

FORD

LT TRACTOR ATTACHMENTS

MODELS:

09GN-3657	MOWER DECK 38" S.D.
09GN-3658	MOWER DECK 38" R.D.
09GN-3660	SNOW THROWER 36"

REPAIR MANUAL

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IMPORTANT: The replacement of any part on this product by other than the manufacturers' authorized replacement part may adversely affect the performance, durability or safety of this product.

The manufacturer reserves the right to make changes on and to add improvements upon its products at any time without notice or obligation. The manufacturer also reserves the right to discontinue manufacture of any product at its discretion at any time.

38" MOWER ATTACHMENT

(SIDE DISCHARGE)

INTRODUCTION

This manual contains service and maintenance instructions for a mower attachment. It has been prepared to provide the instructions the serviceman needs to correctly service and maintain this mower attachment. All sections of this manual should be carefully studied by the serviceman before beginning to work on the mower attachment.

Pay attention to all WARNINGS used throughout this manual and follow each one very closely. Failure to obey these rules could result in personal injury or death to yourself or others.

All references made to the left side, right side, front and rear are given from the operator's position, when attachment is mounted on the tractor.

SAFETY



Safety is No Accident Be Alert!

This symbol is used to attract your attention to the safety precautions that should be understood by the serviceman to avoid accidents.

Please read and follow these instructions on safety procedures before servicing this attachment.

PERSONAL CONSIDERATIONS:

1. Never let shop rags, used for cleaning, lay around to become fire hazards.
2. Always use safety glasses when servicing or inspecting the attachment.
3. DO NOT wear loose fitting clothing that might get caught in moving parts. Also keep hands and feet away from moving parts.
4. Be sure the work bench or support being used is strong enough. The weight of the part plus the force applied to it during assembly or disassembly may put a great strain on the bench or support.
5. Be certain that any part being removed is properly supported or held to prevent injury or damage.
6. DO NOT lubricate or make any mechanical adjustments to the attachment while the unit is in motion or when the engine is running.

EQUIPMENT CONSIDERATIONS:

1. Always disconnect spark plug wire and secure away from spark plug. This **must** be performed every time any servicing is done and will prevent accidental starting of engine.
2. Always store gasoline or flammable solvents used for cleaning in closed containers specifically designed for that purpose.

3. Before cleaning, servicing or inspecting attachment, make certain all moving parts have stopped.
4. DO NOT alter or remove safety devices from attachment.
5. Be sure all power to the attachment is turned off or disengaged and engine is off before making any repairs or adjustments.
6. Keep the attachment in good operating condition and keep safety devices in place.
7. Check blade mounting bolts for proper tightness and torque.

OPERATIONAL CONSIDERATIONS:

1. DO NOT start or run engine indoors. Fumes from engine exhaust can kill.
2. Be sure attachment is mounted properly to tractor before operating attachment.
3. Be sure all tools and cleaning materials are removed before starting tractor or attachment.
4. If the equipment should start to vibrate abnormally, stop engine and check immediately for the cause. Vibration is generally a warning of trouble.
5. If test running is required, make sure you are thoroughly familiar with the complete operation of this tractor attachment. Know how to stop the tractor and attachment.
6. Disengage power to attachment when transporting or not in use.
7. The attachment should be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the attachment.
8. Shut engine off and remove key from ignition switch when unclogging discharge chute or when removing deck from tractor.

Whenever you see this symbol  it means:

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

IDENTIFICATION PLATE LOCATION

The mower attachment model and serial number identification plate is located on the top right rear section of the mower deck. (Fig. 1)

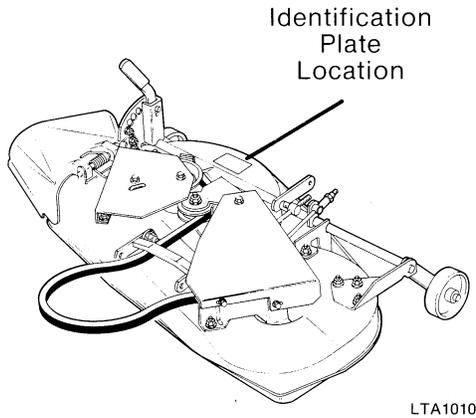


FIG. 1

MOWER DECK MOUNTING AND REMOVAL

1. DECK MOUNTING —

- A. Attach the mower deck to the tractor. For ease of installation find a hard, smooth, level surface; such as a garage floor or driveway to work on.
- B. Turn pivot assembly clockwise as far as it will go, as shown by the arrow in (Fig. 2).

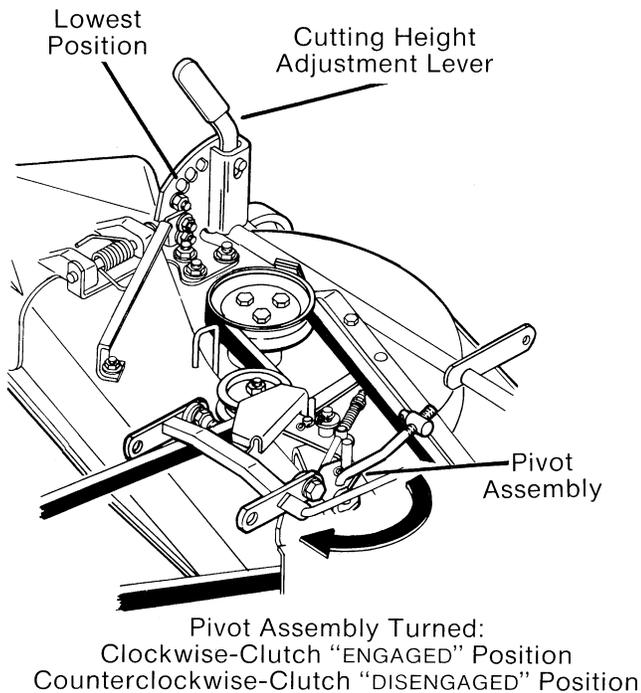


FIG. 2

- C. Move cutting height adjustment lever to the **lowest** cutting position. (Fig. 2)
- D. From right side of tractor carefully slide mower under tractor. NOTE: Mower wheels should be toward the rear with cutting height adjustment lever on the right side of tractor.
- E. Move mower until holes in front hanger assembly of mower (Fig. 2) are directly under holes in hanger brackets (Fig. 3) on tractor frame.

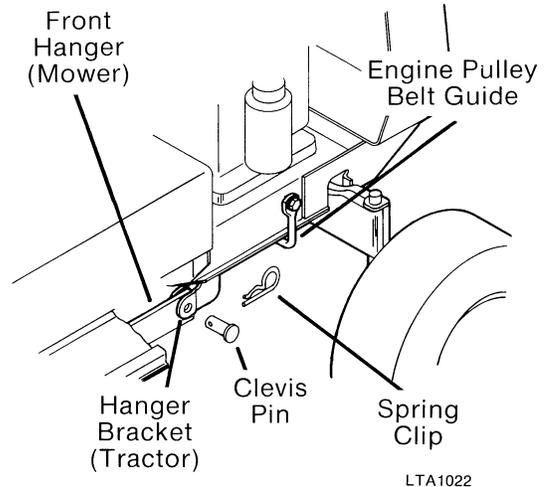


FIG. 3

- F. Move attachment lift lever to the lowered position.
- G. Route lift cable up and over spool and hook end of cable onto lift pin. (Fig. 4)
- H. Slide end link of lift chain onto lift pin. See (Fig. 4)
- I. Secure chain and cable to lift pin with a flat washer and spring clip. (Fig. 4)
- J. Using attachment lift lever, raise the front of the mower deck, lining up holes in front hanger brackets on tractor frame. (Fig. 3)
- K. Insert clevis pin through holes **from the outside**, as shown in (Fig. 3) on both sides of the tractor and secure each clevis pin with a spring clip.
- L. Route mower drive belt forward and through engine pulley belt guide and around groove in lower engine pulley.

IMPORTANT: If the belt guide (with extra prong) that is furnished with optional snow thrower attachment is being used with the mower attachment; be sure to route the belt to the left of the prong, as shown in (Fig. 5).

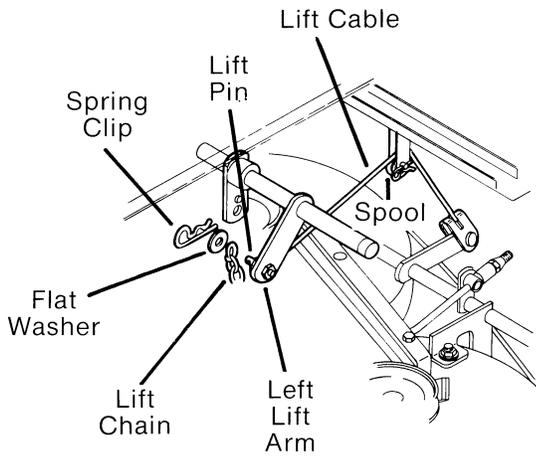


FIG. 4

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Optional Snowthrower
Engine Pulley Belt Guide

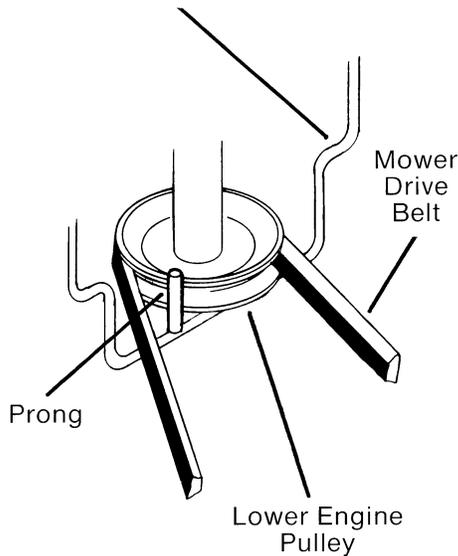


FIG. 5

LTA1021

M. Be sure cutting height adjustment lever is still in the **lowest** cutting height position. (Fig. 2)

N. Position the P.T.O. lever on instrument panel as follows:

Gear Drive Tractors Only:

$\frac{1}{32}$ " - $\frac{1}{8}$ " from bottom of slot. See (Fig. 6)

Hydro Drive Tractors Only:

$\frac{1}{2}$ " from bottom of slot. See (Fig. 6)

O. Turn trunnion on engagement rod (Fig. 7) until trunnion fits into hole at bottom end of P.T.O. lever. Secure trunnion in this position with a spring clip.

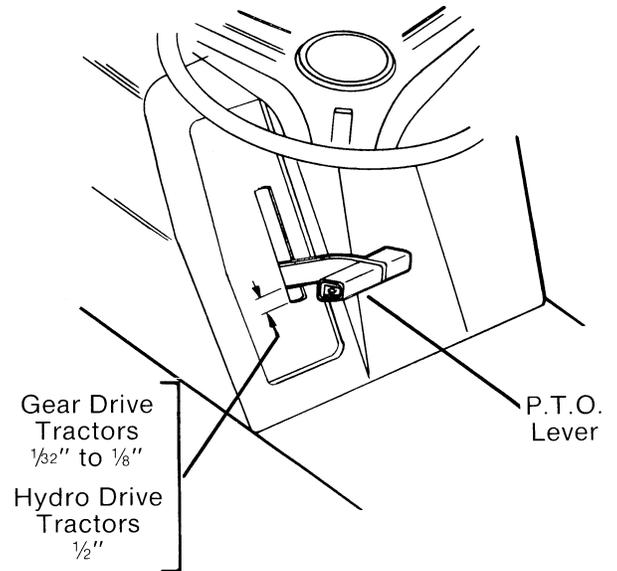


FIG. 6

LTA1009

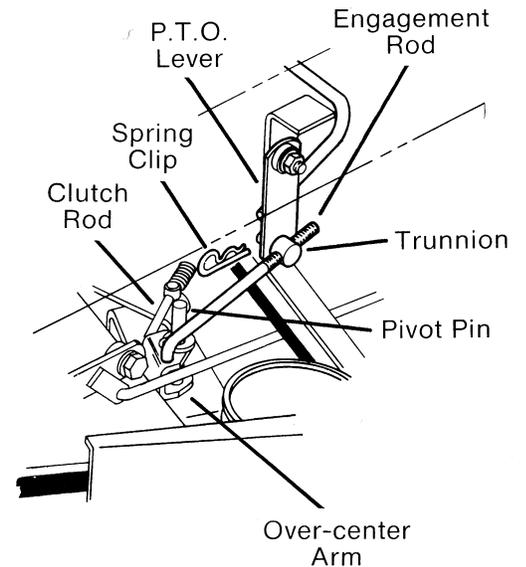


FIG. 7

LTA1017

NOTE: Large end of trunnion should be positioned on the left side of the P.T.O. lever, as shown in (Fig. 7).

P. Move P.T.O. lever to the "ON" position. The clutch rod, attached to over-center arm, should touch the pivot pin. (Fig. 7)

Q. Move P.T.O. lever to the "OFF" position and recheck the dimension in step "N". Readjust if necessary.

NOTE: Check P.T.O. lever in the "OFF" position in all mower cutting heights. If P.T.O. lever touches the bottom of the slot, readjust lever up slightly, by repeating steps "N" and "O".

2. DECK REMOVAL —

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Lower attachment to the ground.
- B. Move cutting height adjustment lever to the **lowest** cutting position. (Fig. 2)
- C. Move P.T.O. lever to the “OFF” position.
- D. Remove spring clip holding trunnion to bottom end of P.T.O. lever (Fig. 7), then detach trunnion from P.T.O. lever.
- E. Slip drive belt off of lower engine pulley, then out through engine pulley belt guide. (Fig. 5)
- F. Lift front edge of deck slightly and remove the two clevis pins and spring clips holding front hanger to tractor hanger brackets. (Fig. 3)
- G. Remove spring clip and flat washer holding lift chain and lift cable onto lift pin. (Fig. 4) Remove lift chain and lift cable from lift pin and slide lift cable through and off of spool. (Fig. 4)
- H. From **right** side of tractor, carefully slide mower deck out from under tractor. Clean or service mower deck as required.

NOTE: If mower deck is removed for storage, be sure to store all loose parts **with** the mower deck for next usage.

LUBRICATION AND MAINTENANCE

WARNING: To avoid injury, disengage power to attachment and stop the engine and remove ignition key before lubricating attachment.

DAILY

- A. **GENERAL:** Make a general visual inspection of mower for loose or damaged parts. Check nuts and bolts periodically to insure against looseness caused by vibration or rough handling. Damaged parts should be repaired or replaced before using mower again.
- B. **BELTS:** Inspect for proper tension. Refer to ADJUSTMENT AND SERVICING section.

EVERY 25 OPERATING HOURS

- A. **GENERAL:** Perform the “Daily” maintenance schedule.

B. OIL: SAE #30

- a. **Mower Wheels:** Oil shaft liberally, turning wheels to work oil in. If wheels become tight, remove wheels, clean shafts. Oil shafts using #30 wt. oil and replace. See (Fig. 8)

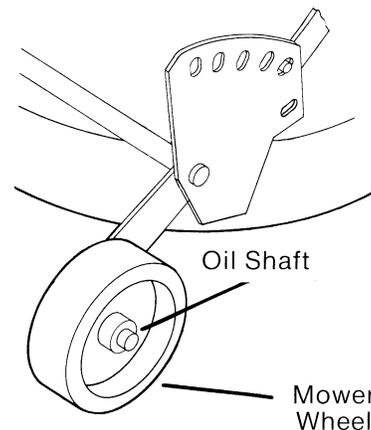


FIG. 8

LTA1011

- b. **General:** Apply oil to all pivot points and linkages to reduce wear and assure free movement. Be sure linkages are clean before applying oil.

IMPORTANT! Apply oil carefully and only where required. Oil on drive belts or pulleys will cause slippage and loss of drive. Wipe up all spills or excess oil completely.

- C. **BLADES:** Remove mower from tractor and turn upside down. Check tightness of all blade mounting capscrews (30-40 ft./lb. torque) along with the blade saddle mounting capscrew tightness (16-24 ft./lb. torque). Check blades for sharpness. Reference BLADE REMOVAL, SHARPENING AND BALANCING.
- D. **BLADE BRAKE PADS:** Inspect pad linings for excessive wear. Replace brake strap assembly if pads are worn. Reference MOWER BLADE BRAKE REPLACEMENT.

ADJUSTMENTS AND SERVICING

1. BLADE REMOVAL, SHARPENING AND BALANCING —

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove deck from tractor by following procedures for "DECK REMOVAL" and turn deck upside down.
- B. To remove blades on Model 09GN3657 follow procedure, step "a". To remove blades on Model 09GN3697 follow procedure, step "b".
 - a. Remove two capscrews, lockwashers and hex nuts that secure each blade to spindle assembly. (Fig. 9) Remove blades from spindles.

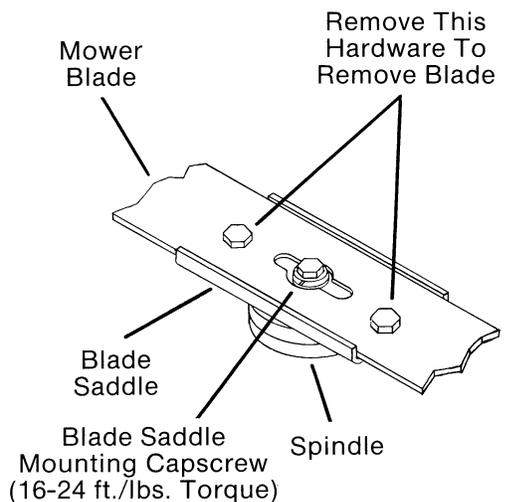


FIG. 9

- b. Remove capscrew and conical lockwasher that secure each blade to spindle assembly (Fig. 9A). Remove blades from spindles.

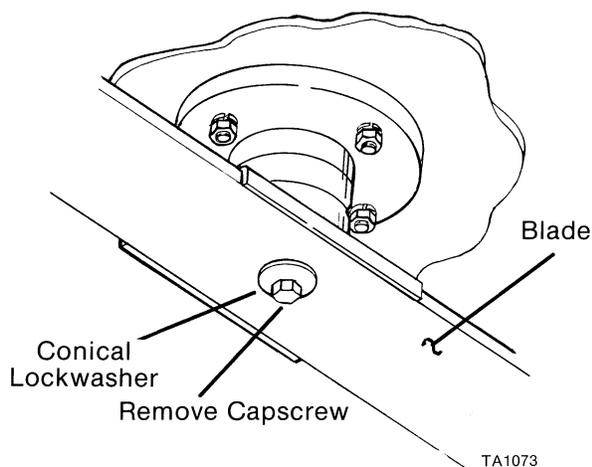


FIG. 9A

NOTE: Blocking blades with a piece of wood will keep blades from turning while loosening or tightening capscrews.

- C. Sharpen blades following the original blade cutting edge contours. Refer to (Fig. 10) for correct blade sharpening dimensions and instructions.

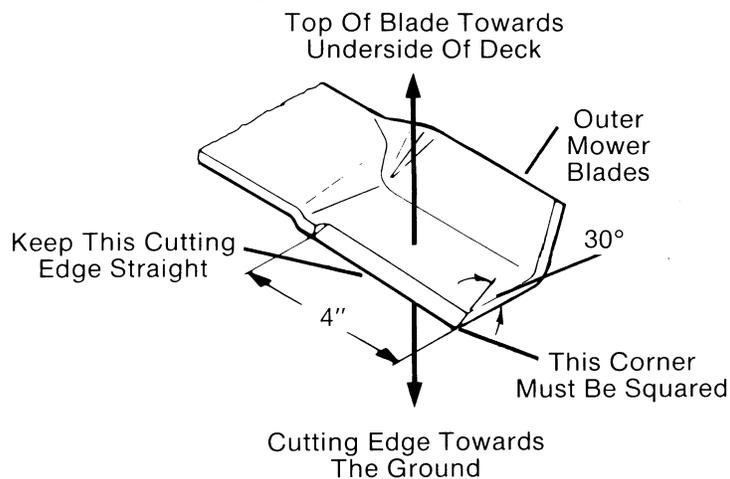


FIG. 10

NOTE: If blades become badly worn or damaged or original blade sharpening contours cannot be maintained, replace with new blades. It is recommended that blades be replaced in **sets**.

- D. After sharpening, check blade for balance by supporting blade as shown in (Fig. 11), using the center hole as a guide. File or grind metal from heavy end of blade until the blade balances.

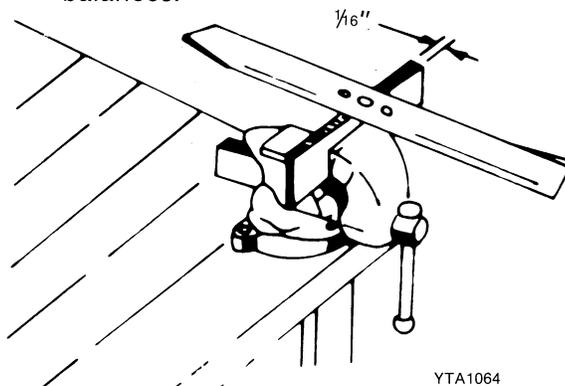


FIG. 11

- E. To remount blades on Model 09GN3657 follow procedures, step "a". To remount blades on Model 09GN3697 follow procedures, step "b".

- a. After balancing, remount blade flush onto spindle assembly. Be sure blade is mounted so cutting edge is towards the ground. (Fig. 10) Replace blade mounting hardware and tighten capscrews to a torque of 30 - 40 ft./lbs.

IMPORTANT: Blade mounting capscrews are heat treated (Grade 5 type). Other types of capscrews must not be used as replacements.

IMPORTANT: Check also at this time the tightness of the blade saddle mounting cap-screw (Fig. 9) (16-24 ft./lb. torque).

- b. After balancing, remount blade flush onto spindle assembly. Be sure blade is mounted so cutting edge is towards the ground (Fig. 10). Replace blade mounting hardware, make sure wide side of conical lockwasher is against blade, and tighten cap-screw to a torque of 40 ft./lbs.

IMPORTANT: Blade mounting cap-screw is heat treated (Grade 8 type). Other types must not be used as replacements.



NOTE: A grade 8 cap-screw may be identified by the distinctive markings on it's head as shown at left.



WARNING: The capscrews used to secure blades to spindles are heat treated. Other types of capscrews must not be used as replacements.

- F. Remount mower deck to tractor by following procedures under "DECK MOUNTING".

2. DRIVE BELT ADJUSTMENT —



WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. If belt has stretched and begins to slip under load, adjust belt as follows:
- B. Move the P.T.O. lever to the **ENGAGED** (up) position. Measure the compression of the clutch rod tension spring. Spring should be compressed to dimension shown in (Fig. 12). Turn adjustment locknut on end of clutch rod until dimension is achieved.

- C. If belt still slips; remove right pulley guard (Fig. 13) and move the P.T.O. lever to the **DISENGAGED** (down) position.

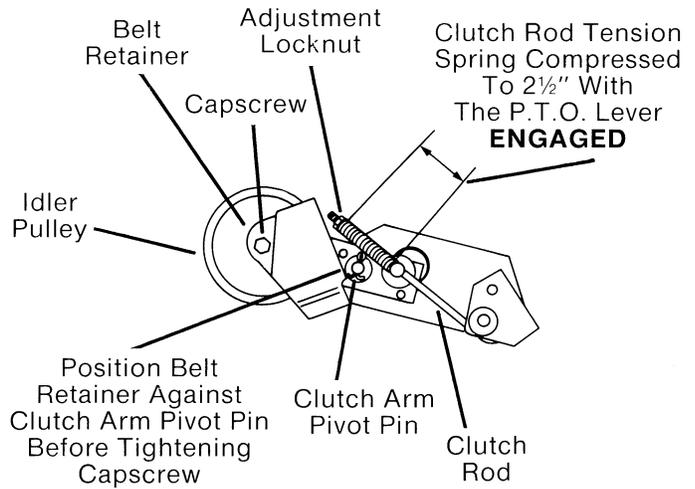


FIG. 12

53.0003

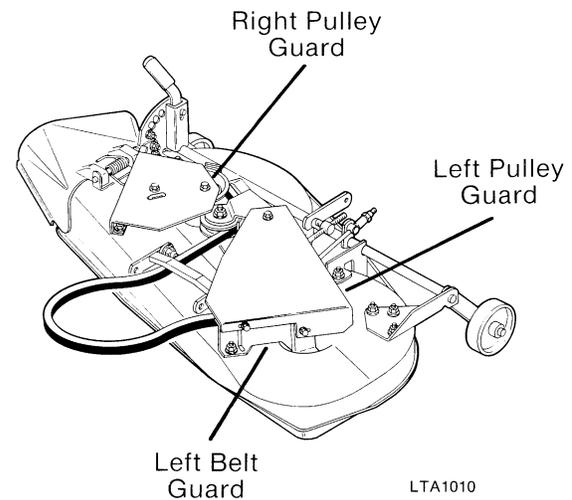
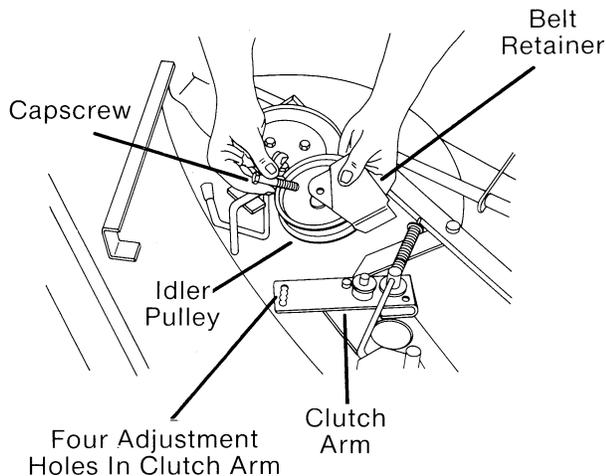


FIG. 13

LTA1010

- D. Remove hex nut and washers holding idler pulley to clutch arm assembly. (Fig. 14)

IMPORTANT! Note which hole the idler pulley is presently mounted through on the clutch arm. There are **four** hole positions that the idler pulley can be mounted in. (Fig. 14)



53.0004

FIG. 14

- E. Lift idler pulley, belt retainer and capscrew off of the clutch arm and reposition pulley in the next hole towards the rear of the deck. Replace washers and hex nut on capscrew and tighten hardware.

NOTE: Before tightening hardware, be sure belt retainer is positioned **against** clutch arm pivot pin. (Fig. 12)

- F. Test mower deck. If belt still slips, reposition idler pulley back one more notch. Repeat this step if necessary.
- G. If idler pulley has reached the last notch and the belt still slips; turn adjustment locknut on end of clutch rod (Fig. 12) **in** (clockwise) until belt stops slipping.

NOTE: DO NOT compress spring any further than 2" with the mower in the **ENGAGED** position.

- H. If belt is still slipping after adjustment nut has been turned in all the way, belt **must** be replaced. Follow procedures under **DRIVE BELT REPLACEMENT**.
- I. After all adjustments have been made be sure to replace right pulley guard. (Fig. 13)

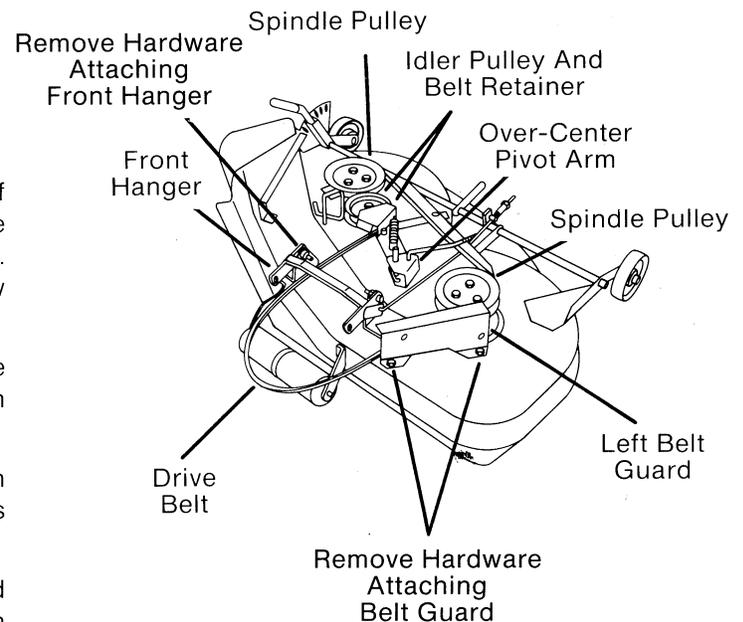
3. DRIVE BELT REPLACEMENT —

This belt was designed and engineered to provide long trouble-free service. If belt replacement is necessary, use **only** the belt recommended by manufacturer to be sure you have a belt that will provide the life and service required.



WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove mower deck from tractor by following procedures under "DECK REMOVAL".
- B. Remove right and left pulley guards. (Fig. 13)
- C. Remove the hardware attaching front hanger assembly to mower deck lift brackets. See (Fig. 15)



53.0005

FIG. 15

- D. Remove hardware holding idler pulley and belt retainer to the clutch arm. Remove belt retainer and idler pulley. (Fig. 15)
- E. Remove hardware holding left belt guard to mower deck. (Fig. 15)
- F. Turn over-center pivot arm counterclockwise as far as it will go (clutch **ENGAGED** position). (Fig. 15)
- G. Remove old belt and replace with a new one.
- IMPORTANT:** Be careful not to damage pulleys when sliding belt out between pulley and brake pad on each end of brake strap assembly.

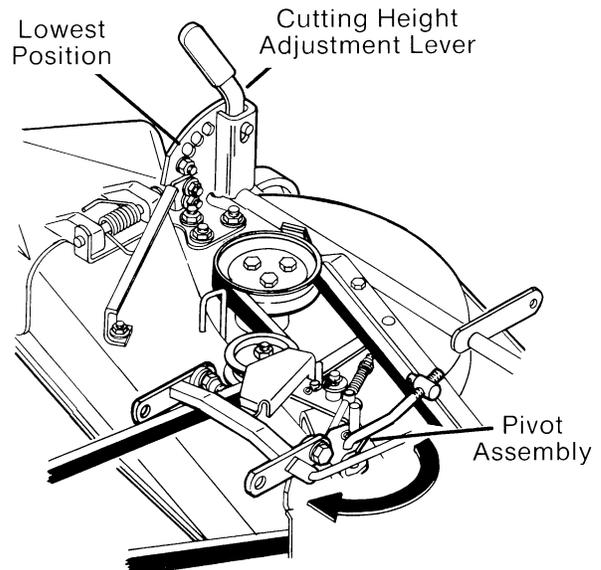
- H. Remount left pulley belt guard.
- I. Reassemble idler pulley and belt retainer onto clutch arm, in the hole that is closest to the front of the deck. (Fig. 14)

NOTE: Before tightening hardware, be sure belt retainer is positioned **against** clutch arm pivot pin. (Fig. 12)

- J. Remount mower deck to tractor by following procedures under "DECK MOUNTING".
- K. After deck has been remounted to tractor, turn locknut to adjust clutch rod tension spring to the dimension shown in (Fig. 12).

NOTE: This adjustment must be made with P.T.O. lever moved to the **ENGAGED** (up) position.

- L. After all adjustments are made remount both the right and left pulley guards. (Fig. 13)



Pivot Assembly Turned:
Clockwise-Clutch "ENGAGED" Position
Counterclockwise-Clutch "DISENGAGED" Position

FIG. 16 LTA1019

4. MOWER BLADE BRAKE REPLACEMENT —

The purpose of the blade brake is to stop mower blade rotation within a minimum amount of time. (7 seconds)

When the brake material has worn down close to the metal on the brake strap assembly, order a new brake strap assembly, then replace and adjust mower brakes as follows:

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove mower deck from tractor by following procedures under "DECK REMOVAL".
- B. Remove right and left pulley guards. (Fig. 13)
- C. Turn over-center pivot arm counterclockwise as far as it will go (clutch ENGAGED position). (Fig. 16) This will move ends of brake strap away from pulleys.
- D. Remove shoulder bolt and locknut from both ends of brake strap assembly. (Fig. 17)
- E. Remove cotter pin from oval head pin. See (Fig. 17) Remove oval head pin.
- F. Remove brake strap assembly and install new one as shown. (Fig. 17)

NOTE: Be sure shoulder of shoulder bolts are in the slots in the brake strap before tightening locknuts. (Brake strap should move freely after locknuts are tightened).

- G. Check brake operation as follows:
 - a. Turn over-center pivot arm clockwise (Fig. 16) brake pads must contact pulleys.

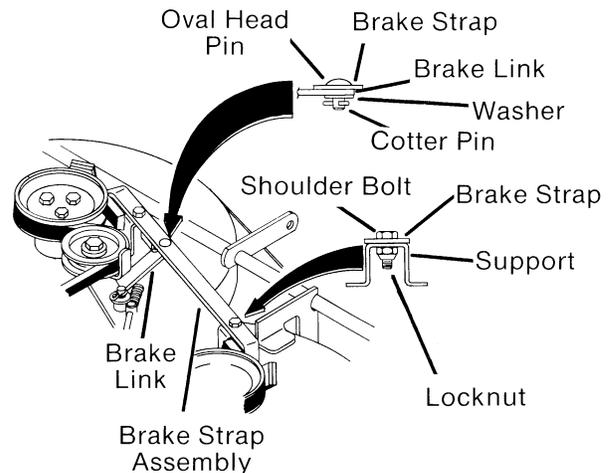


FIG. 17 LTA1013

- b. Turn over-center pivot arm all the way counterclockwise (Fig. 16); brake pads must move away from pulleys.
- H. Reinstall right and left pulley guards. (Fig. 13)
- I. Remount mower deck to tractor by following procedures under "DECK MOUNTING" and check blade stopping time (within 5-7 seconds).
- J. If blade does not stop within the required safe stopping time, the brake strap may not be sliding properly in the slots. Lubricate slots with a few drops of SAE 30 wt. oil. If blades still do not stop within the required safe stopping time, it may be necessary to bend the ends of the brake strap so the brake pads are closer to the pulleys. Recheck brake operation described in step "G". Retest blade stopping time.

5. SPINDLE REPLACEMENT —

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove mower deck from tractor by following procedures under "DECK REMOVAL".
- B. Remove right or left pulley guard, depending upon which spindle is being replaced. See (Fig. 13)
- C. Raise mower deck and support deck in an upright position.
- D. Block blade, of the spindle being replaced, with a block of wood and remove three thread forming screws holding top spindle pulley to spindle. (Fig. 15) Remove pulley.
- E. With blade still blocked, remove hardware holding blade to spindle assembly. Remove blade. (Fig. 18 or 18A)

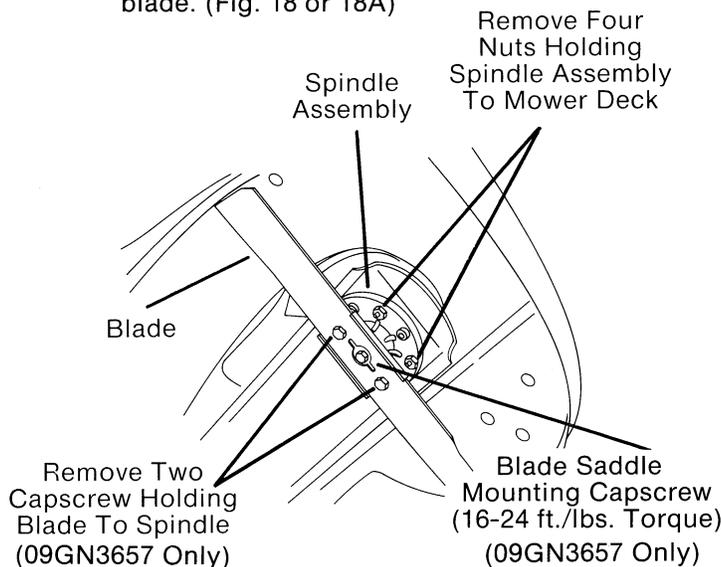


FIG. 18 53.0006

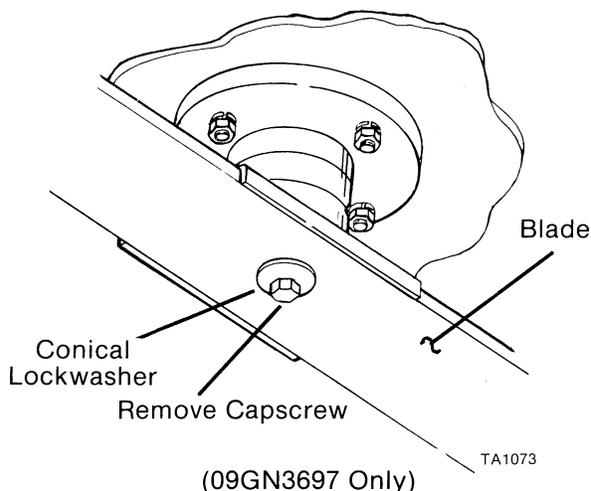


FIG. 18A TA1073

- F. Remove four nuts holding spindle assembly to mower deck. (Fig. 18) Pull spindle assembly out bottom of deck.
- G. Replace spindle assembly at this time. Reverse above procedures to reassemble spindle to the mower deck.
- H. Follow procedures under "DECK MOUNTING" to remount mower deck to tractor.

NOTE: At this time check blade for sharpness. Sharpen and balance blade if necessary. Remount blade with cutting edge towards bottom of deck. Torque blade mounting capscrews to 40 ft./lbs.

IMPORTANT: (09GN3657 Only) Check also at this time the tightness of the blade saddle mounting capscrew (Fig. 18) (16-24 ft./lb. torque).

IMPORTANT: (09GN3697 Only) Be sure wide side of conical lockwasher is against blade (Fig. 18A).

6. MOWER DECK LEVELING —

A. MOWER PITCH (Front to Rear)

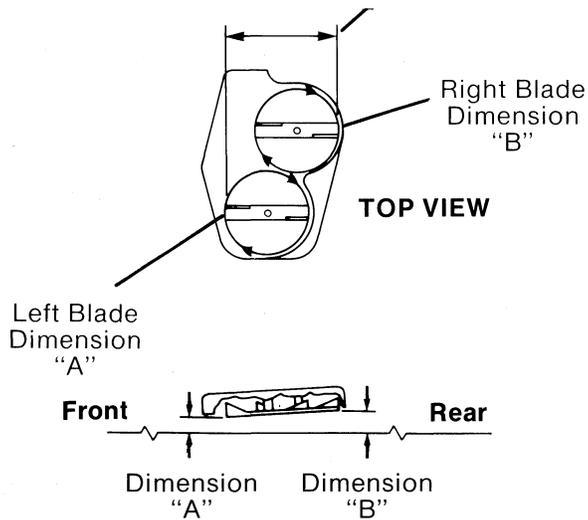
This adjustment must be performed with the mower deck mounted to the tractor on a flat level surface and the cutting height handle in the second lowest cutting height position. Check this adjustment knowing that you are working with a good set of blades. Bent blades must be replaced.

NOTE: Tire pressure in all four tractor tires must be equal. (10 p.s.i.)

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

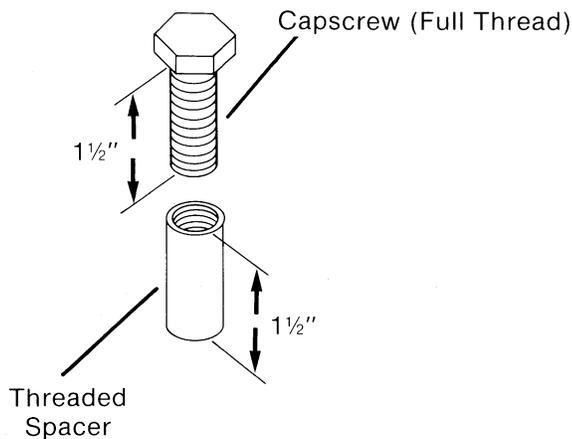
- a. Check mower pitch by turning both blades so they point front to rear. (Fig. 19)
- b. Make a gauge using a threaded spacer approximately 1½" long of any size and a full thread capscrew about the same length and size. (GB 88143) (Fig. 20) Thread capscrew into spacer and position gauge under front tip of left blade. Thread capscrew out of spacer until head of capscrew touches bottom of left blade tip. Hold capscrew and spacer in this position and remove from under mower deck. Measure overall length of capscrew and spacer and record this dimension. Repeat this procedure but this time take the measurement at the rear tip of the right blade. Record this dimension.

0-¼" Downward Pitch
Measured From Rear
Tip Of Right Blade
To The Front Tip
Of Left Blade.
(⅛" Downward Pitch
Is Preferred).



"A" Dimension Should Be
0-¼" Less Than "B" Dimension

FIG. 19 53.0007



MOWER LEVELING
GAUGE TOOL
(GB 88143)

FIG. 20 51.0007

The right rear blade tip dimension must be **equal to** but **no greater than ¼"** larger than the left front blade tip dimension. (Fig. 19)

NOTE: A ⅛" mower pitch is the preferred adjustment. Set mower pitch at this adjustment if at all possible.

- c. If dimension is anything other than what is described above, mower pitch **must** be adjusted as follows.

- d. Turn locknut on end of adjustment rod (Fig. 21) clockwise to raise front of the deck or counterclockwise to lower front of the deck.

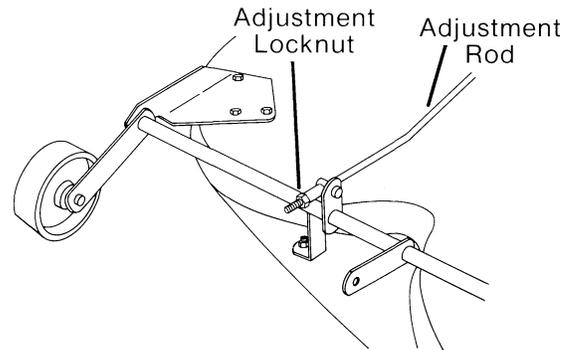


FIG. 21 53.0008

- e. Recheck mower deck pitch by repeating procedures in step "b". Readjust locknut on end of adjustment rod until proper pitch is achieved.

NOTE: If locknut has reached the end of the thread on the adjustment rod and proper pitch has not been achieved, add ⅜" flat washers (to suit) between locknut and spacer on adjustment rod.

- f. Continue with procedures below to set mower level (side to side) which should be set at the same time mower pitch is set.

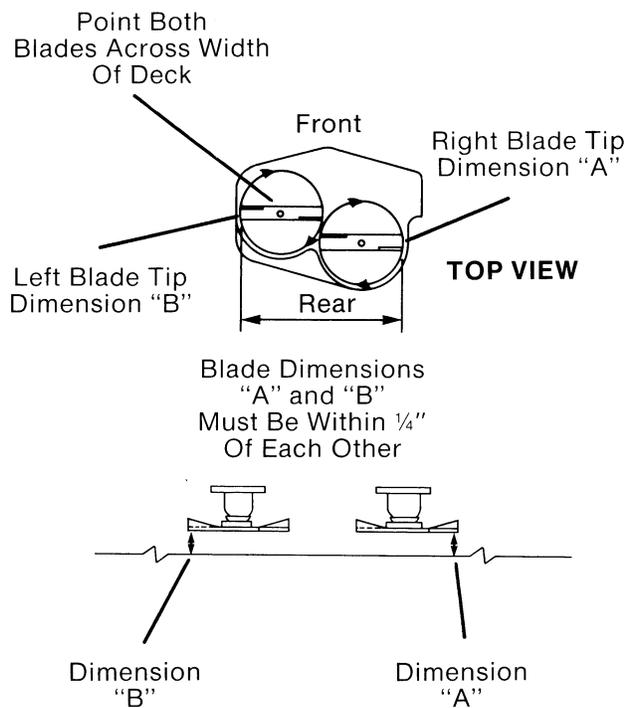
B. MOWER LEVEL (Side to Side)

This adjustment should be made at the same time that mower pitch is set. First follow procedures above, before setting mower level.

- a. Check mower level by turning blades so they are pointing across the width of the deck. (Fig. 22)
- b. Using the same gauge described in step "b" of "MOWER PITCH". Position gauge under outer tip of right blade. (Fig. 22) Thread capscrew out of spacer until head of capscrew touches bottom of outer right blade tip. Hold capscrew and spacer in this position and remove from under mower deck. Measure overall length of capscrew and spacer and record this dimension. Repeat this procedure at the outer tip of left blade. Record this dimension.

The right blade dimension must be **equal to** but **no greater than ¼"** larger or smaller than the left blade dimension. (Fig. 22)

- c. If dimension is anything other than what is described above, mower level can be adjusted by shimming between front lift bracket and mower deck.



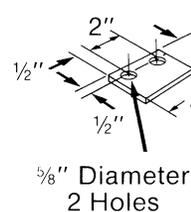
53.0009

FIG. 22

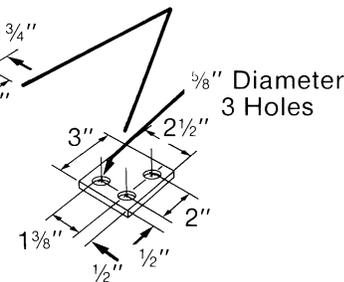
- NOTE: If mower deck is more than $\frac{1}{4}$ " out of level, shimming should not be performed. Instead; check for a bent wheel hanger, spindle or deck housing.
- d. Make shims using flat plate stock, and cut and drill to the size shown in (Fig. 23).

NOTE: **DO NOT USE FLAT WASHERS** for shimming. Washers will not provide proper support between lift brackets and mower deck.

RIGHT SIDE LIFT BRACKET SHIM



The Number Of Shims Used And Shim Thickness Will Vary Based Upon The Amount Of Adjustment Needed.



LEFT SIDE LIFT BRACKET SHIM

53.0010

FIG. 23

- e. Shim under hanger bracket on the side of the deck that is **higher**. (e.g.: If left side of deck is higher, shim under the left lift bracket).
- f. Remove carriage bolts and flange washers from lift bracket to be shimmed. Place shims between hanger bracket and mower deck as required. Longer carriage bolts will have to be used to remount lift bracket. Recheck mower level.

TROUBLE-SHOOTING OF MOWER CUTTING PROBLEMS

STREAKING: Leaving strips of uncut grass.

Possible Causes: Dull blades, tip of blade not square, blade lift worn off, low engine RPM. Incorrect length replacement blade, not enough overlapping between cutting rows, ground speed too high, belt slippage, wet grass, blade upside down.

SCALPING: Blades hitting dirt or cutting very close to the ground.

Possible Causes: Ground speed too high, rough terrain, deck mounted improperly, blade upside down, cutting too low.

STRINGERS: Occasional blades of uncut grass.

Possible Causes: Low RPM, plugged deck, dull blades, ground speed too high, belt slippage, wet grass, blade upside down.

UNEVEN CUT: Wavy appearance, high, low, high.

Possible Causes: Too much blade (deck) angle, bent deck, uneven ground, deck mounted improperly, plugged deck, lift worn off blade, dull blades.

STEP CUT: Clear ridges in grass height.

Possible Causes: Bent deck, bent blade, blade upside down, deck mounted incorrectly, wrong spindle assembly, internal spindle failure, bent spindle, wheels uneven.

Following is a check list of possible causes. They are arranged in the best manner for eliminating any of the above problems.

1. Check that the deck is mounted correctly. The correct pins are positioned and properly clipped. different units have individual ways of mounting so check the DECK MOUNTING.
2. Clean out the underside of the mower deck to eliminate any build-up of grass or debris. Build-up in the mower deck will affect discharge and bagging of grass.
3. Blades should be sharpened and mounted correctly. Blades should be straight with cutting edge towards bottom of deck.
4. Tractor must be run at full engine r.p.m. (3600 ± 100 r.p.m.). Reducing r.p.m. slows blade tip speed which cuts down the cutting efficiency of the mower deck.
5. Tire pressure must be equal in all four tires. (10 psi)
6. Check tension of drive belt. A slipping belt will cause a loss in blade tip speed.
7. Lubricate the idler control linkages and all other pivot points.
8. Ground speed should be at about an average walking pace, to suit height and density of grass.
9. The length of grass being removed should be no more than $\frac{1}{3}$ the height of the grass before it is cut.
10. Rough terrain may cause scalping of the ground. Adjust cutting height and ground speed.
11. Mower deck pitch and level or blade alignment will affect the quality of the cut. Check MOWER PITCH and MOWER LEVEL to correct the problem.

BOLT TORQUE SPECIFICATIONS

The following chart lists the standard torque specifications for all capscrews and thread forming screws used in this unit. Unless **special** torques are called for, all torque values must meet these specifications.

	TYPE OF CAPSCREW	SAE GRADE 2	SAE GRADE 5	SAE GRADE 5	SAE GRADE 5	SAE GRADE 2 OR 5 ALSO THREAD FORMING SCREWS
						
	TYPE OF FASTENER USED	STANDARD HEX NUT	STANDARD HEX NUT	CONE LOCKNUT		INTO TAPPED HOLE
TORQUE FACTOR		FT./LBS. MIN. MAX.	FT./LBS. MIN. MAX.	FT./LBS. MIN. MAX.	FT./LBS. MIN. MAX.	FT./LBS. MIN. MAX.
SCREW SIZE	1/4	5 7	9 11	5 7	5 7	
	5/16	9 14	18 22	9 14	9 14	
	3/8	16 24	30 40	16 24	16 24	
	7/16	25 37	50 60	25 37	25 37	
	1/2	38 57	75 95	38 57	38 57	
	5/8	73 110	150 185	73 110	73 110	

C. BLADE ALIGNMENT —

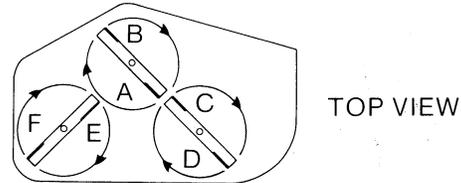
This procedure is designed to determine whether there is a bent blade, spindle or deck.



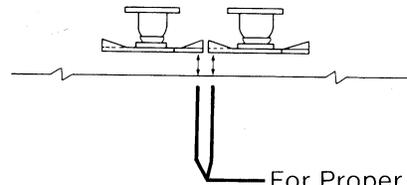
WARNING: To avoid accidental starting, shut off engine, wait for all movement to stop and remove ignition key.

- a. Check tightness of all blade mounting hardware. Torque capscrews to 30 - 40 ft./lbs.
- b. Follow diagram (Fig. 29) to check proper blade alignment. Rotate blades until blade tips are at their closest point (example: (Fig. 29) blade tip "A" to blade tip "C"). Take measurement in this position then rotate blades until all tip combinations are achieved.
- c. If any blade is misaligned more than $\frac{1}{8}$ ", check blade straightness or check for a bent spindle or deck. Replace all parts that are defective.

Check Blade Alignment By Positioning Blade Tips At Their Closest Points In **ALL** Of The Following Combinations.
A to C, A to D, B to C, B to D,
A to E, A to F, B to E, B to F.



TOP VIEW



For Proper Blade Alignment These Two Measurements Must Be Within $\frac{1}{8}$ " Of Each Other At All blade Tip Combinations.

51.0011

FIG. 29

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38" MOWER ATTACHMENT (REAR DISCHARGE) (Model 09GN-3658)

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IMPORTANT: The replacement of any part on this product by other than the manufacturers' authorized replacement part may adversely affect the performance, durability or safety of this product.

The manufacturer reserves the right to make changes on and to add improvements upon its products at any time without notice or obligation. The manufacturer also reserves the right to discontinue manufacture of any product at its discretion at any time.

INTRODUCTION AND SAFETY

This manual contains service and maintenance instructions for a mower attachment. It has been prepared to provide the instructions the serviceman needs to correctly service and maintain this mower attachment. All sections of this manual should be carefully studied by the serviceman before beginning to work on the mower attachment.

Pay attention to all WARNINGS used throughout this manual and follow each one very closely. Failure to obey these rules could result in personal injury or death to yourself or others.

All references made to the left side, right side, front and rear are given from the operator's position, when attachment is mounted on the tractor.

SAFETY:



Safety is No Accident Be Alert!

This symbol is used to attract your attention to the safety precautions that should be understood by the serviceman to avoid accidents.

When you see this symbol —  It means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Please read and follow these instructions on safety procedures before servicing this attachment.

PERSONAL CONSIDERATIONS:

1. Never let shop rags, used for cleaning, lay around to become fire hazards.
2. Always use safety glasses when servicing or inspecting the attachment.
3. DO NOT wear loose fitting clothing that might get caught in moving parts. Also keep hands and feet away from moving parts.
4. Be sure the work bench or support being used is strong enough. The weight of the part plus the force applied to it during assembly or disassembly may put a great strain on the bench or support.
5. Be certain that any part being removed is properly supported or held to prevent injury or damage.
6. DO NOT lubricate or make any mechanical adjustments to the attachment while the unit is in motion or when the engine is running.

38" MOWER ATTACHMENT (REAR DISCHARGE) (09GN-3658)

EQUIPMENT CONSIDERATIONS:

1. Always disconnect spark plug wire and secure away from spark plug. This **must** be performed every time any servicing is done and will prevent accidental starting of engine.
2. Always store gasoline or flammable solvents used for cleaning in closed containers specifically designed for that purpose.
3. Before cleaning, servicing or inspecting attachment, make certain all moving parts have stopped.
4. DO NOT alter or permanently remove safety devices from attachment.
5. Be sure all power to the attachment is turned off or disengaged and engine is off before making any repairs or adjustments.
6. Keep the attachment in good operating condition and keep safety devices in place.
7. Check blade mounting bolts for proper tightness and torque.

OPERATIONAL CONSIDERATIONS:

1. DO NOT start or run engine indoors. Fumes from engine exhaust can kill.
2. Be sure attachment is mounted properly to tractor before operating attachment.
3. Be sure all tools and cleaning materials are removed before starting tractor or attachment.
4. If the equipment should start to vibrate abnormally, stop engine and check immediately for the cause. Vibration is generally a warning of trouble.
5. If test running is required, make sure you are thoroughly familiar with the complete operation of this tractor attachment. Know how to stop the tractor and attachment.
6. Disengage power to attachment when transporting or not in use.
7. The attachment should be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the attachment.
8. Shut engine off and remove key from ignition switch when unclogging discharge chute or when removing deck from tractor.

IDENTIFICATION PLATE LOCATION

The mower attachment model and serial number identification plate is located on the top right rear section of the mower deck. (Fig. 1)

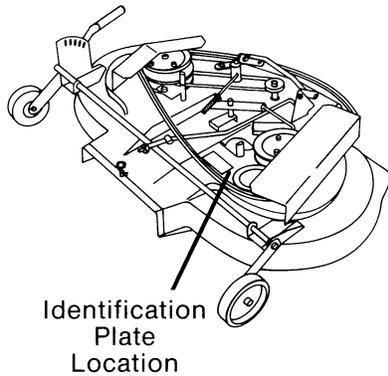


FIG. 1

MOWER DECK MOUNTING AND REMOVAL

1. DECK MOUNTING —

A. Before attaching the mower deck to the tractor check if blade brake assemblies are worn, by following procedures under "MOWER BLADE BRAKE REPLACEMENT". Check also mower blade brake operation, as follows:

- a. Turn clutch rod arm (Fig. 2) clockwise, then all the way counterclockwise. Both brake pads should move **away** from the two outer pulleys.

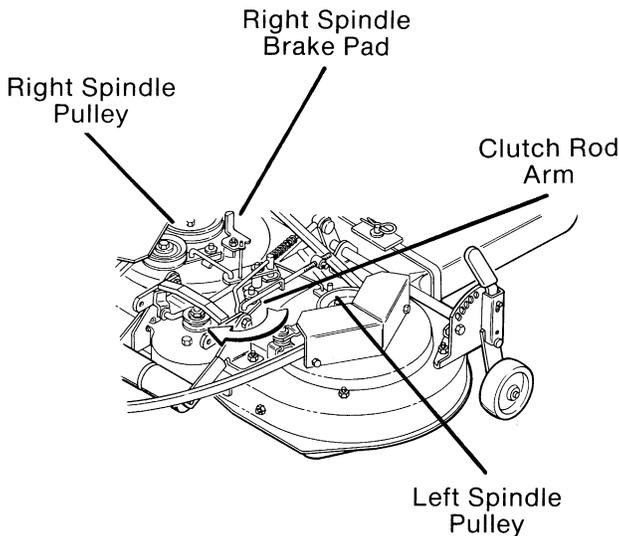


FIG. 2

- b. Turn the clutch rod arm clockwise again and check brake pad position. Pads should be resting firmly on the edges of the pulleys. (Fig. 3) Brake links (Fig. 3) should have $1/16'' - 1/8''$ slack movement, if brakes are adjusted properly. If brake links are too loose or too tight, readjust brake pads by following procedures under "MOWER BLADE BRAKE ADJUSTMENT"

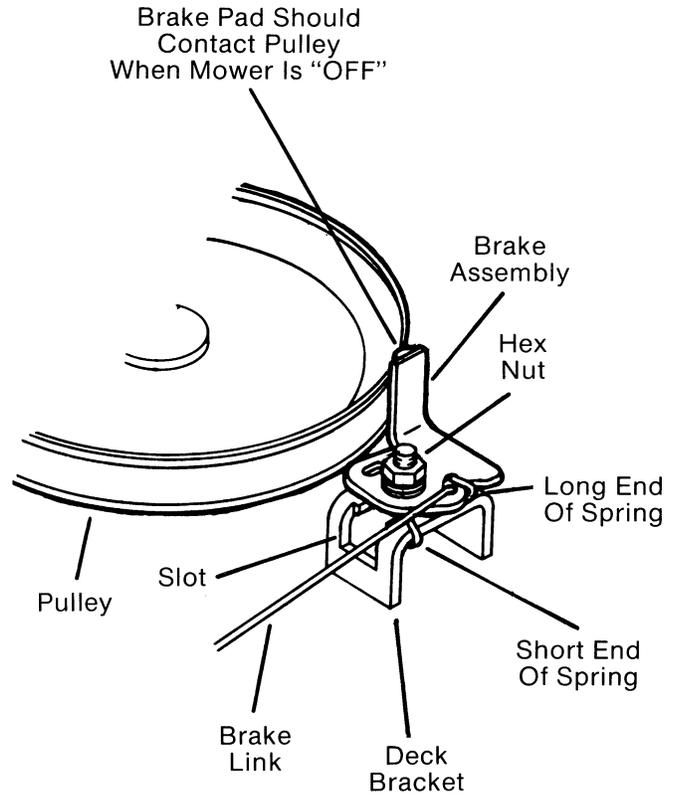


FIG. 3

- B. Attach the mower deck to the tractor. For ease of installation find a hard, smooth, level surface; such as a garage floor or driveway to work on.
- C. Turn clutch rod arm clockwise as far as it will go, as shown by the arrow in (Fig. 2).
- D. Move cutting height adjustment lever to the **lowest** cutting position. (Fig. 4)
- E. From the left side of tractor carefully slide mower under tractor. NOTE: Mower wheels should be toward the rear with cutting height adjustment lever on the left side of tractor.

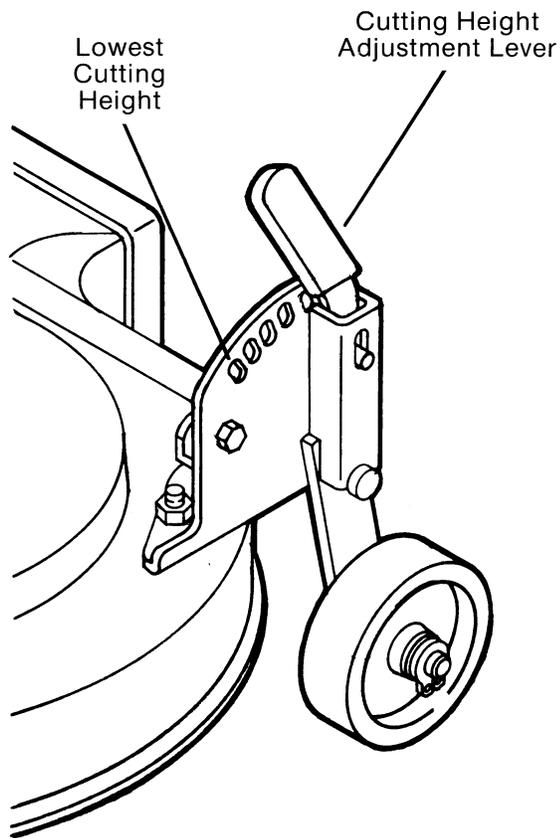


FIG. 4

- F. Move mower until holes in front hanger assembly of mower are directly under holes in hanger brackets on tractor frame. (Fig. 5)
- G. Move attachment lift lever to the lowered position.

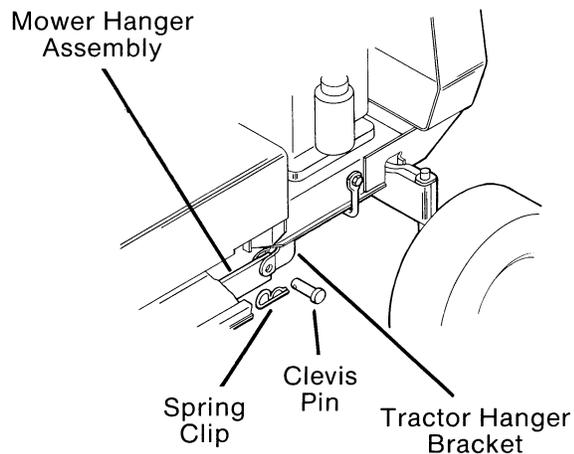
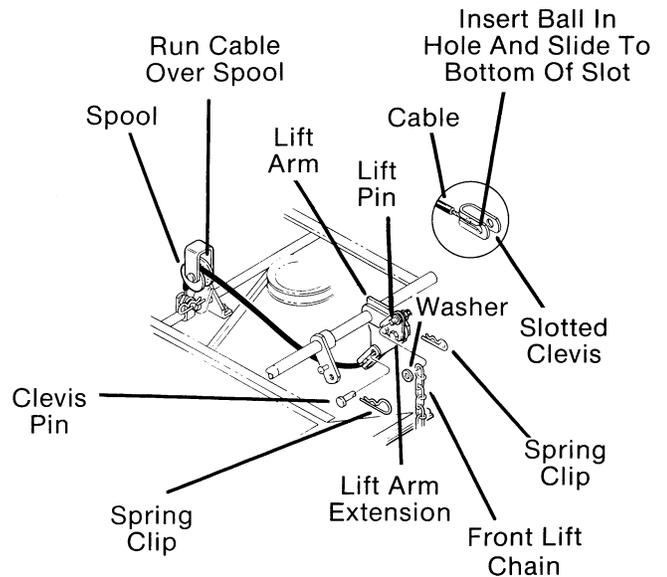
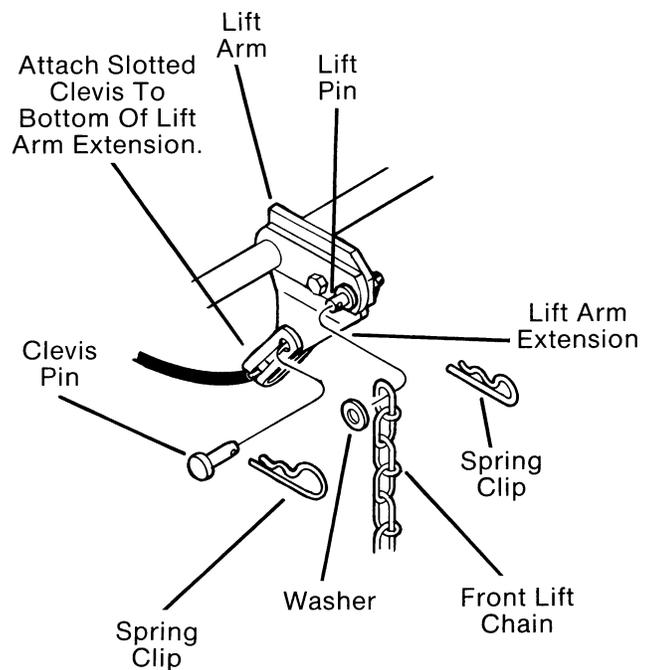


FIG. 5

- H. Route lift cable up and over spool. (Fig. 6) Attach slotted clevis to the end of the lift cable (see circled illustration). Attach slotted clevis to the bottom hole in lift arm extension with a small clevis pin and spring clip. (Fig. 6)



GEAR DRIVE TRACTORS ONLY



HYDRO DRIVE TRACTORS ONLY

FIG. 6

- I. Attach front lift chain to lift pin on lift arm extension. Fasten lift chain with a flat washer and a spring clip. (Fig. 6)

NOTE: With cutting height in the lowest cutting position, chain should be pulled to its tightest position. The nearest link that doesn't significantly lift the deck should be attached to the lift pin.

- J. Using attachment lift lever, raise the front of the mower deck, lining holes in front hanger between holes of front hanger brackets on tractor frame. (Fig. 5)
- K. Insert clevis pin through holes **from the outside**, (as shown in Fig. 5) on both sides of the tractor and secure each clevis pin with a spring clip.
- L. Route mower drive belt forward and through engine pulley belt guide and around groove in lower engine pulley. (Fig. 7)

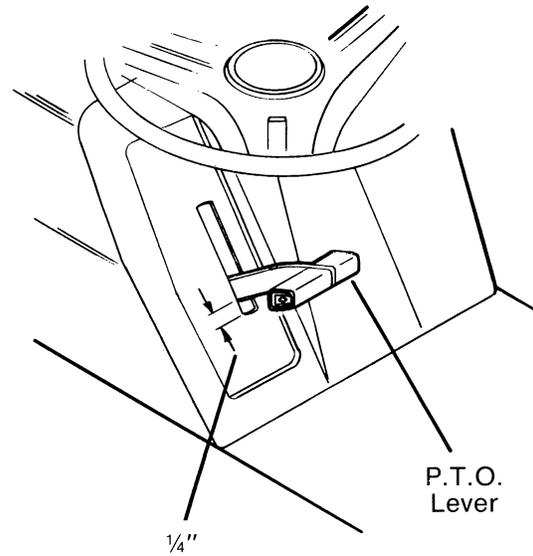


FIG. 8

- O. Turn the trunnion on P.T.O. engagement rod, in or out, until small end of trunnion fits into hole on bottom of P.T.O. lever (Fig. 9). Secure with a spring clip.

NOTE: Large end of trunnion should be positioned on the left side (outside) of the P.T.O. lever. (Fig. 9)

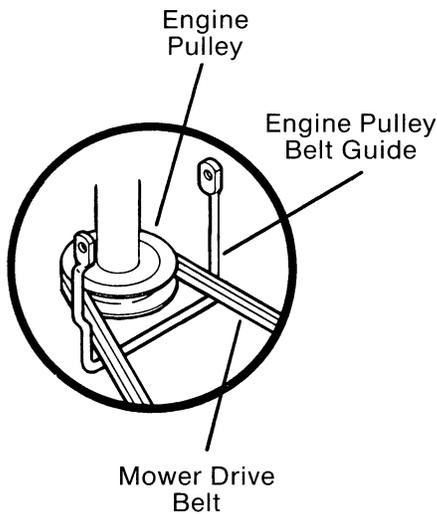


FIG. 7

IMPORTANT: If the belt guide (with extra prong) that is furnished with optional snow thrower attachment is mounted on the tractor, it **must** be removed and replaced with the original belt guide supplied with the mower deck.

- M. Lower the mower deck with the attachment lift lever for easier access to set P.T.O. engagement rod. Be sure clutch rod arm is turned clockwise as far as it will go. (Fig. 2)
- N. Position the P.T.O. lever on instrument panel 1/4 inch from the bottom of the slot, as shown in (Fig. 8).

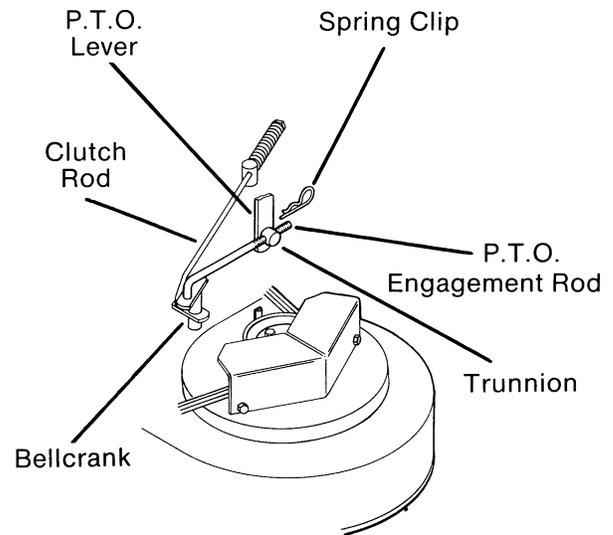


FIG. 9

- P. Check P.T.O. lever adjustment:
- Move P.T.O. lever up to the "ON" position. The clutch rod, attached to bellcrank, should move over-center and rest against bellcrank hub. (Fig. 9) The P.T.O. lever must not contact top of slot in any cutting height. (Fig. 8)
 - Move P.T.O. lever down to the "OFF" position, P.T.O. lever must not contact bottom of slot in any cutting height. (Fig. 8)
- Q. Attach the discharge guard to rear of mower deck as follows:
- Insert the long ends of the guard supports into the rear support brackets. (Fig. 10)

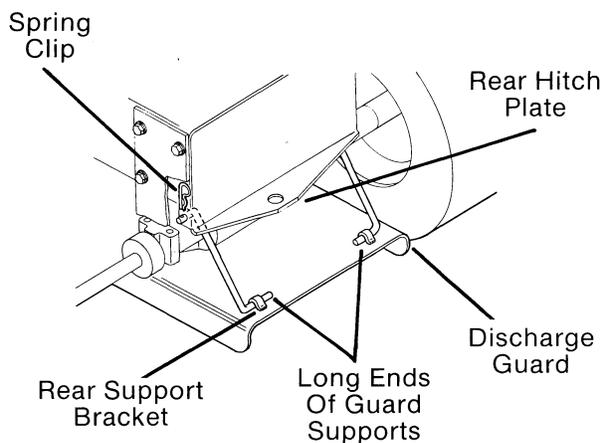


FIG. 10

- Slide front end of mower guard (with hole) forward between the rear tractor tires and hook onto pin on rear of mower deck.
- Place flat washer over pin and secure guard to mower with spring clip through hole in pin.
- Lift rear of guard up and hook short ends of guard supports into rear hitch plate as shown in (Fig. 10). Secure supports with spring clips.

2. DECK REMOVAL —

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- Lower attachment to the ground.
- Move cutting height adjustment lever to the **lowest** cutting position. (Fig. 4)
- Move P.T.O. lever to the "OFF" position.

- Remove discharge guard from rear of mower deck, by removing spring clips from each guard support. Slide supports out of holes in hitch plate. (Fig. 10)
- Remove spring clip and flat washer holding front of discharge guard to mower deck. Remove discharge guard.
- Remove spring clip holding trunnion to bottom end of P.T.O. lever (Fig. 9), then remove trunnion from lever.
- Remove spring clip holding lift chain to lift pin on lift arm extension. (Fig. 6)
- Remove spring clip and clevis pin holding lift cable to lift arm extension. (Fig. 6) Work end of lift cable out of slotted clevis and pull cable back and off of spool. (Fig. 6)
- Slip belt off of lower engine pulley, (Fig. 7) then slip belt back through belt guide.
- Lift front edge of mower deck slightly and remove two spring clips and clevis pins holding front hanger of mower to hanger brackets on tractor. (Fig. 5)
- Pull mower deck out from under left side of tractor.
- Store all loose parts **with** the mower deck for next usage.

LUBRICATION AND MAINTENANCE



WARNING: To avoid accidental starting, disengage power to attachment and stop the engine and remove ignition key before lubricating attachment.

DAILY

- GENERAL:** Make a general visual inspection of mower for loose or damaged parts. Check nuts and bolts periodically to insure against looseness caused by vibration or rough handling. Damaged parts should be repaired or replaced before using mower again.
- BELTS:** Inspect for proper tension. Refer to ADJUSTMENT AND SERVICING section.

EVERY 25 OPERATING HOURS

- A. GENERAL: Perform the "Daily" maintenance schedule.
- B. OIL: SAE #30
 - a. Mower Wheels: Oil shaft liberally, turning wheels to work oil in. If wheels become tight, remove wheels, clean shafts. Oil shafts using #30 oil and replace. (Fig. 11)

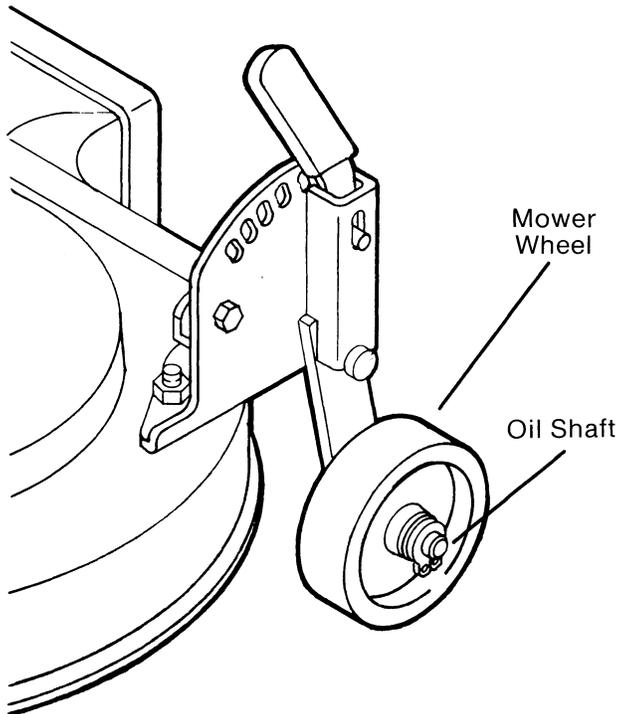


FIG. 11

- b. General: Apply oil to all pivot points and linkages to reduce wear and assure free movement. Be sure linkages are clean before applying oil.
IMPORTANT! Apply oil carefully and only where required. Oil on drive belts or pulleys will cause slippage and loss of drive. Wipe up all spills or excess oil completely.
- C. BLADES: Remove mower from tractor and turn upside down. Check tightness of all blade mounting capscrews (30-40 ft./lb. torque). Check blades for sharpness. Reference BLADE REMOVAL, SHARPENING AND BALANCING.
- D. BLADE BRAKE PADS: Inspect pad linings for excessive wear. Replace brake strap assembly if pads are worn. Reference MOWER BLADE BRAKE REPLACEMENT.

ADJUSTMENTS AND SERVICING

1. BLADE REMOVAL, SHARPENING AND BALANCING —



WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove deck from tractor by following procedures for "DECK REMOVAL" and turn deck upside down.
- B. Remove **two** capscrews, lockwashers and hex nuts that secure each outer blade to spindle assembly. (Fig. 12) Remove blades from spindles.

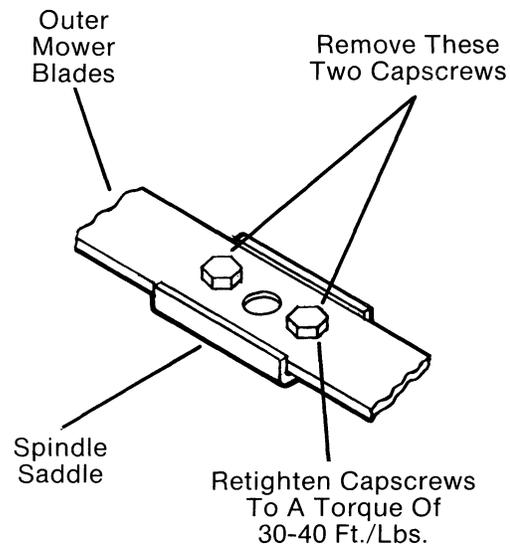


FIG. 12

NOTE: Blocking blades with a piece of wood will keep blades from turning while loosening or tightening capscrews.

- C. Remove **one** capscrew, lockwasher, special washer, fiber washer, blade and blade saddle from end of center spindle shaft. (Fig. 13)

NOTE: Center spindle shaft has two flat sides that will accept a $\frac{5}{8}$ " open end wrench, which will aid in the removal of the blade mounting capscrew. (Fig. 13)

IMPORTANT: When reassembling blade onto center spindle shaft, be sure rectangular slot in blade saddle fits flush onto end of shaft and blade fits properly into blade saddle before tightening blade mounting capscrew (Torque capscrew to 16 - 24 ft./lbs.)

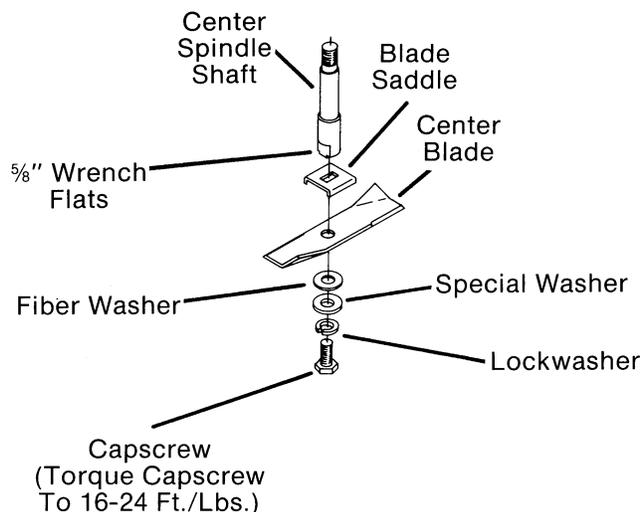


FIG. 13

D. Sharpen blades following the original blade cutting edge contours. Refer to (Fig. 14) for correct blade sharpening dimensions and instructions.

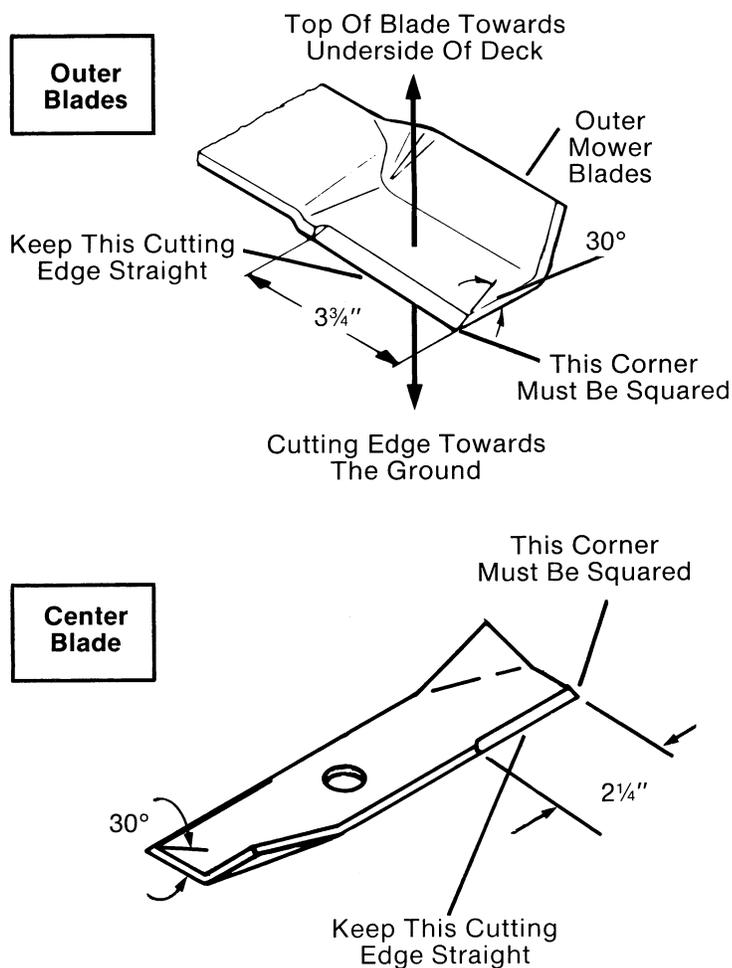


FIG. 14

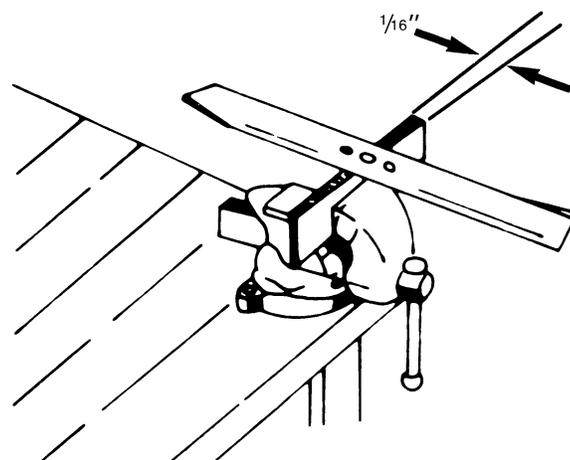


FIG. 15

NOTE: If blades become badly worn or damaged or original blade sharpening contours cannot be maintained, replace with new blades. It is recommended that if either of the two outer blades need replacement, then both outer blades should be replaced as a **set**.

E. After sharpening, check blade for balance by supporting blade as shown in (Fig. 15), using the center hole as a guide. File or grind metal from heavy end of blade until blade balances.

F. After balancing, remount blades flush onto spindle assembly. Be sure blade is mounted so cutting edge is towards the ground. (Fig. 14) Replace blade mounting hardware and tighten capscrews to a torque of 30 - 40 ft./lbs.

IMPORTANT: Blade mounting capscrews are heat treated (Grade 5 type). Other types of capscrews must not be used as replacements.

2. DRIVE BELT ADJUSTMENT —

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

A. If belt has stretched and begins to slip under load, adjust belt as follows:

- B. Move the P.T.O. lever to the ENGAGED (up) position. Measure the compression of the clutch rod tension spring. Spring should be compressed to dimension shown in (Fig. 16). Turn adjustment locknut on end of clutch rod until dimension is achieved.
- C. If belt still slips, remove right pulley guard (Fig. 17) and move the P.T.O. lever to the DISENGAGED (down) position.

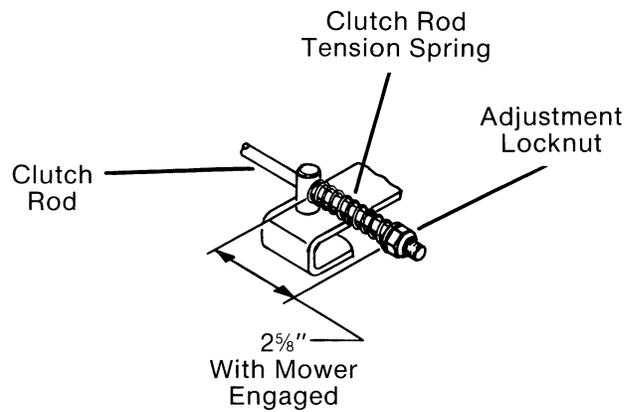


FIG. 16

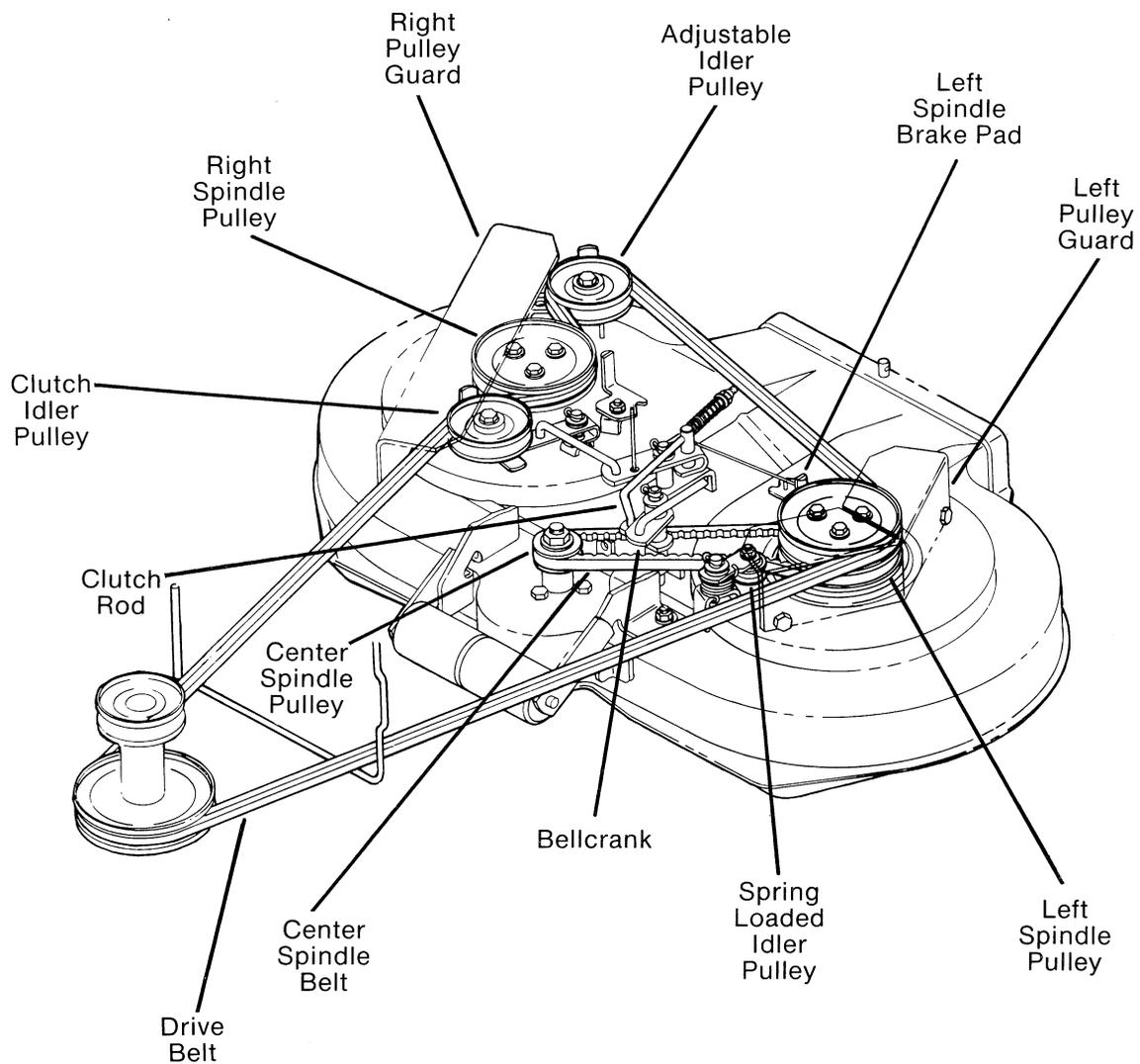


FIG. 17

- D. Remove locknut on bottom of capscrew holding adjustable idler pulley to pulley bracket. (Fig. 18)

IMPORTANT: Note which hole the adjustable idler pulley is presently mounted through on the pulley bracket. There are **four** hole positions that the idler pulley can be mounted in. (Fig. 18)

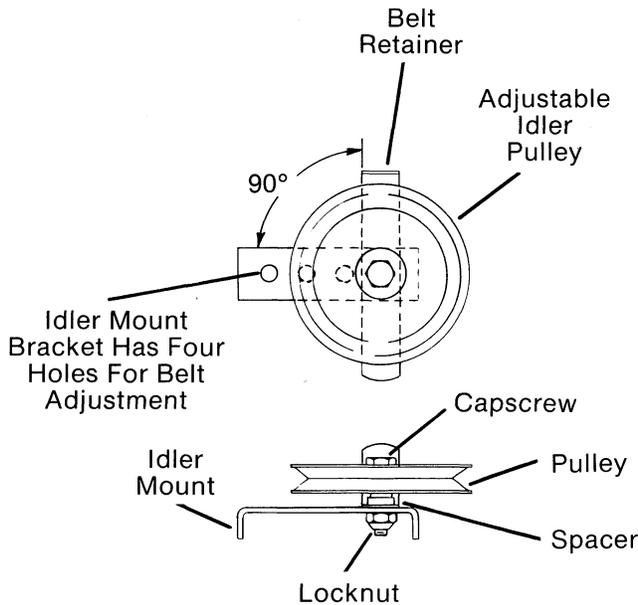


FIG. 18

- E. Lift adjustable idler pulley, capscrew, spacer and belt retainer off of pulley bracket and reposition pulley in the next hole towards the right side of the deck. Replace locknut on the bottom of the capscrew and tighten locknut.

NOTE: Before tightening hardware, be sure belt retainer is positioned 90° from pulley bracket, as shown in (Fig. 18)

- F. Test mower deck. If belt still slips, reposition idler pulley in the next hole to the right in pulley bracket. Repeat this step if necessary.
- G. If adjustable idler pulley has reached the last hole in the pulley bracket and the belt still slips; turn adjustment locknut on end of clutch rod (Fig. 16) **in** (clockwise) until belt stops slipping.

NOTE: DO NOT compress spring any further than 2" with the mower in the **ENGAGED** position.

- H. If belt is still slipping after adjustment nut has been turned in all the way, belt **must** be replaced. Follow procedures under "DRIVE BELT REPLACEMENT".

- I. After all adjustments have been made be sure to replace right pulley guard. (Fig. 17)

3. DRIVE BELT REPLACEMENT —

This belt was designed and engineered to provide long, trouble-free service. If belt replacement is necessary, use **only** the belt recommended by manufacturer to be sure you have a belt that will provide the life and service required.

WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- A. Remove mower deck from tractor by following procedures under "DECK REMOVAL".
- B. Remove right and left pulley guards. (Fig. 17)
- C. Remove locknut and capscrew holding adjustable idler pulley to pulley bracket. (Fig. 18) Work belt off, between idler pulley and belt retainer.
- D. Turn clutch rod arm counterclockwise (Fig. 19), right spindle brake pad should move away from right spindle pulley. Work belt off between right spindle pulley and brake pad.

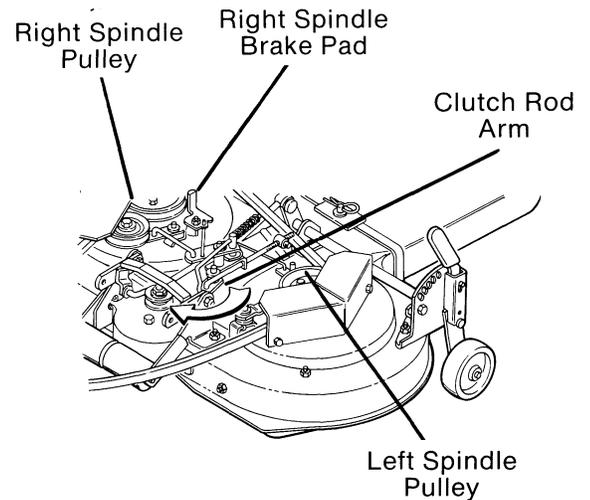


FIG. 19

- E. Remove locknut and capscrew holding clutch idler pulley to structure (Fig. 17 and 20) Work belt off, between idler pulley and belt retainer.

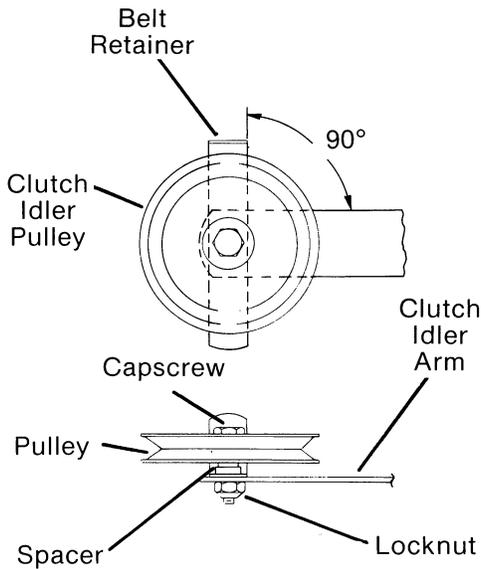


FIG. 20

- F. Remove belt and replace with a new belt.
 G. Remount clutch idler pulley and adjustable idler pulley to mower deck. (Fig. 17)

IMPORTANT: Be sure to remount adjustable idler pulley in the hole on pulley bracket that is furthest to the left. This will enable you to make future belt adjustments, as the belt stretches.

NOTE: Before tightening hardware on idler pulleys, be sure belt retainers are positioned 90° from pulley bracket and clutch idler arm as shown in (Figs. 18 and 20).

- H. Remount mower deck to tractor by following procedures under “DECK MOUNTING”.
 I. Move the P.T.O. lever to the ENGAGED (up) position. Measure the compression of the clutch rod tension spring. Spring should be compressed to dimension shown in (Fig. 16). Turn adjustment locknut on end of clutch rod until dimension is achieved.

4. CENTER SPINDLE BELT ADJUSTMENT —

No adjustment is necessary. This belt is self adjusted by a spring loaded idler pulley. Periodically check idler arm to be sure it is pivoting freely and providing tension.

5. CENTER SPINDLE BELT REPLACEMENT —

This belt was designed and engineered to provide long, trouble-free service. If belt replacement is necessary, use **only** the belt recommended by manufacturer to be sure you have a belt that will provide the life and service required.



WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- Remove mower deck from tractor by following procedures under “DECK REMOVAL”.
- Remove left pulley guard. (Fig. 17)
- Remove cotter pin or spring clip and washer attaching clutch rod to bellcrank. (Fig. 17) Disconnect clutch rod from bellcrank.
- Pull spring loaded idler pulley away from belt and work belt off of center spindle pulley. (Fig. 17)
- Pull drive belt away from upper groove in left spindle pulley. (Fig. 17)
- Turn clutch rod arm clockwise (Fig. 19) left spindle brake pad should move away from left spindle pulley. Work center spindle belt off between left spindle pulley and brake pad.
- Remove old belt and replace with a new one.
- Reverse above procedures to replace new belt and remount mower deck to tractor by following procedures under “DECK MOUNTING”.

6. MOWER BLADE BRAKE ADJUSTMENT —

The purpose of the blade brake is to stop mower blade rotation in a minimum of time. (about 5-7 seconds)



WARNING: To avoid injury, shut off engine, wait for all movement to stop and remove ignition key.

- Remove mower deck from tractor by following procedures under “DECK REMOVAL”.