	1/4-20 2-WAY LOCK NUT	-
35	UH2922	1/4-20 X 2-1/2 HHCS	-
36	UH4015	1/4-2- X 1-1/2 HHCS	-
37	UH4050	5/16 NYLON LOCK NUT	-
39	UH4035	3/8 Z 1-1/2 CARRIAGE BOLT	-
40	UH4060	3/8 FLAT WASHER	-

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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.

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