FORD

YT
TRACTOR ATTACHMENTS

MODELS:

09GN-3659	MOWER DECK 42″
09GN-3665	SNOW THROWER 36″
09GN-3639	TILLER 26″
GB 63646	ELECTRIC LIFT KIT

REPAIR MANUAL

40365940
Reprinted

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42" MOWER ATTACHMENT (Yard Tractor) (Model 09GN-3659)

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.

42" MOWER ATTACHMENT

(YARD TRACTOR) (09GN-3659)

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 back edge of the deck next to the right hand roller bracket. (Fig. 1)

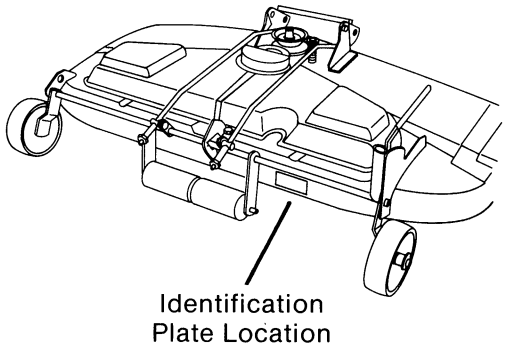


FIG. 1

SET-UP INSTRUCTIONS

This procedure is provided for the serviceman to determine if the original set-up and assembly of this mower attachment was performed properly. For a more detailed account of the original set-up procedures see the OPERATOR'S MANUAL.

1. Initial Deck Set-Up —

A. Lubricate mower wheel shafts with SAE #30 wt. oil. (Fig. 2)

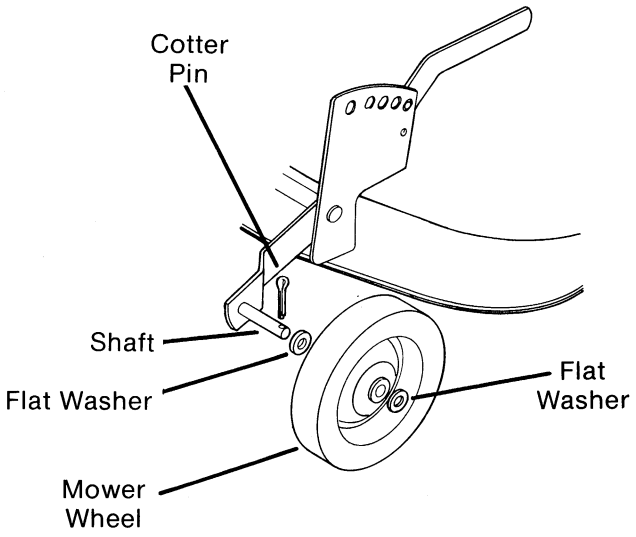


FIG. 2

B. Slide one flat washer then mower wheel and another flat washer onto shaft on each end of wheel hanger. Secure each mower wheel in place on shaft with a cotter pin. (Fig. 2)

C. Assemble retainer capscrew to the height adjustment quadrant as follows:

a. Move height adjustment handle to the fourth highest notch as shown in (Fig. 3).

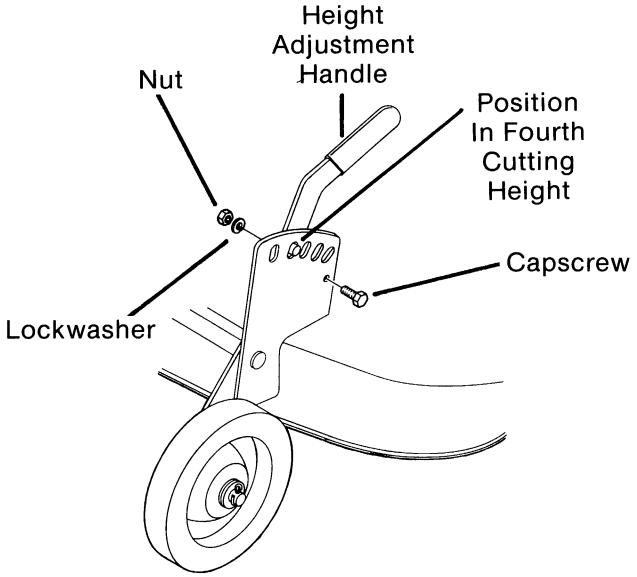


FIG. 3

b. Insert capscrew into lower hole and secure in place with a lockwasher and hex nut.

D. Insert a large spring clip into the second hole from the right end of the bell crank shaft. See (Fig. 4)

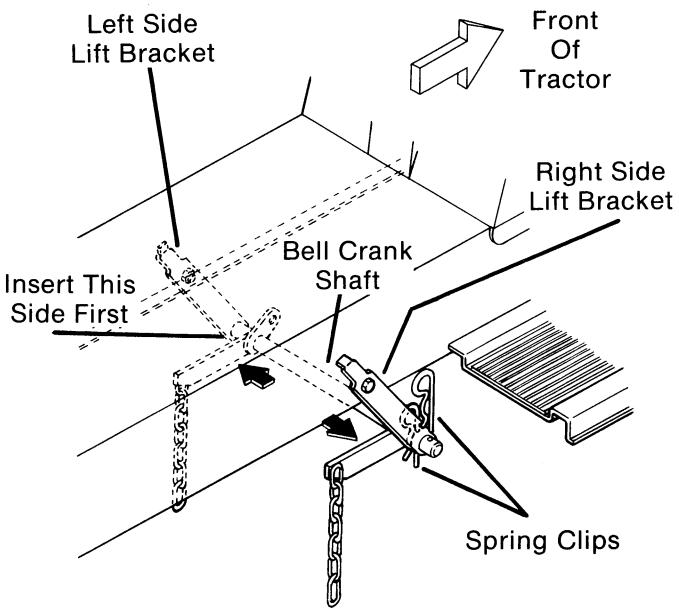


FIG. 4

E. Slide the left end of the bell crank shaft into the hole in the left side lift bracket. Then insert the right end of the bell crank shaft into the hole in the right lift bracket and secure with another large spring clip in the remaining hole on the shaft. (Fig. 4)

F. Insert one anti-rotation spacer into square hole on left front edge of mower deck. Then from the inside of the deck insert a carriage bolt through the spacer. (Fig. 5)

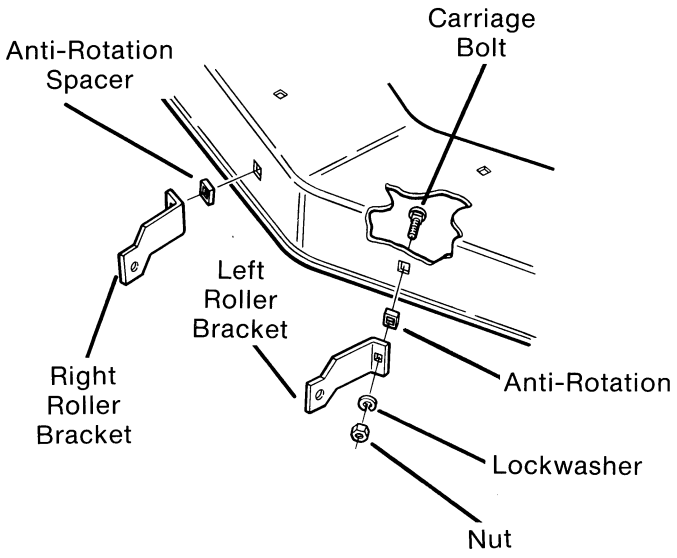


FIG. 5

G. Assemble left front roller bracket onto carriage bolt and spacer, as shown in (Fig. 5). Secure with a lockwasher and hex nut.

H. Repeat steps "F" and "G" for mounting the right front roller bracket.

I. Position front rollers between roller brackets, as shown in (Fig. 6), and insert roller shaft thru front brackets and rollers. Insert a cotter pin in each hole in the ends of the roller shaft.

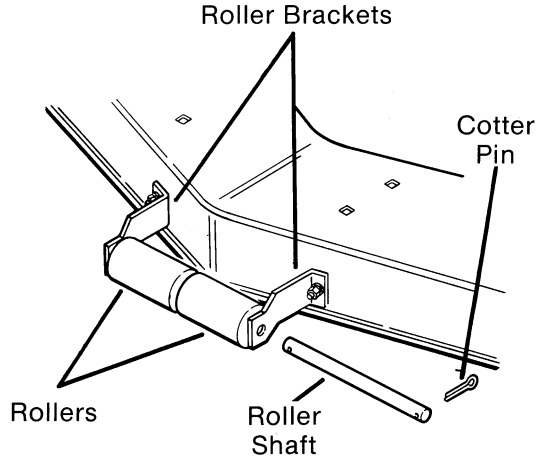


FIG. 6

2. 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. TWO PEOPLE WILL MAKE ATTACHING THE MOWER TO TRACTOR NOTICEABLY EASIER.

B. Position tractor to the left of the mower deck. (Fig. 7) Turn steering wheel to the left until front wheels are pointed left, as far as possible. (Fig. 7)

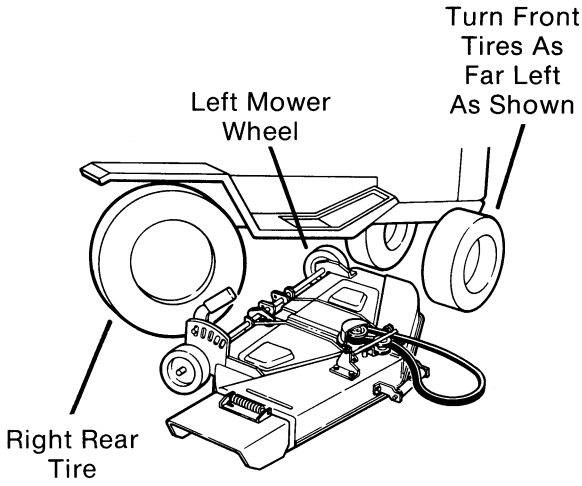


FIG. 7

C. Slide mower deck under tractor on an angle so the left mower wheel clears the right rear tractor tire. (For easier positioning of mower deck, the front or rear tractor tires could be jacked up about 3 or 4 inches.)

D. Straighten mower deck under tractor. Slide a 4" - 5" block of wood under the front of the mower deck.

E. Lift mower up and position the front hanger assembly between the hanger brackets on each side of frame. (Fig. 8)

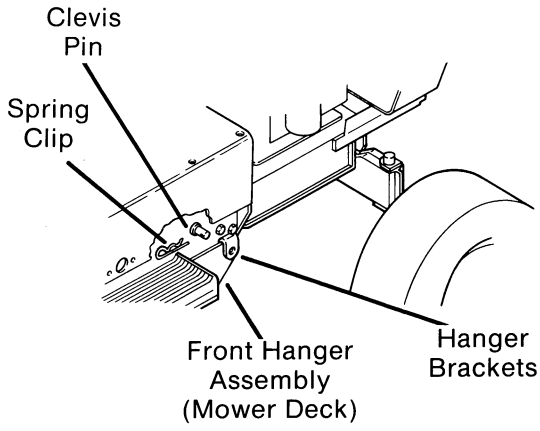


FIG. 8

NOTE: To easily line up hanger assembly with hanger brackets put tractor in NEUTRAL and roll tractor forward or backward.

F. Line up holes and insert clevis pins, through hanger brackets and hanger on both sides of frame, from the inside out as shown in (Fig. 8).

G. Secure clevis pins in position using two small spring clips (one for each clevis pin). (Fig. 8)

H. Lower attachment lift lever and insert lift link into the bottom hole in lift arm as shown in (Fig. 9).

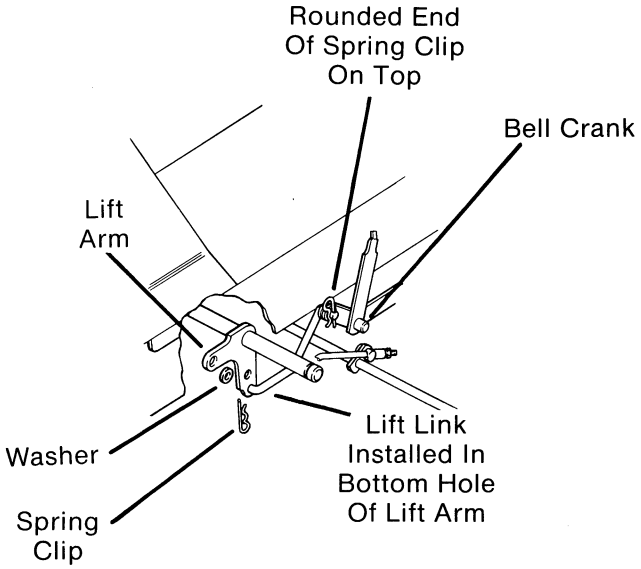


FIG. 9

NOTE: Rounded end of spring clip attached at the bellcrank, should be on top as shown in (Fig. 9).

I. Secure lift link to lift arm with a flat washer and a small spring clip. (Fig. 9)

J. Position a lift clevis around hanger rod and insert a clevis pin through lift clevis and the last link of bell crank lift chain. (Fig. 10)

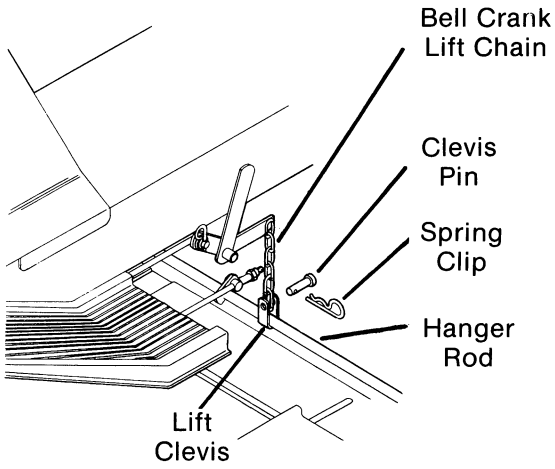


FIG. 10

K. Secure clevis pin in place using a small spring clip. Repeat again on other side of mower deck.

L. Pull spring loaded idler pulley to the right and place belt inside idler (be sure wide side of belt is against idler pulley.) Then forward and around electric P.T.O. clutch pulley, as shown in (Fig. 11).

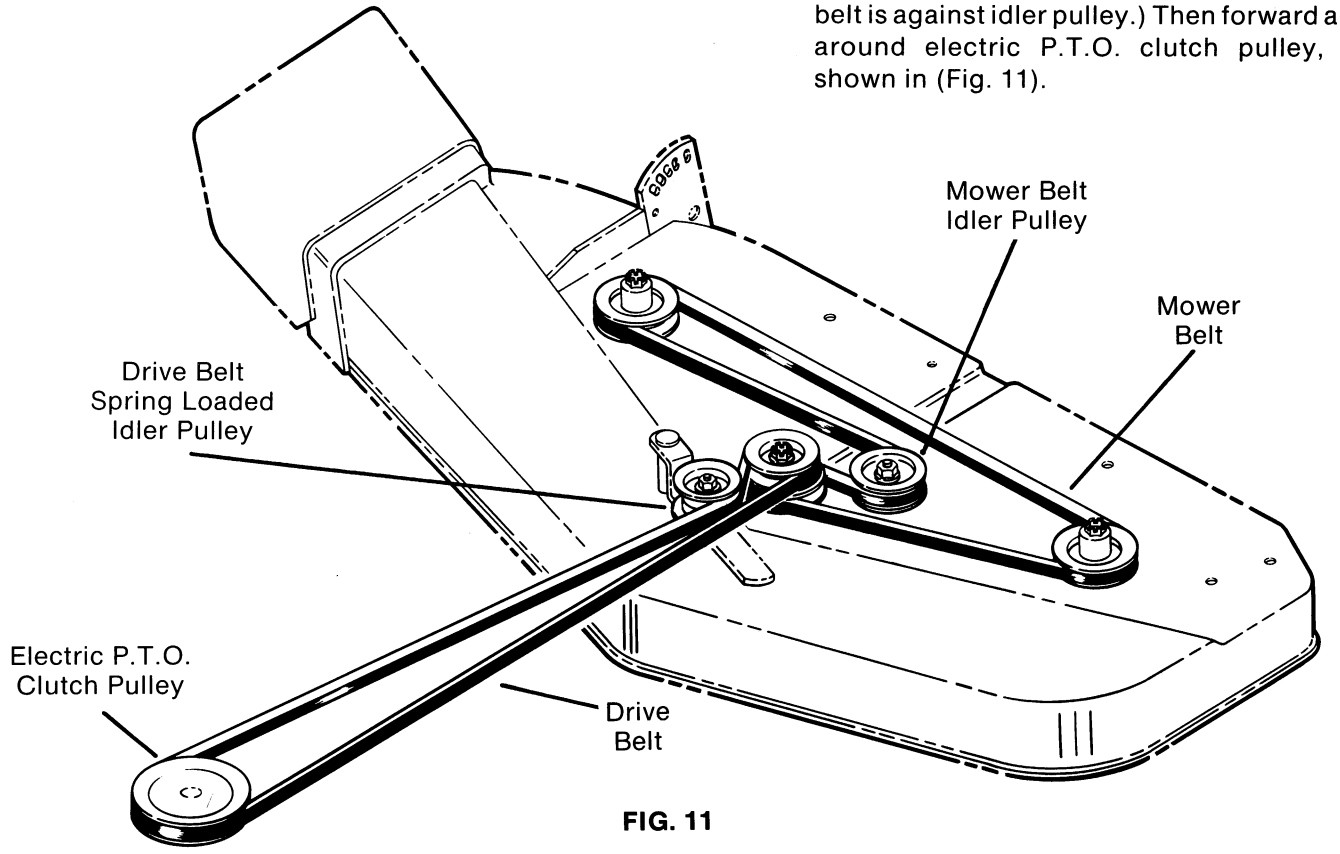


FIG. 11

M. Lubricate all linkages and pivot points with SAE #30 wt. oil. APPLY OIL CAREFULLY — oil on belts or pulley grooves will cause slippage and poor performance. Clean up all spilled or excess oil.

3. DECK REMOVAL —

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

A. Lower attachment to the ground and set deck in middle cutting height.

B. Remove mower drive belt from electric P.T.O. clutch pulley (Fig. 11) by moving spring loaded idler pulley to the right to relieve tension on the belt.

C. Remove spring clip from clevis pin attaching lift clevis to hanger rod. Remove clevis pin and lift clevis. (Fig. 10) Repeat again on side of mower deck.

D. Remove spring clip and flat washer from front end of lift link attached to lift arm. (Fig. 9) Detach lift link from lift arm.

E. Lift front of mower deck up and remove spring clips from clevis pins through front hanger brackets. Remove clevis pins and lower deck to the ground. (Fig. 8)

F. Slide mower deck out right side of tractor.

G. If mower deck is to be removed for storage or to be replaced with a different attachment, bell crank assembly **must** be removed from the tractor, proceed as follows:

NOTE: The following procedure **does not** have to be performed if mower deck is only being removed for cleaning or servicing.

a. Remove outer spring clip on right end of bell crank shaft. (Fig. 4) Slide bell crank to the left until right end of shaft comes out of hole in right lift bracket. Remove bell crank from left lift bracket and remove from tractor.

b. 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

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 wt.

a. **Mower Wheels:** Oil shaft liberally, turning wheels to work oil in. If wheels become tight, remove wheels, clean shafts and oil shafts using SAE #30 oil and replace. See (Fig. 12)

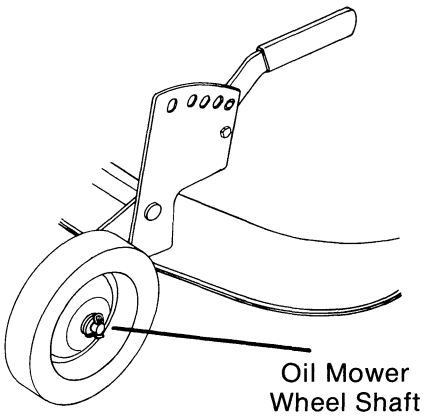


FIG. 12

b. **General:** Apply oil to all pivot points and linkages indicated in (Fig. 13) to reduce wear and assure free movement. Be sure linkages are clean before applying oil.

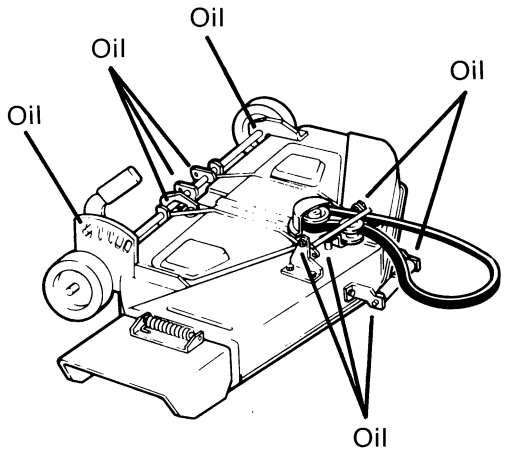


FIG. 13

c. **Cutting Blade Spindles (3):** Remove the mower from tractor and turn upside down. Clean off all 3 grease fittings (Fig. 14) before grease gun is used. Use #2 wheel bearing grease or Ford 1T-M1C137-A grease. Lubricate until grease is visible.

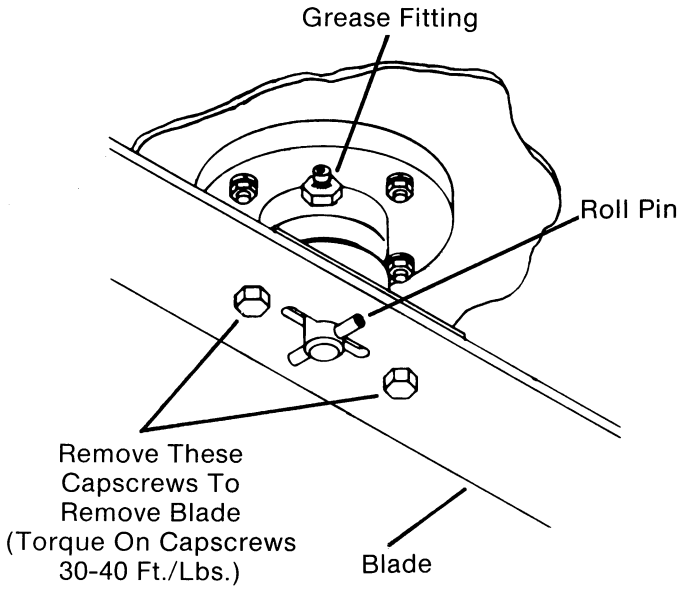


FIG. 14

C. BLADES: Remove mower from tractor and turn upside down. Check tightness of all blade mounting capscrews (30 - 40 ft./lbs. torque.) Check blades for sharpness. Reference BLADE REMOVAL, SHARPENING AND BALANCING.

ADJUSTMENTS AND SERVICING

1. BLADE REMOVAL, SHARPENING, AND BALANCING —

WARNING: To avoid accidental starting, 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 blade to spindle assembly. (Fig. 14)

C. Turn blade 90° to clear roll pin in spindle assembly. (Fig. 14)

D. Sharpen blades following the original blade cutting edge contours. Refer to (Fig. 15) for correct blade sharpening dimensions and instructions.

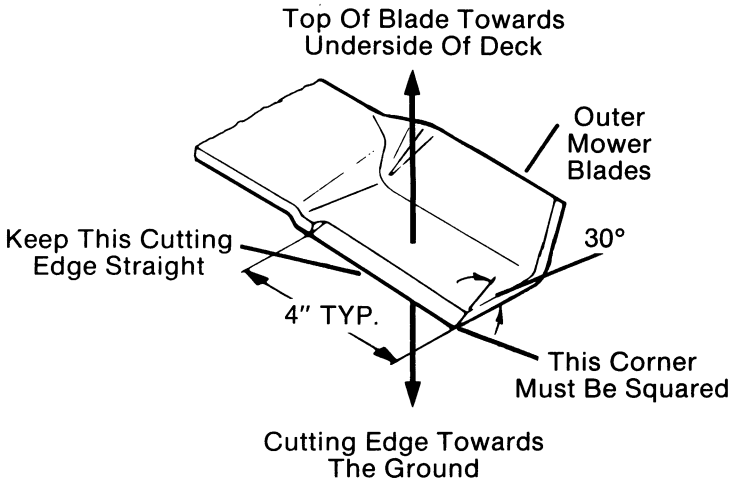


FIG. 15

E. After sharpening, check blade for balance by supporting blade as shown in (Fig. 16) using the center hole as a guide. File or grind metal from heavy end of blade until the blade balances.

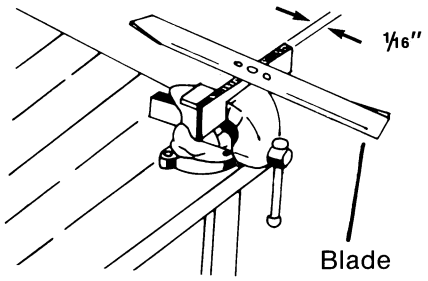


FIG. 16

F. After balancing, remount blade flush onto spindle assembly. Be sure blade is mounted with cutting edge towards the ground. (Fig. 15) Replace blade mounting hardware and tighten capscrews to a **torque** of **30 - 40 ft./lbs.**

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

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

NOTE: If blades become badly worn or damaged, replace with new blades. It is recommended that blades be replaced in **sets.**

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

2. DRIVE 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. (Fig. 17)

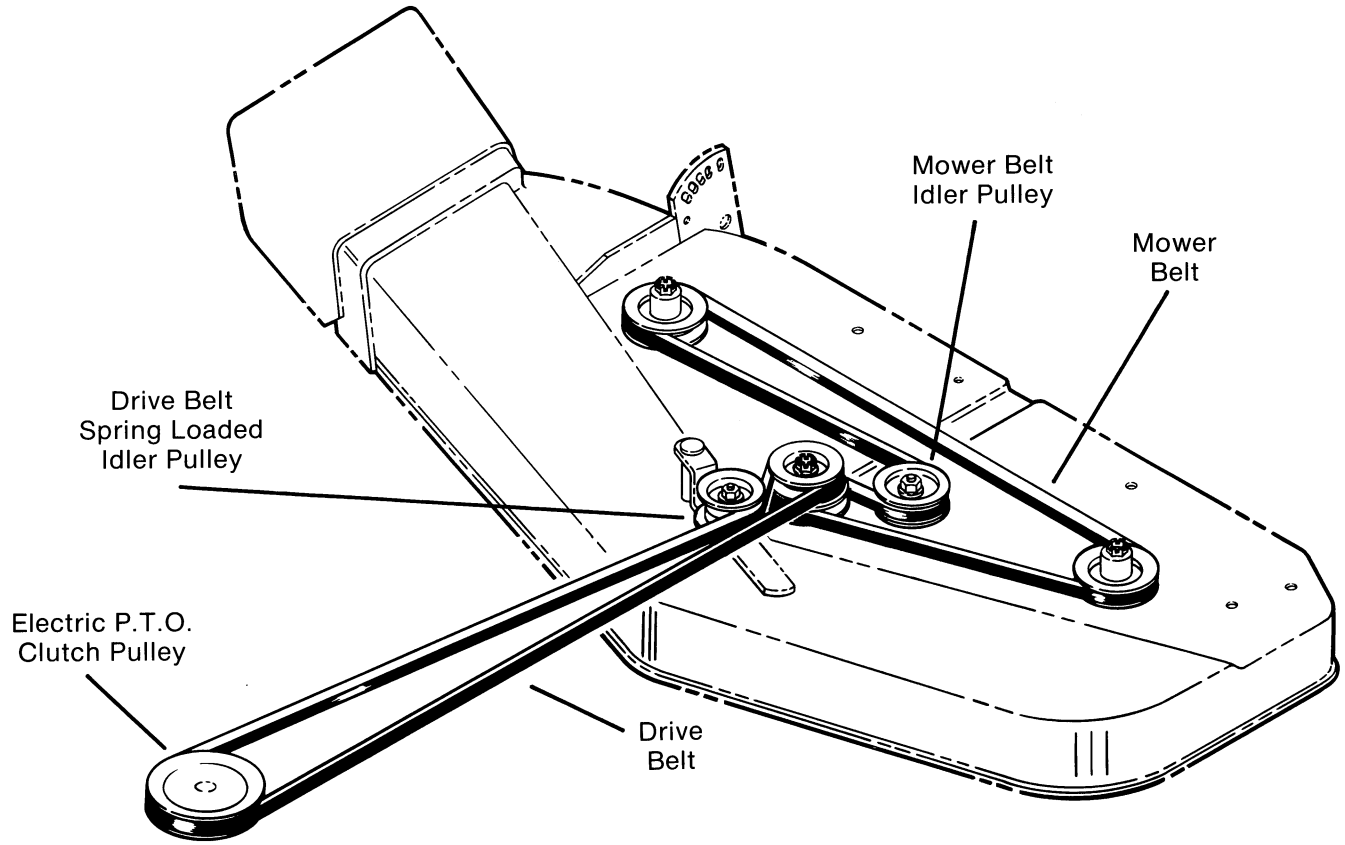


FIG. 17

3. DRIVE BELT REPLACEMENT —

This belt was designed and engineered to provide long, trouble-free service. If 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 accidental starting, shut off engine, wait for all movement to stop and remove ignition key.

A. Lower attachment to the ground.

B. Push spring loaded idler pulley, on the front of mower deck, to the right to take tension off of the drive belt. (Fig. 17)

C. Remove drive belt from electric P.T.O. clutch pulley. (Fig. 17)

D. Remove cover from center spindle pulley, (Fig. 18) by removing three capscrews and lockwashers.

E. Remove belt from center spindle pulley and replace with a new belt. Pull spring loaded idler pulley to the right and place belt inside idler (be sure wide side of belt is against idler pulley.) (Fig. 17)

F. Route belt forward and around electric P.T.O. clutch pulley. (Fig. 17)

G. Reinstall cover over center spindle pulley and secure with hardware removed in step "D". (Fig. 18)

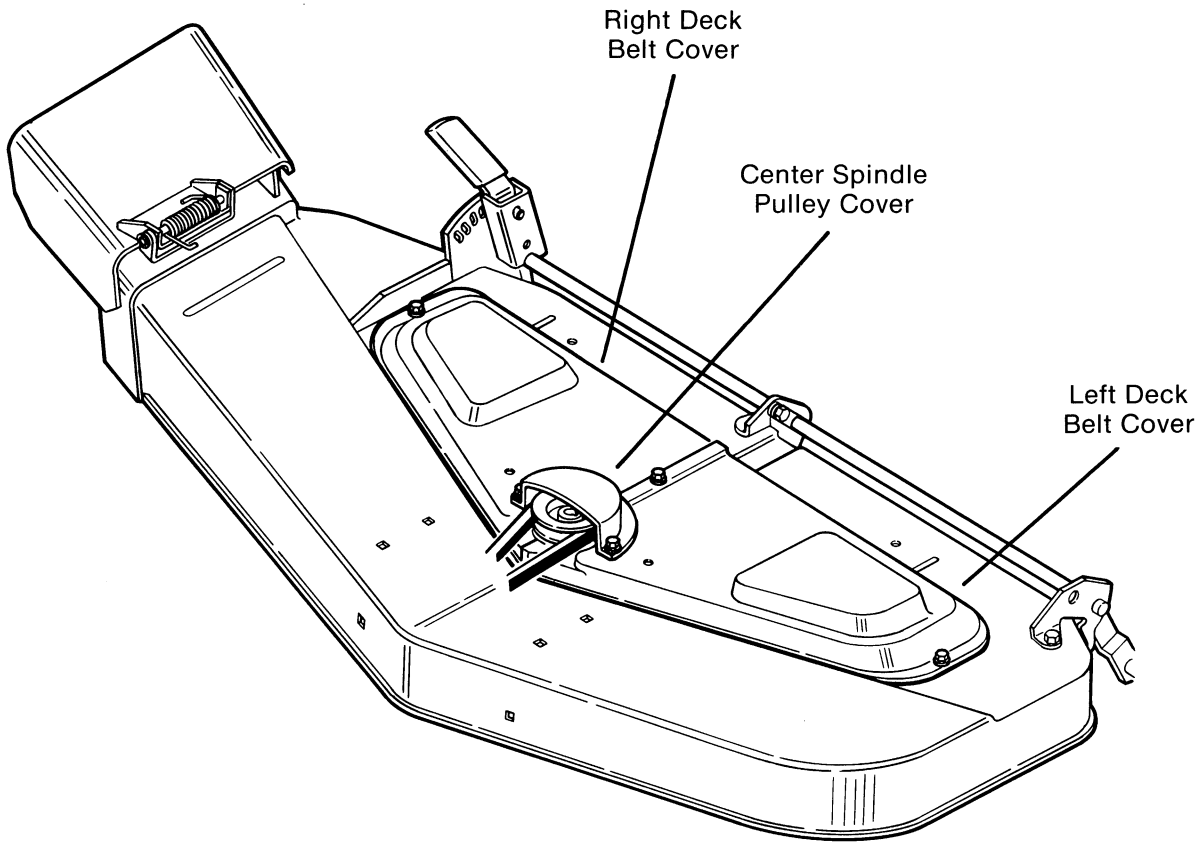


FIG. 18

4. MOWER BELT ADJUSTMENT —

This belt is properly adjusted at the factory, but after the first 4 hours of use or when belt begins to slip, adjust belt as follows:

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

A. Remove deck from tractor by following procedures for "DECK REMOVAL".

B. Remove cover from center spindle pulley, (Fig. 18) by removing three capscrews and lockwashers.

C. Remove left main deck belt cover by removing five capscrews and lockwashers. (Fig. 18)

D. Raise and support deck in a upright position. Block center spindle blade with a piece of wood. (Fig. 19) Try to rotate one of the outside blades by hand, if blade can be rotated, belt tension must be increased. Adjust as follows:

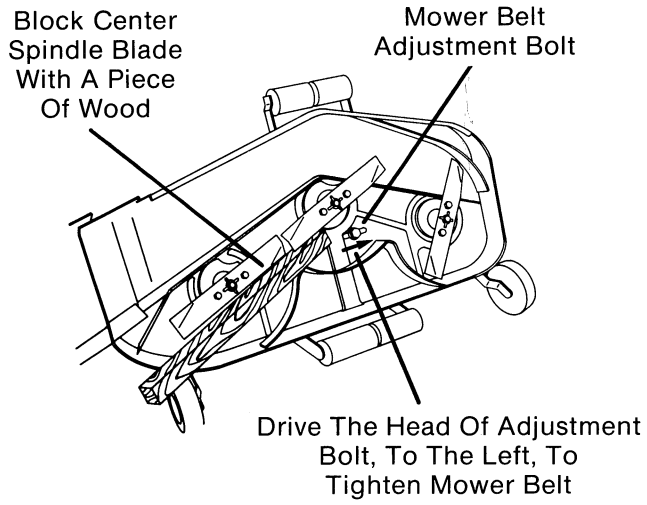


FIG. 19

a. Loosen adjustment bolt on idler pulley, (Fig. 19) just far enough to allow the bolt to move when driven to the left with a block of wood and a hammer. Drive on the **head** of the adjustment bolt.

b. Tighten the nut on the top of the idler pulley and recheck the adjustment as described in step "D".

c. Repeat adjustment if necessary.

NOTE: Belt tension, provided by the idler pulley adjustment, can **never** be too tight.

NOTE: if idler pulley adjustment has reached the end of the slot in mower deck and belt is still not tight, replace mower belt.

E. Replace left belt cover and center spindle pulley cover.

F. Remount mower deck to tractor and test operation.

5. MOWER BELT REPLACEMENT —

This belt was designed and engineered to provide long, trouble-free service. If 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 accidental starting, shut off engine, wait for all movement to stop and remove ignition key.

A. Remove deck from tractor by following procedures for "DECK REMOVAL".

B. Remove center spindle pulley cover and right and left main deck covers. (Fig. 18)

C. Remove drive belt from center spindle pulley.

D. Loosen nut on mower belt idler pulley (Fig. 17) and slide idler pulley to the right to relieve tension on mower belt.

E. Remove old mower belt from all pulleys and replace with a new belt. See (Fig. 17) for proper routing of belt.

NOTE: At this time, lubricate all spindle bearings (Fig. 14) and sharpen or replace blades. Also be certain that all spindle assemblies are torqued securely to mower deck. (Reference SPINDLE REMOVAL AND REPLACEMENT).

F. Raise and support deck in an upright position. Block center spindle blade with a piece of wood. (Fig. 19)

G. Using another block of wood and a hammer, drive the idler pulley bolt head (that has been loosened just enough so bolt will move) to the left until belt is tight. Tighten nut on the top of the idler pulley.

H. Unblock center spindle blade and try to rotate one of the outside blades by hand. If blade rotates too easily, belt tension must be increased. Repeat steps "F", "G", and "H" until belt is tight.

NOTE: Belt tension, provided by the idler pulley adjustment, can **never** be too tight.

I. Reinstall drive belt onto center spindle pulley. (Fig. 17)

J. Reinstall right and left main deck covers then center spindle pulley cover. (Fig. 18)

K. Reattach mower deck to tractor by following "DECK MOUNTING" procedures.

NOTE: After the first 4 hours of use on the new belt, or when belt begins to slip, readjust belt. (Reference MOWER BELT ADJUSTMENT)

6. SPINDLE REMOVAL AND REPLACEMENT —

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

A. Remove deck from tractor by following procedures for "DECK REMOVAL".

B. Remove center spindle pulley cover and right and left main deck covers. (Fig. 18)

C. Remove drive belt from center spindle pulley.

D. Loosen nut on mower belt idler pulley (Fig. 17) and slide idler pulley to the right to relieve tension on mower belt. Remove mower belt.

E. One or all spindle assemblies can be serviced at this time. Follow procedures below to remove any spindle assembly.

a. Remove cotter pin from slotted nut on top of spindle shaft. (Fig. 20)

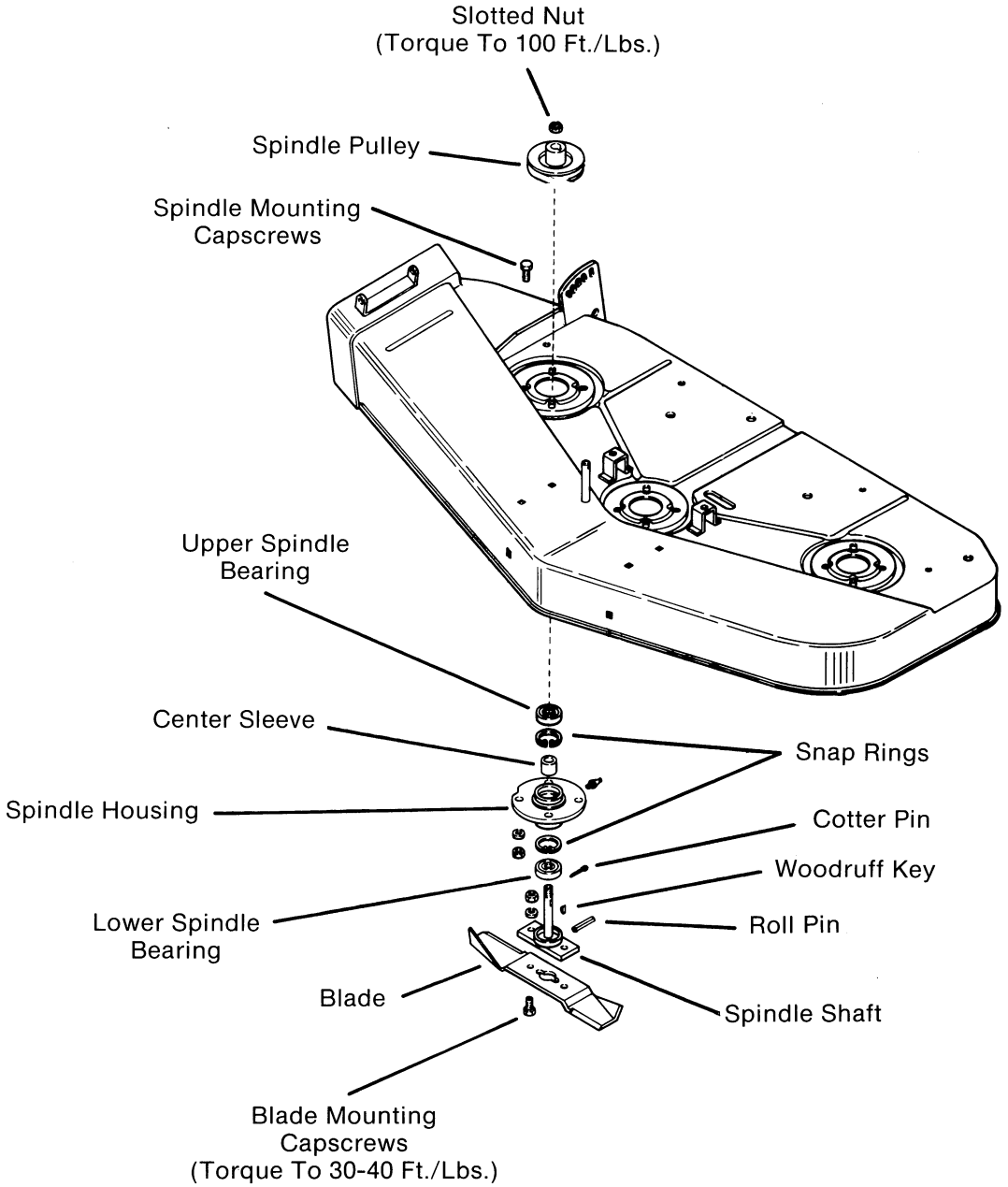


FIG. 20

b. Block blade with a piece of wood (Fig. 19) and remove slotted nut from spindle shaft. (Fig. 20)

c. Pull pulley off end of spindle shaft. (Fig. 20)

d. Remove four capscrews, lockwashers and nuts securing spindle assembly to mower deck. (Fig. 20) Remove spindle assembly out bottom of deck.

e. Remove woodruff key from spindle shaft and pull spindle assembly out of spindle housing bearings. (Blade still attached to spindle assembly). Check spindle assembly for excessive wear and overall straightness.

NOTE: If spindle is to be replaced, remove blade and roll pin from bottom end of spindle assembly. (Fig. 20)

IMPORTANT: Note spindle assembly should contain a spacing washer at the base of the spindle shaft in the dust shield. (Fig. 21)

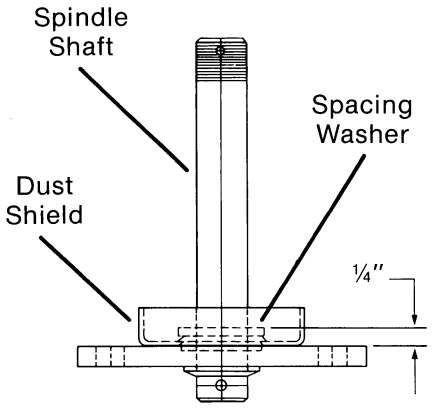


FIG. 21

f. Check condition of both upper and lower spindle bearings in spindle housing. If bearings need replacement, tap lightly on inner race of bearings from the opposite direction of which they were installed. (Fig. 22)

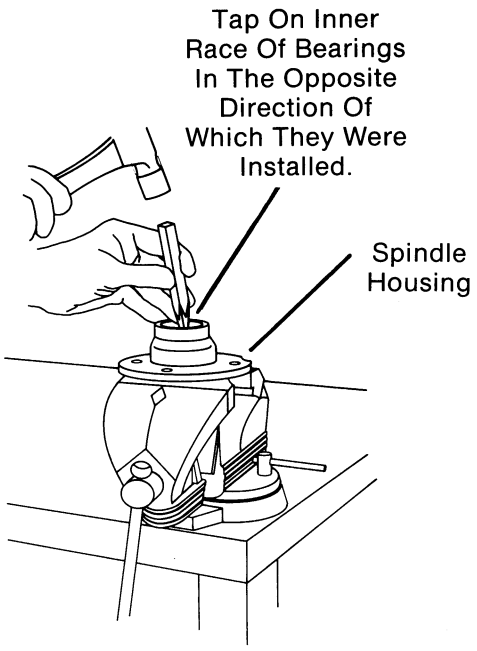


FIG. 22

NOTE: Spindle bearings are precision ball bearings. The top bearing is sealed on both sides and the bottom bearing is sealed on **one** side only. New bearings **must** be installed properly, reference (Fig. 23). Lower bearing **must** be installed with the unsealed side up and black sealed side down. Upper bearing is installed with the black sealed side up. **Be sure** center sleeve is installed between bearings before bearings are installed into spindle housing. (Fig. 23) (Be sure bearings are installed until they are seated against snap rings.) (Fig. 23)

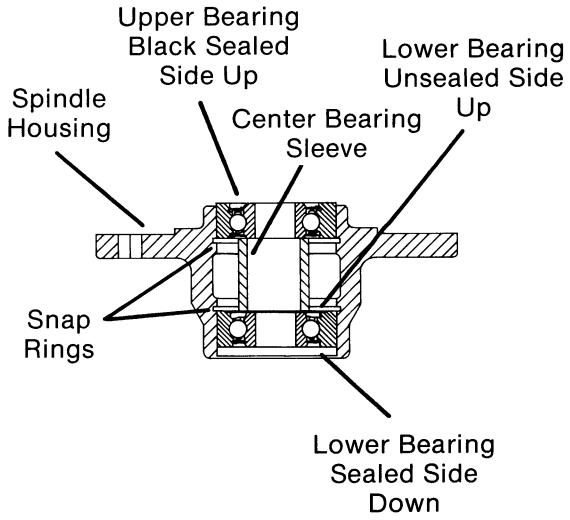


FIG. 23

F. Reassemble spindle assembly to mower deck as follows:

a. Slide spindle shaft thru bearings and center sleeve in spindle housing. (Fig. 20)

NOTE: If spindle shaft assembly was replaced, install roll pin thru hole in bottom of spindle shaft. (Fig. 20)

b. Mount blade flush against bottom of spindle flange. Be certain blade is mounted with cutting edge towards bottom of deck. Replace capscrews, lockwashers and nuts thru blade and spindle flange. (Fig. 20) Tighten capscrews to a torque of 30 - 40 ft./lbs.

NOTE: Blade may have to be secured into a vise in order to get the proper torque on blade capscrews.

c. Replace woodruff key in key slot. (Fig. 20)

d. Mount spindle assembly to mower deck from the bottom up and secure with four capscrews, lockwashers and nuts. (Fig. 20)

e. Install spindle pulley onto top end of spindle shaft. (Fig. 20)

f. Block blade with a piece of wood (Fig. 19) and install slotted nut on top end of spindle shaft. Tighten slotted nut to a torque of 100 ft./lbs. and secure with a cotter pin.

NOTE: To align hole in spindle shaft with slots in nut, **advance** (tighten) nut; DO NOT BACK OFF to align holes with slot.

g. Lubricate spindle bearings with No. 2 wheel bearing grease or Ford 1T-M1C137-A grease until grease comes out of dust shield.

G. Replace mower belt, drive belt and deck covers to mower deck by following **all** procedures for "MOWER BELT REPLACEMENT".

H. Reattach mower deck to tractor by following "DECK MOUNTING" procedures.

7. 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 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 accidental starting, shut off engine, wait for all movement to stop and remove ignition key.

a. Check mower pitch by turning blades so they **all** point front to rear. (Fig. 24)

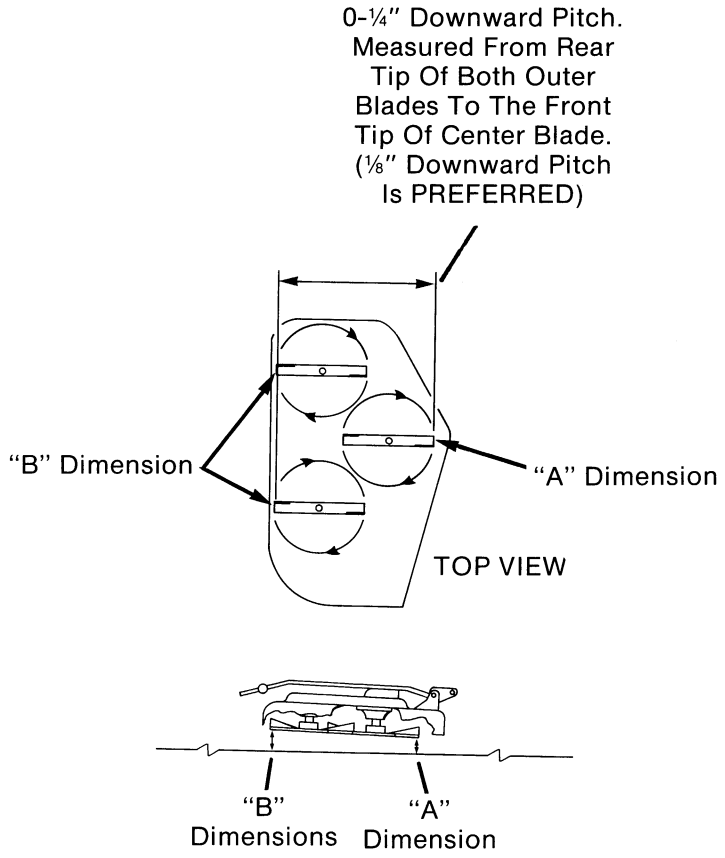
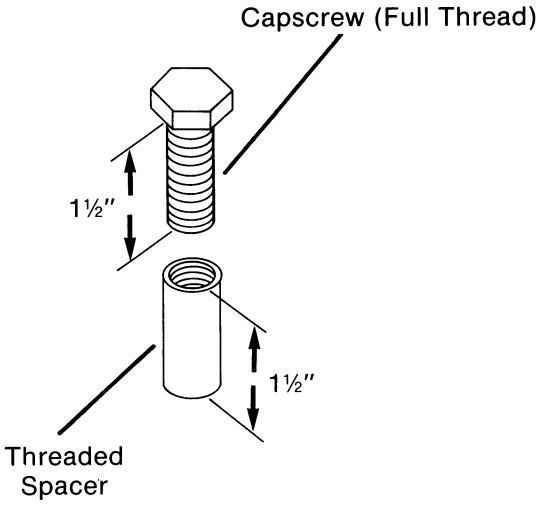


FIG. 24

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. (Fig. 25) Thread capscrew into spacer and position gauge under front tip of center blade. Thread capscrew out of spacer until head of capscrew touches bottom of center blade tip. Hold capscrew and spacer in this position and remove from under mower deck. Measure overall of capscrew and spacer and record this dimension. Repeat this procedure, but this time take the measurement at the rear tip of **both** outer blades. Record both of these dimensions.



MOWER LEVELING GAUGE TOOL

FIG. 25

The rear two dimensions must be **equal to** but **no greater than** ¼" larger than the front dimension. (Fig. 24)

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. Loosen (do not remove) level rod setscrew in both pivot pins. (Fig. 26)

e. Turn lock nuts on rear of level rods clockwise to raise front of the deck or counterclockwise to lower front of the deck. (Fig. 26)

f. Recheck mower deck pitch by repeating procedures in step "b". Readjust locknuts on end of level rods until proper pitch is achieved.

g. 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 the two outer blades are pointing across the width of the deck. (Fig. 27)

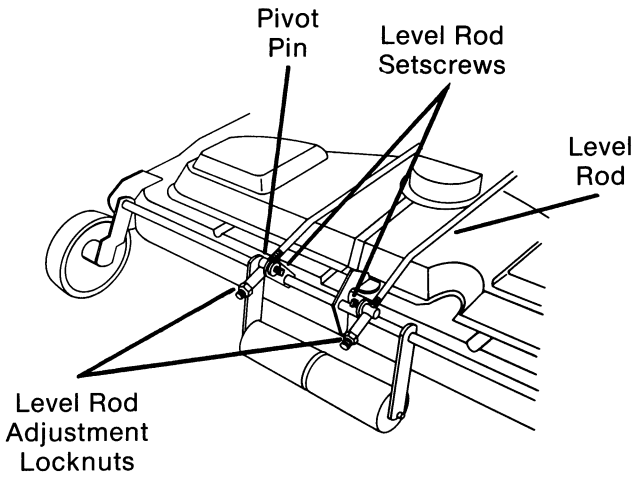


FIG. 26

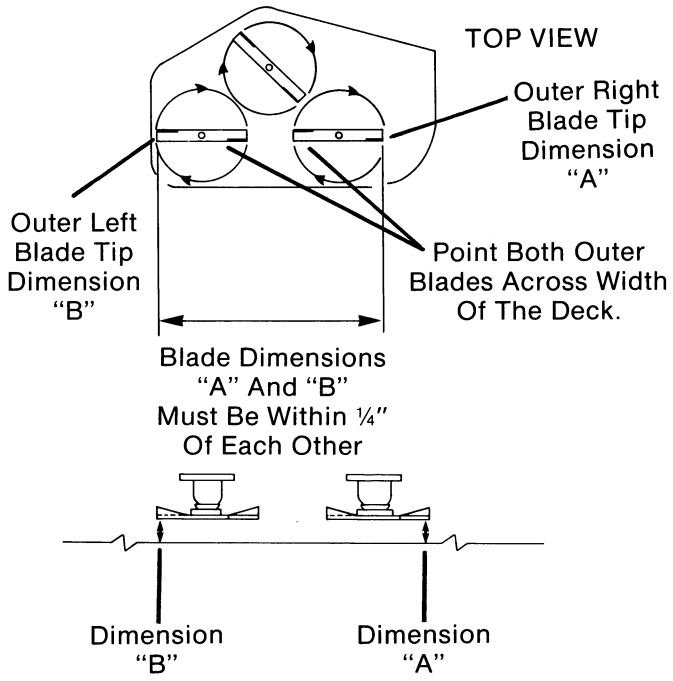


FIG. 27

b. Using the same gauge described in step "b" of "MOWER PITCH". Position gauge under outer tip of right rear blade. (Fig. 27) 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 rear blade. Record this dimension.

   The blade dimensions, from right to left must be within ¼" of each other. (Fig. 27)

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

   NOTE: If mower deck is more than ¼" out of level, shimming should not be performed. Instead; check for a bent wheel hanger, spindle or deck.

d. Make shims using flat plate stock of desired thickness , and cut and drill to the size shown in (Fig. 28).

   NOTE: **DO NOT** use flat washers for shimming. Washers will not provide proper support between hanger brackets and mower deck.

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

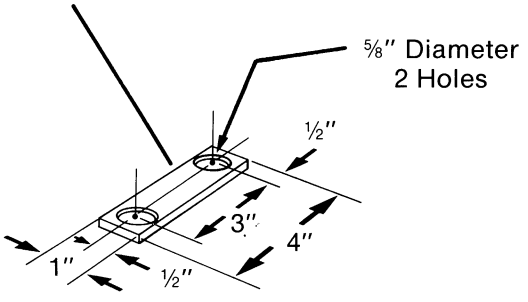


FIG. 28

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 left hanger bracket.)

f. Follow these procedures to shim under **left** hanger bracket **only**.

   Remove two carriage bolts, lockwashers and nuts on left hanger bracket. Shim between hanger bracket and mower deck as required. Longer carriage bolts will have to be used to remount hanger bracket. Recheck mower level.

g. Follow these procedures to shim under **right** hanger bracket **only**.

   Remove drive belt from electric clutch. Remove cotter pin and flat washer on top of idler arm pivot pin. Lift idler arm assembly up and off of pivot pin.

WARNING: To avoid injury from idler arm under extreme spring tension, care should be taken when idler arm is lifted off of pivot pin.

   Remove two carriage bolts, lockwashers and nuts on right hanger bracket. Shim between hanger bracket and mower deck as required. Longer carriage bolts will have to be used to remount hanger bracket.

   Remount idler arm assembly on pivot pin. Twist lower end of idler arm spring until it rests against inside of right hanger bracket. Secure idler arm assembly with flat washer and cotter pin. Reattach drive belt to electric clutch. Recheck mower level.

h. IMPORTANT: After correct mower pitch and mower level is achieved, tighten setscrews in pivot pins securely. (Fig. 26) If setscrews are not tightened securely, drive belt may slip off electric P.T.O. clutch when deck is raised for transport.

C. BLADE ALIGNMENT —

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

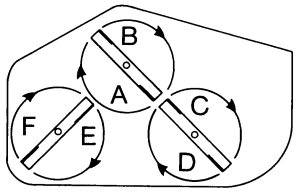
WARNING: To avoid accidental starting, shut off engine, wait for all movement to stop and remove ignition key.

a. Check tightness of all blade mounting hardware. Torque capscrews to 30 - 40 ft./lbs.

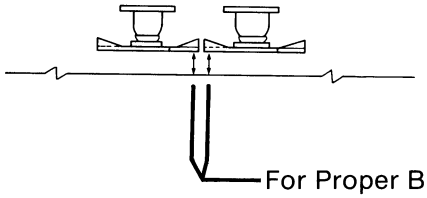
b. Follow diagram (Fig. 29) to check proper blade alignment. Rotate blades until blade tips are at their closest point (example: (Fig. 29) blade tip "A" to blade tip "C"). Take measurement in this position then rotate blades until all tip combinations are achieved.

c. If any blade is misaligned more than ⅛", check blade straigtness 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 ⅛" Of Each Other At All blade Tip Combinations.

FIG. 29

TROUBLE - SHOOTING OF MOWER CUTTING PROBLEMS

CONDITIONS AND CAUSES:

STREAKING: Leaving strips of uncut grass.

Possible Causes: Dull blades, tip of blade not square, blade 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, incorrect pitch or levelness.

STRINGERS: Occasional blades of uncut grass.

Possible Causes: Low throttle 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, bent spindle mounting area, bent 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, bent spindle mounting area.

CURES:

Following is a check list of possible cures. 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 INITIAL SET-UP and 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 the 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 tractor tires (10 p.s.i.).
6. Check tension of drive and mower belts. 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 ⅓ the height of the grass before it is cut.
10. Rough terrain may cause scalping of the ground. Adjust cutting height and ground speed accordingly.
11. Mower deck pitch and level or blade alignment will affect the quality of the cut. Check MOWER PITCH, MOWER LEVEL and BLADE ALIGNMENT 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 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.
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

TABLE OF CONTENTS

SNOW THROWER 36" (YARD TRACTORS) (Model 09GN-3665)

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 snow thrower attachment. It has been prepared to provide the instructions the serviceman needs to correctly, service and maintain this snow thrower attachment. All sections of this manual should be carefully studied by the serviceman before beginning to work on the snow thrower 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.

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.
7. DO NOT put hands or feet near rotating parts. Keep clear of discharge opening at all times.

SNOW THROWER 36"

(YARD TRACTOR) (09GN-3665)

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. When cleaning, repairing or inspecting make certain collector and 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.

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 attachment.
6. Disengage power to collector 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 before unclogging collector housing or discharge guide, and making any repairs, adjustments, or inspections.

IDENTIFICATION PLATE LOCATION

The snow thrower attachment model and serial number identification plate is located on the right front side of the snow thrower mounting frame. See (Fig. 1)

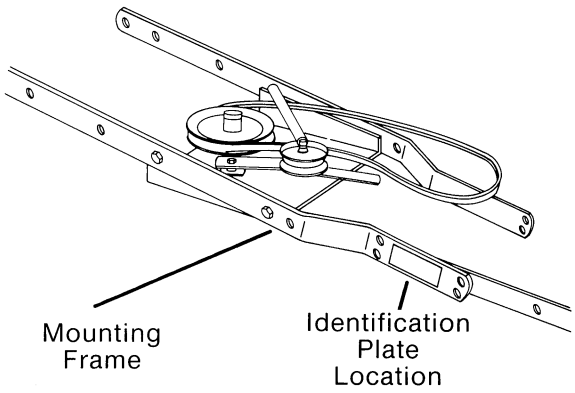


FIG. 1

SNOW THROWER MOUNTING AND REMOVAL

1. INITIAL SNOW THROWER SET-UP—

This procedure is provided for the serviceman to determine if the original set-up and assembly of this snow thrower attachment was performed properly. For a more detailed account of the original set-up procedures see the OPERATOR'S MANUAL.

A. Slide support arm assembly onto pivot pin and secure in place with klik pin as shown in (Fig. 2).

B. Attach right support arm to right side of mounting frame (Fig. 3) using a capscrew, lockwasher and hex nut. **DO NOT TIGHTEN AT THIS TIME.**

IMPORTANT: When attaching support arm to mounting frame, attach to the end on which the holes are spaced further apart.

C. Tip and hold mounting frame on its right side and remove belt guard from bottom pulley. (Fig. 3)

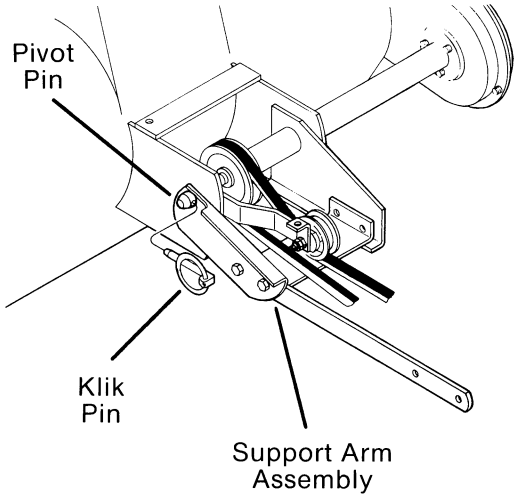


FIG. 2

D. Slip secondary drive belt around pulley and replace belt guard (Fig. 3). NOTE: There should be no twists or turns in the belt. Also be certain idler pulley is above belt as shown. Lay frame down again behind snow thrower and check belt. Belt should run from top of output shaft drive pulley on snow thrower to left side of bottom pulley on mounting frame.

E. Line up holes in torque plate, pivot mount and right support arm. (Fig. 4) Insert capscrews through holes and secure with lockwashers and hex nuts.

F. Align holes in support arm and right (short) hanger with **top** hole on right front end of mounting frame. (Fig. 5) Secure right hanger in position with a capscrew, lockwasher and hex nut. **DO NOT TIGHTEN AT THIS TIME.**

G. Attach left (long) hanger in same position on left side of mounting frame and support assembly. Use same size and quantity hardware. **DO NOT TIGHTEN.**

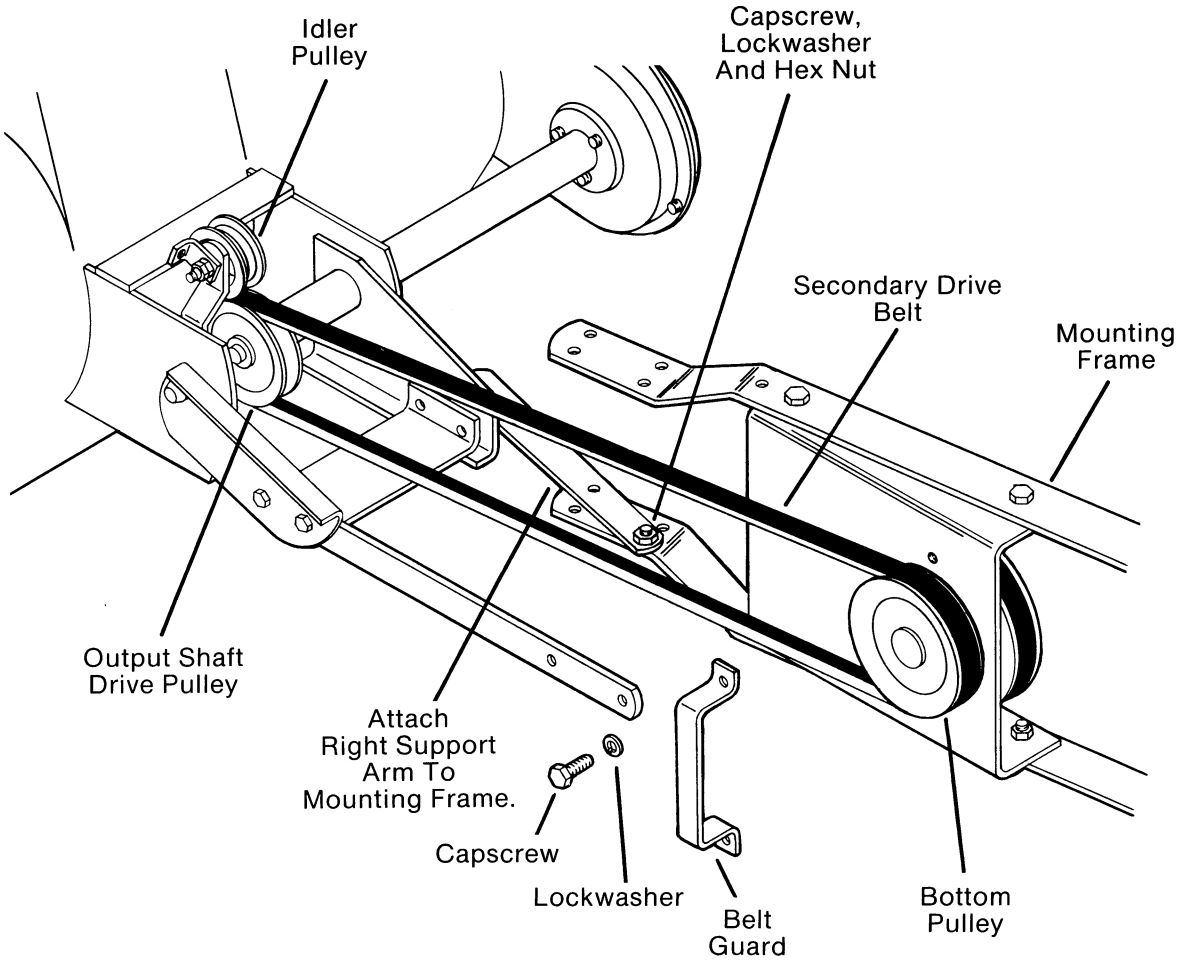


FIG. 3

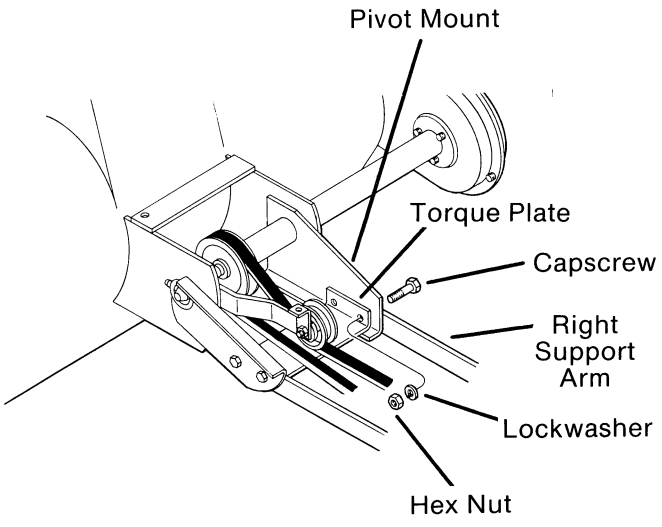


FIG. 4

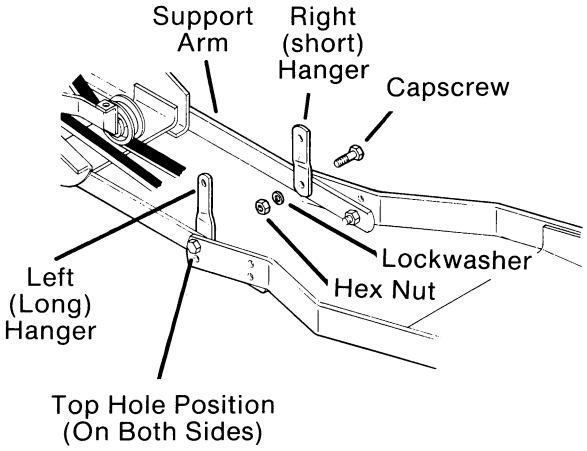


FIG. 5

H. Align end hole in support arm assembly with bottom hole in mounting frame. (Fig. 6) Secure using capscrew, lockwasher and hex nut. Tighten this hardware along with hardware in the same position on the **right** side of mounting frame.

NOTE: DO NOT tighten capscrews holding hangers at this time.

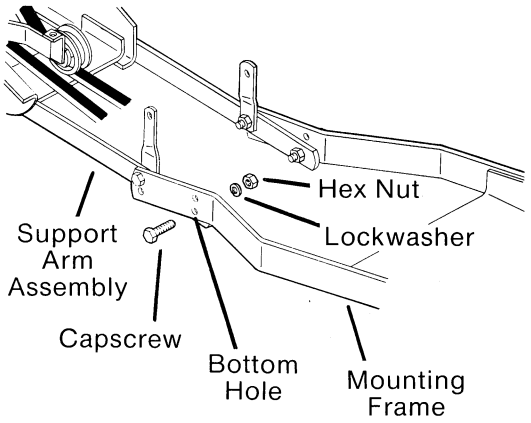


FIG. 6

I. Hook one end of idler spring in hole in torque plate. (Fig. 7) Hook other end of idler spring between nuts on idler arm.

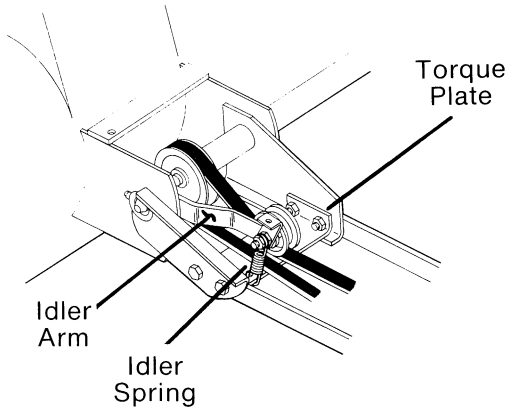


FIG. 7

J. Remove the removable retainer from the bottom of the discharge guide gear, (Fig. 8) by removing two self tapping screws and lockwashers.

K. Liberally apply No. 2 wheel bearing grease or Ford 1T-M1C137-A grease to the top surface of outlet tube and bottom surface of the discharge guide gear. (Fig. 8)

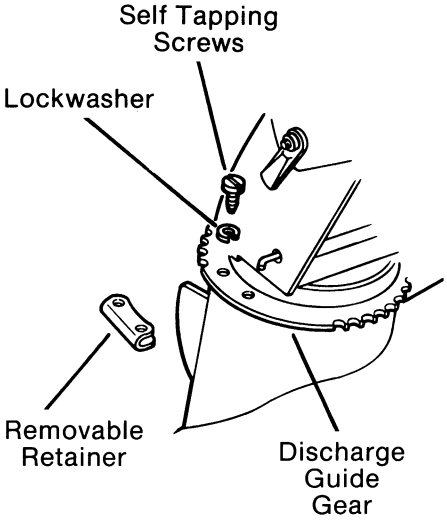


FIG. 8

L. With opening in discharge guide facing forward, place discharge guide onto outlet tube.

NOTE: If necessary, loosen locknut (Fig. 9) and turn adjustment bolt counterclockwise until guide fits onto tube.

M. Position discharge guide so the two welded retainers (welded to bottom of the discharge guide gear) are fitted around the flange on the outlet tube ring. (Fig. 9)

N. Position the removable retainer under discharge guide gear and around the flange on the outlet tube ring. Secure retainer with the self tapping screws and lockwashers removed earlier.

O. Mesh worm gear (in worm support) (Fig. 9) with teeth on discharge guide gear. Discharge guide should rotate **easily** when worm gear is turned. To adjust:

a. Loosen locknut on front of worm support. (Fig. 9)

b. Discharge guide **too loose;** turn adjustment bolt (Fig. 9) clockwise until guide rotates freely and easily.

Discharge guide **too tight;** turn adjustment bolt (Fig. 9) counterclockwise until guide rotates freely and easily.

c. Once satisfactory adjustment is reached, retighten the locknut.

NOTE: To permit discharge guide to rotate easily, apply No. 2 wheel bearing grease or Ford 1T-M1C137-A grease to gear teeth and worm gear.

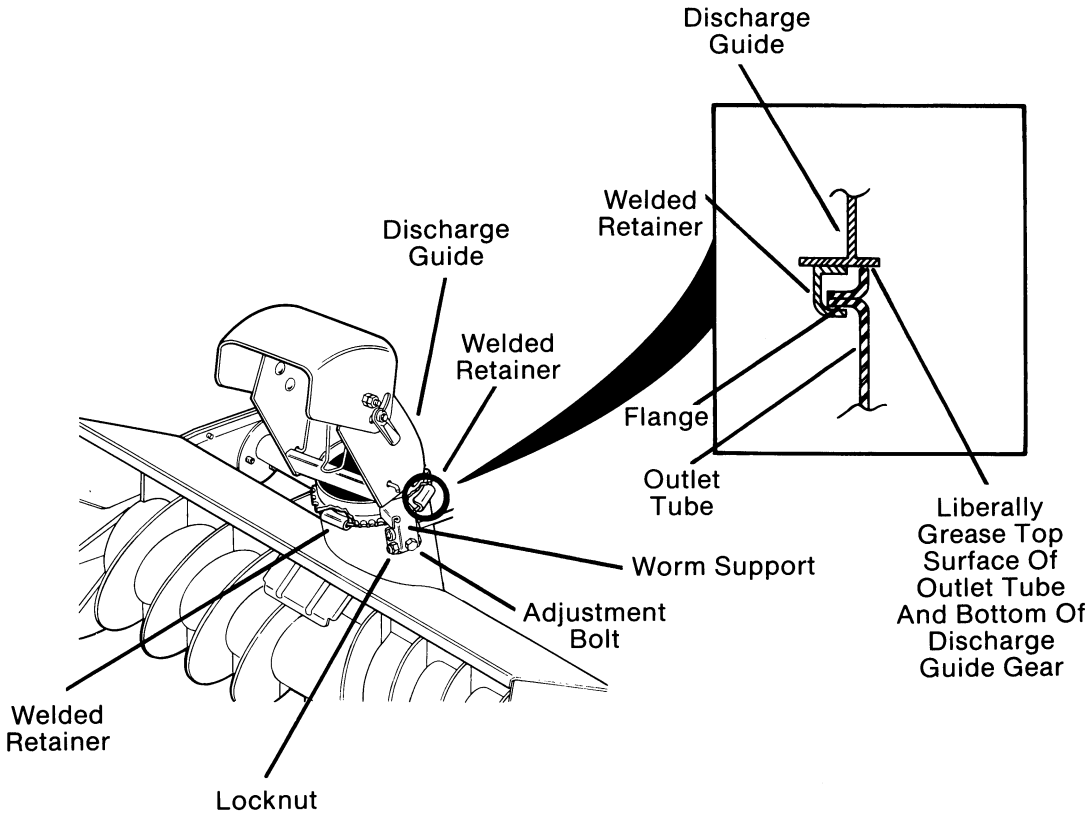


FIG. 9

P. Attach clevis end of lift arm assembly to the rod on right side of collector housing, (Fig. 10) using a flat washer and spring clip.

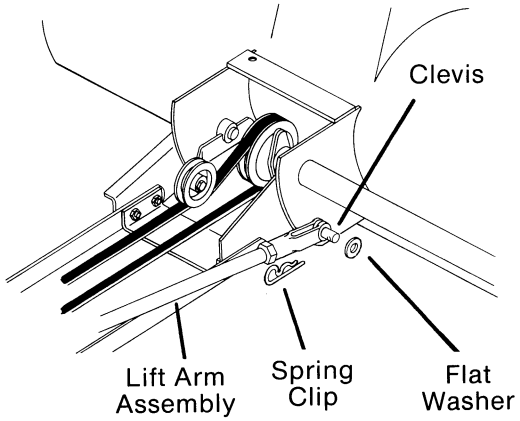


FIG. 10

Q. Attach stop bar into holes in support arms, as shown in (Fig. 11). Secure stop bar in place with two cotter pins.

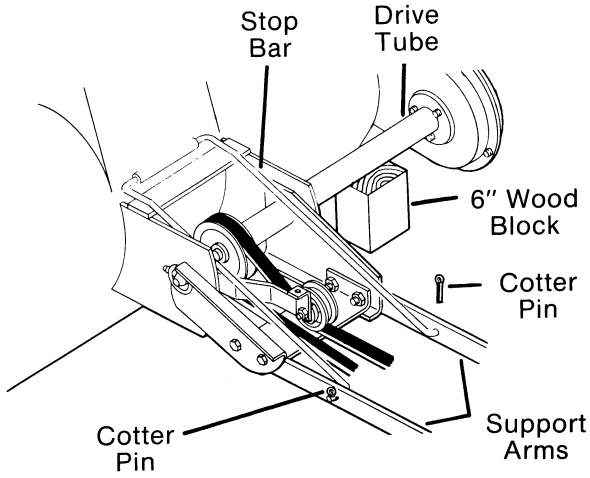


FIG. 11

R. Block the collector housing off the ground. Install skids onto sides of collector housing; using carraige bolts, lockwashers and nuts. (Fig. 12)

NOTE: Carriage bolts **must** be installed from the inside out, as shown in (Fig. 12)

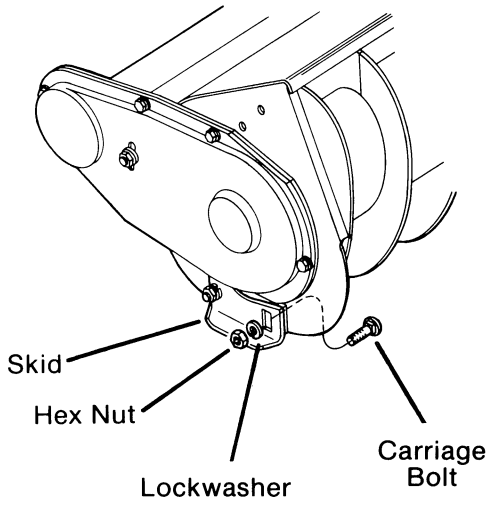


FIG. 12

B. Align the three mounting holes in the right rear hanger bracket with matching holes on right rear side of tractor frame (Fig. 14). Secure each hole with hardware shown in (Fig. 14).

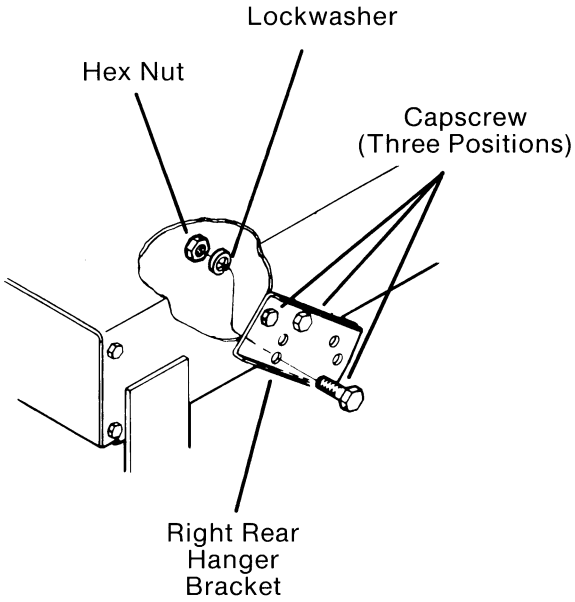


FIG. 14

2. SNOW THROWER MOUNTING—

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

A. Attach left rear hanger bracket to left rear side of tractor frame. Remove factory assembled hardware, shown in (Fig. 13), and use to attach top hole in left hanger bracket. Secure each of the two other mounting holes with hardware shown in (Fig. 13).

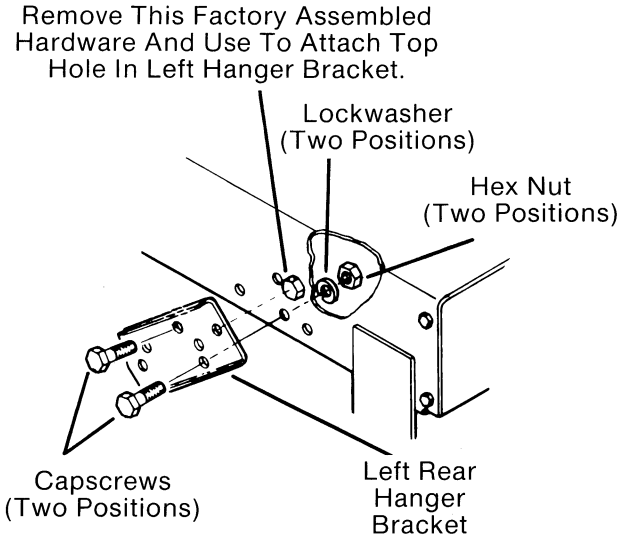


FIG. 13

C. Place a 6″ block under drive tube on snow thrower. (Fig. 11)

D. Roll tractor over mounting frame so that snow thrower is directly in front of tractor.

E. Push spring loaded idler toward the right side of mounting frame. (Fig. 15)

F. While holding idler to the right, slip primary drive belt around electric P.T.O. clutch pulley. (Fig. 15) Let idler return back to its operating position against belt.

G. Line up end hole on rear of mounting frame (both sides) with holes in rear hanger brackets. (Fig. 16) Secure mounting frame to hanger brackets using a capscrew, lockwasher and hex nut. (Fig. 17) **DO NOT TIGHTEN AT THIS TIME.**

H. With 6″ block under drive tube (Fig. 11), lift and line up holes in front hanger brackets with holes in bracket on bottom of front axle. (Fig. 17) Secure hangers to axle brackets with a capscrew, lockwasher and hex nut. (Fig. 17)