MODEL AM48

SICKLE BAR MOWER

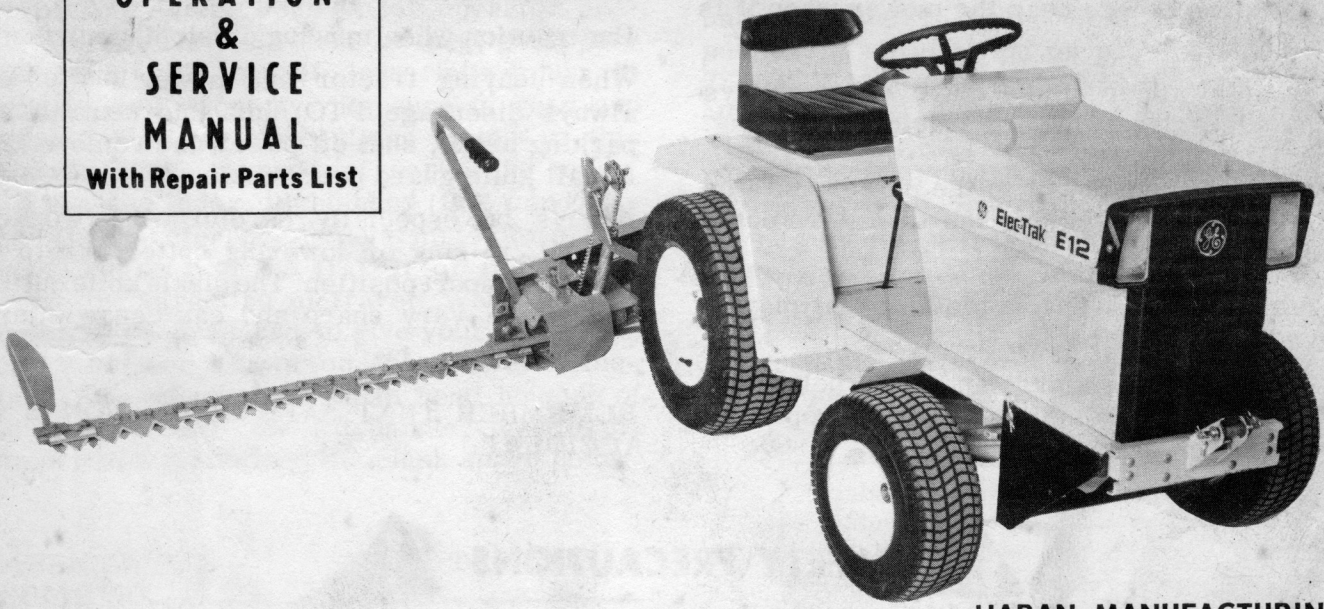
ATTACHMENT

for

Elec-Trak

TRACTOR

OPERATION & SERVICE MANUAL
With Repair Parts List

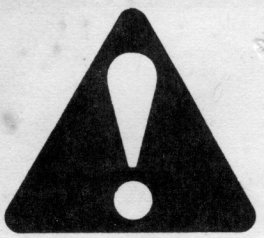


HABAN MANUFACTURING COMPANY

Racine, Wisconsin

Form 8895 (3/73)
Form GEH 4027

(Ser. 199,206)



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

This symbol is used to call your attention to safety precautions that should be followed by the operator to avoid accidents. When you see this symbol - Heed Its Warning.

Many hours of lost time and much suffering is caused by the failure to practice simple safety rules.

IT IS TOO LATE TO REMEMBER WHAT SHOULD HAVE BEEN DONE AFTER THE ACCIDENT HAS HAPPENED.

Read and become familiar with the owner's manual for your tractor and the mower before operating the mower.

Do not allow anyone to use the mower unless they have been instructed in how to operate it safely.

Never attempt to adjust, repair or service the mower while the tractor motor is running.

Do not allow others near the mower when it is operating.

Always stay clear of the drive belts, pulleys and sickle knives when the tractor is running.

Always disengage power to the mower and stop the motor before leaving the operators position.

Do not wear loose fitting clothing that may be blown into moving parts.

Be sure the sickle knives and drive belts have stopped before attempting to adjust, repair or service the mower.

CAUTION: The sickle knives and belts may continue to move several seconds after the clutch has been disengaged or the motor shut off.

Mark clearly or remove from any area to be mowed any objects which might be caught in or be stuck by the sickle bar.

Always keep all shields and guards in place.

Tractor and mower should always be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the equipment.

Operate the mower only in daylight or good artificial light.

Use caution when mowing on sloping surfaces.

When leaving tractor and mower unattended, always disengage PTO; shift into neutral, set parking brake, shut off power and remove key. Install knife guard over sickle.

Always be especially careful when working around, raising or lowering cutter bar to or from transport position. The sickle knife cutting edges are very sharp and can cause injury.

REMEMBER THAT SAFE OPERATION IS NO ACCIDENT.

SAFETY PRECAUTIONS

CAUTION: Before leaving the tractor for any reason, turn PTO and key switches to "OFF" and set tractor parking brake.

CAUTION: KEEP HANDS and feet away from the sickle.

CAUTION: DO NOT allow anyone to walk alongside, in front of, or behind the machine during operation.

CAUTION: The machine should not be lubricated or any adjustment made while it is RUNNING.

CAUTION: AVOID excessive speed.

HABAN SICKLE BAR MOWER ATTACHMENT

Your Haban Sickle Bar Mower is the finest sickle bar mower available anywhere for your compact tractor. Here's why: First of all, it is designed specifically to match your Lawn and Garden Tractor. Rugged, long-life construction assures you of highest performance with limited horsepower. It is equipped with anti-friction, heavy duty bearings in all important areas. The Haban Sickle Bar Mower provides more machine for your money, and following the points of service as listed below will give you years of successful operation and satisfaction.

OPERATING SUGGESTIONS

This manual will help you get the most value from your Haban Sickle Bar Mower. Read carefully all assembly, operating, adjusting and service information. You will find many helpful points which will not only save time but will help you operate the mower most efficiently.

Every effort has been made to incorporate all of the safety devices for operator protection. However, careless or negligent operation can still result in serious injury to persons and property. Be sure to read and follow all safety precautions listed in this manual. When in need of parts and major service, see index. Right-hand (R.H.) and left-hand (L.H.) reference is determined by standing at the rear of the tractor or mower and facing the direction of travel. When in need of parts, be prepared to give your dealer the serial number shown on the mower nameplate, located on the Pitman head housing of the mower near the lift handle. Locate the number and write it in the blank space below.

HABAN MODEL 454 SICKLE BAR MOWER
SERIAL NO. 20 1091 H

The Haban Sickle Bar Mower was designed for mowing areas which include tall weeds, grass, light brush, etc., but should not be used on very short grass. Sickle Bar Mowers are not effective in short grass. It is important that the appropriate ground speed be maintained when mowing with a Sickle Bar Mower.

OPERATING TRACTOR

For general cutting the range selector should be in "L" range for best results. For best operation, fuel level indicator should not be allowed to be down in the red area.

When mowing in extremely rough areas, reduce speed of tractor to meet existing conditions. Move range selector to the lowest range (LL). This prevents over-loading the sickle bar which in turn could reduce power pack range and hinder cutting.

Performance of the sickle knife depends on the following points, all of which are important: (1) sharpness of sickle knife; (2) wear blade adjustment; (3) straightness of knife bar; (4) hold-down clip clearance; (5) speed of sickle knife (approximately 1050 strokes per minute); (6) lead adjustment of sickle bar; (7) cutting pitch of shear fingers.

TRANSPORT POSITION:

The sickle bar mower can be transported from one location to another by raising the unit with the lift handle and locking it into position (as illustrated on page 6) BE SURE TO ALWAYS INSTALL KNIFE GUARD ON MOWER BAR WHEN TRANSPORTING. ALWAYS OPERATE AT CAREFUL SPEEDS IN TRANSPORTING AND AVOID MAKING SUDDEN OR SHARP TURNS WITH THE MOWER IN THE RAISED POSITION.

HOW TO OBTAIN SERVICE

Address all parts orders or correspondence regarding service to your Elec-Trak dealer or:

Haban Manufacturing Company
Mound and Marquette Street
Racine, Wisconsin 53404

Select any parts needed from the Exploded View Illustrations or Photographs. Using the Reference Letter on the Exploded View, obtain the correct Part Number and Part Name from the parts list. DO NOT USE THE REFERENCE LETTER WHEN ORDERING PARTS. Always order Parts by Part Number only.

CONTENTS

Your Haban Sickle Bar Mower is designed specifically for your tractor and is designed with all controls convenient to the operator. It cuts an effective 48" swath and operates from the dash-controlled KP 36 Rear PTO outlet. Initial installation of this outlet should be made by your dealer.

BE SURE TO FOLLOW ALL SAFETY HINTS AND PRECAUTIONS

SPECIFICATIONS

Cutting Width . . . . . Mows 48 "Swath
Drive . . . . . Belt Driven from Electric Motor
Suspension . . . . . Free-Floating, Spring Suspended
Mounting . . . . . Swivel, Vibration-Dampening
Cutting Speed . . . . . 1050-1200 strokes per minute
Stroke . . . . . Full 3" width
Shear Knives . . . . . High Carbon Steel
Guards . . . . . Open Face
Vertical Adjustment . . . . . 70°—45° below horizontal
90° vertical—lever controlled
Transport Position . . . . . Pin-Locked for Transport
Safety . . . . . Automatic Spring-Loaded "Swing Back" device protects against damage from solid objects
Construction . . . . . All-Steel, with Anti-Friction bearings

INITIAL USE

Prior to initial use of the HABAN Sickle Bar, the operator should completely familiarize himself with all tractor controls. This information and general attachment operating information is found in your Tractor Use and Care Manual. Refer to your manuals often.

1. Be sure mower has been properly assembled to tractor. Assembly instructions start on page 13.
2. Be sure mower is adjusted.
3. To start sickle bar mower, turn PTO switch to "ON" Run sickle bar mower for 5 minutes then shut PTO "OFF." Check for loosened bolts, etc., prior to starting to mow.

Before using the sickle bar, be sure the power pack is fully charged. If you are planning to operate the mower for an extended period of time, place the tractor on charge several hours before use to assure a maximum power supply.

STARTING OPERATION

Lower sickle bar down to ground level and remove guard. Start its motor by sitting on the tractor seat and turning the key switch "ON." Turn the PTO switch "ON" as directed in owners manual. For all normal use the PTO switch should be used to start and stop the sickle bar.

EFFICIENCY AND ECONOMY

During any mower operation, the forward speed should be regulated to keep the power use gauge indicator in the green or yellow zone most of the time. Continued use with indications in the red zone will open a circuit breaker and result in a power interruption to the sickle bar mower. In the event that the motor circuit breaker opens turn the PTO switch to "OFF" and after a few minutes the red button can be manually pressed into its reset position. The sickle bar can then be restarted in the usual manner.

⚠ WARNING: Before leaving the tractor for any reason, turn PTO and key switch to "Off."

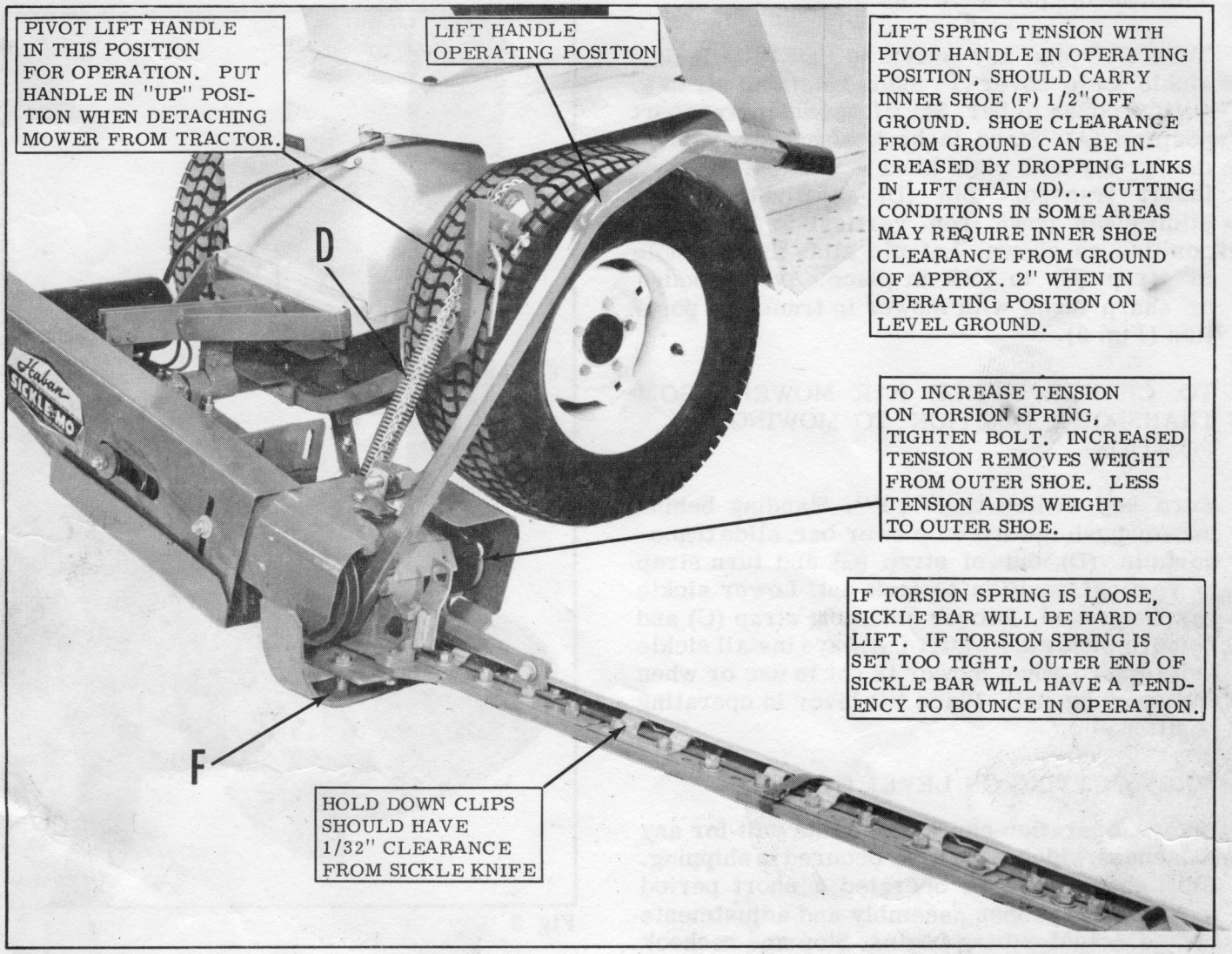


Fig.1

⚠ Keep lock strap (H) in place.

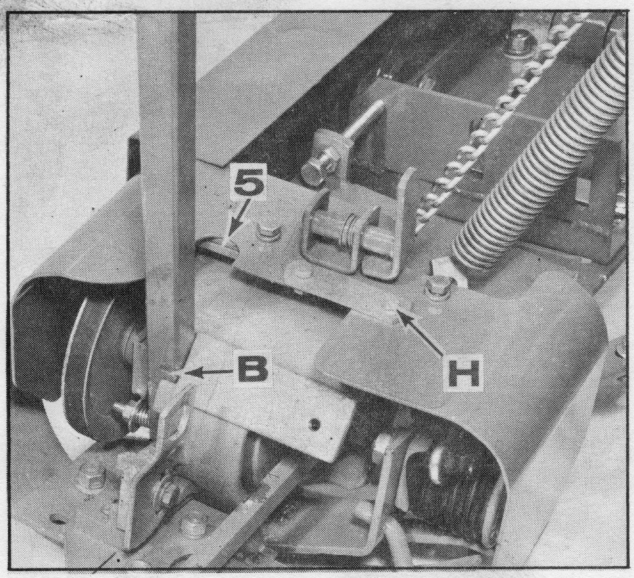


Fig.2

LIMIT STOP (Figure 4) NORMAL CUTTING: The limit stop (5) should be set with LOCK OUT STRAP (H) in place on slot. This will limit the travel of the Cutter Bar in cutting position to approximately 70 degrees above ground level. The lift arm must always be set in operating position (B) when mowing.

OPERATION

TRANSPORTING MOWER:

Turn PTO and key switch to "OFF." Install sickle knife cover (F) using retaining strap to secure cover to bar. Set lift handle in transport position (A). Stand in back of mower, raising mower bar with right hand to vertical position. Insert transport pin (D) as illustrated by sliding pin down from vertical to horizontal position as shown. Let pin slide through hole in strap (G) to lock in place. Avoid sudden or sharp turns with mower in transport position (Fig. 3).

TO CHANGE SICKLE BAR MOWER FROM TRANSPORT POSITION TO MOWING POSITION:

Turn key switch to "OFF". Standing behind mower push inward on mower bar, slide transport pin (D) out of strap (G) and turn strap to vertical position to lock out. Lower sickle bar to ground. Loosen retaining strap (C) and remove sickle knife guard. Always install sickle knife guard when mower is not in use or when transporting unit. Place lift lever in operating position.

WHEN CUTTING ON LEVEL GROUND

Before operation,check complete unit for any looseness which may have occured in shipping. Unit should then be operated a short period to check for proper assembly and adjustments before actual cutting begins. Stop and recheck all parts after 30 minutes of operation and retighten loose parts. Also follow lubricating instructions found on page 12. Operate tractor in L range. It will be necessary to regulate tractor forward travel to meet existing cutting conditions, which can vary greatly, depending on material that is being cut. RUN INNER SHOE APPROXIMATELY 4" AWAY FROM PREVIOUS SWATH EDGE FOR BEST PERFORMANCE. Cutter bar has additional width of cut to compensate for overlay. Care must be exercised not to operate tractor at excessive ground speed when cutting rough terrain. The lift arm must always be set in operating position (B) when cutting.

Under severe conditions the sickle knives should be sharpened after every four hours of operation. Additional knives and rivets are available for repairs, which makes it possible to always have a sickle knife assembly in good repair if one becomes damaged or worn.

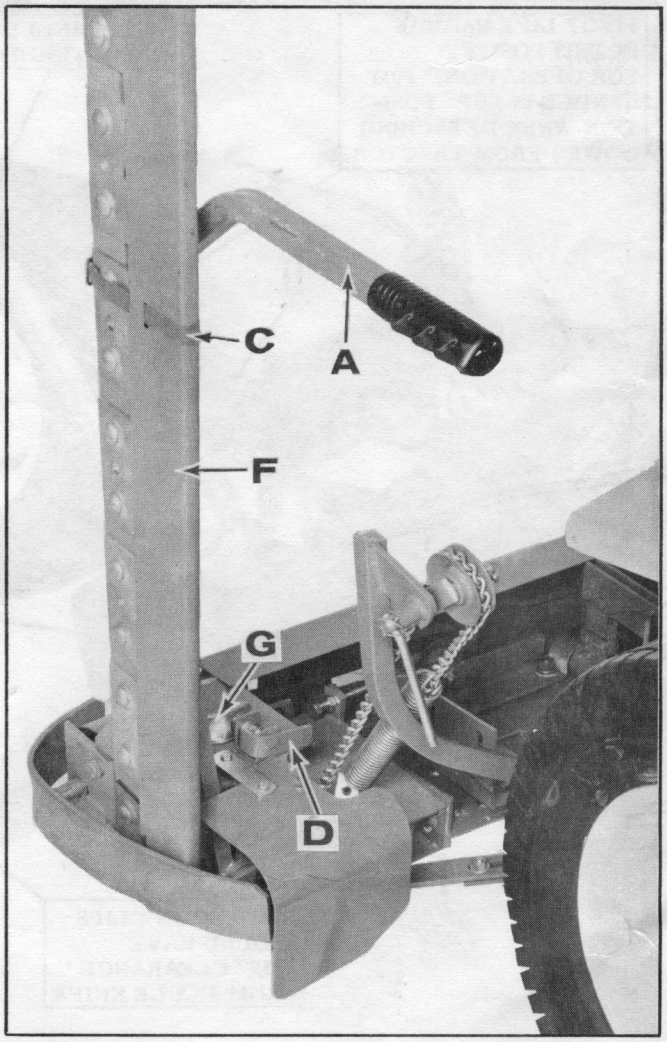


Fig. 3

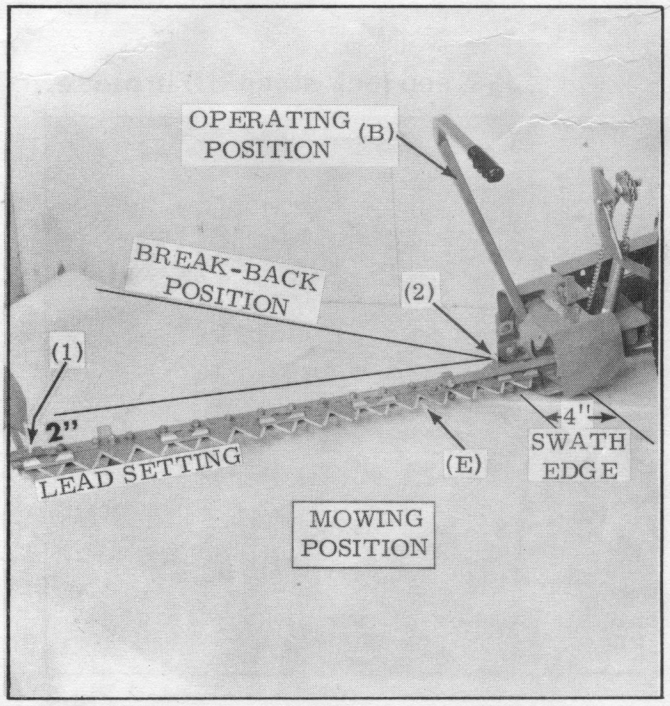
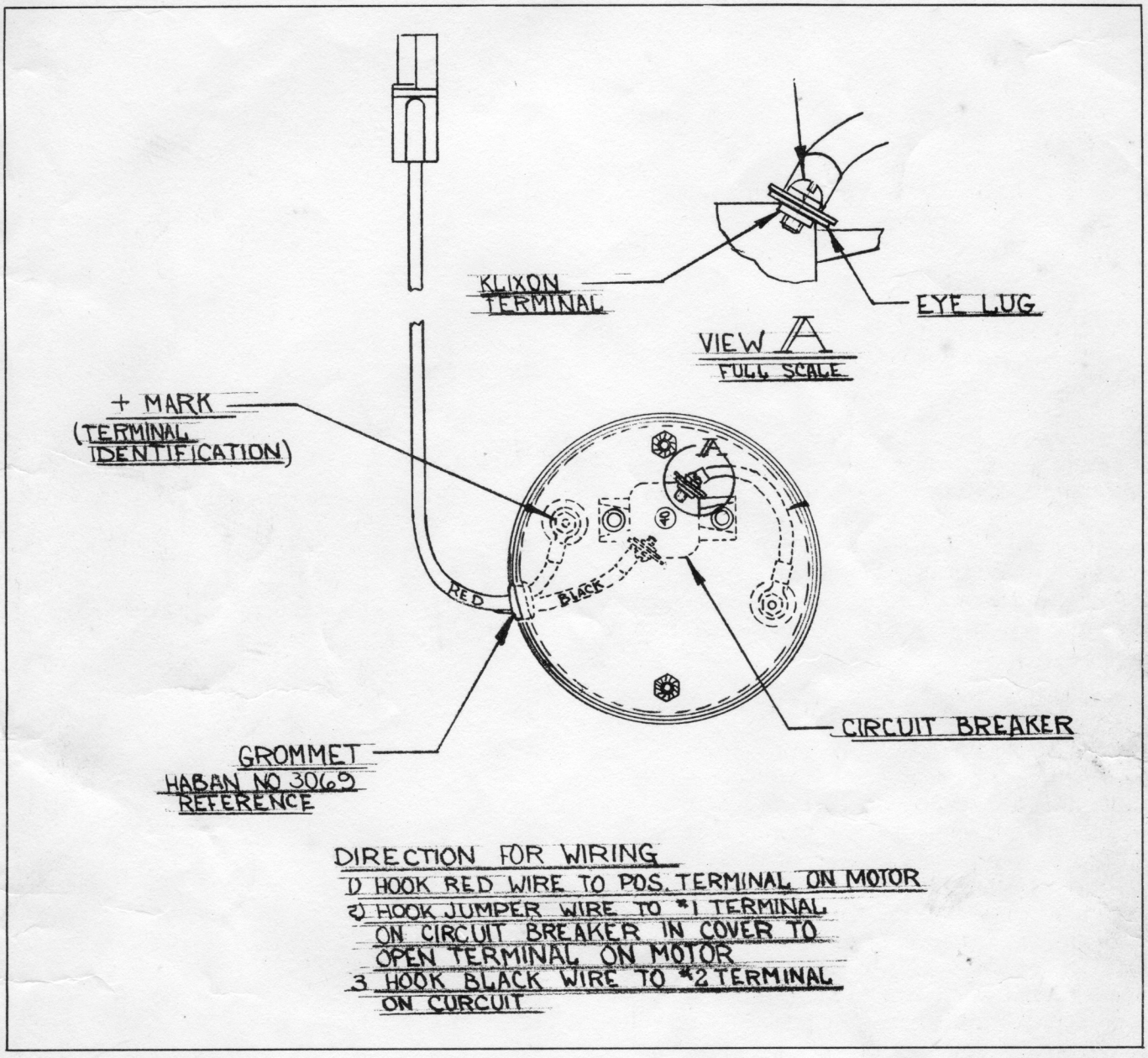


Fig. 4

MOTOR KIT WIRING DIAGRAM

Motor part # 8886 General Electric (4/73)



FORM #GEH 4027 GENERAL ELECTRIC SICKLE BAR (4/73) Late Product Changes

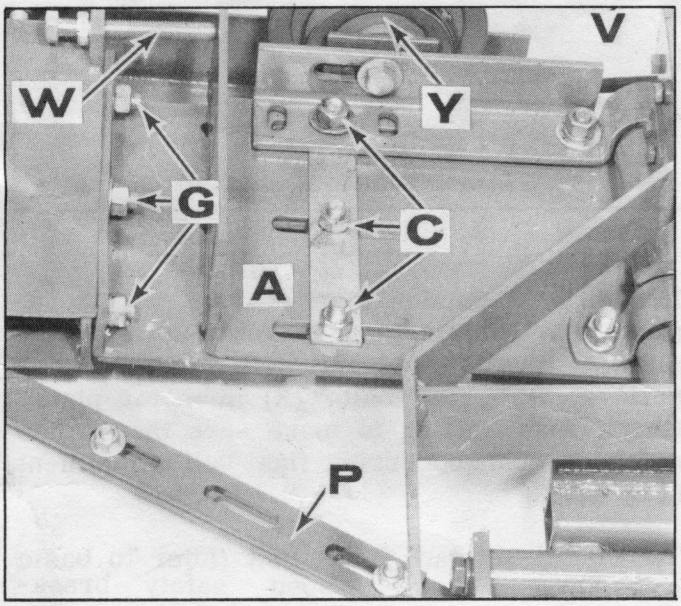
Bolt (C) in (Fig. 5, 7 & 8) are now reversed in plate (A) and any other photo where they appear. In (Fig. 5) anchor bolt (W) is reversed so head of bolt is in contact with plate (A).

SETTING LEAD OF SICKLE BAR

(Fig. 4) Improper lead adjustment of sickle bar assembly will create excessive side draft on tractor and poor cutting action, as well as possibly plugging sickle knife. Outer end of sickle bar at (1) should lead inner end (2) by two inches as illustrated in (Fig. 4). To adjust lead, loosen three vertical bolts (C) in plate (A) and two set screws in tie rod (P) (Fig. 5). Adjust cutter bar (E) to lead setting as illustrated in (Fig. 4), by pushing outer end of bar forward. Slots in carriage plate (A) will adjust accordingly to allow for change in lead setting. (Fig. 5). When proper setting is obtained tighten vertical bolts (C) and two set screws in tie rod (P). IMPORTANT: Proper V-belt tension will allow approximately 1/2" deflection of V-belt when applying firm finger pressure midway between pulleys (Fig. 8a). (See adjustment of drive belt, page 8).

Fig.18

Fig.5



AUTOMATIC BREAK-BACK (Figures 4 & 6)

The break-back automatically releases sickle bar into break-back position when hitting obstruction. The mower should be immediately shut "OFF" . Return sickle bar to normal cutting position, engaging break-back. This may be done by reversing tractor with sickle bar on ground, or manually. Unwarranted or frequent break-back releases indicate tension on the spring (F) should be increased. It is suggested an extra sickle knife assembly be kept on hand for easy replacement.

To disengage safety break-back manually, insert screw driver at (G) and pry break-back pivot open-at same time push sickle bar back to release catch. Fig. 6.

Fig.6

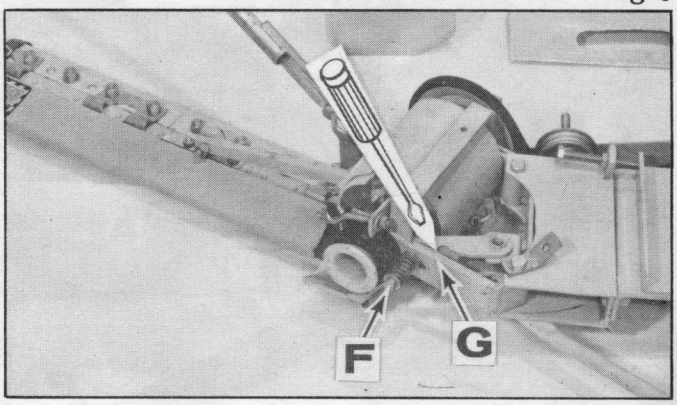
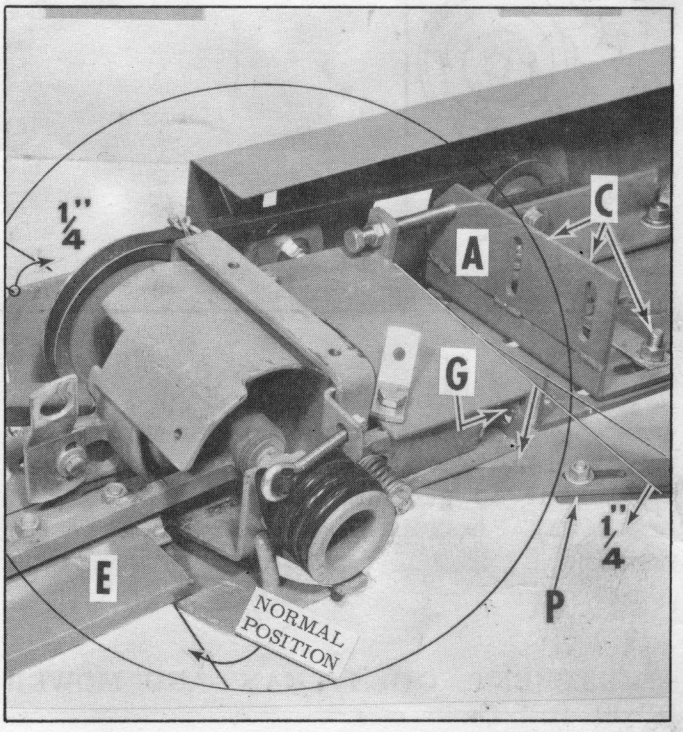


Fig.7



KNIFE POINT POSITION (Pitch Angle) (Fig. 7)

The pitch of the sickle bar (E) can be adjusted by loosening bolts (G) and two set screws in tie rod (P). With sickle knife cover in place raise sickle bar to vertical position and push forward to increase downward pitch of guards. For normal cutting the sickle bar (E) should be positioned with a downward pitch of approximately 1/4" from carriage plate (A) as shown (Fig. 7). It may be necessary to increase downward pitch of guards when cutting extremely heavy, tangled, or matted grass, or

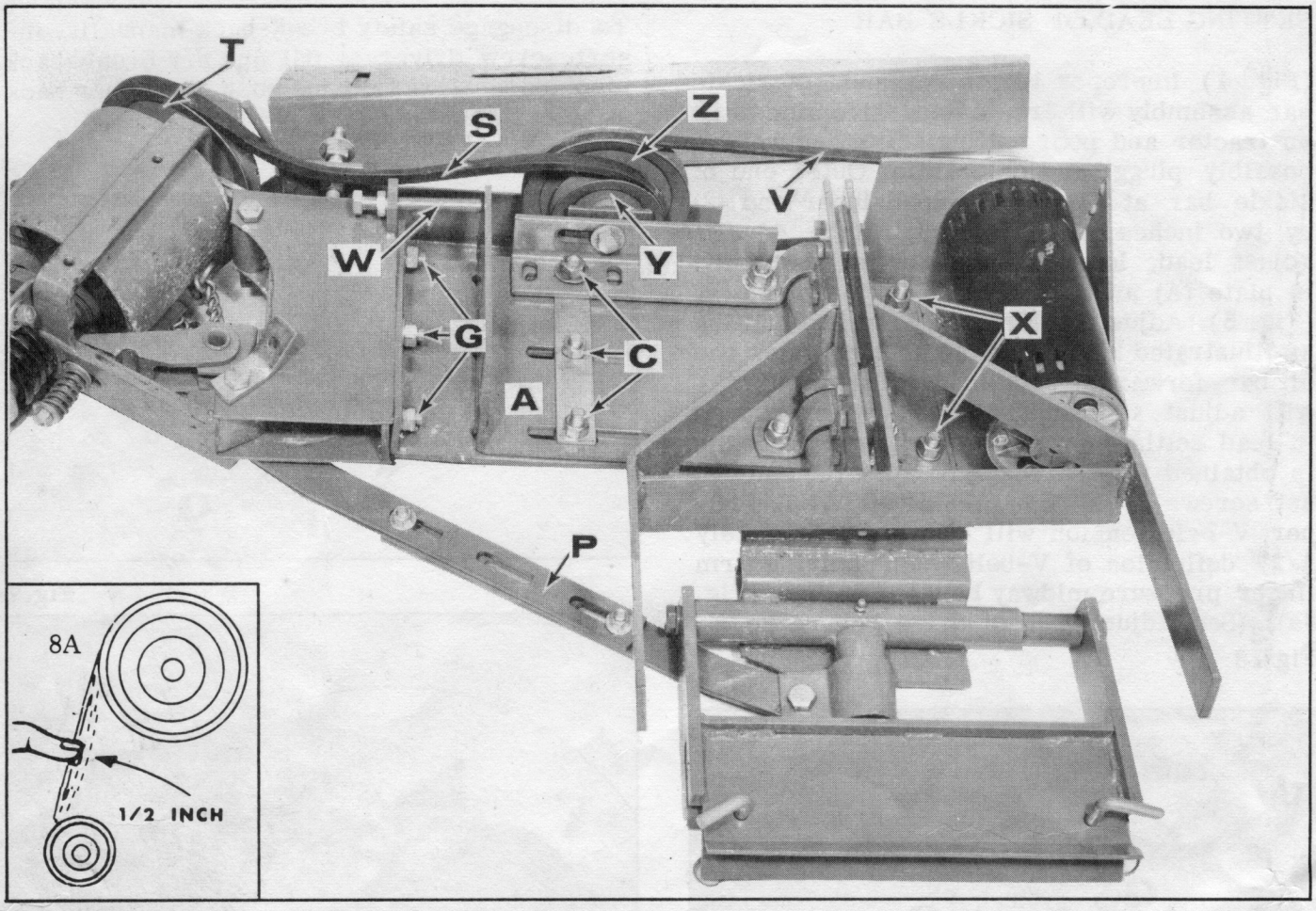


Fig. 8

if green undergrowth is intermingled heavily with dry grass and weeds from previous seasons. After desired setting is reached, lower sickle bar to ground. Retighten bolts (G) in breakaway housing and set bolts in tie rod (P).

ADJUSTMENT OF PITMAN AND MOWER DRIVE BELTS:

If additional tension is needed on v-belt (S) (Idler to basic sickle). Loosen bolts (C) in plate (A) and loosen two set bolts in tie rod (P). Turn adjusting bolt (W) until v-belt (S) is tightened. (Proper tension will allow approximately 1/2" deflection of v-belt when applying firm finger pressure midway between pulleys) (Fig. 8a). Retighten bolts (C) in plate (A) and set bolts in tie rod (P).

If additional tension is needed on v-belt (V) (Motor to Idler). Loosen bolts (X) in motor plate. Adjust for 1/2" deflection between pulleys. Retighten bolts (X) in motor plate. Check lead setting to make sure that it has not been changed during final belt adjustment (Fig. 4).

To install pitman drive belt (Idler to basic sickle), manually open safety breakback release. Loosen bolts (C) in motor plate remove motor to idler pulley; v-belt (V). Slide pitman drive belt over small idler pulley (Y) and pitman pulley (T). Push sickle bar back in operating position. Place motor drive v-belt over large idler pulley (Z) and motor pulley. Adjust v-belt for 1/2" deflection between pulleys and retighten bolts (X) in motor plate.

Sickle Knife Adjustment

Check the position of the forward ends of the sickle sections (B) to make sure that they protrude past the forward ends of the guards (E). For cutting loose precut hay, dense fine and loose under growths, etc., without clogging, the sickle must contact the material ahead of any guard. 1/32" to 1/16" protrusion of the sickle beyond the guard is sufficient. If your "wear-plates" (A) are worn half-way thru on the front edge, moving the wear plate forward will place the sickle in the proper position. If the wear plate is worn too much for making the proper adjustment, they should be replaced.

SICKLE ASSEMBLY REMOVAL

When it becomes necessary to remove the sickle for sharpening, section replacement or complete sickle replacement, remove the bolts holding the sickle head to bar and slide sickle out of guard assembly.

ALIGNMENT OF LEDGER PLATE SURFACES

Remove the sickle assembly and check all guards for alignment of surfaces. The alignment may be checked by using a straight edge or drawing a string tightly across these surfaces. Any guard being too high will create excessive clearance between the guard and the sickle sections. Misalignment can be corrected by bending guards up or down, as required. Hammer only on solid portion of guard beyond the lip.

WEAR PLATE ADJUSTMENT (Fig. 9)

The wear plates (A) support the back of the sickle sections (B) and guide the sickle bar in the guard recess. Wear plates have elongated holes for adjustment against the sickle bar (C) to prevent it from drifting forward and backward. Adjust by loosening the guard bolts (D) and sliding the wear plate forward against the sickle bar. Avoid a tight fit. Check the top surface of the wear plate with the guard surface (E). These two surfaces must be even.

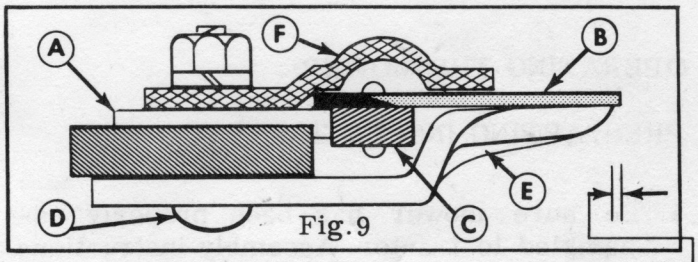


Fig. 9

SICKLE SECTIONS TO PROTRUDE 1/32" to 1/16" OVER GUARD

SICKLE CLEARANCE (Fig. 9)

If the sickle fits too loosely, in most cases proper clearance can be obtained by hammering down or prying up the front end of the hold down clips (F). The suggested method is to remove the sickle assembly. Reinsert the sickle and adjust each clip as it is reached, for the entire length of the bar. Bend each clip up or down as required. The approximate clearance to be maintained should not exceed 1/32". Fitting these clips too tightly will cause binding or scoring, excessive vibration and chatter. Lubricate freely.

CUTTING FAILURE

A. Check sharpness of sickle sections.

1. If sharpening is necessary a sickle grinder with a holder should be used for this operation to maintain correct grinding angle. (Same as original)

2. Replace damaged sickle sections.

B. Check fit of sickle sections to guards and wear plates. If the sickle sections are sharp, clean cutting is entirely dependent upon the following:

1. Alignment of guard surfaces.
2. Wear plate adjustment.
3. Straightness of cutter bar.
4. Pitch of guards.
5. Hold down clip clearance.
6. Proper lead setting of mower.
7. Improper speed of sickle in relation to forward travel of tractor.

Be sure the sickle sections are sharp at all times and held close to the guards by the sickle clips. Be careful, however, of having them too tight as this will cause binding. Always lubricate well with oil at the point on the bar and guard assembly where the clips contact the sickle assembly.

OPERATION

OPERATING THE MOWER:

PRESTARTING INSPECTION:

1. Be sure mower has been properly assembled to tractor. Assembly instructions start on page 13.
2. Be sure mower is adjusted.
3. To start sickle bar mower, turn PTO switch to "ON." Run sickle bar mower for 5 minutes, then shut PTO "OFF". Check for loosened bolts, etc; prior to starting to mow.

STOPPING THE MOWER:

To stop sickle bar mower, turn PTO switch to "OFF."

METHOD OF MOWING:

Before mowing a new plot of grass, always stop to analyze the area for best mowing procedure. Consider also the height of grass to be mowed, type of terrain (level, hilly or pitted), as well as the presence of rock or trash. Each condition will require certain adjustments or precautions, as outlined in the following pages.

⚠ CAUTION: Before servicing machine, turn PTO switch "OFF" and disconnect cable from PTO receptacle.

⚠ CAUTION: Pick up all rocks, stones and other debris you can find before mowing in a new area. Enter the area cautiously.

Sickle bar mower can operate from 60 degree above horizontal to 45 degree below horizontal. It may be necessary to release some tension on the torsion spring to allow mower bar to drop to lowest angle.

If several years of dead grass has accumulated in areas being cut, particularly on hills or slopes, it may be necessary to cut against the slope due to dead material leaning forward, thereby not allowing the sickle to cut cleanly.

Test pattern cutting will soon show you the most appropriate way to approach the task. Remember, the proper settings, a sharp sickle, correct forward speed, and good general maintainance will enable you to cut any reasonable patch of grass with satisfaction. Overlooking any one of the above points may deter from the machine's performance. A few points are listed below:

OPERATING SICKLE BAR MOWER ON AN ELEC-TRAK TRACTOR

Proper ground speed for mowing depends upon (1) the height, density, and type of grass to be cut and (2) field or yard conditions. When mowing, always operate engine in (L) range. This is necessary to maintain proper sickle speed.

Operation of Elec Trak tractor enable you to easily obtain the proper ground speed needed for best mowing performance with the sickle bar mower. A short amount of testing when starting to mow in the various conditions that you find, will enable you to determine the most appropriate speed for that particular condition. Too fast a forward ground speed will cause problems as outlined in paragraph three as listed in operating tips (page 11).

Exceptionally tall grass or weeds, uneven terrain, may require you to operate your tractor at a much slower speed than you would normally use. On the other hand sparse weeds etc., may enable you to operate at a higher rate of forward speed that would normally be used under regular cutting conditions.

⚠ SAFETY PRECAUTIONS ⚠

Do not allow anyone to walk in front of, alongside, or behind machine during operation. Keep hands and feet away from sickle until it has come to a complete stop.

⚠ REMEMBER SAFETY PAYS.

Always slow down the forward speed of the tractor at the time of making a sharp turn, cutting on a radius, on banks or slopes or other uneven terrain.

✱ SERVICE TIPS

PROBLEM	SOLUTION
1. Cutter bar outer shoe bounces or digs into ground surface.	Adjust torsion spring as indicated in figure 1, (Page 5).
2. Inner shoe dragging on ground.	Raise inner shoe assembly by adjustment of lift spring (Fig. 1, page 5). Make sure lift chain is properly assembled.
3. Mower does not cut cleanly, drags hay under sickle, cutting pattern shows blank or skipping points.	Adjust forward travel of speed to coincide with sickle knife action. Check setting of hold down clips (Page 9). Check lead setting (See page 7).
4. Bunching of cut material in front of inner shoe after adjustment of lift spring.	Inner shoe is being run too close to edge of previous swath. Allow approximately 4" overlap. Fig.4 (Page 6).
5. Failure to cut grass and weeds.	Check clearance of sickle to guards - fit should be snug, 1/32" clearance. Tap metal hold-down clips with hammer to adjust. Sharpen sickle section if dull. Check pitch of guards and lead of sickle bar.
6. Mower motor power interrupted.	Mower circuit breaker tripped, reset manually. Frequent tripping indicates over loading or the need for maintenance.

SERVICE TIPS FOR SICKLE BAR MOWER

Operation of Elec Trak tractor enables a wide variance of forward speed at a single throttle setting without necessarily taking into consideration the type of material that is being cut. Listen below are some of the tell-tale signs which will indicate when you are operating your tractor in excess of reasonable performing speeds:

1. Jagged or uneven cutting indicates too fast a forward ground speed.

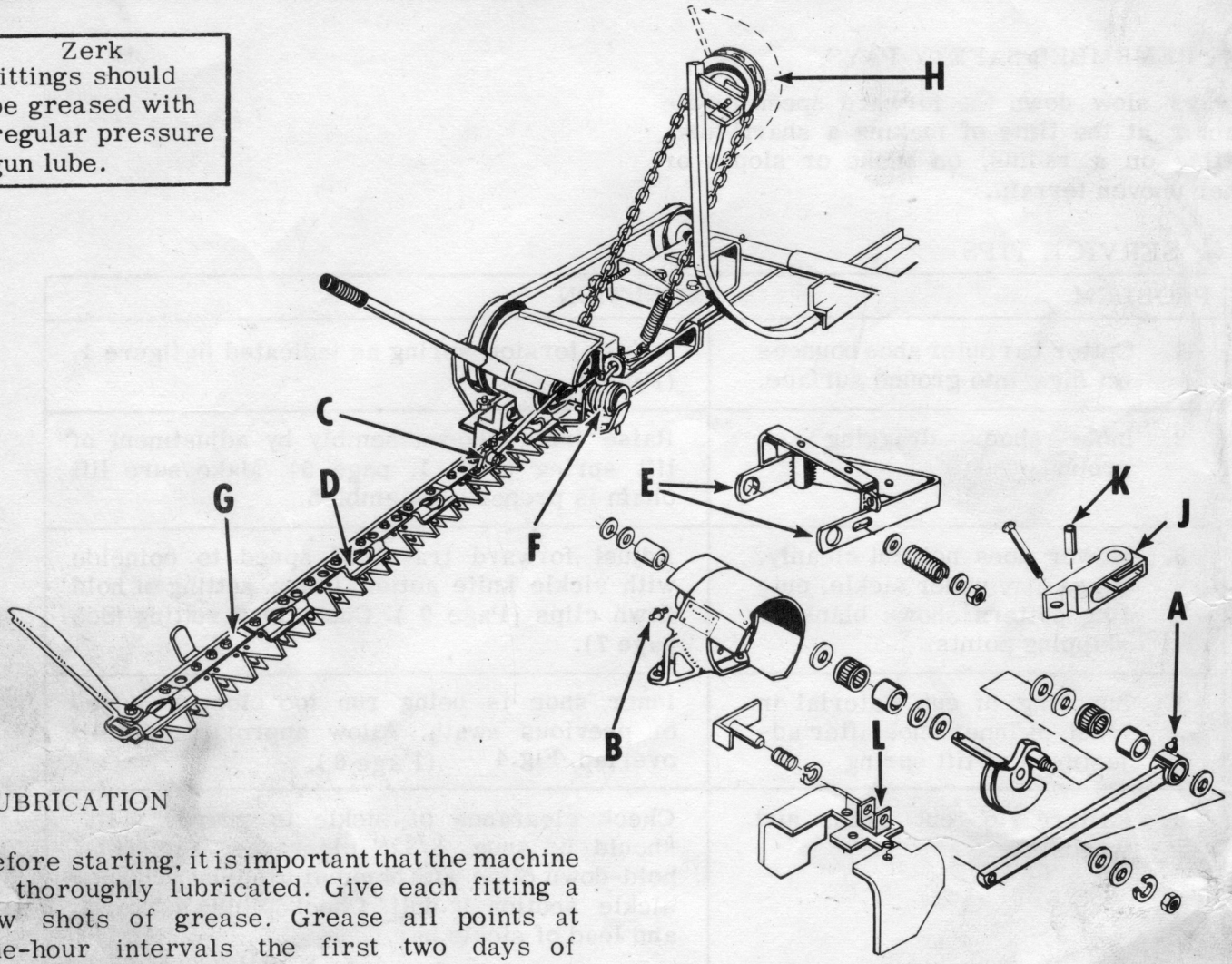
2. Plugging sickle assembly could be created by either excessive forward speed, improper lead adjustments, improperly installed hold down clips, dull sickle or incorrect pitch angle of sickle bar.

Cutting of heavy, short undergrowth, intermingled with tall weeds may require a slower forward speed than would normally be used for weed mowing. Be certain that your sickle assembly is always kept sharp.

⚠ CAUTION: Never attempt to force the sickle bar mower to raise, if the outer end of the bar is lodged or caught in foreign debris, dirt or heavy underbrush. Give your tractor and the equipment every possible opportunity to operate efficiently. Attempt to reverse tractor or move forward carefully until sickle bar is released from entaglement or -- stop tractor -- set parking brake - disengage PTO switch, dismount from tractor and release mower bar from entanglement manually, then proceed.

MAINTENANCE

Zerk fittings should be greased with regular pressure gun lube.



LUBRICATION

Before starting, it is important that the machine is thoroughly lubricated. Give each fitting a few shots of grease. Grease all points at one-hour intervals the first two days of operation and then twice each day thereafter. Entire unit should be greased at least once each four hours during continous operation.

The following fittings require grease every two hours of machine operation:

(A) Pitman crank pin
(B) Crankshaft

REMEMBER: Too much oil and grease will do no harm, but lack of it means excessive wear and machine failure.

The following points require lube oil every two hours of operation.

C. Pitman Head
D. Sickle hold down clips
E. Two inner shoe pivots
F. Torsional lift spring
G. Wear plate and moving points
H. Transport spring pulley
J. Spring release pivot assembly
K. Spacer break away housing
L. Quick pin assembly

The drive motor does not require lubrication as it is equipped with permanently lubricated bearings.

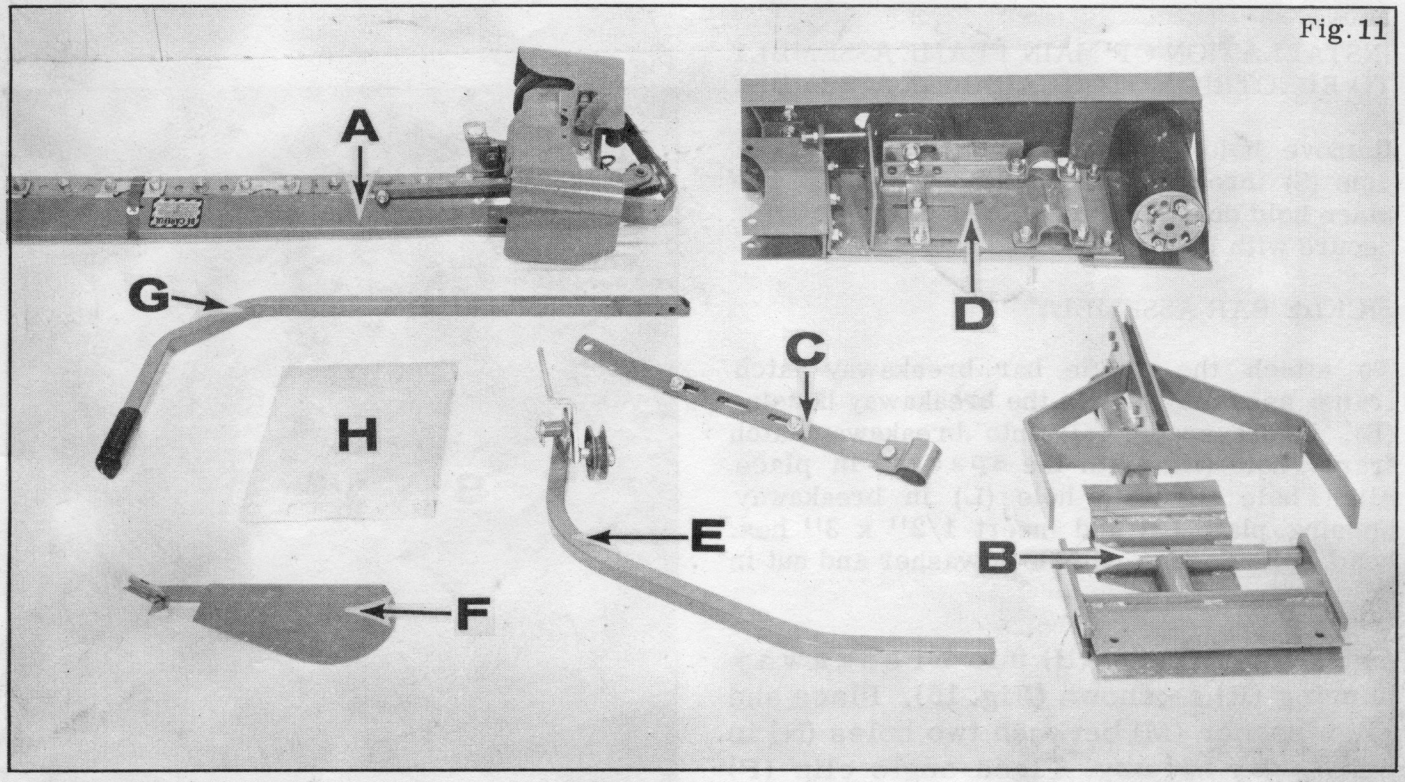
MAINTENANCE

Adjust the belt tension described under "Belt Adjusting" on page 8. Proper tension allows for approximately one-half inch deflection when finger pressure is applied midway between pulleys. Check V-belt for wear. Replace worn belts with belts supplied only by

CLEANING

⚠ Do not attempt to clean the machine while it is operating. STOP MACHINE. For best and lasting results, the machine should have all dirt accumulations removed from sickle bar. Do not allow machine to stand for long periods without cleaning. Inside storage will also prolong its operating expectations.

Fig. 11



Your sickle bar attachment and all necessary parts and hardware are packed in two cartons. Unpack cartons carefully to insure that all parts are accounted for. Lay out all assemblies in the position as shown (Fig.11).

The Sickle Bar Mower consists of the following:

MOWER CARTON

A (1)-Basic Mower Assembly

CARTON OF MOUNTING PARTS

B (1)-Main Frame
C (1)-Tie Rod
D (1)-Electric Motor-Carriage Assembly
E (1)-Carrier Arm Assembly
F (1)-Grass Divider Board
G (1)-Lift Lever Extension
H (1)-Bag of Parts

LIFT ARM INSTALLATION

Remove two lift straps (M) and spring (N) on basic sickle as shown (Fig. 12).

Insert lift arm (G) through same bolt used for lift straps. Thread two springs (Q) into place as shown by arrow (Fig. 13). Secure with washer and nut that were removed from left straps.

Fig. 12

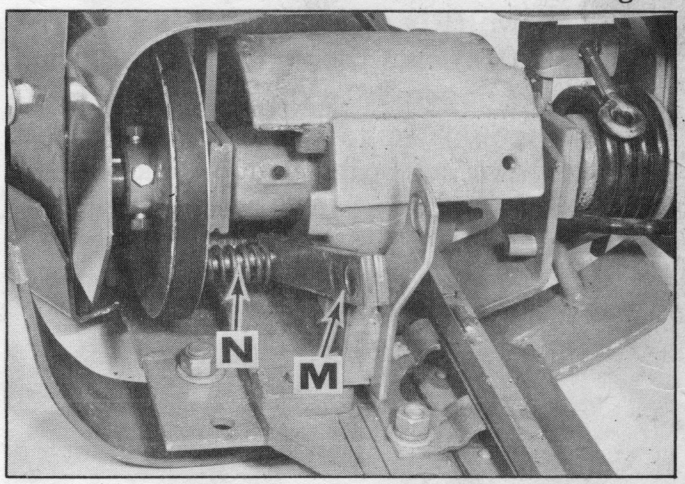
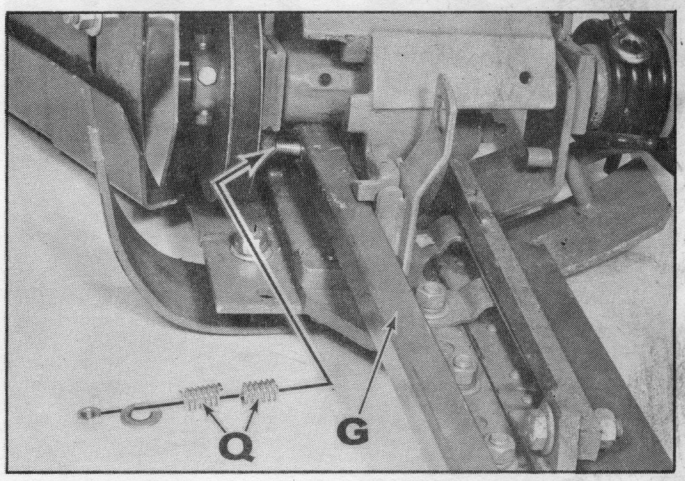


Fig. 13



INSTALLATION OF MAIN FRAME ASSEMBLY TO ELECTRIC MOTOR CARRIAGE ASSEMBLY

Remove hold down clamp (R) slide carrier pipe (S) through second hold down clamp. Replace hold down clamp (R) over carriage bolts. Secure with lock washer and nut.

SICKLE BAR ASSEMBLY

To attach the sickle bar breakaway latch frame assembly (H) to the breakaway housing (B), insert spacer (J) into breakaway latch frame hole (K). With the spacer in place, align hole (K) with hole (L) in breakaway housing plate (B) and insert 1/2" x 3" hex. head bolt. Secure with lock washer and nut in (Fig. 14).

Swing latch frame (H) into breakaway housing (B) as shown (Fig. 16). Place and align spacer (M) between two holes (N) in breakaway housing. Place angle clip (P) over hole (N). Keep angle clip in the position as shown (Fig. 16). Thead 1/2 x 3-1/2" hex. bolt (R) down through angle clip and hole (N). Loosen 3/16 x 1" set bolts in tie rod (T); adjust tie rod to align with bolt (R) retighten set bolts. Keep lock washer and hex. nut loose at this point on bolts(R).

Fig. 14

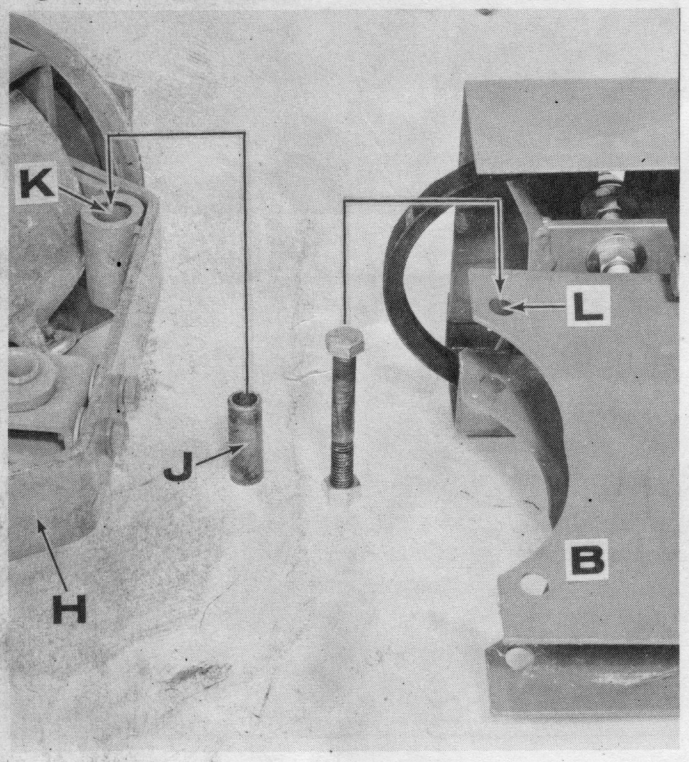


Fig. 15

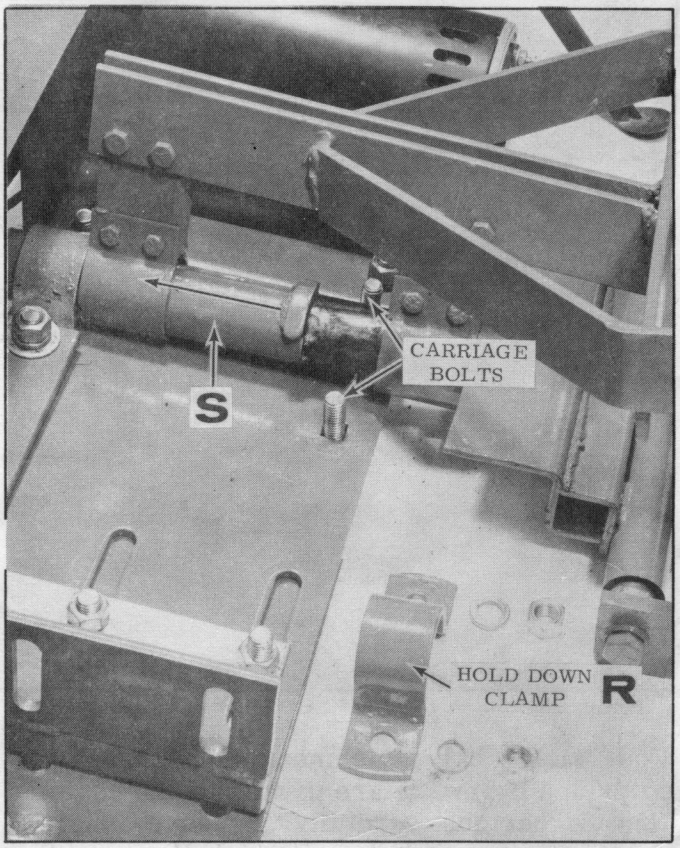
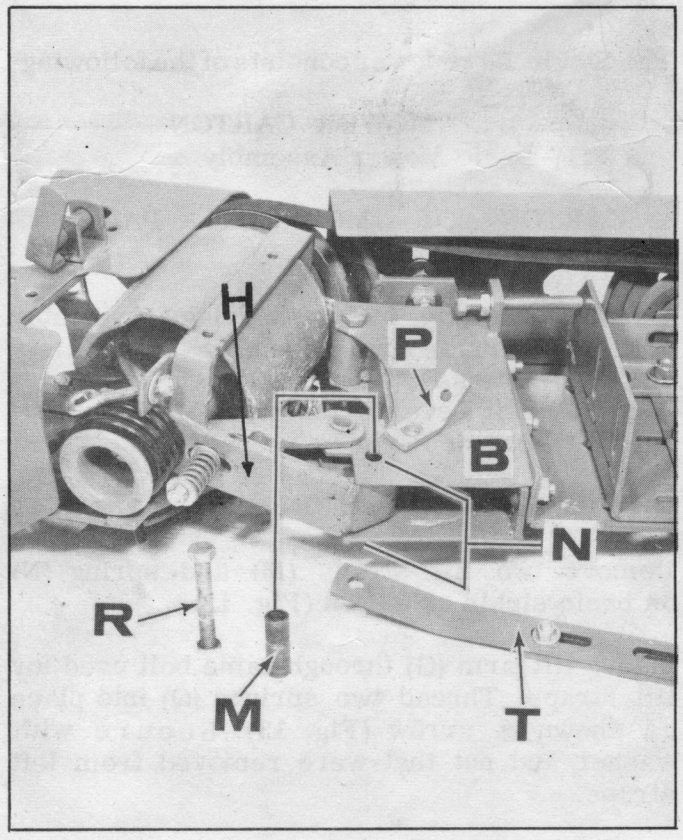


Fig. 16



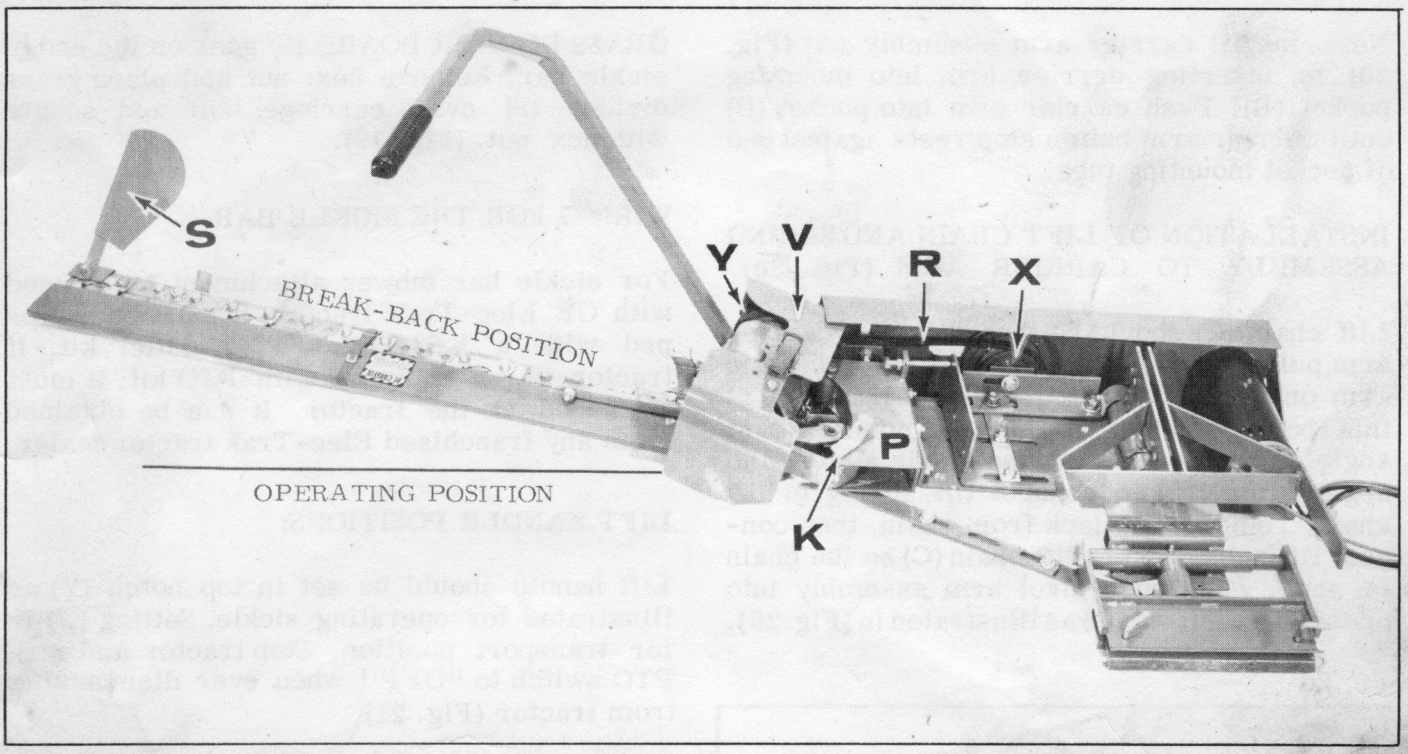


Fig. 19

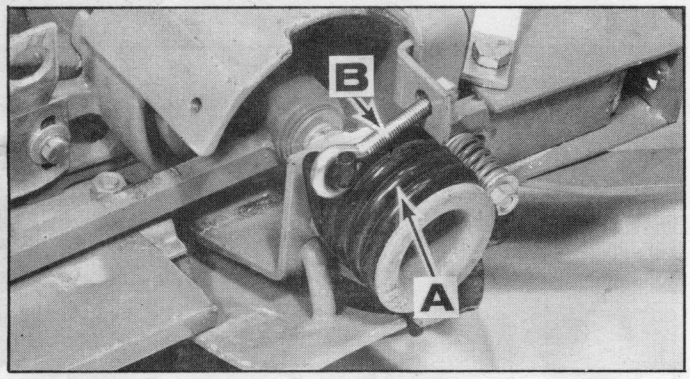


Fig. 17

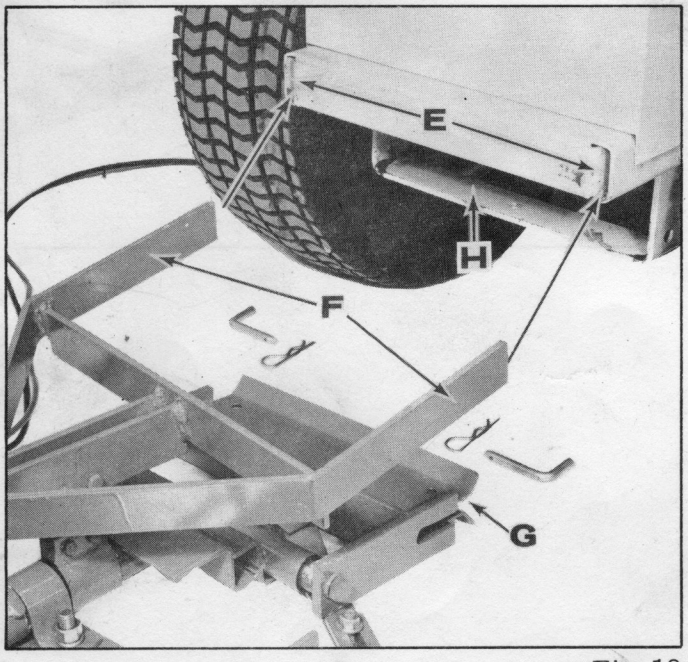


Fig. 18

PITMAN V-BELT HOOK UP (Fig. 19)

Leaving mower assembly in break back position, install v-belt (R) as follows: Remove housing stop cover (V). Slide v-belt (R) onto small idler pulley (X), and over pitman pulley (Y). Replace housing stop cover (V). See v-belt adjustments on page 8.

FINAL ADJUSTMENT OF PITMAN DRIVE BELT

Standing in back of mower, push sickle bar out into operating position (Fig. 19). Use firm hand pressure on backside of sickle bar assembly engaging breakaway latch

Tighten hex. bolt (K) securely in breakaway housing (P).

NOTE: Torsion spring (A) should not be attached to torsion adjusting bolt (B) at this point (Fig. 17).

INSTALLATION OF SICKLE BAR MOWER ON TRACTOR

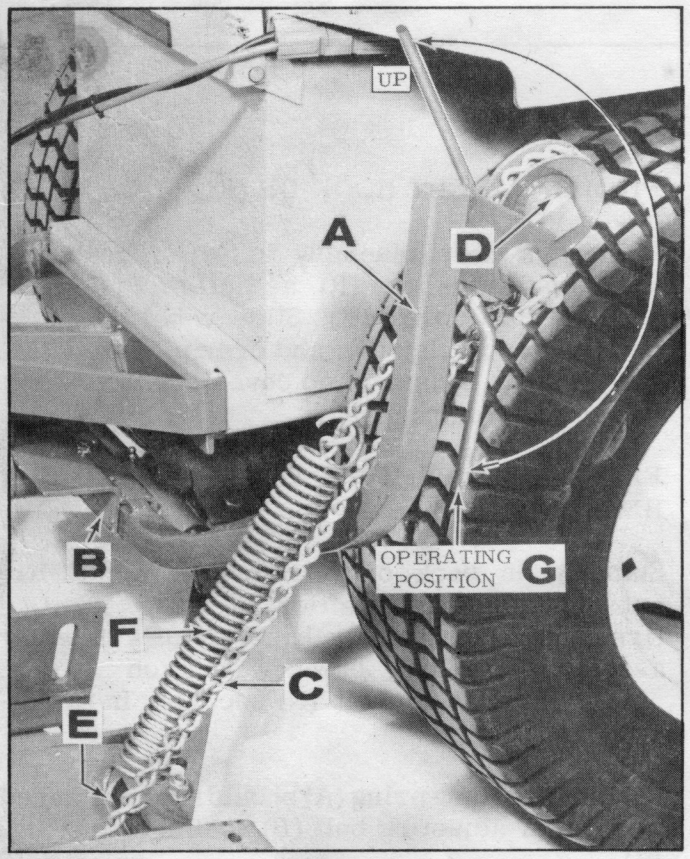
Slide lift arm (F) into two slots (E) at rear of tractor frame. Guide drawbar hitch (G) onto lower bracket (H) at rear of tractor frame. Secure with two clevis pins and cottor pins.

Next, install carrier arm assembly (A) (Fig. 20) by inserting carrier arm into mounting pocket (B). Push carrier arm into pocket (B) until carrier arm button stop rests against end of pocket mounting tube.

INSTALLATION OF LIFT CHAIN AND SPRING ASSEMBLY TO CARRIER ARM (Fig. 20).

Lift chain (C) should be threaded over carrier arm pulley (D). NOTE: Be certain that eccentric arm on carrier pulley is in "up" position at this point. Anchor clip (E) is positioned at angle shown and lift spring (F) is attached to angle clip (E). To connect lift spring to lift chain, remove all slack from chain, then connect lift spring (F) to lift chain (C) so the chain is snug. Then push pivot arm assembly into operating position (G) as illustrated in (Fig. 20).

Fig. 20



Inner shoe of sickle should then be approximately 1/2" off from floor at this point. For added clearance, drop additional links of chain. Having inner shoe approximately 1/2" off from floor or ground level when sickle is not operating will allow inner shoe to float more easily over uneven terrain, precut material, and other obstructions.

GRASS DIVIDER BOARD (S) goes on the end of sickle bar. Remove hex. nut and place grass divider (S) over carriage bolt and secure with hex. nut. (Fig. 19).

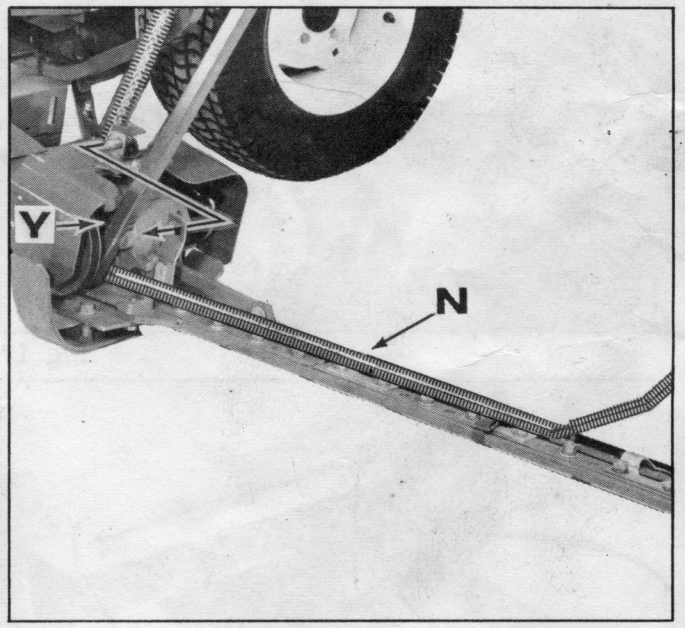
WIRING FOR THE SICKLE BAR

For sickle bar mower attachment to be used with GE Elec-Trak tractor. It must be equipped with a KP36 Rear PTO outlet kit. If tractor is not equipped with PTO kit; it must be added to the tractor. It can be obtained from any franchised Elec-Trak tractor dealer.

LIFT HANDLE POSITIONS:

Lift handle should be set in top notch (Y) as illustrated for operating sickle. Setting (N) is for transport position. Stop tractor and turn PTO switch to "OFF" when ever dismounting from tractor (Fig. 21).

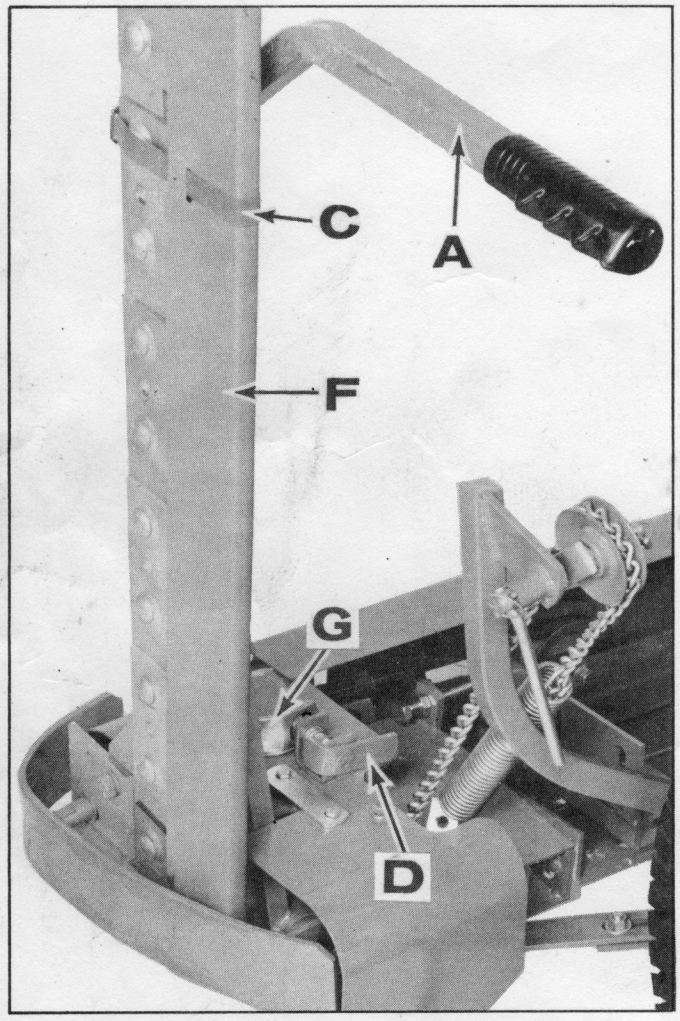
Fig. 21



TRANSPORTING MOWER:

Install sickle knife cover (F) using retaining strap to secure cover to bar. Set lift handle into transport position (A). Stand in back of mower, raising mower bar with right hand to vertical position. Insert transport pin (D) as illustrated by sliding pin lever down from vertical to horizontal position as shown by arrow. Let pin slide through hole in strap (G) to lock in place. Avoid sudden or sharp turns with mower in transport position (Fig. 21-22).

Fig. 22



NOTE: Never operate sickle bar mower over 45 degrees above horizontal. If sickle bar mower is raised higher than 45 degrees above horizontal during operation, Pitman arm will strike lock strap and could damage sickle knife or pitman arm assembly. The lock strap prevents sickle knife from accidentally being run, while in vertical or transport position, above 70 degrees above horizontal.

Haban
HABAN MANUFACTURING CO RACINE WIS U.S.A.
SICKLE-MO

REPAIR PARTS LIST

MODEL AM 48 SICKLE BAR MOWER

The following pages contain a parts list and views of the various units so that parts desired may be easily located.

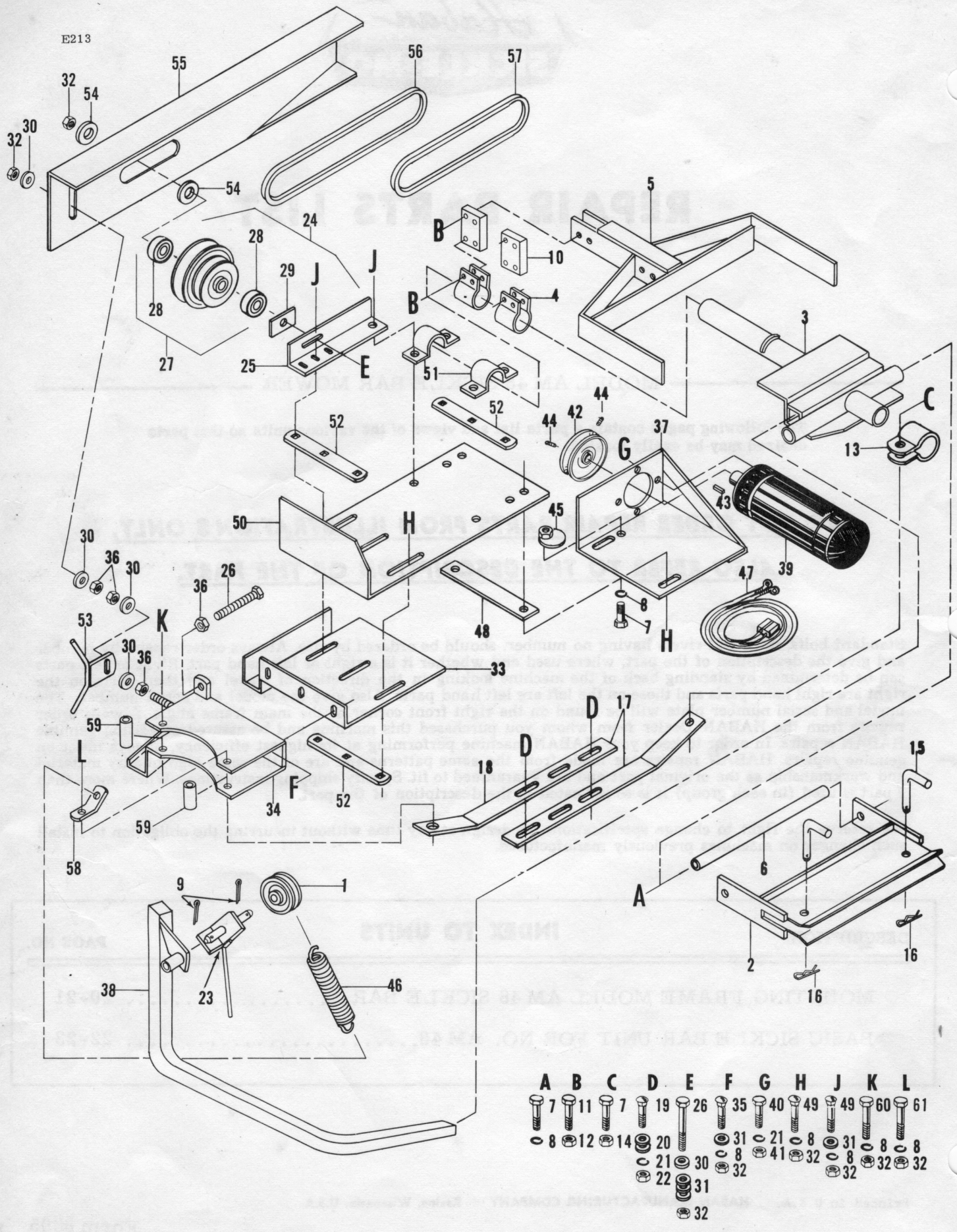
DO NOT ORDER REPAIR PARTS FROM ILLUSTRATIONS ONLY, ALSO REFER TO THE DESCRIPTION OF THE PART.

Standard bolts, nuts, and rivets having no number, should be ordered by size. Always ordér repairs by number and give the description of the part, where used and whether it is a right or left hand part. Right or left parts can be determined by standing back of the machine looking in the direction of travel and then parts on the right are right hand parts and those on the left are left hand parts. Also give the model and serial number. The model and serial number plate will be found on the right front corner of the main frame angle. Always order repairs from the HABAN Dealer from whom you purchased this machine and be assured of getting genuine HABAN repairs. In order to keep your HABAN machine performing at its highest efficiency, always insist on genuine repairs. HABAN repairs are made from the same patterns and are of the same high quality material and workmanship as the original part and are guaranteed to fit. Specify shipping instructions. Where more than 1 part is used (in each group) it is so indicated in the description of the part.

We reserve the right to change specifications on design at any time without incurring the obligation to install such changes on machines previously manufactured.

INDEX TO UNITS

Printed in U.S.A. HABAN MANUFACTURING COMPANY Racine, Wisconsin, U.S.A.

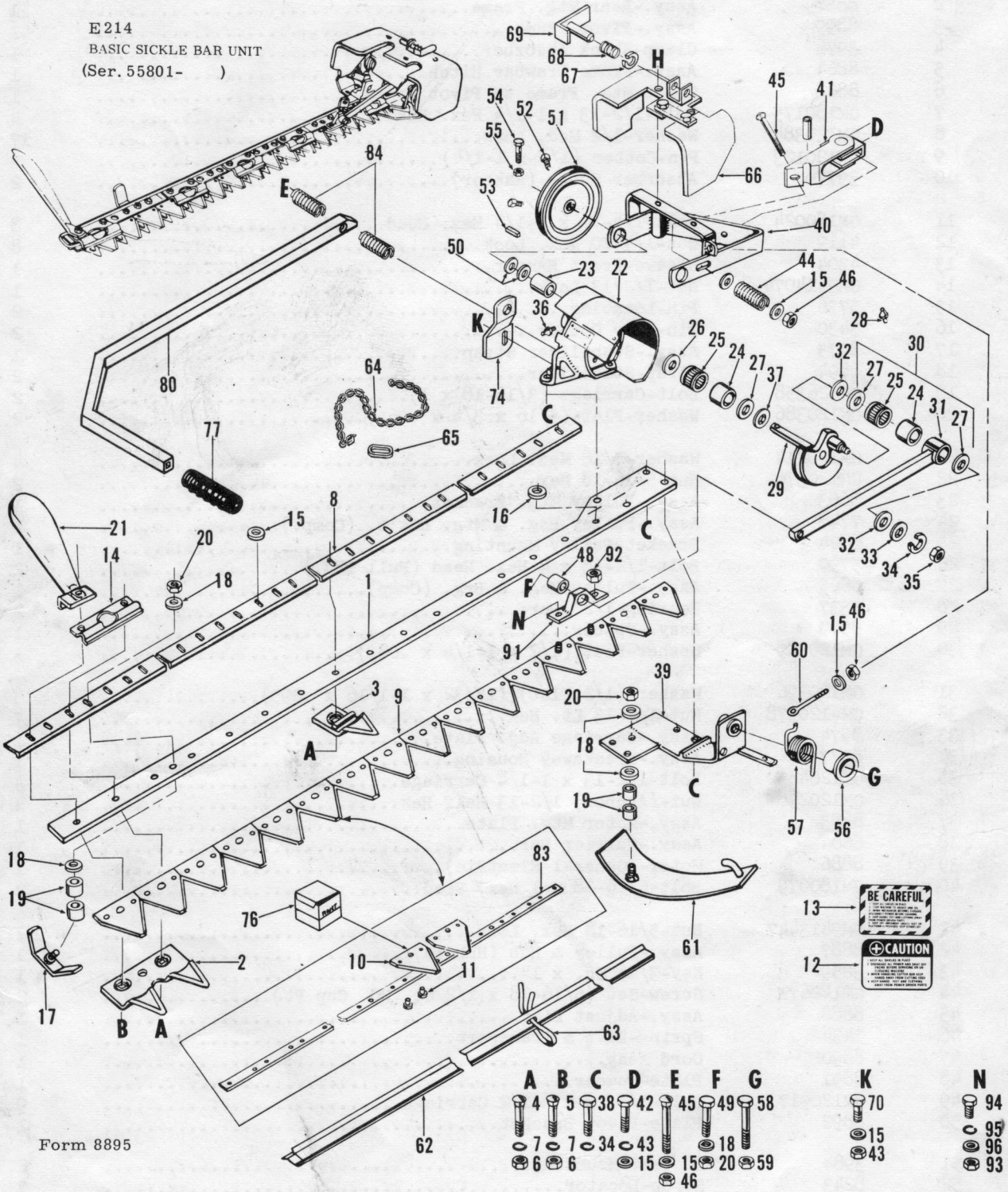


A	B	C	D	E	F	G	H	J	K	L
7	11	7	19	26	35	40	49	49	60	61
8	12	14	20		31	21	8	31	8	8
			21	30	8	41	32	8	32	32
			22	31	32			32		
				32						

GENERAL ELECTRIC SICKLE BAR MOWER - 45401

Ref. No.	Part No.	Description	No. Req.
1	4676	Assy.-Pulley & Hub	1
2	8857	Assy.-Rear Mtg. Frame	1
3	8899	Assy.-Pivot Frame	1
4	3976	Clamp-Shock Absorber	1
5	8864	Assy.-Frame Drawbar Hitch	1
6	8868	Shaft-Mtg. Frame to Pivot Frame	1
7	GM180175	Bolt-1/2-13 x 1-1/4 Hex. Head	4
8	GM120384	Washer-1/2 Med. Lock	17
9	GM120123	Pin-Cotter (1/8 x 1-1/4)	2
10	3977	Absorber-Shock (Rubber)	2
11	GM180024	Bolt-1/4-20 x 1-1/4 Hex. Head	8
12	4119	Nut-1/4-20 Hex. Lock	8
13	4304	Sleeve-Front Hanger	1
14	GM9414074	Nut-1/2-13 Lock	1
15	5736	Pin-Locating	2
16	3430	Pin-Hair Cotter	2
17	8975	Assy.-Stabilizer Strap	1
18	8894	Strap-Stabilizer	2
19	GM126358	Bolt-Carriage (3/16-18 x 1)	2
20	GM120386	Washer-Flat (5/16 x 3/4 x .065)	2
21	GM120214	Washer-5/16 Med. Lock	4
22	GM120376	Nut-5/16-18 Hex	2
23	5663	Assy.-Pulley Mtg. Bracket	1
24	7748	Assy.-Pulley Hsg. & Mtg. Brk't. (Comp.)	1
25	6824	Bracket-Pulley Mounting	1
26	5790	Bolt-1/2-13 x 4 Hex. Head (Full Thd.)	2
27	6825	Assy.-Pulley Hsg. & Brg. (Comp)	1
28	5337	Bearing-1/2" Bore	2
29	8979	Assy.-Spacer	1
30	GM120389	Washer-Flat (1/2 x 1-1/4 x .083)	3
31	GM120396	Washer-(1/2 Flat) (17/32 x 1-1/16 x .095)	8
32	GM-120378	Nut-1/2-13 Lt. Hex	17
33	8974	Assy.-Carriage Adj. Plate	1
34	8977	Assy.-Breakaway Housing	1
35	GM126485	Bolt-1/2-13 x 1-1/4 Carriage	3
36	GM120238	Nut-(Anchor) 1/2-13 Half Hex	4
37	8883	Assy.-Motor Mtg. Plate	1
38	6604	Assy.-Carrier Bar	1
39	8886	Motor-(General Electric)	1
40	GM180079	Bolt-5/16-18 x 1 Hex. Head	2
41	GM9413447	Nut-5/16-18 Hex. Lock	2
42	8887	Assy.-Pulley & Hub (Hub in)	1
43	3259	Key-3/16 Sq. x 1"	1
44	GM142671	Screw-Set (5/16-18 x 1/2 Sq. Hd. Cup Pt.)	2
45	8888	Assy.-Adjust Disc	1
46	3434	Spring-Lift & Transport	1
47	8890	Cord Assy	1
48	8891	Plate-Spacer	1
49	GM120917	Bolt-1/2-13 x 1-1/2 Carriage	9
50	8892	Plate-Pivot Bracket	1
51	3984	Bracket-Mounting	2
52	8243	Strap-Locator	3
53	7328	Belt Retainer	1
54	6979	Washer-(Flat) (17/32 x 2-3/8 x 16 Ga.)	4
55	8893	Guard-V-Belt	1
56	8104	V-Belt (Motor to Idler)	1
57	4577	V-Belt (Idler to Basic Sickle)	1
58	6073	Anchor-Spring	1
59	3554	Spacer-Breakaway Housing	2
60	GM180190	Bolt-1/2-13 x 3 Hex. Head	1
61	GM180192	Bolt-1/2-13 x 3-1/2 Hex. Head	1

E214
BASIC SICKLE BAR UNIT
(Ser. 55801-)



A	B	C	D	E	F	G	K	N
4	5	38	42	45	49	58	70	94
7	7	34	43		18		15	95
6	6		15	15	20	59	43	96
				46				93

HABAN SICKLE BAR MOWER
REPAIR PARTS LIST

Ref. No.	Part No.	Description	No. Req.
1	3592	Sickle Bar	1
2	6732	Finger-Shear	8
3	7188	Shear Finger	1
4	GM126452	Bolt 7/16-14 x 1 1/2 Carr.	16
5	GM120916	Bolt 7/16-14 x 1 3/4 Carr.	1
6	GM271501	Nut-7/16-14 Lt. Hex.	17
7	GM120383	Washer 7/16 Med. Lock	17
8	3597A	Plate-Universal Wear	4
9	3622	Assem., Sickle Knife & Pitman Pivot (Comp)	1
9A	6612	Assem. SickleKnife Only (Less Pitman Pivot)	1
10	3928	Knife-Sickle (3-Hole)	16
11	6066	Rivet-Sickle Knife	32
12	6625	Decal Caution	1
13	S 820	Decal Be Careful	1
14	3598 A	Clip Knife	5
15	GM120388	Washer 3/8 Flat 7/16 x 1 x .083	18
16	GM120389	Washer 7/16 Flat 1/2 x 1 1/4 x .083	1
17	5571	Assem. Outer Shoe	1
18	GM120396	Washer 7/16 Flat 1/2 x 1 1/16 x .095	6
19	3346	Spacer (Outer Shoe) 1/2 Long	4
20	GM9414074	Nut 1/2-13 Hex. Lock	3
21	4648	Grass Divider Board	1
22	4707	Assem. Flywheel Housing	1
23	3034	Bushing-Flywheel Housing	1
24	4683	Race-Bearing (Outer)	2
25	4684	Bearing-Roller	2
26	4653	Washer (Flat) 1 5/16 x 15/16 x 11 GA	1
27	4656	Seal-Bearing Oil	3
28	5074	Fitting-Grease (1/4-28 Str.)	1
29	4641	Crankshaft	1
30	4685	Pitman & Bearings (Comp.)	1
31	4629	Pitman (Less Bearings)	1
32	4654	Washer (Flat) (15/16 x 1 1/2 x .0299)	2
33	GM120390	Washer (1/2 Flat) (9/16 x 1 3/8 x .109)	1
34	GM120384	Washer 1/2 Med. Lock	5
35	GM124934	Nut 1/2-20 Half Hex.	1
36	5074	Fitting-Grease (1/4-28 Str.)	1
37	4719	Washer (Flat) (15/16 x 2 x .0299)	1
38	GM180177	Bolt 1/2-13 x 1 1/2 Hex. Head	3
39	3570	Assem. Sickle Mounting Bracket	1
40	3555 A	Assem. Breakaway Pivot	1
41	5602	Assem. Latch (Comp.)	1
42	GM180122	Bolt-3/8-16 x 1 Hex. Head	2
43	GM120382	Washer 3/8 Med. Lock	5
44	3411	Spring-Latch & Lift Strap	1
45	GM126705	Bolt 3/8-16 x 3 Carriage	2
46	GM9413534	Nut 3/8-16 Hex. Lock	3
47			
48	1094	Bushing-Pitman Pivot	1
49	GM180179	Bolt 1/2-13 x 1 3/4 Hex. Head	1

Ref. No.	Part No.	Description	No Req
50	3396	Washer (49/64 x 1 1/2 x .0598)	2
51	4638	Pulley (Crankshaft)	1
52	GM142671	Screw-Set (5/16-18 x 1/2 Sq. Head)	2
53	4585	Key-Pulley (3/16 Sq. x 1 1/2)	1
54	GM180042	Bolt 1/4-20 x 1 3/4 Hex. Head	1
55	4119	Nut 1/4-20 Hex. Lock	1
56	4645	Retainer-Torsion Spring	1
57	4655	Spring-Torsion	1
58	GM271724	Bolt 5/8-11 x 2 1/4 Hex. Head	1
59	GM124847	Nut 5/8-11 Half Hex.	1
60	3058	Eye Bolt-Spring	1
61	3604 A	Inner Skid Shoe	1
62	4690	Guard-Sickle Bar	1
63	4686	Guard Strap	1
64	4716	Chain-Transport	1
65	3436	Anchor-Chain	1
66	7323	Assem. Housing Stop & Quick Pin	1
67	6795	Snap Ring	1
68	5681	Spring-Coupler	1
69	6791	Assem. Quick Pin	1
70	GM180120	Bolt-3/8-16 x 3/4 Hex. Head	3
71			
72			
73			
74	6850	Vertical Position Stop	1
75			
76	8163	Rivets-16 oz. Box #6066 Rivets (Repairs)	1
77	3339	Grip-Handle	1
78	GM180175	Bolt 1/2-13 x 1 1/4 Hex. Head	1
79	GM120378	Nut 1/2-13 Lt. Hex.	1
80	42014	Handle-Lift	1
80			1
81			1
82			16
83	4631	Back-Sickle Knife	1
84	3411	Spring	
85			
86			
87			
88			
89			
90			
91	8224	Pitman Pivot Kit Consisting of:	
	FOR LATE	1 6614 Pivot	
92	PRODUCTION	2 6617 Cone Nuts	
93		2 8223 Spacer Nuts	
94	FOR EARLY	2 GM180018 Bolt 5/8 Hex. Hd.	
95	PRODUCTION	2 GM120380 Washer Lock 1/4	
96		2 446188 Washer Flat 1/4	