



**6" TOP DRIVE  
TRANSPORT AUGER**

MODEL & LENGTH: \_\_\_\_\_  
SERIAL NUMBER: \_\_\_\_\_  
DATE PURCHASED: \_\_\_\_\_

**MANUAL**



## **Cardinal™ Brand Grain Handling Equipment One Year Limited Warranty**

Novae Corp. warrants to the original owner that your Cardinal equipment will be free from defects in material and workmanship for the one (1) year period commencing with the date of purchase, except as herein limited. The obligation of this warranty is limited to repairing or replacing any part or parts which, in the opinion of Novae Corp. is/are defective in material or workmanship under normal use and service.

### **90 Day Limited Warranty**

Excluded from this One Year Limited Warranty are driveline components such as gearboxes, PTO drive shafts, chain and belt drives, and universal joints, which are warranted for a 90 day period commencing with the date of purchase.

### **Warranty Validation**

Your new equipment should be registered with Novae Corp within ten (10) days of the original purchase. Warranty registration forms are available on the web at [www.cardinalgrain.com](http://www.cardinalgrain.com) or by calling customer service at 888-400-3545 to have one mailed to you.

### **How to Obtain Service**

1. All warranty claims must be presented to Novae Corp. and proper arrangements must be made and approved by Novae Corp. prior to any work being done.
2. All warranty repairs must be performed at Novae Corp. unless prior approval is obtained from Novae Corp. In certain cases, Novae Corp may, at its sole discretion, elect to have warranty work performed by a qualified repair facility.
3. Novae Corp. will not be obligated in any way to pay for: repairs made without specific advance approval, labor charges in excess of those deemed reasonable by Novae Corp., or for any part costs in excess of the cost if Novae Corp. had supplied the parts. The cost of any replacement items will be limited to the amount of the original cost of that item as installed and sold by Novae Corp.
4. Any charges for: overtime labor, service calls, towing charges, expediting, freight or transportation costs are the sole responsibility of the consumer and will not be paid by Novae Corp.

### **Items Not Covered In This Warranty**

1. Wheels and Tires. Contact the tire manufacturer for warranty information
2. Running Gear including axle and suspension assemblies. Present all claims directly to the axle manufacturer or their authorized dealers.
3. Paint finish and durability are not covered under this warranty.
4. Damage or defects resulting from misuse ( including, but not limited to, improper operation, negligence, alteration, accident or lack of maintenance.)
5. Maintenance items that are worn through normal use.
6. Damage caused by loose nuts, bolts or screws including improperly torqued wheel lug nuts.
7. Damage caused by improper hitching or improper installation of drive motors.
8. Loss of time, inconvenience, loss of equipment use, rental or substitute equipment, loss of revenues, or any other losses.
9. Damage or loss resulting from towing equipment that exceeds the tow vehicle manufacturer's specific towing limitations.
10. Any travel time or expenses, such as food, fuel, lodging, etc., incurred to obtain service.

Any express warranty not provided herein, and any remedy for breach of contract which, but for this provision, might arise by implication or operation of law, is hereby excluded and disclaimed. The implied warranties for merchantability and of fitness for a particular purpose are expressly limited to a term of one (1) year. Under no circumstances will Novae Corp. be liable to purchaser or any other person for any special, incidental, or consequential damages, whether arising out of a breach of warranty, breach of contract or otherwise. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Novae Corp. neither assumes nor authorizes any other person to give any other warranty on its behalf. This warranty is not transferable from the original owner.

**Cardinal™ Equipment Warranty Registration Form**

Model: \_\_\_\_\_ Date: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Owners Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Street: \_\_\_\_\_

City, State Zip: \_\_\_\_\_

Primary Use: \_\_\_\_\_

Store and Location where purchased: \_\_\_\_\_ Delivery Date: \_\_\_\_\_

Store Representative: \_\_\_\_\_ Owner Signature: \_\_\_\_\_

(Fold to conceal information, tape closed, affix postage and mail)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State Zip: \_\_\_\_\_

PLACE  
POSTAGE  
HERE

**NOVAE CORP. / CARDINAL GRAIN  
607 S CHAUNCEY ST  
COLUMBIA CITY, IN 46725**



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TO THE OWNER:

This manual is provided to acquaint the operator in the care, operation and maintenance of your Cardinal Portable Auger. Your Cardinal Auger has been designed and manufactured to produce years of dependable service. Following the recommended procedure from this manual will help insure a long and safe period of trouble-free life from your new auger.



GENERAL SAFETY STATEMENT

Watch This Symbol. It Points Out Important Safety Precautions. It means "ATTENTION - Become Alert! Your Safety Is Involved." Read The Message That Follows And Be Alert To The Possibility Of Personal Injury Or Death.

Occupational safety is of prime concern to Corporation. This Portable Auger Manual was written with the safety of the operator and others who come in contact with the equipment as our prime concern. The manual presents day to day work problems encountered by the operator and other personnel. We wrote this manual to help you understand safe operating procedures for augers. We want you as our partner in safety.

It is your responsibility as an owner or operator or supervisor, to know what specific requirements, precautions and work hazards exist and to make these known to all other personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required.

Failure to read this Portable Auger Manual and its Safety Instructions is a misuse of the equipment.

Should any of the safety decals on your Portable Auger become damaged or illegible, be sure to order replacements through your Cardinal Dealer.

SIGN OFF SHEET



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

DATE	EMPLOYER SIGNATURE	EMPLOYEE SIGNATURE



# READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING!



**CAUTION!** This symbol is used to call your attention to specific instructions relating to safety. It is recommended that you review the entire contents of this manual, paying particular attention to items preceeded by this symbol.

**FAILURE TO HEED THESE INSTRUCTIONS CAN RESULT IN PERSONAL INJURY!**

## OPERATOR QUALIFICATIONS



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



1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes farmstead equipment. It is your responsibility to know what these regulations are in your own area or situation.



2. Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved."\*



3. Unqualified persons are to stay out of the work area. The "Work Area" is defined as any area within 20 feet of storage bins or buildings or the loading or unloading system.



4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

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

## MACHINE INSPECTION

After completion of assembly and before each use, inspection of the equipment is mandatory. This inspection should include but not be limited to:



1. Check to see that all guards listed in the assembly instructions are in place and secured, and functional. PTO shields must rotate easily.



2. Are all fasteners tight?  
3. Are all belts and chains properly adjusted? (See Service Section.)  
4. Check oil levels in drive boxes. (See Service Section.)

## DRIVES AND LOCK OUT

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

### A. PTO

#### PTO—Shaft



1. Never use a PTO shaft without a rotating shield in good working order. Also see that the power drive system safety shields are in place at the equipment gear box and the power source.



2. Be certain that the PTO shaft is securely attached to the gear box and the power source.
3. Do not exceed maximum recommended operating length or angularity of PTO shaft.
4. Before starting power source, be certain power to PTO is off.
5. Stay out of the hazard area of an operating PTO.



#### Lock Out



1. Remove ignition key or coil wire from power source. If this is impossible, remove the PTO shaft from the work area.

#### Power Source



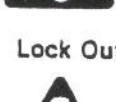
1. Electric motors and controls shall be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.



2. A magnetic starter should be used to protect your motor.



3. You must have a manual reset button.



4. You must disconnect power before resetting your motor.



5. Reset and motor starting controls must be located so that the operator has a full view of the entire operation.

#### Lock Out

6. Keep all guards and shields in place.



A main power disconnect switch capable of being locked only in the Off position shall be provided. This shall be locked whenever work is being done on the equipment.

#### Power Source



1. Never attempt to adjust or service engine while it is in operation.

2. Shut down and allow engine to cool before filling with fuel.

3. Keep all guards and shields in place.



#### Lock Out

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

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

## D. HYDRAULIC POWER

#### Power Source



1. Refer to the above rules and regulations applicable to the power source operating your hydraulic drive.

2. Do not disconnect hydraulic lines while system is under pressure. Consult your hydraulic systems operators manual for proper procedures.

3. Keep all hydraulic lines away from moving parts.



#### Lock Out

Refer to the above rules and regulations applicable to the lock out of the power source operating your hydraulic drive.



## FULL LOAD OPERATING PROCEDURES

During the regular operation of your farmstead equipment, one person shall be in a position to monitor the operation.

It is also good practice to visually inspect the equipment periodically during the actual operation. You should be alert for unusual vibrations, noises, and the loosening of any fasteners.



### Caution:

1. Observe work area restrictions.
2. Keep all safety shields and devices in place.
3. Make certain everyone is clear before operating or moving farmstead equipment.



4. Keep hands, feet, and clothing away from moving parts.
5. Shut off power to adjust, service, or clean.

## SHUTDOWN

### A. Normal Shutdown

Make certain that the equipment is empty before stopping the unit.

Before the operator leaves the work area, the power source shall be locked out.

### B. Emergency Shutdown

1. Should the equipment be immediately shut down under a load—disconnect and lock out the power source. Clear as much grain from hopper and auger as you can. Never attempt to restart when full.
2. Reconnect power source and clear the equipment gradually.
3. Starting equipment under load may result in damage to equipment. Such damage is considered abuse of the equipment.

## WORK AREA SAFETY AND DIAGRAMS



1. Designated work areas shall be marked off with colored nylon or plastic rope hung as portable barriers to define the designated work areas.



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

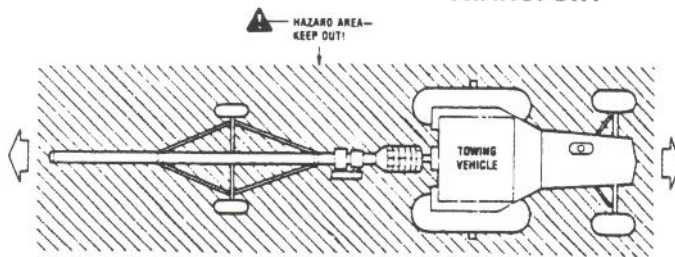


2. Under no circumstances should persons not involved in the operation be allowed to trespass into the work area.

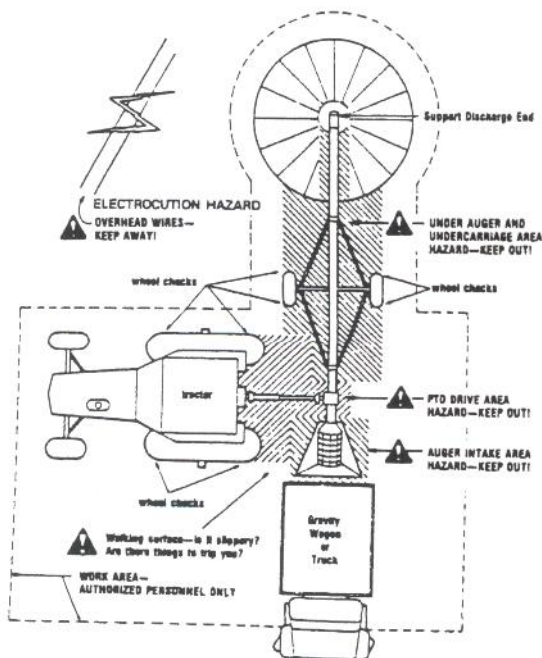


4. Prior to start up and during operation, it shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of all debris and tools which might cause accidental tripping and/or falling.

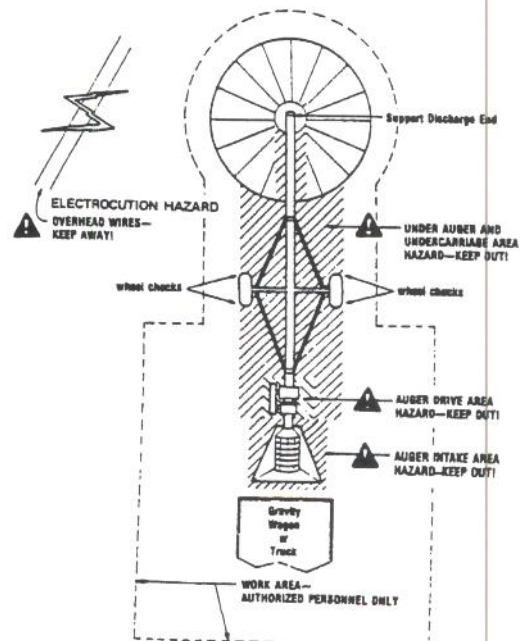
## TRANSPORT



## PTO DRIVE



## GAS, ELECTRIC AND HYDRAULIC





## MANUAL WINCH OPERATION



**READ BEFORE EACH USE!  
SEE WINCH**

1. This winch is equipped with a brake that is actuated by turning the handle. Turn the handle clockwise to raise the auger, and counterclockwise to lower the auger. The brake is designed to hold the auger in position.
2. **CAUTION:** The brake is not fully locked until the handle is turned clockwise far enough to hear two clicks.
3. **CAUTION:** The brake disc will get HOT when lowering auger. If brake is smoking, or squeals, stop lowering and let the brake cool for 15 minutes. **DO NOT TOUCH BRAKE!**
4. **NEVER CONTINUE TURNING THE HANDLE COUNTERCLOCKWISE IF THE AUGER DOES NOT LOWER; THIS WILL DISENGAGE THE BRAKE MECHANISM.**
5. Brake disc inspection (items 9). To physically check the wear on these parts, they must be removed from the winch. Measure the discs for wear and if they are worn to 1.16 of an inch, replace both discs.



**READ MANUAL SHIPPED IN WINCH CARTON.**

## TRANSPORTING AND POSITIONING



Your auger is designed for maximum balance when empty and in down position. Auger must be empty and in lowest position before moving. Partially filled augers can be dangerous and difficult to handle. Before transporting on county or state highways, contact your local sheriff's department or State Highway Patrol office for laws governing the transportation of the equipment in question. Care should be exercised when traveling on rough and uneven terrain and in turning and cornering to avoid upsetting. Auger is designed for transport at tractor speeds. Be alert to overhead obstructions and electrical wires and devices.



**ELECTROCUTION HAZARD  
OVERHEAD WIRES  
KEEP AWAY**



**ELECTROCUTION HAZARD!  
THIS MACHINE IS NOT INSULATED. KEEP AWAY FROM OVERHEAD WIRES AND DEVICES. ELECTROCUTION CAN OCCUR WITHOUT DIRECT CONTACT. FAILURE TO KEEP AWAY WILL RESULT IN SERIOUS INJURY OR DEATH!**

Leave auger in the full down position while moving. Raise auger to necessary height and back into position at bin or building making sure all persons are clear of the hazard area. Auger must be hooked up to the tractor for transport, raising and placement. DO NOT push or pull in any other manner. Operation site should be firm and level. When in place, unhook from tractor, lower to final position, remove hitch and install the proper hopper. Install the necessary wheel chocks, supports and anchors needed to secure auger. When operation is complete, move auger slowly out of the working position with towing vehicle--not by hand. If not in transport position, lower auger to the full down position immediately upon clearance of any obstruction. Transport to the new work area or storage area. We recommend that the auger be stored in the full down position with the intake end anchored.

## BEFORE OPERATING AUGER



Make certain everyone is clear of the auger before starting or moving it.



Electric drives should have manual resets on auger. Wiring must be done by a qualified electrician making certain it meets all safety laws and ordinances.



Make certain all guards and shields are in place before starting.

**CAUTION:** Auger should be securely fastened to bin or building during operation or when raised and unattended.

## BREAK-IN INSTRUCTIONS

Augers should be broken in properly and never run empty. Do not try out new auger prior to season by running it empty. This will result in serious damage to your auger.

Idle engine and be sure a supply of grain is available. Slowly engage clutch lever and increase R.P.M. to handle grain supply. New augers should always be run at reduced capacity until tube and screw become polished, therefore auger should be broken in at reduced RPM's. This would also be true of an auger which has not been used for some time.

## ANGLE OF OPERATION

Your auger is designed to operate between 15° and 45°. Capacity decreases and power requirements increase as the angle of operation increases, therefore the lower the angle of operation the greater the efficiency of the auger.

## RAISING AND LOWERING



**FAILURE TO HEED THESE INSTRUCTIONS CAN RESULT IN PERSONAL INJURY.**

1. Never fully extend the cable. Always keep three (3) complete turns of the cable around the drum.
2. Always inspect the cable for damage prior to each use. Replace frayed or kinked cable.
3. The operator must keep all persons clear of the auger when it is being raised or lowered.
4. Never operate winch with wet or oily hands and always use a firm grip on the handle.
5. Auger should be in the down position or secured to bin or building when unattended.
6. Always keep the winch lubricated per lubrication instructions. Remember that worn parts cause unsafe conditions.
7. Whenever raising auger with a manual winch, listen for a "clicking sound" of the ratchet. If the clicking sound stops, keep a firm grip on the handle and return the auger to the full down position by turning the handle counterclockwise. Repair the ratchet. There will not be a clicking sound when the auger is being lowered.
8. The winch is designed for raising the auger weight only! **DO NOT LIFT OTHER ITEMS WITH THE AUGER!**



## -MAINTENANCE AND LUBRICATION-

### -Periodic Inspection-

The auger is subject to some vibration. Even though all the nuts are locking types, the auger should be checked at least once a week during operation for loose bolts and nuts. Especially check in critical areas; such as the tube joiners, chassis hook-up, drive shafts, PTO shafts, trailer hitches, ect. This is especially true with a new auger. One mistightened bolt could cause a lot of down time. Check your new auger closely.

### -Lubrication-

Lubrication and care of this auger will determine its useful life. The more care, the greater its life.

PTO SHAFTS-Grease the fittings on each yoke each eight hours of operation and right before storage. Pull the sliding members apart and grease the surface of the solid square shaft at least twice a year.

GEARBOX-Fill with EP 90 Gear Oil. Check level through plug in the side of gearbox housing. Be sure vent plug is in the top of the gearbox.

PINION SHAFT @ BLACK PLUG IN GUARD - MUST BE GREASED PERIODICALLY TO GET LUBRICATION TO SHAFT BEARINGS!

TOP DRIVE-This unit has a screw type take-up for the roller chain drive. The chain should be lubricated every 40-50 hours of operation with S.A.E. 20 or 30 oil.

WHEELS-Repack each wheel hub at least once a year and check before transporting long distance. Lubricate each wheel right before storage.

Periodically check the wheel bearing for excessive wear.

WINCH-All gears should have a film of grease on them at all times. The bushings should be wet with oil. Do not lubricate any part of the friction brake. (See instructions included in the winch carton.)



Shut off power to adjust, service or clean.

**-SPECIFICATIONS-**

WHEEL TREAD WIDTH ----- **66"** ON 32' MODEL  
**75"** ON 47'-52' MODELS  
**93"** ON 57'-62' MODELS

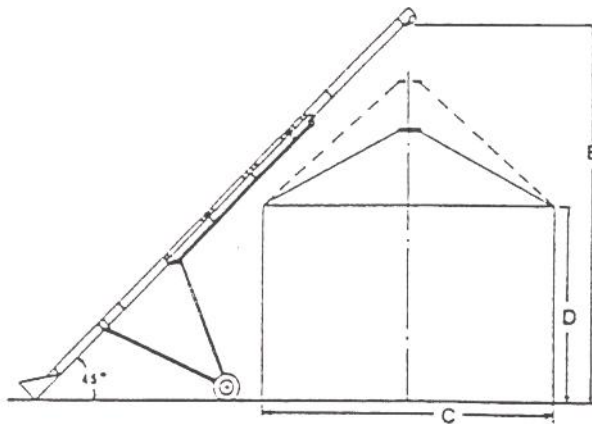
WHEEL BEARINGS ----- TAPERED ROLLER BEARING

AUGER RPM ----- **600**

CAPACITY (BASED ON DRY  
 CORN @ 20 DEGREE  
 ELEVATION) ----- **1270** BU/HR

Recommended Electric Horsepower

32'		47'		52'		57'		62'	
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
3	5	7.5	10	7.5	10	10	15	10	15



**APPLICATION CHART**

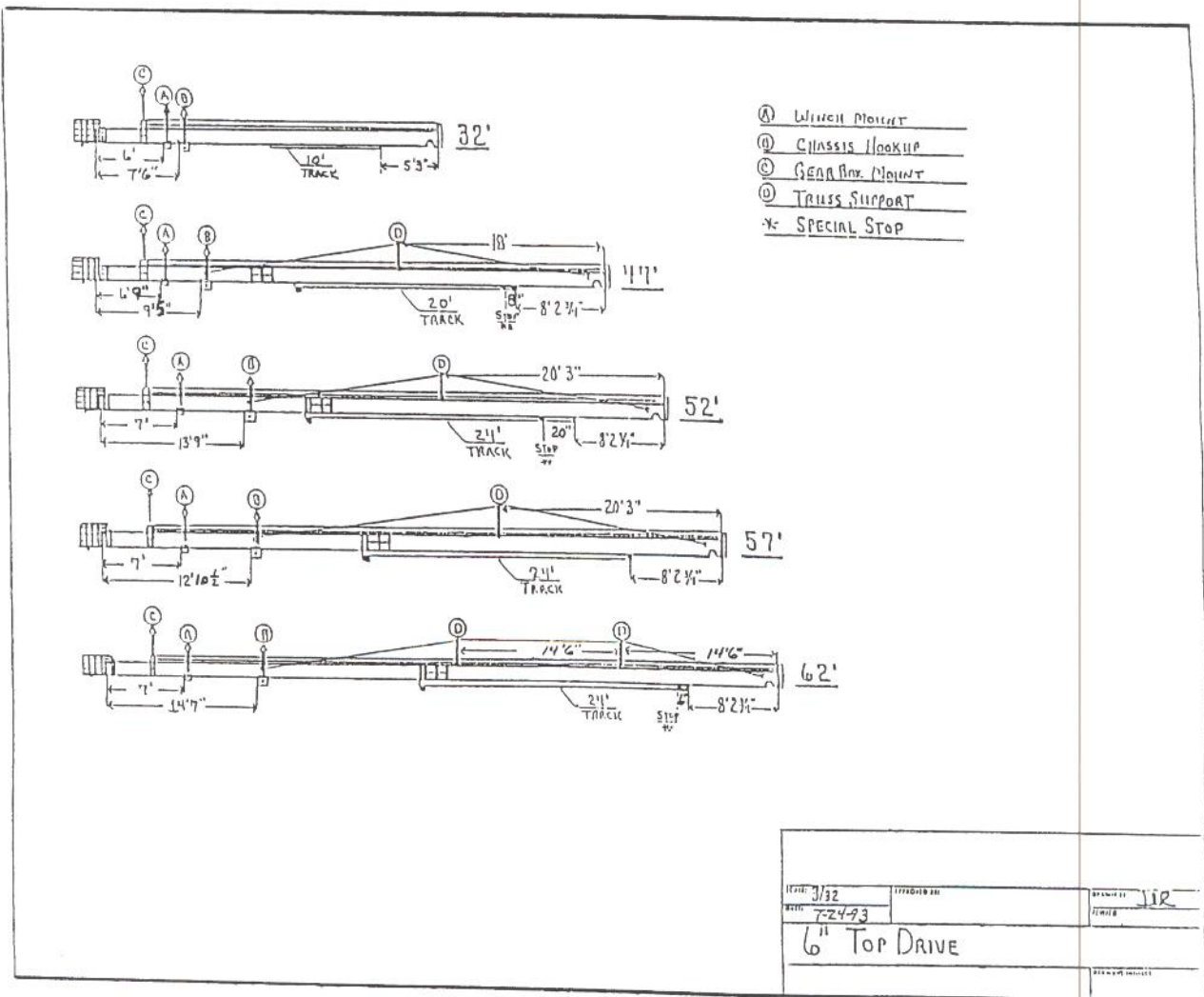
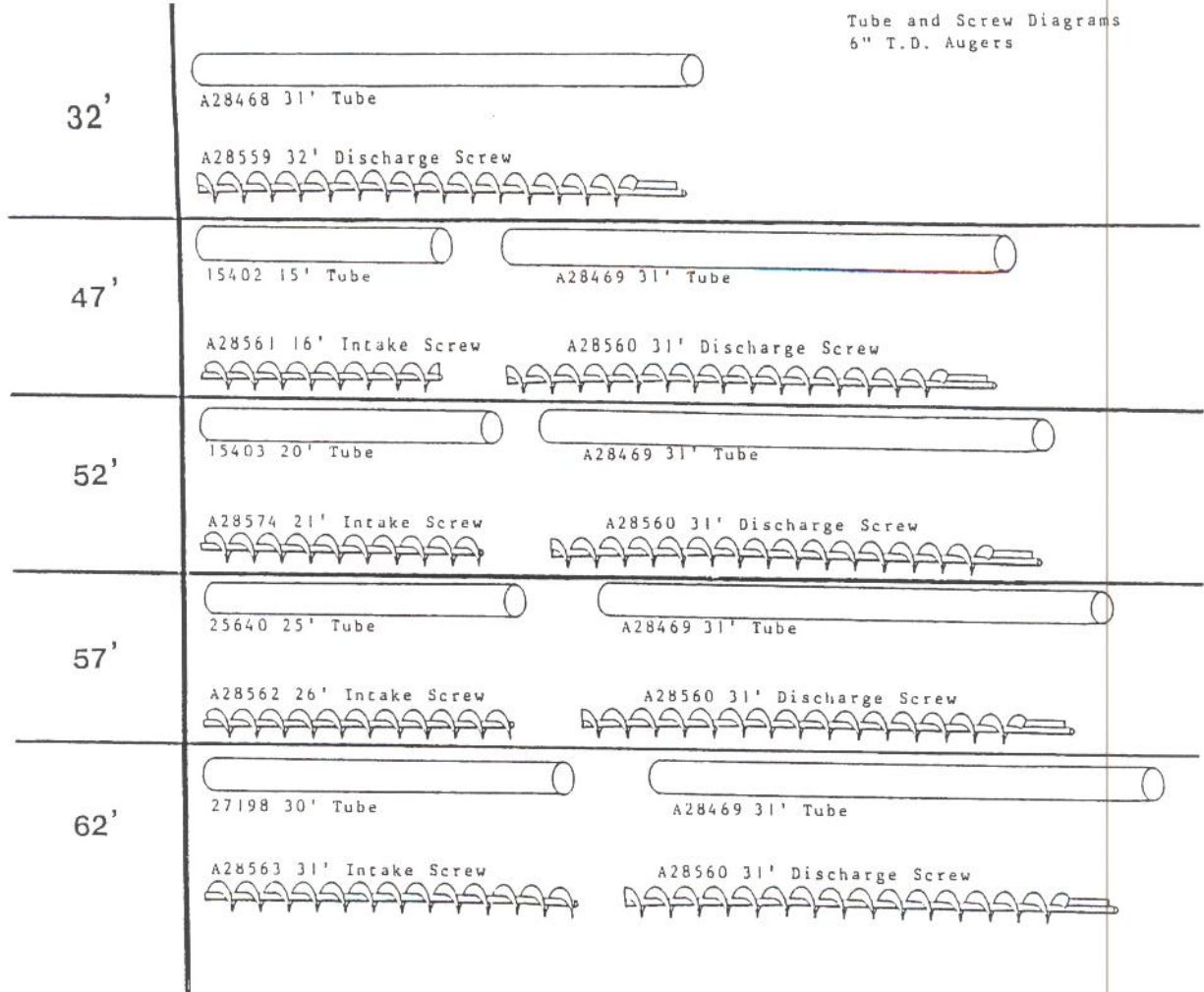
Lengths	32'	47'	52'	57'	62'
Bin Dia. (Max)	15'	24'	30'	30'	34'
Eave (Max.) D	14'9"	21'	21'7"	26'	26'9"
Discharge Hgt. (Max.) E	22'	33'	35'	39'6"	43'3"

**TRANSPORT HEIGHTS**

Length	32'	47'	52'	57'	62'
b"	12'	10'9"	11'9"	12'9"	14'

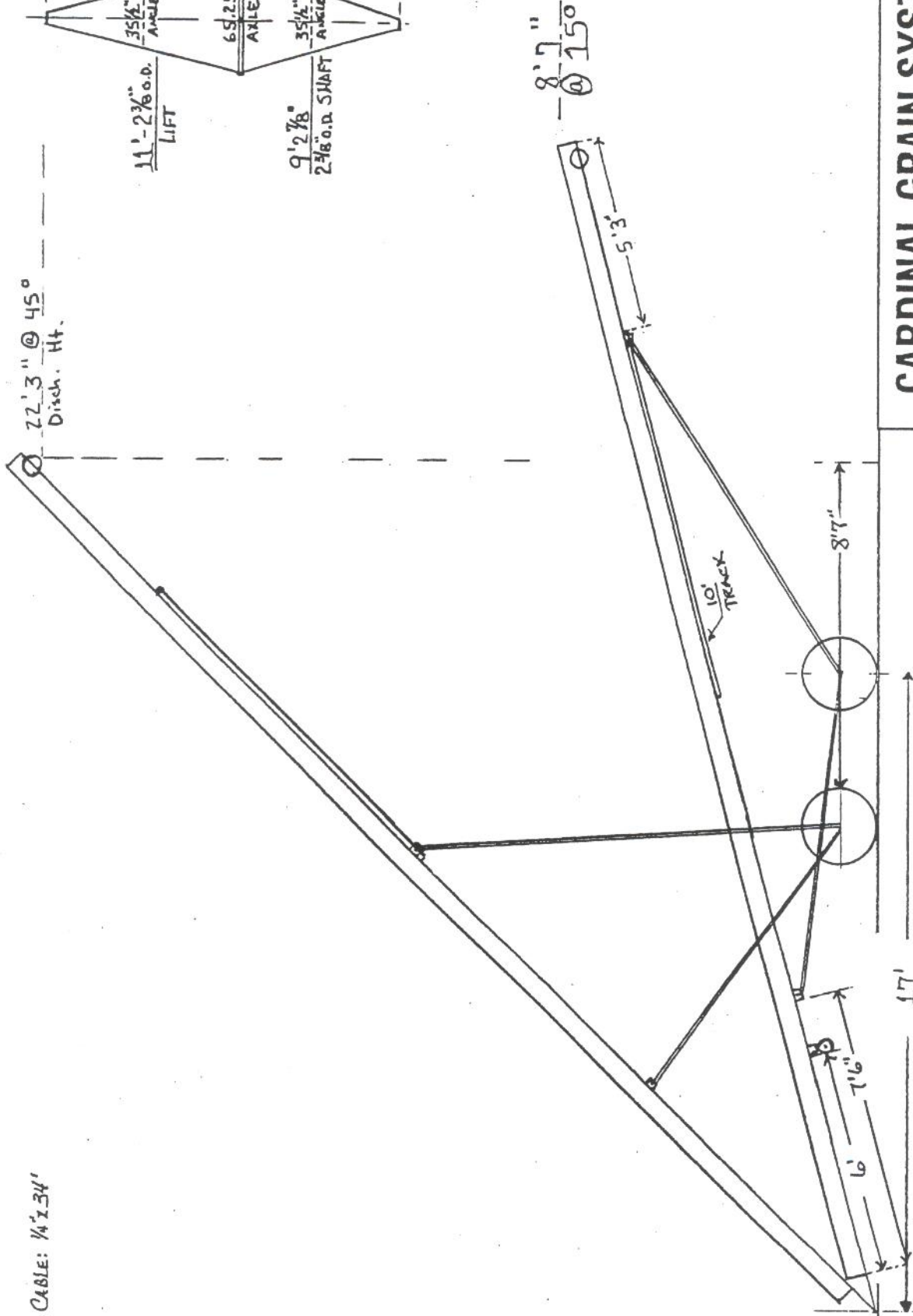
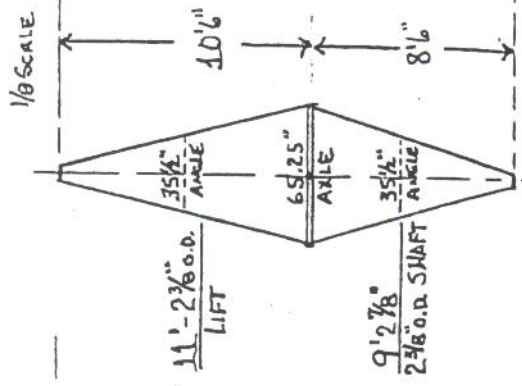
These Dimensions are within  $\pm$  6"





WINCH CABLE: 1/4" x 3/4"

22' 3" @ 45°  
Disch. Ht.



# CARDINAL GRAIN SYSTEMS

SCALE: 1/4" = 1'

DATE: 7-24-93

DRAWN BY: JLR

REVISED

6" x 32' TOP DRIVE

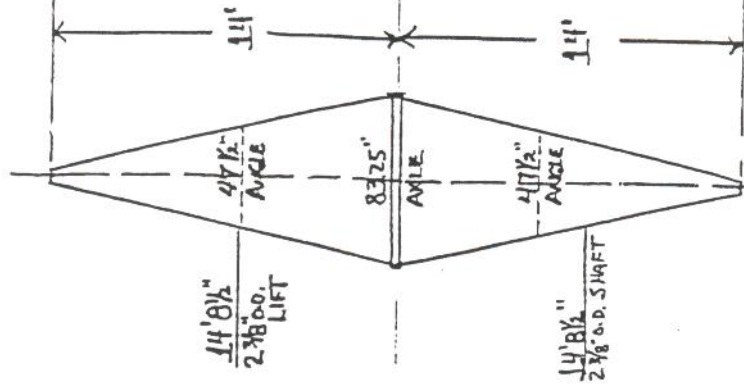
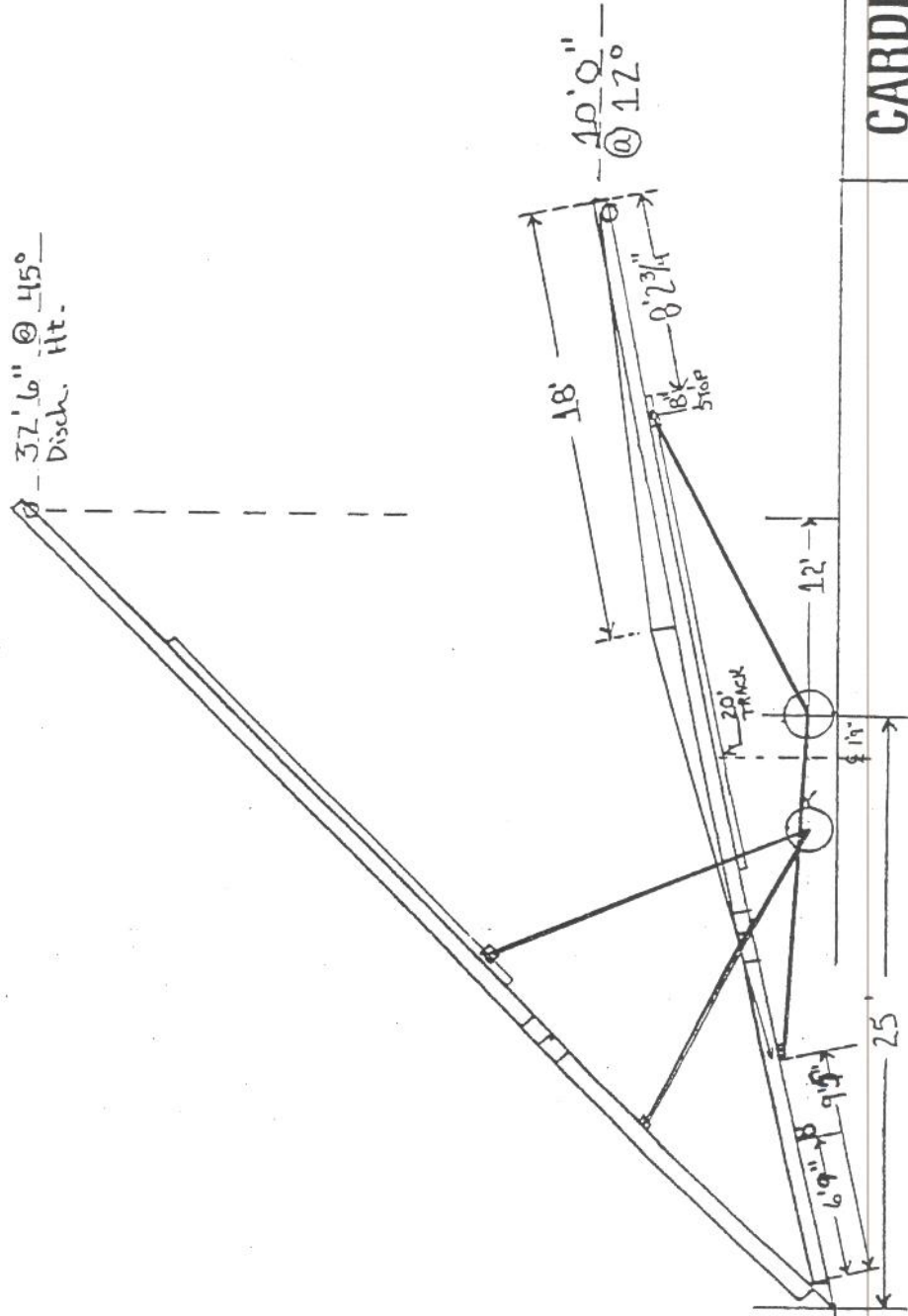
DRAWING NUMBER

W = (A) 7' 8"  
(D) 13' 10"



WHEEL CABLE: 1/4" x 54' (Single Strand)

TRUSS CABLE: 1/4" x 37'

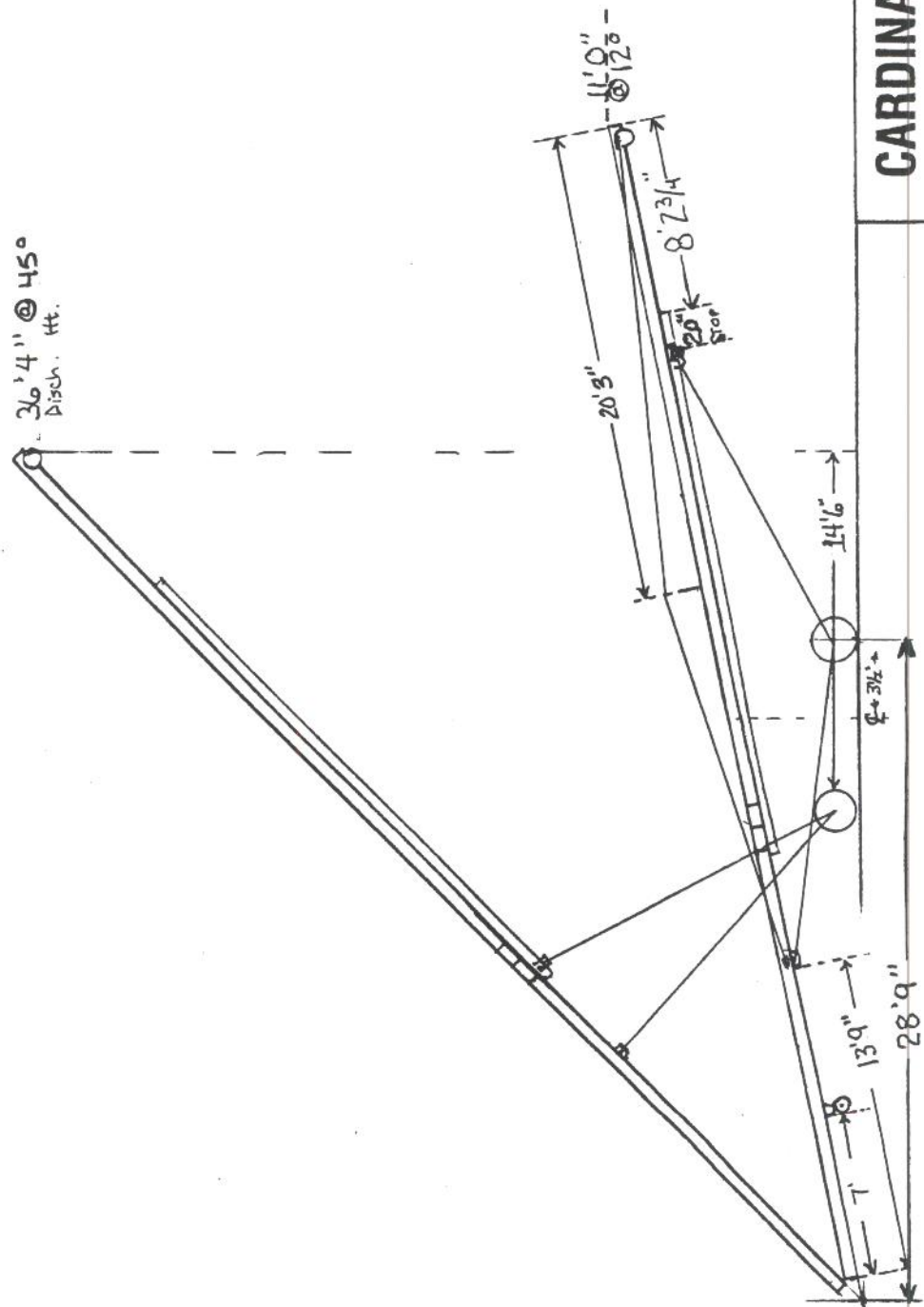


# CARDINAL GRAIN SYSTEMS

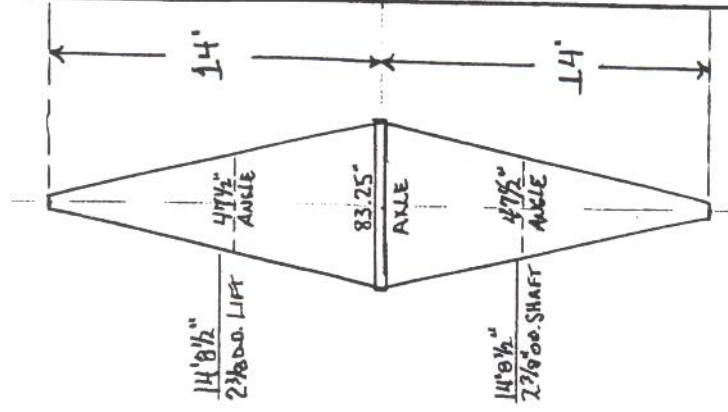
SCALE: 1/8" = 1'	APPROVED BY:	DRAWN BY: JLR
DATE: 7-24-93		FILED:
6" x 47' TOP DRIVE		
DRAWING NUMBER:		

- C = (C) 13' 2" (S) 19' 2" (W) 14' (O) 12' 9" (P) 13' 1"
- A = (A) 13' 2" (S) 19' 2" (W) 14' (O) 12' 9" (P) 13' 1"
- W = (W) 10' 10" (O) 20' 11"

WINCH CABLE: 1/4" x 60' SINGLE STRING  
 TRUSS CABLE: 1/4" x 38'



Mark  
 W = (5) 11' 11"  
 (0) 23' 1"  
 (C) 13' 5"  
 (P) 22' 6"  
 (N) 15' 3"  
 (D) 12' 11"  
 (P) 15' 8"



# CARDINAL GRAIN SYSTEMS

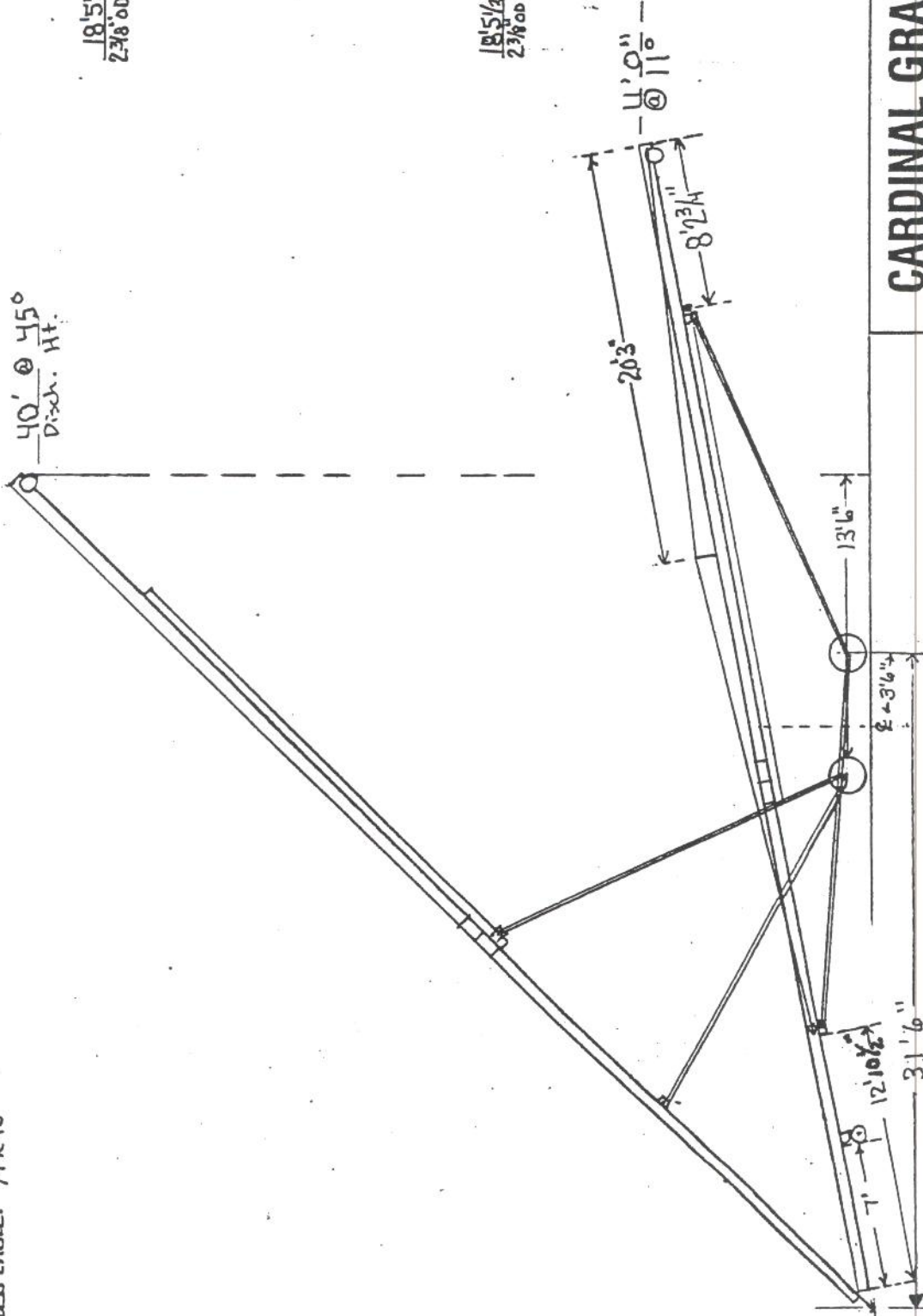
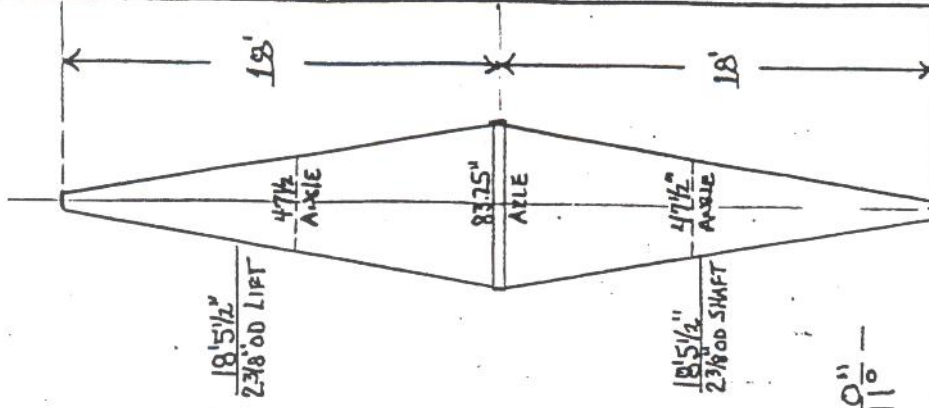
SCALE: 1/8" = 1'	APPROVED BY: JLR
DATE: 7-24-93	REVISED:
6" x 52' TOP DRIVE	
DRAWING NUMBER:	



WINDH CABLE: 5/16 x 91' (DOUBLE STRUNG)

TRUSS CABLE: 1/4 x 45'

40' @ 45°  
Disch. HT.



- (D) 16' 9"
- (C) 25' 8"
- (M) 18'
- (O) 15' 5"
- (P) 15' 8"

W = (D) 11' 5"  
(D) 25' 1"

# CARDINAL GRAIN SYSTEMS

SCALE: 1/8" = 1'

DATE: 7-24-93

APPROVED BY: JCR

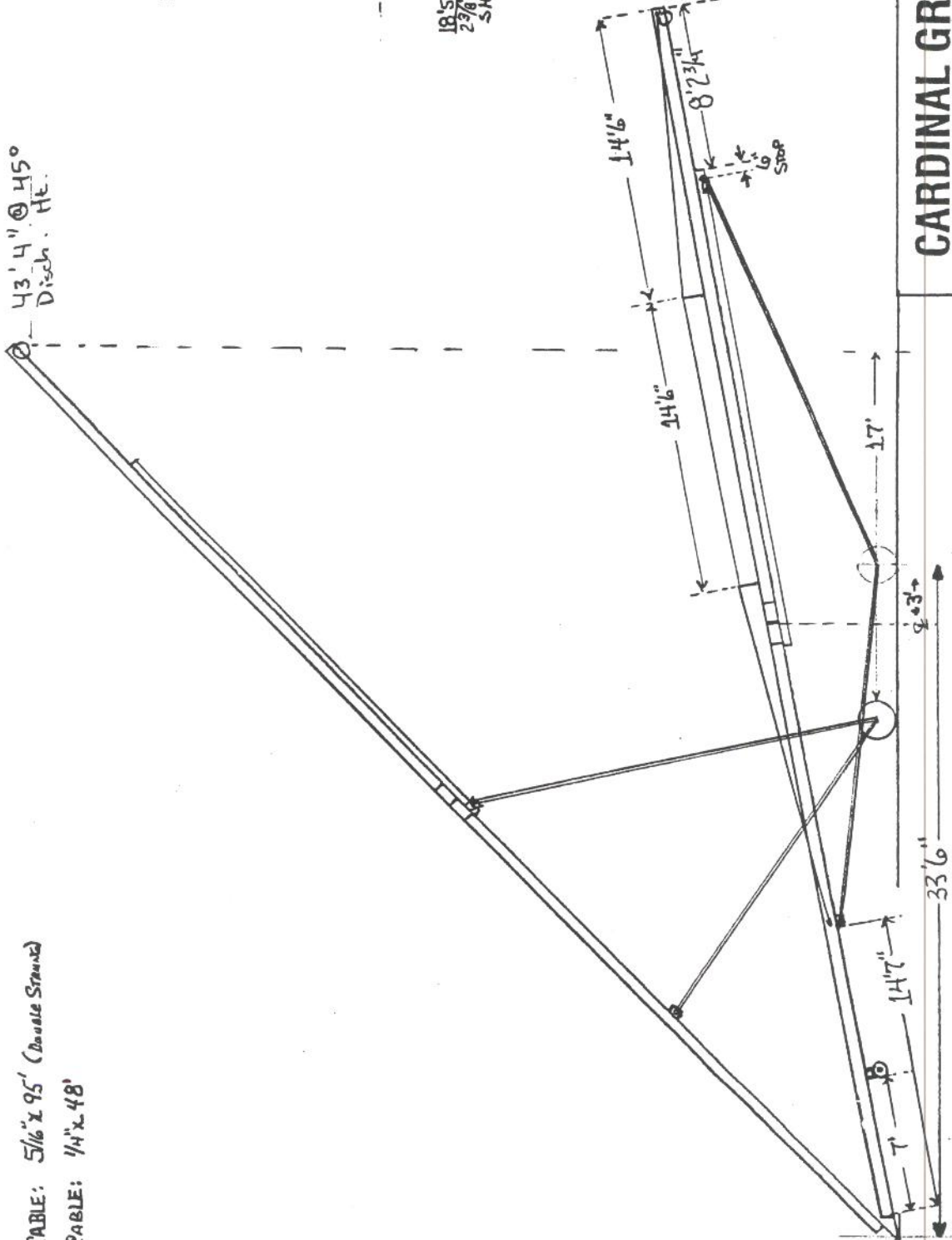
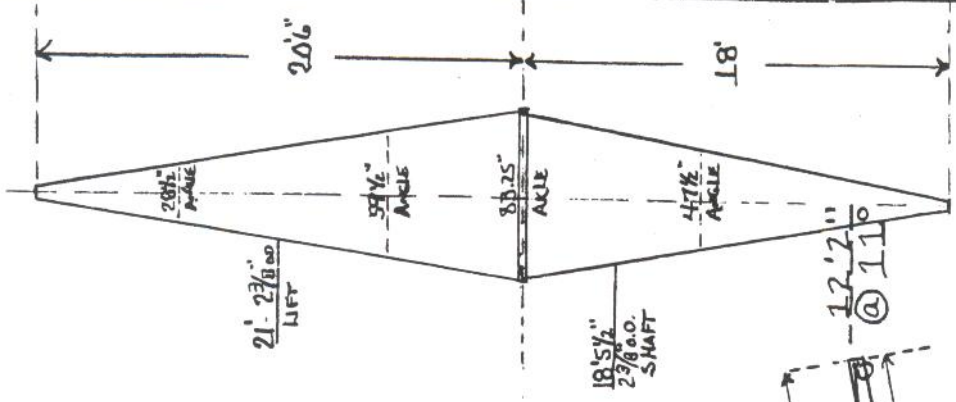
REVISED

6" x 57' TOP DRIVE

DRAWING NUMBER

WINCH CABLE: 5/16" x 95' (Double Strand)  
 TRUSS CABLE: 1/4" x 48'

43' 4" @ 45°  
 Disch. He.



# CARDINAL GRAIN SYSTEMS

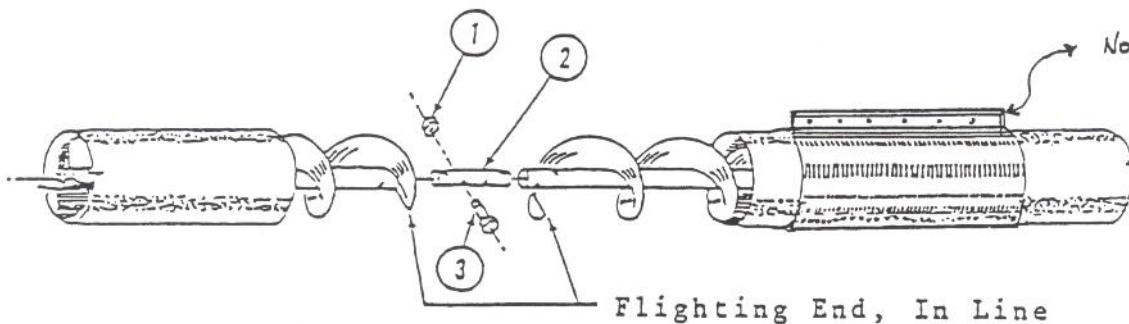
SCALE: 1/8" = 1'	APPROVED BY: JUR
DATE: 7-24-93	REVISED:
6" x 62' TOP DRIVE	
DIP. WAG. NUMBER:	

-ASSEMBLY INSTRUCTIONS-

The auger should be assembled in an area that is level. A mechanical lifting device, of at least a 2-ton capacity, should be available to lift the partially assembled auger during the assembly procedure.

This auger is shipped broken down. The tubes and screws are shipped according to the length of auger ordered. Each auger length has one 31 foot long discharge tube with the proper screw inside.

With the tubes and screw arranged in the proper order, place a joiner band (see Figure 1) over one tube at joint of two tubes. No tube joiners are required at either end of the auger. Now, with the joiner on one tube, couple the two screws together with the coupler shaft and attached coupler bolts (see Figure 1). Go to the next joint and repeat the process until all screws are coupled. Butt the tubes together and center the joiner over the joint. Use 3/8-16NC x 1 1/2 bolts starting at the center bolt hole in the joiner flange and work your way to each end of the joiner (see Figure 2). Watch the overall alignment of the auger as the tubes are joined to be sure of maintaining a straight auger. Note: Tighten the bolts (Key No. 2 in Figure 2) in the joiner band to a reading of 35-40 foot-pounds to obtain good clamping pressure.



NOTE: MOUNT WITH FLANGE UP ON TOP OF TUBE. HELPS STIFFEN JOINT.

Figure #1

Figure #1 Key Nos.	Part No.	Description
1.	1271	1/4-20 LOCKNUT
2.	15613	Coupler Shaft
3.	23069	1/4-20 COUPLER BOLT

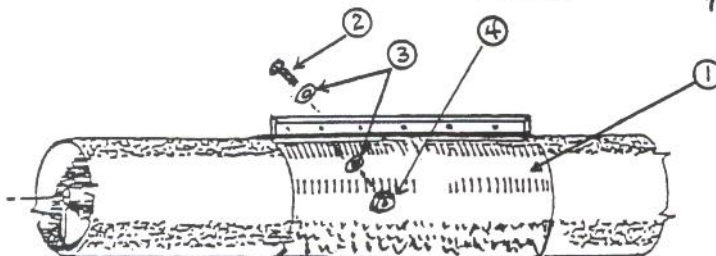


Figure #2

Figure #2 Key Nos.	Part No.	Description
1.	A28445	Tube Joiner W/Hdw
2.	1404	HHCS 3/8-16 x 1 1/2 GRD5
3.	28453	Clamp Washer 7/16 I.D.
4.	1274	3/8-16NC LOCKNUT



\*Note: This dimension should be maintained between all Line Shaft Bearings.

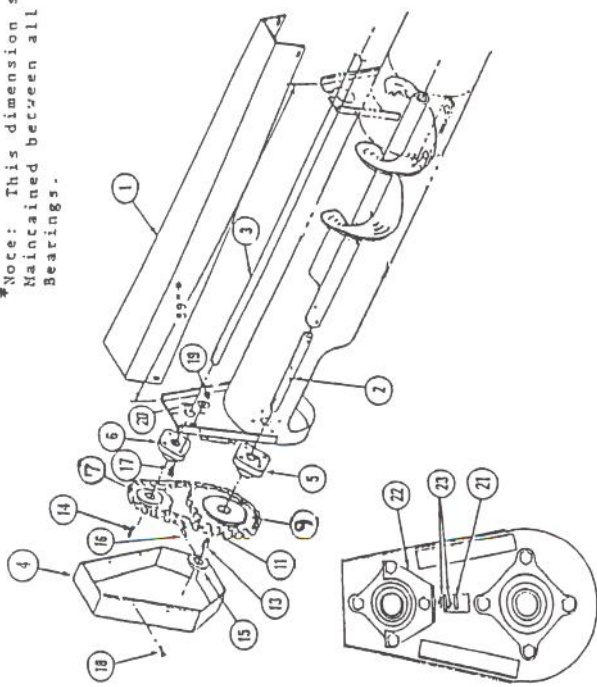


Figure #3  
Top Drive Details

Figure #3 Key Nos.	Part No.	Description
1.	26587	Discharge Cover
2.	26567	Discharge Shaft
3.	27201	Line Shaft (Discharge)
4.	A26568	Cover
5.	A26571	Bearing
6.	A26518	Bearing
7.	A28443	Sprocket 16T(upper)
8.	N-A	Sprocket 22T(lower)
9.	A17403	Roller Chain
10.	N-A	Woodruff Key
11.	A25228	Sq. Key 1/2x1
12.	N-A	Thrust Collar
13.	15304	Spring Pin (collar to shaft)
14.	25139	HHCS 7/16-14NCx1 1/2
15.	15502	Self tap screw 1/2x1 hex hd (pltd)
16.	15389	Locknut 7/16-14 NC
17.	1428	Flatwasher 7/16
18.	1319	HHCS 3/8-16x1 1/2
19.	1284	Locknut 7/16-14 NC
20.	1475	Flatwasher 7/16
21.	1176	HHCS 3/8-16x1 1/2
22.	27823	Take up Bracket
23.	1470	Jam nut 3/8-16

The Top End Drive should be assembled as shown above in Figure No. 3. The roller chain drive has a screw type take-up as shown in the end view drawing above. Take-up bracket, Key No. 22, mounts on top of the bearing. If the bearing collars are loosened during repairs, be sure to tighten these eccentric locking collars by turning them in the same direction (clockwise looking at the end of the shaft) as the shaft will be rotating in operation.

Note: Make sure that the Thrust Collar (Key No. 15) is tight up against the Roller Chain Sprocket (Key No. 9) to take care of the thrust load produced by the auger screw.

Install all the Line Shaft Bearings as shown in Figure No. 4 below by starting at the Top Drive and working down to the gear box. Be sure to maintain the 59" spacings between all bearings. It is also important to keep all the bearings in alignment so that the Line Shaft will turn true and not vibrate excessively. Refer to the chart below to determine the Line shafts required for each model of the auger.

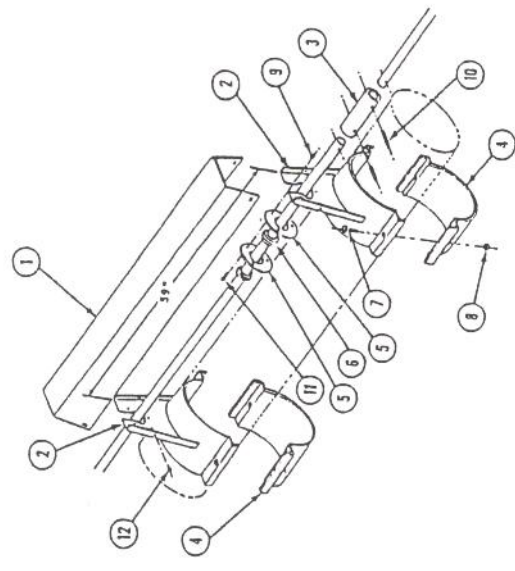


Figure #4  
Line Shaft Details

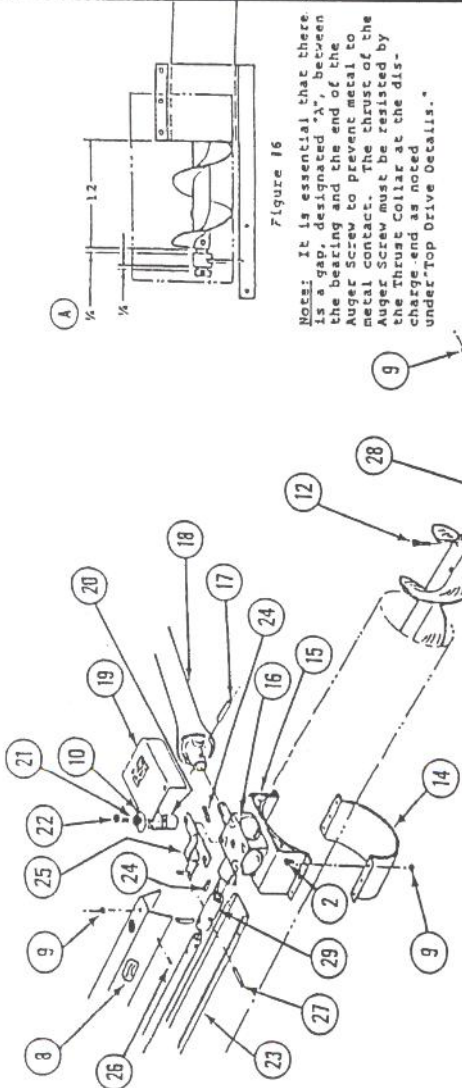
Figure #4 Key Nos.	Part No.	Description
1.	26499	Cover
2.	A28361	Bearing Support
3.	26475	Line Shaft Cover
4.	28362	Track Clamp Band Half
5.	15341	Bearing Scamping
6.	A26519	Bearing (includes collar)
7.	1404	HHCS 3/8-16x1 1/2 GRD5 (pltd)
8.	1274	3/8-16 locknut (nylok)(pltd)
9.	1273	5/16-18 locknut (nylok)(pltd)
10.	26437	Roll Pin
11.	1214	Carriage bolt 5/16-18x3/4
12.	1319	Self tap screw 1/2x1 hex hd (pltd)

Line Shaft Chart

Discharge Line Shaft	32P	32E	47P	47E	52P	52E	57P	57E	62P	62E
2nd Line Shaft	A27961	A27963	A27156	A27156	A27156	A27156	A27156	A27156	A27156	A27156
3rd Line Shaft										
4th Line Shaft										
5th Line Shaft										

Part No.	Length	Part No.	Length
27201	16' 0"	A27210	15' 1/4"
A27156	16' 0"	A27212	11' 1 1/4"
A27157	6' 2 1/4"	A27959	16' 0"
A27207	4' 11 1/4"	A27961	12' 4 3/8"
A27208	9' 10 1/4"	A27963	30' 1/4"
A27209	3' 8 1/4"		



Assemble Gear Box, PTO Drive and the Intake End Details, see assembly of Motor Mount and Belt Guard.

Figure 16

Note: It is essential that there is a gap, designated "A", between the bearing and the end of the Auger Screw to prevent metal to metal contact. The thrust of the Auger Screw must be resisted by the Thrust Collar at the discharge end as noted under "Top Drive Details."

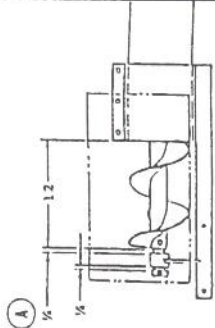


Figure #5  
Gear Box & Intake End  
Decal

Figure #5 Key Nos.	Part No.	Description
1.	26403	Hitch
2.	1176	HHCS 3/8-16x1 1/2
3.	26708	Collar
4.	19961	Serial Number
5.	1427	HHCS 1/2-13x3 GRDS
6.	1276	Locknut 1/2-13
7.	A26548	Intake Housing
8.	23491	Decal "Danger"
9.	1274	3/8-16 Hex Locknut
10.	28453	Flat Clamp Washer 7/16 I.D.
11.	1404	HHCS 3/8-16x1 1/2 GRDS
12.	23069	HHCS 1/2-20
13.	1271	Locknut 1/2-20
14.	28184	Clamp Band Half
15.	A28289	Gear Box Mount
16.	A26347	Gear Box
17.	26649	Spring Pin 5/16x2
18.	A25221	PTO Shaft w/o Clutch
19.	A27935	PTO Shield w/Decal
20.	24728	Spacer
21.	1302	Lockwasher 3/8
22.	1180	HHCS 3/8-16x2 1/2
23.	26501	Line Shaft Guard
24.	19179	Sq. Key 1/2x1 1/2
25.	A26378	Drive Shaft Shield Mtg. Brkt.
26.	1319	Self Tap Screw 1/2x hex hd.
27.	26405	Roll Pin
28.	26707	Intake Shaft
29.	A26837	Coupler
30.	1179	HHCS 3/8-16x2

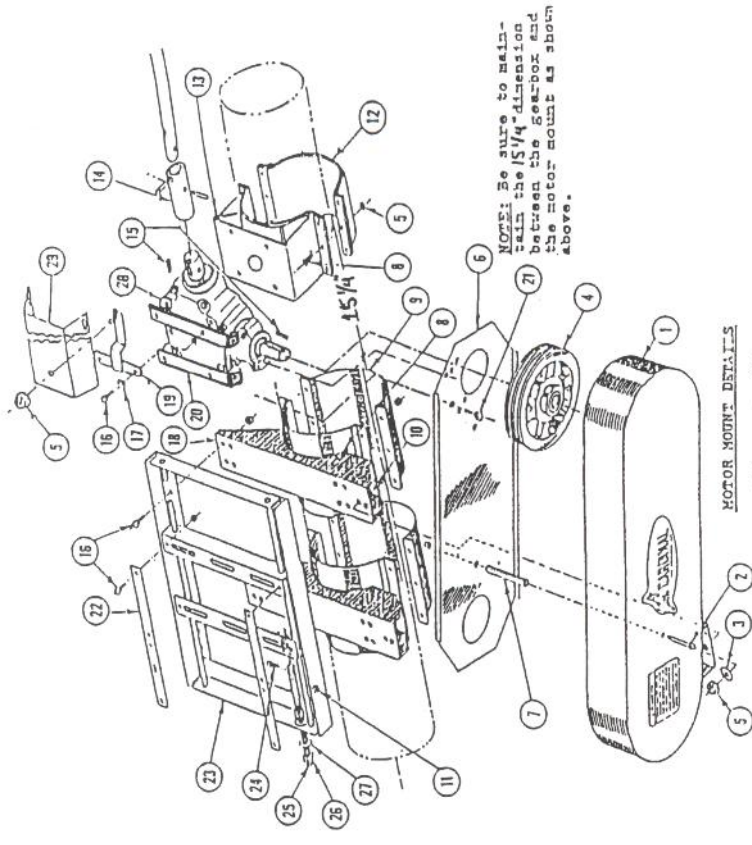


Figure #6

Figure #6 Key Nos.	Part No.	Description
1.	A25133	Guard Front Cover
2.	1369	HHCS 5/16-18x5
3.	28453	Flat Clamp Washer 7/16 I.D.
4.	A25219	V-Belt Pulley
5.	1274	Hex Locknut 3/8-16
6.	25125	Guard Backplate
7.	25128	Cover Standoff
8.	1404	HHCS 3/8-16x1 1/2 GRDS
9.	A19326	Clamp Band
10.	1175	HHCS 3/8-16x1
11.	1273	Locknut 5/16-18
12.	28184	Clamp Band Half
13.	A28289	Gear Box Mount
14.	A26837	Coupler (Gearbox)
15.	19179	1/2x1 1/2 Sq. Key
16.	1174	HHCS 3/8-16x3/4
17.	1302	Lockwasher 3/8
18.	A25178	Support
19.	A26378	Drive Shaft Shield Mtg. Brkt.
20.	25237	Belt Guard Bracket
21.	1357	HHCS 5/16-18x3/4
22.	20766	Spacer Strap
23.	A20758	Motor Base
24.	1202	5/16-18x1 3/4 HHCS
25.	20771	Adjusting Rod
26.	1278	Locknut 3/4-10
27.	1297	Flatwasher 3/4
28.	A26347	Gear Box
29.	26500	Line Shaft Cover



## CHASSIS ASSEMBLY

Assemble the chassis pipes and axle together as shown in Figure 9. With a cable or chain sling fastened securely around the auger tube just ahead of the chassis track, lift the discharge end of the assembled auger three or four feet off the ground. Roll the assembled chassis underneath the auger. Attach the chassis hook-up band, Key No. 6 and 9, in Figure No. 7, to the auger tube in the correct position as shown on the component placement diagrams. Attach the anchor bracket, Key No. 12 in Figure No. 7 to the chassis hook-up band as shown.

Bolt the winch mount to the auger tube in position as shown on the component placement diagrams. Attach the winch mount as shown.

String the winch cable as shown by starting at the end opposite the winch. Attach the cable to the winch drum as noted on the winch instruction sheet.

The cable winch is equipped with a brake which is activated by turning the handle. Turn the handle clockwise to raise the auger and counterclockwise to lower the auger. A clicking sound will be heard when raising the auger. When lowering the unit, no clicking will be heard. When the auger is lowered to the desired height, turn the handle clockwise until two clicks are heard to lock the winch. There is no pawl or clutch to release to lower the auger.

Always be sure there are at least three wraps of cable on the winch drum.

Read winch operating instructions included in the winch carton.

Carefully lift the auger with the cable or chain sling, and at the same time manually raise the chassis lift until the roller frame Key No. 12 (Figure No. 9) engages the end of the chassis track. With the roller frame in position on the chassis track, continue to raise the auger until the lift roller frame passes the four sets of holes in the track. Refer to the component placement diagrams and find where to place the chassis stop, Key No. 2 (Figure No. 8). Attach the chassis stop with four 1/4-13NCx1 bolts and nuts. Let the auger down until the lift roller frame rests against the stop.

Do not remove the lifting sling at this time as the auger may be top end heavy and tip.

String the truss cables as shown in Figure No. 7. Note: Only one truss support is shown for simplicity. Tighten cables only enough to maintain a straight auger.

Assemble the rear stop, Key No. 2, in Figure No. 8 onto the chassis track as shown on the component placement diagrams.

**CAUTION:** Check the assembled auger balance. If it is heavy on the discharge end, then add weight to the intake or hitch end in the form of an optional gravity hopper, electric motor, or if necessary, tie down the intake end to prevent a "tip-over" condition. Never lift the intake end any higher than necessary to attach the hitch to the towing vehicle as a weight shift toward the top of the discharge end will take place rapidly.

Assemble the truss supports (trussed models only), Key No. 10 (Figure No. 7, to the cube placing it as shown on the component placement diagram.

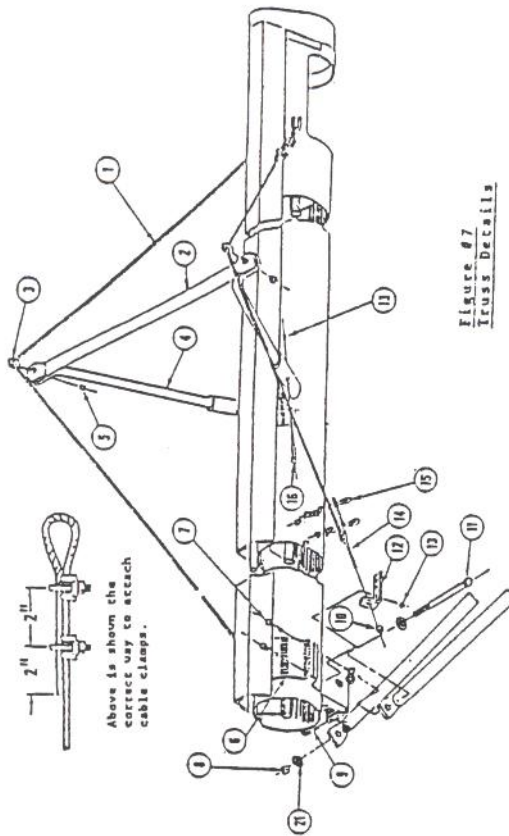
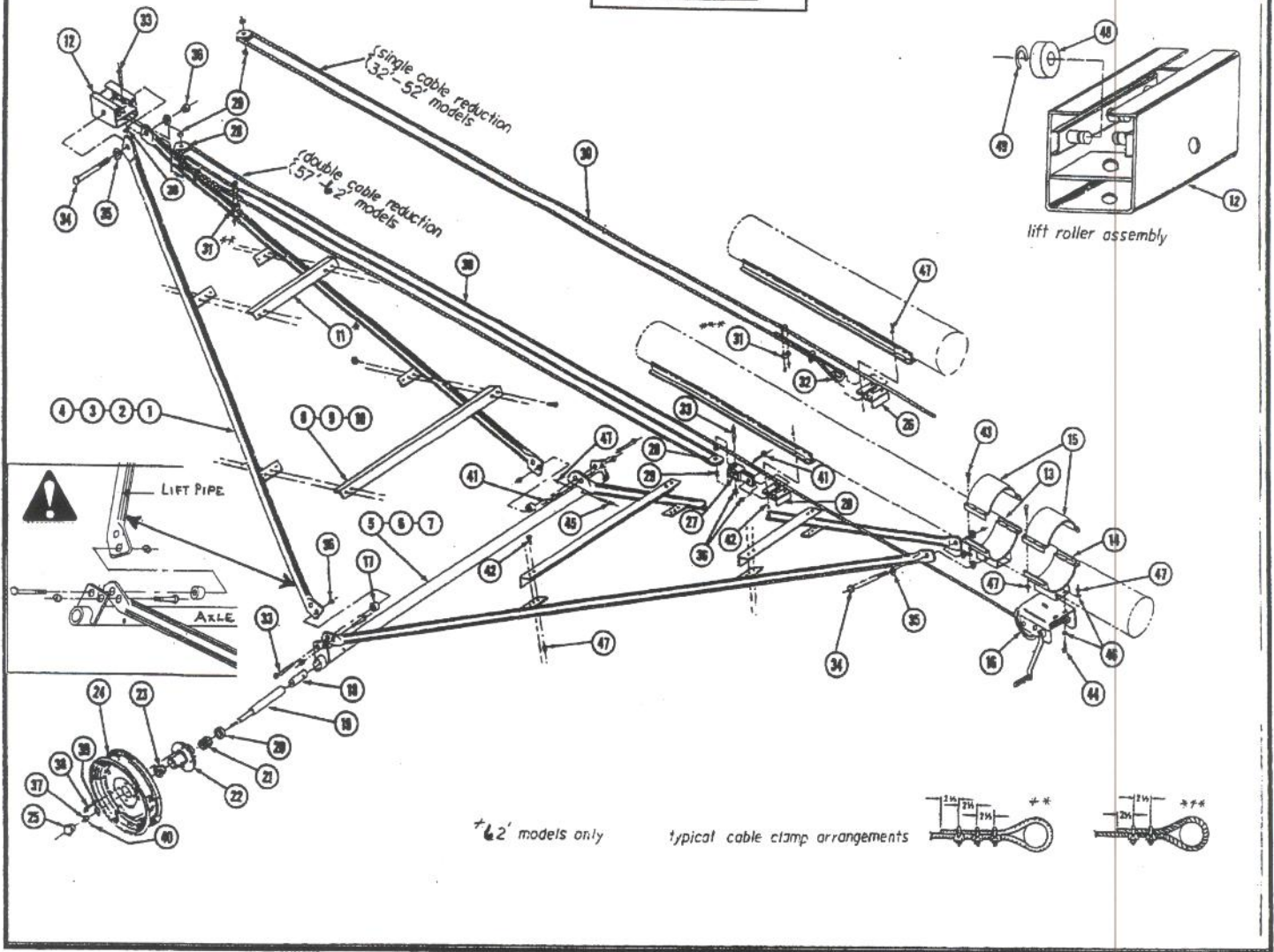


Figure #7  
Truss Details

Figure #7 Key Nos.	Part No.	Description
1	A23231	1/4 Dia. x45' Cable (52'-47') Augers
2	A26066	1/4 Dia. x33' Cable (52'-37') Augers
3	A26023	1/4 Dia. x65' Cable (72' Augers)
4	A28414	Truss Cross Pipe
5	28100	Eye Bolt 3/8-16x4
6	1281	Truss Support Pipe
7	20185	Hex Whit Nuc 3/8-16
8	1404	Clamp Band Bolt
9	1278	BBCS 3/8-16x14 CRDS
10	A29370	Hex Locknut 3/4-10
11	1269	Chassis Hook Up
12	1508	Ret. Nuc 1/2-13
13	28391	BBCS 1/4-10x7
14	1274	Anchor Bracket
15	A28415	Hex Locknut 3/8-16
16	15188	1/4" Cable Clamp (complete)
	1178	BBCS 3/8-16



FIGURE-9



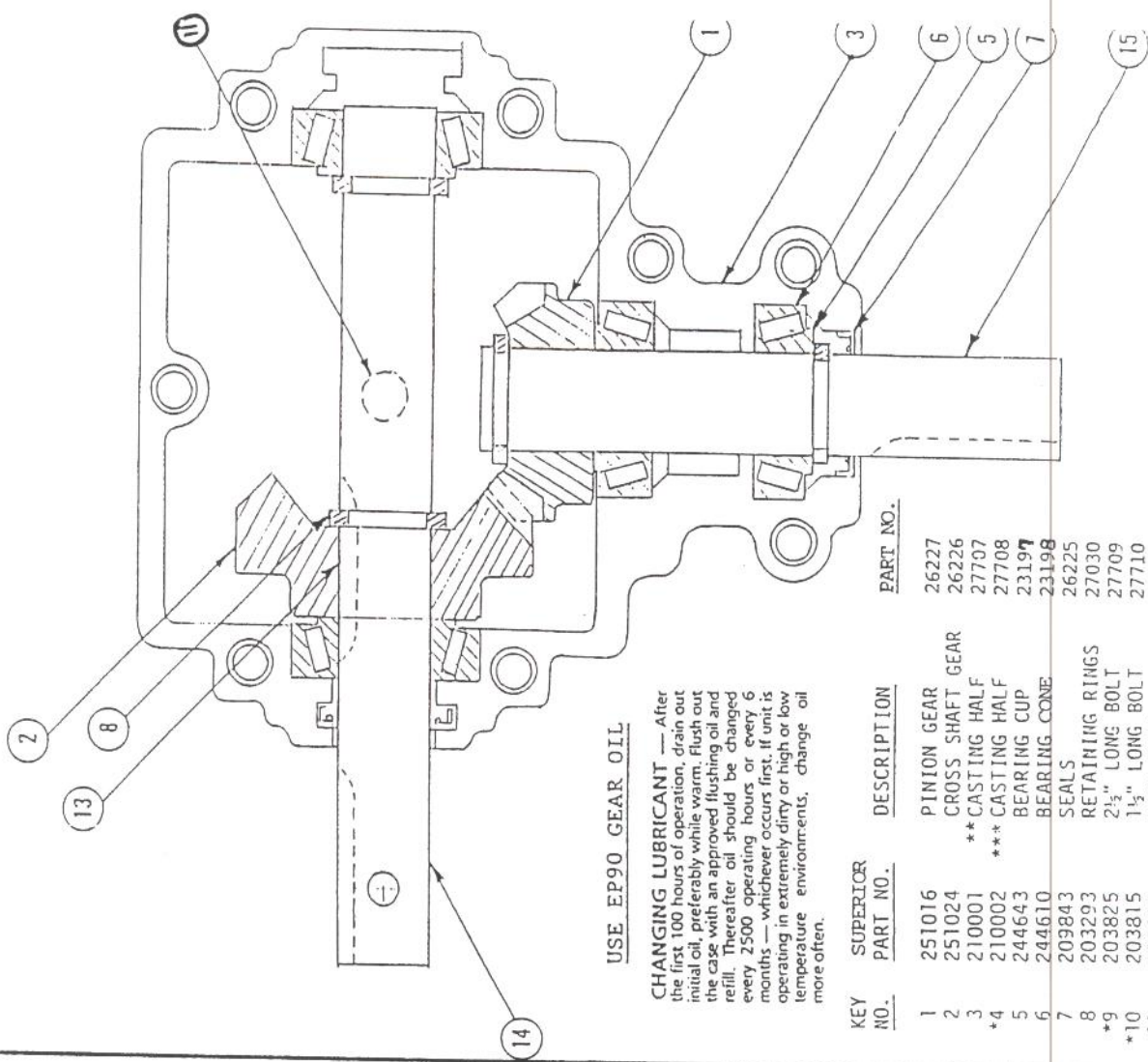
- 1. A28542 2 3/8" O.D. x 9'2 7/8" CHASSIS PIPE
- 2. A28543 2 3/8" O.D. x 14'8 1/2" CHASSIS PIPE
- 3. A28558 2 3/8" O.D. x 18'5 1/2" CHASSIS PIPE
- 4. A28770 2 3/8" O.D. x 21' CHASSIS PIPE
- 5. A28476 65.25" AXLE PIPE (32' AUGER)
- 6. A28477 83.25" AXLE PIPE (47' thru 62' AUGERS)
  
- 8. 28540 35 1/2" CHASSIS ANGLE (32' AUGER)
- 9. 28541 47 1/2" CHASSIS ANGLE (47' thru 62' AUGERS)
- 10. 28539 59 1/2" CHASSIS ANGLE (62' AUGER)
- 11. 28538 28 1/8" CHASSIS ANGLE (62' AUGER)
- 12. A28588 LIFT ROLLER FRAME -W/A
- 13. A28367 CHASSIS HOOKUP-W/A
- 14. A28579 WINCH MOUNT-W/A
- 15. 28184 3 BOLT- HALF BAND
- 16. A20532 1000 # WINCH- (32' AUGER)
- A20385 1500 # WINCH- (47' & 52' AUGERS)
- A28057 2500 # WINCH- (57' thru 62' AUGERS)
- 17. 28484 FRAME SPACER
- 18. 28483 AXLE TUBE SLEEVE
- 19. 28513 AXLE SPINDLE
- 20. 28511 SEAL
- 21. 15128 WHEEL BEARING-INNER CONE
- 22. 15184 WHEEL HUB
- 23. 15127 WHEEL BEARING-OUTER CONE
- 24. 15124 15" 4 BOLT RIM
- 25. 28509 CAP

\* 62' models only

typical cable clamp arrangements

- 26. A28395 STOP W/A
- 27. A26033 PULLEY BRACKET
- 28. 15144 CABLE SHEAVE
- 29. 20660 SPACER
- 30. A28627 1/4" x 36' WINCH CABLE (32' AUGER)
- 1/4" x 54' WINCH CABLE (47' AUGER)
- 1/4" x 60' WINCH CABLE (52' AUGER)
- 5/16" x 95' WINCH CABLE (57' & 62' AUGER)
  
- 31. 15188 1/4" CABLE CLAMP
- 15266 5/16" CABLE CLAMP
- 32. 19480 5/16" CABLE THIMBLE
- 33. 1192 HHCS 3/4"-10x3"
- 34. 1508 HHCS 3/4"-10x7"
- 35. 1297 3/4" FLATWASHER
- 36. 1278 3/4" LOCKNUT
- 37. 28507 SPINDLE NUT
- 38. 28510 WHEEL BOLT
- 39. 28506 SPINDLE WASHER
- 40. 28508 SPINDLE COTTER PIN
- 41. 1191 HHCS 3/4"-10x2"
- 42. 1187 HHCS 1/2"-13x1"
- 43. 1404 HHCS 3/8"-16x1 1/2" GR.5
- 44. 1175 HHCS 3/8"-16x1"
- 45. 1514 HHCS 3/8"-16x2 3/4" GR.5
- 46. 1294 3/8" FLATWASHER
- 47. 1274 3/8"-16 LOCKNUT
- 48. 27689 PLASTIC ROLLER
- 49. 27690 RETAINING RING

PARTS LIST FOR A26347 GEAR BOX



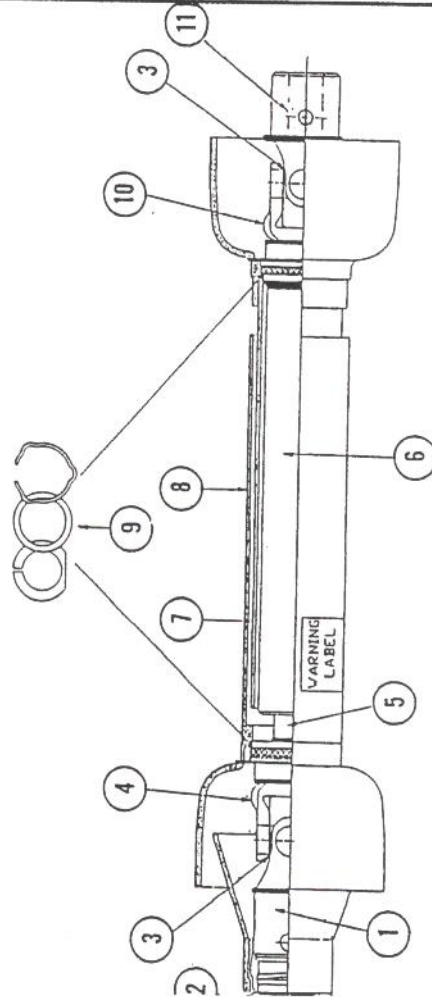
USE EP90 GEAR OIL

CHANGING LUBRICANT — After the first 100 hours of operation, drain out initial oil, preferably while warm. Flush out the case with an approved flushing oil and refill. Thereafter oil should be changed every 2500 operating hours or every 6 months — whichever occurs first. If unit is operating in extremely dirty or high or low temperature environments, change oil more often.

\*PARTS NOT SHOWN  
\*\*TIEDED HOLES  
\*\*\*FINISHED HOLES

KEY NO.	SUPERIOR PART NO.	DESCRIPTION	PART NO.
1	251016	PINION GEAR	26227
2	251024	CROSS SHAFT GEAR	26226
3	210001	** CASTING HALF	27707
*4	210002	*** CASTING HALF	27708
5	244643	BEARING CUP	23197
6	244610	BEARING CONE	23198
7	209843	SEALS	26225
8	203293	RETAINING RINGS	27030
*9	203825	2½" LONG BOLT	27709
*10	203815	1½" LONG BOLT	27710
11	200300	PIPE PLUG	27711
*12	20030V	VENTED PLUG	27712
13	200200	KEY	27029
14	200111-127	CROSS SHAFT	27028
15	200100-01	PINION SHAFT	27027
+	207597	GREASE ZERK	27713

REPAIR PARTS LIST  
CARDINAL PART NO. A27849 (183-63) (G&G)



KEY NO.	PART NO.	DESCRIPTION
1	27852	Snap Hitch Yoke
2	27853	Uni-Shield Repair Kit
3	A25292	Repair Kit Complete
4	25293	Yoke 1x1-1/8 Rect.
5	25294	1x1-1/8 Rect. Shafting x 5'
6	25295	1x1-1/8 Rect. Tubing x 5'
7	27854	Inner Plastic Shield
8	27855	Outer Plastic Shield
9	A25298	Nylon Bearing, Thrust Washer & Snap Ring
10	25299	Yoke 1-9/32 x 1-13/32 Rect.
11	25301	Implement Yoke 1" Bore
	A27850	Tractor Half Assembly
	A27851	Implement Half Assembly

No Key Number