8” NORTHERN PORTABLE AUGER
33’, 41’ & 53’ MODELS

OWNER’S & OPERATOR’S MANUAL

Effective September 15, 2007 **Publication No. 1031686**

Northern Auger Gas Models

833603G - 8” x 33’
841603G - 8” x 41’
853603G - 8” x 53’

IMPORTANT! The gearboxes are shipped **Without** **Oil.**
Oil must be added Before operation.
Refer to the Lubrication Section in this Manual.

Hutchinson/Mayrath
A Division of GLOBAL Industries, Inc.

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Hutchinson/Mayrath/TerraTrack

*A Division of **GLOBAL** Industries, Inc.*

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Service Charge: A service charge will be assessed for all past due balances as permitted by state law not to exceed 1-1/2% per month.

Minimum Order: Processing and handling costs necessitate a minimum charge of $15.00 net on all orders.

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Damaged Goods: It is the consignee's responsibility to check all shipments thoroughly upon receipt of goods. If any damage is discovered, it must be noted on the freight bill of lading before signing. The consignee must make necessary claims against the respective freight line. All damage claims must be submitted within 30 days of delivery receipt.

Shortages: All shortages must be noted at time of delivery. Shortages must be noted on the freight bill of lading before signing. Hutchinson/Mayrath/TerraTrack must be advised of all concealed shortages upon discovery. Once notified of concealed shortages Hutchinson/Mayrath/TerraTrack will advise corrective action to be taken.

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Modifications: It is the policy of Hutchinson/Mayrath/TerraTrack to improve its product whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any ti me without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

Limited Warranty: (a) For a period of (1) year after receipt of goods by the original consumer buyer, Hutchinson/Mayrath/TerraTrack will supply free of charge replacement parts for parts that prove defective in workmanship or material. Defective parts must be returned freight prepaid to a specified Hutchinson/Mayrath/TerraTrack location. Only Hutchinson/Mayrath/TerraTrack original repair parts may be used for warranty repairs.
(b) This limited warranty does not extend to parts designed to wear in normal operation and be replaced periodically; or to damage caused by negligence, accident, abuse or improper installation or operation.
(c) GOODS NOT MANUFACTURED BY HUTCHINSON/MAYRATH/TERRATRACK CARRY ONLY THE MANUFACTURER'S WARRANTY.
(d) THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

FAILURE TO FOLLOW THE INSTRUCTIONS CONTAINED IN THE OWNER'S & OPERATORS'S MANUALS AND THE ITEMS LISTED BELOW WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.

(1) Improper assembly, including failure to properly install all safety equipment.
(2) Improper installation.
(3) Unauthorized alternations of goods.
(4) Goods operated when obviously in need of repair.
(5) Use of unauthorized repair parts.
(6) Irresponsible operation.
(7) Used to handle materials other than free flowing, nonabrasive and dry materials, as intended.
(8) Damaged through abusive use or accident.

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SAFETY

GENERAL SAFETY STATEMENT

This manual was written with the safety of the operator and others who work with the equipment as our prime concern. The instructions presented will help the reader learn **SAFE** day to day work practices. We want you as our partner in safety.

It is your responsibility as an owner, operator or supervisor to know what specific safety requirements and precautions exist and to make these known to all other personnel working with the equipment or in the area, so that they too may safely perform their duties and avoid any potentially hazardous situations.

Please remember safety equipment provides important protection for persons around a grain handling system that is in operation. Be sure **ALL** safety shields and protection devices are installed and properly maintained. If any shields or guards are damaged or missing, contact your dealer to obtain the correct items.

Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

SAFETY ALERT SYMBOL

The symbol shown below is used to call your attention to instructions concerning your personal safety.

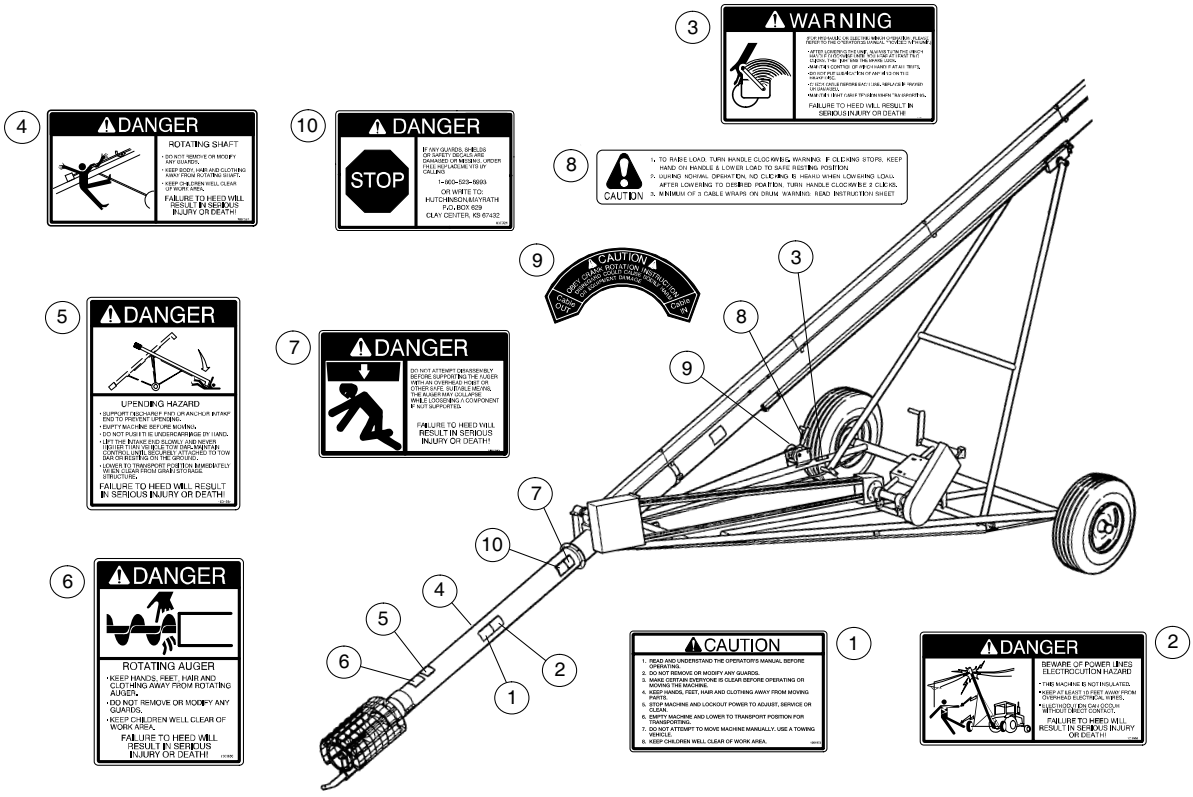
Watch this symbol - it points out important safety precautions. It means - **ATTENTION! Become alert! Your personal safety is involved!** Read the message that follows the symbol when a warning is given, be alert to the possibility of personal injury or death.

BE ALERT!

YOUR SAFETY IS INVOLVED

SAFETY DECALS

Check to ensure all Safety Decals are present and in good condition. If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer.



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OPERATOR QUALIFICATIONS

WARNING

Anyone who will operate or work around this machine shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Operation of this auger shall be limited to competent and experienced persons. In addition, anyone who will operate or work around an auger must use good common sense. In order to be qualified, the operator must also know and meet all other requirements, such as:

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes this auger. It is your responsibility to know what these regulations are in your area or situation.
2. Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in safe operation and servicing of all equipment which the employee is, or will be involved with.”*
3. Unqualified persons are to stay out of the work area. See page 4.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

***Federal Occupational Safety & Health Standards for Agriculture Subpart D, Section 1928.57 (a) (6).**

SIGN-OFF SHEET

As a requirement of OSHA, it is necessary for the employer to train the employee in the safe operation and safety procedures with this auger. We include this sign off sheet for your convenience and personal record keeping.

DATE	EMPLOYER SIGNATURE	EMPLOYEE SIGNATURE

DESIGNATED WORK AREA

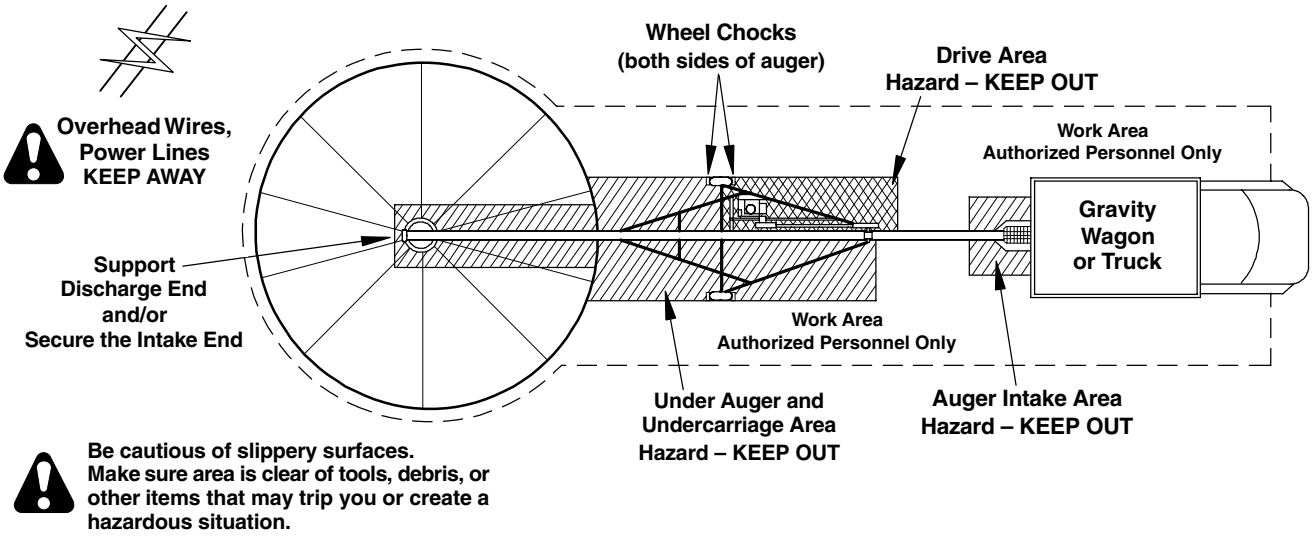
Before starting the auger, a designated work area should be established and properly marked around the work site. The following diagrams show the manufacturers designated work areas. These areas shall be marked off with colored ropes hung as portable barriers to define the designated work areas.

Under no circumstances should persons not involved in the operation be allowed to trespass into the work area.

It shall be the duty of all operators to see that children and/or other persons stay out of the work areas! Entering the work area by anyone not involved in the actual operation, or trespass into a hazardous area by anyone, shall result in an immediate shut down by the operator.

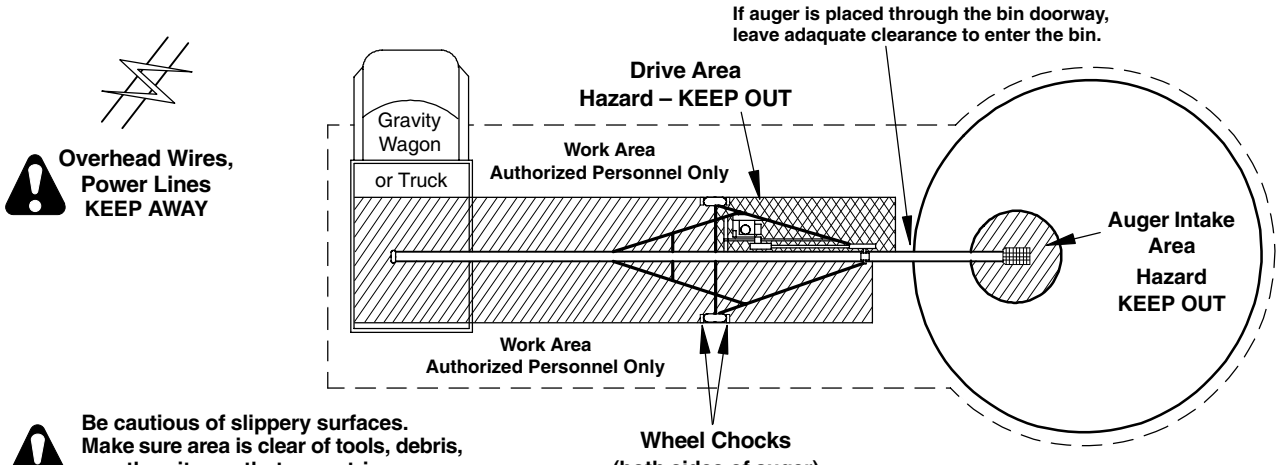
It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of all debris, and tools which might cause accidental tripping and/or falling.

Designated Work Area When Filling Grain Bin



Be cautious of slippery surfaces. Make sure area is clear of tools, debris, or other items that may trip you or create a hazardous situation.

Designated Work Area When Unloading Grain Bin



Be cautious of slippery surfaces. Make sure area is clear of tools, debris, or other items that may trip you or create a hazardous situation.

MACHINE INSPECTION

Our augers are well made and we are proud of our line of equipment. We would like you, as our customer, to do your part in using caution and good judgement in using our equipment, as well as any other machinery.

After delivery of your new auger and/or completion of assembly and before each use, inspection of the machine is mandatory. Use the assembly instructions in this manual as a reference to determine that the auger is assembled properly. This inspection should include, but not be limited to:

1. Check to see that all shields listed in the assembly instructions are in place, secured and functional.
2. Check all safety signs (decals) and replace any that are worn, missing or illegible. Safety signs may be obtained free of charge from your dealer or ordered from the factory.
3. Check ***all*** fasteners; nuts, bolts, set screws etc. for tightness.
4. Check drive belts for proper tension, cracking or fraying, tighten or replace as necessary.
5. Check engine filters, spark plug etc.
6. Check fuel level. Starting with a full tank will help eliminate or reduce operating interruptions for refueling.

   Follow the procedures described in the Engine Owners Manual for proper engine care and storage information.

Gasoline is highly flammable and explosive.

Never **refuel indoors or near an area where sparks or open flame are present.** ***Never*** **smoke while refueling.**

Wipe up spilled fuel immediately.

OPERATING CAPACITIES

The capacities of screw type conveyors can vary greatly under varying conditions. Different materials, moisture content, amounts of foreign matter, angle of operation, methods of feeding and speed all play a role in the performance of the auger.

An auger operating at a 45 degree incline could be cut 20% in capacity over an auger operating horizontally. Twenty-five percent (25%) moisture could cut capacity back by as much as 40% under some conditions.

OPERATING CAPACITIES *(con't.)*

If an inclined auger has one foot of grain over the inlet flight it will get better capacity than if there was only one inch of grain covering. On the other hand, an auger in the bottom of a cone shaped pit or under a bulk tank with maybe four feet of grain on top of it, may be over fed. The result would be extra strain on the drive line and possibly cause the auger to overload and stall out.

Use control gates to help with the flow of grain in situations like this.

BREAK-IN & OPERATING INFORMATION

During the operation of your auger, one person shall be in a position to monitor the operation at all times.

Any screw conveyor when it is new, or after sitting idle for a season should go through a "break-in" period. The auger should be run at partial capacity until several hundred bushels of grain have been augured to polish the flighting and the tube.

When the flight and tube are polished and smooth, the auger can be run full. Never run the auger empty for any length of time as excessive wear will result. If at all possible, do not stop or start the auger under load, especially before the flight and tube become well polished, as this may cause auger to "freeze-up."

During initial start-up and break-in period, the operator shall be aware of any unusual vibrations or noises that would indicate a need for service or repair.

Keep all safety shields and devices in place.

Keep hands, feet, and clothing away from moving parts.

The operator should have a full view of the auger work area and check that all personnel are free from designated work areas before adding power.

SHUTDOWN/LOCKOUT

EMERGENCY SHUTDOWN

Should the auger be immediately shutdown under load, **disconnect** and **lockout** the power source.

Clear as much grain from the hopper and auger as you can. Reconnect the power source and run the auger to clear the grain. Never attempt to start when under load.

Starting the unit under load may result in damage to the auger. Such damage is considered abuse of the equipment and will not be warranted.

NORMAL SHUTDOWN

When shutting down the auger, make certain the hopper and auger are empty before stopping the unit. Before the operator leaves the work area, the power source shall be locked-out.

INTERMITTENT SHUTDOWN

Consideration should be given to the proper size auger for batch drying, or any intermittent type operation. Using a large diameter auger and reducing its load level will be far better than subjecting a smaller diameter auger to high loads.

If an auger is kept from absolute filling, it will make start-up easier and will convey more efficiently.

LOCKOUT

If the operator must leave the work area, or whenever servicing or adjusting, the auger must be stopped and the power source turned off. Precaution should be taken to prevent anyone from operating the auger when the operator is absent from the work area.

Lockout, Gasoline Drive

For engines with rope or crank start, remove spark plug wire or spark plug.

For engines with electric start, remove ignition key, spark plug wire or spark plug.

TROUBLE SHOOTING

LOW CAPACITY

The auger may not be getting enough grain. Check to see that the grain has not bridged over the intake area restricting the flow.

The exposed flighting at the auger intake should be covered with grain to achieve maximum capacity.

Check auger speed. Operating auger below recommended speed will result in low capacity.

PLUGGING OF AUGER

The auger may getting too much grain where it is “jamming” inside the housing. An optional control gate may be necessary at the intake end.

If wet grain or other hard to move material is being augured, use a larger size motor than that recommended for normal use.

Is the auger free of any foreign material such as sacks, tarp corners, etc. An auger plug at the discharge end will cause an auger plug at the intake end.

Check to see that all belts are lined up and tensioned properly.

EXCESSIVE AUGER NOISE

Damage can occur to the auger flighting, thus causing noise. Damage usually occurs because of foreign material having been run through the auger. It may be necessary to remove the flighting for inspection.

IMPORTANT! An auger should be frequently checked and serviced to operate freely. Keep all guards and shields in place, replace any that are damaged or missing.

An auger should run partially full for several hundred bushels to polish the flighting when it has not been used for an extended period of time. An auger with flighting that has not been polished in this manner requires greater horsepower, damage to the drive and/or flighting can result if overloaded.

TRANSPORTING AUGERS

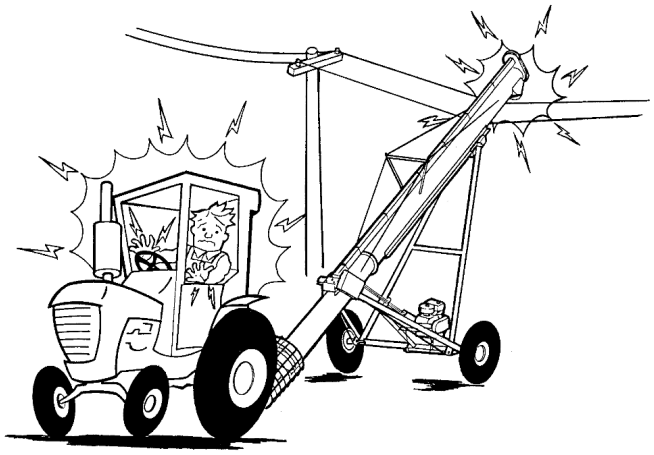
TRANSPORT INFORMATION

Always observe safe driving and operating practices, and comply with your local and state regulations governing marking, towing and maximum width.

Do Not transport the auger at speeds in excess of 20 MPH.

Be alert to overhead obstructions and electrical wires, especially if towing height is 13'-6" and higher. Failure to do so can result in electrocution.

Lower the auger well below the level of power lines before moving. Maintain at least 10 feet of clearance (electrocution can occur without direct contact of power lines.



- To prevent the auger from upending, make sure all grain has been emptied from the auger before transporting.
- Always transport the auger in the full down position.

ATTACH AUGER to TOWING VEHICLE

- Never raise the hitch end higher than necessary to attach it to the towing vehicle (weight transfers rapidly to the discharge end as the hitch end is raised).
- Never stand between the tractor and auger when hitching unless all controls are in neutral and the brakes locked.

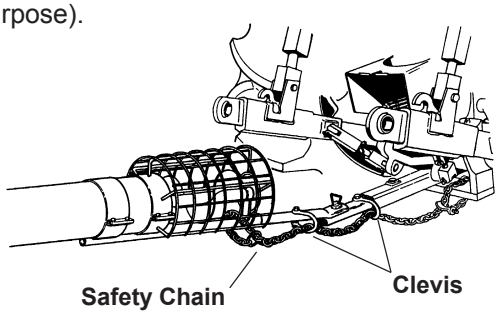
1. Position the rear of the towing vehicle at the intake end of the auger. Raise the auger hitch just high enough to attach it to the tow vehicles draw bar.

   Insert an appropriate sized hitch pin and secure auger hitch to drawbar.

2. A safety chain is required to retain the connection between the towing and towed machines in the event the auger hitch should separate from the drawbar (safety chain not provided).

   Attach one end of the chain to the drawbar of the towing vehicle. Route the other end of the safety chain through the intake screen and around the bearing support at the lower end of the intake flight (leave enough slack in the chain to allow for cornering and sharp turns).

   A clevis or intermediate chain support should be fastened to the hitch tube no farther than 6" from hitch pin (a hole is provided in the hitch tube for this purpose).



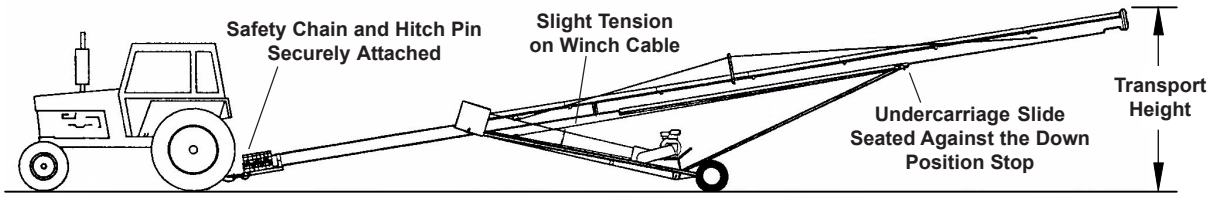
TRANSPORT HEIGHT

Auger Length	8" x 33'	8" x 41'	8" x 53'
Transport Height	7'-10"	8'-10"	10'-10"

IMPORTANT! Transport heights are figured with the auger attached to towing vehicle with a drawbar height of 1'-6"

To find the height of the auger with the intake end resting on the ground, just add the 1'-6" to the transport height

Auger Shown in Transport Position (fully down)



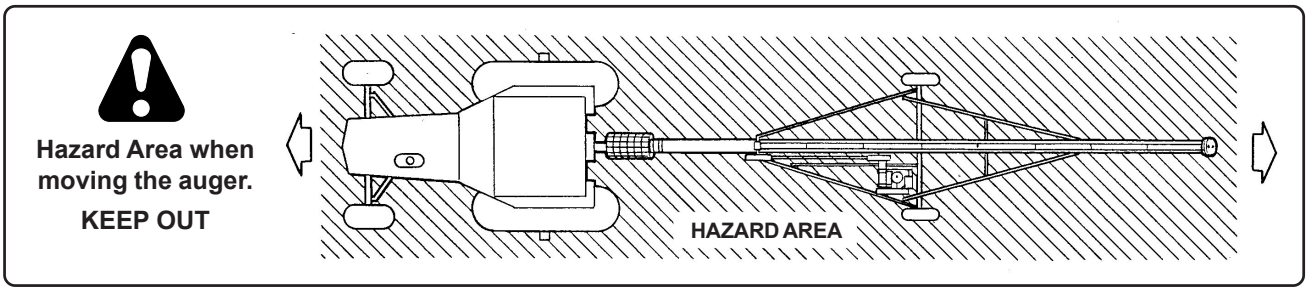
TRANSPORTING AUGERS

<u>TRANSPORT INFORMATION</u> (con't.)

PLACEMENT OF AUGER for FILLING GRAIN BIN

Moving your portable auger can sometimes require careful planning. A route plan should be considered beforehand to help avoid any obstacles, power lines or other hazards that could create problems and loss of time.

- 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 (there should be at least 3 complete wraps of cable around the winch drum).
- Never allow persons to stand underneath or ride on the auger while it is being moved.
- Make certain everyone is clear of the work area before moving the auger (the illustration below shows the "hazard area" zone when the auger is being transported).



Make sure entire area above auger and the path of travel is clear of overhead obstructions and electrical wires. Failure to do so can result in electrocution (maintain at least 10 feet of clearance from power lines, *electrocution can occur without direct contact of the power lines*).

To prevent tip-over when backing, avoid rolling over any obstructions and avoid steep slopes. If the auger is to be set on a slope, approach the bin uphill. Avoid moving the auger at right angles to a slope.

STEP 1

Move the auger into its working position with a towing vehicle. Locate the auger as close as possible to the bin (or other structure). Move auger slowly towards the bin with the towing vehicle - **not by hand.**

When positioning the auger into its working position, make sure to leave adequate room for the loaded vehicles to reach the auger intake area.

STEP 2

Raise the auger only high enough to clear the top of the bin.

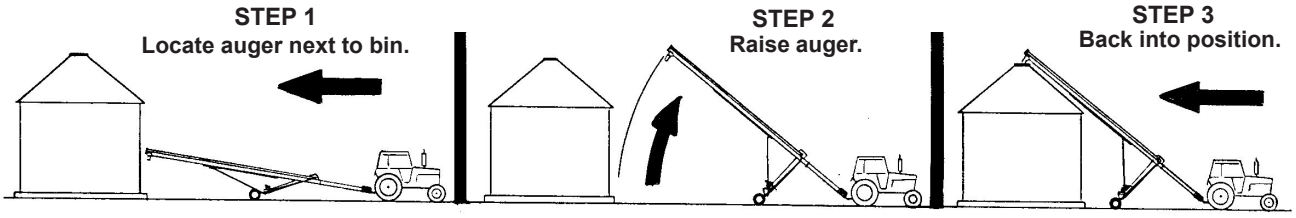
If using the hand winch to raise the auger, observe the cable as it is winding onto the winch drum. The cable should roll up on the drum evenly, avoid cable buildup on one side of the drum.

STEP 3

Back auger slowly into working position with towing vehicle. **Never move auger by hand, always use a vehicle.**

***Do Not* attempt to increase auger height by positioning its wheels on lumber, blocks, or any other means to raise its height.**

Once in place the wheels should be choked on both sides of the auger to prevent it from rolling when disconnected from the towing vehicle.



PLACEMENT OF AUGER FOR FILLING GRAIN BIN, STEP 3 (con't.)

Disconnect the auger from the towing vehicle. **Use caution when releasing the auger from the vehicle, weight transfers rapidly to the discharge end, especially with the auger in the raised position. Lower the auger slowly to the ground.**

Remove the bolt from the auger hitch, retract and secure the hitch pipe.

If a hopper is to be used, install it at this time.

Lower the auger head so the discharge is directly over the bin opening. **Note: when discharging into a grain spreader, always maintain at least 12 inches (305 mm) of space between the auger discharge and the spreader.**

- The auger should be anchored at the intake end and/or supported at the discharge end. This will help prevent the auger from tipping as it empties (the weight transfer of grain to the top of the auger will cause auger to tip if not properly secured).
- It is a good practice to tie the discharge end of the auger to the bin or grain storage structure to prevent possible wind damage. Remember to untie the auger before attempting to move.

Ensure the auger wheels are chocked and the auger is properly anchored.

Make sure there is adequate room for the loaded vehicles to reach the auger intake.

Depending on your power source, prepare the auger and the work area for safe and proper operation.

PLACEMENT OF AUGER for UNLOADING GRAIN BIN

Only use the axle mounted belt drive model of auger for this type of bin unloading operation.

Determine through what opening in the bin the auger will be placed to gain access to the grain **(this opening must be large enough so the auger intake can be placed in the bin *without* removing the intake guard).**

Make sure entire area above auger and the path of travel is clear of overhead obstructions and electrical wires. Failure to do so can result in electrocution (maintain at least 10 feet of clearance from power lines, *electrocution can occur without direct contact of the power lines*).

To prevent tip-over when backing, avoid rolling over any obstructions and avoid steep slopes. If the auger is to be set on a slope, approach the bin uphill. Avoid moving the auger at right angles to a slope.

STEP 1

Locate the auger as close as possible to the bin or storage structure with towing vehicle. Leave the auger in the lowered position.

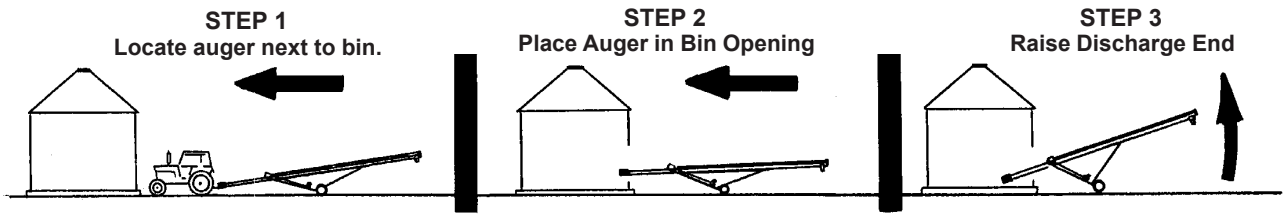
STEP 2

Place auger intake into bin or storage structure. Only raise intake high enough to place into bin opening.

STEP 3

Place auger intake into the grain (if the auger is placed through the bin doorway, do not push the auger into the bin so far that it will restrict access into the bin, leave adequate clearance to enter bin).

Raise the discharge end of auger to allow grain to be loaded into truck or grain wagon. ***Do Not move the auger when it is in operation.***



TRANSPORTING AUGER

Relocation of Auger

When grain conveying is completed, the auger should be moved away from the bin and lowered. The auger can then be moved to a different bin for more conveying operations, or it can be cleaned up and stored.

Make sure entire area above auger and the path of travel is clear of overhead obstructions and electrical wires. Failure to do so can result in electrocution (maintain at least 10 feet of clearance from power lines, *electrocution can occur without direct contact of the power lines*).

To prevent tip-over when backing, avoid rolling over any obstructions and avoid steep slopes. If the auger is to be set on a slope, approach the bin uphill. Avoid moving the auger at right angles to a slope.

STEP 1

A. Empty all grain from the auger and clean up area.

B. Untie any anchors or remove all supports.

C. Disconnect the power source:

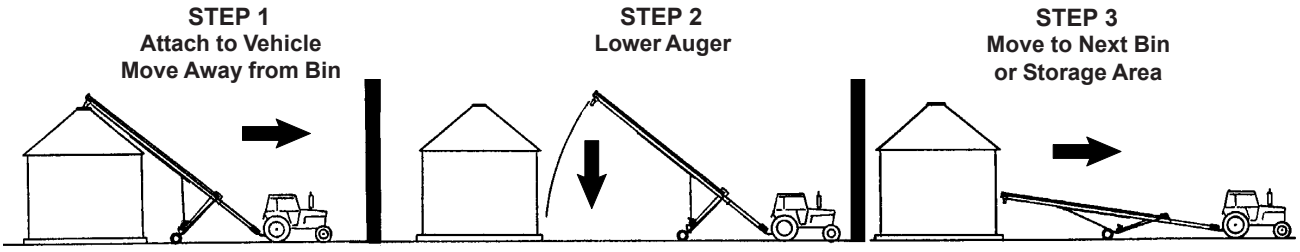
Gas Drive - For engines with rope or crank start, remove spark plug wire or spark plug.
For engines with electric start, remove, ignition key, spark plug wire or spark plug.

D. Raise the auger so the discharge spout is clear of bin opening.

E. Remove hopper from auger intake and secure hitch in place with bolt and nut.

F. Lift the auger intake and connect to towing vehicle.

G. Move auger slowly away from the bin with the towing vehicle - ***Not by Hand.***



STEP 2

A. Lower auger immediately after clearing bin (or storage structure). **IMPORTANT! Lower the auger even if relocating to a bin in the immediate area.**

STEP 3

A. Move the auger to the next bin, or prepare the auger for storage **(when storing the auger, we recommend the auger be stored in the full down position with the intake end anchored).**

B. Follow the machine inspection recommendations on Page 5 before operating the auger again.

AXLE MOUNTED, GASOLINE (BELT) DRIVE

Always use an engine with the required horsepower suggested in the Horsepower Requirement Chart shown below. The horsepower recommendations are for auguring reasonably dry grain at varying angles.

High moisture grain (above 15%) will require greater power if maximum capacity is to be maintained. The maximum possible capacity will be less with high moisture grain than it would be with dry grain.

HORSEPOWER REQUIREMENTS

Auger Length	Gas Engine H.P.	Gearbox Ratio	Gearbox Sheave	Jack Shaft Sheave	Gas Engine Sheave *	Suggested Auger Flight Speed Operating Engine at 3,000 RPM
33 ft.	9 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650
41 ft.	12 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650
53 ft.	18 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650

P.D. - Pitch Diameter

O.D. - Outside Diameter

*** Gas Engine Sheave is Not Furnished with the Auger**

Auger flight speed can be regulated by adjusting the gas engine speed.

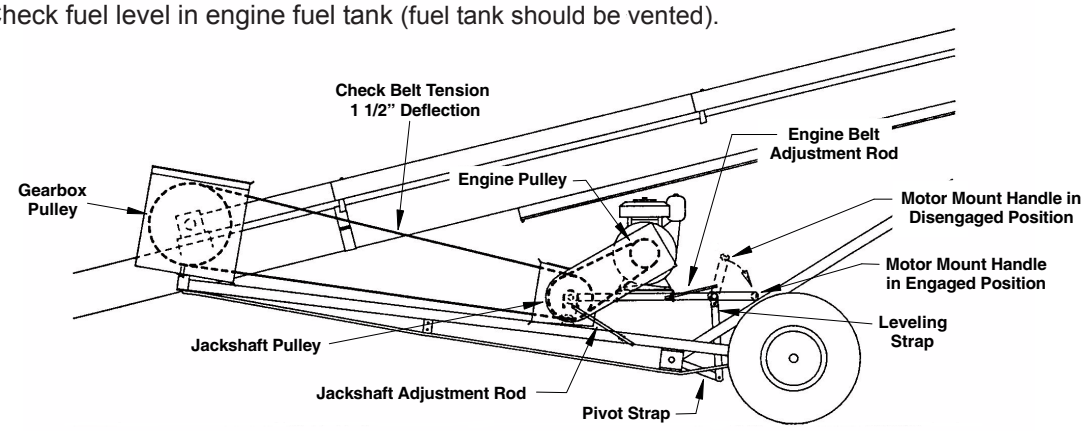
Check the Following Before Adding Power

Never attempt to adjust or service the auger or any of its drive components while the auger is in operation.

Make sure engine has had time to cool before adding fuel.

1. Check the belt from the gearbox pulley to the jackshaft pulley for proper belt tension. Adjustment is made by using the jackshaft adjustment rod (see illustration below). Check belt tension midway between the gearbox and jackshaft pulley's. Should have 1 1/2" deflection using 6 lbs. of downward pressure.
2. The motor mount should be adjusted so the gasoline engine sits in a level position. This can be done by using adjustment holes in the leveling strap (be sure the motor mount and engine are supported when disconnecting the leveling strap from the pivot strap).

   Note: the engine motor mount is self-leveling as the auger is raised or lowered. The bolts holding the leveling strap to the motor mount and to the pivot strap must be loose enough to allow the leveling strap to pivot freely.
3. Check the belt from the engine pulley to the jackshaft pulley for proper tension. Adjustment is made using the engine adjustment rod (see illustration below) with the crank handle in the engaged position (Refer to Page 27, Step #14 for proper adjustment procedures).
4. Check that all belt guards are in place, secured and functional.
5. Check fuel level in engine fuel tank (fuel tank should be vented).



***AXLE MOUNTED, GASOLINE (BELT) DRIVE** (con't.)*

To Start the Auger

The motor mount is equipped with a crank handle that allows the motor mount and engine to be slid back to tighten (engage) the drive belts between the jackshaft pulley and engine pulley.

1. Before starting engine make sure the crank handle is ***disengaged.***

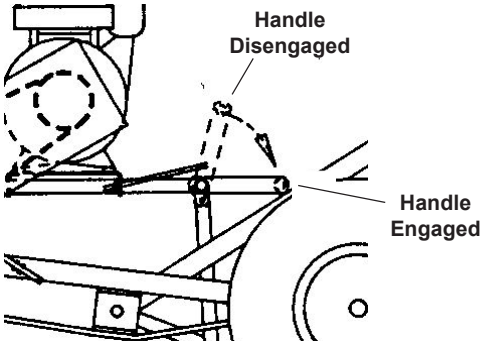


Fig. 1

2. Start the engine, allow engine to warm, then set to proper operating RPM.
3. Slowly engage the crank handle back until it locks over-center.

   Note: if the drive belts slip during grain conveying operations, empty and stop the auger, lockout the drive and adjust belt tension (crank handle needs to be in the engaged position to properly adjust belt tension).

To Stop the Auger

1. Let auger empty of grain before stopping.
2. Disengage the crank handle.
3. Shut off engine and lockout power source (remove ignition key, spark plug wire or spark plug).

WINCH OPERATION

Keep hands away from winch drum during winch operation.

Never fully extend the cable, always keep three complete turns of cable wrapped around the winch drum.

Never operate winch with wet or oily hands, always use a firm grip on the handle.

The winches used with these augers are a "brake type" winch - that is, the winch brake is activated by turning the handle. The brake is designed to hold the load whenever the handle is released.

The operator must pay attention during the raising and lowering of the auger.

- Watch cable to ensure it is coiling on the drum properly.
- Don't use hands to guide cable onto winch drum.
- Don't allow auger to become hung up on other structures when lowering.
- Don't continue to attempt to raise auger after the slide reaches the top.

To Raise Auger

1. Turn the winch handle clockwise (pulling cable onto the drum). There should be a clicking sound.

   Observe the cable as it is winding onto the winch drum. The cable should roll onto the drum evenly, avoid cable buildup on one side of the drum.

   Continue raising the auger until desired height is obtained.

To Lower Auger

1. Turn the winch handle counter-clockwise, there will be no clicking sound.

   To stop lowering the auger, turn the handle clockwise until you hear two clicks (about 6" of handle movement, the clicking sound will be the brake activating). Use this procedure during the lowering of the auger as needed.

   Also refer to the instructions that come from the winch manufacturer.

LUBRICATION & MAINTENANCE

For economical and efficient operation of your auger, maintain regular and proper lubrication practices. Neglect leads to reduced efficiency, excessive wear and needless down time. Keep auger maintained for efficient and proper operation.

Keep all safety shields and devices in place.

Never clean, adjust or lubricate a machine that is in operation.

Auger Drive Lubrication

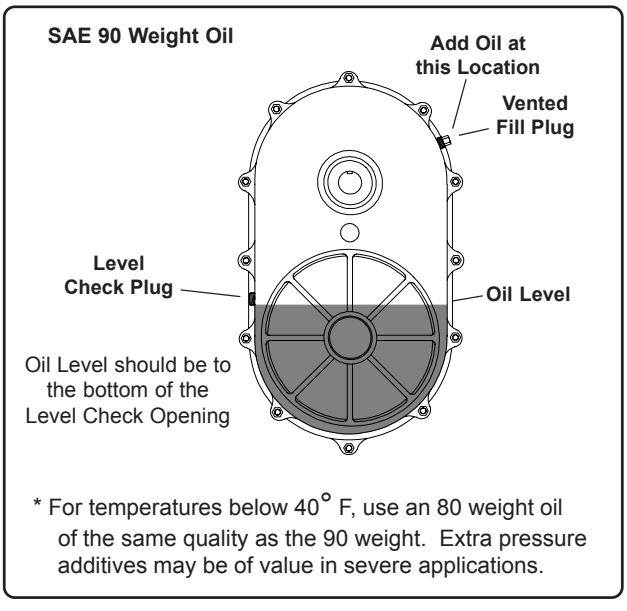
IMPORTANT! The enclosed drive reducer is shipped without oil. Oil needs to be added *before* operation.

1. With drive reducer in the upright and level position, remove the vented fill plug and the level check plug from the reducer housing (See Fig. 2).

   Start by adding approximately 24 oz (7.2 ml) of an SAE 90* weight oil, we recommend a non-foaming, multi-purpose gear oil (same as used commercially for automotive differentials).

   Watch the level check hole when pouring the last of the oil. If oil begins to leak from the hole, stop adding oil, if more oil is needed, add oil until it reaches the level check hole. ***Do Not* add more oil than what is recommended. Additional oil may damage the seals or be forced through the vented plug.**

   Oil will dissipate under normal operating conditions, therefore, oil should be checked regularly.



* For temperatures below 40° F, use an 80 weight oil of the same quality as the 90 weight. Extra pressure additives may be of value in severe applications.

Fig. 2

Gearbox Lubrication

IMPORTANT! The gearbox is shipped without oil. Oil needs to be added *before* operation.

1. Place the gearbox, flat side down, on a level surface (See Fig. 3). Remove the vented fill plug and the level check plug.
2. Add an SAE 90 weight non-foaming oil into the fill plug opening (use a funnel or similar type method and begin with just a small amount of oil, add more as needed).

   Stop adding oil when the oil begins to leak from the level check opening. ***Do Not* add more oil than what is recommended. Additional oil may damage the seals or be forced through the vented plug.**

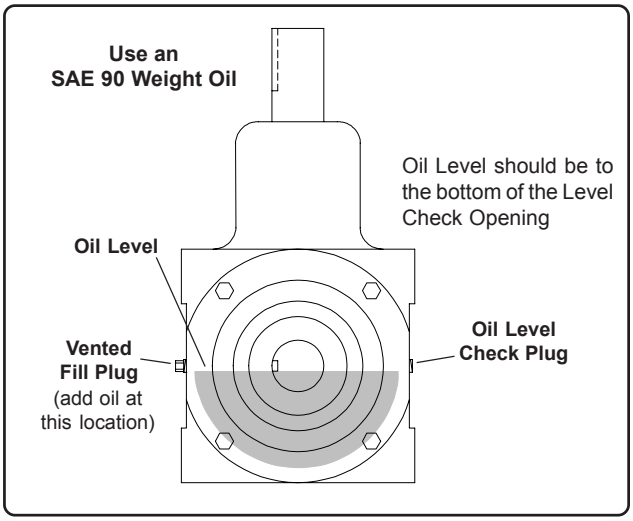


Fig. 3

LUBRICATION & MAINTENANCE (con't.)

Friction Type Winch Lubrication

The following lubrication checks should be made to the winch periodically.

The auger should be in the full down position with the undercarriage lift arm slide against the upper head stop when this inspection is performed. **Refer to the operating and maintenance instructions furnished with your winch for proper inspection methods.**

1. All gears should have a film of grease on them at all times.
2. The following parts must be wet with oil at all times:
   (a) the two bushings located at ends of drum shaft.
   (b) the rachet pawl pivot.
   IMPORTANT! *Do Not* get oil or grease on the disc brake faces.
3. Check brake disc's, if they are worn to less than 1/16 of an inch thick (1.6 mm), cracked or broken, replace both disc's.

Drive Shaft Bearing Inspection

All drive shafts are supported by self-aligning, sealed ball bearings which have been packed at the factory and require no further lubrication. However, check that the retainers are firmly fastened to the bearing stand.

Also check that the setscrews in the collars are tight against the drive shaft.

IMPORTANT! the complete drive shaft must be shielded with drive shaft covers during operation.

Keep all safety shields and devices in place.

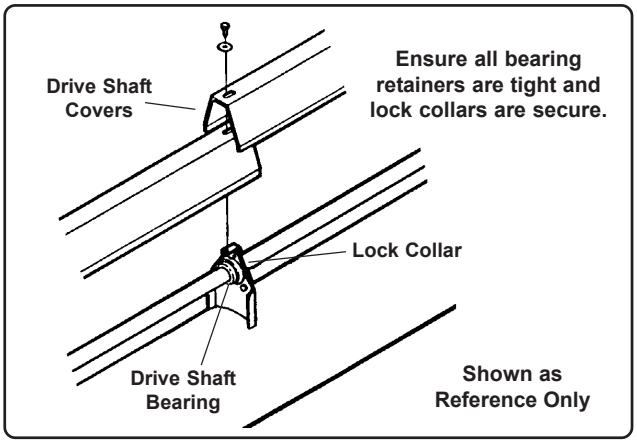


Fig. 4

Undercarriage Axle, Spindle Bearing

Tapered roller type bearings are standard for the 8" augers and will require occasional maintenance. The spindle bearings should be repacked with grease once every 12 months or more frequently depending on operating conditions.

1. Care must be used when dismantling the bearing and hub assembly. First remove the dust cap by prying around its edges.
   Remove the cotter pin, slotted nut and flat washer.
2. Carefully remove the hub and bearings from the spindle (axle shaft). Inspect all parts for wear or damage and replace with new if necessary (use caution not to damage the grease seal during removal or during reinstallation).

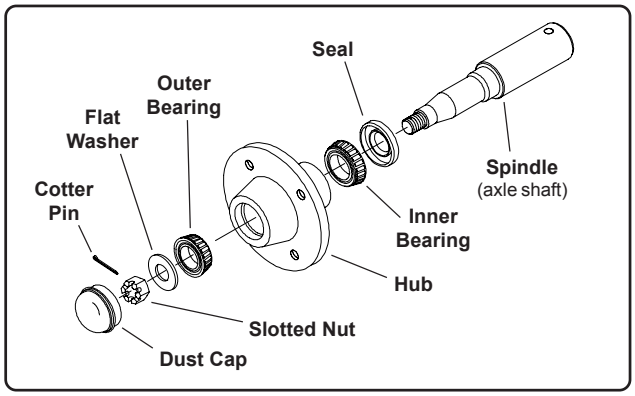


Fig. 5

3. Reassemble the hub in the reverse order of removal. Repack both bearings with grease and fill the hub cavity 1/3 full of grease as well.
   Place inner bearing and seal into hub. Carefully reinstall hub onto spindle (use care not to damage the lip of the seal).
4. Install outer bearing into hub and replace flat washer and slotted nut. Tighten the nut to press bearings into position. Rotate the hub occasionally as the nut is being tightened, when the hub begins to bind, back off the nut to the next slot and install a new cotter pin (use a 5/32" x 1 1/4" long cotter pin).
5. Replace dust cap.

Belt Adjustment

On drives that are powered by belts, the belt tension will need periodic adjustment.

See the operating procedures section for belt adjustment locations.

AUGER ASSEMBLY

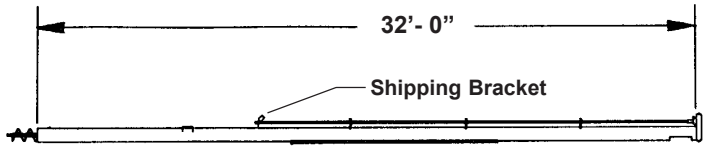
Some of the parts used in assembly are heavy and may require assistance when lifting and positioning these parts.

Always wear the proper personal safety equipment when working with metal and power tools.

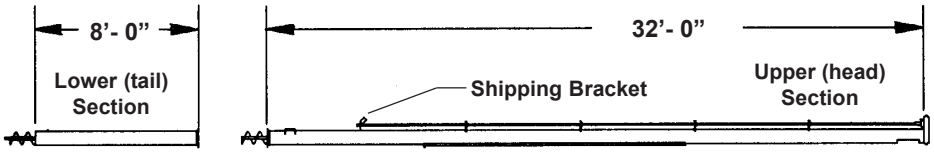
Be cautious of electrical hazards. Keep work area clean and free from tools and objects that may cause accidental tripping or falling.

Choose an area of open level ground, accessible to chain hoist or other lifting devices, where the auger can be laid out in full length. Lay the different sections of tube assemblies in the appropriate positions.

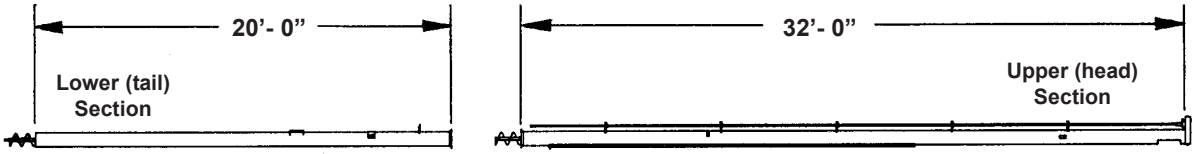
33' Model - Single Tube Construction



41' Model - Two Section Unit

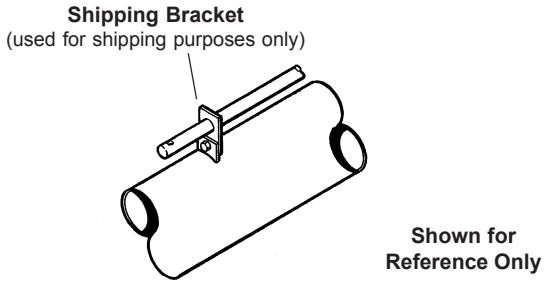


53' Model - Two Section Unit



Shipping Bracket

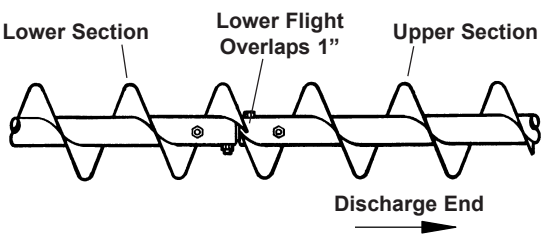
The shipping bracket on the 33' and 41' models supports the drive shaft during the shipping process. This bracket needs to be removed and discarded (the illustrations above show shipping bracket locations).



Flight Connections

The flight sections on the 41' and 53' models will need to be bolted together (the lower section of flighting will lap the upper section flighting about one inch).

Insert the connecting stub from the lower flight into the upper flight and align mounting holes. Secure using two 7/16 x 2 1/2 bolts and nylon locknuts.



***AUGER ASSEMBLY* (con't.)**

NOTE: Whenever reference is made to the left, right, front or rear of an auger, it is always determined by standing at the hitch end looking towards the discharge spout.

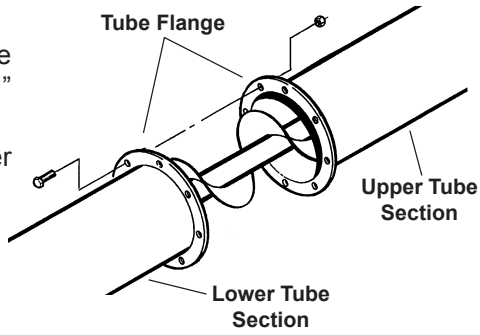
Auger Drive Lubrication

IMPORTANT! The enclosed drive reducer is shipped without oil. Oil needs to be added *before* operation.

1. The auger drive gearbox is located at the discharge end of the auger.
   Refer to the Lubrication Section on Page 13 for proper filling procedures.

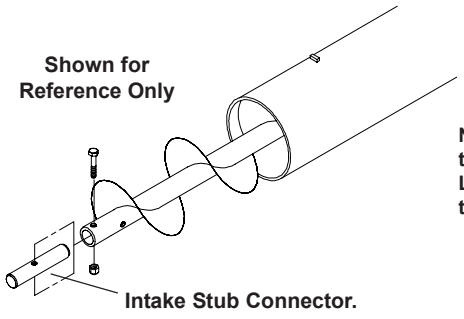
Connecting Flange

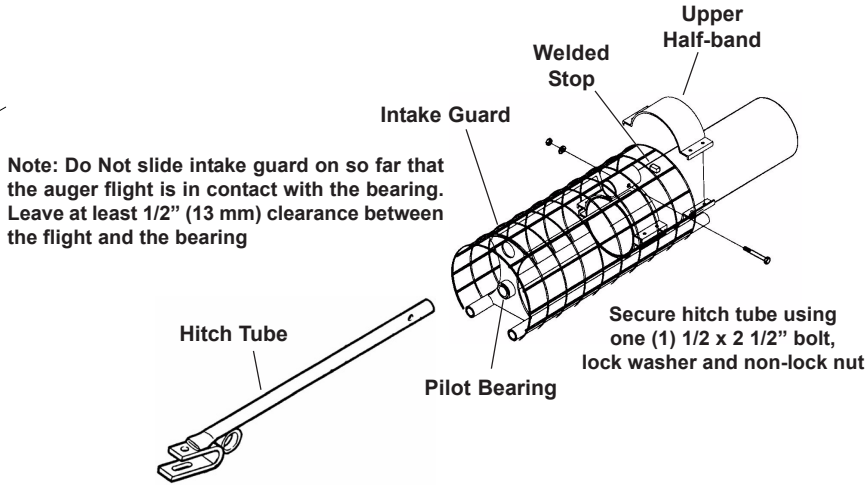
1. Once the lower and upper flight sections have been attached, slide the tube sections together and secure using eight (8) 5/16 x 1" bolts and nylon locknuts.
   Make sure when connecting the flanges, the upper and lower sections remain in alignment.



Intake Guard

1. Install the intake stub connector into the end of the flight and secure using one 7/16 x 2 1/2" bolt and nylon locknut (the mounting hole in the stub is offset from one end, insert the long end into the flight).
2. Slide the intake guard assembly over the flight and housing. Align the stub connector with the pilot bearing on the intake guard and continue installing the assembly pushing the stub through the bearing.
3. Position the intake guard so the rear side of the lower clamp assembly is flush with the edge of the tubing and attach the upper half-band to the clamp at the front of the guard using four (4) 5/16 x 1 1/2" bolts and nylon locknuts (the half-band will be located to the front side of the stop welded to the housing, don't tighten completely at this time). Use the same size hardware to fasten the rear clamp assembly as well.
4. Position the intake guard making sure there is approximately 1/2" (13 mm) of clearance between the pilot bearing and the edge of the auger shaft and tighten hardware.
5. Insert the hitch tube through the cut-out at the back of the guard and into the mounting tube on top of the clamp assembly. Secure the hitch tube using one (1) 1/2 x 3" bolt and nylon locknut.





***AUGER ASSEMBLY** (con't.)*

Drive Shaft Extension Assembly

The 33' & 41' models will use a band-on style bearing stand. The 53' model has the bearing stand already welded to the lower section housing.

1. Assemble the bearing flanges and bearings onto the bearing stand as shown in the illustration below. Each bearing will require three (3) 5/16 x 3/4" carriage bolts, lock washers and non-lock nuts. The two bottom bolts secure the bearing to the bearing stand, the top bolt attaches the mounting bracket for the drive shaft covers (See Fig. 6).

   Attach the drive shaft cover mounting brackets so they face towards the hitch end of the auger.

2. Slide the bearing and stand onto the drive shaft extension (on 53' models, slide the extension drive shaft through the bearing on the bearing stand). Use a coupler and two (2) 1/4" x 1" square keys and connect the extension shaft to the drive shaft.

   Use the illustration below to determine spacing for bearing stand placement and position the bearing stand at that location. Attach the bottom section half-band to the bearing stand and secure using two (2) 5/16 x 1 1/2" bolts and nylon locknuts.

3. Tighten the two bearing set screws to secure bearing to drive shaft.

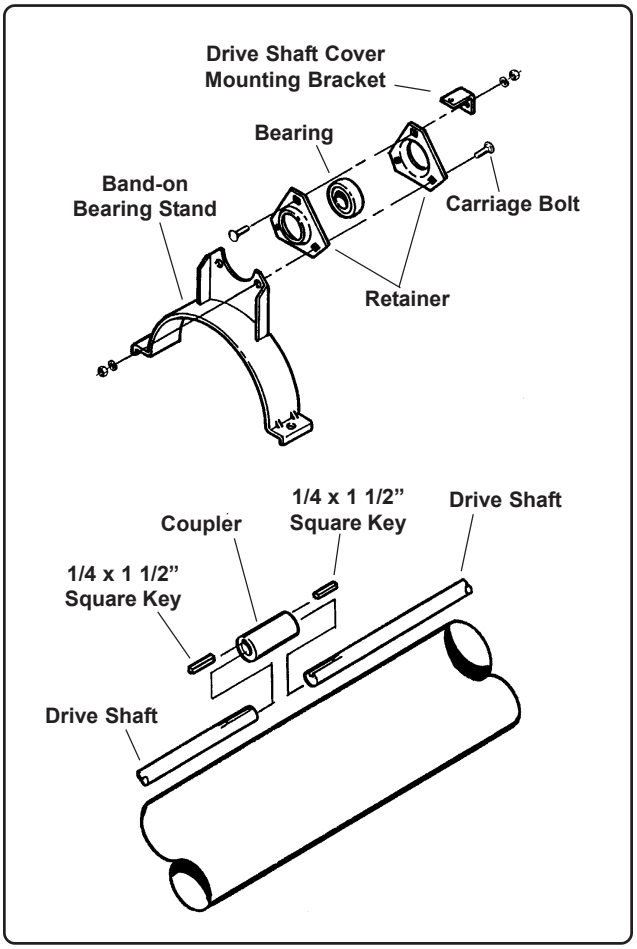
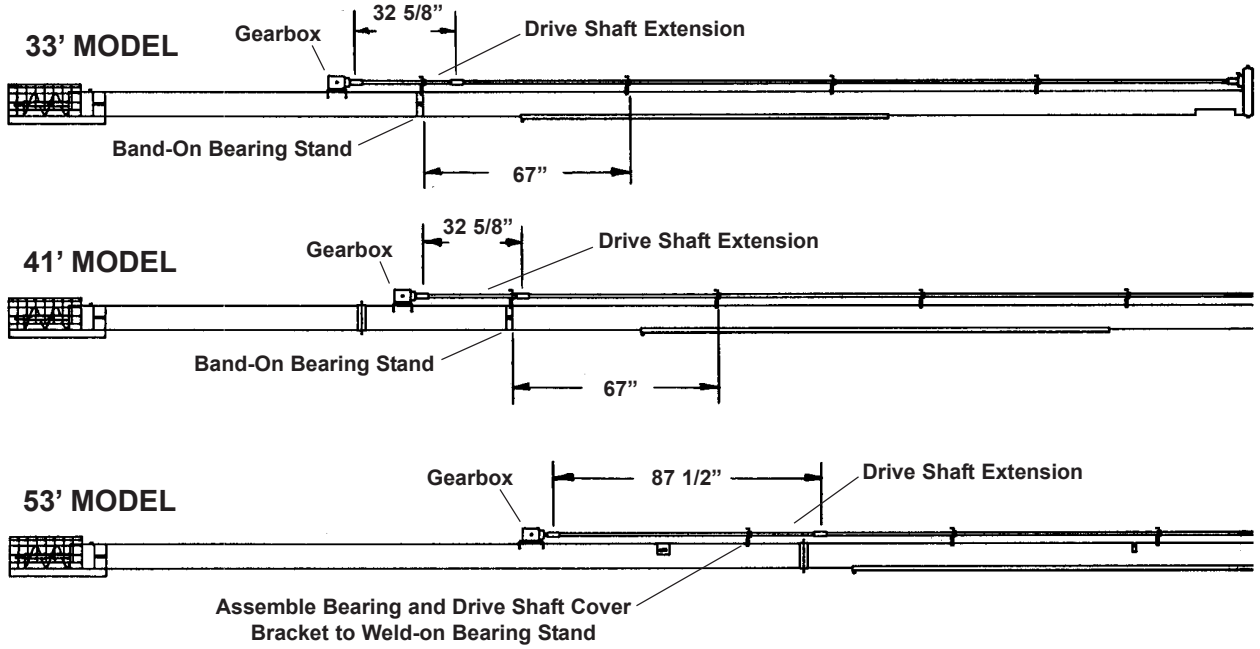


Fig. 6



Gearbox Assembly

IMPORTANT! The gearbox is shipped <u>without</u> oil. Oil needs to be added *before* operation.

Refer to the Lubrication Section on Page 13 for proper filling procedures.

1. Attach the gearbox to the gearbox mount bracket as shown in Fig. 7. Secure gearbox using four (4) 1/2" x 1" bolts and lock washers.
2. Install a coupler and 1/4" x 1 1/2" square key onto the end of the gearbox shaft. Align the gearbox and coupler with the drive shaft extension, using a 1/4" x 1 1/2" square key, connect the coupler to the drive shaft extension.

   Install the bottom half-band to the gearbox mount bracket and secure using six (6) 3/8" x 1 1/2" bolts and non-lock nuts (make sure to keep everything in alignment when tightening the gearbox mount to the half-band).
3. Attach the drive shaft cover mounting bracket to the top of the gearbox as shown. Secure using two (2) 1/2" x 3/4" bolts and lock washers.

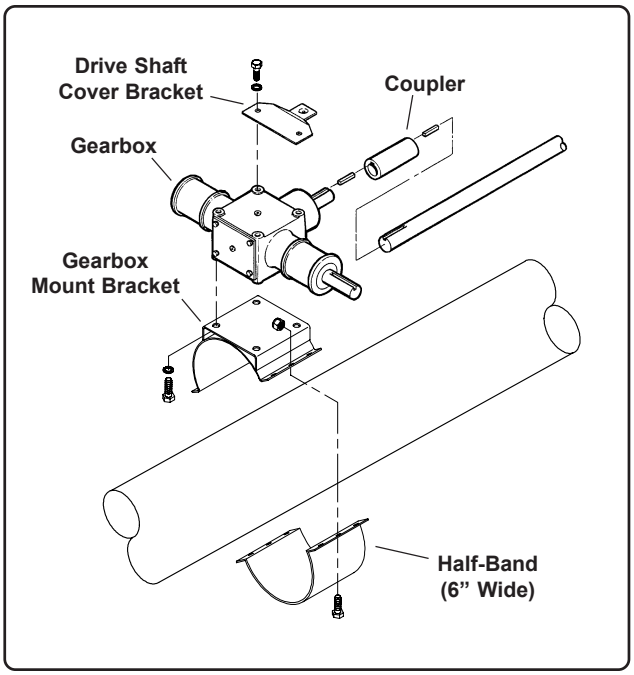
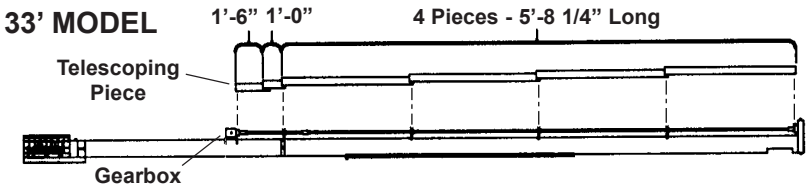


Fig. 7

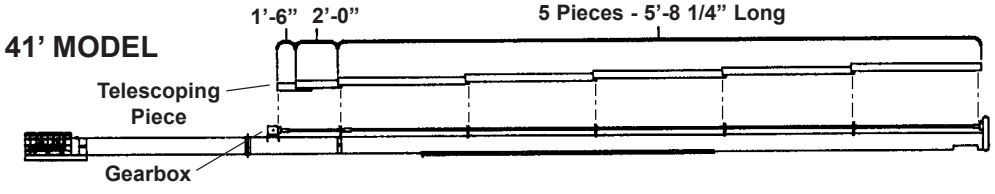
Drive Shaft Covers

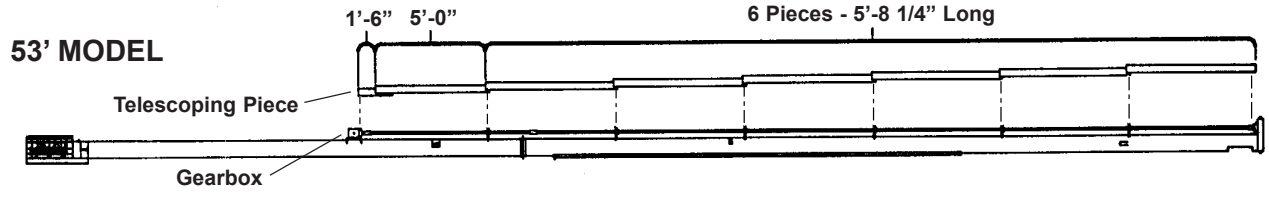
The drive shaft covers should be installed onto the auger while the auger is still laying on the ground. **Please remember these covers provide important protection for persons around an auger that is in operation. Proper installation is important!**

Determine the location of the various lengths of covers by placing them along side the auger in the order shown below. Begin at the intake (hitch) end of the unit and work your way up, overlapping the covers at each bearing stand.



Do Not operate auger without all drive shaft covers in place.



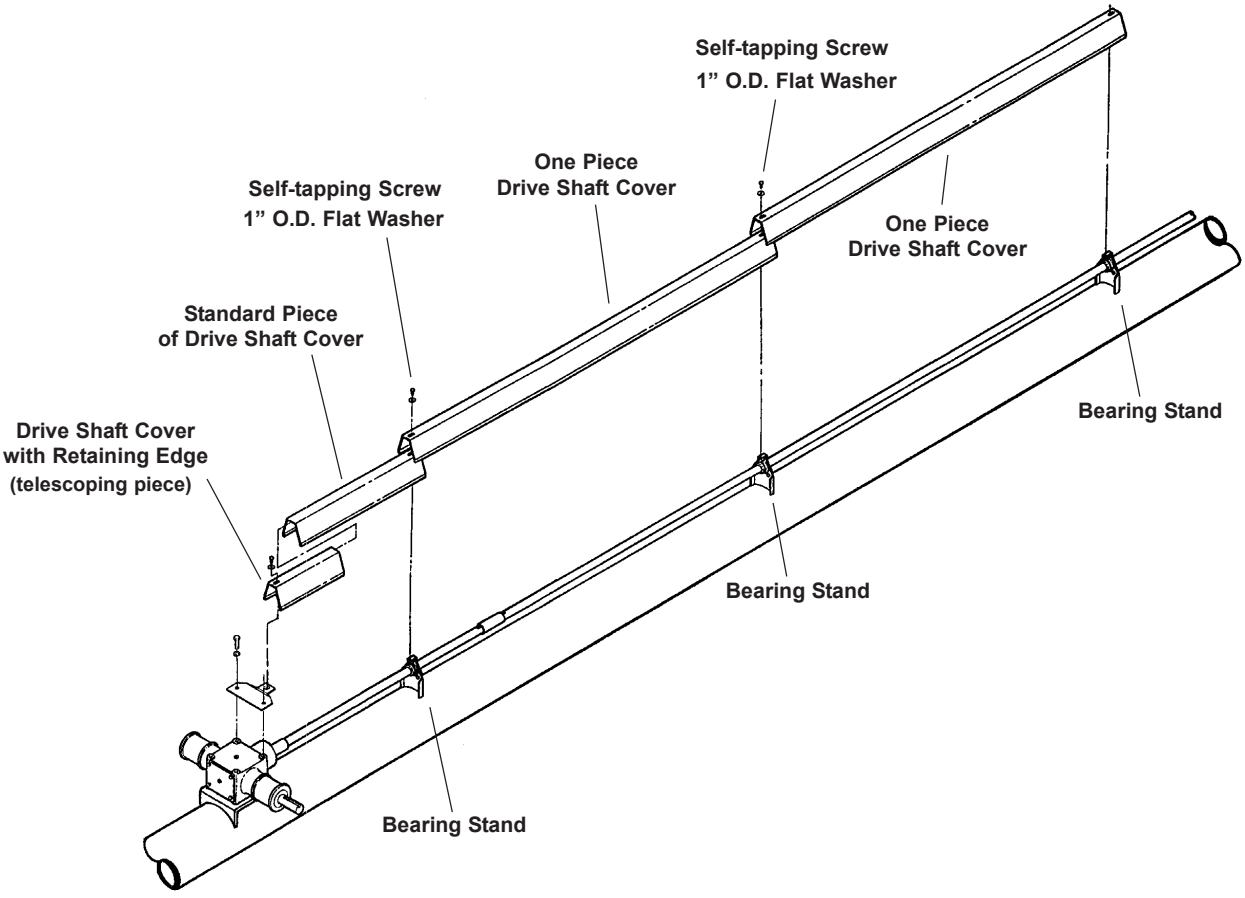


***DRIVE SHAFT COVERS* (con't.)**

Drive Shaft Cover Assembly

There is a special 2 piece section of drive shaft covers that installs between the gearbox and the first bearing stand. This section contains a short piece that has a retaining edge on the bottom that gives both cover sections a telescoping affect.

1. Attach the short section of cover to the bracket previously mounted to the top of the gearbox. Center the slotted hole with the mounting hole in the bracket and secure using one (1) 1/2 x 1 1/2" self-tapping screw and one (1) 1" O.D. flat washer. ***Do Not* overtighten, this can cause the hole in the mounting bracket to strip out.**
2. Position the slotted hole in the longer cover section above the cover bracket on the first bearing stand. Install the next section of cover on top of and overlapping the first (align the center of the slot as well). Secure using one (1) 1/2 x 1 1/2" self-tapping screw and 1" O.D. flat washer. Continue using this method to install the remaining covers.



This portion of the auger assembly is now complete. The next procedure will be assembling and installing the undercarriage and drive assembly.

The 53' Model requires a truss assembly. Refer to the following page (Page 20) for installation of the truss assembly.

For 33' and 41' Models continue with the undercarriage instructions on Page 21.

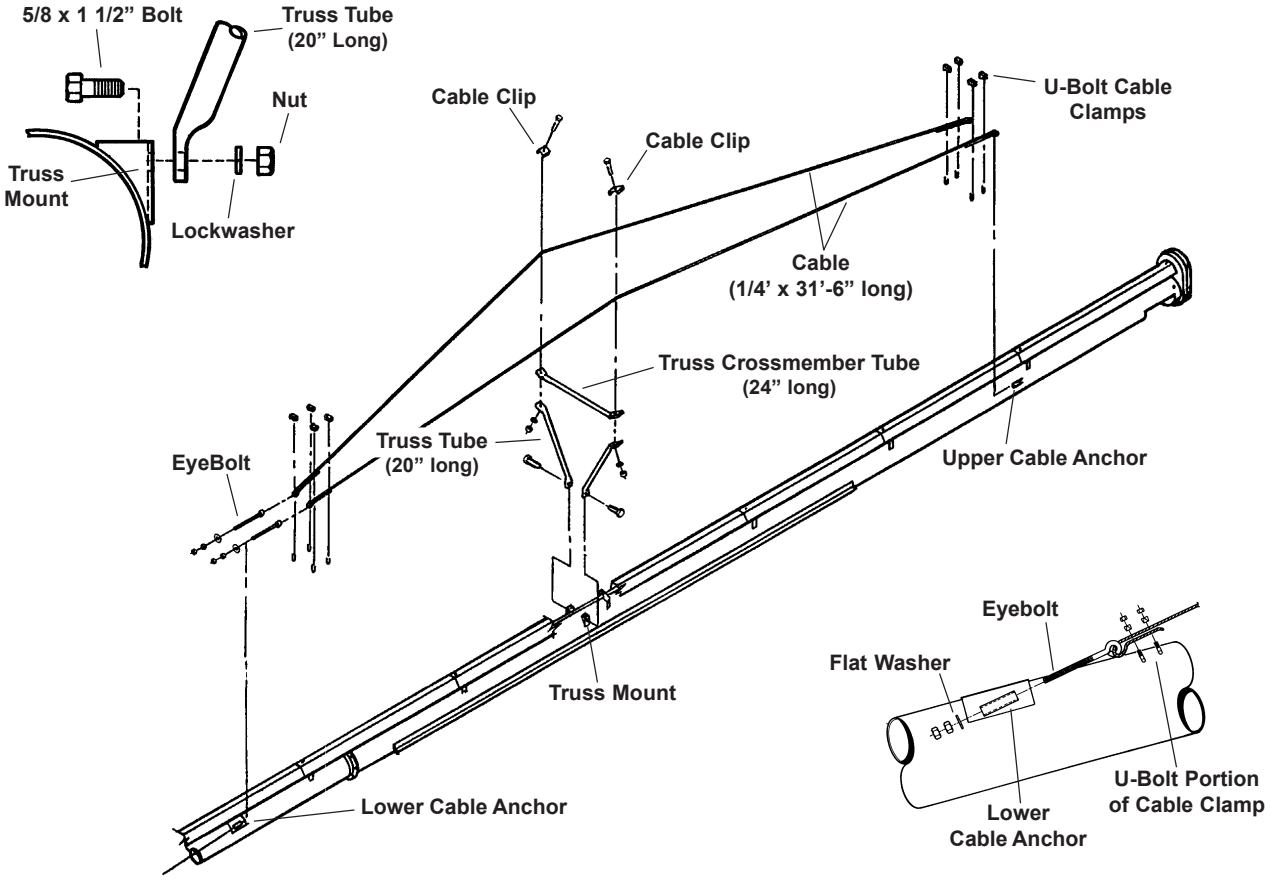
TOP TRUSS ASSEMBLY
53' AUGERS ONLY

1. Locate the truss tubes, cables, cable clips and mounting hardware from the kit.
2. Attach the two 20" vertical truss tubes to the mount brackets located on the auger housing (the mount brackets are located about 23 feet back from the discharge end). Secure the vertical tubes using 5/8 x 1 1/2" bolts, lock washers and non-lock nuts (do not tighten completely at this time).

   Attach the 24" crossmember tube to the tops of the vertical tubes. Secure each side using one 5/8 x 1 1/2" bolt, a cable clip, lock washer and non-lock nut (the cable clip will be positioned on the top side of the tube, leave hardware loose enough to allow the cable to fit between the clip and the truss tube).
3. Attach the cables to the upper cable anchors located on the auger housing near the discharge end of auger. Secure each cable using two u-bolt cable clamps. **IMPORTANT! When clamping the cable, position the u-bolts against the loose end of the cable.**
4. Route the cable over the vertical truss tubes (position cable under the cable clips) and to the lower cable anchors located on the auger housing near the hitch end of the auger.

   Install an eyebolt through each cable anchor and secure each eyebolt using one (1) 1/2" flat washer and two (2) 1/2" non-lock nuts.

   Loop the cable through the eyebolts, pull cable fairly snug to remove the slack from the cable (snug both cables equally). Secure using two (2) u-bolt cable clamps. **IMPORTANT! When clamping the cable, position the u-bolts against the loose end of the cable.**
5. **Adjust the truss support so it is 90 degrees to the auger housing and tighten truss to housing. Tighten the cable at the eyebolts until reasonably snug, then tighten the cable clips.**



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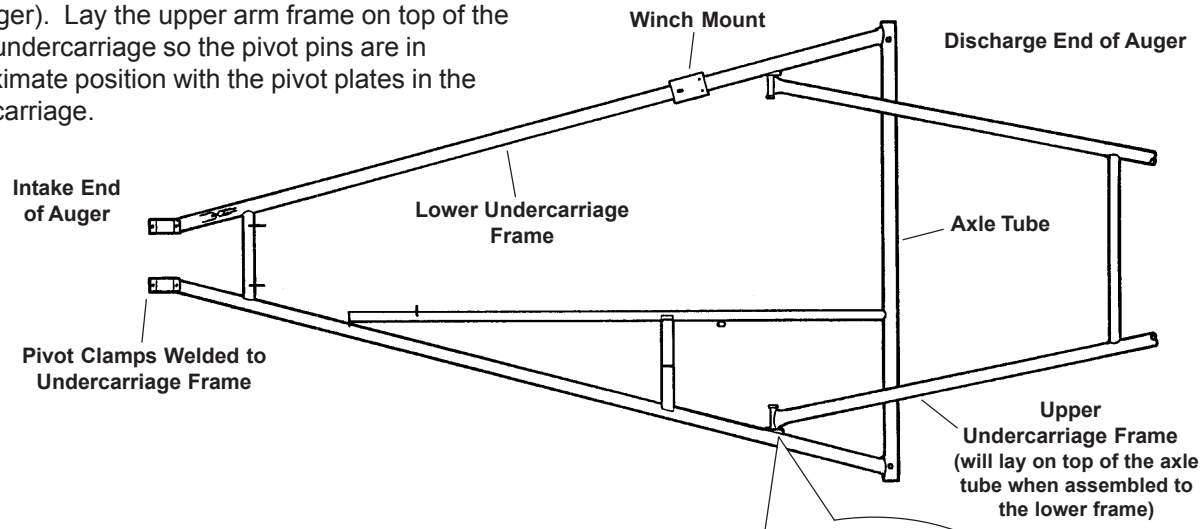
UNDERCARRIAGE ASSEMBLY

Assemble Undercarriage

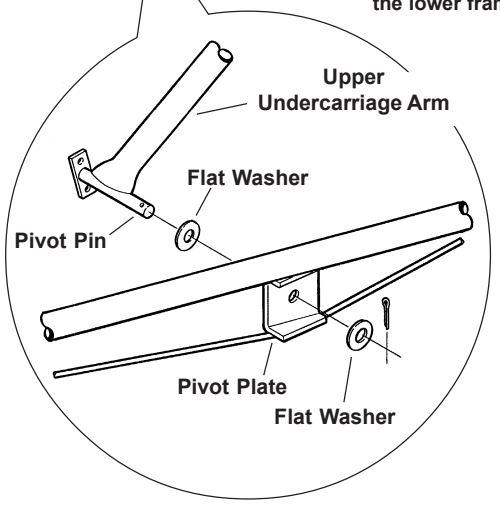
Lay the lower undercarriage frame next to the auger housing (position the pivot clamps at the hitch end of the auger). Lay the upper arm frame on top of the lower undercarriage so the pivot pins are in approximate position with the pivot plates in the lower carriage.



Upper Arm Frame to Lower Undercarriage Frame

1. Slide a 1" I.D. flat washer onto the pivot pin located on the upper arm frame. Insert pivot pin into the pivot plate, install another flat washer and secure using a 3/16" x 2" cotter pin.

   Install the opposite side of the upper arm frame in the same manner (you will need to pull the upper arm frame towards the center of the undercarriage to allow the pivot pin to slide into position).



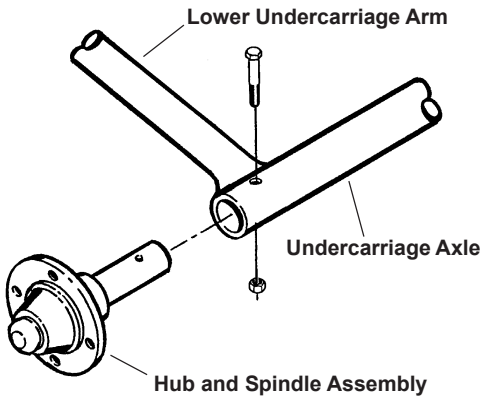
Hub & Spindle

2. Raise and support the axle tube end of the undercarriage high enough to install the tire and wheel assemblies.

   Do Not rely solely on mechanical or hydraulic jacks for support. Use jackstands or equivalent for support.

   Slide the hub and spindle assembly into the ends of the axle tube. Secure using one 1/2" x 2 1/2" bolt and nylon locknut (41' & 53' models will use a 1/2" x 3" bolt).

   Install the tire and wheel assemblies and secure each using the four (4) lug bolts provided.



***UNDERCARRIAGE ASSEMBLY** (con't.)*

Undercarriage Slide to Track Assembly

3. Lift the auger assembly a few feet by lifting at a point near the center of the auger with a chain hoist or other safe, suitable means. Do Not lift the entire weight of the auger from the extreme end. Do Not use the driveshaft to lift auger. Use a sling completely around the auger housing for lifting.

   Install the carriage slide onto the track form the discharge end (make sure the slide is installed on the track in a manner whereby it cannot be removed from the track after the stop has been installed.

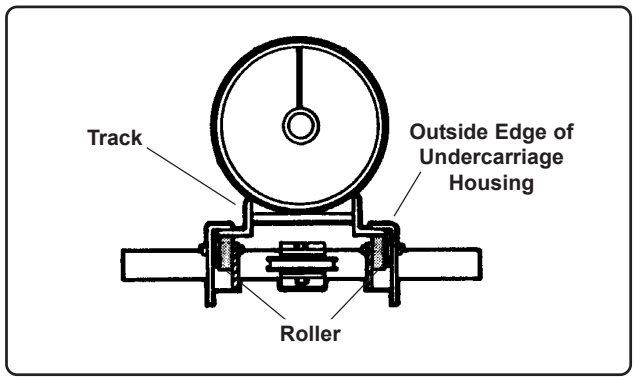


Fig. 8

Be cautious when installing the slide rollers onto the track, hands and fingers can become pinched during this procedure.

Undercarriage Track Stop

4. A "track stop" must be installed on the discharge end of the undercarriage track on all lengths of auger.

   Once the undercarriage slide has been installed onto the track, attach the track stop using two (2) 1/2 x 1 1/2" bolts, lock washers and non-lock nuts (the track stop will bolt onto the bottom side of the housing track).

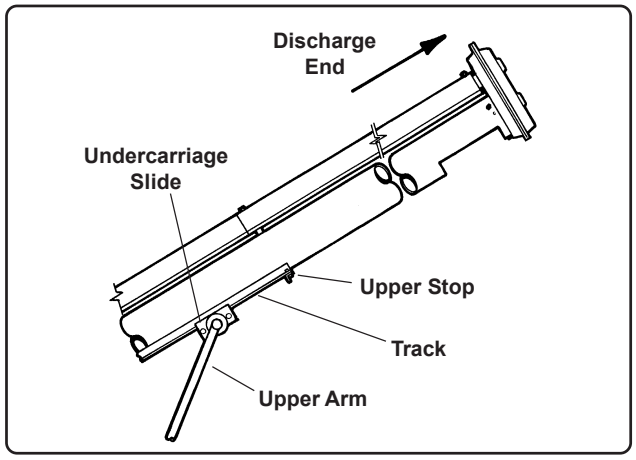


Fig. 9

Lower Undercarriage Arm to Gearbox

5. Lift the auger high enough to attach the pivot clamps to the pivot ears on the gearbox (keep the undercarriage slide against the track stop by securing temporarily with a chain).

6. Clamp the lower undercarriage arms to the gearbox pivot ears using four (4) 3/8 x 1 1/4" bolts and nylon lock nuts.

   Note: the lower undercarriage arms must be able to pivot freely on the gearbox ears. If the clamps are tight against the ears, the undercarriage arms will not be able to pivot and may cause damage to the gearbox. If necessary, shims can be used between the clamps to provide sufficient clearance.

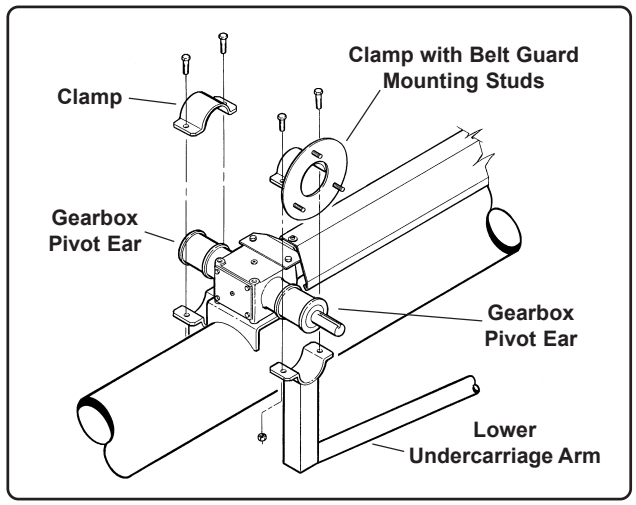


Fig. 10

WINCH ASSEMBLY

Winch Handle
33' & 41' Augers use Winch Model K-1050
53' Augers use Winch Model K-1550

Keep hands away from winch drum during winch operation.

Never fully extend the cable, always keep three complete turns of cable wrapped around the winch drum.

Never operate winch with wet or oily hands, always use a firm grip on the handle.

Handle installation is the same for both models.

1. Align the slot of the handle with the flat portion of the winch shaft. Use the hex nut to hold the handle in place and tighten securely (See Fig. 11).

   It is important that the handle is properly installed for the winch brake to work properly.

   For additional winch information, follow the instructions and precautions listed in the material supplied by the winch manufacturer.

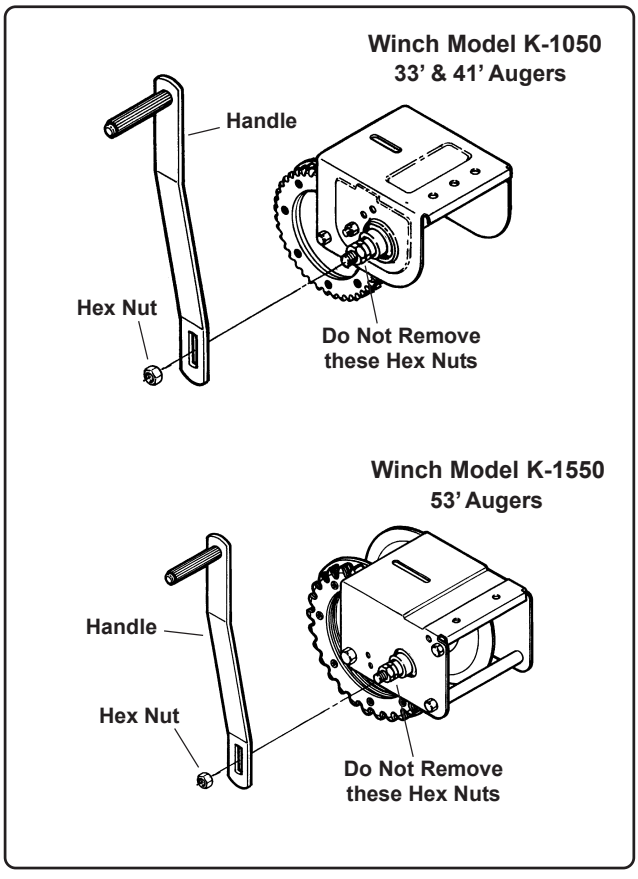


Fig. 11

Attach Cable to Winch

Attach cable to winch drum so cable will wrap ***over*** the winch drum when turning handle in a clockwise direction.

2. From inside of drum, insert the cable through one round hole until it extends about 1" (24.5 mm) past the two square holes.

   Clamp the cable to the outside of the drum with the cable keeper using two (2) 3/16 x 3/4" carriage bolts, lock washers and non-lock nuts (be sure the carriage bolt heads are inserted from the inside of the drum, See Fig. 12).

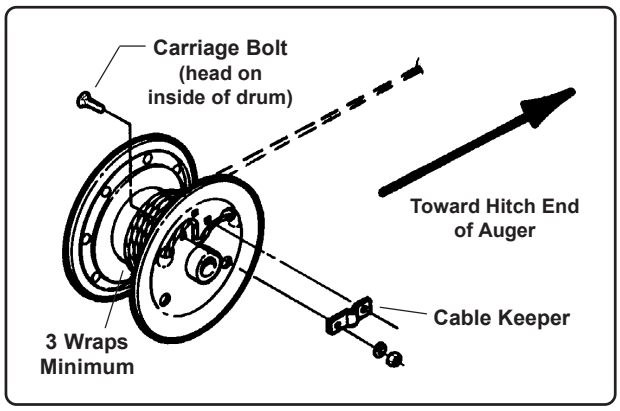


Fig. 12
Hitch End of Auger

Mount Winch onto Auger

3. Position the winch assembly onto the mounting plate so the winch drum is facing towards the hitch end of the auger (See Fig. 13).

   Secure using three (3) 3/8 x 1" bolts, flat washers, lock washers and non-lock nuts.

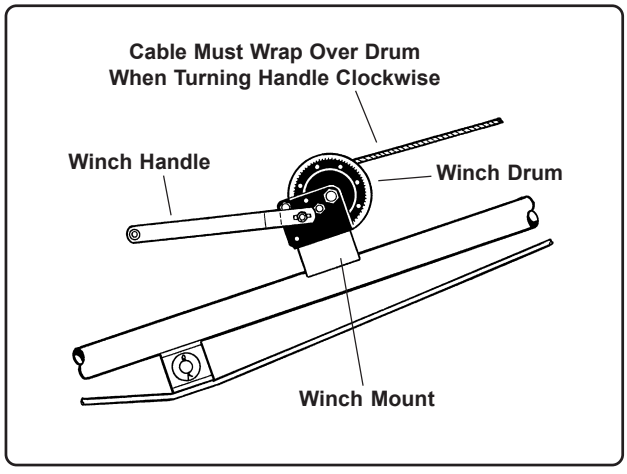


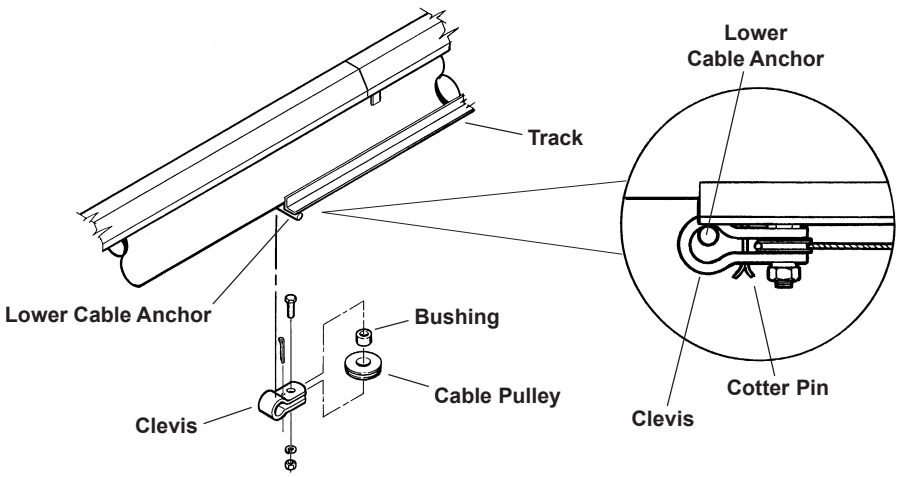
Fig. 13

***WINCH ASSEMBLY** (con't.)*

Route Winch Cable, 41' & 53' Models

It will be necessary to install a clevis and cable pulley assembly to the anchor rod on the 41' & 53' Models.

1. The clevis and pulley assembly will have to be disassembled in order to install it onto the cable anchor. After disassembly, attach the clevis to the cable anchor and reassemble the pulley, bushing and hardware (make sure to reinstall the cotter pin).



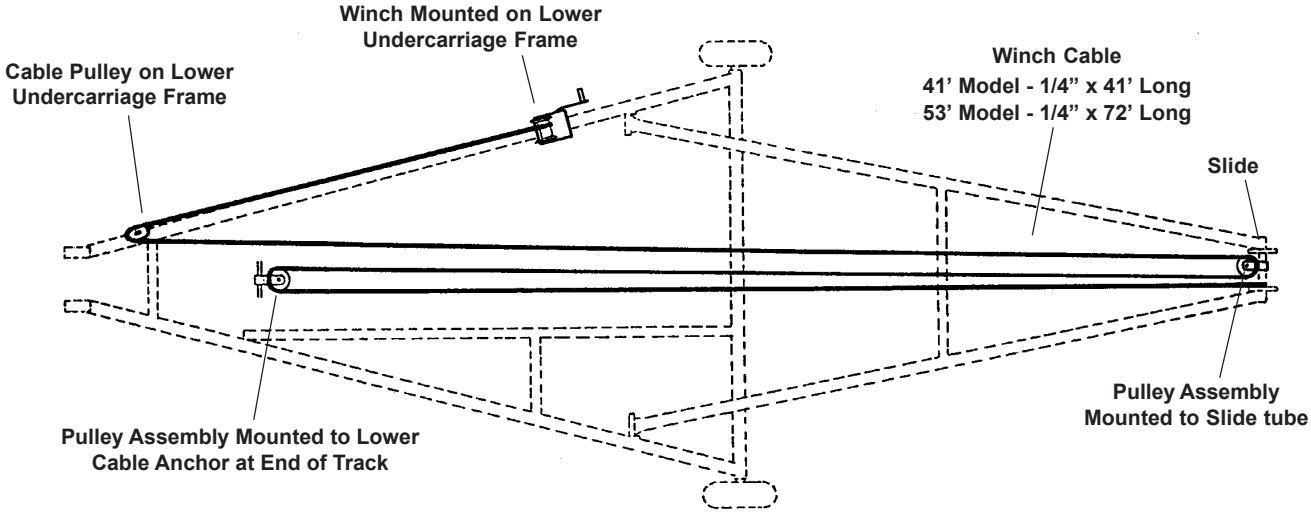
2. Route the cable through the existing cable pulley located on the undercarriage frame.

   Continue to the discharge end and route through the pulley on the slide assembly; down to the cable pulley at the lower end of the track and back up to the slide assembly at the discharge end.

   Wrap cable around the slide tube (next to the cable pulley); pull cable tight enough to keep the cable taut at the winch end. Turn the winch handle clockwise until the drum has three complete wraps around it.

   Keeping the cable snug, secure it to the slide tube using two (2) u-bolt clamps **(position the u-bolts against the loose end of the cable).**

41' and 53' Models



WINCH ASSEMBLY (con't.)

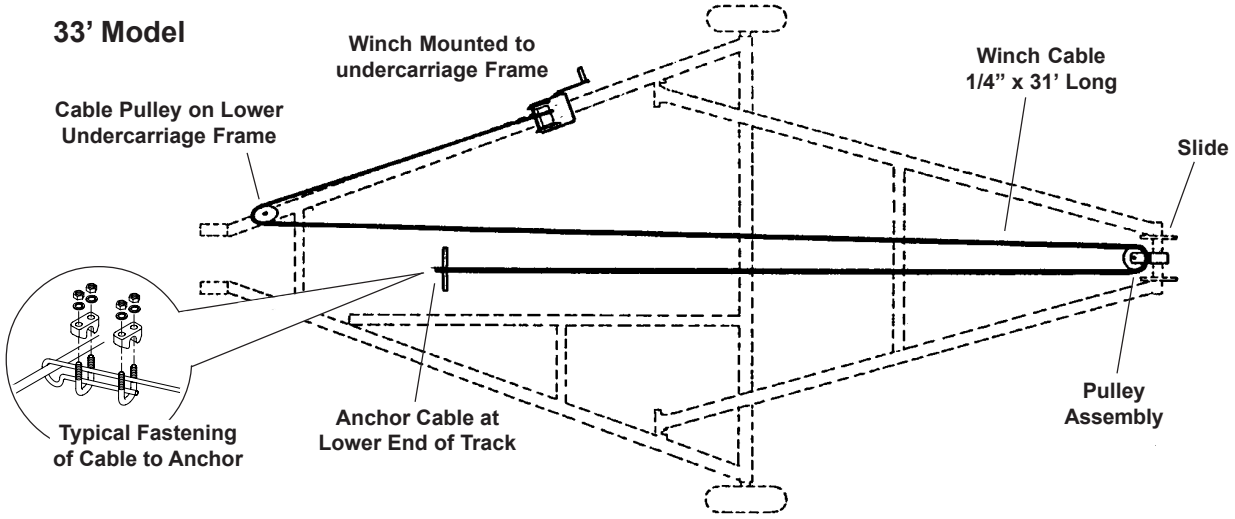
Route Winch Cable, 33' Models

The illustrations below shows the routing path of the winch cable for the 33' auger models.

1. Route the cable through the existing cable pulley located on the undercarriage frame near the hitch end of the auger. Continue to the discharge end and route through the pulley on the slide assembly and on down to the cable anchor at the lower end of the track (cable anchor is a rod welded to the lower end of the track).

   Wrap cable around the anchor and pull cable tight enough to keep the cable taut at the winch end. Turn the winch handle clockwise until the drum has three complete wraps around it.

   Keeping the cable snug, secure it to the anchor using two (2) u-bolt clamps **(position the u-bolts against the loose end of the cable).**



INSTALL DRIVE ASSEMBLY - all Gas Models

The motor mount equipped with these augers is of the self-leveling style, that is, as the auger is lowered and raised, the motor mount linkage keeps the engine in a level position. Make sure the leveling and pivot straps can pivot freely after installation.

Always use an engine with required horsepower (see chart below). The horsepower recommendations are for auguring reasonably dry grain at varying angles. High moisture grain (above 15%) will require greater power if maximum capacity is to be maintained. The maximum possible capacity will be less with high moisture grain as opposed to dry grain.

HORSEPOWER REQUIREMENTS

Auger Length	Gas Engine H.P.	Gearbox Ratio	Gearbox Sheave	Jack Shaft Sheave	Gas Engine Sheave *	Suggested Auger Flight Speed Operating Engine at 3,000 RPM
33 ft.	9 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650
41 ft.	12 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650
53 ft.	18 hp	1 1/2 to 1	15" O.D.	8" O.D.	4.6" P.D.	650

P.D. - Pitch Diameter

O.D. - Outside Diameter

* Gas Engine Sheave is Not Furnished with the Auger

Auger flight speed can be regulated by adjusting the gas engine speed.

INSTALL DRIVE ASSEMBLY - all Gas Models (con't.)

Install Drive Assembly (Gas Models)

1. Install the jackshaft to the mounting tabs on the lower portion of the undercarriage frame. Secure using two (2) 1/2 x 1 1/4" bolts and nylon locknuts. **Note: the jackshaft assembly must be able to pivot, tighten the bolts only enough to still allow the jackshaft to pivot freely.**
2. Thread two 1/2" non-lock nuts onto the jackshaft adjustment rod. Insert the threaded end of the adjustment rod through the anchor tube welded to the side of the undercarriage frame, and insert the hook end of the adjustment rod into the hole on back of the jackshaft mounting tab (See Fig. 14).

   Secure the hook end using one (1) 1/8 x 1 1/4" cotter pin, and install two more nuts onto the threaded end of the rod (jackshaft adjustment will be made during the pulley and belt installation).
3. Slide the small belt guard over the three bolts welded to the round shaped mounting plate on the end of the jackshaft assembly. Install a belt guard ring onto the three bolts and secure using three (3) 3/8 nylon locknuts (do not tighten completely at this time, the belt guard will be adjusted after the belts have been installed).
4. The inside clamp on the gearbox ear has a round shaped mounting plate with three bolts welded to it as well, install the large belt guard over the three bolts, slide on a belt guard ring and secure using three (3) 3/8" nylon locknuts (do not tighten completely at this time).

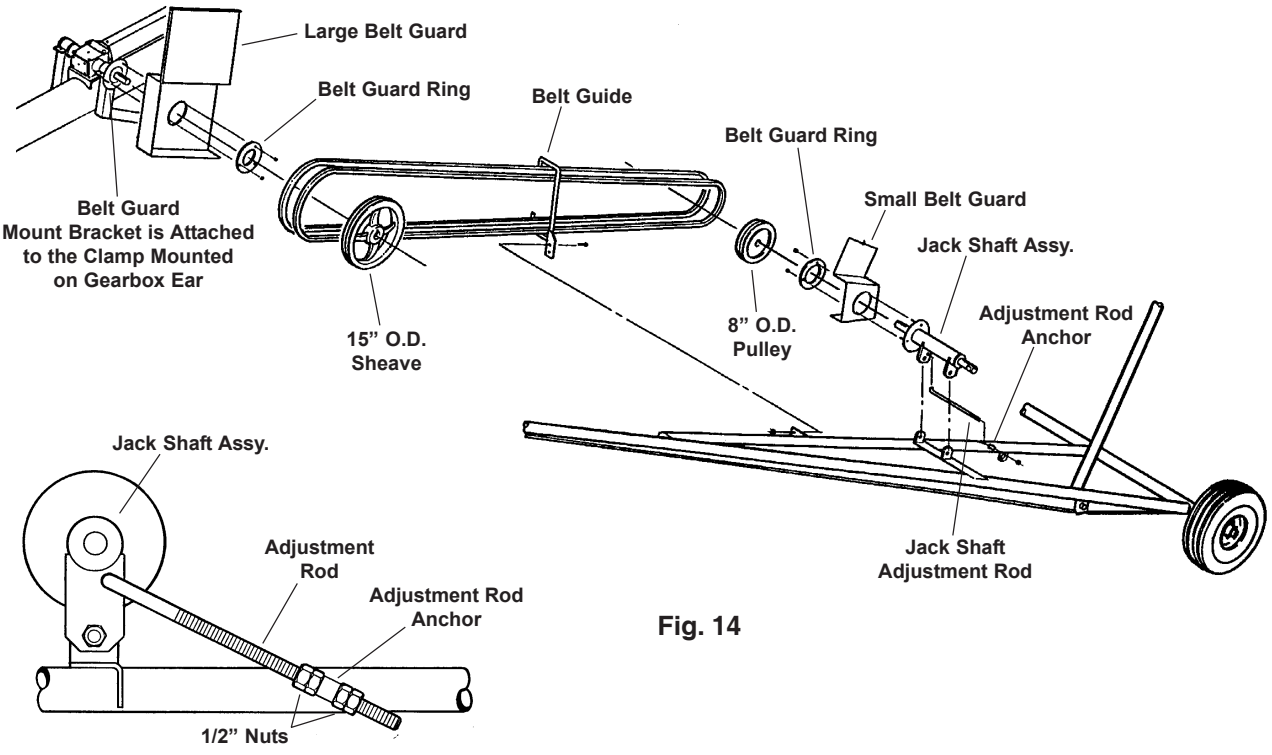


Fig. 14

5. Install the 15" sheave and 1/4 x 2" square key onto the gearbox shaft and install the 8" sheave and 1/4 x 2" square key onto the jackshaft (the sheaves should be completely on the shafts, but not rubbing against the back of the belt guards). Secure the sheaves by tightening the set screws in the sheave hubs.
6. Install the belts onto the sheaves. Tighten the belts using the nuts on the jackshaft adjustment rod, (tighten the belts until reasonably snug, check belts during operation, if they slip, tighten a little more). When properly adjusted, secure the nuts on the adjustment rod. Adjust the belt guards so they are not rubbing on the belts or sheaves and tighten the guard rings into place.
7. Locate the belt guide from the kit. Position the guide over the belts and attach it to the mounting tab on the undercarriage frame as shown in Fig. 14. Secure using two (2) 5/16 x 1" bolts and nylon locknuts (make sure to position the belts so they are captured inside the belt guide).

INSTALL DRIVE ASSEMBLY - all Gas Models (con't.)

8. Insert the tube end of the undercarriage pivot strap into the pivot bracket welded to the bottom side of the carriage frame just to the front of the jackshaft adjustment rod (See Fig. 15).

   Fasten the opposite end of the pivot strap to the upper undercarriage arm. Secure using two (2) 3/8 x 1" bolts and nylon locknuts.

9. Fasten the motor mount frame to the jackshaft assembly as shown in Fig. 15. Secure using two (2) 3/8 x 3 1/2" bolts and nylon locknuts, ***tighten only enough to still allow the motor mount to pivot freely on the jackshaft.***

10. Attach the adjustment strap to the mounting tab on front of the motor mount assembly (attach the end of the strap that has only one hole). Secure using one (1) 1/2 x 1 1/4" bolt and nylon locknut **(*do not* tighten completely, the adjustment strap must be allowed to pivot freely).**

    Attach the opposite end of the adjustment strap (end with 4 holes) to the undercarriage pivot strap previously installed in Step 8 (determine the approximate position that the motor mount would be when sitting level and attach the adjustment strap to the pivot strap using one of the four holes closest to that position). Use a 1/2 x 1 1/4" bolt and nylon locknut and tighten just enough to still allow the strap to pivot freely.

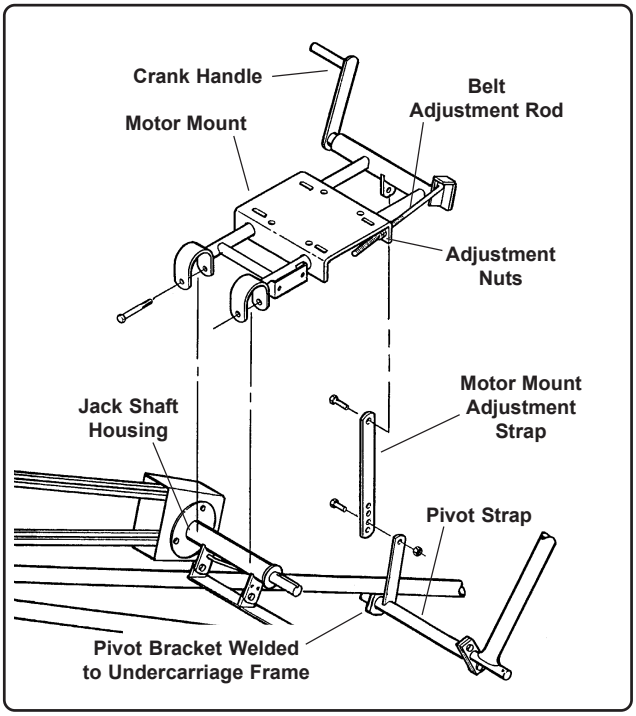


Fig. 15

11. Install the belt guard mounting bracket to the side of the motor mount frame using two (2) 3/8 x 1" bolts, flat washers and nylon locknuts (do not tighten at this time, See Fig. 16).

12. Install the 8" sheave and 1/4 x 2" square key onto the end of the jackshaft assembly. Tighten the set screws in the sheave to secure into place.

13. Install the gas engine onto the motor mount and secure using the hardware provided with the engine **(the engine sheave and mounting hardware is not furnished).** ***Refer to Page 11 for recommended horsepower requirements.***

    Install the sheave onto the engine shaft and position the engine to align the sheaves (place a straight edge across the face of the both sheaves for alignment).

14. Install and tighten the engine drive belts. To tighten belts, engage the crank handle by rotating down until handle locks over-center.

    Use the nuts on the motor mount adjustment rod and tighten belts until reasonably snug **(do not overtighten, excessive wear or damage will occur).**

15. Slide the belt guard into place and secure to the bracket using four (4) 1/4" flat washers and nylon locknuts. Position the belt guard so it does not contact or rub on the belts or the sheave and secure into place.

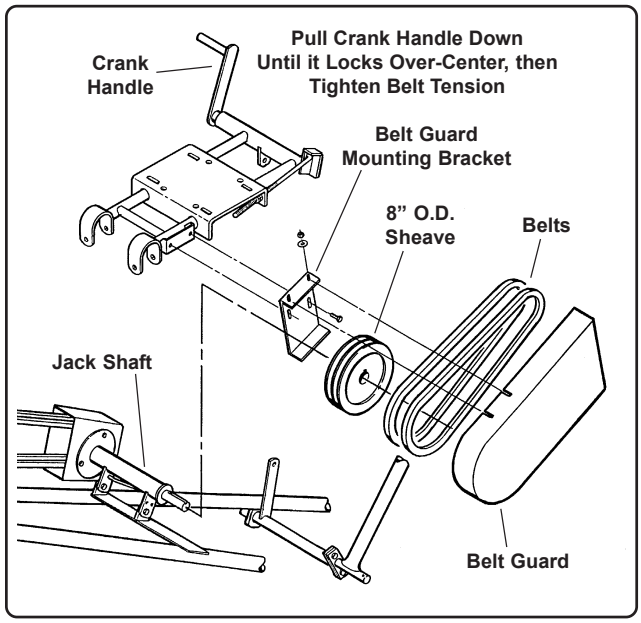


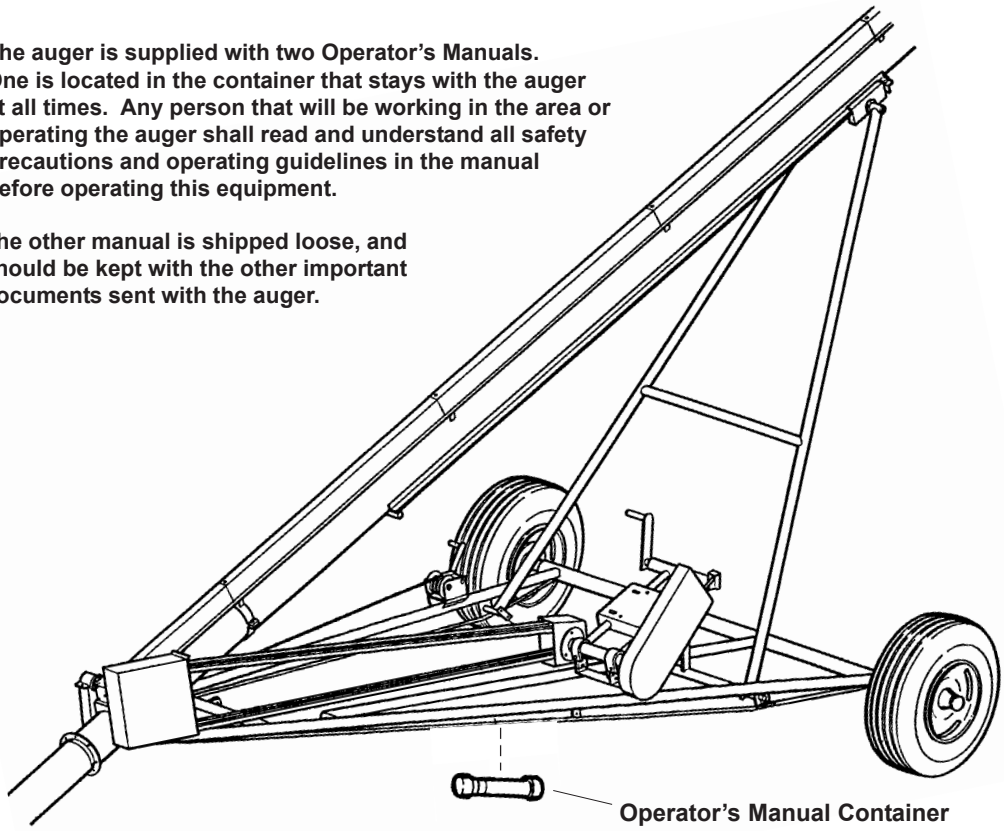
Fig. 16

OPERATOR'S MANUAL CONTAINER

1. Check that an Operator's Manual is in the plastic container (Manual Part No. 1031686).
2. Snap the container into the holder located on the inside of the lower undercarriage arm.

The auger is supplied with two Operator's Manuals. One is located in the container that stays with the auger at all times. Any person that will be working in the area or operating the auger shall read and understand all safety precautions and operating guidelines in the manual before operating this equipment.

The other manual is shipped loose, and should be kept with the other important documents sent with the auger.



Operator's Manual Container
Snaps into holder located on inside of the Lower Undercarriage Arm

TO DEALER/ASSEMBLER

The assembly of the auger is now complete if all applicable assembly steps in this manual have been followed.

Before delivery to the customer, it is a good practice to check the following:

a. Be sure all safety shields and devices are properly installed.

b. Check all Safety Decals to see if they are clean and legible. If any are missing, damaged, painted over, etc. replace them. Safety Decals can be obtained free of charge from your dealer, distributor, or ordered from the factory.

c. Check all bolts and fasteners to see if they are tightened and secured properly.

TO THE CUSTOMER/OWNER

Use the assembly section in this manual as a reference to ensure that the auger has been assembled properly.

Make sure an Operator's Manual is delivered along with your auger. Anyone who will operate or work around a portable auger shall first read the Operator's Manual.

Failure to read the manual and its safety instructions is misuse of the equipment.

BOLT KIT, 33' NORTHERN AUGER (GAS)

Part No.	Description	Qty.	Where Used
106241	Lug bolt, 1/2-20 x 1"	8	Wheel to Hub
33091	Bolt, 1/2-13 x 3" G5 PLT	2	Spindle Assemblies into Axle
33138	Nut, nylon lock, 1/2-13 PLT	2	
33138	Screw, 1/2 x 1 1/2" self tapping	6	Drive Shaft Covers to Drive Shaft
33020	Washer, fender, 1/4-1" PLT	6	Cover Brackets
4736	Bolt, 5/16-18 x 1 1/2" G5 PLT	8	Half-Band (2) to Tail Cage
33135	Nut, nylon lock, 5/16-18 PLT	8	
4911	Bolt, 1/2-13 x 3 1/2" G5 PLT	1	Hitch Pipe
D1143	Washer, 1/2" lock	1	
33024	Washer, 1/2" flat	1	
D1169	Nut, non-lock, 1/2-13 PLT	1	
33294	Bolt, 1/2-13 x 1" G5 PLT	4	Gearbox to Gearbox Mount
D1143	Washer, 1/2" lock	4	
1002226	Bolt, 1/2-13 x 3/4" G5 PLT	2	Gearbox Shield Bracket to Gearbox
D1143	Washer, 1/2" lock	2	
33060	Bolt, 3/8-16 x 1" G5 PLT	3	Winch to Mount
33136	Nut, nylon lock, 3/8-16 PLT	3	
33024	Washer, 3/8 flat	3	
1002227	Bolt, 1/2-13 x 1 1/2" G5 PLT	2	Upper Undercarriage Stop to Auger
33138	Nut, nylon lock, 1/2-13	2	
1002253	Bolt, 7/16-14 x 2 1/2" G5 PLT	2	Flight Connection
33137	Nut, nylon lock, 7/16-14	2	
33229	Bolt, 3/8-16 x 1 1/4" G5 PLT	4	Undercarriage Clamp
33136	Nut, nylon lock, 3/8-16 PLT	4	to Gearbox Ears
8371C	Key, square 1/4 x 1 1/2"	2	Drive Shaft Connectors
8371C	Key, square 1/4 x 1 1/2"	2	Drive Shaft to Gearbox
4727-1	Bolt, 5/16-18 x 1 1/4" G5 PLT	2	Belt Guide to Undercarriage Frame
33135	Nut, nylon lock, 5/16-18 PLT	2	
33136	Nut, nylon lock 3/8-16 PLT	3	Gearbox Belt Guard to Undercarriage Clamp Bracket
D1160	Washer, flat, 1" I.D. PLT	4	Upper Undercarriage Arm to
3018A1	Cotter pin, 3/16 x 2"	2	Lower Udercarriage Arm
6369C	Clamp cable, 1/4"	2	Undercarriage Cable to Track Angle
33310	Bolt, 3/8-16 x 1 1/2" G5 PLT	6	Gearbox Mount to Half-Band
D1149	Nut, non-lock, 3/8-16 PLT	6	
1002238	Bolt, carriage, 5/16-18 x 3/4" G5 PLT	2	Bearing Assembly to Bearing Stand
33135	Nut, nylon lock, 5/16-18 PLT	2	
1002238	Bolt, carriage, 5/16-18 x 3/4" G5 PLT	1	Drive Shaft Cover Bracket
33135	Nut, nylon lock, 5/16-18 PLT	1	to Bearing Assembly
33082	Bolt, 1/2-13 x 1 1/4" G5 PLT	2	Jackshaft to Lower
33138	Nut, nylon lock, 1/2-13 PLT	2	Undercarriage Arm
D1169	Nut, 1/2-13 non-lock PLT	2	Jackshaft Housing
4112	Cotter pin. 1/8 x 1 1/4"	2	Adjustment Rod
4045A1	Key, square, 1/4 x 2"	1	Sheave to Gearbox Shaft
4045A1	Key, square, 1/4 x 2"	1	Pulley to Jackshaft

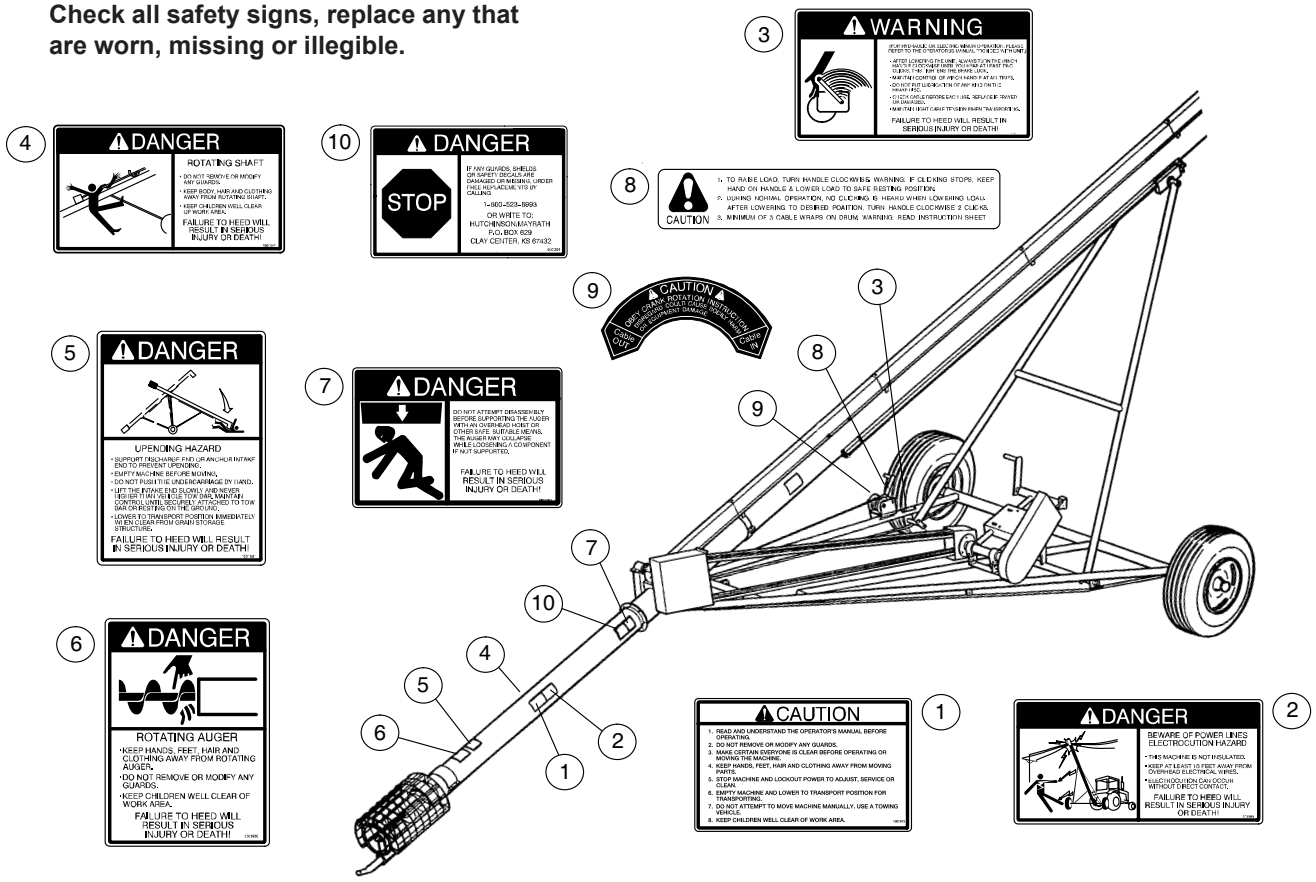
BOLT KIT, 41' & 53' NORTHERN AUGER (GAS)

Part No.	Description	Qty.	Where Used
106241	Lug bolt, 1/2-20 x 1"	8	Wheel to Hub
33091	Bolt, 1/2-13 x 3" G5 PLT	2	Spindle Assemblies into Axle
33138	Nut, nylon lock, 1/2-13 PLT	2	
33138	Screw, 1/2 x 1 1/2" self tapping	6	Drive Shaft Covers to Drive Shaft
33020	Washer, fender, 1/4-1" PLT	6	Cover Brackets
4736	Bolt, 5/16-18 x 1 1/2" G5 PLT	8	Half-Band (2) to Tail Cage
33135	Nut, nylon lock, 5/16-18 PLT	8	
4911	Bolt, 1/2-13 x 3 1/2" G5 PLT	1	Hitch Pipe
D1143	Washer, 1/2" lock	1	
33024	Washer, 1/2" flat	1	
D1169	Nut, non-lock, 1/2-13 PLT	1	
33294	Bolt, 1/2-13 x 1" G5 PLT	4	Gearbox to Gearbox Mount
D1143	Washer, 1/2" lock	4	
1002226	Bolt, 1/2-13 x 3/4" G5 PLT	2	Gearbox Shield Bracket to Gearbox
D1143	Washer, 1/2" lock	2	
33060	Bolt, 3/8-16 x 1" G5 PLT	3	Winch to Mount
33136	Nut, nylon lock, 3/8-16 PLT	3	
33024	Washer, 3/8 flat	3	
1002227	Bolt, 1/2-13 x 1 1/2" G5 PLT	2	Upper Undercarriage Stop to Auger
33138	Nut, nylon lock, 1/2-13	2	
1002253	Bolt, 7/16-14 x 2 1/2" G5 PLT	2	Flight Connection
33137	Nut, nylon lock, 7/16-14	2	
33229	Bolt, 3/8-16 x 1 1/4" G5 PLT	4	Undercarriage Clamp
33136	Nut, nylon lock, 3/8-16 PLT	4	to Gearbox Ears
8371C	Key, square 1/4 x 1 1/2"	2	Drive Shaft Connectors
8371C	Key, square 1/4 x 1 1/2"	2	Drive Shaft to Gearbox
4727-1	Bolt, 5/16-18 x 1 1/4" G5 PLT	2	Belt Guide to Undercarriage Frame
33135	Nut, nylon lock, 5/16-18 PLT	2	
33136	Nut, nylon lock 3/8-16 PLT	3	Gearbox Belt Guard to Undercarriage Clamp Bracket
D1160	Washer, flat, 1" I.D. PLT	4	Upper Undercarriage Arm to
3018A1	Cotter pin, 3/16 x 2"	2	Lower Udercarriage Arm
6369C	Clamp cable, 1/4"	2	Undercarriage Cable to Track Angle
33310	Bolt, 3/8-16 x 1 1/2" G5 PLT	6	Gearbox Mount to Half-Band
D1149	Nut, non-lock, 3/8-16 PLT	6	
1002238	Bolt, carriage, 5/16-18 x 3/4" G5 PLT	2	Bearing Assembly to Bearing Stand
33135	Nut, nylon lock, 5/16-18 PLT	2	
1002238	Bolt, carriage, 5/16-18 x 3/4" G5 PLT	1	Drive Shaft Cover Bracket
33135	Nut, nylon lock, 5/16-18 PLT	1	to Bearing Assembly
33082	Bolt, 1/2-13 x 1 1/4" G5 PLT	2	Jackshaft to Lower
33138	Nut, nylon lock, 1/2-13 PLT	2	Undercarriage Arm
D1169	Nut, 1/2-13 non-lock PLT	2	Jackshaft Housing Adjustment Rod
4112	Cotter pin. 1/8 x 1 1/4"	2	
4045A1	Key, square, 1/4 x 2"	1	Sheave to Gearbox Shaft
4045A1	Key, square, 1/4 x 2"	1	Pulley to Jackshaft
4727-1	Bolt, 5/16-18 x 1 1/4" G5 PLT	8	Upper Tube Flange to
33135	Nut, nylon lock, 5/16-18 PLT	8	Lower tube Flange

33', 41' & 53' NORTHERN AUGERS (GAS)

Safety Signs and Decals

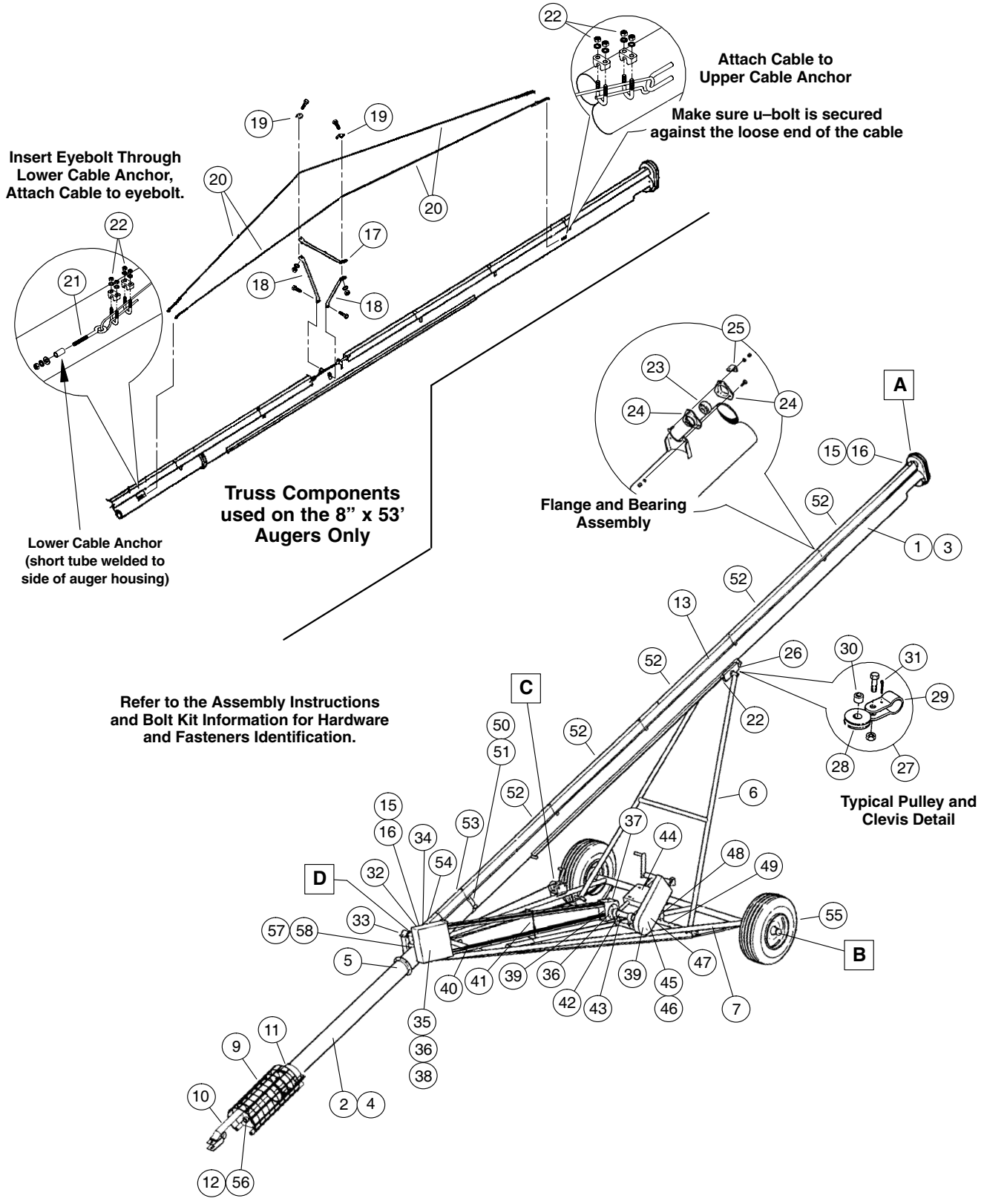
Check all safety signs, replace any that are worn, missing or illegible.



Ref. No.	Part No.	Description	Qty.
1	1001973	Decal, Caution, General Statement (one on both sides of auger housing)	2
2	1001980	Decal, Danger, Beware of Power Lines (one on both sides of auger housing)	2
3	1002091	Decal, Warning, Hand Winch Operation (one on undercarriage arm near winch)	1
4	1001982	Decal, Danger, Rotating Shaft (one on both sides of auger housing)	2
5	1001981	Decal, Danger, Upending Hazard (one on auger housing)	1
6	1001985	Decal, Danger, Rotating Auger (one on auger housing)	1
7	1001984	Decal, Danger, Do Not Attempt Disassembly (one on both sides of auger housing)	2
8	2169A1	Decal, Caution, Winch Operation (on winch handle)	1
9	1002805	Decal, Caution, Cable Out/Cable In	1
10	1005324	Decal, "Stop" if any Guards, Shields (one on both sides of auger housing)	2

33', 41' & 53' NORTHERN AUGERS (GAS)

Main Auger Components



33', 41' & 53' NORTHERN AUGERS (GAS) — Main Auger Components

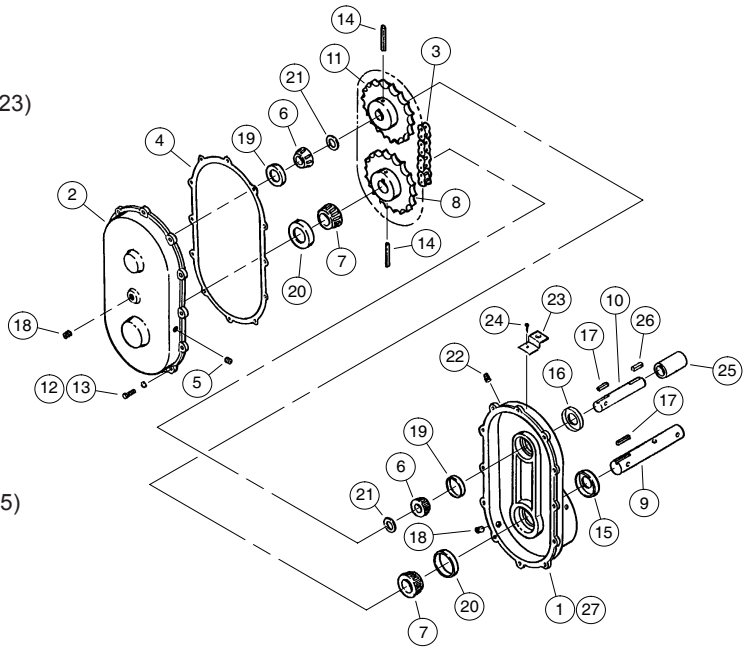
Ref. No.	Part No.	Description
A	631368	Enclosed Drive Assembly (See Page P-4 for parts breakdown)
B	1001562	Spindle & Hub assembly, 4-bolt for 8" x 31' (See Page P-5)
B	1001563	Spindle & Hub assembly, 4-bolt for 8" x 41' and 8" x 53' (See Page P-5)
C	339A11	Winch, brake type, Model K-1051 for 8" x 33' and 8" x 41' (See Page P-6)
C	335A11	Winch, brake type, Model K-1550 for 8" x 53' (See Page P-6)
D	1029210	Gearbox with pivot ears, 1.5:1 ratio (See Page P-5)
1	1031700-320	Tube housing, complete (galv.) for 8" x 33'
(1)	1031701-320	Tube, housing, upper section (galv.) for 8" x 41'
(1)	1005141-G	for 8" x 53'
2	1005138-G	Tube, housing, lower section (galv.) for 8" x 41'
(2)	1005140-G	for 8" x 53'
3	1009613	Flight Assembly, complete for 8" x 33 (399" long)
(3)	1009614	Flight Assembly, upper section for 8" x 41' and 8" x 53' (396" long)
4	1009617	Flight Assembly, lower section for 8" x 41' (99" long)
(4)	1009619	for 8" x 53' (243" long)
5	8320A	Stub, connecting, 1 1/4" x 9 1/2" (lower flight to upper flight)
6	1004588	Frame, upper undercarriage (for 8" x 33')
(6)	1004635	for 8" x 41'
(6)	1004637	for 8" x 53'
7	1004589	Frame, lower undercarriage (for 8" x 33')
(7)	1004636	for 8" x 41"
(7)	1004638	for 8" x 53'
8	635098	Cable, winch, f/33' - 1/4" x 31'-0" long
(8)	8381C	for 8" x 41'
(8)	848107	for 8" x 53'
9	1024775	Intake guard
10	1007734	Hitch pipe
11	5042A1	Half-band, for intake guard
12	8379C	Replacement, tail stub bearing
13	1005043	Drive shaft, upper section, for 33' - 32'-5/8" long
(13)	1004763	for 41" - 27'-4 3/4" long
(13)	1002457	for 53' - 31'-3 1/2" long
14	1005044	Drive shaft, lower section, for 53' only - 87 1/2" long
15	1002382	Drive shaft coupler w/snap ring
16	8371C	Key, square, 1/4 x 1 1/2"
17	550208	Top truss tube, 24" long, 53' Only
18	550209	Side truss tube, 20" long, 53' Only
19	550313	Cable clip, 53' Only
20	1002569	Truss cable, 1/4" x 31'-6" (53' Only)
21	6308C	Eyebolt, 1/2 x 8" (53' Only)
22	6369C	Cable clamp, 1/4"
23	6382C	Bearing, drive shaft
24	54008	Flange, bearing
25	54584	Mounting clip, drive shaft cover
26	54330	Track stop, bolt-on
27	1006197	Pulley and clevis assembly
28	3223A1	Pulley, 1/4' cable
29	5120A1	Clevis, pulley
30	50079A1	Bushing, pulley
31	D1263	Cotter pin, 1/4" x 2"
32	1031481	Bracket, drive shaft cover to gearbox
33	1031436	Clamp, pivot
34	1031480	Clamp, w/belt guard bracket
35	1005023	Belt guard, for 15" sheave
36	1005051	Ring, belt guard mounting
37	1005024	Belt guard, for 8" sheave
38	40157	Sheave, 15" O.D., 2 belt, 1" bore
39	1005031	Sheave, 8" O.D., 2 belt, 1" bore
40	621039	Belt, drive, for 8" x 33' B-175
(40)	1005030	Belt, drive, for 8" x 41' B-225
(40)	40144	Belt, drive, for 8" x 53' B-300
41	1005022	Guide, belt
42	1005037	Jackshaft, complete
(42)	1005036	• Jackshaft only
(42)	1006323	• Bearing, jackshaft
43	1004996	Rod, jackshaft adjustment
44	1004913	Motor mount frame
45	1005026	Guard, belt (engine to jackshaft)
46	1005042	Bracket, belt guard to motor mount
47	40116	Belt, B-48
48	1005040	Strap, connecting (motor mount to pivot strap)
49	1005039	Strap, pivot
50	630487	Band-on Bearing Stand
51	5033A1	Half-band, 2" wide
52	550651	Cover, drive shaft, 5'-8 1/2" long
53	550645	Cover, drive shaft, telescoping 1'-0" long for 33'
(53)	500647	2'-0" long for 41'
(53)	550650	5'-0" long for 53'
54	550646	Cover, drive shaft (w/retaining flange)
55	6393D	Wheel & rim, 15" 4-bolt
56	8383C	Stub, connecting (flight to intake bearing)
57	1031445	Gearbox Mounting Bracket
58	1031440	Half-band, 6" wide (for gearbox mount)

▪ Indented parts names indicate these parts are included in the previous assembly.

33', 41' & 53' NORTHERN AUGERS (GAS)

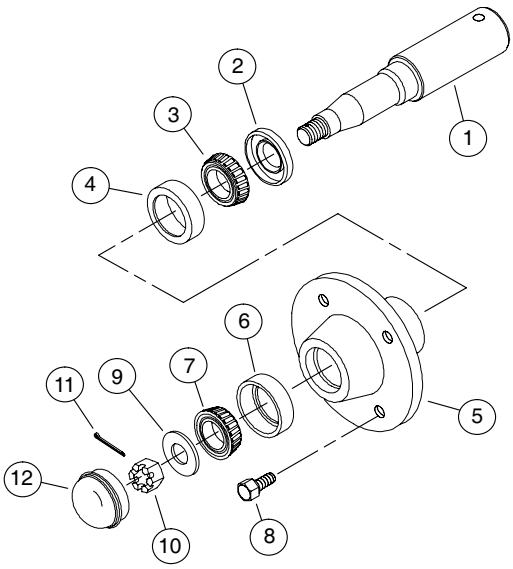
A *Enclosed Head Drive Assembly (Ratio 1:1)*

Ref. No.	Part No.	Description
1	1001439	Aluminum casting
2	842033-2	Cover, aluminum casting
3	842064	Chain, roller, #60 - 38 pitch
4	842035	Gasket
5	458026	Plug, 3/8" vented
6	835174	Bearing, 1" cone (Timken No. 07100)
7	106322	Bearing, cone 1 1/4" (Timken No. 15123)
8	40039	Sprocket, 19 tooth 1 1/4" bore
9	553629	Shaft, 1 1/4" dia.
10	553628	Shaft, 1" dia.
11	835176-1	Sprocket, 19 tooth 1" bore
12	33046	Bolt, 5/16-18 x 1"
13	33144	Lock washer, 5/16"
14	33203	Roll pin, 3/8 x 2 1/2"
15	835168	Seal, screw shaft - 1 1/4"
16	835169	Seal, drive shaft - 1"
17	4020A1	Key, square 1/4" x 1"
18	842083	Plug, drain 1/4"
19	835175	Cup, bearing 1" (Timken. No. 07204)
20	106323	Cup, bearing 1 1/4" (Timken No. 15245)
21	4542	Spacer, bearing 1"
22	1001438	Plug, 3/8" pipe
23	553630	Clip, drive shaft cover mounting
24	33183	Screw, self-tapping 1/4 X 1/2"
25	1002382	Coupler, 4" long
26	8371C	Key, square 1/4" x 1 1/2"
27	1001131	Decal - Notice Oil Level



B *Spindle & Hub Assembly*

Ref. No.	Part No.	Description
1	1001562	Spindle & Hub Assembly for 33'
(1)	1001563	Spindle & Hub Assembly for 41' & 53'
2	1001001	Spindle, 1.62" x 10" for 33'
(2)	1001002	Spindle, 2.062" x 10" long for 41 & 53'
3	3079R1	Inner cone (Timken No. LM67048)
4	3148R1	Inner cup (Timken No. LM67010)
5	90174	Hub, 4-bolt
6	40552	Outer cup (Timken No. LM11910)
7	40551	Outer cone (Timken No. LM11949)
8	106241	Lug bolt
9	106252	Washer
10	106250	Slotted hex nut (5/8")
11	D1146	Cotter pin, 5/32" x 1 1/4"
12	106244	Cap, hub



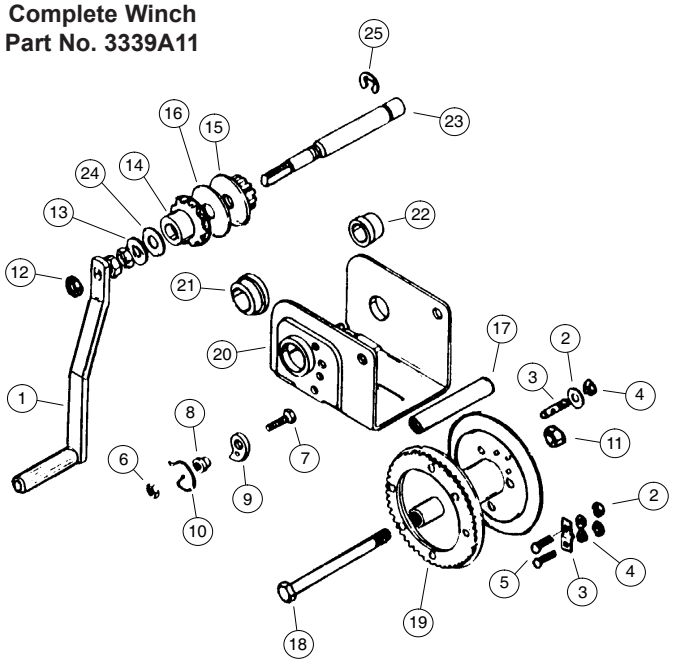
33', 41' & 53' NORTHERN AUGERS (GAS)

C *Winch - Brake Type, Model K-1051 used on 33' and 41' Augers*

Ref. No.	Part No.	Description	Fulton No.
1	41595	Handle assembly, 11"	2461-01
2-5	41600	Cable Keeper Kit	5621S01
6-10	40840	Ratchet Kit	6731S00
11	* 33234	Nut, nylon lock, 3/8-16	907-01
12	* 33138	Nut, nylon lock, 1/2-13	952-01
13	41906	Brake disc	2552-01
14	41908	Rachet assembly	2555-01
15	1003595	Gear, pinion	0434003-01
16	41909	Disc, friction	2356-00
17	41910	Spacer, winch drum	6284-05
18	41911	Screw, 3/8-16 x 5 3/4"	6299-01
19	41912	Drum assembly	9186-01
20	1003588	Frame, winch assy.	0436001-01
21	41914	Bushing, 1.25 ID x .50"	4592-19
22	41915	Bushing, .75 ID x .50"	5790-19
23	1003589	Shaft, pinion	0469001-01
24	1003590	Washer, thrust	178-00
25	1003591	Ring, retaining	57-01

* Indicates standard hardware item, obtain locally.

Complete Winch
Part No. 3339A11



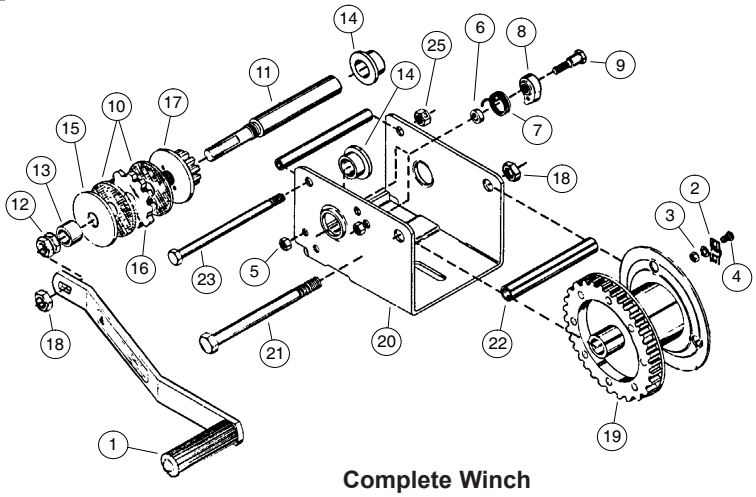
Repair parts for the winches can also be purchased directly from:
Fulton Manufacturing Corp.
P.O. Box 19903
Milwaukee, WI 53219

C *Winch - Brake Type, Model K-1550 used on 53' augers*

Ref. No.	Part No.	Description	Fulton No.
1	41595	Handle assembly, 11"	2461-01
2-5	41600	Cable Keeper Kit	5621S01
6-9	40836	Ratchet Kit	6730S00
10	41596	Disc Brake Kit	1558S00
11-17	41597	Input Shaft Kit	1563S01
18	*	Nut, lock, 1/2"-13	
19	**	Drum Assembly	
20	**	Frame, winch	
21	*	Bolt, 1/2-13 x 5 3/4"	
22	**	Drum Spacer	
23	*	Bolt, 3/8-16 x 5 3/4"	
24	**	Frame Spacer	
25	*	Nut, nylon lock, 3/8-16	
26	2169A1	Decal, Caution -Winch Operation	

* Indicates standard hardware item, obtain locally.

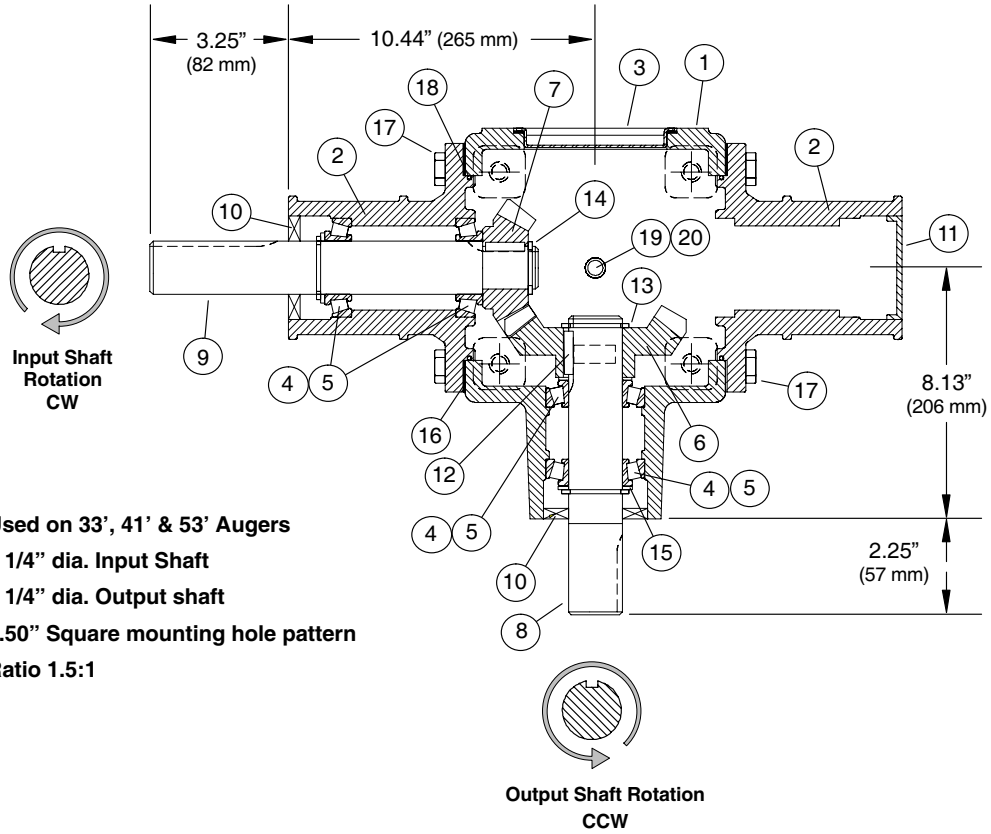
** These items are not available as separate parts because of the precision assembly required. If these parts require replacement, a new winch unit is recommended.



Complete Winch
Part No. 3335A11

33', 41' & 53' NORTHERN AUGERS (GAS)

D *Gearbox Components for 1029210 Gearbox*



Used on 33', 41' & 53' Augers
1 1/4" dia. Input Shaft
1 1/4" dia. Output shaft
4.50" Square mounting hole pattern
Ratio 1.5:1

Ref. No.	Part No.	Description	Qty
1	70-00092	Housing	1
2	70-20044	Quill	2
3	70-10006	Stamping Cover	1
4	71-20006	Bearing cup (LM67010)	4
5	71-20005	Bearing cone (LM67048)	4
6	71-00273	Gear, DP 4.84, 21 tooth	1
7	71-00274	Gear, DP 4.84, 14 tooth	1
8	71-10584	Shaft, quill	1
9	71-10585	Shaft, cross	1
10	71-40002	Seal 1.25 x 2.374 x 0.315	2
11	70-10106	Stamping cover	1
12	72-40017	Square key, 1/4 x 1 1/4"	2
13	71-60002	Snap ring	3
14	71-60001	Snap ring	1
15	71-50106	Spacer	3
16	71-50021	Gasket	As Req'd.
17	72-00007	Bolt, 3/8-16 x 1"	8
18	72-70004	O-Ring, 105 x 3.1 mm	2
19	72-20002	Plug, pipe, 1/4 NPT	2
20	72-20016	Plug, vent, 1/4 NPT	1

Hutchinson/Mayrath

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