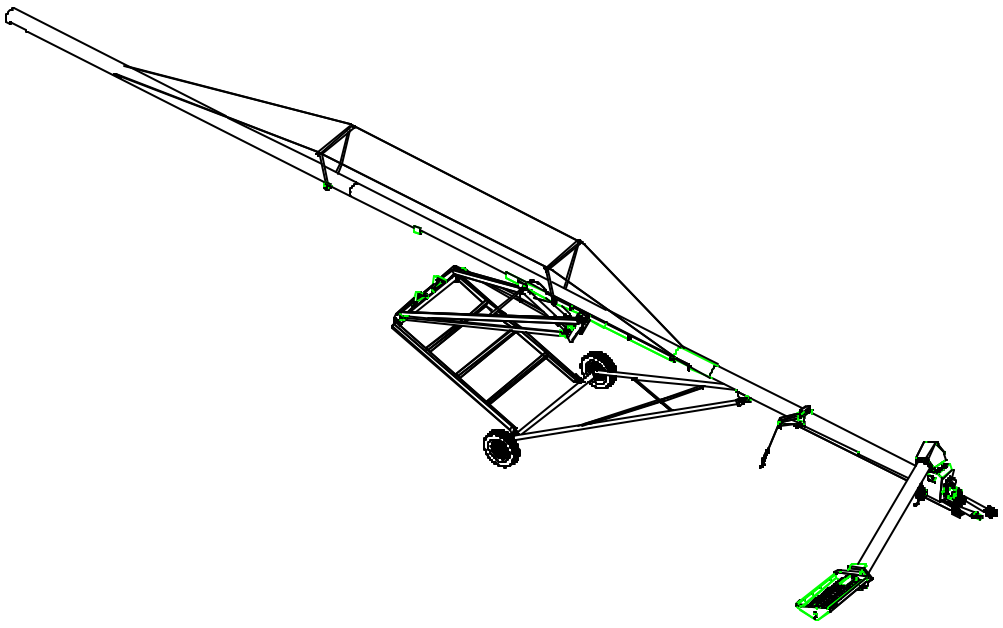
PNEG-1002
08-01-02
Revision No. 1

12" Direct Gear Drive SAW Transport Auger

Assembly & Operation Manual



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Personnel operating or working around this equipment should read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment. Any misuse of the equipment may void the warranty.

Safety 1st

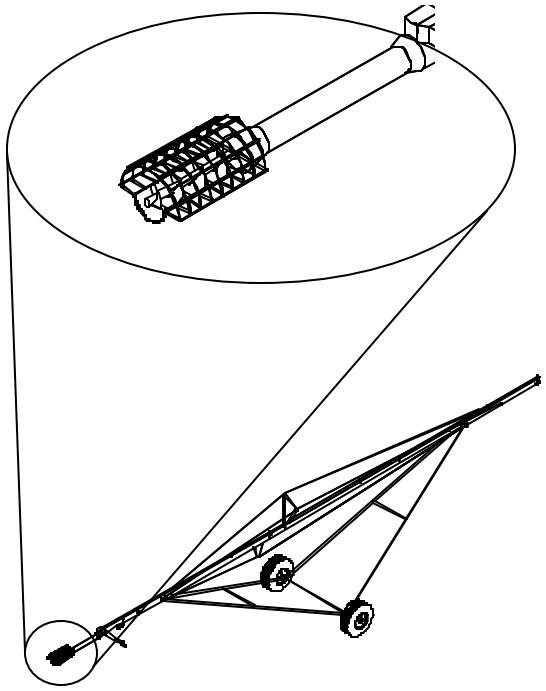
Our equipment is built to provide many years of dependable service to our customers through durable craftmanship.

One of the most important aspects of our engineering is ***SAFETY* 1st** design throughout all product lines. At our company **-** safety is NO ACCIDENT!

That is why we are implementing the ***SAFETY* 1st** program. Should you ever need guards, shields, safety decals or owner/operator manuals, simply contact us and we will supply you with them **FREE OF CHARGE**!

While it is our main goal for our company to be the world leader in auger manufacturing, it is always our first priority to keep our customers safe.

We replace missing guards and shields ***FREE OF CHARGE****!*



If you need any of the above listed safety items or have safety questions, please contact the company or your local dealer.

1. General Safety Statements

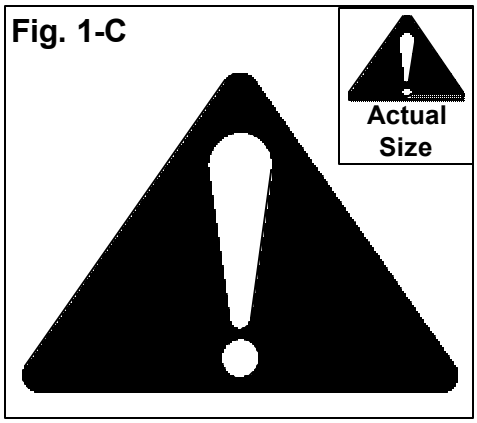


Fig. 1-C

A. Our principle concern is your safety and the safety of others associated with grain handling equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

B. As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where **SERIOUS INJURY** or **DEATH** may occur.

C. This symbol *(Fig. 1-C)* is used to call attention to instructions concerning your personal safety. Watch for this symbol; it points out important safety precautions. It means "**ATTENTION", "WARNING", "CAUTION**", and "**DANGER**". Read the message that follows, and be cautious to the possibility of personal **INJURY** or **DEATH**.

D. This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

E. Untrained operators subject themselves and others to **SERIOUS INJURY** or **DEATH**. **NEVER** allow untrained personnel to operate this equipment.

F. Keep children and other unqualified personnel out of the working area at **ALL** times. Refer to the ***Startup*** section of this manual for diagrams of the working area.

G. **NEVER** start equipment until **ALL** persons are clear of the work area.

H. Be sure **ALL** operators are adequately rested and prepared to perform **ALL** functions of operating this equipment.

I. Keep hair, loose clothing, and shoestrings away from rotating and moving parts. **NEVER** wear loose fitting clothing when working around augers.

J. **NEVER** allow any person intoxicated or under the influence of alcohol or drugs to operate the equipment.

K. **NEVER** allow anyone inside a bin, truck or wagon which is being unloaded by an auger or conveyor. Flowing grain can trap and suffocate in seconds.

L. Make sure someone is nearby who is aware of the proper shutdown sequence in the event of an accident or emergency.

M. **NEVER** work alone.

N. **ALWAYS** think before acting. **NEVER** act impulsively around the equipment.

O. Make sure **ALL** equipment is locked in position before operating.

P. Keep hands and feet away from the auger intake and other moving parts.

Q. **NEVER** attempt to assist machinery operation or to remove trash from equipment while in operation.

R. **NEVER** drive, stand or walk under the equipment.

S. Use caution not to hit the auger when positioning the load.

T. Use ample overhead lighting after sunset to light the work area.

U. **ALWAYS** lockout **ALL** power to the equipment when finished unloading a bin.

V. Keep area around intake free of obstacles such as electrical cords, blocks, etc. that might trip workers.

2. Personal Protective Equipment

A. The proper personal protective equipment should be worn at **ALL** times by anyone in the work area.

2-B

B. **ALWAYS** wear safety glasses when in the work area.

2-C

C. The operator should **NEVER** wear jewelry.

2-D, E

D. Loose clothing should not be worn. Any clothing that becomes loosened should be tucked in tightly.

E. Loose or dangling shoe strings should be tucked in.

2-F

F. Long hair should be tied up and/or back.

3. Emergency Shutdown Sequence

A. In an emergency, shutdown the power source.

4. Pinch Points

A *Pinch Point* is any place on the equipment which can injure the operator.

A. Components of this equipment have sharp edges which can scrape and/or cut an operator.

B. A moving auger can sever an operator's limbs or even kill him/her.

5. Shields and Guards

A. **ALWAYS** keep **ALL** shields and guards in place during operation.

We will replace any missing shields or guards free of charge!

See (page ii) for more information on our Safety First program.

6. Operator Qualifications

A. The User/Operator must be competent and experienced to operate auger equipment. Anyone who works with or around augers must have good common sense in order to be qualified. These persons must also know and meet all other qualifications, such as:

1. Any person who has not read and/or does not understand all operation and safety procedures is not qualified to operate any auger systems.

2. Certain regulations apply to personnel operating power machinery. Personnel under the age of 18 years may not operate power machinery, including augers. It is your responsibility, as owner and/or supervisor, to know what these regulations are in your area or situation.

3. Unqualified or incompetent persons are to remain out of the work area.

4. O.S.H.A. (Occupational Safety & Health Administration) regulations state: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved." (Federal Occupational Safety & Health Standards for Agriculture. Subpart D, Section 19287.57 (a) (6).

6. Operator Qualifications *(cont.)*

B. As a requirement of OSHA, it is necessary for the employer to train the employee in the safe operating and safety procedures for this auger. We included this sign-off sheet for your convenience and personal record keeping. All unqualified persons are to stay out of the work area at all times. It is strongly recommended that another qualified person who knows the shutdown procedure is in the area in the event of an emergency. A person who has not read this manual and understands all operating and safety instructions is not qualified to operate the machine.

Date	Employer's Signature	Employee Signature
	1	
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SAFETY DECALS

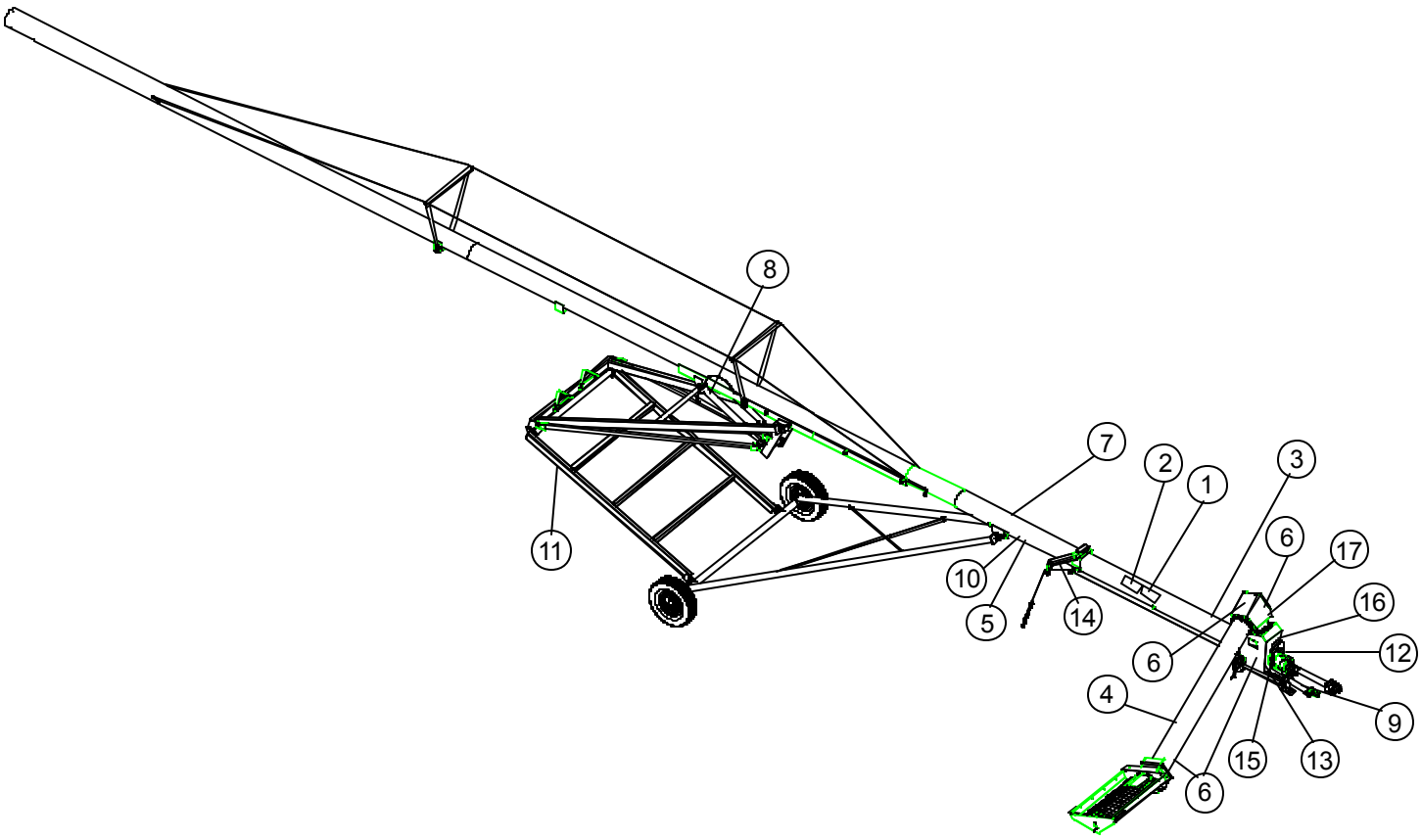
The Safety Decals listed below are included with the auger. On the following pages are samples of each decal and a diagram to show where each decal should be located.

Inspect all decals and replace any that are illegible, worn, or missing. Contact your dealer or the factory to order replacement decals.

Safety Decals

Ref. #	Part #	Qty.	Description	Size
1	DC-1446	1	**Caution—General Statements 1-12** (On Main Auger Housing)	8-1/4" x 4-1/8"
2	DC-1412	1	**Danger—Electrocution** (On Main Auger Housing)	8" x 3-3/8"
3	DC-1419	1	**Warning—Hydraulic Fluid Leaking** (On Main Auger Housing)	8" x 3-3/8"
4	DC-1421	1	**Warning—Winch Handle** (On Side of Inlet Hopper)	7" x 3"
5	DC-1409	1	**Danger—Falling Auger** (On Main Auger Housing)	4-1/2" x 6-1/2"
6	DC-1416	5	**Danger—Rotating Auger** (On Intake End of Tube Near Hopper, On Side of Spout Head, On Underside of Inlet Hopper, On Side of Inlet Hopper, On Inlet Hopper Clean Out Door)	4-1/2" x 5-1/2"
7	DC-1410	1	**Danger—Never Disassemble the Auger** (On Main Auger Housing)	4-1/2" x 2-1/8"
8	DC-1408	1	**Danger—Cylinder Guidelines** (On Side of Hydraulic Cylinder)	8" x 3-7/8"
9	DC-1418	1	**Safety First**—(On Main Auger Housing)	4-7/8" x 3-1/2"
10	DC-1445	1	**Warning—Caution Transporting Auger** (On Main Auger Housing for 62' and 72' Models Only)	6" x 3-1/2"
11	DC-1447	2	**Warning—Pinch Points** (On Both Sides of Undercarriage Frame)	7" x 3"
12	DC-1375	1	**Danger—Rotating Driveline** (On PTO Driveline Shield)	4-3/8" x 5-3/4"
13	DC-1425	1	**Manual Inside**—(On Operator Manual's Canister on Inlet Hopper)	7" x 1-1/4"
14	DC-1420	1	**Important—Before Moving Auger** (On Lift Arm)	5-3/8" x 2-1/8"
15	DC-1414	1	**Caution—PTO Driveline Guidelines**—(On Front of Inlet Hopper)	7" x 5-1/4"
16	DC-1413	1	**Grease Here**—(On Front of Inlet Hopper)	2" x 1"
17	DC-1411	1	**Danger—Shear Point** (On Front of Inlet Hopper)	4-1/2" x 2-1/16"

SAFETY DECALS



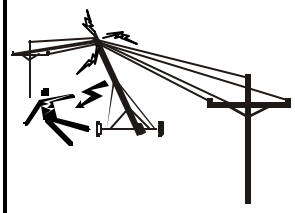
1

NOTICE

1. READ AND UNDERSTAND THE INSTALLATION & OPERATION MANUAL AND ALL SAFETY INSTRUCTIONS BEFORE OPERATING EQUIPMENT.
2. DO NOT OPERATE WHILE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.
3. DO NOT OPERATE UNLESS ALL SAFETY EQUIPMENT, SWITCHES, GUARDS AND SHIELDS ARE SECURELY IN PLACE AND OPERATIONAL.
4. BE SURE EVERYONE IS CLEAR OF THE EQUIPMENT BEFORE ATTEMPTING TO OPERATE OR MOVING THE MACHINE.
5. ALLOW ONLY TRAINED PERSONNEL IN the OPERATING AREA.
6. KEEP HANDS, FEET, HAIR AND CLOTHING AWAY FROM MOVING PARTS.
7. DISCONNECT AND LOCKOUT POWER BEFORE ADJUSTING OR SERVICING.
8. ELECTRICAL WIRING OR SERVICE WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN. IT MUST MEET ALL STATE AND LOCAL ELECTRICAL CODES.
9. EMPTY AUGER AND LOWER TO TRANSPORT POSITION BEFORE TRANSPORTING.
10. MAKE CERTAIN ALL ELECTRIC MOTORS ARE GROUNDED.
11. NEVER MOVE MACHINE MANUALLY. ALWAYS USE A TOWING VEHICLE.
12. KEEP CHILDREN AWAY FROM WORK AREA AT ALL TIMES.

DC-1446

2



⚠ DANGER

ELECTROCUTION!!

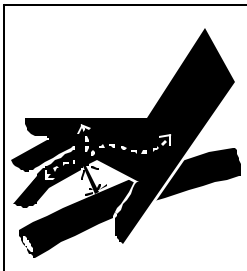
STAY CLEAR OF POWER LINES!

- THIS EQUIPMENT IS NOT INSULATED FROM ELECTRIC SHOCK.
- KEEP EQUIPMENT AWAY FROM POWER LINES.
- ELECTROCUTION CAN OCCUR WITH OR WITHOUT DIRECT CONTACT.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1412

3



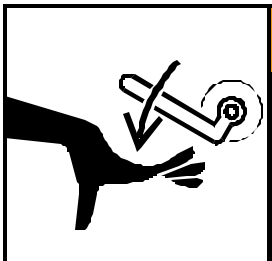
⚠ WARNING

HYDRAULIC FLUID LEAKING UNDER PRESSURE CAN PENETRATE SKIN. IF THIS HAPPENS, SEEK MEDICAL ATTENTION IMMEDIATELY.
ALWAYS RELEASE PRESSURE FROM HYDRAULIC LINES BEFORE DISCONNECTING.
ALWAYS INSPECT THE HYDRAULIC LINES BEFORE AND AFTER USING THIS EQUIPMENT AND PERFORM ANY NECESSARY MAINTENANCE ON THE HYDRAULIC SYSTEM BEFORE OPERATING.

FAILURE TO HEED
WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1419

4



⚠ WARNING

WINCH HANDLE CAN MOVE WITHOUT WARNING CAUSING SEVERE INJURY.

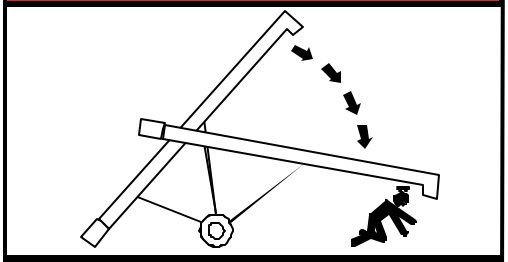
- NEVER RELEASE THE WINCH HANDLE UNTIL THE LOCK IS SECURELY IN PLACE.
- NEVER RELEASE WINCH LOCK BEFORE MANUALLY SECURING WINCH HANDLE WHEN LOWERING HOPPER.
- NEVER LEAVE HOPPER ON THE GROUND WHEN RAISING OR LOWERING THE AUGER. DOING SO COULD DAMAGE THE HOPPER WHEELS.

DC-1421

SAFETY DECALS

⑤

⚠ DANGER



FALLING AUGER CAN CRUSH OR KILL!

ALWAYS SECURE INTAKE END SO THAT THE AUGER CANNOT FALL.

EMPTY THE AUGER BEFORE ATTEMPTING TO TRANSPORT IT.

NEVER PUSH THE UNDERCARRIAGE. ALWAYS USE PROPER TRANSPORTING METHODS.

USE CAUTION WHEN LIFTING THE INTAKE END. NEVER LIFT HIGHER THAN THE VEHICLE TOW BAR. DO NOT RELEASE UNTIL AUGER IS SECURELY ATTACHED TO THE TOW BAR OR ON THE GROUND.

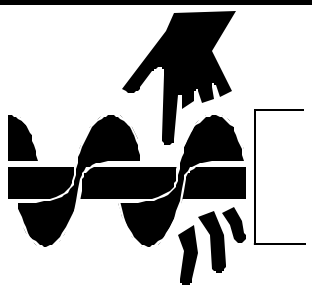
LOWER THE AUGER FOR TRANSPORTING IMMEDIATELY AFTER MOVING IT AWAY FROM THE GRAIN STORAGE BIN.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1409

⑥

⚠ DANGER



ROTATING AUGER!

- DISCONNECT AND LOCKOUT POWER BEFORE SERVICING, ADJUSTING OR CLEANING.
- KEEP HANDS, FEET, HAIR AND LOOSE CLOTHING AWAY FROM ROTATING AUGER AND MOVING PARTS AT ALL TIMES.
- NEVER REMOVE OR MODIFY GUARDS OR SHIELDS.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1416

⑦

⚠ DANGER

NEVER DISASSEMBLE THE AUGER WITHOUT SUPPORTING IT WITH AN OVERHEAD HOIST. LOOSE COMPONENTS MAY CAUSE THE AUGER TO COLLAPSE, IF NOT SUPPORTED.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH.

DC-1410

⑧

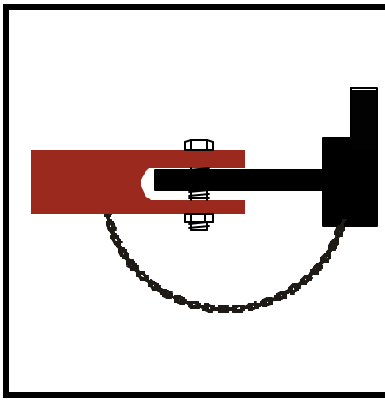
⚠ DANGER

- PRIOR TO USING, ALWAYS CHECK THE CYLINDERS, LINE, HOSES AND VALVES FOR LEAKS, WEAR OR DAMAGE. REPLACE WORN OR DAMAGED PARTS IMMEDIATELY.
- THE AUGER WILL LOWER WITHOUT WARNING, IF ANY LOSS OF HYDRAULIC FLUID OCCURS.
- NEVER BLOCK CYLINDERS.
- FREQUENTLY INSPECT THIS HYDRAULIC SYSTEM AND PERFORM ANY NECESSARY MAINTENANCE.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH.

DC-1408

⑨



⚠ WARNING

HITCH MAY COME LOOSE IF NOT SECURELY FASTENED. HITCH BOLT SHOULD NOT BE LESS THAN 3/4 INCH IN DIAMETER. DAMAGE TO PROPERTY MAY OCCUR.

DC-1449

SAFETY DECALS

(10)

NOTICE

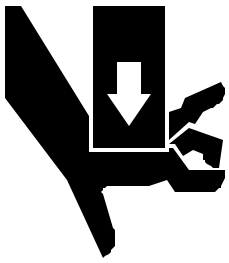
USE CAUTION WHEN TRANSPORTING AUGER! WIDTH EXCEEDS 8 6".

TAKE PROPER PRECAUTIONS WHEN TRAVELING ON PUBLIC ROADS.

USE CAUTION WHEN NEAR OTHER VEHICLES, PEDESTRIANS, ANIMALS AND OBJECTS ON THE ROAD.

DC-1445

(11)



WARNING

KEEP HANDS, FEET, HAIR AND LOOSE CLOTHING AWAY FROM MOVING PARTS AND PINCH POINTS WHEN RAISING AND LOWERING THE AUGER.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1447

(12)

DANGER

ROTATING DRIVELINE CAN CAUSE SEVERE INJURY OR DEATH!

- KEEP AWAY FROM ROTATING DRIVELINE.
- KEEP LOOSE CLOTHING AWAY FROM ROTATING DRIVELINE.
- KEEP ALL GUARDS IN PLACE.
- BE SURE DRIVELINE IS SECURELY CONNECTED TO THE AUGER AND TRACTOR.
- THE DRIVELINE GUARDS MUST BE FREE TO TURN ON THE DRIVELINE.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

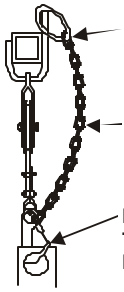
DC-1375

(13)

MANUAL INSIDE | MANUAL INSIDE | MANUAL INSIDE | MANUAL INSIDE

DC-1425

(14)



IMPORTANT!

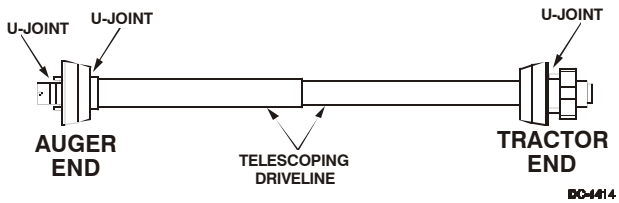
BEFORE MOVING AUGER, SAFETY CHAIN MUST BE HOOKED FROM SWING-OUT HOPPER OVER TRANSPORT HANGER.

DC-1420

(15)

NOTICE

- PLACE AUGER IN OPERATING POSITION BEFORE ATTACHING PTO DRIVELINE TO AGRICULTURAL TRACTOR ONLY.
- NEVER MOVE THE AUGER FROM OPERATING POSITION BEFORE DETACHING THE PTO DRIVELINE FROM THE TRACTOR PTO.
- MOVING the AUGER WITH THE PTO DRIVELINE ATTACHED TO THE TRACTOR WILL CAUSE DAMGE TO THE PTO DRIVELINE.
- THIS IS CONSIDERED A MISUSE OF THE EQUIPMENT. ANY MISUSE OF THE EQUIPMENT MAY VOID THE WARRANTY.



DC-1414

(16)

GREASE HERE

DC-1413

(17)

DANGER

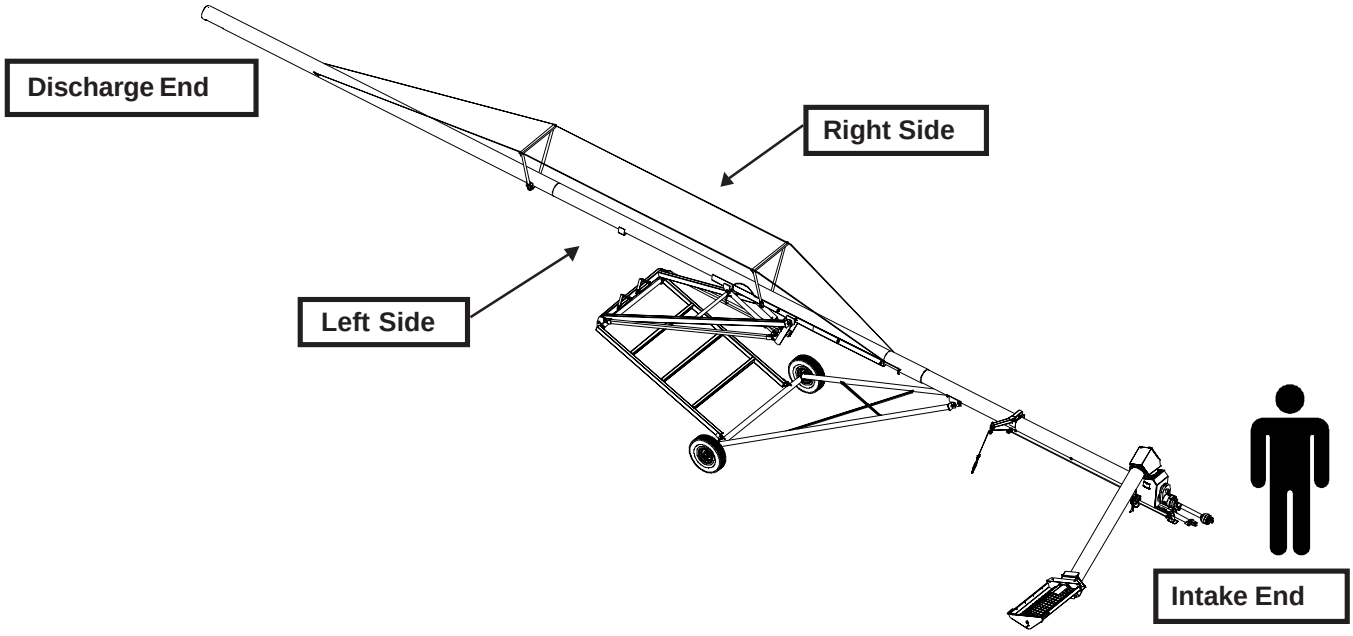
SHEAR POINT

KEEP FINGERS, HANDS, HAIR AND LOOSE CLOTHING AWAY FROM MOVING PARTS.

FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!

DC-1411

For the purpose of this manual, if you stand at the intake end of the auger, and are looking straight ahead at the discharge end, your left is the left side of the auger; your right is the right side of the auger.



1. General information

A. We reserve the right to improve our product whenever possible and practical to do so. We reserve the right to change, improve and modify products at any time without obligation to make changes, improvements and modifications on equipment sold previously.

B. The Direct Gear Drive SAW Transport Augers have been designed and manufactured to give years of dependable service. The care and maintenance of this machine will affect the satisfaction and service obtained. By observing the instructions and suggestions we have recommended, the owner should receive competent service for many years. If additional information or assistance should be required, please contact the factory or your local dealer.

C. When receiving merchandise, it is important to check both the quantity of parts and their descriptions with the packing list enclosed within each package. All claims for freight damage or shortage must be made by the consignee within ten (10) days from the date of the occurrence of freight damage. The consignee should accept the shipment after noting the damage or loss.

2. Capacity

A. The capacities of augers or screw conveyers varies greatly under varying conditions. The following factors play a role in the performance of the auger:

- Speed
- Angle of operation
- Moisture content
- Amounts of foreign matter
- Different materials
- Methods of feeding

B. An auger operating at a 45° incline might experience 20% less capacity than an auger operating horizontally. Twenty-five percent (25%) moisture could cut capacity by as much as 40% under some conditions.

3. Tractor Requirements

A. The SAW portable auger was designed for use with a tractor meeting the following requirements:

1. 540 RPM Power Take Off (PTO)
2. Adjustable Drawbar
3. One (1) hydraulic control circuit for lifting the main auger. Minimum pressure of 1800 to 2000 PSI.

4. PTO Driveline

A. The PTO driveline will be attached to the tractor during placement of the auger. Refer to the ***Start-up*** section of this manual for more information.

B. The PTO driveline furnished with the auger is equipped with a “Spring-Lok” coupler at the tractor end. The coupler is spring loaded and will fit the standard 1-3/8” x 6” spline PTO output shaft from the tractor.

C. The PTO driveline is equipped with a shear bolt at the tractor connection. The shear bolt protects the auger from damage if the auger becomes plugged or subjected to high loads.

D. Do not exceed the maximum recommended operating length of the PTO driveline.

5. Hydraulic Components

A. The hydraulic components received with your SAW Transport Auger were selected to deliver the most efficient and economical use.

Any parts needing replacement should be replaced with parts of the same type and size. Immediately replace any hoses or fittings that develop leaks. For more information, refer to the *Maintenance* section of this manual.

CAUTION: Keep all hydraulic lines away from moving parts. Damaged lines can damage the auger and cause serious bodily injury to the operator. Escaping oil can penetrate skin.

B. Your SAW Transport Auger comes with the following standard hydraulic equipment:

- Hydraulic cylinder
- Shut-off valve
- Fittings
- Hydraulic line from the cylinder to the tractor

Excluded are the fittings necessary to attach the hose to the tractor and a 1/2” female pipe thread tractor fitting required to fit the shut-off valve.

C. The hydraulic cylinder includes a restrictor that limits the speed of operation and a vent plug which is located in the rod end of the cylinder.

6. Hydraulic Shut-Off Valve

A. The hydraulic shut-off valve is located at the end of the hydraulic hose that connects the tractor to the hydraulic line running to the lift cylinder.

B. Be sure that the shut-off valve is fully open before you raise or lower the auger.

C. Make sure that the valve is closed at all other times. This will prevent possible leak-down or inadvertent hydraulic operation.

CAUTION: Never connect or disconnect hydraulic parts when there is pressure within the system. Hydraulic systems are highly pressurized. Hydraulic oil that escapes, even through invisible pinhole-sized leaks, can penetrate body tissues and cause SERIOUS INJURY.

Look for leaks using a piece of wood or cardboard. NEVER use your hands or other parts of your body.

When reassembling, be certain that all connections are tight. If you are injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not received at once.

7. Main Auger Drive Information

A. The auger must remain hitched to the tractor drawbar during operation.

The auger should not be operated with the hitch supported on the jack.

Be sure to inspect your drive before adding power and know how to shutdown in case of emergency.

B. During operation, ensure the tractor is in line with the auger.

Securely attach the swing-away hopper to the inlet hopper on the main auger before operation. A hopper that is not securely attached can swing out and cause injury.

Stop the engine and lockout the power source whenever the equipment must be serviced or adjusted.

Do not use a PTO driveline without a rotating shield in good working order that can be turned freely on the shaft.

Be sure to securely attach the PTO driveline to the auger and the tractor.

Do not exceed the recommended distance from the end of the tractor PTO to the hitch pin.

NEVER start the tractor unless power to PTO is OFF.

Stay out of designated hazard areas of an operating PTO. Observe restricted work areas.

Do not operate unless ALL safety shields and devices are in place.

Be certain to close ALL the clean-out doors and inspection doors in the main auger hopper before operating the auger.

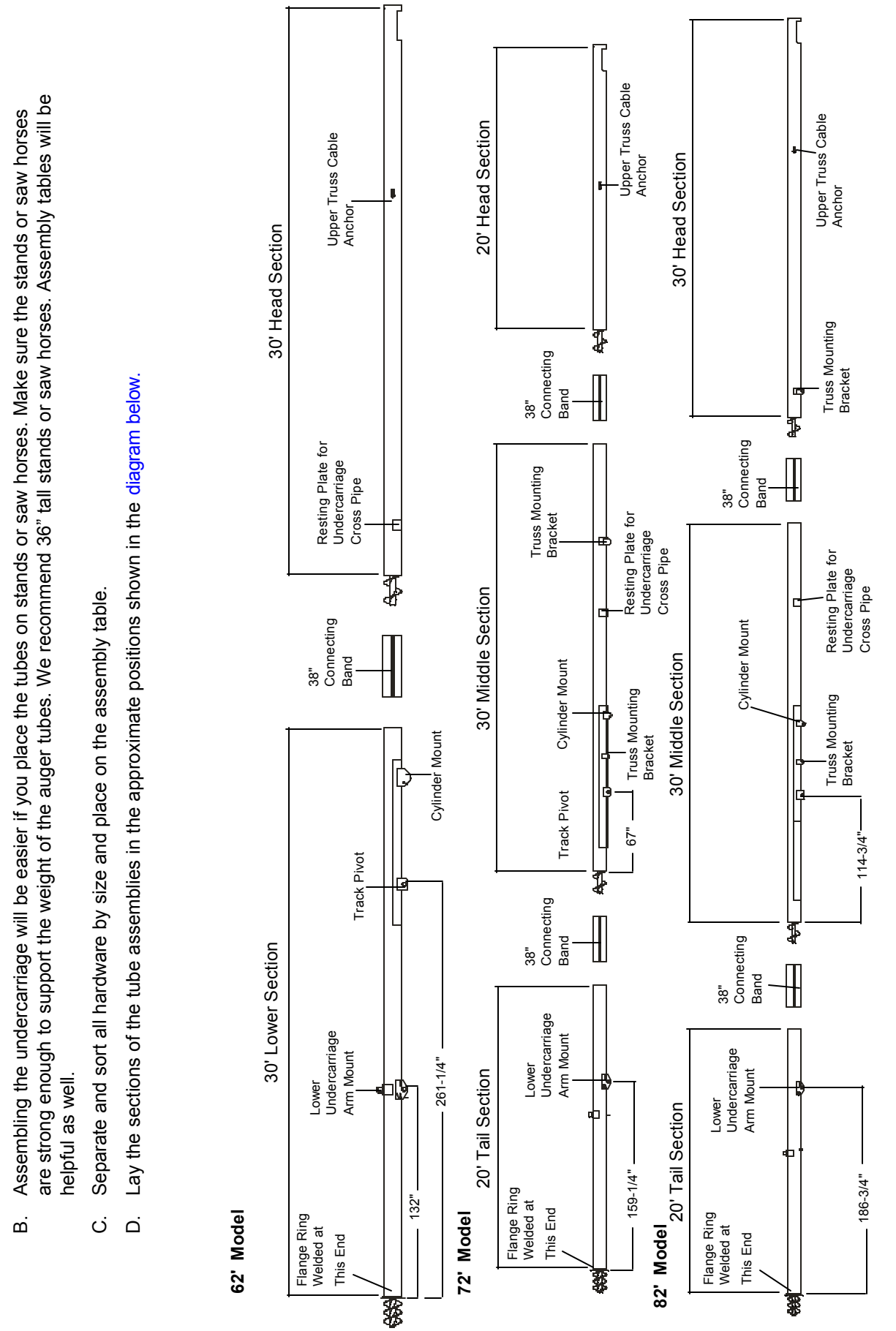
1. Layout Auger Housing

A. Layout the auger housing on an open area of level ground that is accessible to a chain hoist or other lifting devices. The open area needs to be large enough to accommodate the auger being laid out at full length.

B. Assembling the undercarriage will be easier if you place the tubes on stands or saw horses. Make sure the stands or saw horses are strong enough to support the weight of the auger tubes. We recommend 36" tall stands or saw horses. Assembly tables will be helpful as well.

C. Separate and sort all hardware by size and place on the assembly table.

D. Lay the sections of the tube assemblies in the approximate positions shown in the diagram below.



2. Flight and Auger Section Assembly

See page 10 for assembly of augers with **optional internal flight bearings**.

A. Place the connecting band(s) onto the end of the auger housing tube(s) of the sections to be assembled.

B. Bolt the sections of the upper auger flighting to the next flight section, using two (2) 5/8" x 4" long (Grade 8) black hex head capscrews and stover type locknuts. The lower section of the flighting will overlap the upper section of the flighting approximately one inch on the side of the discharge end. For easier assembly, coat the connecting stubs with anti-siege lubricant or grease.

The upper flight section is connected to the head bearing at the factory . Therefore, you need to slide the lower flight section out of the tube to fasten the two pieces together.

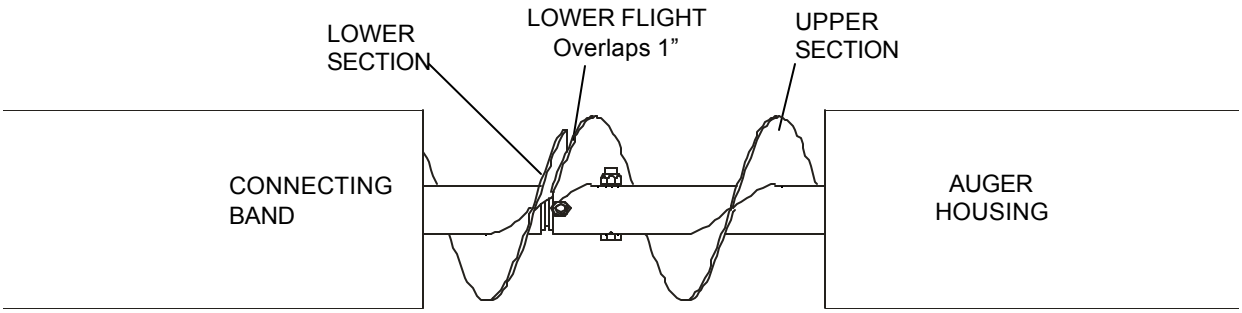


Fig. 2-B

C. On 72' and 82' models, bolt the middle and lower flight sections together in the same manner as the top section and middle section were bolted.

D. Tightly slide together auger housing sections and place connecting band so it is half on the lower auger housing section and half on the upper auger housing section. Using ten (10) 3/8" x 1-1/2" long (grade 5) hex head capscrews and non-locknuts, securely tighten the connecting band around the auger housings tubes.

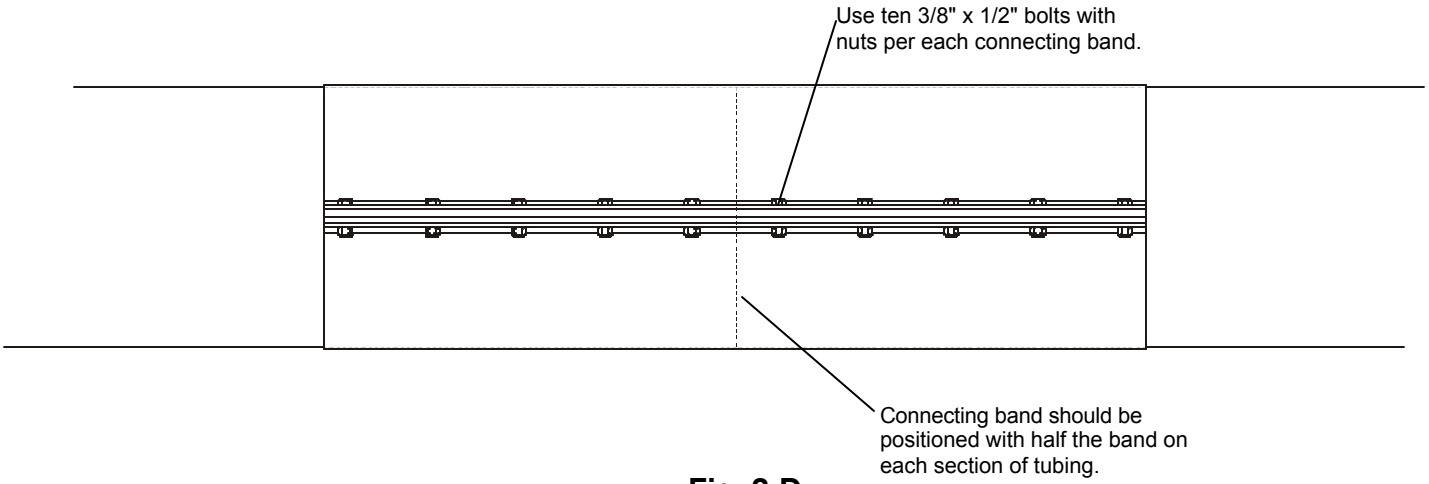


Fig. 2-D

3. Auger Housing and Flight Section w/ Optional Internal Bearings Assembly

A. Place connecting band(s) onto the upper end of the auger housing tube(s) of the sections to be assembled.

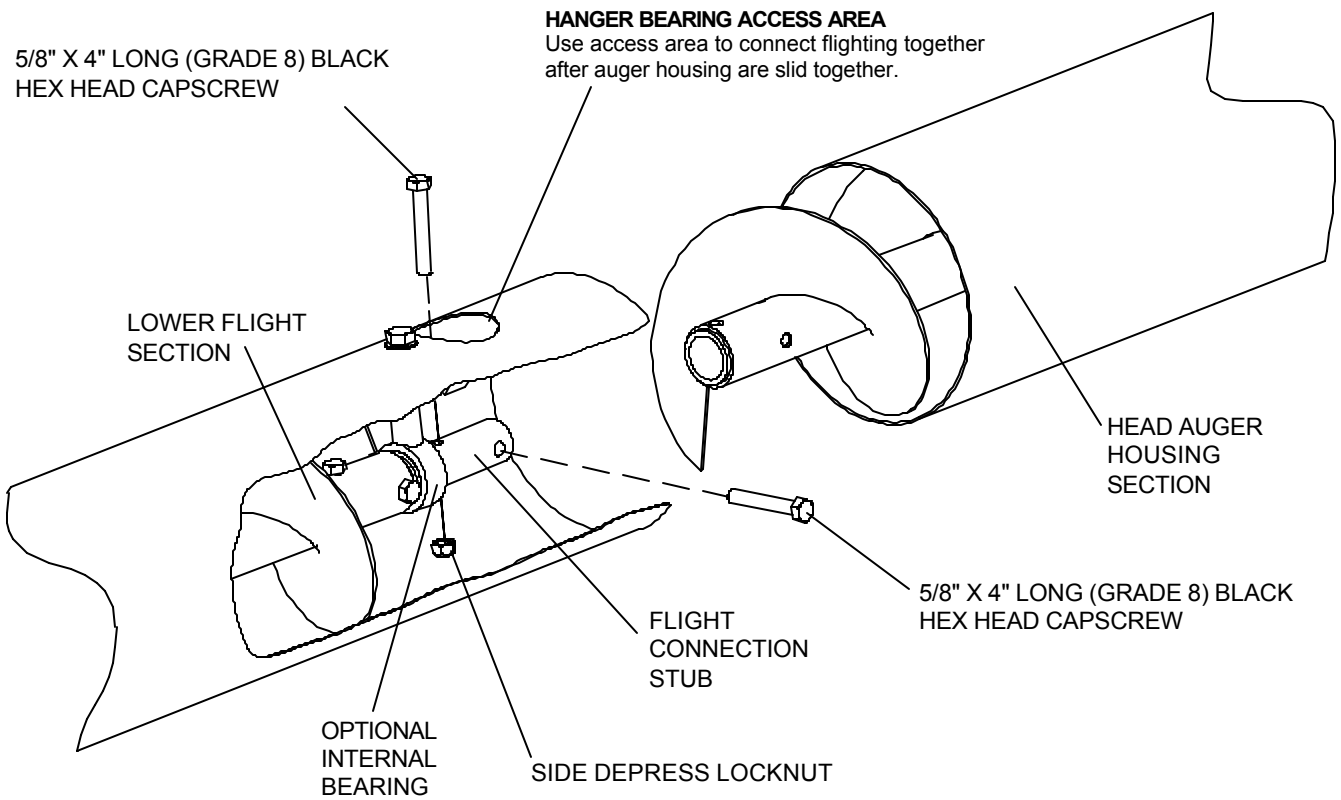
B. Slide auger housing tube sections together until there is about 12" between the ends of the auger housing tubes.

C. Rotate the connecting band so the flanges are pointing up. See Fig. 3-C.

D. While continuing to slide the auger housing sections together, guide the flight connection stub on the lower flight section into the upper flight section. Use the inspection hole to gain access the connection stub. (See Fig. 3-E)

E. Fasten the upper flight section to the lower flight connection stub using (2) 5/8" x 4" long (grade 8) black hex head capscrews and side depress locknuts.

Fig. 3-E



NOTE: The connecting band is not shown in the illustration so the flighting connection is visible.

3. Auger Housing and Flight Section w/ Optional Internal Bearings Assembly (cont.)

G. Rotate the connecting band so the seams are horizontal. (See Fig. 3-G)

The hole in the top of the connecting band is designed to fit over the internal bearing hanger bolt head.

H. Tighten the connecting band using (10) 3/8" x 1-1/2" long (grade 5) hex head capscrews and non-locknuts.

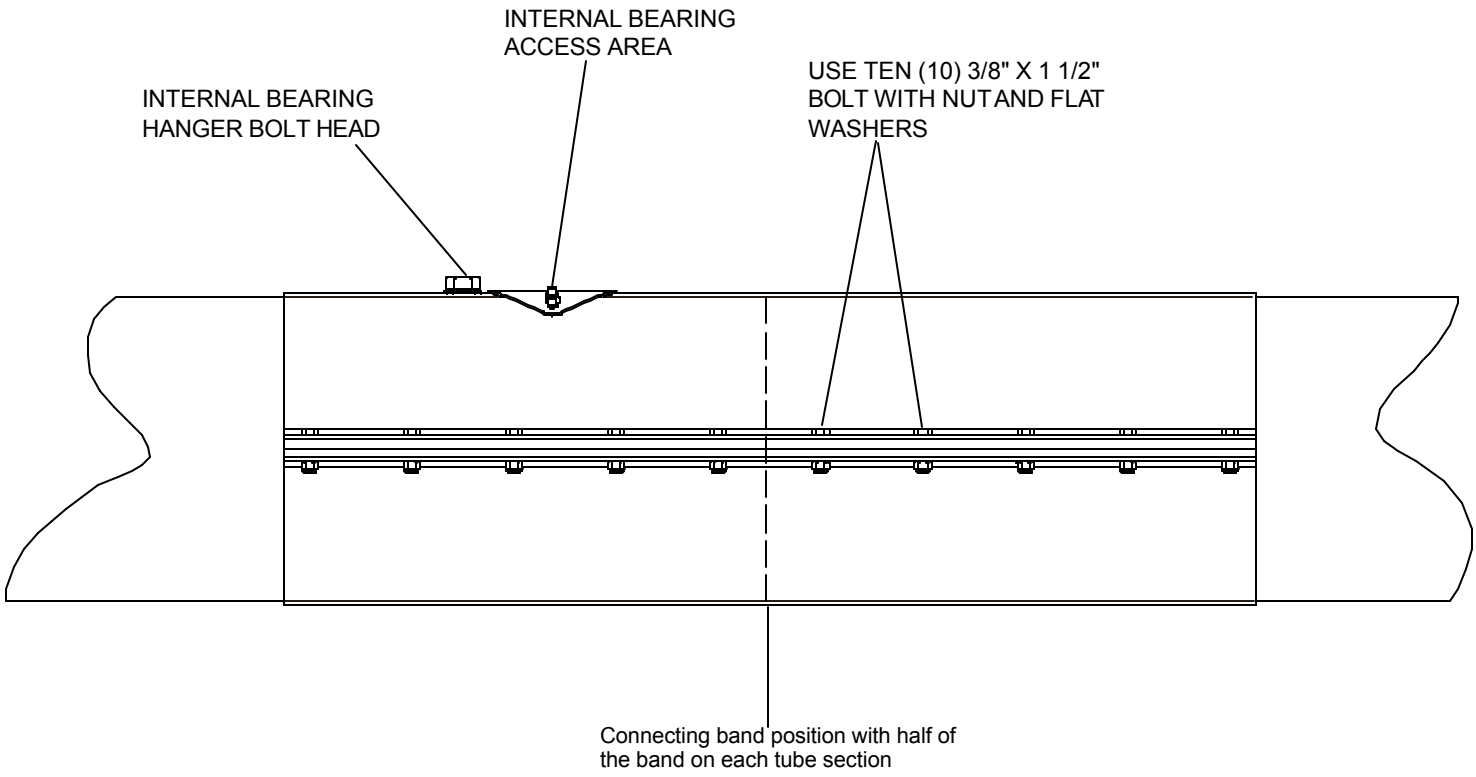


Fig. 3-G

4. Head Plate and Bearing Assembly

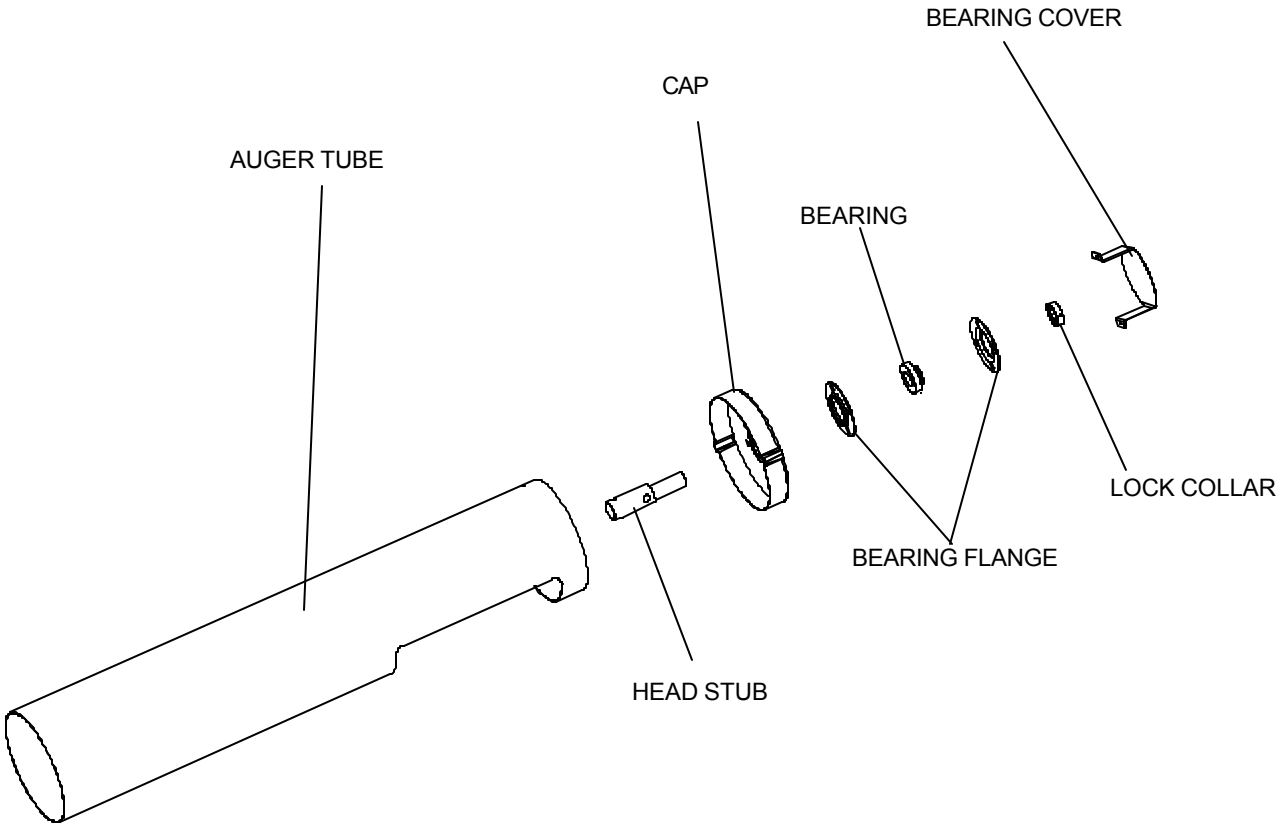
A. Bolt the 4-hole flange bearing to the end cap using four (4) 1/2" x 1-1/2" carriage bolts and nylon locknuts. (See Fig.4)

B. Bolt the head stub to the head flight using two (2) 5/8" x 4" grade 8 bolts with stover nuts.

C. Slide the head plate with the bearing onto the head stub in the head flight, then onto the head auger housing fasten cap to housing using two (2) 5/16" x 1-1/2" HHCS & Nylon locknuts.

D. Slide the locking collar over the shaft and lock on the bearing. Tighten the setscrew.

Fig. 4



5. Inlet Hopper Assembly

A. Bolt the flight to the enclosed drive with two (2) 5/8" x 4" bolts and nuts. Connect the lower auger housing flange to the inlet hopper using twelve (12) 3/8" x 1" hex head capscrews and locknuts.

B. The enclosed drive is shipped without oil, therefore **OIL MUST BE ADDED** during field assembly of the auger. Remove vented fill plug. Pour in **4 PINTS** of oil and replace vented fill plug. The oil level should be checked on a regular basis. Oil will dissipate under normal operating conditions.

DO NOT ADD MORE OIL THAN RECOMMENDED! OVERFILLING CAN DAMAGE THE SEALS OR BE FORCED OUT THROUGH THE VENTED PLUG.

We recommend the use of non-foaming, multipurpose gear oil, SAE 90 weight for normal operating temperatures between 40°F and 120°F. In temperatures below 40°, use SAE 80 weight oil.

C. Coat the enclosed drive flight stub with anti-siege lubricant or grease. Attach the drive flight stub to the lower auger flighting using two (2) 5/8" x 4" long (grade 8) black hex head capscrews and side depress type locknuts.

D. Using 1" x 18-3/4" long pin and two (2) collars securely fasten the hitch frame to inlet hopper. To hold the collars to the end of the pins, use the 3/8" x 2-1/2" long hex head capscrews and nylon locknuts.

E. Attach the hitch clevis to the hitch frame using a 3/4" x 5" long (grade 5) hex head capscrews and nylon locknuts.

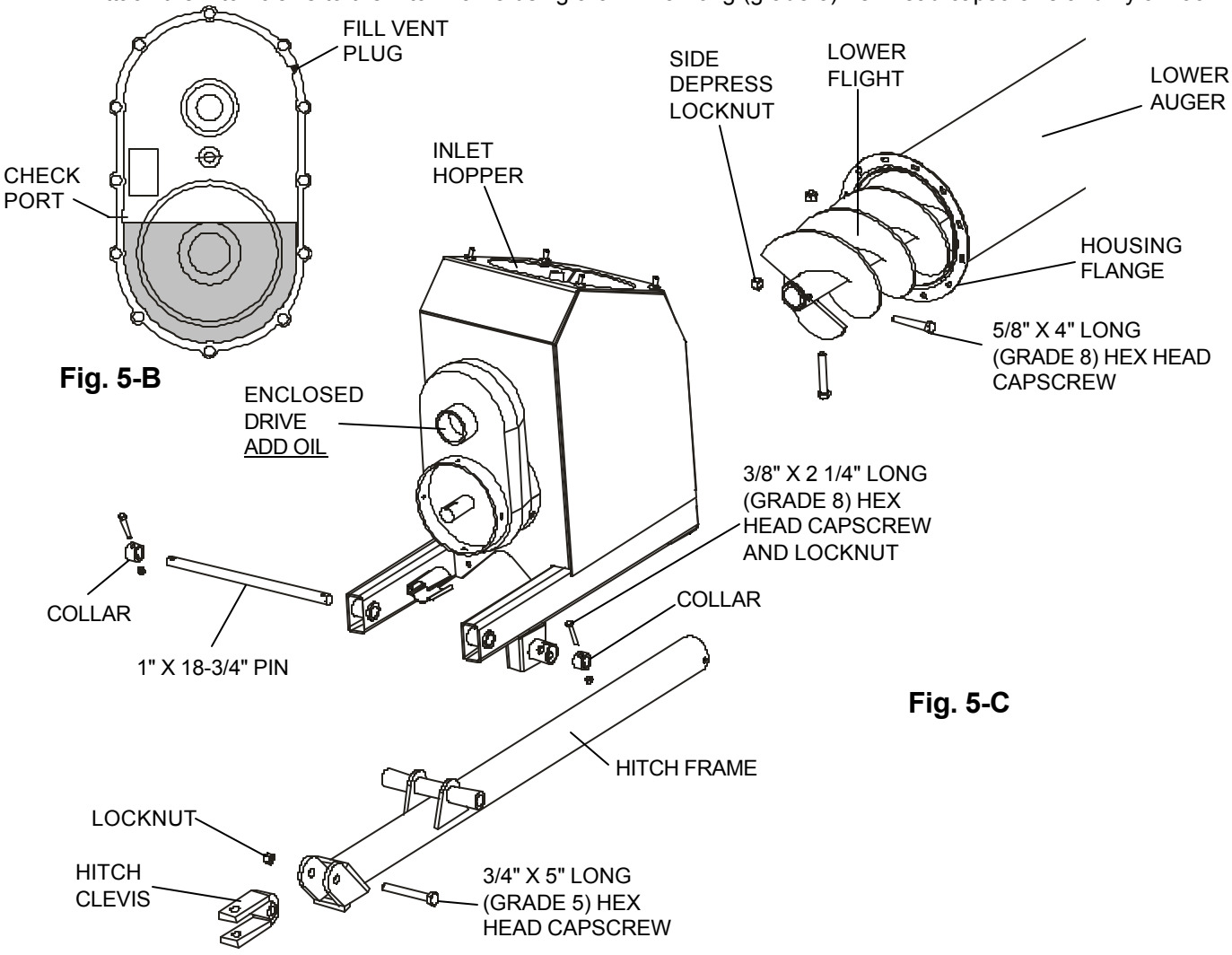


Fig. 5-B

Fig. 5-C

6. Top Truss Assembly for 62' Auger

A. Bolt the center truss frame sides to truss mounting ears located on the auger using two (2) 5/8" x 1-1/2" long (grade 5) hex head capscrews and nylon locknuts. (See Fig. 6-A)

B. Attach cables to upper cable anchors (located on the auger tube at discharge end) using two (2) cable clamps on each cable. (See Fig. 6-A)

SECURE THE CLAMP U-BOLT AGAINST LOOSE END OF CABLE.

C. Run cables over the truss cross brace and down to the intake end of auger. Attach cables to the top of the truss cross brace using 3/8" cable clamps. **DO NOT** tighten 3/8" cable clamps at this time. (See Fig. 6-B.)

D. Install eyebolts through lower cable anchors (located on the auger at intake end) using a flat washer and two (2) 5/8" nuts.

E. Slide the cables through the eyebolts and using two (2) cable clamps for each cable, tightly secure the u-bolt portion of the cable clamp against the loose end of the cable. (See Fig. 6-C.)

F. Tighten cables using the eyebolts to remove slack in cable. Tighten both cables to have the same amount of tension. The cables should be snug. **DO NOT over tighten!** Sight down the tube and make sure all tube sections are straight. Go back and tighten the 3/8" cable clamps on the truss cross brace. Minor adjustments can be made after the auger is set up on the undercarriage.

Truss Cable to Upper Truss Detail

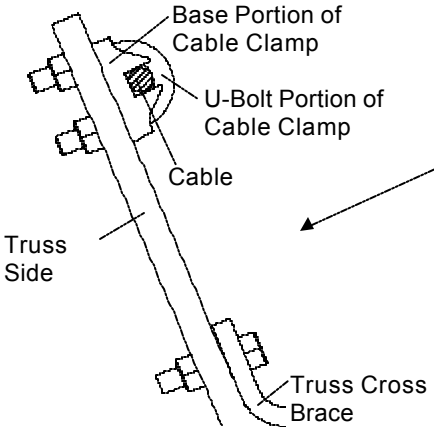


Fig. 6-B

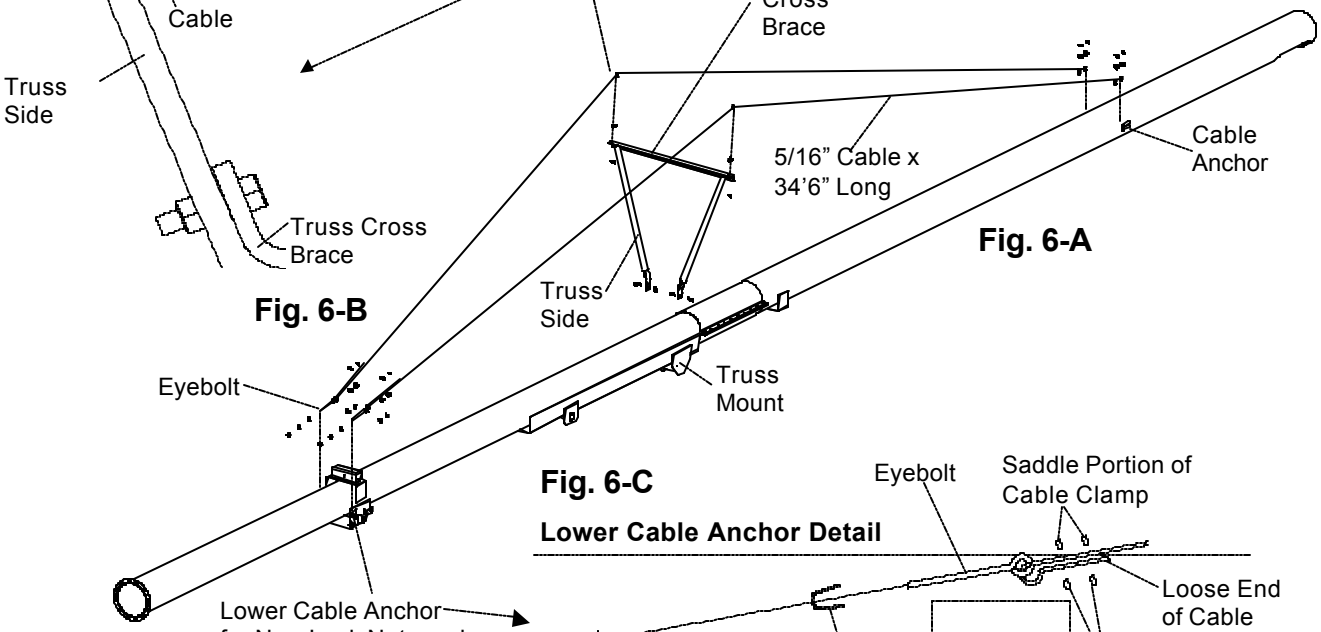
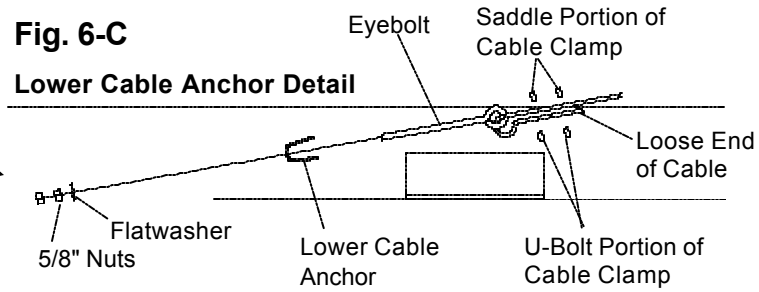


Fig. 6-A

Fig. 6-C

Lower Cable Anchor Detail



7. Top Truss Assembly for 72' & 82' Auger

A. Bolt the four (4) truss frame sides to the truss mounting ears located on the auger using two (2) 5/8" x 1-1/2" long (grade 5) hex head capscrews and nylon locknuts per each truss frame side. (See Fig. 7-A.)

B. Attach cables to upper cable anchors (located on the auger tube at discharge end) using two (2) cable clamps on each cable.

SECURE THE CLAMP U-BOLT AGAINST LOOSE END OF CABLE.

C. Run cables over the truss cross braces and down to the intake end of auger. Attach cables to the top of the truss cross brace using (2) 3/8" cable clamps per each truss. **DO NOT** tighten 3/8" cable clamps at this time.

D. Install eyebolts through lower cable anchors (located on the auger at intake end) using a flat washer and (2) 5/8" nuts. (See Fig. 7-C.)

E. Slide the cables through the eyebolts and using two (2) cable clamps for each cable, tightly secure the u-bolt portion of the cable clamp against the loose end of the cable. (See Fig.7-C.)

F. Tighten cables using the eyebolts to remove slack in cable. Tighten both cables to have the same amount of tension . The cables should be snug. **DO NOT over tighten!** Sight down the tube and make sure all tube sections are straight. Go back and tighten the 3/8" cable clamps on the truss cross brace. Minor adjustments can be made after the auger is set up on the undercarriage.

Truss Detail

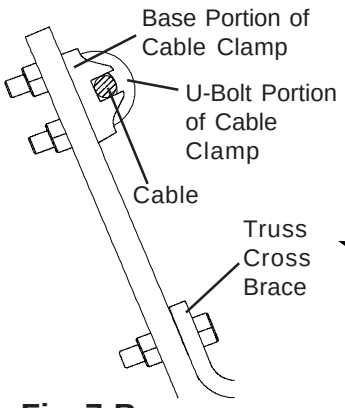


Fig. 7-B

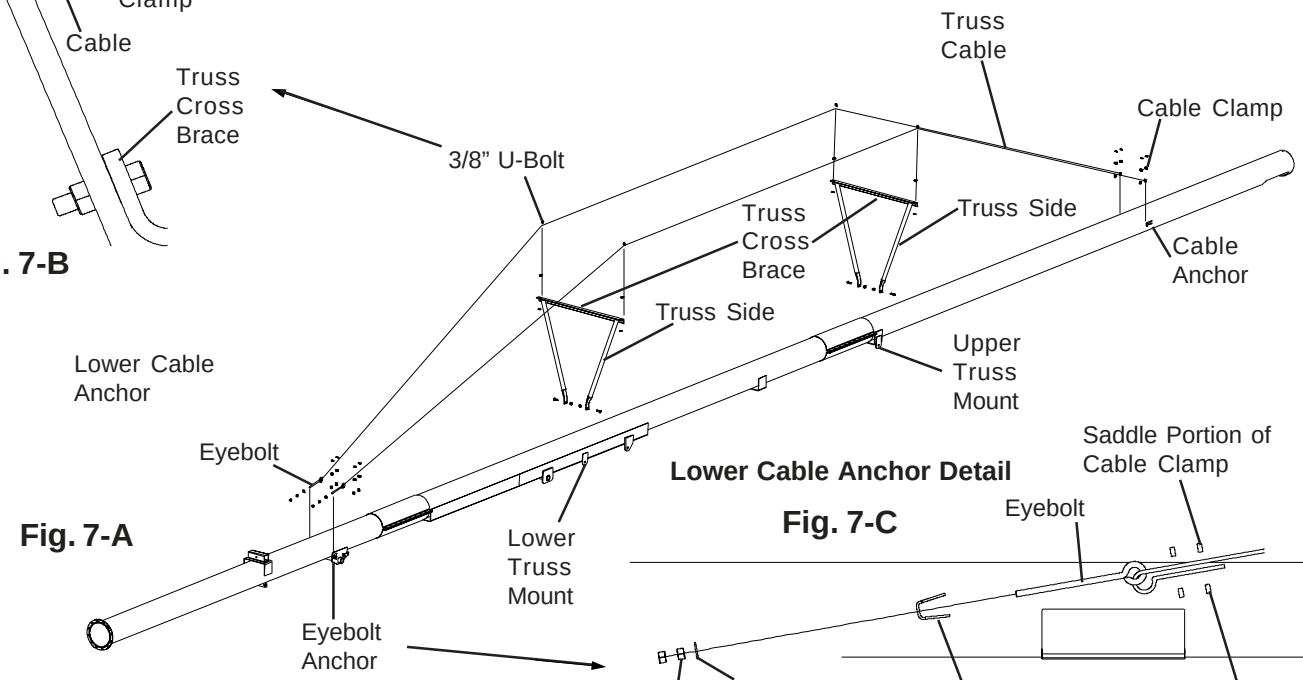


Fig. 7-A

Lower Cable Anchor Detail

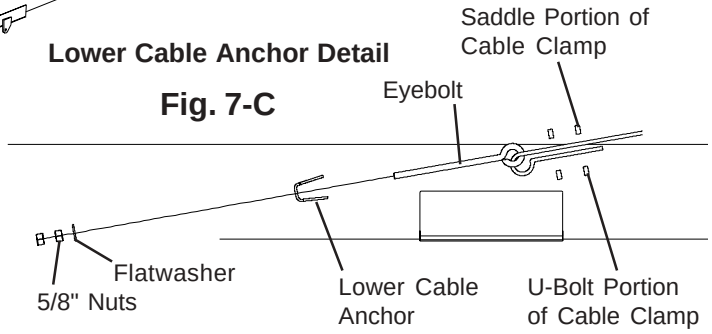


Fig. 7-C

8. Hubs and Spindle Assembly to Axle

A. The hubs, bearings, seals, and spindles are pressure packed with grease at the factory when they are assembled.

B. Slide the hub and spindle assembly into the undercarriage axle and secure with 1/2" dia. (Grade 5) hex head cap screw and nylon locknut. (See Fig. 8.) Mount the tire and rim to the hub with lug bolts.

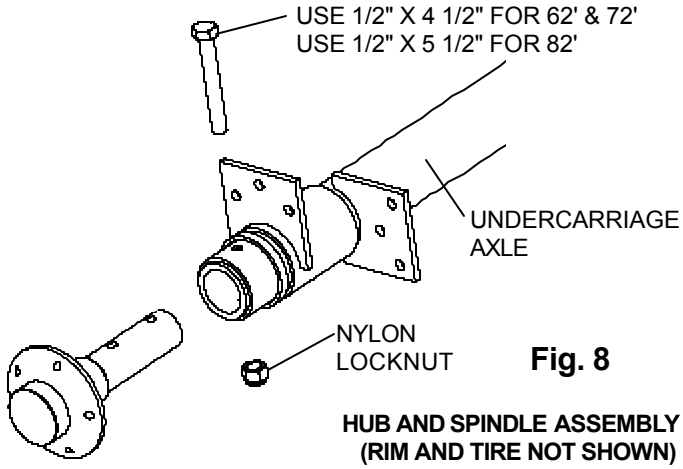


Fig. 8

HUB AND SPINDLE ASSEMBLY (RIM AND TIRE NOT SHOWN)

9. Undercarriage to Auger Housing Assembly

See Fig. 9-E on page 18 for 62' models.
See Fig. 9-F on page 19 for 72' 82' models

A. Attach the H-frame and upper frame to the track pivot that is welded to the auger housing, using 1-1/4" x 18" bolts and locknut.

B. Attach the lower and upper frames using two (2) 1" dia. x 3-1/8" pins and 1/4" x 2" long cotter pins.

C. Connect the lower frame and axle using three (3) 1/2" x 1-1/2" long (grade 5) hex head capscrews and nylon lock-nuts.

D. Attach the H-frame tubes to the upper frame (located near the lower frame and upper frame connection).
On **62' Models** the H-frame tube is fastened on the outside of the upper frame mounting plate with a 1" x 2-1/2" long (grade 5) hex head capscrew and nylon locknut.

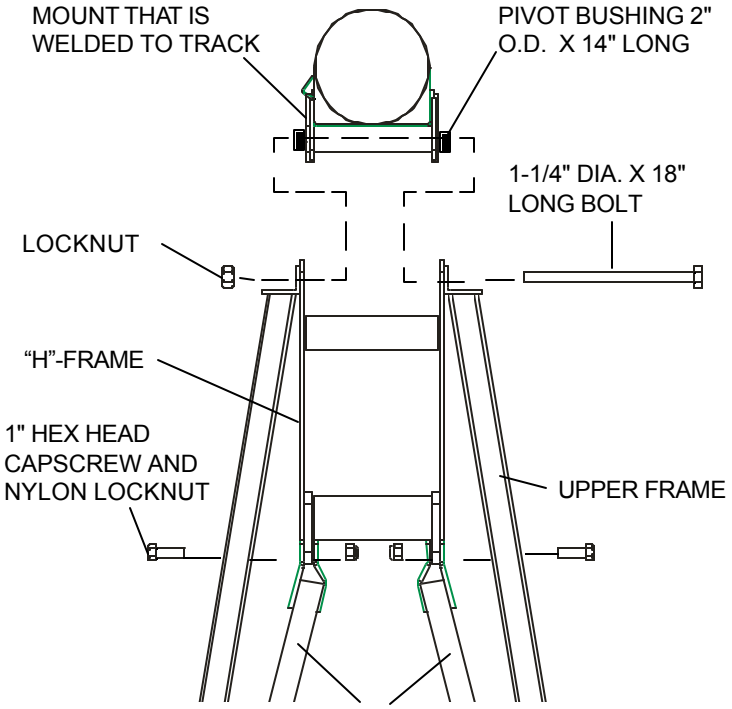


Fig. 9-A

On **72' & 82' Models** the H-frame tube is fastened on the outside of the upper frame mounting plate with a 1" x 3" long (grade 5) hex head capscrew and nylon locknut.

E. Attach the other end of the H-frame tube to the H-frame using the lower hole in the H-frame plate.

On **62' Models** the H-frame tube is fastened on the outside of the H-frame with a 1" x 2-1/2" long (grade 5) hex head capscrew and nylon locknut.

On **72' & 82' Models** the H-frame tube is fastened on the outside of the H-frame with a 1" x 3" long (grade 5) hex head capscrew and nylon locknut.

G. Fasten both tube guides to upper frame brackets using four (4) 1/2" x 1-1/4" long (grade 5) hex head capscrews and nylon locknuts per each guide. (See Fig 9-E & F Detail A.)

F. Lay out the lower arm under the auger housing.

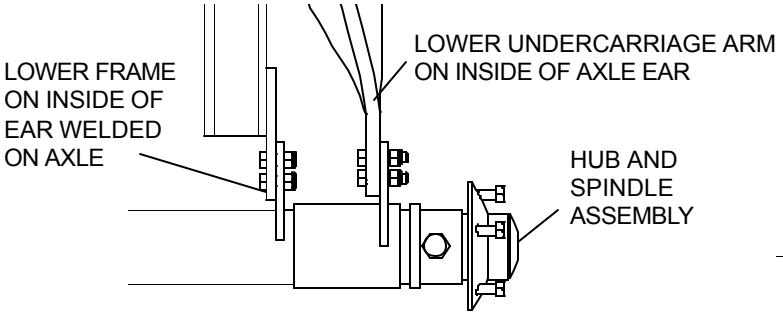
9 . Undercarriage to Auger Housing Assembly (cont.)

H. Attach the lower arms to the axle ear brackets.

For **62' & 72' Models**, use three (3) 1/2" x 1-1/2" long (grade 5) hex head capscrews and nylon locknuts for each leg. (See Fig. 9-B)

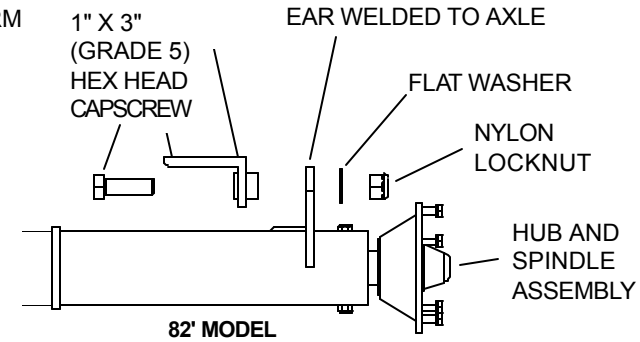
For **82' Models**, use one (1) 1" x 3" long (grade 5) hex head capscrew, flat washer, and nylon locknut for each leg. (See Fig. 9-C)

The lower arm should be on the inside of the axle ear axle. (See Fig. 9-C)



62' AND 72' MODEL LOWER ARM TO AXLE DETAIL

Fig. 9-B



82' MODEL LOWER ARM TO AXLE DETAIL

Fig. 9-C

I. **For 72' & 82' models only.** Connect angle crossbraces to ears on lower arms using four (4) 1/2" x 1-1/4" long HHCS (grade 5) and nylon locknuts. Bolt the middle of the angle crossbraces together using one (1) 1/2" x 1" long (grade 5) and nylon locknut. (Do ***Not*** *tighten hardware until later.)*

J. Wrap a chain or heavy duty strap around the auger tube and the undercarriage frame. The chain or strap must be **VERY TIGHT** to keep the undercarriage frame from opening while the auger tube is lifted to attach the lower arm to the lower arm mount on the auger tube.

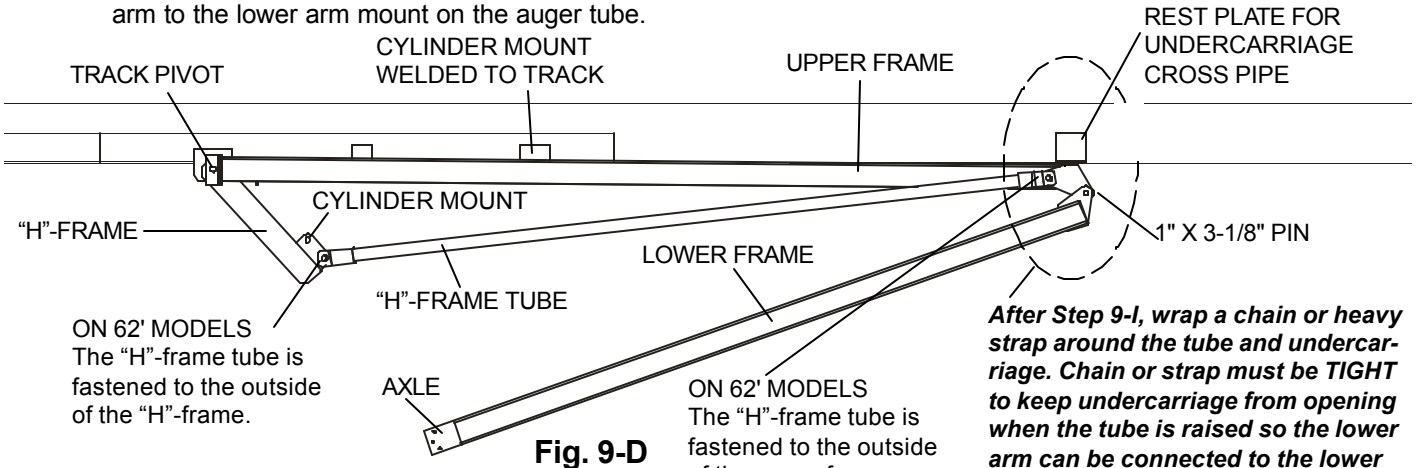


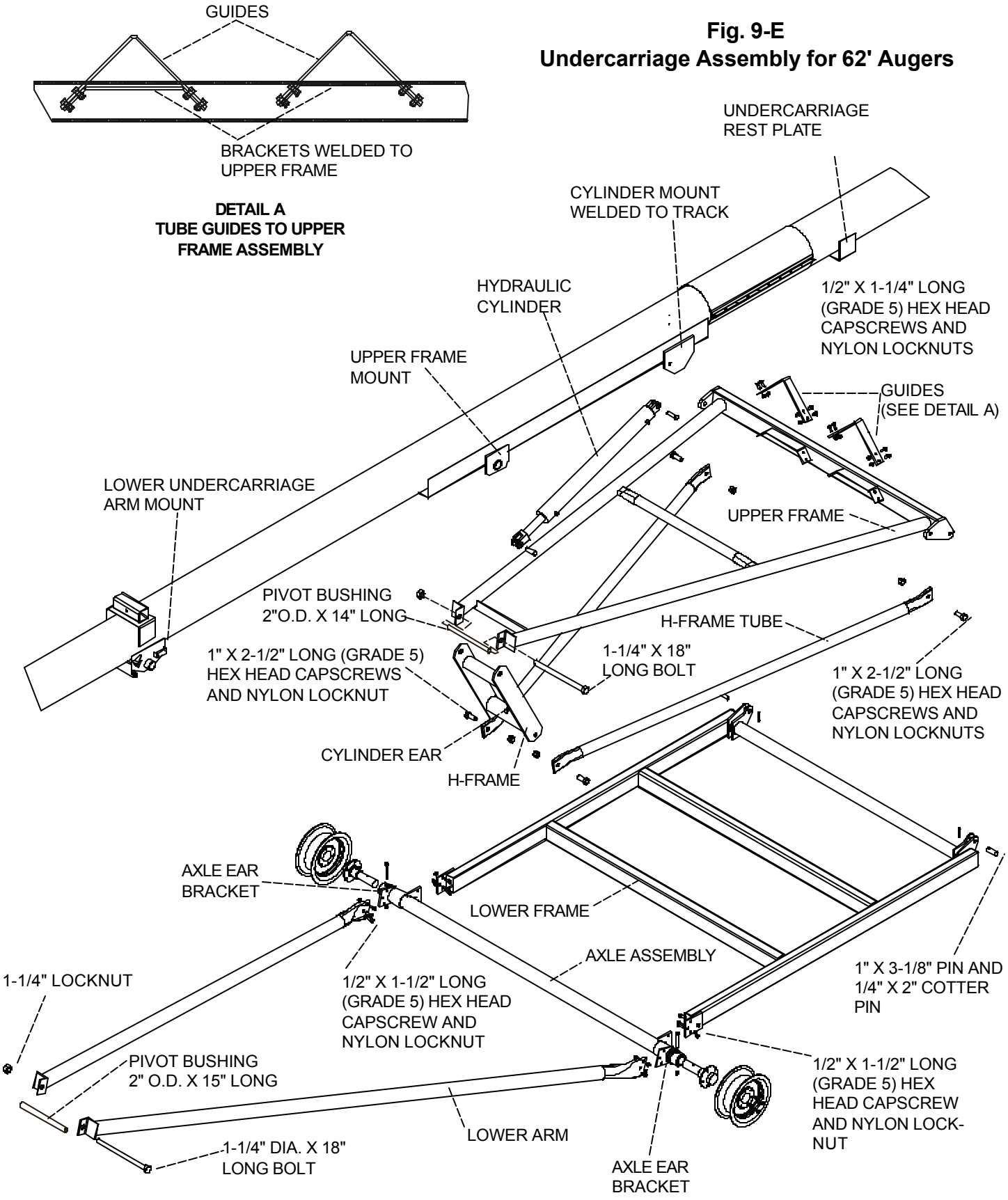
Fig. 9-D

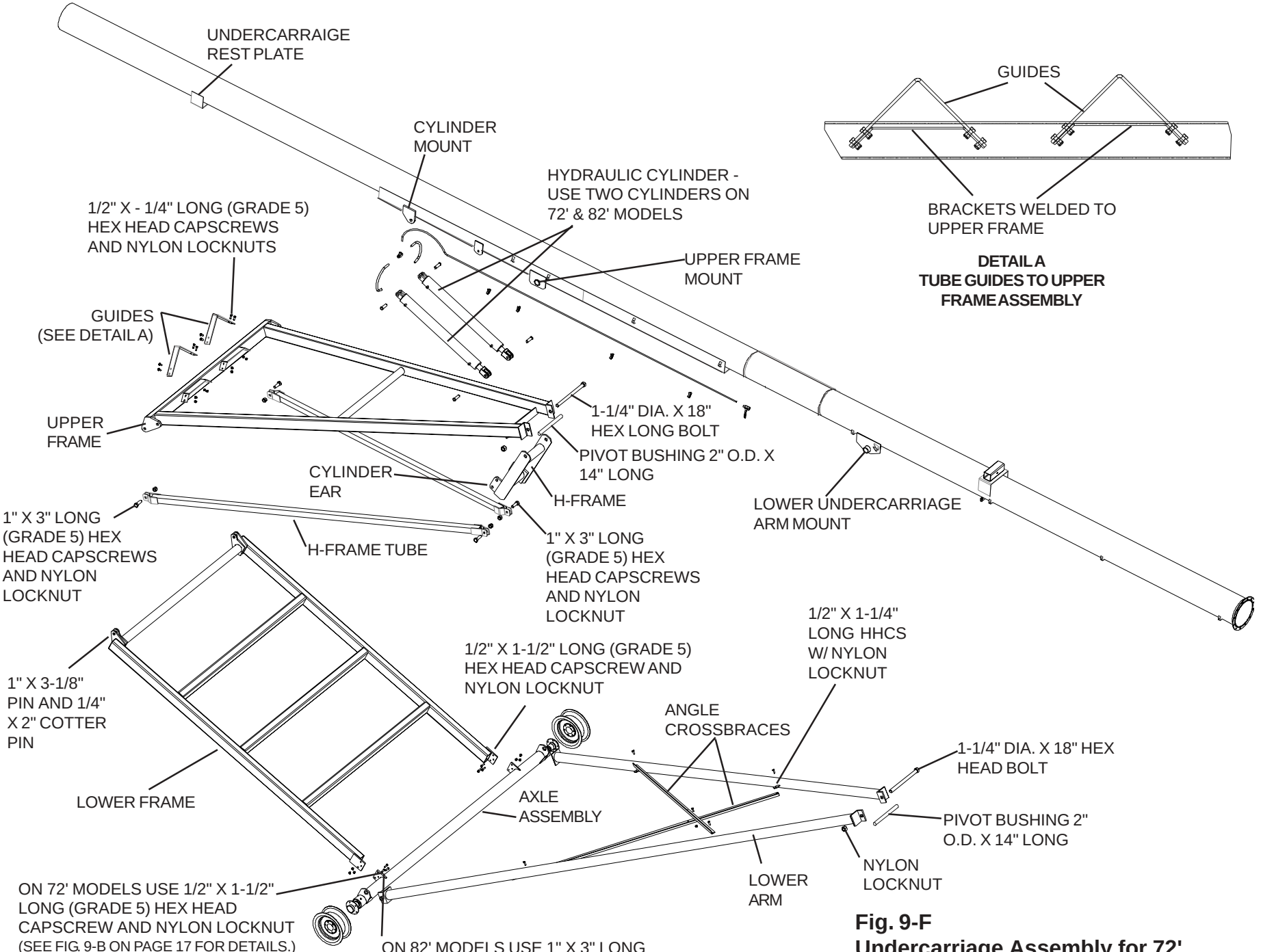
After Step 9-I, wrap a chain or heavy strap around the tube and undercarriage. Chain or strap must be TIGHT to keep undercarriage from opening when the tube is raised so the lower arm can be connected to the lower arm mount.

K. Raise the auger assembly with a chain hoist or other lifting device high enough to line up the lower arms with the lower arm mount.

Only lift from the center of the auger with a lifting device that is safe and suitable for this purpose. DO NOT lift the full weight of the auger from the extreme end.

Fig. 9-E
Undercarriage Assembly for 62' Augers





DETAIL A
TUBE GUIDES TO UPPER FRAME ASSEMBLY

Fig. 9-F
Undercarriage Assembly for 72' and 82' Augers

9. Undercarriage to Auger Housing Assembly (cont.)

L. Attach the lower arms to the lower arm mount using a 1-1/4" dia. x 18" long bolt and 1-1/4" nylon locknut. (See Fig. 9-E& 9-F on page 18 and 19.)

M. Double check all undercarriage bolts and fasteners to assure they are tight, secure, and assembled correctly. Lower auger and remove lifting device. On 72' & 82' models, go back and tighten all 1/2" hex head capscrews that fasten the angle crossbraces to the lower arms in step 9-I.

Remember to remove the chain or heavy duty strap that is holding the auger tube and undercarriage frame together.

10. Hydraulic Cylinder to Undercarriage Assembly

A. Fasten the hydraulic cylinder or cylinders *(62' models us one cylinder and 72' & 82' use two cylinders)* to the H-frame. Use the mounting pin and keeper clip furnished in the box with the cylinder(s).

B. The base end of the cylinder must be attached to the cylinder mount welded on the track. The rod end of the cylinder(s) should be fastened to the H-frame mount. The cylinder ports must be facing the left side of the auger when viewing the auger from the intake end.

The cylinder(s) furnished with your auger have a restrictor in the port at the base end of the cylinder(s). This restrictor limits the speed that the auger can be raised and lowered. Only use cylinder(s) provided with the auger. DO NOT use any cylinder(s) that do not have the proper restrictor.

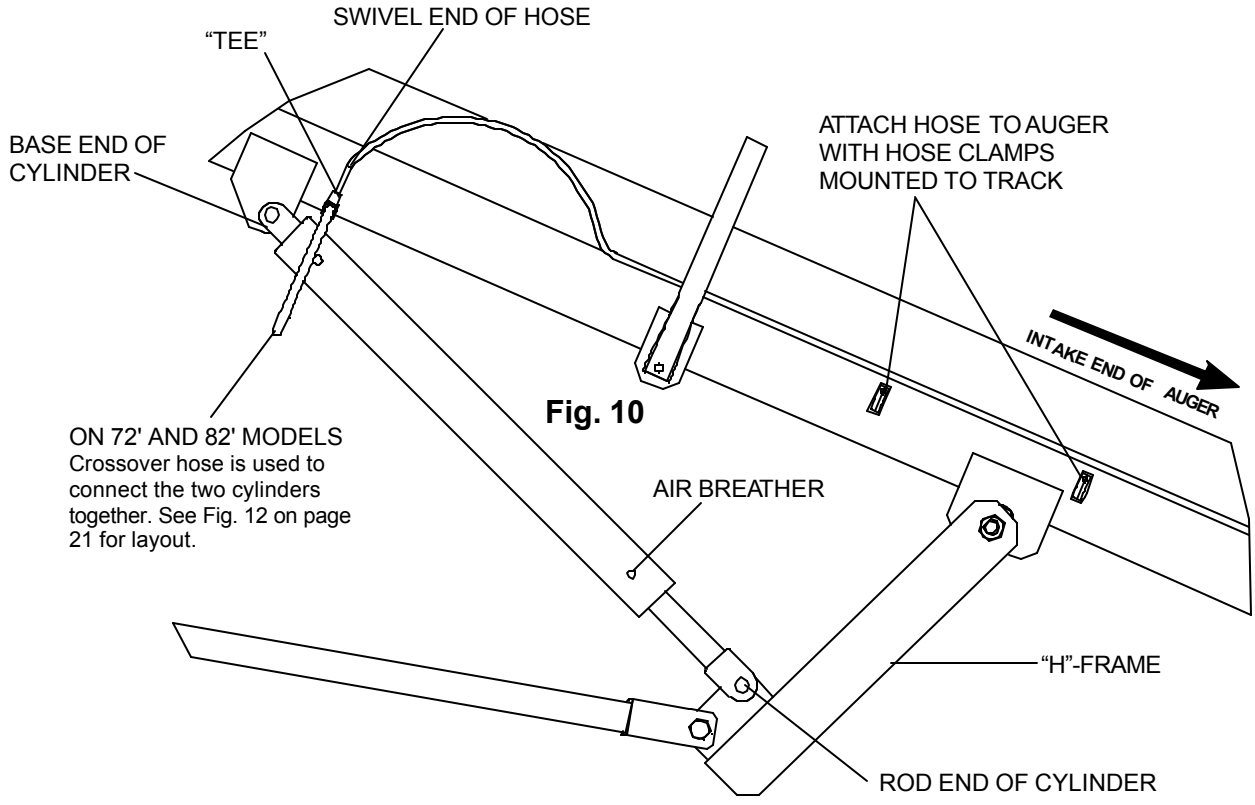


Fig. 10

11. Hydraulic Hose and Fitting Installation for 62' Models

A. Thread the heavy duty street elbow into the upper cylinder port (at the base of the cylinder). Tighten and leave street elbow parallel with the auger tube and pointed toward inlet air breather on the opposite end of the cylinder.

B. Connect the swivel end of the hydraulic hose to the street elbow and tighten.

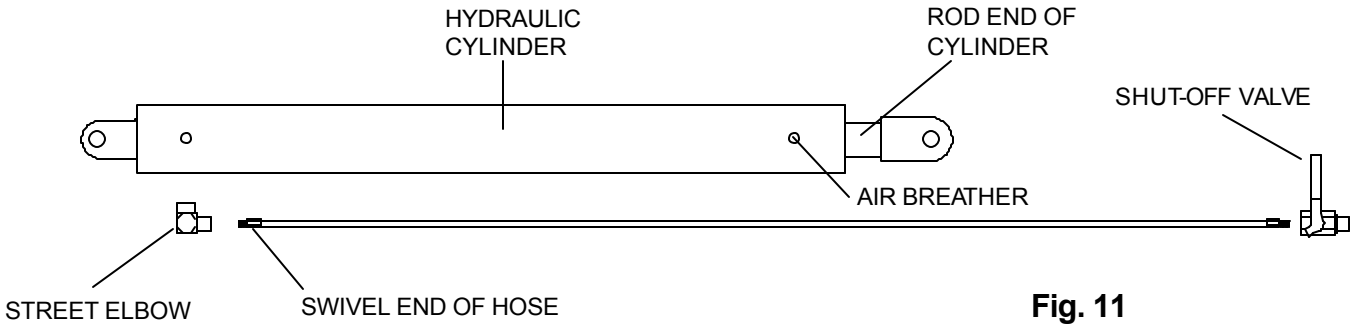


Fig. 11
MODEL 62'
HYDRAULIC HOSE LAYOUT

12. Hydraulic Hose and Fitting Installation for 72'& 82' Models

A. Connect the 18" hydraulic hose into the upper cylinder port of the cylinder on the right.

> **Both ends have a 1/2" male pipe fitting, but only one has a swivel end. Install the end that does not swivel into this cylinder port.**

B. Connect the swivel end to the 18" long hose to the upper end of the “tee” fitting that is installed in the cylinder on the left.

C. On **72' Models** connect the swivel end of the 37'-6" long hose to the other end of the “tee” fitting.
On **82' Models** connect the swivel end of the 41'-6" long hose to the other end of the “tee” fitting.

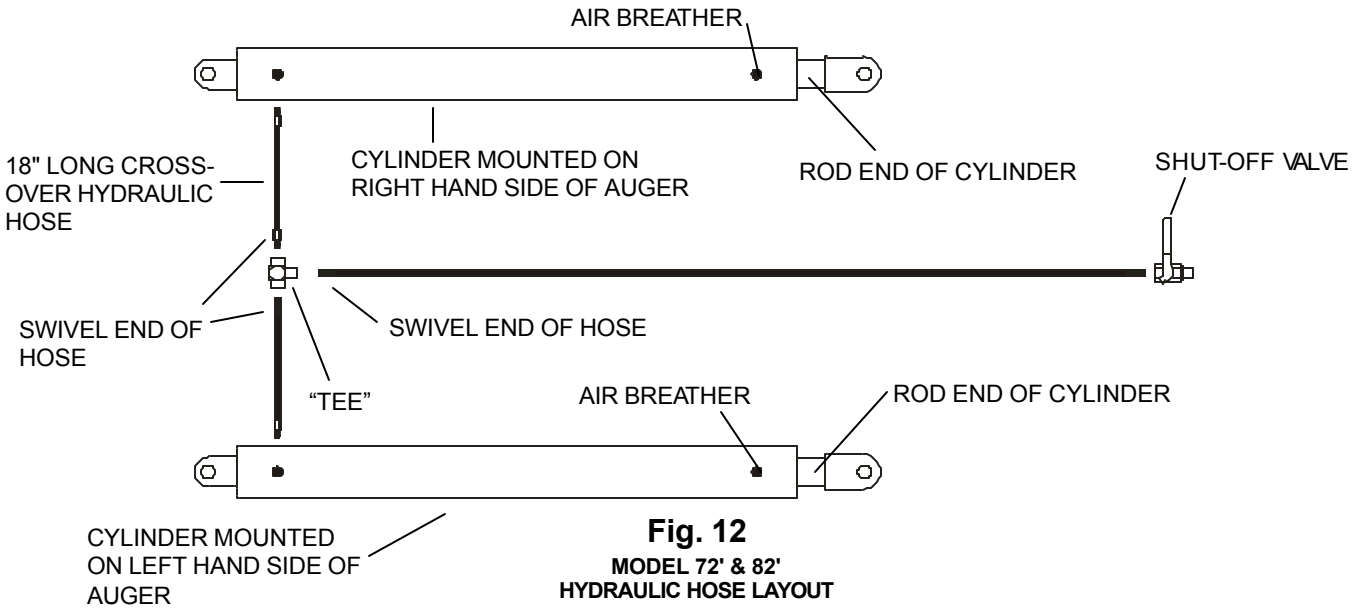


Fig. 12
MODEL 72' & 82'
HYDRAULIC HOSE LAYOUT

13. Hydraulic Hose Clamp Instructions

CAUTION: You must leave a loop of hose to account for the increased distance between the clamp and the cylinder port when the auger is raised. There must be a 5'-0" loop of hose between the first clamp and the cylinder port.

A. Start at the cylinder end of the hose, attach the hydraulic hose to the tube housing by using the mounting clamp and 5/16" x 3/4" hex head capscrew with lockwasher.

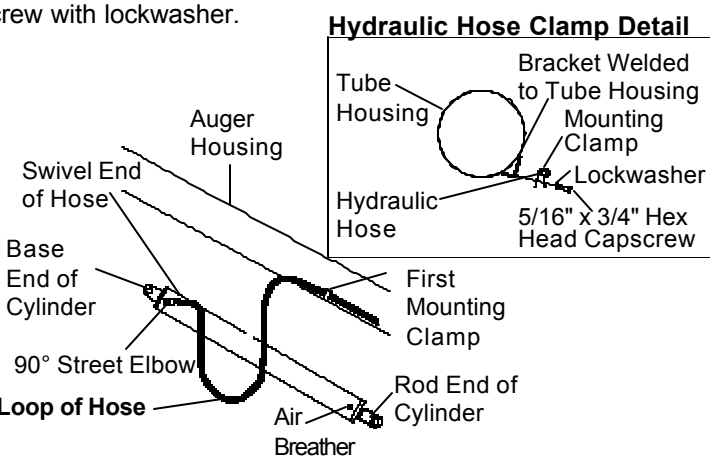


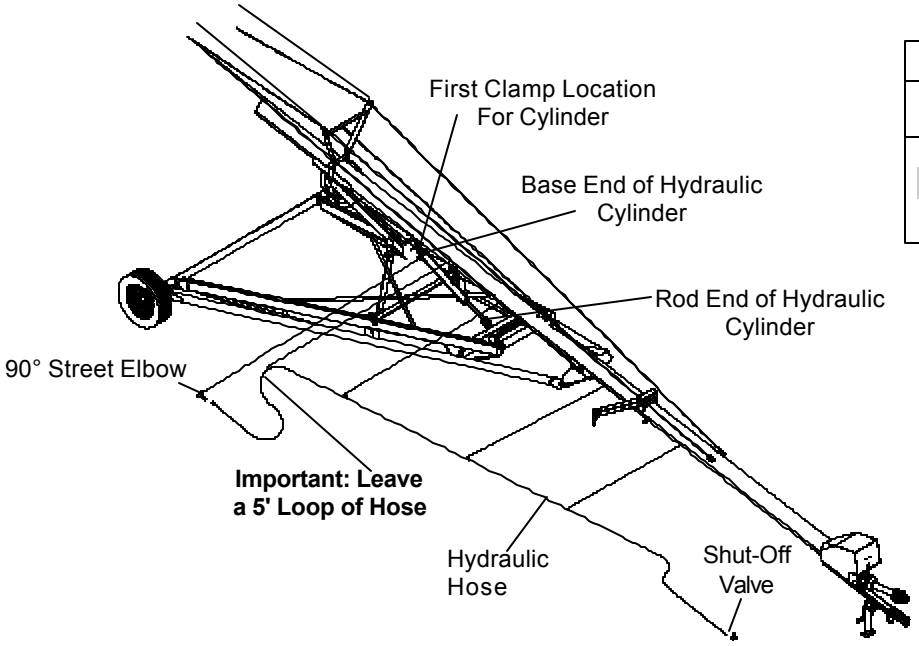
Fig. 13
62' Auger Shown

14. Hydraulic Shut-Off Valve Assembly

A. Thread the shut-off valve onto the end of the hose. After it is threaded on, the arrow on the valve must point towards the auger and away from the tractor. The hose should be threaded into the female end of the valve.

B. Double check all fittings and connections for a tight and secure fit.

CAUTION: DO NOT connect or disconnect any hydraulic component when there is pressure within the system. Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues and cause serious injury. Use a piece of wood or cardboard when looking for leaks. Never use the hands or other parts of the body. When reassembling, make absolutely certain that all connections are tight. If injured by hydraulic oil escaping under pressure, seek medical attention immediately. Serious infection or reaction may occur if medical attention is not received at once.



HYDRAULIC HOSE ASSEMBLY	
Auger Length	Hydraulic Hose Length
62'	34'-6"
72'	37'-6"
82'	41'-6"

15. Swing-Away hopper Lift Arm, Cable and Winch Assembly

The swing-away hopper can be stored on either side, right or left, of the main auger housing.

A. Install the lift arm into the lift arm mount from the side you prefer. Securely attach the lift arm to the mounting tube using a 1/2" x 4-1/2" long (grade 5) hex head capscrew, lockwasher, and nut.

B. Attach winch plate to inlet hopper using four (4) 3/8" x 1" long hex head capscrews and locknuts.

C. Hook clevis plates through the hanger loop on underside of auger housing as shown in Fig 15 below. Assemble 5/8" long bushing and cable pulley between the clevis plates using 1/2" x 2" long (grade 5) hex head capscrew and nylon locknut. After tightening the locknut, check to see that the clevis plates are securely hooked on the hanger loop and can't come off.

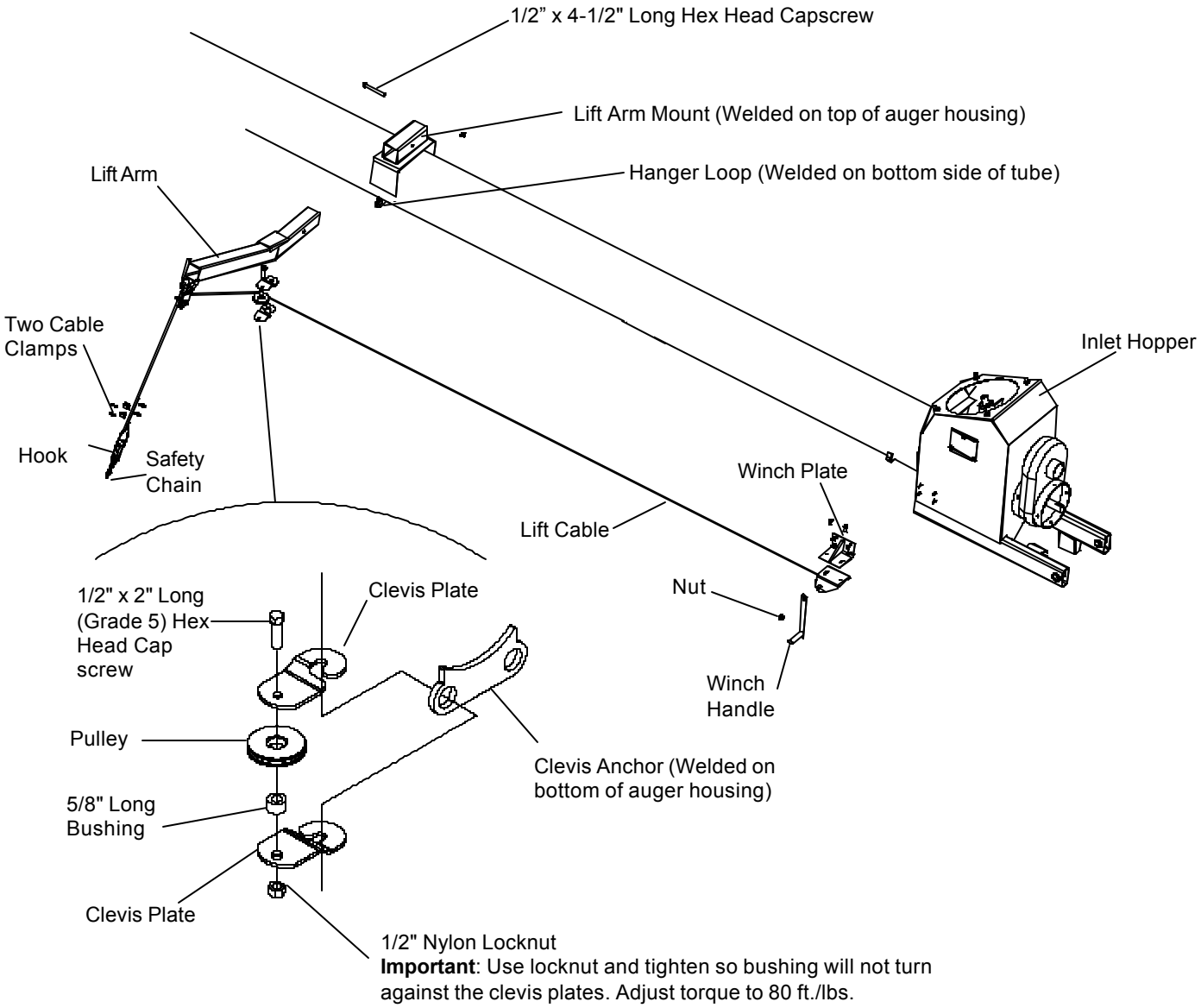


Fig. 15

15. Swing-Away Hopper Lift Arm, Cable and Winch Assembly (cont.)

D. Connect handle to winch by aligning the slot on the end of handle with the turndown portion of pinion shaft. Use hex head nut to secure handle to winch. For more winch information, follow the instructions and precautions listed in the material supplied with the winch from the manufacturer.

E. Connect the 1/4" x 28' long lift cable to winch drum so cable will wrap **under** winch drum when turning handle in a clockwise direction. (See Fig. 15-E.)

F. Working from inside of the drum to the outside, slide cable through one of the round holes in the side of the drum until the cable extends 1" past the two square holes.

G. Clamp the cable to the outside of the winch drum with the cable keeper, using two (2) 3/16" x 3/4" carriage bolts. Bolt heads should be on the inside of the winch drum. (See Fig. 15-E.)

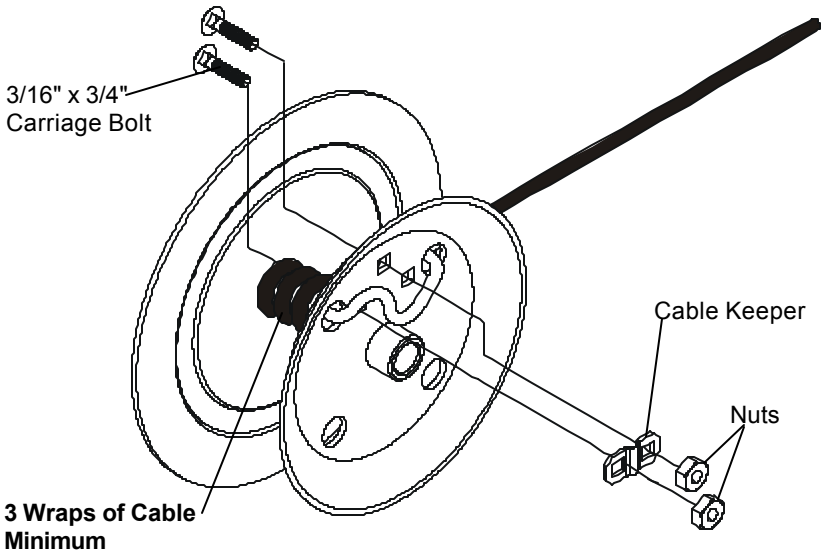


Fig. 15-E

The cable keeper alone will not hold the weight of the auger. There should be enough cable so that when the swing-away hopper is all the way down, there are at least 3 turns of cable on the winch drum. Never let the cable all the way out. Always keep a minimum of 3 turns of cable on the winch drum. If there are NOT 3 turns of cable around the winch drum when the swing-away hopper is fully lowered, then the cable must be replaced with a longer cable.

H. Mount the winch to the winch mount using two (2) 3/8" x 1" long bolts with flatwashers and nylon locknuts.

I. Rig lift cable from winch through the pulley and clevis under the auger then through the pulley and clevis assembly at the end of the lift arm.

J. Fasten cable hook to lift cable using two (2) 1/4" cable clamps. Secure the clamp u-bolt against the loose end of the cable.

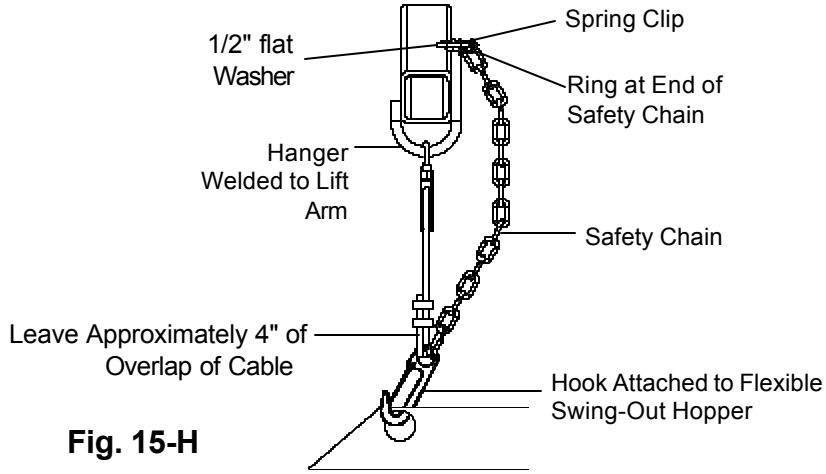


Fig. 15-H

DO NOT attach the lift cable to the safety chain.

16. PTO Driveline, Shield, and Jack Assembly

A. Connect PTO driveline to the enclosed drive input shaft using 3/8" x 1-1/2" drive key.

For the setscrews in the PTO driveline yoke to be properly engaged on the enclosed drive input shaft, slide the PTO driveline on until the setscrews will sit on the flat portion of the enclosed drive input shaft. See fig. 17-B. DO NOT extend the enclosed drive input shaft beyond the inside of the yoke.

Fig. 16-A

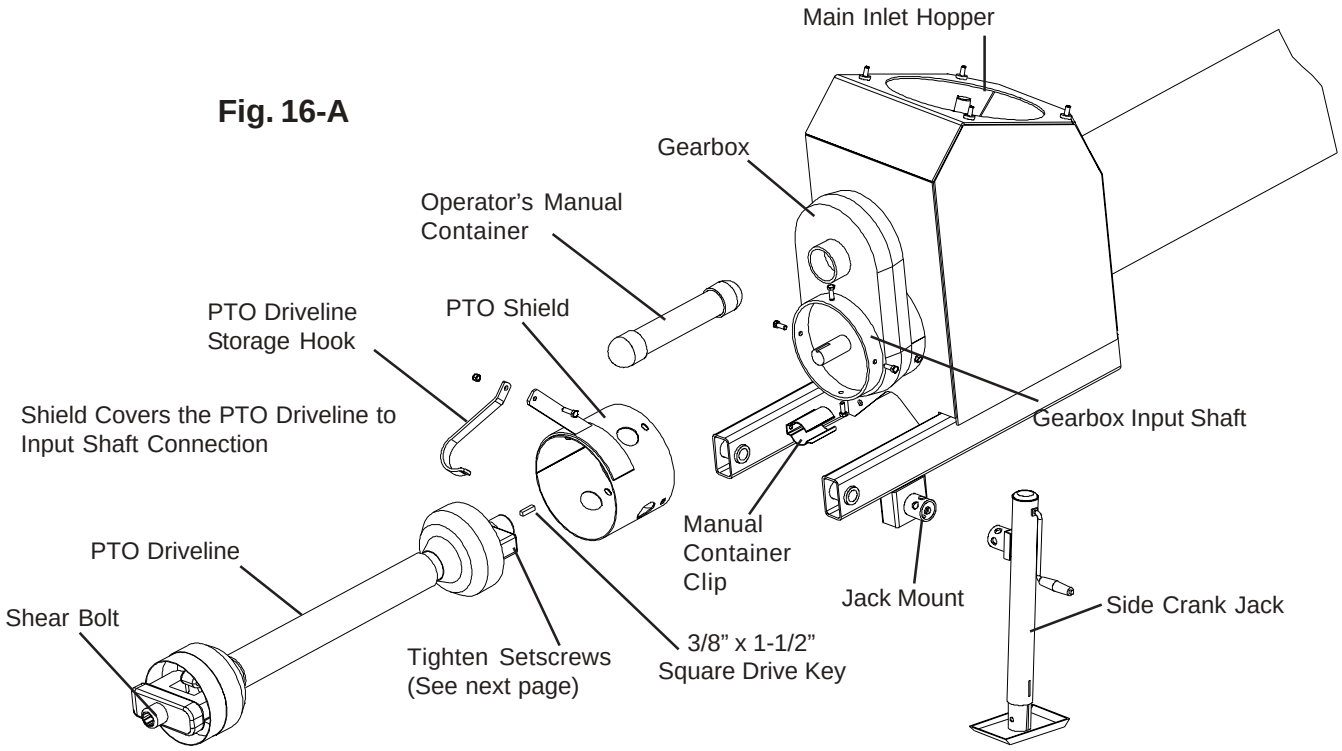
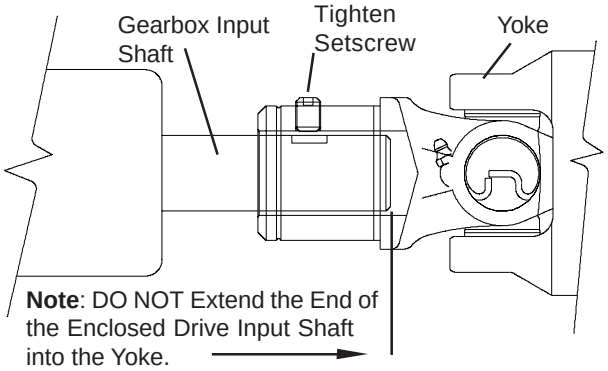


Fig. 16-B



The PTO driveline is equipped with a shear bolt at the tractor connection. The shear bolt protects the auger from damage if the auger becomes plugged or subjected to high loads. It is important to use the correct replacement bolt of the proper size and strength to ensure that the shear device will protect the auger and operator. Extra shear bolts are provided with the auger and are stored in the operators manual container located on the main auger undercarriage.

16. PTO Driveline/Shield and Jack Assembly (cont.)

B. Place shield over the PTO driveline. Bolt the shield to the mounting ring on the outside of the enclosed drive, using four (4) 3/8" x 1" long (grade 5) hex head capscrews and nylon locknuts.

C. Attach the storage hook to the strap on the shield with a 3/8" x 1-1/4" long (grade 5) hex head capscrew and nylon locknut.

D. Place PTO driveline into storage position. (See Fig. 16-D.)

E. Attach jack to hitch tube.

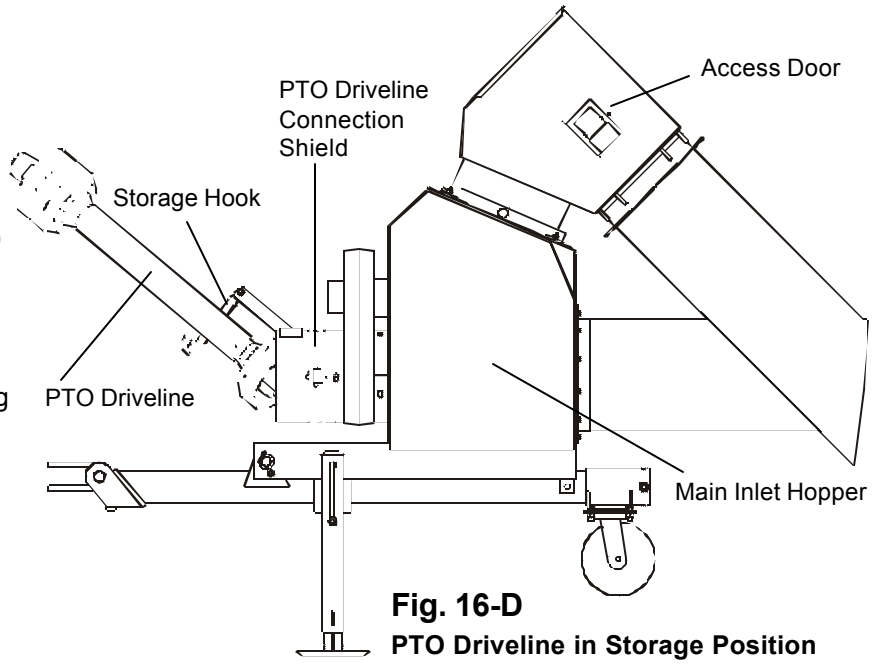


Fig. 16-D
PTO Driveline in Storage Position

The PTO Driveline should be placed in the storage position when not attached to a tractor. Tip the PTO driveline up and swing the support hook under the driveline shaft so it supports the weight of the driveline.

17. Caster Wheel Assembly

A. Attach caster wheel to caster wheel swivel bracket using four (4) 1/2" x 1-1/4" long (grade 5) hex head capscrews and nylon locknuts.

B. Place the caster wheel swivel bracket over the hitch pipe and bolt it in the down position using a 1/2" x 5" long (grade 5) hex head capscrew, lockwasher, and nut.

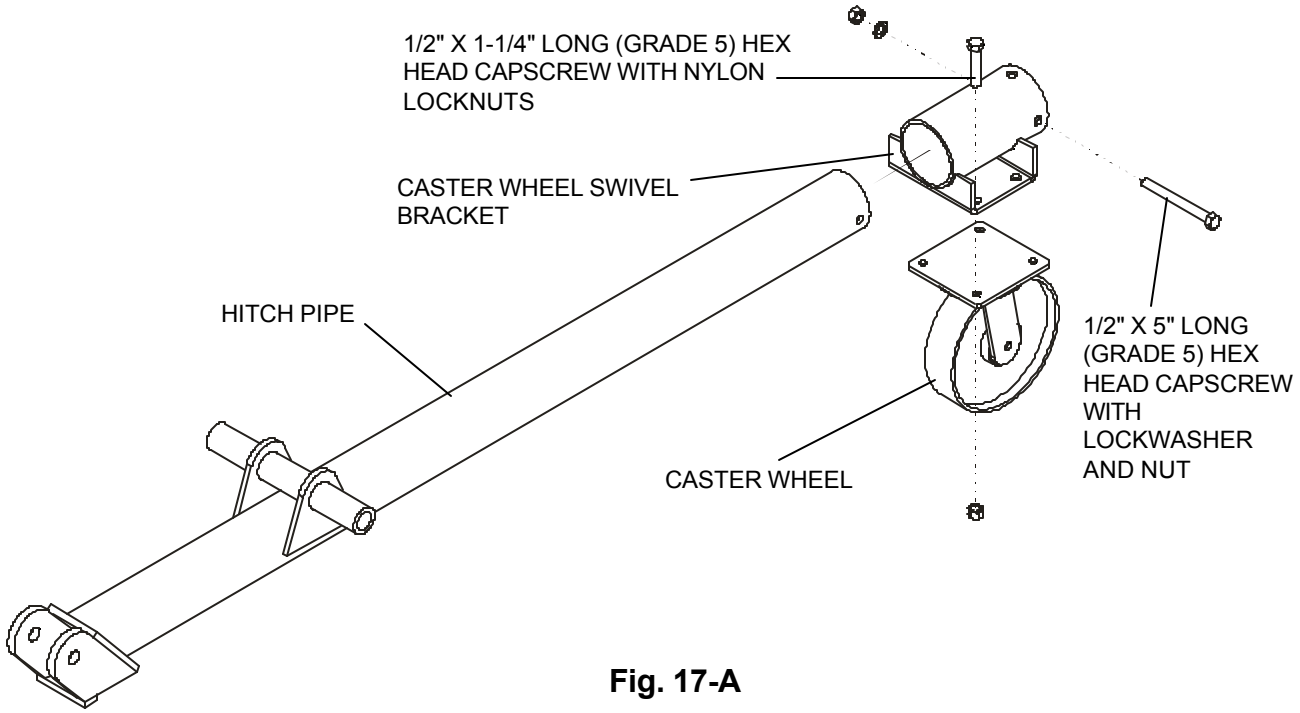


Fig. 17-A

18. Swing-Away Hopper and Incline Tube Assembly

The hopper hanger bearing and bearing stub are pre-assembled on the swing-away hopper. Therefore, in the drawings, those parts were exploded away from the hopper to better show the proper assembly of the other components.

A. Attach the rubber hopper wheel to the back of the swing-away hopper using two (2) 5/8" flat washers and 3/16" x 2" cotter pins. (See Fig. 18.)

B. Fasten two (2) hopper caster wheels to front of hopper using (4) 3/8" x 1-1/4" long (grade 5) hex head capscrews and nylon locknuts for each wheel.

C. Remove the incline flight from the incline tube.

D. Attach lower end of the incline tube to the front of the swing-away hopper. Use two (2) 5/8" x 1-1/4" long (grade 5) hex head capscrews, flat washers, and locknuts.

E. Connect incline tail stub into the incline flight using four (4) rubber sleeves, two (2) 1/2" x 3 3/4" long (grade 5) hex head capscrews, flat washers, and nylon locknuts. (See Fig. 18-E.)

Tighten locknuts so the flat washers are firmly against the rubber sleeves. DO NOT tighten so tight that the flat washers are against the flight tube. Leave about 1/16" gap.

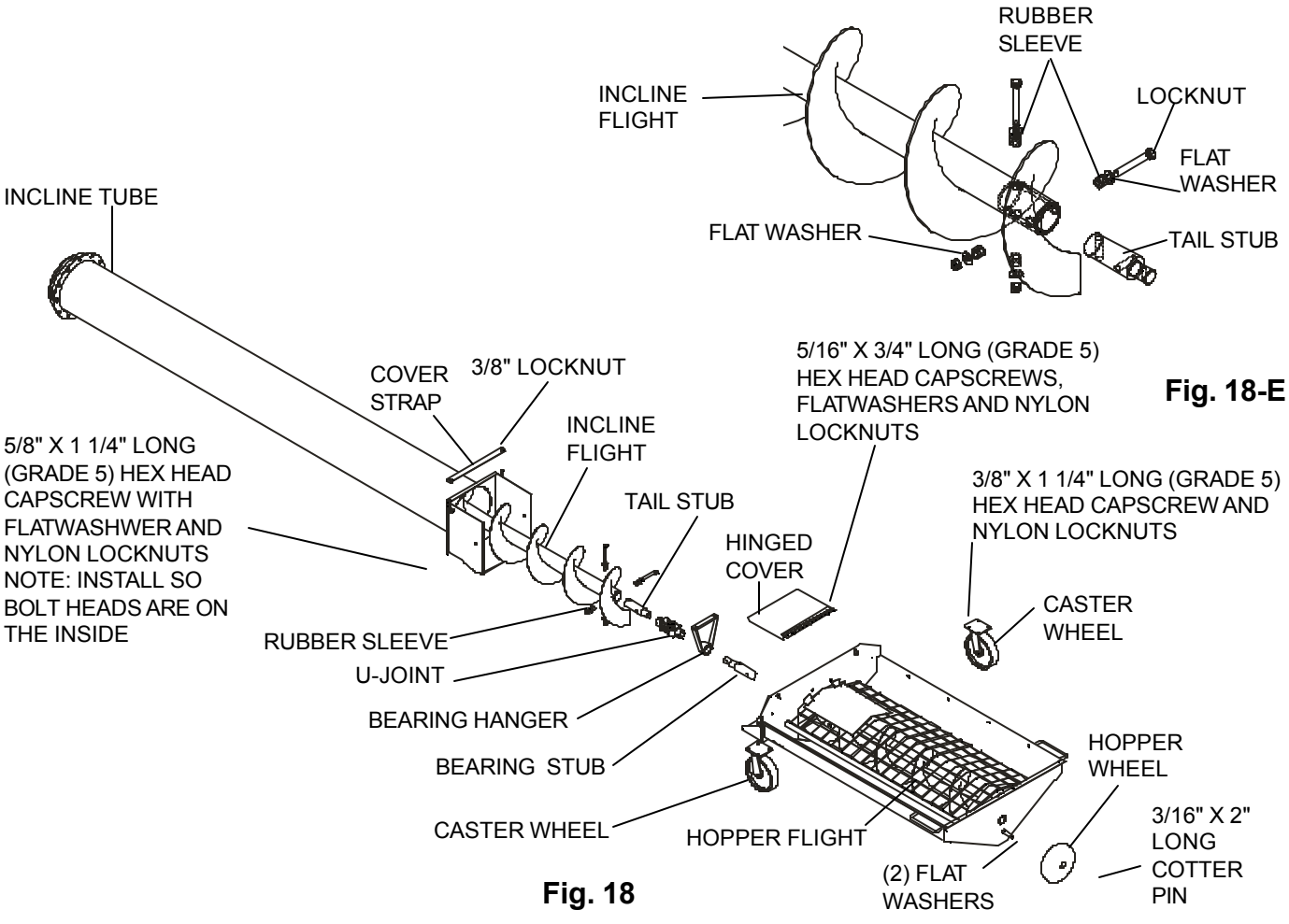


Fig. 18-E

Fig. 18

18. Swing-Away Hopper and In-line Tube Assembly (cont.)

F. Using a 3/8" x 3" long (grade 5) hex head capscrew and nylon locknut, attach the u-joint to the incline tail stub.

G. Slide the lower end of the inclined flighting *(the end with the u-joint fastened)* down into the upper end of the incline tubing. Slide the flighting down until the u-joint is near the swing-away hopper bearing stub.

H. Connect the u-joint on the flighting to the bearing stub in the swing-away hopper using a 3/8" x 3" long (grade 5) hex head capscrew and nylon locknut.

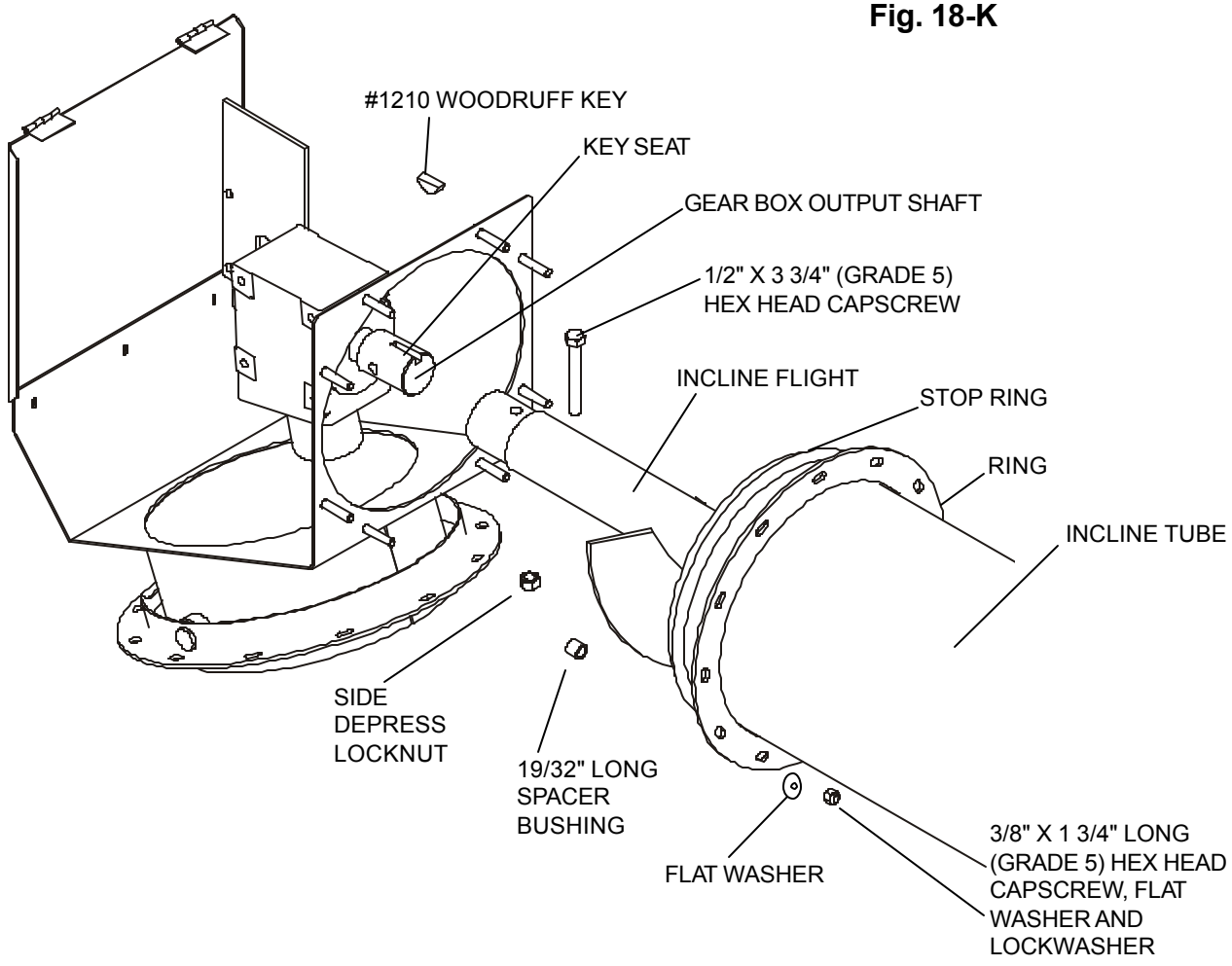
I. Bolt hinged cover to the front of the swing-away hopper using two (2) 3/8" x 3/4" long (grade 5) hex head capscrews, flat washers, and nylon locknuts.

DO NOT tighten the nuts down. The hinged cover MUST be able to slide under the strap when the incline tube is tilted at different angles.

J. Install cover strap over lid onto the 3/8" stub that is welded to the box on the lower end of the incline tube. Use the 3/8" nylon locknuts to hold the straps onto the stub.

K. Remove access door on the side of the spout. (Save the nuts. They will be used when door is put back on the spout later.)

Fig. 18-K



18. Swing-Away Hopper and In-line Tube Assembly (cont.)

L. Slide head end of the incline flight onto the spout gearbox output shaft, lining up the key seat in the flight shaft with the woodruff key in the spout gearbox output shaft. Secure the incline flight in place by using a 1/2" x 3-3/4" long (grade 5) hex head capscrew with a side depress locknut. (See Fig. 18-K on page 28.)

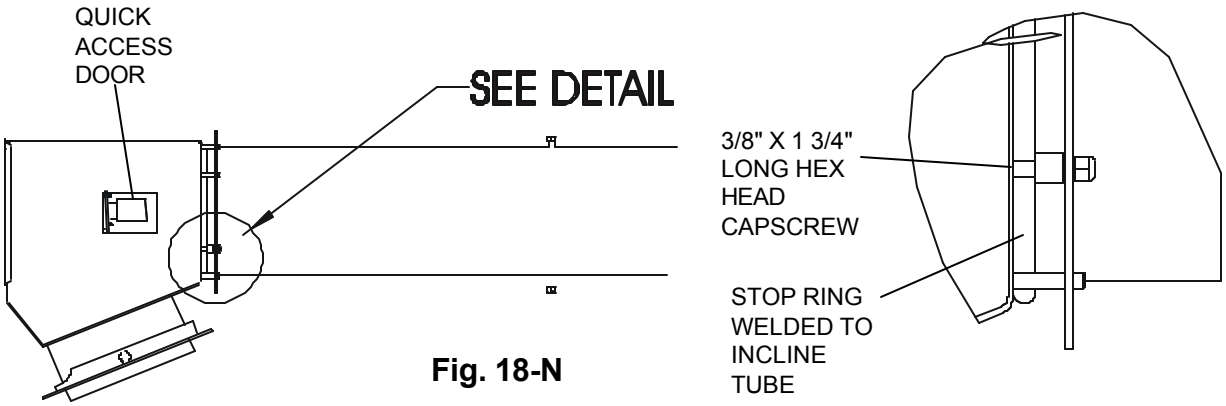


Fig. 18-N

M. Slide incline tube onto the back of the downspout, lining up the holes on the incline ring with the bolts welded onto the down spout. Fasten using eight (8) 19/32" long spacer bushings, eight (8) 3/8" x 1-3/4" long hexhead capscrews, eight (8) flat washers, and eight (8) 3/8" nylon locknuts.

Be sure to install the spacer bushings between the back of the spout and the ring. After the 3/8" nylon locknuts are tightened, the spout <u>MUST BE ABLE TO SWIVEL</u> on the incline tube.

M. Replace the spout access door removed in Step 18-K and secure in place with the (3) 5/16" nylon locknuts that were removed earlier.

19. Incline Tube to Main Inlet Hopper Assembly

B. Lift the downspout end of the incline tube with a lifting device or sling and position it directly over the opening in the main inlet hopper.

C. Carefully lower and align the u-joint with the splined gearbox shaft in the main inlet hopper. Use the quick access door or clean out door to gain access to the u-joint when lowering the incline tube. Completely lower until the spout flange sits flat on top of the main inlet hopper.

D. Fasten spout flange to top of main inlet hopper by using four (4) 2" O.D. flat washers and locknuts.

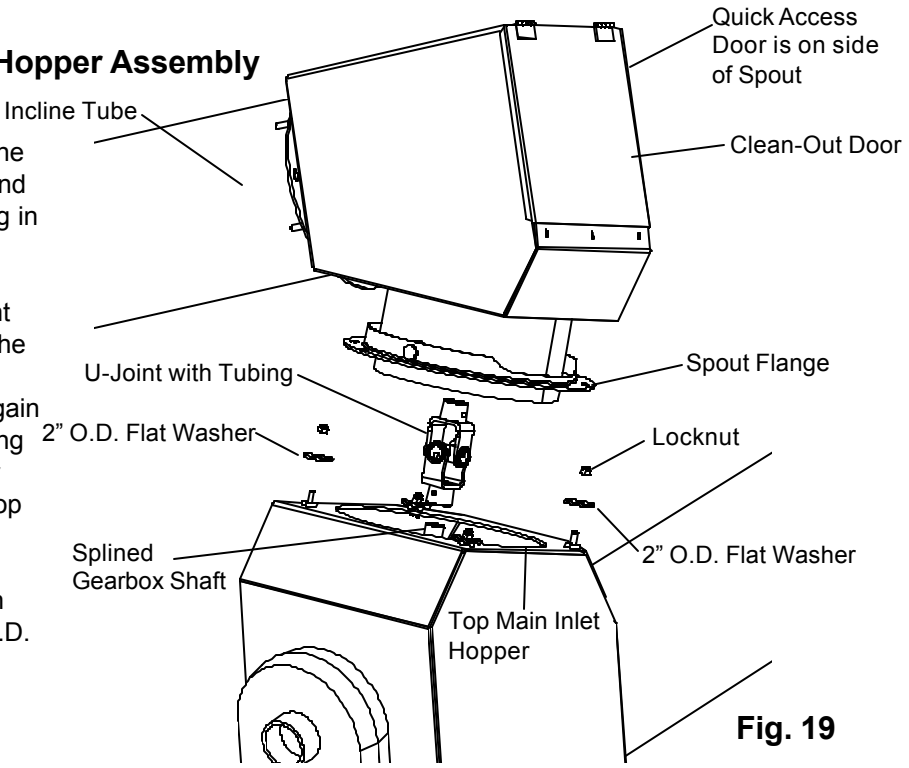


Fig. 19

IMPORTANT: The incline tube spout should rotate on top of the main inlet hopper.

20. Swing-Away Hopper Rubber Belting Assembly

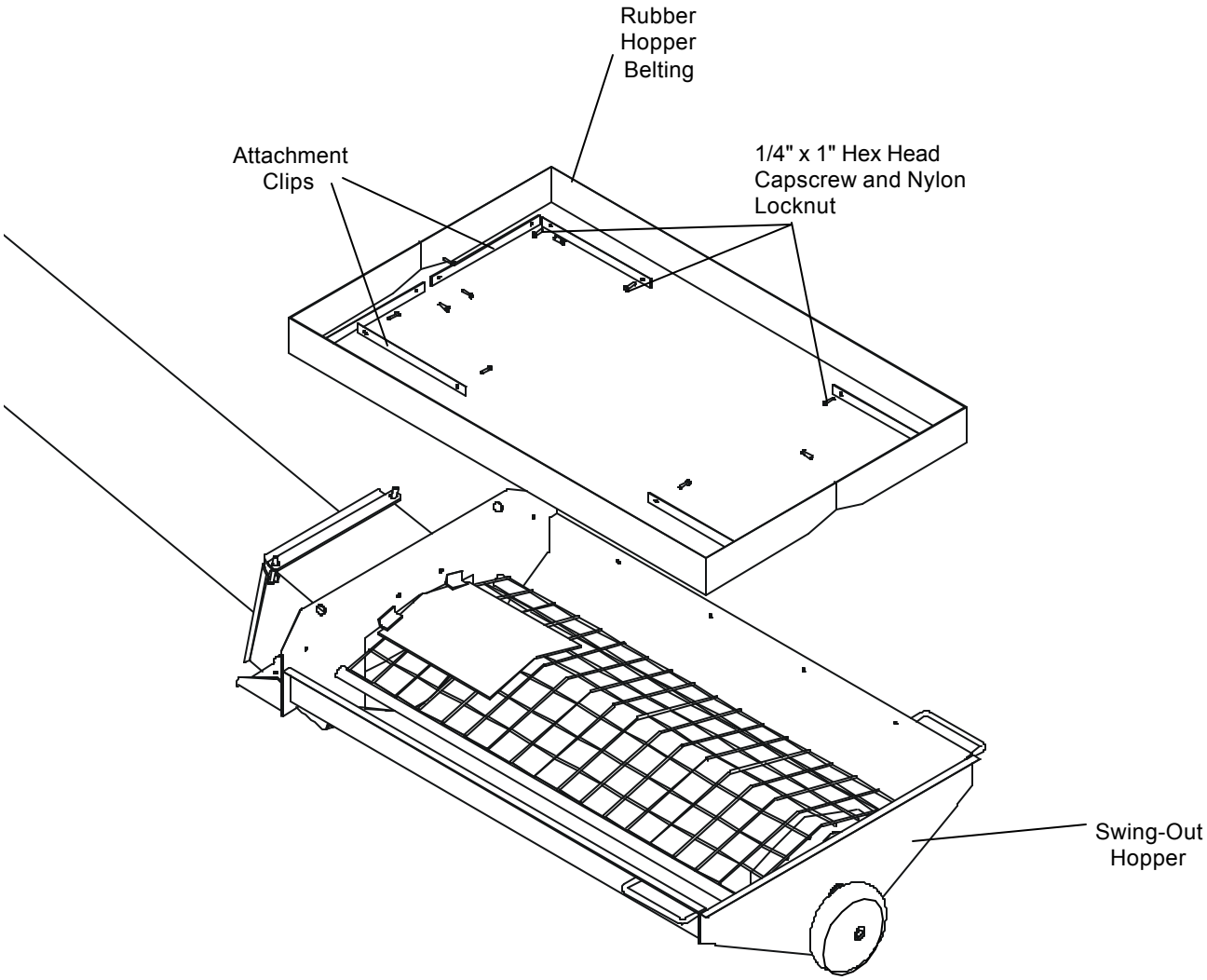
A. Place the rubber belting into the inside of the swing-away hopper.

B. Loosely attach the rubber belting using ten (10) attachment clips and two (2) 1/4” x 1” long hex head cap screws and nylon locknuts for each clip. The points of the clips should point up and the bolt heads should be inside the hopper. Use the bolt holes positioned around the upper edge of the hopper as a guide.

C. Position the belting inside the clips with the belting edge resting on the bolts. As shown on the diagram on the previous page, the belting should not cover the output end of the hopper. Keep the belting end within one (1) inch of the clip end.

D. Position the belting evenly around the hopper and through the corners.

E. Tighten the bolts and nuts so that the clip points draw into the belting and the smooth edge of the clips is in contact with the belting.



21. Optional Low Profile Hopper Assembly Instructions

1. Install the hopper wheels to the hopper using four (4) 5/8" x 9-3/4" long clevis pins and four (4) 1-1/4" cotter pins. Install the hopper wheels so the front wheels are tilted in towards the incline tube and the rear wheels are tilted away from the hopper chain guard. Basically, you want to tilt your wheels so they follow the arc made when you move the hopper. (See Fig 21-A)

NOTE: There are two installation heights for the hopper wheels. For the shortest hopper profile, use the upper set of holes. Also use the holes to angel the wheels by using opposite holes.

2. Fasten the CV- Joint to the incline tail stub using one 3/8" x 3"long (grade 5) HHCS and stover nut.

3. Connect the CV-Joint to the power shaft in the swing-out hopper using one(1) 3/8" x 3" long (grade 5) HHCS and stover nut.

4. Fasten the lower end of the incline tube to the front of the swing away hopper. Use two 1/2" x 1-1/2" long (grade 5) HHCS, flat washers, and nylon locknuts.

NOTE: Install bolt heads onto the inside and DO NOT tighten completely. The coupler box must be able to pivot.

5. Bolt hoppper lid to the front of the swing out hopper using three (3) 5/16"x 3/4" long (grade 5) HHCS flat washers, and nylon locknuts.

6. Install lid strap onto 3/8" stubs welded onto lower end of incline tube. Hold the straps on the stud with 3/8" nylon locknuts.

NOTE: Do NOT tighten the nuts down. The lid staps must be allowed to slide when the incline tube is tilted at different angles.

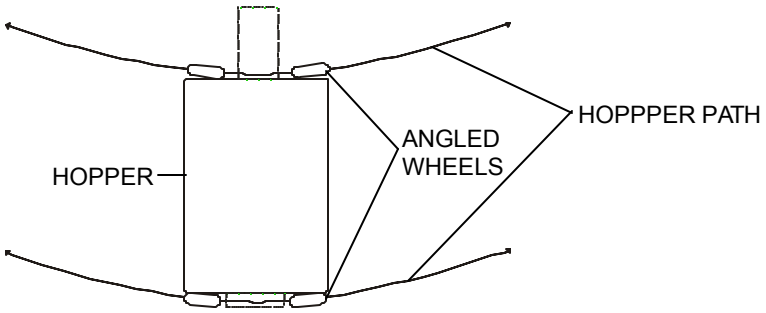
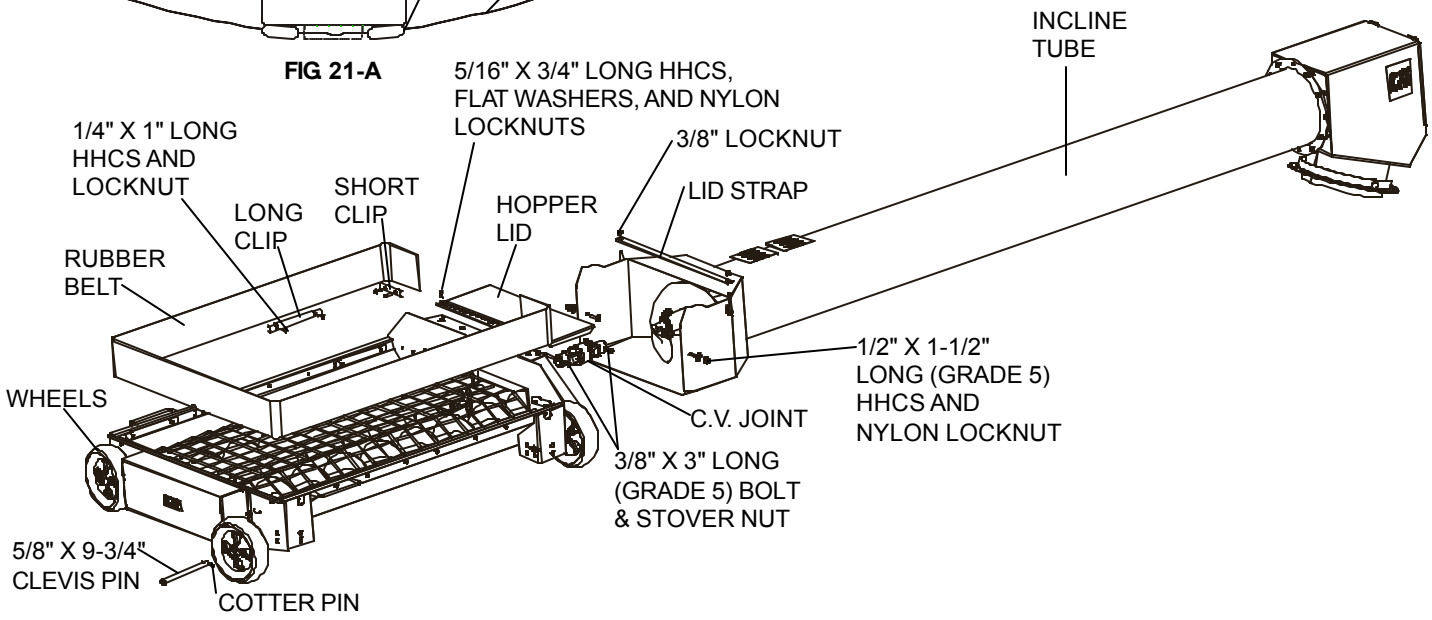


FIG. 21-A



22. Low Profile Swing-Out Hopper Rubber Belting Assembly

1. Install the rubber belting into the inside of the swing out hopper. Use ten (10) long and four (4) short attachment clips to install the belting. Two (2) 1/4"x 1" long hex head capscrews and nylon locknuts are used for each clip. Loosely attach each clip with grip teeth of clips up and with bolt heads inside the hopper. Use bolt holes positioned around upper edge of hopper.

2. Set the belting inside the clips with the belting edge resting on the bolts. The belting does not go completely across the output end of the hopper. The belting is notched to accommodate the center guard support at the rear of the hopper. Begin installing the belting at this point and work each way toward the hopper discharge. Keep the belting end within one inch of the clip end. Position the belting evenly around the hopper and through the corners.

3. Tighten the bolts and nuts to where the clip points draw into the belting and the smooth edge of the clips is in contact with the belting.

23. Attach Operator's Manual

A. Locate the operator's manual holder on the bottom side of the Inlet Hopper. (See Fig. 16-A on page 25.)

B. Snap the operator's manual container into place.

24. Recheck Assembly Before Delivery and Use

A. It is important to ensure the assembly of the SAW transport auger before using it for the first time. Make sure that all applicable assembly steps in this manual have been followed.

To the Dealer

All applicable assembly steps included in this manual must be followed for the assembly of the auger to be complete. Before delivering the auger to the owner, check the following:

1. Ensure that all safety shields and devices are installed properly.
2. Make sure that all safety decals are clean and readable. Replace any that are missing, damaged, or covered by paint. Refer to the first page of the Decal section for a list of the decals required for the auger and an illustration showing where the decals should be placed.
3. Ensure that all bolts and fasteners are tightened and secured properly.
4. Make sure that the Operator's Manual container (with Operator's Manual inside) is installed in its holder on the main auger inlet hopper. Refer to Fig. 16-A on page 25 for the location of the container.

Deliver this ***Assembly and Operator's Manual*** to the owner when you deliver the auger.

To the Owner

1. Read this manual. Check the assembly instructions to determine that the auger is assembled correctly.
2. Familiarize yourself with the safety decals on the auger. If you ever need to replace a safety decal, you can contact your dealer, distributor or the factory.
3. Check all safety shields and devices for proper installation, and make any necessary adjustments.
4. Check all the bolts and fasteners to ensure they are tight and secure.

1. Setup a Designated Work Area

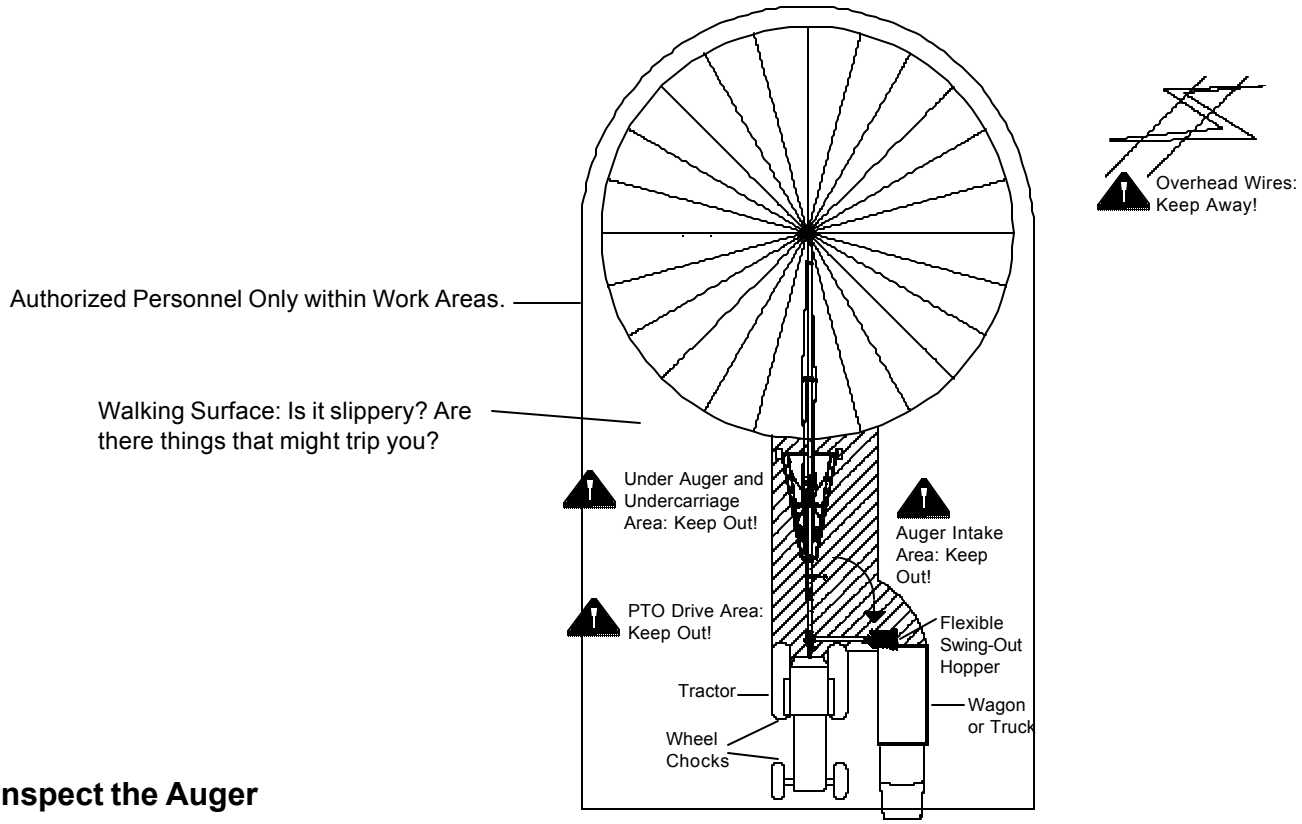
A. Before starting the auger, setup the designated work areas. The diagram below shows where boundaries should be established.

B. Mark off the designated work areas using colored nylon or plastic rope as portable barriers.

RULES FOR A SAFER WORK AREA

Under no circumstances should persons not involved in the operation of the auger be allowed to trespass into the designated work area. It is the duty of ALL operators to ensure that children and/or other persons stay out of the work areas. Should anyone not involved in the operation trespass into the work area or into a hazard area, the operator should immediately shutdown the auger.

It is the responsibility of ALL operators to ensure that the work area has secure footing, and is clean and free of debris and tools that might cause accidental tripping or falling. The operator is also responsible for keeping the work area clean and orderly during operation of the auger.



2. Inspect the Auger

A. After your new auger is delivered and assembly is complete, and before each use, you must inspect the auger.

B. Be sure that ALL guards listed in the assembly instructions are in place, secured, and functional.

C. Be sure that the shields on the PTO rotate easily.

D. Check ALL safety decals. Replace any that are worn, missing, or illegible. A list of decals, found on the auger, are included in the front of this manual. You may obtain decals from your dealer or order them from the factory.

E. Check the hopper winch and cable to ensure they are secure and operational.

2. Inspect the Auger (cont.)

F. Ensure that ALL fasteners are tight.

G. Check the hydraulic hose and fittings to ensure they are tight and are not leaking hydraulic oil.

H. Check the oil level in ALL gearboxes. The ***Maintenance*** section of this manual gives oil level recommendations.

I. Make sure that the clean out door is shut. It is located in the bottom of the inlet hopper.

J. Ensure that the inspection covers are in place.

3. Adjust Tractor Drawbar

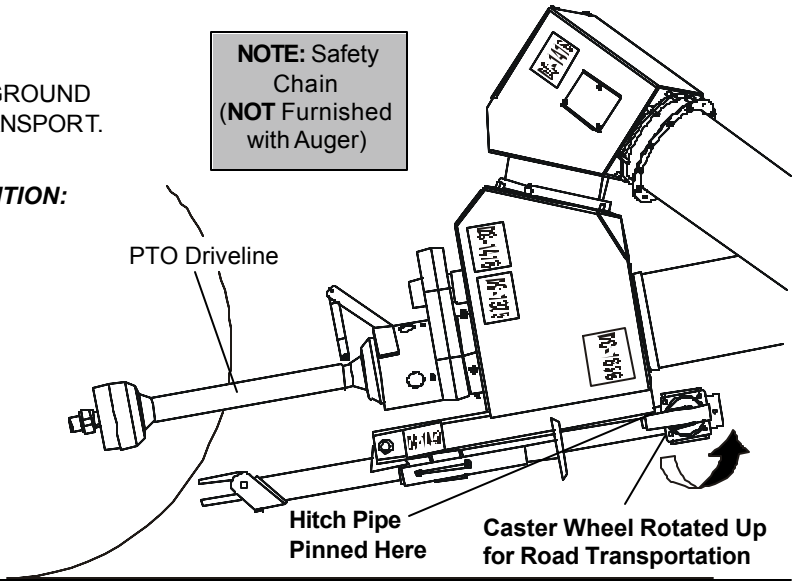
A. Adjust the drawbar so there is 14" from the end of the tractor PTO output shaft to the center of the hitch pin. Refer to the drawing below.

IMPORTANT: If the distance from the end of the tractor PTO to the hitch pin is shorter than 14", the auger should NOT be raised. The PTO driveline may bottom out as it compresses, causing damage to the PTO driveline, auger hopper assembly, or tractor PTO.

IMPORTANT:
THE HITCH CASTER WHEEL MUST BE UP OFF THE GROUND IN ITS' PINNED CARRYING POSITION FOR ROAD TRANSPORT.

TO RAISE THE CASTER WHEEL TO CARRYING POSITION:

1. ATTACH THE HITCH TO THE TOWING VEHICLE.
2. USE THE JACK TO RAISE THE AUGER INTAKE UNTIL THE HITCH PIPE CAN BE PINNED INTO PLACE. THEN ROTATE THE CASTER WHEEL ON ITS' SUPPORT FOR ADDITIONAL GROUND CLEARANCE.
3. STOW THE JACK INTO TRANSPORT POSITION.



THE HITCH CASTER WHEEL MUST BE ON THE GROUND DURING AUGER OPERATIONS. IT HELPS TO MAINTAIN THE PTO DRIVELINE WITH CV IN A HORIZONTAL POSITION. USE THE JACK TO RELEASE THE CASTER WHEEL FROM ITS' CARRYING POSITION.

Important: Tractor Master Shield Must Cover PTO Driveline To Tractor PTO Connection

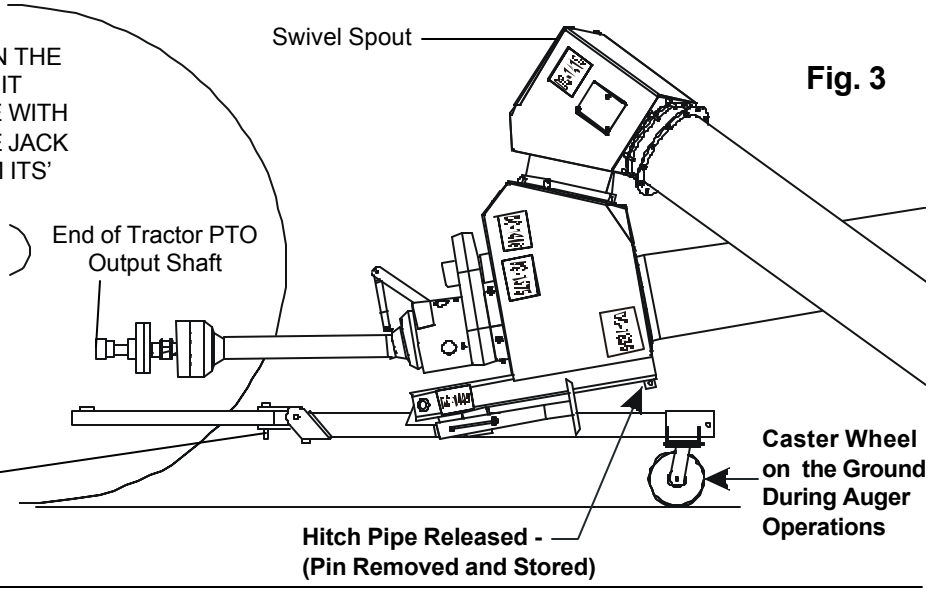


Fig. 3

4. Hitch the Auger to the Tractor

Empty the machine before moving it to prevent upending.

WARNING: NEVER stand between the tractor and the auger when hitching unless ALL controls are in neutral and the brakes are locked.

A. Lift the auger intake with the jack to the height of the tractor drawbar. NEVER raise the intake end higher than necessary to attach to a towing vehicle because weight transfers rapidly to the discharge end when the intake is raised.

B. Attach the hitch clevis to the tractor drawbar using either the hitch pin and keeper, or a bolt with two (2) nuts. Refer to the Fig 3 on page 33.

C. Route the hitch safety chain through the loop anchor welded to the hitch tube, then fasten the chain to the tractor drawbar no more than 6” from the hitch pin.

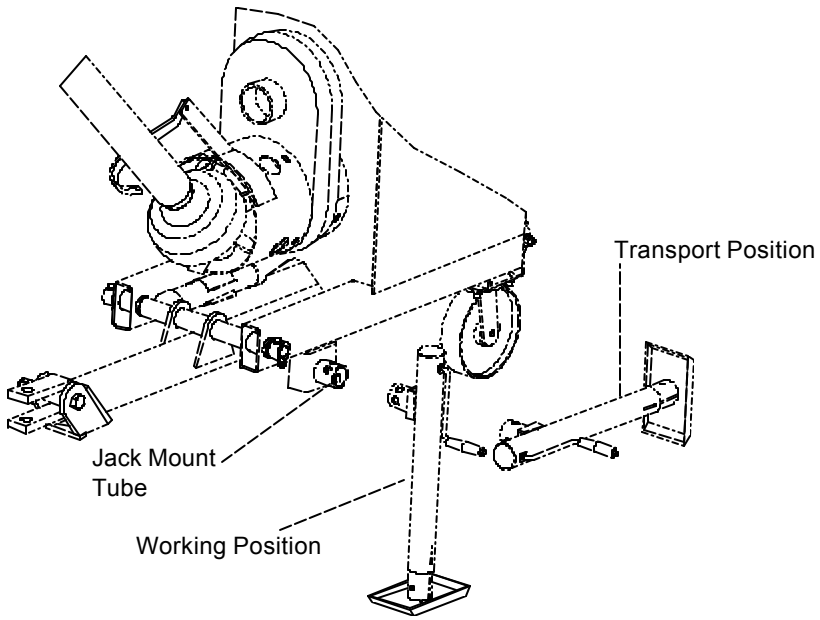
A safety chain (auxiliary attachment system) is required on public roads to retain the connection between towing and towed machines in case the primary attachment system separates. This is not supplied with the auger.

D. Connect the hydraulic hose to the tractor.

E. Make sure the hydraulic shut-off valve is closed.

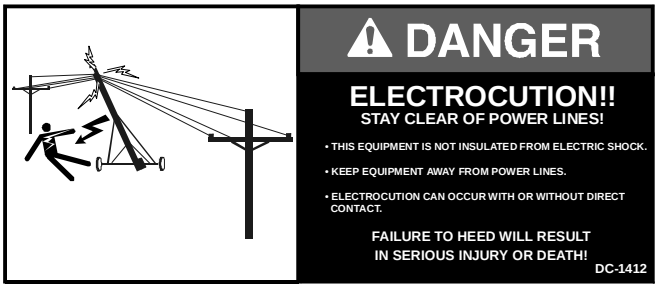
F. Retract the jack and rotate it 90° into transport position.

CAUTION: Before retracting or folding the jack, the hitch clevis should be secured to the drawbar to prevent the hitch from falling to the ground.



G. **DO NOT** attach the PTO driveline to the tractor at this time. It will be attached during placement of the auger, as described on Page 36.

5. Transport the Auger



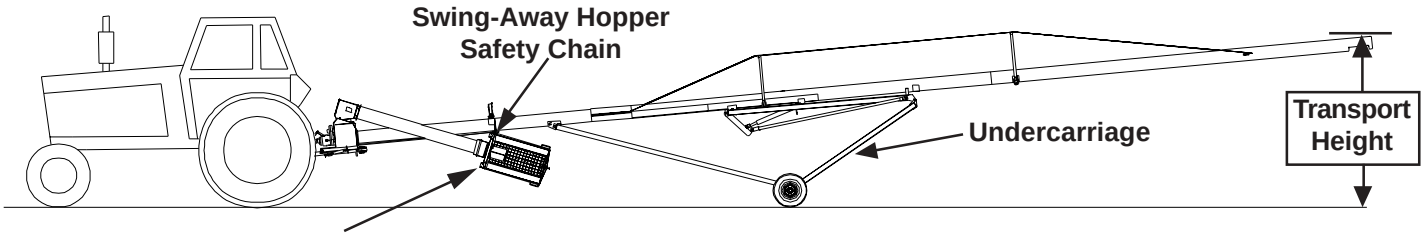
A. Before moving your portable auger, carefully consider the route you will take prior to departure. The route considered should be clear of dangerous obstacles, such as electrical lines and overhead obstructions.

B. If you have marked off the designated work area using colored nylon or plastic rope as portable barriers, be sure to allow room for the tractor and auger to pass through.

C. Move the auger with a tractor to and from the work area. If you need to move the auger over greater distances, use a pickup truck or other suitable vehicle.

D. Follow these recommendations when transporting the auger:

1. Always transport the auger in the full-down position, as shown below. The swing-away hopper must be raised and set in the transport position. Make sure the ratchet on the winch is locked. This will prevent lowering of the hopper during transport.
2. Make sure the hydraulic shut-off valve is closed.
3. Make sure the hitch is secured to the tractor.
4. Make sure the jack is stored in transport position or hitch adjustment position. **Be sure to fasten the alternate safety chain.**
5. Make sure the swing-away hopper safety chain is hooked over the hanger on the lift arm. (See ***Raise the Swing-Away Hopper into Transport Position*** on Page 43 for more information.)



IMPORTANT: Transport heights are estimated based on the auger being attached to a towing vehicle with a drawbar height of 1'6".

Auger Size	12" x 62'	12" x 72'	12" x 82'
Transport Height	12'-3"	13'-3"	15'-0"

IMPORTANT: Be careful making turns and AVOID SHARP TURNS. It is possible for the swing-away hopper to hit the tractor wheels or fenders.

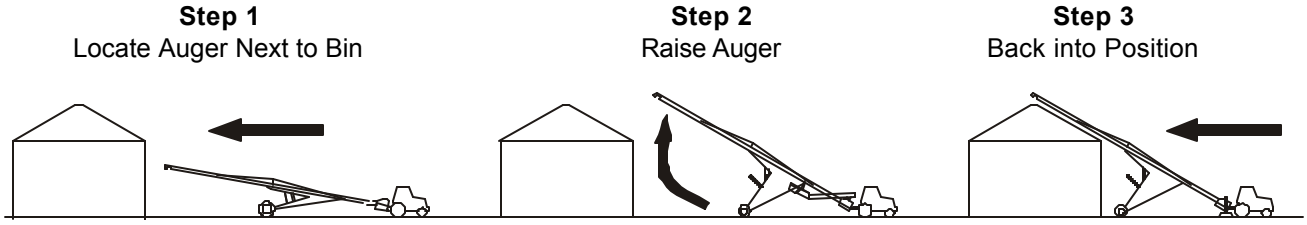
DANGER: Watch for overhead obstructions and electrical wires. Failure to do so may result in electrocution. Before you begin transport, lower the auger well below the level of power lines. Maintain at least ten (10) feet of clearance. The chart above gives the recommended height of each portable auger in the lowered transport position. Refer to the chart to determine at what height you should transport your auger.

NEVER allow persons to stand under or ride on the auger during transport. Do not transport the auger at speeds in excess of 20 M.P.H. Comply with state and local regulations governing marking towing vehicles and maximum width. Observe safe driving and operation practices.

6. Placing the Auger in Work Area

A. Placing the Auger—Use a towing vehicle to move the auger into its working position within the designated work area. Placing the auger consists of three (3) steps:

1. Locating the auger next to the bin.
2. Raising the auger.
3. Backing the auger into position.



Step 1. - Locate Auger

A. Locate the discharge end of the auger as close as possible to the bin or other structure.

B. When moving the auger toward the working position, leave adequate room so the swing-away hopper can be deployed. Also allow room for a convenient path for the loaded vehicle to reach the swing-away hopper.

DANGER: Make sure everyone is clear of the work area when moving the auger. To prevent the auger from tipping over while backing, avoid rolling over any obstructions. Also avoid moving the auger at right angles to a slope. If the auger is to rest on a slope, approach the bin uphill.

Be certain that the entire area above the auger and in the line of travel is clear of overhead obstructions and electrical wires. Failure to do so may result in electrocution. Maintain at least ten (10) feet of clearance.

Electrocution can occur without direct contact.

C. Position the auger so the tractor and auger will be in a straight line during grain conveying operation.

1. Place the auger on a level surface. The wheels must be allowed to roll freely while the auger is being raised. Be sure there are no obstructions in the area.
2. Open the hydraulic shut-off valve.
3. Check the swing-away hopper to ensure it is in transport position.
4. Attach the PTO driveline to the tractor by completing these steps:
   a. Slide the driveline end onto the tractor PTO output shaft.
   b. Compress the spring keeper on the PTO driveline and continue to slide it onto the tractor PTO output shaft until the keeper sets in the groove on the tractor PTO output shaft.
   c. The spring keeper returns to its original position and the PTO driveline locks onto the tractor PTO output shaft.

D. **DO NOT** engage the PTO when the swing-away hopper is in transport position.

DANGER: Avoid making turns while moving the auger when the PTO driveline is attached to the tractor. Maneuvering with the PTO driveline attached results in driveline damage that is not covered by the warranty.

Make sure the tractor is exactly in line with the auger while the PTO is operating.

6. Placing the Auger in Work Area (cont.)

Step 2. - Raise Auger

A. Raise the auger only high enough to allow minimum clearance above the bin.

Step 3. - Back Into Position

A. Slowly back the auger with the tractor so that the discharge end of the auger is positioned over the bin or grain storage structure. **DO NOT** back the auger by hand.

B. Lower the auger until the discharge spout or auger discharge is directly over the bin hole opening.

If you discharge grain into a grain spreader, maintain at least twelve (12) inches of space between the auger discharge and the spreader. The discharge end will lower as the auger fills with grain during operation.

C. Place the tractor in “Park,” set the brake, and chock the wheels by placing a board or cement block in front and behind the wheels.

D. Close the hydraulic shut-off valve to prevent the auger from inadvertently lowering or raising.

F. **DO NOT** increase the height of the auger by placing the wheels on blocks, lumber, or by other means.

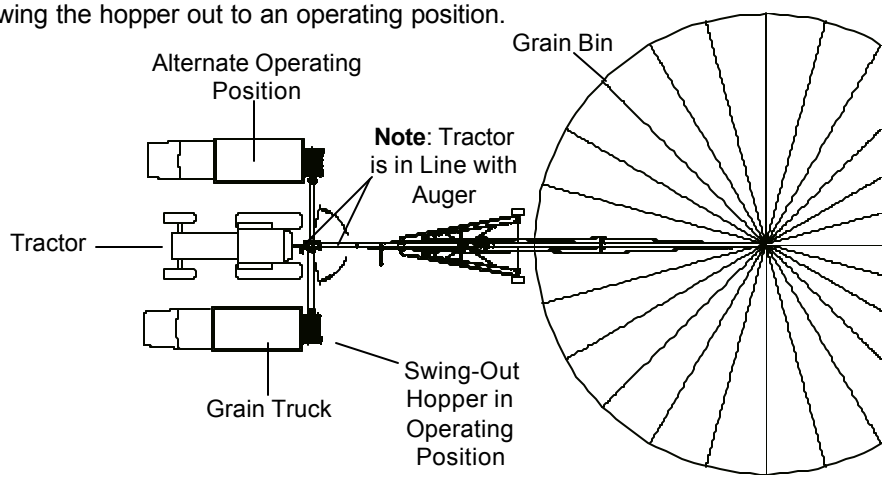
7. Deploy Swing-Away Hopper

A. Firmly grasp the winch handle and release the ratchet lock on the winch. Slowly turn the handle counter-clockwise to lower the hopper.

CAUTION: Maintain control of the winch handle at ALL times. If the handle is released, the swing-away hopper will drop, possibly damaging the hopper. Be sure to ALWAYS reset the ratchet lock after letting out the cable.

B. When the hopper reaches the ground, unhook the cable from the hopper. Hang the cable hook on a section of the auger housing to get it out of your way.

C. Carefully swing the hopper out to an operating position.



IMPORTANT: Do not engage the PTO unless the hopper is in operating position. Do not move the swing-away hopper while the auger is in operation.

1. Operation Recommendations

A. One person must be in a position to monitor the operation of the auger at **ALL** times. That person should visually inspect the auger before and during operation and be alert to any unusual vibrations, noises, and the loosening of any fasteners.

B. For smoother start-ups, keep the auger from operating totally filled. This will also help ensure efficient operation.

C. To avoid excessive wear, do not operate the auger empty for any length of time.

D. You must “break-in” a screw conveyor when it is new and at the beginning of each season. Refer to Step 2 for instructions.

E. Only use an Agricultural Tractor with 540 RPM Power Take-Off (PTO).

F. To avoid damage and excessive wear of the 12" augers:

- Do not operate the auger at speeds in excess of 540 RPM.
- Do not operate the auger at speeds below 450 RPM.

G. During operation, ensure the tractor is in line with the auger.

Be certain to close ALL the clean-out doors and inspection doors in the main auger hopper before operating the auger.

The operator should not turn on power before viewing the entire work area and checking that ALL personnel are clear of the designated work areas.

The operator should be alert to any unusual vibrations or noises that might indicate a need for service or repair during the initial start-up and break-in period.

The operator should regulate the grain flow into the main auger by controlling the amount of grain fed into the swing-away hopper. Avoid plugging the main auger by overfeeding the hopper.

Be certain that ALL safety shields and devices remain in place during operation.

Ensure that hands, feet, and clothing are kept away from moving parts.

Stop the engine and lockout the power source whenever the equipment must be serviced or adjusted.

2. Start-up and Break-In

A. Any auger that is new or has set idle for a season needs to go through a “break-in” period.

B. Before you start the tractor, be sure the PTO driveline is securely attached to the auger and the tractor. Make sure the swing-away hopper is in working position.

C. Be sure that power to the PTO is **OFF**.

Be certain that the shaft shield rotates freely on the shaft before engaging the PTO driveline.

D. Turn on the tractor.

E. Engage the PTO (by turning the switch to **ON**, engaging the lever, or whatever means necessary) at a slow RPM to minimize shock loads.

F. Do not allow the auger flighting to “load up” at low speed. If this occurs, high torque must be used to turn the auger flighting, and this can damage the auger.

G. Run the auger at partial capacity until several hundred bushels of grain have been augured and the flighting assembly and tube are polished.

Do not stop or start the auger under load because the auger has a tendency to “freeze up,” especially if the flight and tube have not become well polished.

H. When the screw and tube are polished and smooth, slowly work up to the recommended speed and run the auger at full speed.

You will minimize shock loads by engaging the PTO at a slow RPM, then increasing the RPM to the recommended speed.

1. Normal Shutdown

A. Make sure that the swing-away hopper and auger are empty before shutting down the unit.

B. Slow down the RPM.

C. Turn off the tractor.

D. Before the operator leaves the work area, the power source should be locked out, as described below.

WARNING: Precaution should be made to prevent anyone from operating the auger when the operator is absent from the work area. The operator must stop the auger and turn off the power source any time he/she must leave the work area, or service or adjust the auger.

2. Intermittent Operation Shutdown

IMPORTANT: Do not stop and restart the auger when it is fully loaded. This may damage the auger.

A. During intermittent operations such as batch drying, give careful consideration to the size of auger to use. Using a larger diameter auger and reducing its load level is far better than subjecting a smaller diameter auger to high loads. An auger that is kept from absolute filling will start-up easier and convey more efficiently.

3. Emergency Shutdown

A. If you have to immediately shutdown the auger under load, **be sure to disconnect and lockout the power source**.

B. Remove as much grain from the hoppers and auger that you can before restarting. Use the clean-out door in the bottom of the main auger inlet hopper.

C. **Never** attempt to restart the auger when it is full.

IMPORTANT: Starting the auger under load may result in damage to the auger. Such damage is considered abuse of the equipment.

D. When as much grain as possible has been cleared from the hoppers and the auger, reconnect the power source and clear the remaining grain gradually.

4. Lockout

A. To lockout the auger, stop the auger and turn off the power supply.

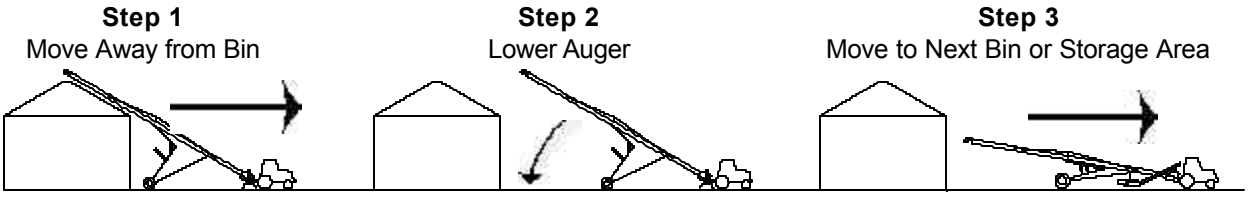
B. Remove the ignition key or coil wire from the power source. If this is not possible, remove the PTO driveline from the work area.

C. The operator should lockout the SAW auger in the following situations:

- Anytime the operator leaves the work area, such as after shutdown.
- Anytime the operator services or adjusts the auger.

5. Relocate the Auger

A. After you complete conveying grain, you should move the auger away from the bin and lower it. The auger can then be moved to a different bin for more conveying or to be cleaned and stored.



B. Relocating the auger consists of three (3) steps:

1. Move the auger from bin or storage area.
2. Lower the auger.
3. Move the auger to next bin or storage area.

Move Auger Away from Bin

On augers equipped with side drive kits, first hitch the tractor to the drawbar and connect the hydraulic lift hose to the tractor.

A. Empty the auger and clean up the work area.

B. Raise the swing-away hopper before lowering the main auger. (Refer to ***Raising Swing-Away Hopper into Transport Position*** on page 43 for more information.)

C. Untie any anchors and remove all supports.

D. Open the hydraulic shut-off valve.

E. Remove the wheel chocks.

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

G. Slowly move the auger away from the bin.

When moving the auger, do not make turns while the PTO driveline is attached to the tractor. Maneuvering with the PTO driveline attached will result in damage to the driveline that is not covered by the warranty.

Lower the Auger

A. Lower the auger immediately after moving the auger away from the bin or storage structure.

IMPORTANT: You should lower the auger even if you are relocating it a short distance away, such as to another bin in the immediate area.

B. Disconnect the PTO driveline and place it in storage position. Support the PTO driveline with a storage hook, as shown on page 44.

Move Auger to Next Bin or Storage Area

A. Carefully move the auger to the next bin or storage area.

B. It is recommended that the auger be stored in the full down position.

C. Thoroughly inspect the auger as described in the ***Inspect the Auger*** section on page 32.

6. Unhitch the Auger

A. Make sure the hydraulic shut-off valve is closed.

B. Relieve the tractor of internal hydraulic pressure. (Refer to the tractor's operation manual for specific instructions.)

C. Disconnect the hydraulic hose from the tractor.

D. Chock the auger wheels to prevent the auger from rolling.

E. Place the jack into the lifting position and remove the hitch weight from the tractor drawbar. Be certain the jack pin is properly set to prevent the jack from rotating on the mount.

F. Remove the safety chain and hitch pin.

G. Disconnect the tractor from the auger.

H. Open the clean-out door in the bottom of the main inlet hopper to clean out excess grain and allow water to drain during storage.

CAUTION: NEVER raise the intake end of the auger higher than is necessary to attach to a towing vehicle. When the intake end is raised, weight rapidly transfers to the intake end.

Never stand between the tractor and the auger when hitching unless all controls are in neutral and the brakes are locked.

7. Raise Swing-Away Hopper into Transport Position

A. Ensure that all grain has discharged from the auger.

B. Disengage the PTO.

C. Lockout the power sources.

D. Swing the hopper to the side of the main auger.

E. Release the ratchet lever on the winch and release enough cable to attach the cable hook to the front of the hopper.

F. Attach the hook to a hole in the front plate of the hopper, as shown on the next page. Use the hole closest to the auger tube. This ensures that when the hopper is raised, it will rotate and face away from the auger.

G. Engage the winch ratchet by flipping the winch ratchet lever into the down position. A clicking noise will sound as the handle is turned.

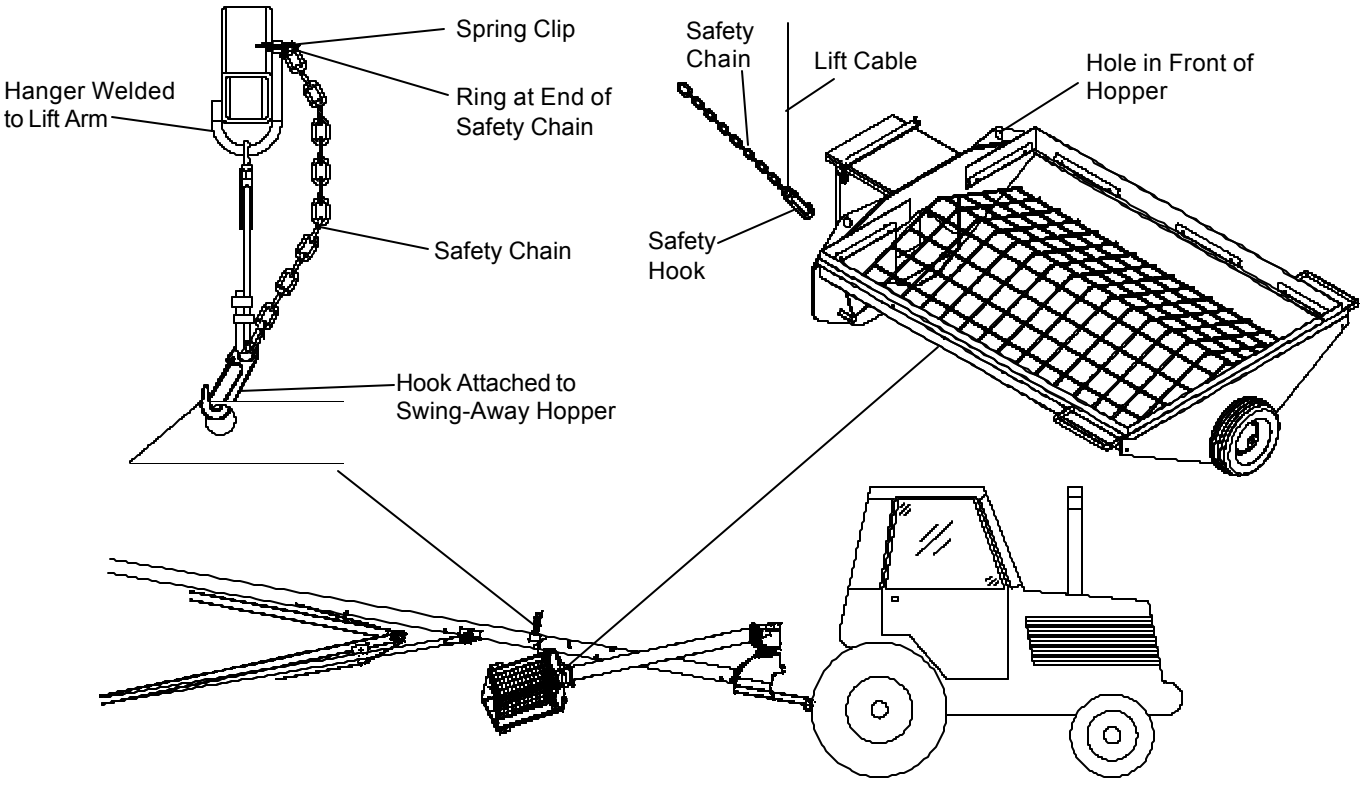
H. Turn the winch handle clockwise to raise the hopper.

I. Raise the hopper until the safety hook is within a few inches of the lift arm pulley.

J. Place the safety chain ring over the hanger welded to the lift arm, and secure it with a spring clip.

Pay attention to the cable as it winds into the winch drum. Make sure it winds on the drum evenly and does not build up on one side.

CAUTION: Be sure to keep your hands away from the winch drum while operating it.

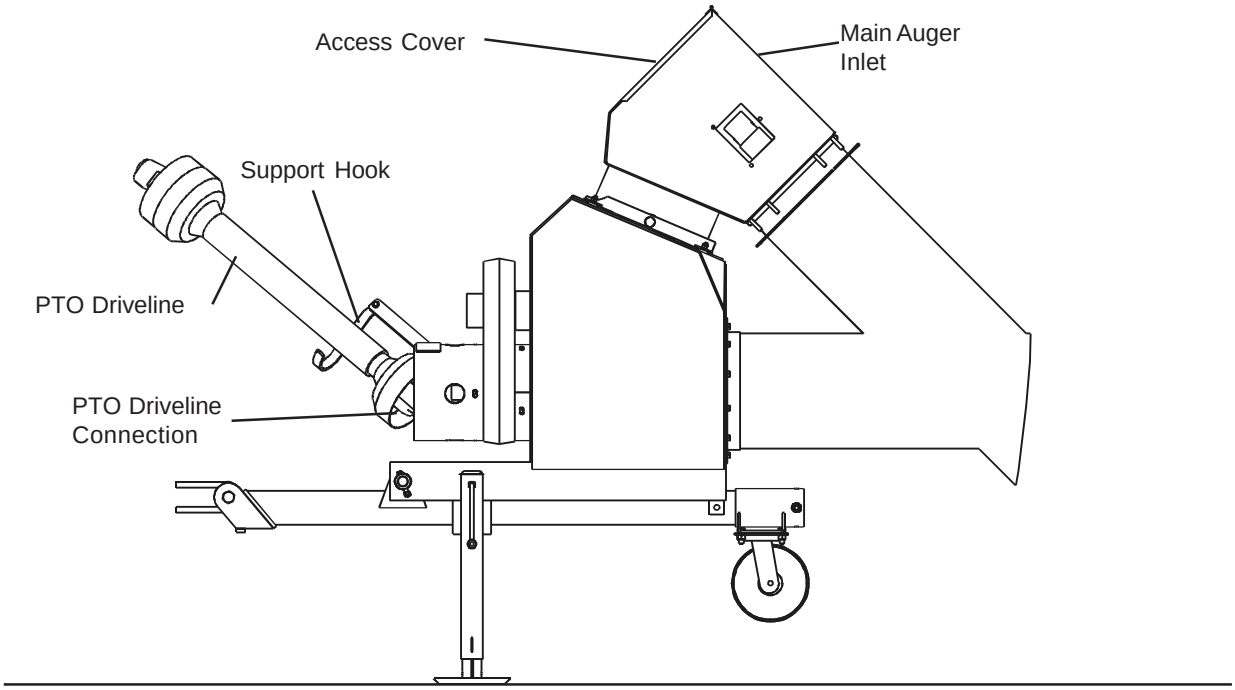


Swing-Away Hopper in Transport Position

8. Store PTO Driveline

A. Place the PTO driveline in storage position when it is not attached to the tractor.

B. Tilt the PTO driveline up and position the support hook under the driveline to support the weight of the driveline.



PTO Driveline in Storage Position

1. Lubrication Guidelines

A. Check and service the auger frequently to ensure economical and efficient operation of your auger. Maintaining regular and correct lubrication is key to proper maintenance. Infrequent or incorrect lubrication can result in reduced efficiency, excessive wear, and needless downtime.

B. Refer to the drawing below to identify the parts that need lubrication and the lubrication frequency.

NEVER perform maintenance on the auger unless all safety shields and devices are in place. Replace any that are damaged or lost. DO NOT clean, adjust, or lubricate any part of the auger while it is connected to a power source. Always disconnect all power sources prior to servicing the auger

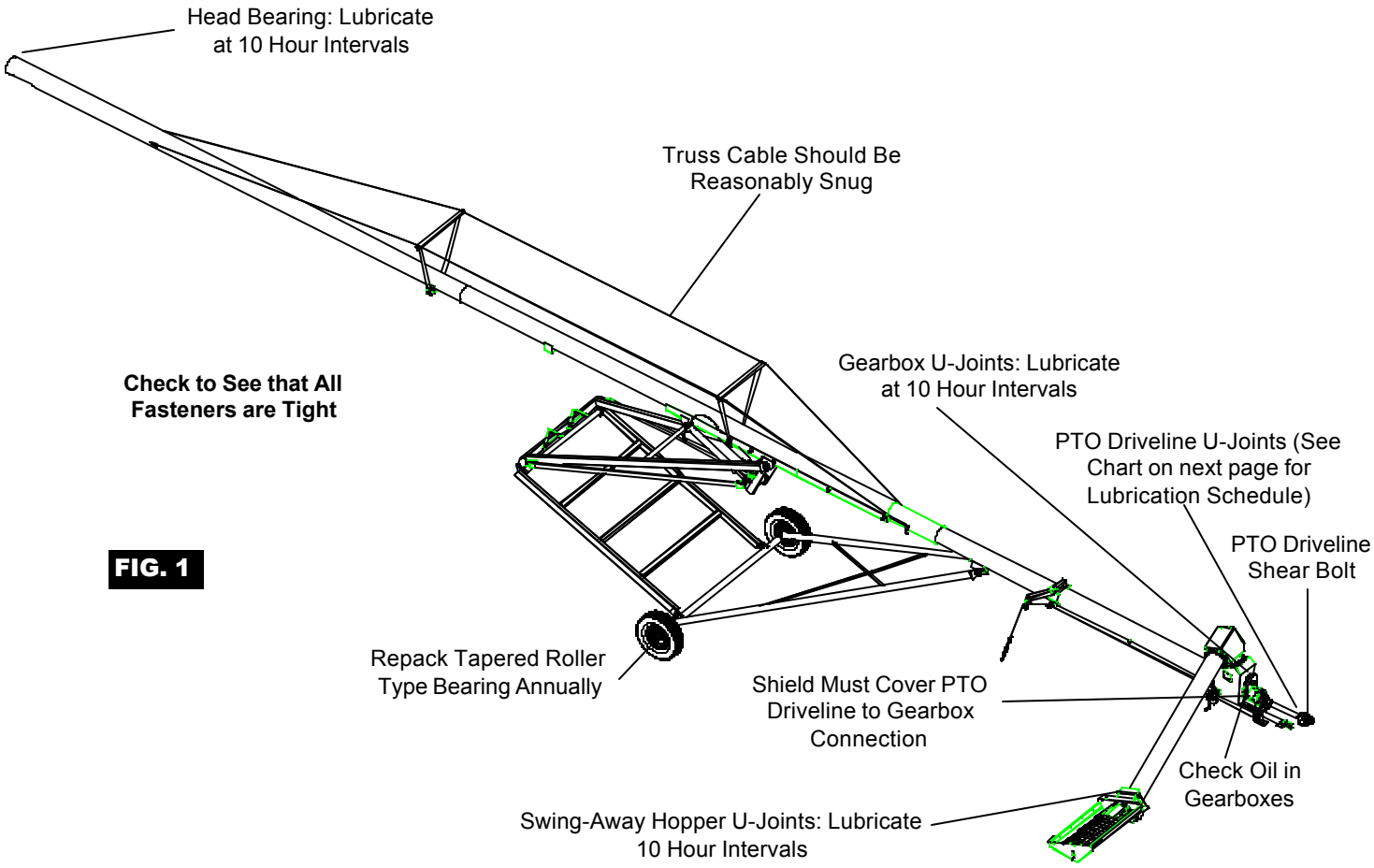


FIG. 1

2. Ratchet Type Winch Lubrication

A. Use a ratchet type winch to lift the swing-away hopper into transport position.

B. Ratchet type winches require the following maintenance:

1. All gears must be covered by a film of grease at all times.
2. The nut holding the handle assembly must be tight.
3. The two (2) bushings found at the end of the drum shaft, the ratchet pawl, and the bushing at the ends of the pinion shaft should be wet with oil.
4. The teeth of the ratchet lock should be sharp, and not worn, so that they can hold the load.

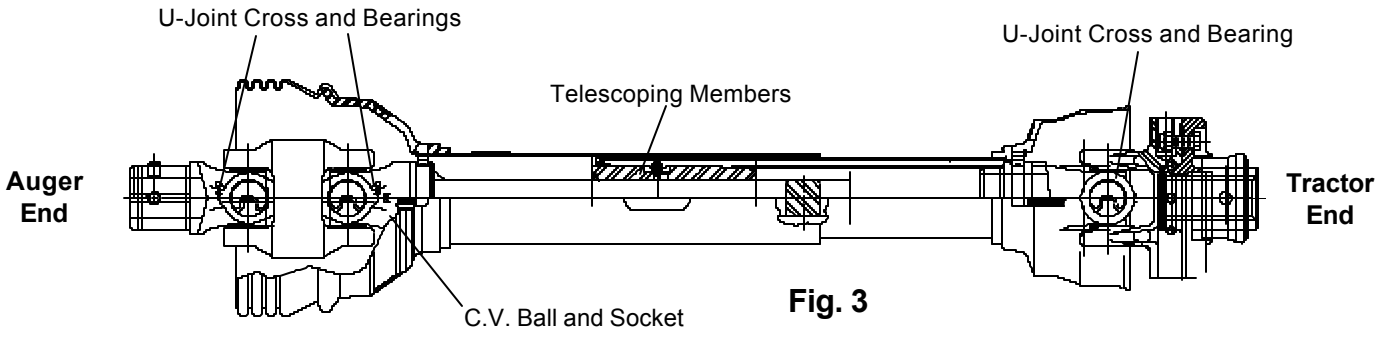


Fig. 3

Note: To lubricate the U-joint on the auger end, loosen the four (4) bolts holding the PTO driveline shield to the gearbox, then rotate the shield up.

3. PTO Driveline U-Joint Lubrication

A. You must lubricate five (5) fittings on the PTO driveline. The drawing above identifies the location of the fittings.

B. To lubricate the auger end of the PTO driveline, you need to rotate up the shaft shield. See Fig. 1 on page 45 for the location of the shield.

Constant Angle Lube Recommendations		
Interval	**Location**	**Amount**
4 hrs.	U-Joint Cross & Bearings	1 pump
8 hrs.	Telescoping Members	4-8 pumps
4 hrs.	CV Ball & Socket	1-2 pumps

C. Apply the first lubrication after the initial start-up and after 16–24 hours of operation, then follow this schedule:

D. Use a good quality grease. (Example: Shell super duty or equivalent)

4. PTO Driveline Replacement Parts

A. To ensure optimal performance from your auger, any parts for replacement should be replaced with parts of the same type and size. Do not modify or alter any of the auger components, such as using a part that exceeds the maximum recommended operating length of PTO driveline.

PTO driveline replacement parts do not come lubricated. Lubricate them at the time of assembly.

B. When lubricating PTO driveline replacement parts, refer to the chart above to determine the amount of lubrication and the recommended intervals.

5. PTO Driveline Shear Bolt

A. The PTO driveline shear bolt is located at the tractor connection. The shear bolt protects the auger from damage if the auger is subjected to high loads or becomes plugged.

B. Use a replacement bolt of the proper size and strength to ensure that the shear device will protect the auger and operator. Refer to the chart below for the correct size and strength.

PTO Driveline Shear Bolt			
Auger Size	**Shear Bolt Size**	**Shear Bolt Grade**	**Replacement Shear Bolt Part No.**
62'	3/8" - 16 x 1" long	Grade 5	GK3099
72'-82'	3/8" - 16 x 1" long	Grade 8	GK4815

C. Extra shear bolts are supplied with the auger. They are stored in the operator's manual container located on the main auger inlet hopper.

6. Gearbox Lubrication

A. The drawing below identifies the two (2) gearboxes that require lubrication, the incline tube gearbox (upper) and the inlet hopper gearbox (lower).

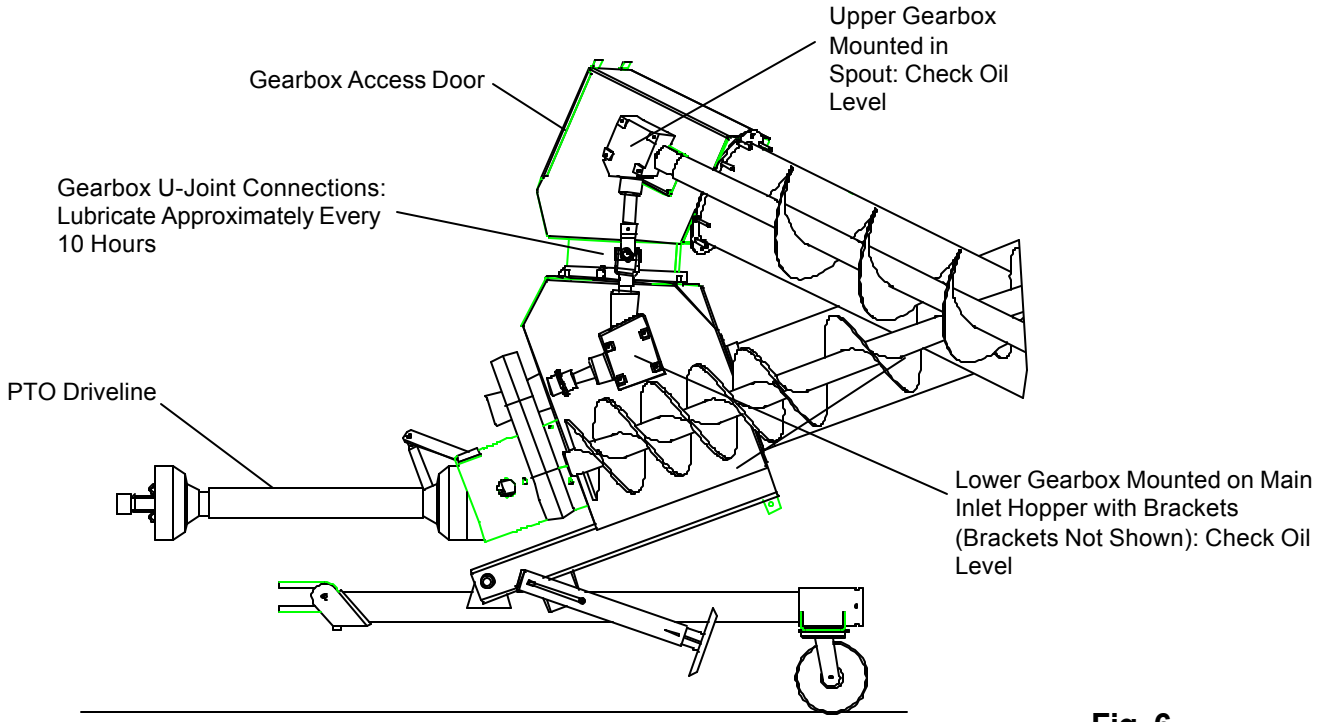


Fig. 6

Note: **The incline tube gearbox (upper gearbox) and the inlet hopper gearbox (lower gearbox) are connected by one u-joint.**

Oil dissipates under working conditions. Be sure to frequently check the oil in the gearboxes and maintain the proper level.

6. Gearbox Lubrication (cont.)

B. The type of oil you should use for the gearboxes depends on operating temperatures:

- For normal operating temperatures between 40°—120°F, use non-foaming, multipurpose gear oil, SAE 90 weight.
- For temperatures below 40°F, use SAE 80 weight oil.

Use commercial grade oil that is available for automotive differentials. If you are running the auger in severe applications, such as running the auger 24 hours a day, extra pressure additives may be of value.

C. Lubricate the gearboxes as needed as described below:

Upper Gearbox

1. Lift the access door.
2. Remove the plug in the side of the gearbox.
3. Check to see if the oil is up to the plug level. If it is not, refill using the oil described in step 6-B.

Lower Gearbox

1. Remove the plug in the side of the gearbox.
2. Check to see if the oil is up to the plug level. If it is not, refill using the oil described in step 6-B.

Be sure to close the access doors after checking the oil level. NEVER operate the unit with the access doors open.

NEVER add more oil than is recommended in Step 6-C. Adding too much oil may damage the seals or force the oil out through the vented plug.

7. Gearbox U-Joint Lubrication

A. Fig. 6 on page 47, identifies the two (2) gearbox u-joints that require lubrication. Lubricate these every ten (10) hours using a SAE multipurpose type grease. Use a grease gun with a rubber hose tip.

Positioning the Auger and Hopper for Lubrication

Rotate the auger so the zerk is facing the opening or in an accessible position.

Although the zerk can be reached with the swing-away hopper in any position, we recommend positioning the hopper on the ground close to the tractor or front. This turns the open side of the u-joint with the zerk toward the open end door. If the hopper is hanging on the auger, you must access the zerk from the back where it is not visible and engage it by feel.

Upper Gearbox U-Joint

1. Open the large hinged door located on the head of the inclined auger.
2. Lubricate the grease zerk if necessary.

Lower Gearbox U-Joint

1. Open the small access door on the front of the hopper.
2. Lubricate the grease zerk if necessary.

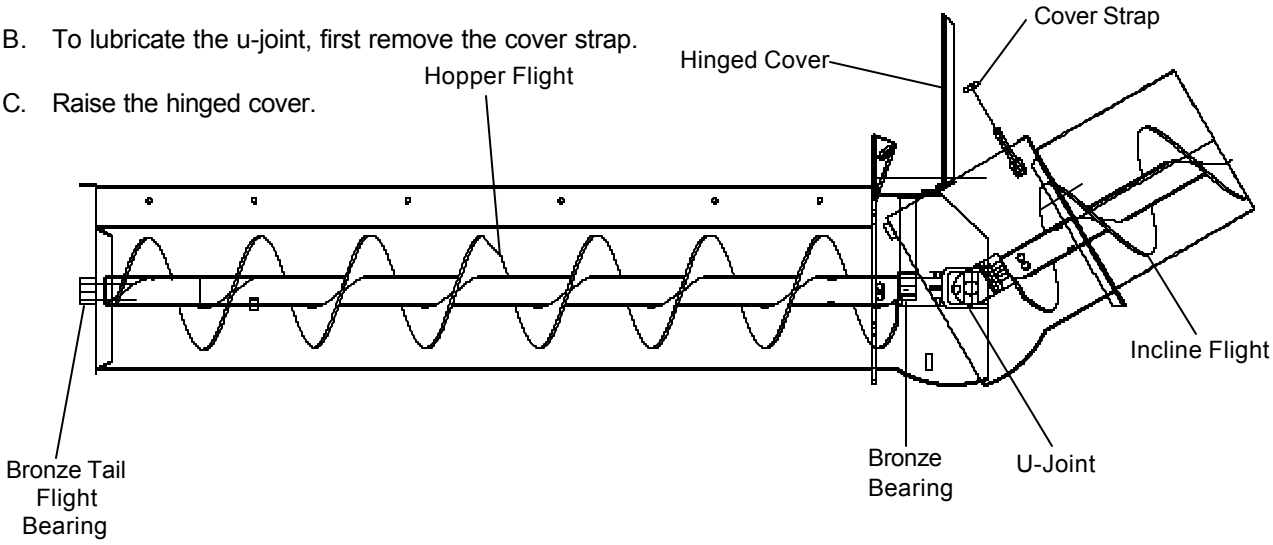
B. Be sure to close all access doors when lubrication is complete.

8. Swing-Out Hopper Flight U-Joint Lubrication

A. A u-joint connects the hopper and the inclined flight at the hopper elbow. Lubricate the flight u-joint at approximately ten (10) hour intervals using SAE multipurpose type grease.

B. To lubricate the u-joint, first remove the cover strap.

C. Raise the hinged cover.



D. Lubricate the grease zerk if necessary.

E. Close the cover and replace the cover strap before operating the unit.

WARNING: The hinge cover must be closed and the strap properly installed before operating the unit.

9. Undercarriage Axle Spindle Bearings Lubrication

A. All 12" augers come with tapered roller type bearings.

B. Repack and adjust the bearings annually or as needed, depending on usage.

C. Be careful when dismantling the wheel bearing assemblies.

D. First remove the dust cap by forcing out the edges.

E. Remove the cotter pin, slotted nut, and flat washer.

F. Use care to remove the hub and bearings from the spindle.

G. Examine each part for wear or damage and replace with new ones as needed.

H. Use care to remove the hub and bearings from the spindle.

I. When reassembling the hub, repack both bearing cones with grease and fill the hub cavity 1/3 full.

J. Place the inner bearing assemblies into the hub.

K. Press the seal into the hub.

L. Reinstall the hub on the spindle, being careful to not damage the lip of the grease seal.

9. Undercarriage Axle Spindle Bearings Lubrication (cont.)

M. Insert the outer bearing assembly into the hub.

N. Replace the flat washer and slotted nut.

O. Tighten the slotted nut to seal the bearings until the hub binds as you rotate the hub.

P. Back off the slotted nut to the next slot and insert a new cotter pin. The cotter pin should measure 5/32” wide x 1-1/4” long.

Q. Securely fasten the dust cap.

10. Hydraulic Cylinder Lubrication

A. An air breather is housed in the rod end port of the hydraulic cylinder.

B. Check to see if oil is leaking from the air breather. If so, the rod seals are damaged or leaking.

C. Remove the old rod seals and replace with new ones.

11. Hydraulic Hose Lubrication

A. Be certain that ALL the hydraulic fittings and hoses are tight and not leaking oil.

B. Replace fittings that are leaking.

C. Replace any hydraulic hose that may be cut or damaged.

CAUTION: NEVER connect or disconnect hydraulic parts when there is pressure within the system. Hydraulic systems are highly pressurized. Hydraulic oil that escapes, even through invisible pinhole-sized leaks, can penetrate body tissues and cause SERIOUS INJURY.

Look for leaks using a piece of wood or cardboard. NEVER use your hands or other parts of your body.

When reassembling, be certain that ALL connections are tight. If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not received at once.

12. Main Auger Head Bearing Maintenance

A. The main auger head bearing is a self-aligning, sealed ball bearing. It requires lubrication daily during operation.

B. Remove the blow-off cap to work with the head bearing, then proceed with lubrication.

C. Although no adjustment needs to be made to the bearing, ensure that it is firmly fastened.

D. Be certain that the setscrews in the lock collar are tight against the shaft, securing the lock collar firmly to the shaft.

13.Bronze Flight Bearings Maintenance

A. Bronze with graphite flight bearings support the swing-away hopper flight. The bearings require no lubrication.

B. If the bronze bearing spins inside the retainer, replace it with a new one.

C. Remove the old bronze bearing and press in the new one.

14.Blow-Off Cap Maintenance

A. Remove the blow-off cap and reinstall it before using the auger each season.

B. The cap should fit snugly, but you should still be able to slide it off the end of the tube if the discharge becomes plugged.

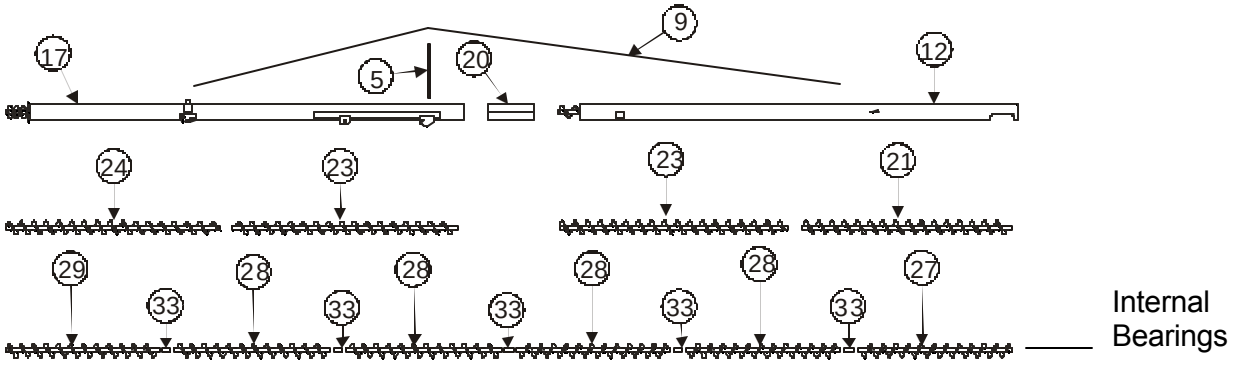
It should be possible to tap the cap off by hand.

Problem	Possible Cause	Solution
1. The auger is vibrating.	A. Damage can occur to the auger flighting, causing noise. Damage usually is caused from foreign material being run through the auger.	A1. It may be necessary to remove the flighting for inspection.
2. Capacity is too low.	A. There may not be enough grain reaching the auger.	A1. Make sure the intake has not bridged over, restricting flow. The flighting at the intake should be covered with grain for maximum capacity.
	B. The auger is moving too slowly.	B1. Check the auger speed. Low capacity will result from speeds slower than recommended.
3. The auger plugs.	A. The auger may be "jamming" because too much grain is reaching the auger.	A1. Decrease the amount of grain the auger is gathering.
	B. The grain may be wet.	B1. If wet grain or other hard-to-move material is being augured, reduce the amount of grain being fed into the swing-away hopper.
	C. The auger may be jammed with foreign material.	C1. Remove any foreign material in the auger.
	D. The discharge end may be plugged.	D1. Unplug any plugs at the discharge end of the auger.

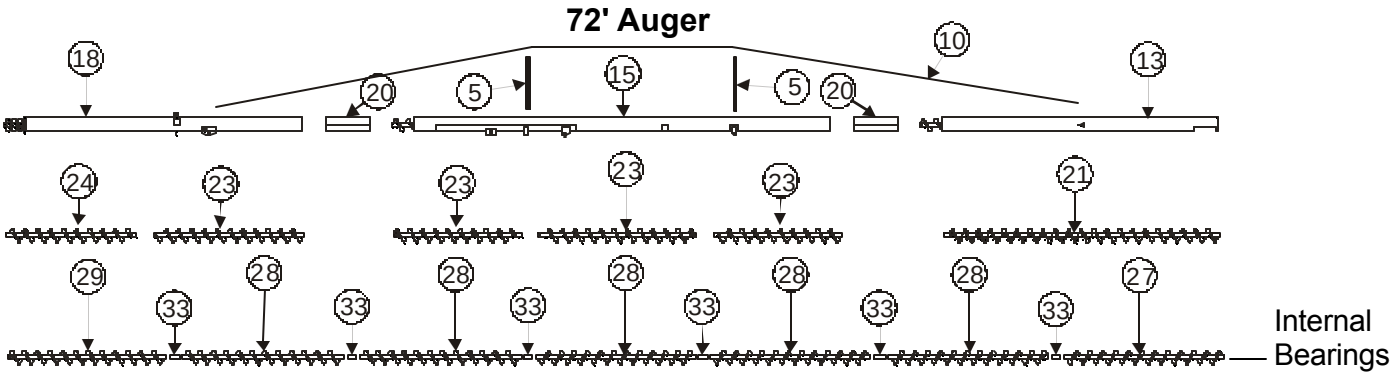
Problem	Possible Cause	Solution
4. The auger is lowering itself.	A. There may be a leak in the hydraulic fittings, hose or connections.	A1. Replace damaged hydraulic fittings, hoses, and connections.
	B. The hydraulic shut-off valve may be open.	B1. Close the hydraulic shut-off valve.
5. Auger will not raise or lower.	A1. Open the hydraulic shut-off valve.	A. The hydraulic shut-off valve may not be open.
	B. The hydraulic coupler may be incorrectly attached to the tractor.	B1. Make sure the hydraulic coupler is correctly mounted.
	C. The tractor reservoir may be low on oil or empty.	C1. Refill the reservoir with oil.
	D. The tractor pressure may be too low.	D1. Increase the tractor RPM.
6. Driveline shear bolt shears frequently.	A. Grain may be flowing too quickly into the ground hopper.	A1. Reduce the flow rate of grain into the ground hopper.
	B. The discharge of grain from the main auger may be restricted.	B1. Inspect auger intake and discharge areas for damage.

Main Auger Components

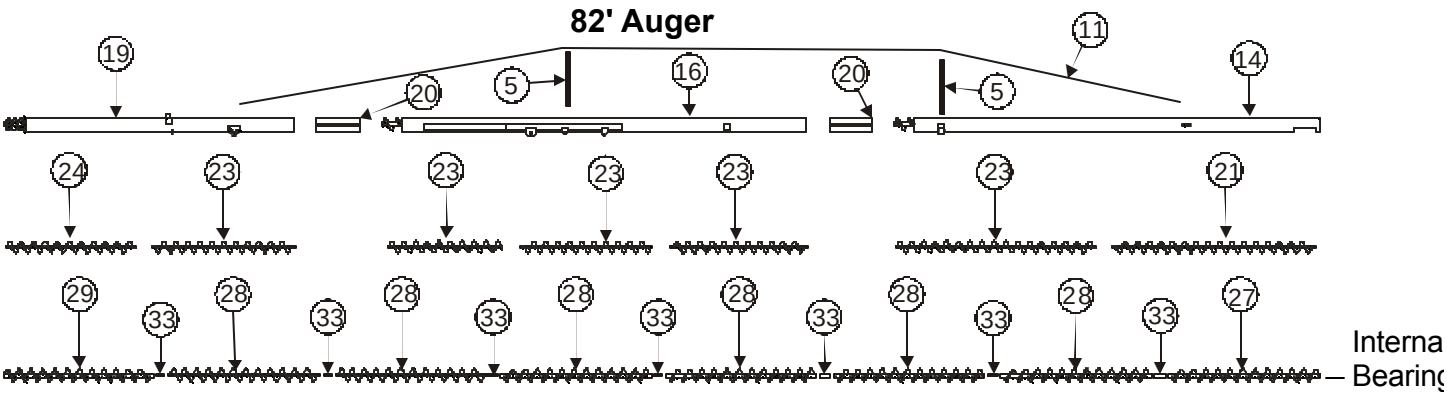
62' Auger

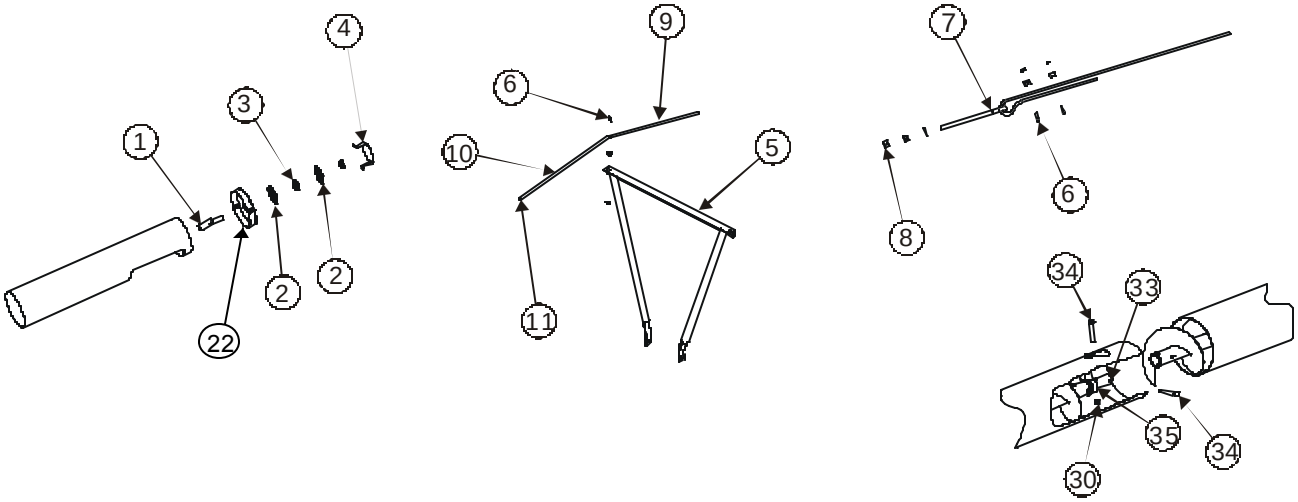


72' Auger



82' Auger





MAIN AUGER COMPONENTS		
REF. NO.	**PART NO.**	**DESCRIPTION**
1	GK4098	Shaft: head stub 2" to 1-1/2" dia. x 8 3/8" Long
2	GK4095	Bearing Flange for 1-1/2" Bore
3	GK4094	Bearing with lock collar 1-1/2" Bore
4	GK4164	Bearing Cover
5	GK4287	Truss Frame
6	GK2759	3/8" Cable Clamp
7	GK3107	Bolt: 5/8" Eyebolt x 13" Long
8	S-4110	Nut Hex 5/8"-11 Zinc Coated Grade 5
9	GK4099	Cable: 3/8" x 42'
10	GK4100	Cable: 3/8" x 52'
11	GK4101	Cable: 3/8" x 57'-6"
22	GK4163	Blow Off Cap

HOUSINGS		
REF. NO.	**PART NO.**	**DESCRIPTION**
		Upper Section - *Tube Housing*
12	GK4062	for 12" x 62' (30' Long)
13	GK4063	for 12" x 72' (20' Long)
14	GK4064	for 12" x 82' (30' Long)
		Middle Section - *Tube Housing*
15	GK4065	for 12" x 72' (30' Long)
16	GK4066	for 12" x 82' (30' Long)
		Lower Section - *Tube Housing*
17	GK4067	for 12" x 62' (30' Long)
18	GK4068	for 12" x 72' (20' Long)
19	GK4069	for 12" x 82' (20' Long)

HOUSINGS FOR INTERNAL BEARINGS		
REF. NO.	**PART NO.**	**DESCRIPTION**
		Upper Section - *Tube Housing*
12	GK4070	for 12" x 62' (30' Long)
13	GK4071	for 12" x 72' (20' Long)
14	GK4072	for 12" x 82' (30' Long)
		Middle Section - *Tube Housing*
15	GK4073	for 12" x 72' (30' Long)
16	GK4074	for 12" x 82' (20' Long)
		Lower Section - *Tube Housing*
17	GK4075	for 12" x 62' (30' Long)
18	GK4076	for 12" x 72' (20' Long)
19	GK4077	for 12" x 82' (20' Long)
20	GK4437	12" x 38" Connecting Band

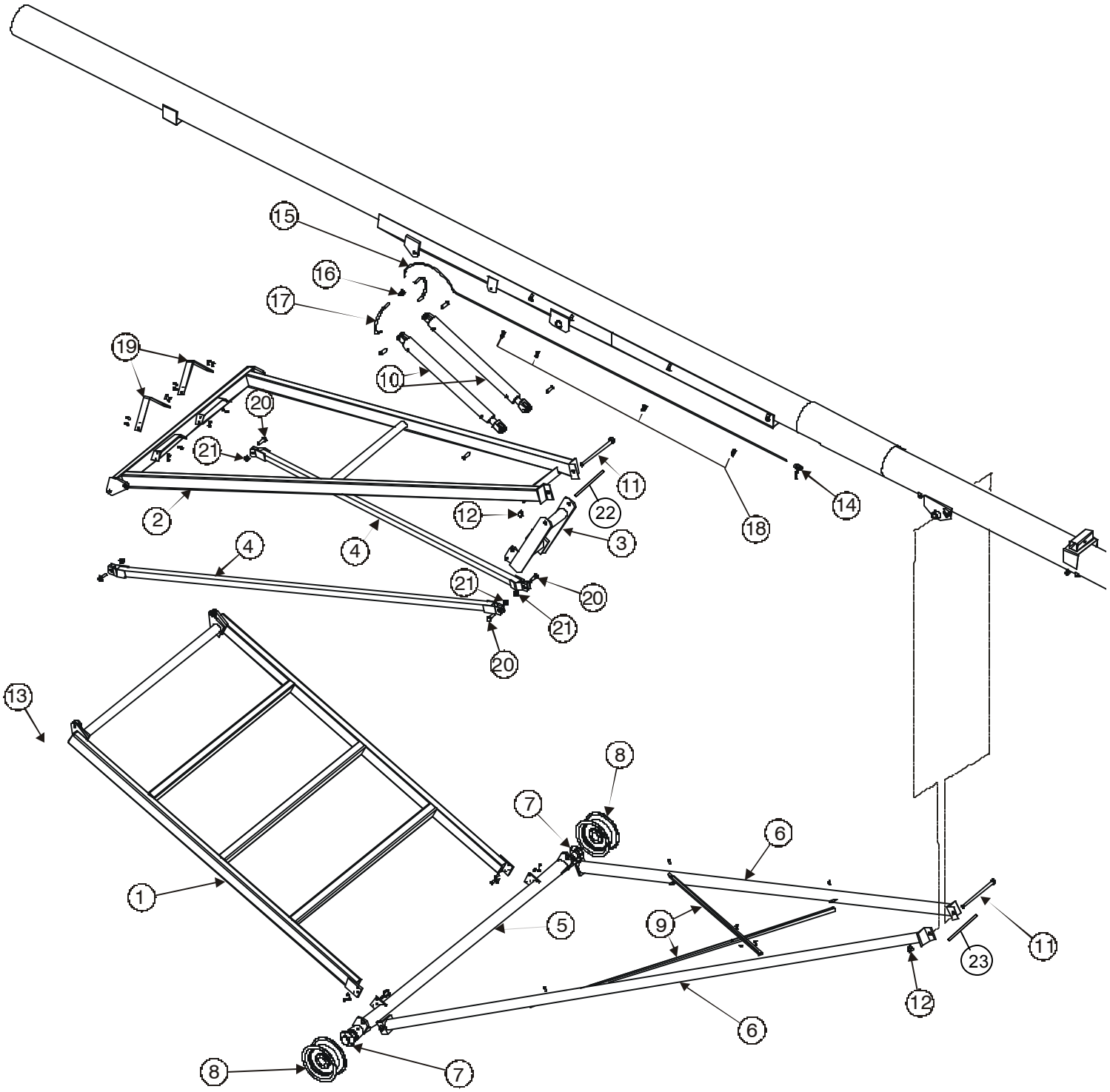
See Illustration on page 55.

FLIGHT SECTIONS		
REF. NO.	**PART NO.**	**DESCRIPTION**
		Upper Section - *Flighting*
21	GK4111	for 12 x 62', 72', & 82' (12" x 19'-11" -- 7 ga.)
	GK4115	for 12 x 62', 72', & 82' (12" x 19'-11" -- 1/4")
		Middle Section - *Flighting*
23	GK4112	for 12 x 62', 72', & 82' (12" x 10' -- 7 ga.)
	GK4116	for 12 x 62', 72', & 82' (12" x 10' -- 1/4")
		Lower Section - *Flighting*
24	GK4113	for 12 x 62', 72', & 82' (12" x 11'-9" -- 7 ga.)
	GK4117	for 12 x 62', 72', & 82' (12" x 19'-11" -- 1/4")

See Illustration on page 55.

FLIGHT SECTIONS FOR OPTIONAL INTERNAL BEARINGS		
REF. NO.	**PART NO.**	**DESCRIPTION**
		Upper Section - *Flighting*
27	GK4478	for 12 x 62', 72', & 82' (10' - 10" --- 7ga.)
	GK4481	for 12 x 62', 72', & 82' (10' - 10" --- 1/4")
		Middle Section - *Flighting*
28	GK4479	for 12 x 62', 72', & 82' (9' - 9'-3/4" --- 7ga.)
	GK4482	for 12 x 62', 72', & 82' (9' - 9'-3/4" --- 1/4")
		Lower Section - *Flighting*
29	GK4480	for 12 x 62', 72', & 82' (10' - 7-9/16" --- 7ga.)
	GK4483	for 12 x 62', 72', & 82' (10' - 7-9/16" --- 1/4")
	GK4173	12" Pitch x 2.875" Shaft x .375" Thick x 2' Ribbon
30	GK2003	Internal Bearing Hanger w/ Bronze Bushing
	GK2010	2" Bronze Bushing
33	GK2222	Stub Connector (2" x 11.5")
	GC03367	Bushing 2.55" O.D. x 2.022" I.D. x 4.5"
34	S-7893	Bolt HHCS 5/8"-11 x 4" Long Zinc Coated Grade 8
35	S-8606	Nut Stover 5/8"-11 Zinc Coated Grade C

See Illustration on page 55.

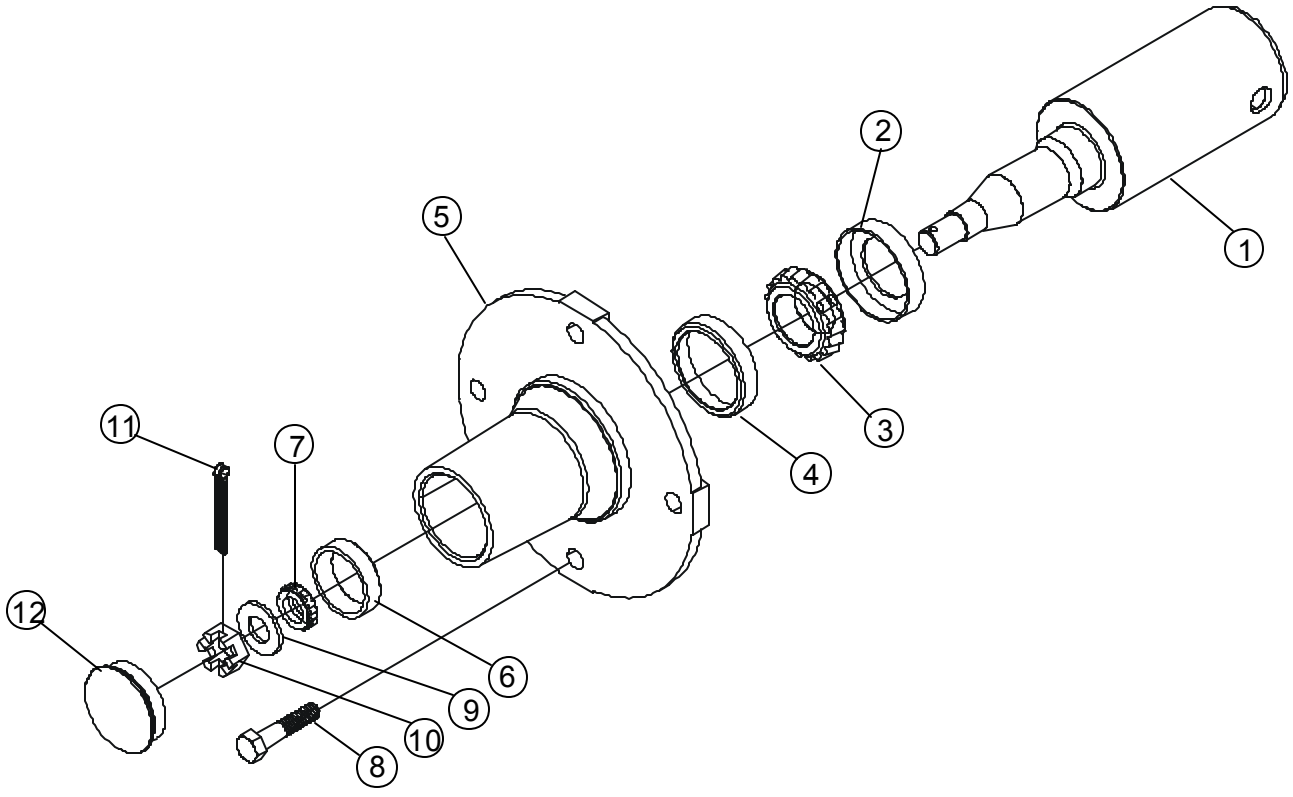


Undercarriage Illustration

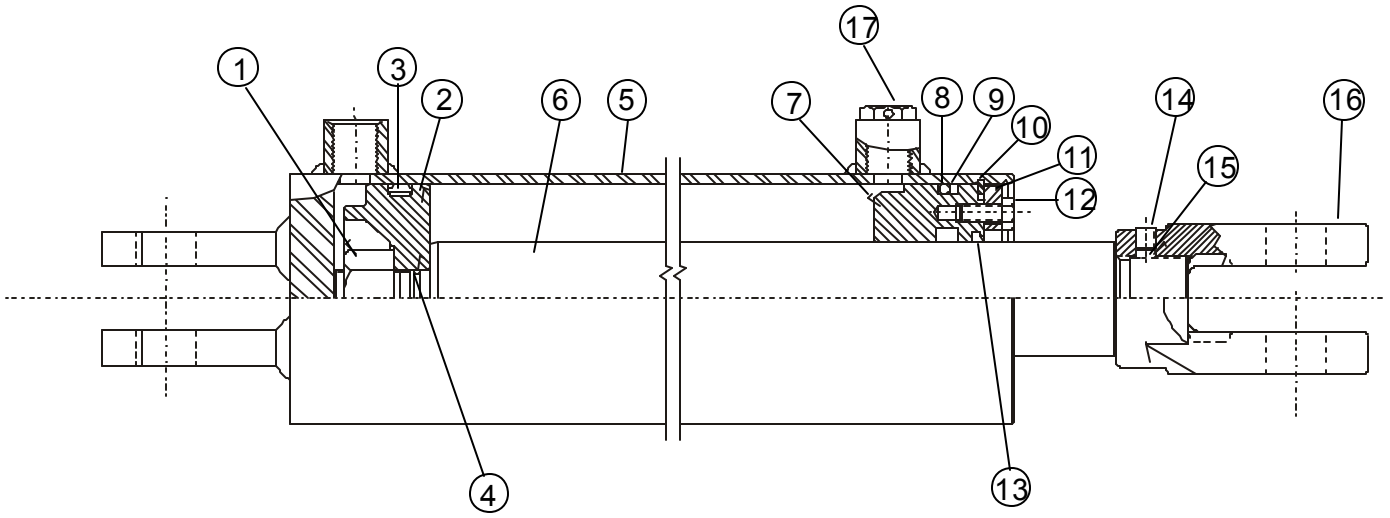
UNDERCARRIAGE COMPONENTS		
REF. No.	PART No.	DESCRIPTION
1		**Lower Frame**
	GK4079	for 12" x 62' Swing Away
	GK4080	for 12" x 72' Swing Away
	GK4081	for 12" x 82' Swing Away
2		**Upper Frame**
	GK4084	for 12" x 62' Swing Away
	GK4085	for 12" x 72' Swing Away
	GK4086	for 12" x 82' Swing Away
3		**H-Frame**
	GK4277	for 12" x 62' Swing Away
	GK4125	for 12" x 72' & 82' Swing Away
4		**H-Frame Tube**
	GK4278	for 12" x 62' Swing Away
	GK4279	for 12" x 72' Swing Away
	GK4280	for 12" x 82' Swing Away
5		**Axle**
	GK4281	for 12" x 62' & 72" Swing Away
	GK4282	for 12" x 82' Swing Away
6		**Lower Arm**
	GK4283	for 12" x 62' Swing Away
	GK4284	for 12" x 72' Swing Away
	GK4285	for 12" x 82' Swing Away
7		**Spindle & Hub Assembly**
	GK1194	5 Bolt Spindle & Hub Assembly (for 12" x 62' & 72')
	GK4083	6 Bolt Spindle & Hub Assembly (for 12" x 82')

UNDERCARRIAGE COMPONENTS		
REF. No.	PART No.	DESCRIPTION
8		**Wheel Rim**
	GK1177	5 Bolt Wheel Rim - 15" x 6lb. (for 12" x 62' x 72')
	GK4252	6 Bolt Wheel Rim - 15" x 6lb. (for 12" x 82')
9	GK4288	Crossbrace for 12" x 72' & 82'
10	GK1528	Hydraulic Cylinder (4" bore x 36" stroke)
11	GK4341	Bolt HHCS 1-1/4" x 18" Long Zinc Coated Grade 5
12	S-8520	1-1/4" Nylon Locknut
13	GK4405	Clevis Pin (3" Long)
14	GK1533	Hydraulic Shut-Off Valve
15		**Hydraulic Hose**
	GK3520	(3/8" dia. x 34'-6" Long)
	GK3679	(3/8" dia. x 37'-6" Long)
	GK4400	(3/8" dia. x 41'-6" Long)
16		**Hydraulic Fitting**
	GK1336	90° Elbow 1/2" NPT
	GK4431	Hydraulic Tee Fitting (12" x 72' & 82') 3 female ends
17	GK4291	Hydraulic Hose (3/8" x 1' 6" long) (12" x 72' & 82') qty. 2
18	GK1315	Hydraulic Hose Mounting Clamp
19	GK4138	Tube Guide
20	S-8608	Bolt HHCS 1"-8 x 2-1/2" Long Zinc Coated Grade 5
20	S-8609	Bolt HHCS 1"-8 x 3" Long Zinc Coated Grade 5
21	S-8418	Nylon Locknut 1"-8 Zinc Coated Grade 5
22	GK4339	2" O.D. x 14" Spacer Bushing
23	GK4340	2" O.D. x 15" Spacer Bushing

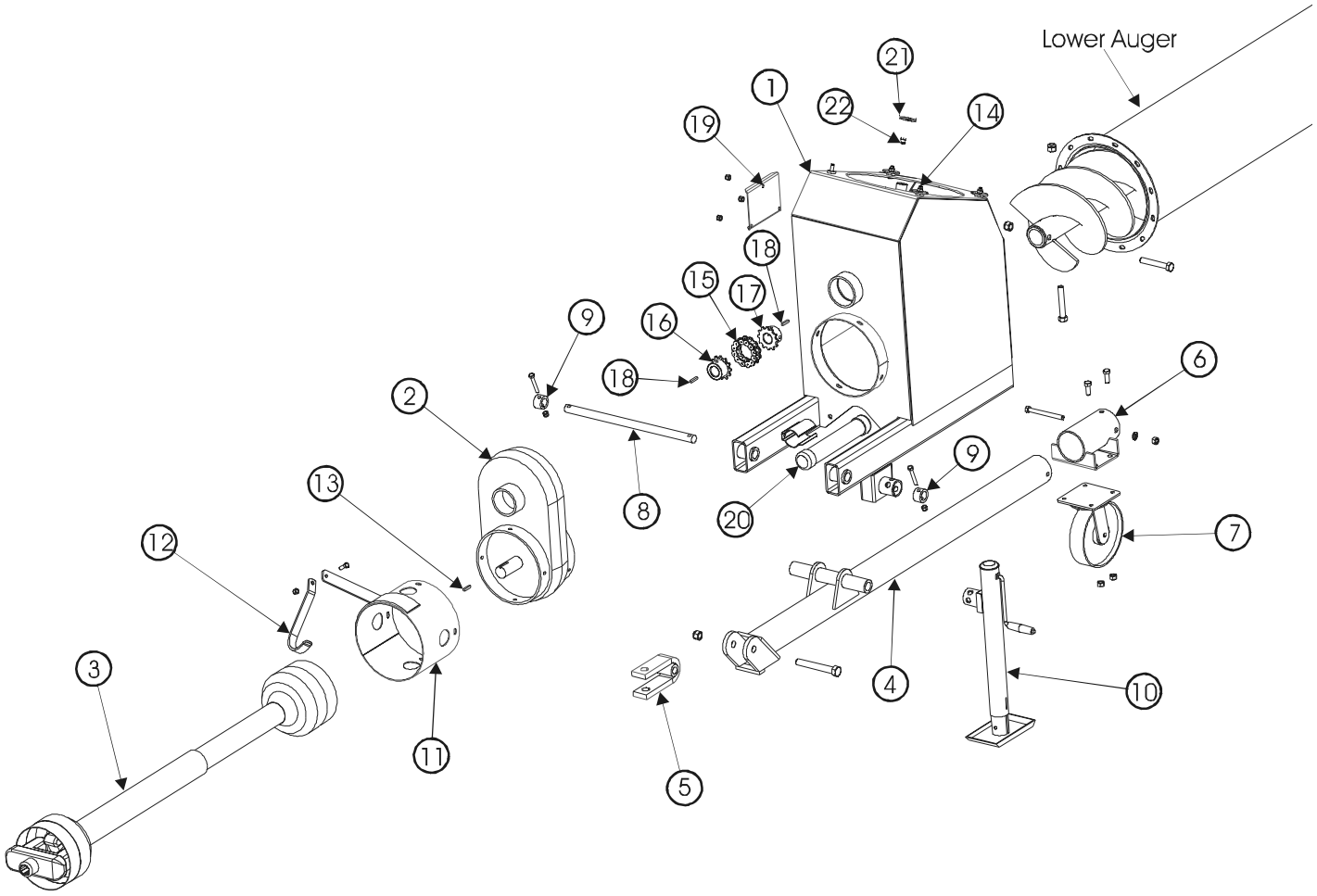
SPINDLE AND HUB ASSEMBLY			
REF. NO.	DESCRIPTION	5-Bolt (2 3/8" O.D. x 14") For 12" x 62' & 72'	6-Bolt (2" O.D. x 10") For 12" x 82'
	Spindle & Hub Assembly	GK1194	GK4083
1	Spindle	GK1513	GK4151
2	Grease Seal	GK2425	GK4484
3	Inner Cone	GK2709	GK4485
	(Timken #)	(LM48548)	(LM501349)
4	Inner Cup	GK2710	GK4486
	(Timken #)	(LM67010)	(LM501310)
5	Hub	GK1548	GK4487
6	Outer Cup	GK2711	GK2711
	(Timken #)	(LM67010)	(LM67010)
7	Outer Cone	GK2700	GK2700
	(Timken #)	(LM67048)	(LM67048)
8	Lug Bolt	--	GK2708
	Lug Nut	GK2698	--
9	Washer	GK2433	GK4488
10	Castle Nut	GK2714	GK4489
11	Cotter Pin	GK2713	GK4490
		(5/32" x 1 3/4" L)	(5/32" x 1 3/4" L)
12	Hub Cap	GK1558	GK4491



HYDRAULIC CYLINDER		
REF. NO.	COMPLETE NO. GK1528 4" BORE X 36" STROKE USED ON 12" X 62' & 72' & 82'	DESCRIPTION
1	N/A	Nut Lock
2	N/A	Piston 4" OD
3	N/A	PSP Piston Seal, 4" Bore
4	N/A	O-Ring
5	N/A	Cylinder Body
6	N/A	Rod
7	N/A	Guide 4" OD
8	N/A	O-Ring
9	N/A	Backup Ring
10	N/A	Retaining Ring
11	N/A	Retaining Plate
12	N/A	Screw Cap
13	N/A	Wiper Ring
14	N/A	Setscrew
15	N/A	Ball Nylon
16	N/A	Rod Clevis
17	N/A	Breather Plug, 1/2" Natural Pipe Thread (NPT)
Not Shown	N/A	Clevis Pin and Clip, 1" Dia.
Not Shown	N/A	Plastic Plug, 1/2" Natural Pipe Thread (NPT) Hex SOC
Not Shown	GK3323	Seal Kit, 4" Bore, 2" Rod



Hydraulic Cylinder Illustration

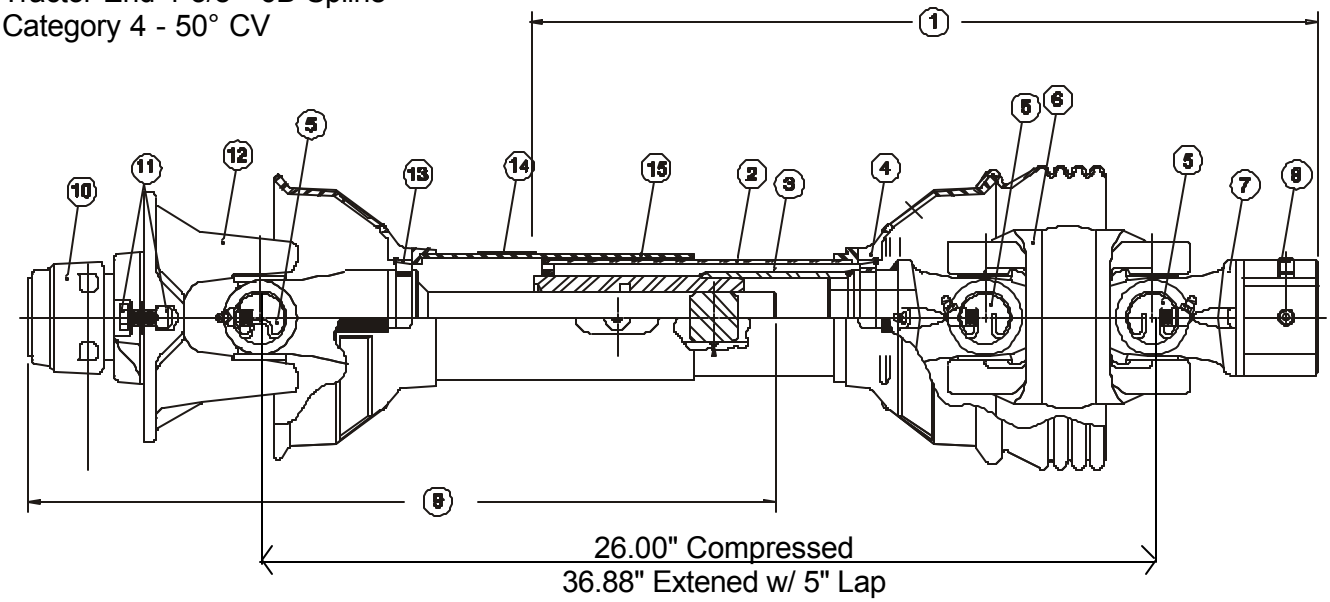


Main Auger Inlet Hopper
Illustration

MAIN AUGER INLET HOPPER COMPONENTS		
REF. NO.	**PART NO.**	**DESCRIPTION**
1	GK3715	Inlet Hopper
2	GK2507	Enclosed Drive: 10" Chain Drv.
3	GK2491	PTO-35R-Cat4; 50° CV for 62'
3	GK2492	PTO-55-Cat6; 50° for 72' & 82'
4	GK3716	Hitch
5	GK3717	Clevis
6	GK3718	Dolly Wheel Bracket
7	GK3719	Dolly Caster Wheel
8	GK3720	Hitch Pivot Pin(1" x 18 3/4")
9	GK3721	Collar
10	GK1379	Side Crank Jack - Shelby 2000#
11	GK3722	PTO Driveline Shield
12	GK1363	PTO Driveline Storage Hook
13	S-4516	Key 3/8" x 3/8" x 1-1/2" Long
14	GK2497	Gearbox: 68° lower 12"
15	GK4376	#60 Chain (12 pitch) w/ Connection Link
16	GK3192	#60 Flex Coupler
17	GK3187	#60 Flex Coupler Half w/ Pinhole (1 1/4” Bore)
18	S-8382	Key 1/4" x 1-1/4" Long
19	GC04870	Access Door Plate
20	GK3723	Manual Container
21	GK1532	Washer (2” O.D. x 13/32” I.D.)

PTO DRIVELINE FOR 62' UNITS		
REF. NO.	**PART NO.**	**DESCRIPTION**
	GK2491	PTO-35R-Cat4; 50°
1	NA	Joint & Tube Half Assembly w/ Guard Auger End
2	GK2682	Inner Guard
3	GK2659	Safety Sign - Inner
4	GK2662	Nylon Repair Kit - Inner Shield Retainer
5	GK2651	35R Cross & Bearing Kit
6	GK2670	50° CV Center Housing Cat 4
7	GK2669	Yoke
8	GK2655	Set Screw: 3/8"- 16 x .38L Socket Head
9	NA	Joint & Shaft Half Assembly w/ Guard Tractor End
10	GK4717	Safety Slide Lock Repair Kit
11	GK3099	Shear Bolt Kit (Includes (6) 3/8" x 1 Gr 5 Hex Bolts & Lock Nuts)
12	GK2667	Ball Shear Assembly
13	GK4715	Nylon Repair Kit
14	GK2658	Safety Sign - Outer
15	GK2687	Outer Guard

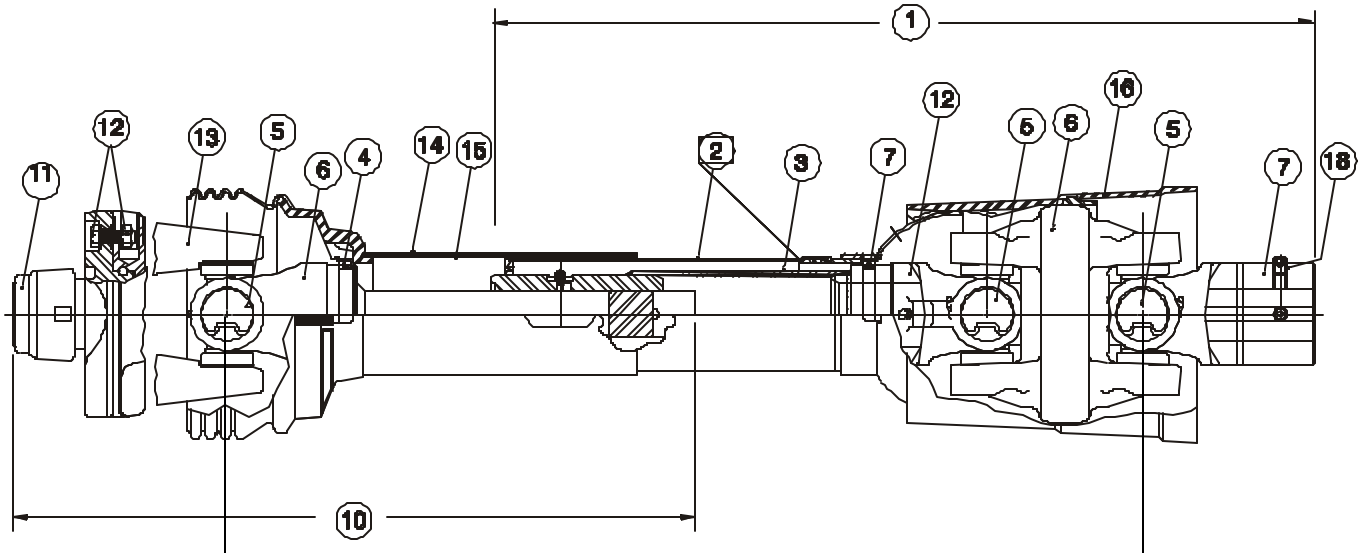
SPECIFICATIONS:
U-Joint Type: 35R
Auger End 1-1/2" Bore with 3/8" Keyseat
Tractor End 1-3/8 - 6B Spline
Category 4 - 50° CV



PTO Driveline 62’ Illustration

PTO DRIVELINE FOR 72' & 82' UNITS		
REF. NO.	**PART NO.**	**DESCRIPTION**
	GK2492	PTO-55R-Cat 6; 50°
1	GK2679	Joint & Tube Half Assembly w/ Guard
2	GK2683	Inner Guard
3	GK2659	Safety Sign - Inner
4	GK2663	Nylon Repair Kit - Inner Shield Retainer
5	GK2652	55R Cross & Bearing Kit
6	GK2673	50° CV Center Housing Cat 4
7	GK2674	Yoke
8	GK2655	Set Screw: 3/8"- 16 x .38L Socket Head
10	GK2680	Joint & Shaft Half Assembly w/ Guard
11	GK2668	Safety Slide Lock Repair Kit
12	GK4716	Nut and Bolt Kit (Includes (6) 3/8" x 1" Gr 5 Hex Bolt and Lock Nuts)
13	GK2672	Ball Shear Assembly
14	GK2658	Safety Sign - Outer
15	GK2688	Outer Guard
16	GK2671	C.V. Bell Extension

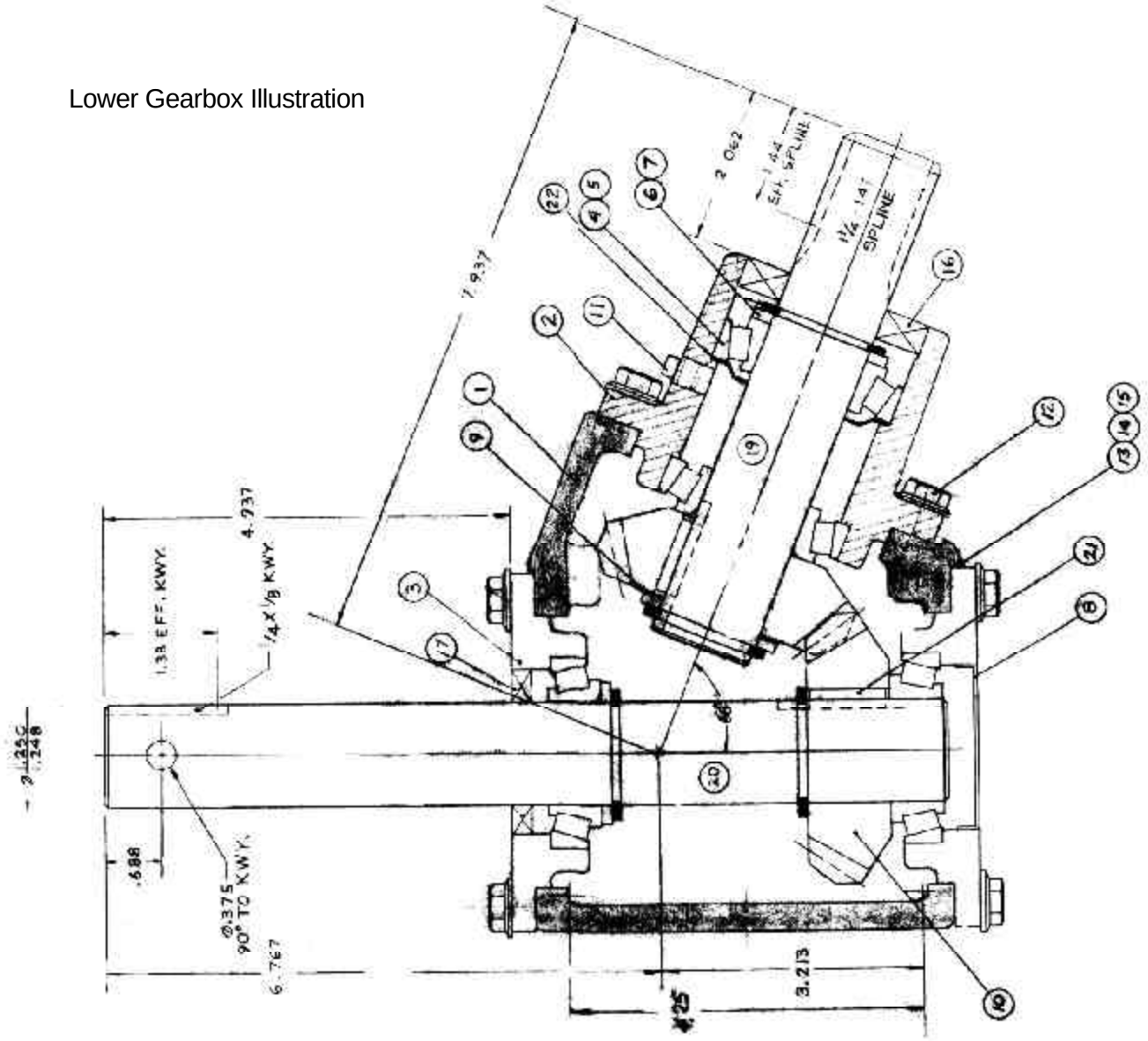
SPECIFICATIONS:
U-Joint Type: 55R
Auger End 1-1/2" Bore with 3/8" Keyseat
Tractor End 1-3/8 - 6B Spline
Category 6 - 50° CV



PTO Driveline 72' & 82'
Illustration

Lower Gearbox Illustration
GK2497

Lower Gearbox Illustration

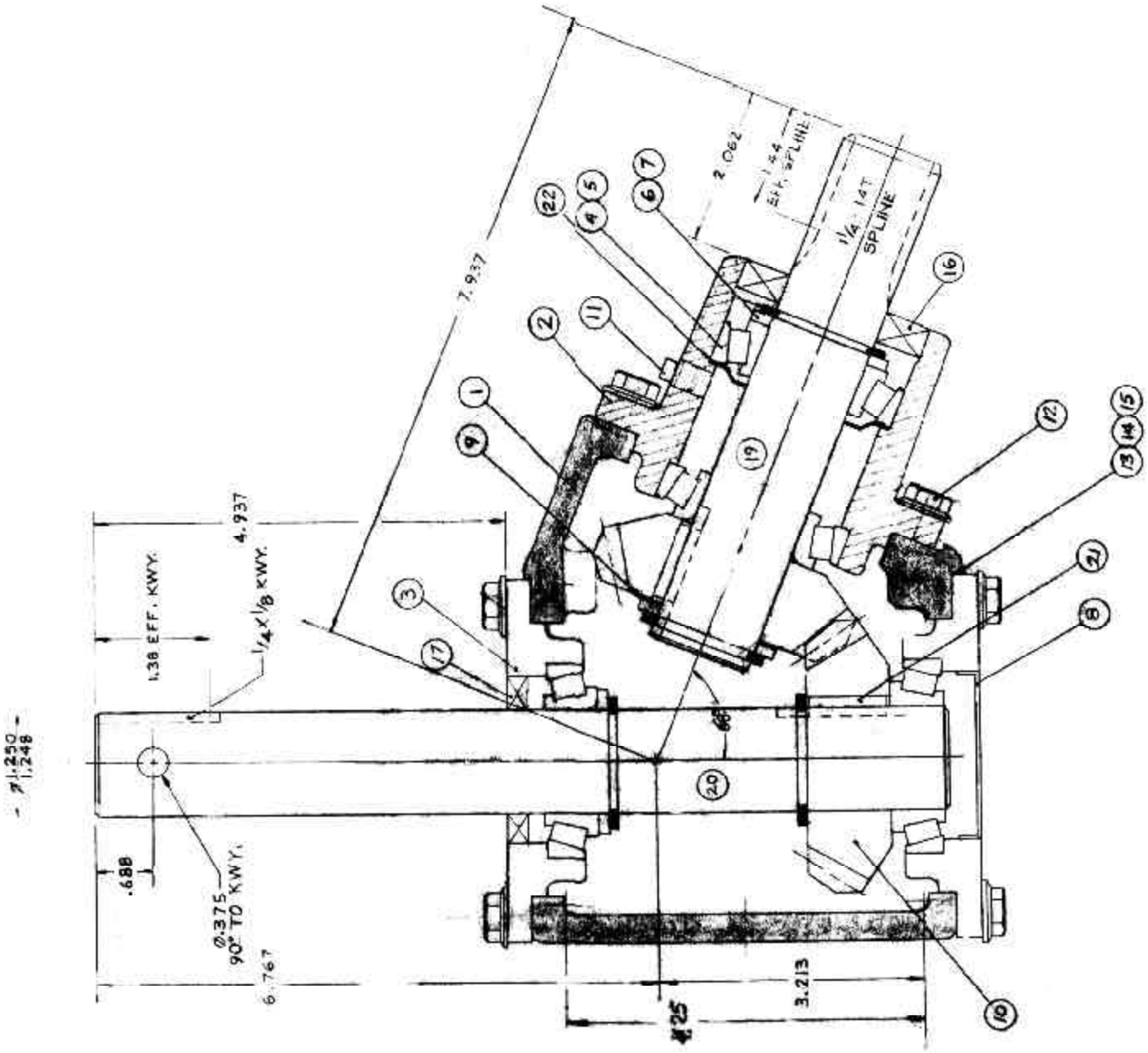


GEARBOX *(Lower Gearbox Mounted Inside Main Inlet Hopper)*		
REF. NO.	**PART NO.**	**DESCRIPTION**
	GK2497	Complete 68° Lower Gearbox
1	GK3205	Gearbox Case 68°
2	GK3207	Cap
3	GK3208	Cover
4	GK4503	Bearing Cone
5	GK2711	Inner Bearing Cup: 1 3/4" (LM67010)
6	GK3209	Washer: 68° Grbx. #1805
7	GK3210	Snap Ring: 1 1/4"
8	GK3211	Cap Plug
9	GK3212	Shim (.007 x 1 1/4" I.D.)
10	GK3213	Gear 68° Cut
11	S-1147	Washer Locksplit 5/16" Med. Zinc Coated
12	S-7105	Bolt HHCS 5/16" - 16 x 3/4" Grade 5 PLTD
13	GK3215	Shim: .005
14	GK3214	Shim: .0075
15	GK3216	Shim: .010
16	GK3217	Seal: 1 1/4" Shaft; #1472
17	GK3218	Seal: 1 1/4" Shaft; #1471
19	GK4499	Output Shaft w/ 14 tooth spline
20	GK4500	Input Shaft with 1-1/4" Dia.
21	GK4501	Key
22	GK4502	Washer Grease
23	GK2697	Vent Plug (1/8" - 27 NPT)
--	GK4470	Pipe Bushing: 1/8" x 1/4" Adapter
--	FLX-3788	Pipe Plug 1/4" NPT

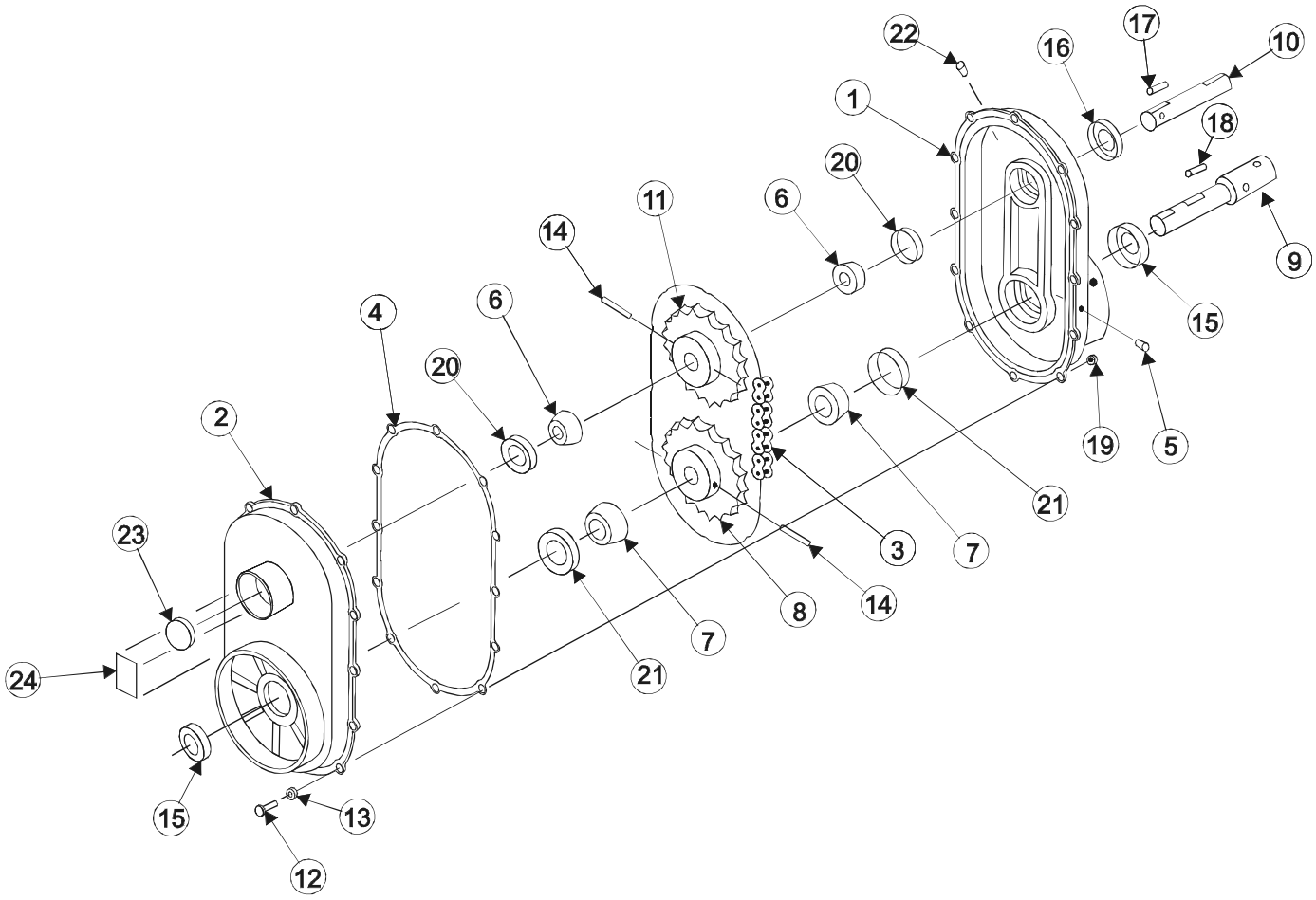
Upper Gearbox Illustration

GK2496

Upper Gearbox Illustration



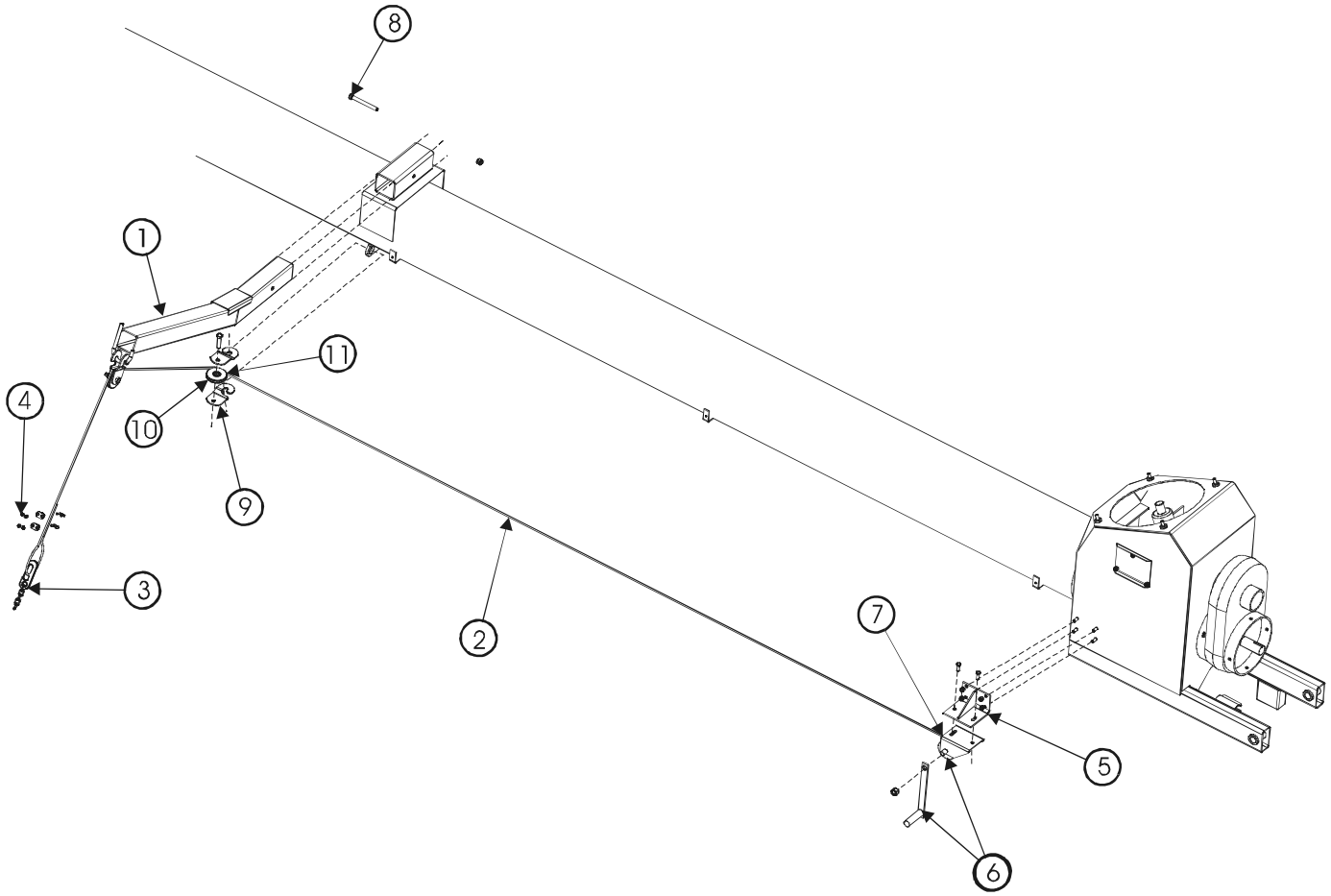
GEARBOX *(Upper Gearbox Mounted in the Incline Tube Spout)*		
REF. NO.	**PART NO.**	**DESCRIPTION**
	GK2496	Complete Assembly
1	GK3205	68° Case
2	GK3207	68° Cap
3	GK3208	68° Cover
4	GK4503	Bearing Cone
5	GK2711	Inner Bearing Cup: 1 3/4"
6	GK3209	Washer: 68° Grbx. #1805
7	GK3210	Snap Ring: 1 1/4"
8	GK3211	Cap: Plug
9	GK3212	Shim: .007 x 1 1/4" I.D.
10	GK3213	Gear 68° Cut
11	S-1147	5/16" Lockwasher
12	S-7105	5/16" x 3/4" Bolt
13	GK3215	.005 Shim
14	GK3214	.0075 Shim
15	GK3216	.010 Shim
16	GK3217	Seal: 1 1/4" Shaft #1472
17	GK3218	Seal: 1-1/4" Shaft #1471
18	S-8240	Key WBF #809
19	Gk4528	Input Shaft
20	GK4527	Output Shaft
21	GK4501	Key 1/4"
22	S-8611	Key WBF #1210
--	GK2697	Vented Plug (1/8" -27 NPT)
--	FLX-3788	Pipe Plug 1/4" NPT
--	GK4470	Pipe Bushing: 1/8" x 1/4" Adapter



Enclosed Drive Illustration

ENCLOSED DRIVE ASSEMBLY		
REF. NO.	**PART NO.**	**DESCRIPTION**
	GK2507	Complete Assembly (Enclosed 10" Chain Drive)
1	GK2363	Aluminum Casting (Inside)
2	GK2364	Aluminum Casting (Outside)
3	GK4529	Roller Chain #80 35 Pitch
4	GK2366	Gasket
5	GK2376	Drain Plug: 3/8"
6	GK2367	1 1/4" Cone Bearing (Timken No. 15123)
7	GK2368?	1 1/2" Cone Bearing (Timken No. LM29749)
8	GK4386	1 1/2" Sprocket 17 tooth
9	GK4530	Enclosed Drive: Input Shaft 2"
10	GK4388	Shaft: 1 1/4" for Enc. Drive
11	GK4531	1-1/4" Bore Sprocket 19 tooth
12	S-4276	Bolt HHCS 5/16" -18 x 1-1/4" Long Zinc Coated Grade 5
13	S-4375	5/16" Lockwasher
14	S-4375	5/16" x 2-1/2" Roll Pin
15	GK2373	Input Shaft Seal - 1-1/2"
16	GK2374	Input Shaft Seal - 1 1/4"
17	GK1032	Square Drive Key - 1 1/4" x 1" Long
18	GK2375	Square Key - 3/8" x 1"
19	S-396	Nut Hex 5/16"
20	GK2383	1 1/4" Bearing Cup (Timken No. 15245)
21	GK2384	1 1/2" Bearing Cup (Timken No. LM29710)
22	GK2385	3/8” Pipe (Vented Plug)
23	GK2387	Cap
24	--	“Notice: Oil Fill” Decal is Provided by Vendor

SWING-OUT HOPPER LIFT COMPONENTS		
REF. NO.	**PART NO.**	**DESCRIPTION**
1	GK4199	Lift Arm Assembly w/ Pulley
2	GK1575	Hopper Lift Cable
3	GK1201	Hopper Hook w/ Chain
4	GK2761	1/4" Cable Clamp
5	GK3725	Winch Mounting Plate
6	GK3984	1000# Friction Disc w/ Handle
7	GK1382	Cable Winch Keeper Pkg.
8	S-8232	Bolt HHCS 1/2" - 13 x 4-1/2" Long Zinc Coated Grade 5
9	GK1545	Pulley Clevis Plate
10	Gk1543	Cable Pulley Wheel (3" O.D. - 1.03 I.D.)
11	GK1544	Pulley Bushing (1" O.D.)

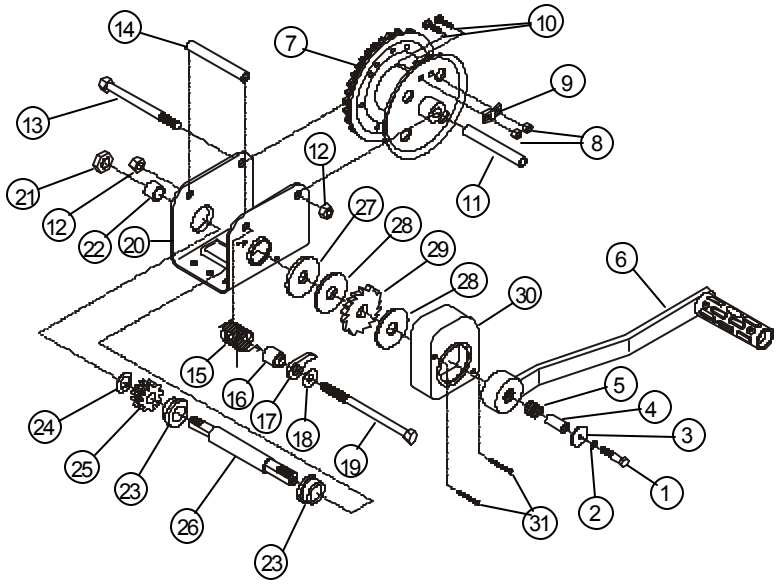


Swing-Out Hopper Lift Illustration

Winch - Brake Type 1000#

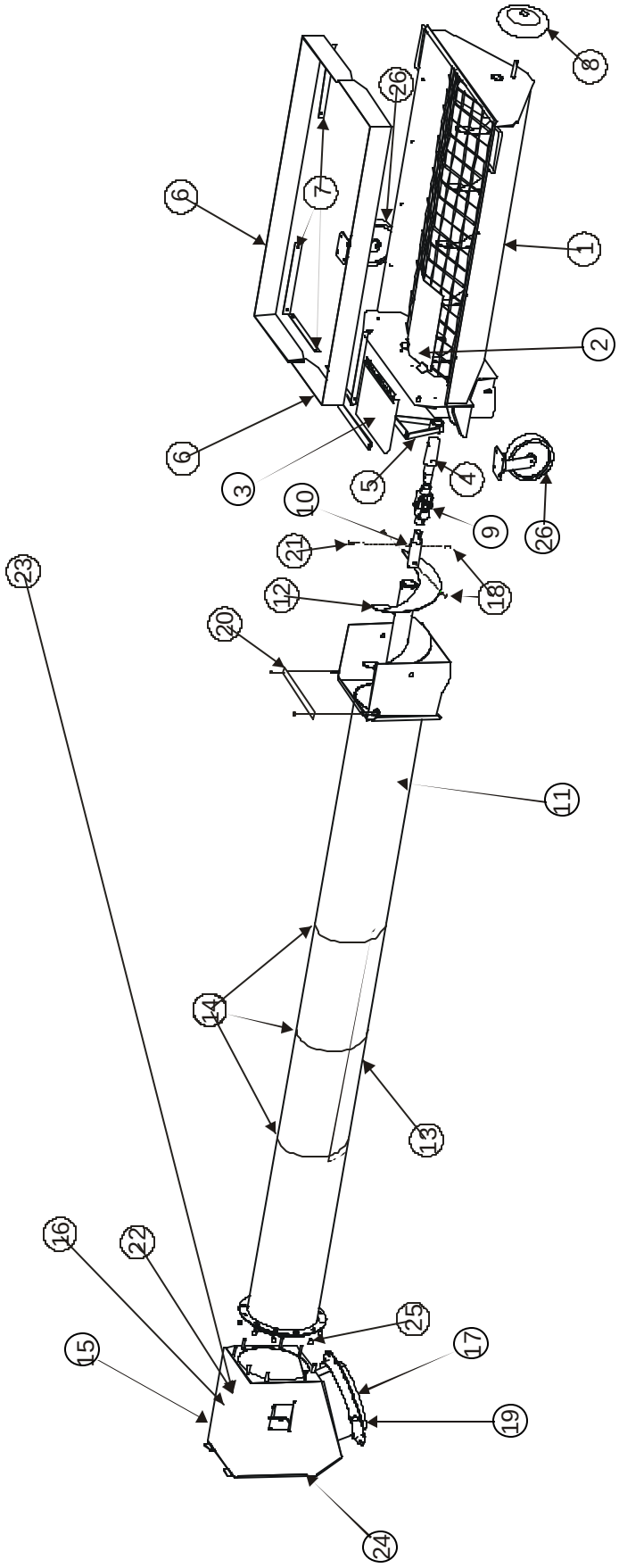
GK1562

Item Number	Description	Qty. Req.	Part Number
1	1/4 - 20 x 1-1/2 Hex Screw	1	
2	1/4" Lockwasher	1	
3	1/4" Wide Flatwasher	1	GK3538
4	Handle Retainer Spacer	1	
5	Spring	1	
6	Handle	1	GK1567
7	Real Assembly	1	**
8	10-24 Hex Nut	2	
9	Cable Keeper	1	GK1382
10	10-24 x 5/8 Carriage Bolt	2	
11	Front Frame Spacer	1	**
12	5/8 Lockwasher	2	*
13	3/8 x 1/2 Reel Bolt	1	*
14	Back Frame Spacer	1	**
15	Pawl Spring	1	**
16	Pawl Spacer	1	**
17	Pawl	1	**
18	3/8" Flat Washer	1	*
19	3/8 x 5-1/2 Pawl Bolt	1	*
20	Frame	1	**
21	9/16 - 16 Locknut	1	*
22	Bearing	1	**
23	3/4 I.D. Bushing	2	**
24	9/16" Flat Washer	1	*
25	Pinion Gear	3	**
26	Pinion Shaft	1	**
27	Brake Backup Plate	1	**
28	Brake Pad	2	**
29	Ratchet	1	**
30	Cover	1	**
31	10-32 x 1-1/2 Cover Screw	2	*



*** Indicates standard hardware items - purchase locally.**

**** these items are not available as separate parts because of the precision assembly required. If these parts require placement, a new winch must be purchased.**

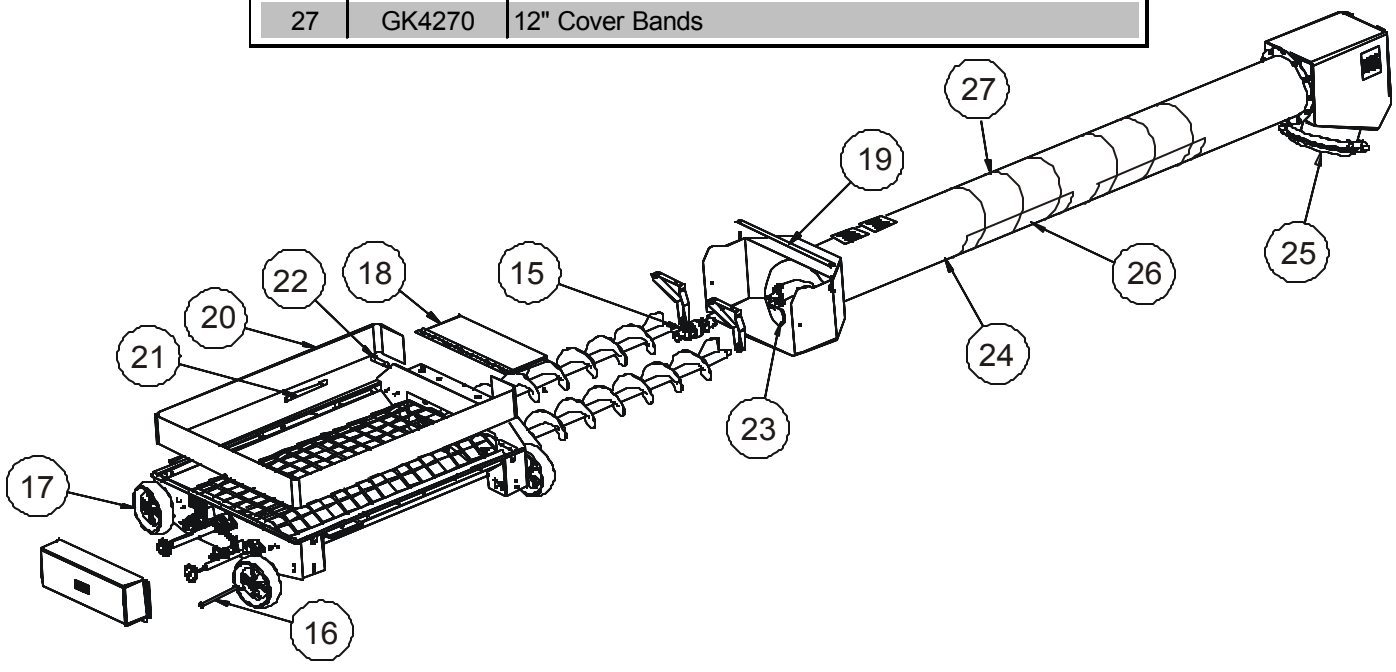


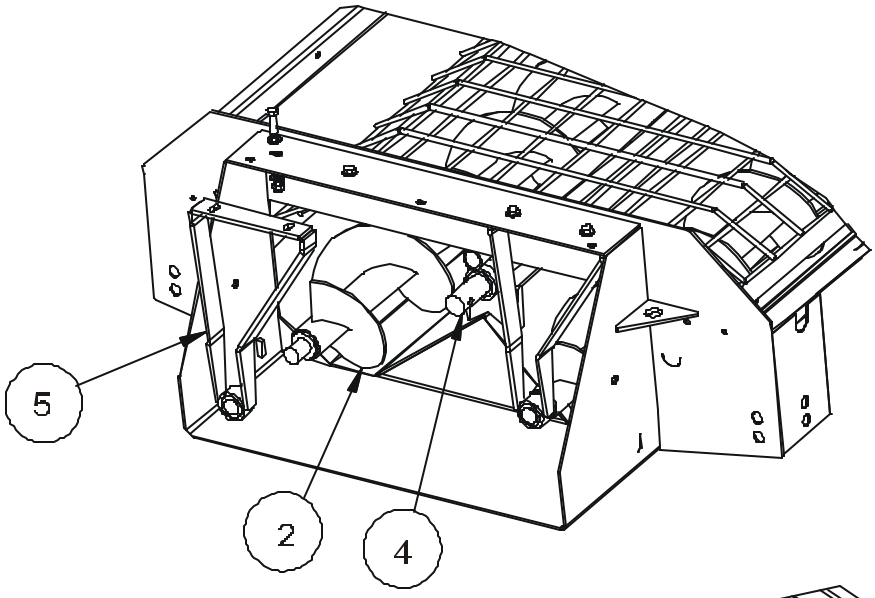
Swing-Out Hopper Illustration

SWING-OUT HOPPER COMPONENTS		
REF. NO.	**PART NO.**	**DESCRIPTION**
1	GK4255	Hopper
2	GK4256	Hopper Flight Weldment 3/16"
	GK4257	Hopper Flight Weldment 1/4"
3	GK4144	Lid w/ Hinge
4	GK4254	Bearing Hanger Stub
5	GK4253	Bearing Hanger
N/S	GK1303	1.875" O.D. x 1 1/2" I.D. Bronze Bushing (in bearing hanger)
6	GK4289	Rubber Mat
7	GK4258	Rubber Mat Strap
8	GK1526	Rubber Wheel w/ Steel Pin
9	GK1291	U-joint (1-1/4" Bore x 7") (12N)
10	GK4102	Shaft: Incline flight stub
11	--	**Incline Tube Weldment**
	GK4265	Standard Tube
	GK4266	Standard tube w/ Corn Screen
12	--	**Incline Flight (132 1/4" Long)**
	GK4273	w/ 7ga. Flighting
	GK4274	w/ 1/4” Flighting
13	GK4269	12” Corn Screen Cover
14	GK4270	12" Cover Band
15	GK4271	12" Swivel Sprout Weldment
N\S	GK2496	Upper Gearbox
17	GK4161	U-Joint w/ Splined End
18	GK1535	Rubber Sleeve
19	S-8240	Woodruff Key #809 - 1/4" x 1-1/8"
20	GK3833	Lid Cover Strap
21	S-8400	Bolt HHCS 1/2" - 13 x 3-3/4" Long Zinc Coated Grade 5
N\S	S-8611	Woodruff Key 3/8" x 1-1/4" #1210
N\S	GK1571	Snap Fastener for Door
25	GK4292	Spacer Bushing for Swivel Spout to Incline Tube
26	GK4147	Wheel: 8" Caster

LOW PROFILE HOPPER

Ref. #	Part #	Description
1	GK5813	Swing Away Hopper with Bushing
2	GK5811	Flight 7" O.D. x 7 Ga.
	GK5825	Flight 7" O.D. x 1/4".
3	GK5820	1" x 9" Intake Shaft
4	GK5812	1.25" x 57" Drive Shaft
5	GK5810	Hanger Bearing
6	GK1049	2 Hole Flange Bearing w/ 1" Bore & Lock Collar
7	GK1330	2 Hole Flange Bearing w/ 1.25" Bore & Lock Collar
8	GK1021	15 Tooth Sprocket 1.25" Bore
9	GK1014	15 Tooth Sprocket 1.00" Bore
10	GK5821	12" Chain Guard
11	GK5900	Spacer Bushing 1.25" x .083" x .875"
12	GK5823	# 50 Roller Chain
13	GK1701	13 Tooth Idler Sprocket #50 x 5/8" Bearing
14	GK5965	Spacer Bushing .843" x .109" x 1.00"
15	GK5819	CV U-Joint 1.25" x 8.875"
16	GK5857	Clevis Pin 5/8" x 9-3/4"
17	GK5817	Wheel 10" Dia. X 3.25" Wide
18	GK5815	Hopper Lid Weldment
19	GK5814	Lid Strap
20	GK5822	.125" x 6" x 161" Rubber Mat
21	GK1482	9.875" Rubber Mat Strap
22	GK5824	4.875" Rubber Mat Strap
23	GK4273	Incline Flight 12" Incline Flight Assembly 7 Ga.
	GK4274	12" Incline Flight Assembly 1/4"
24	GK5827	Incline Tube 12" Incline Tube
	GK5828	12" Incline Tube w/ Corn Screen
25	GK4271	12" Swivel Spout Assembly
26	GK4269	12" Corn Screens
27	GK4270	12" Cover Bands

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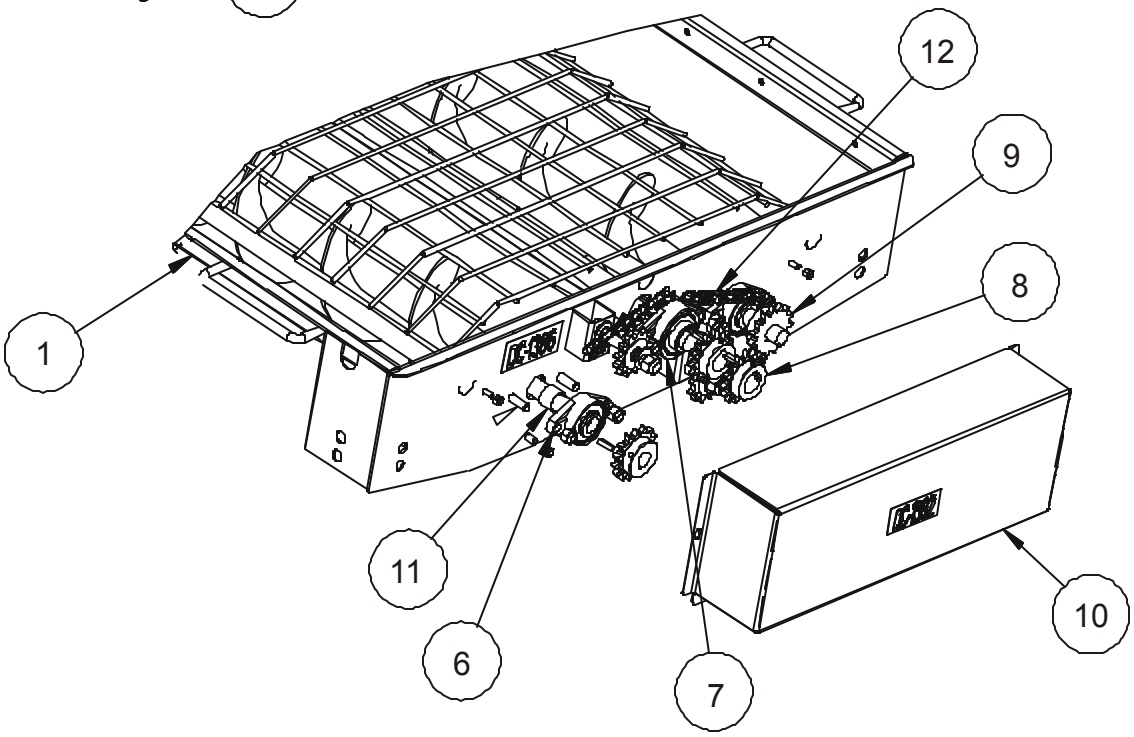
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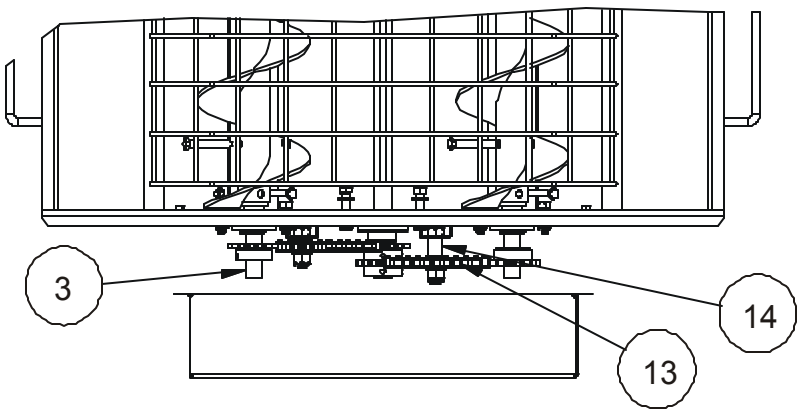
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THE COMPANY WARRANTS ALL PRODUCTS MANUFACTURED TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF TWELVE (12) MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER OF SUCH PRODUCTS. OUR ONLY OBLIGATION IS, AND PURCHASER'S SOLE REMEDY SHALL BE TO REPAIR OR REPLACE, AT THE COMPANY'S OPTION AND EXPENSE, PRODUCTS THAT, IN THE MANUFACTURERS SOLE JUDGEMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM THE FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF THE COMPANY SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE ABOVE EXPRESS LIMITED WARRANTIES, THE COMPANY MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (i) PRODUCT MANUFACTURED OR SOLD BY THE COMPANY OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF THE COMPANY REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCT OR PRODUCTS.

IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE LIMITED TO THAT STATED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. WE SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIVE OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF THE COMPANY.

THE COMPANY ASSUMES NO RESPONSIBILITY FOR FIELD MODIFICATIONS. MODIFICATIONS TO THE PRODUCT NOT SPECIFICALLY COVERED BY THE CONTENTS OF THIS MANUAL WILL NULLIFY ANY PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE. THE USE OF OUR EQUIPMENT TO HANDLE MATERIALS OTHER THAN FREE FLOWING, NONABRASIVE AND DRY MATERIALS, AS INTENDED, WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.

THE FOREGOING WARRANTY SHALL NOT COVER PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION, OR ACCIDENT. ANY NEGLIGENT USE, MISUSE, ALTERATION, OR DAMAGE DUE TO ACCIDENT, AS DETERMINED BY A COMPANY REPRESENTATIVE, MAY VOID THE WARRANTY. THIS WARRANTY COVERS ONLY PRODUCTS MANUFACTURED BY THE COMPANY. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. WE RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME, BEARING NO RESPONSIBILITY TO MAKE SIMILAR DESIGN OR SPECIFICATION CHANGES ON PREVIOUSLY SOLD MERCHANDISE.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION.

This Equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installation occurs.

GRAIN KING

1004 East Illinois Street
Assumption, IL 62510
217-226-4421 Phone