

Safety Instructions & Operator's Manual

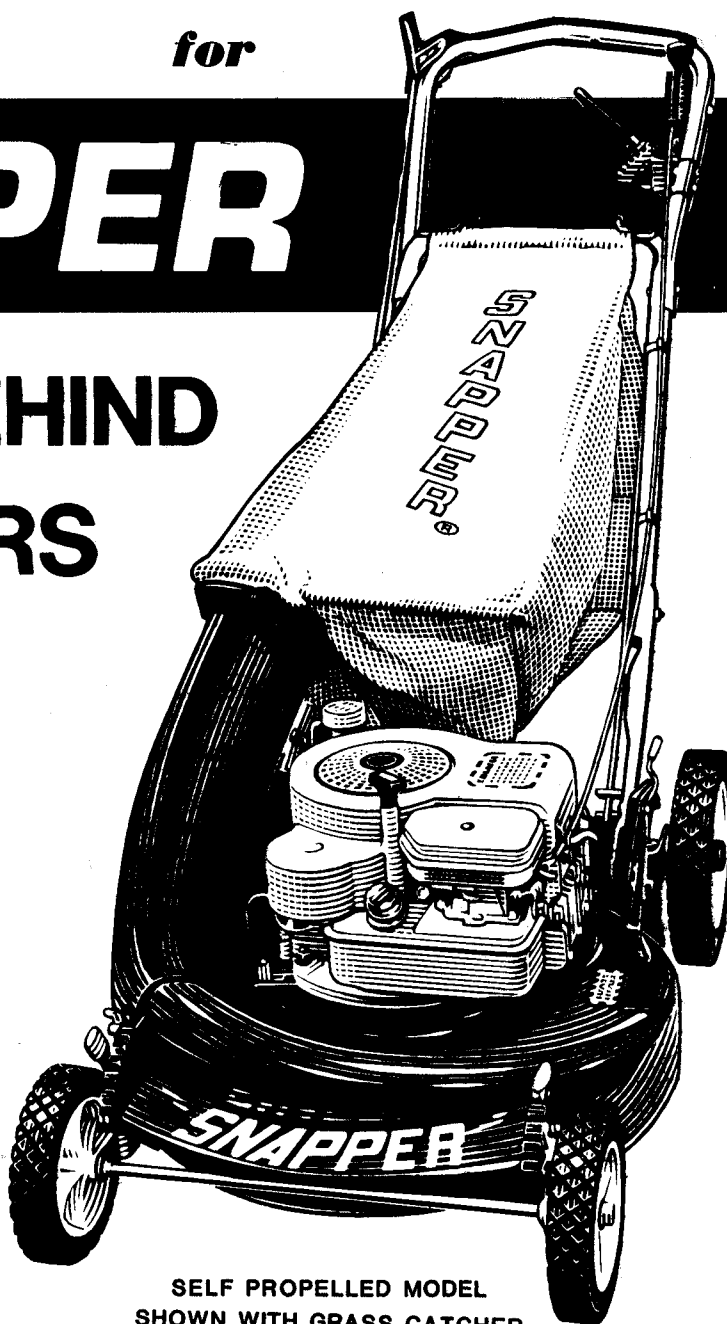
for

SNAPPER

21" WALK-BEHIND LAWN MOWERS

CONTENTS

Subject	Page
SAFETY INSTRUCTIONS	2
OPERATING INSTRUCTIONS	3 & 4
Pre-Start Checks	3
Operating Procedure	3
Cutting Height Adjustment	4
Grass Catcher Bag	4
SERVICE PROCEDURE	5 to 8
Lubrication Services	5
Cutting Blade Service	5 & 6
Clutch Service	6
Driven Disc Service	6 & 7
Belt Service	7
Service Assistance	8
Replacement Parts	8
Storage Procedure	8
POPULAR ACCESSORIES	8
WARRANTY	8



**SELF PROPELLED MODEL
SHOWN WITH GRASS CATCHER**

THANK YOU FOR BUYING A *SNAPPER*® PRODUCT!

Your Snapper Mower was designed and built with utmost care to give you long and satisfactory service. Remember that it, like any other mechanical device, can be potentially dangerous if used improperly. No accident prevention program can be successful without the wholehearted co-operation of the person who is responsible for the operation of the equipment. Study this Operator's Manual carefully to learn the operation of the controls and pay particular attention to all safety precautions. Following these instructions will help you continue to enjoy the trouble-free operation expected of a Snapper.

SNAPPER Power Equipment
McDonough, Georgia 30253



IMPORTANT SAFETY INSTRUCTIONS

WARNING: Failure to comply with the following instructions may result in serious injury to the operator or other persons. The owner of the mower must understand these instructions and, furthermore, must allow only persons who understand these instructions to operate the mower. Any person operating the mower must be of sound mind and body and must not be under the influence of any substance which might impair vision, dexterity, or judgement.

TRAINING

1. Read this Manual carefully and question your dealer if something is not clear. Should the dealer be unavailable or unable to answer to your satisfaction, write or call our Customer Service Department at the factory. Be thoroughly familiar with the controls and proper use of the equipment.
2. Never allow children to operate a power mower.
3. Keep the area of operation clear of all persons, particularly small children, and pets.

PREPARATION

1. Never operate mower without proper guards, plates, safety switches, or other safety protective devices in place and properly connected. Inspect to determine that these safety devices are installed properly, are in good repair, and operate properly. If the condition or operation of these devices are questionable, they must be repaired or replaced before using the mower.
2. Thoroughly inspect the area where the mower is to be used and remove all stones, sticks, wire, bones and other foreign objects. Also note the location of holes, stumps, and other possible hazards.
3. Do not operate mower when barefoot or wearing open sandals. Always wear substantial footwear and long pants.
4. Fill gasoline tank before starting engine. Use approved gasoline container. Do not smoke near open gasoline container. Do not fill gasoline tank indoors or when engine is running. Allow engine to cool for at least ten minutes before refilling. Wipe off any spilled gasoline before starting engine. Do not run engine indoors.
5. Make sure that the traction drive clutch control is disengaged before starting engine.
6. Never attempt to make a wheel height adjustment while the engine is running.
7. When mowing over rough ground or in tall grass, mower must be set in highest cutting position.
8. Mow only in daylight or in good artificial light.
9. Never operate mower in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.

OPERATION

1. Do not change engine governor settings or overspeed engine.
2. Do not put hands or feet near or under rotating parts. Keep clear of discharge area while engine is running.
3. Stop engine when crossing gravel drives, walks, or roads, and under any conditions where thrown objects might be a hazard.
4. After striking a foreign object or if mower vibrates abnormally, stop the engine, disconnect and secure spark plug wire. Inspect the mower for any damage and repair the damage.
5. Stop engine whenever you leave the operating position behind the handle for any reason, including emptying grass bag and making any adjustments, repairs, or inspections.
6. Before cleaning, repairing or inspecting, make certain blade and all moving parts have stopped. Disconnect and secure spark plug wire away from plug to prevent accidental starting.
7. Stop engine and wait until the blade comes to complete stop before removing grass bag and/or unclogging adapter.
8. Mow across steep slopes, never up-and-down. Exercise caution when changing directions on slopes. Do not mow excessively steep slopes.

MAINTENANCE AND STORAGE

1. Keep all nuts, bolts, and screws tight to be sure mower is in safe operating condition.
2. Never store mower with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.
3. To reduce fire hazard keep mower free of grass, leaves or excessive grease.
4. Check grass bag assembly frequently for wear or deterioration. Replace with new bag if loose seams or tears are evident. Replace slider or bag adapter if broken or cracked.
5. Have your mower inspected and serviced each year by an authorized Snapper dealer. Determine if any additional devices are available which might upgrade the safety of your mower.
6. Factory specified Snapper replacement parts must be used to assure adequate protection against injury.

OPERATING INSTRUCTIONS

This manual covers Snapper 21" Push and Self-propelled walk behind rotary lawn mowers with differences pointed out whenever pertinent to the operation. Also covered are popular items such as the grass catcher which is standard on some models and available as accessory kit for adding to other models. Some of the popular accessory kits, which are available from your Snapper Dealer, are described on the back page of this manual.

PRESTART CHECKS

Make the following checks and perform the services as required before each start-up.

- **CHECK GUARDS, ADAPTERS, CHUTES** to make sure all are in proper position and securely tightened.
- **CHECK EXTERNAL SURFACES** and remove dirt, clippings, etc., as needed especially from cooling air inlet on engine to avoid overheating.
- **CHECK OIL LEVEL** in engine and add oil of weight and grade specified in the engine manual as required to bring level up to, but not over, full. On self-propelled models, remove plug from transmission and check (see Lubrication Service section for details).
- **FILL FUEL TANK** after moving mower outdoors where gasoline fumes can be safely dissipated with clean, fresh, gasoline. (Refer to engine manual for fuel specifications).
- **CHECK CUTTING HEIGHT** and readjust as needed to suit grass conditions **before** starting.

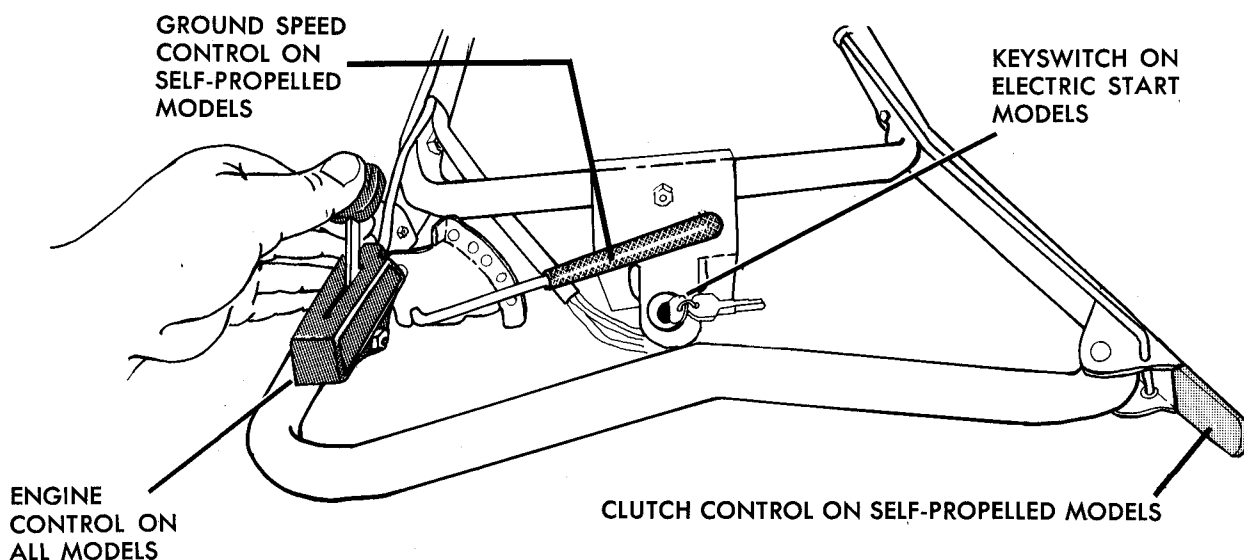


FIGURE 1 — LOCATION OF OPERATIONAL CONTROLS

OPERATING PROCEDURE:

When operating, make sure you always heed the important safety instructions stated in this and the engine manual.

For easier starting, move mower to an area where the blade can turn free of tall grass or other obstructions. Before starting for the first time, know how to stop the mower quickly in the event of emergency. To stop engine, pull the engine control toward you into stop position. Forward motion on self propelled models is stopped by releasing the clutch handle. Operate mower as follows:

STARTING ENGINE: Move engine control downward into START position and on electric start models move and hold key in START position until engine starts then release. On manual start models, position yourself with firm footing and pull recoil handle in quick, steady motion until engine starts. As engine warms, slowly move engine control to the desired speed setting. NOTE: Your mower is equipped with an interlock which prevents engine starting unless the grass catcher adapter or side discharge chute is in position. Make sure this interlock is functioning properly.

MOWING PROCEDURE: Vary speed to suit grass conditions. Set the engine speed high for tall, thick grass or lower for sparse grass. Push hand propelled models at a speed that is comfortable but will allow even cutting without stalling. On self propelled models, set ground SPEED CONTROL lever in desired forward speed setting, then grip the CLUTCH HANDLE and hold against handle to engage clutch for forward motion. Releasing the clutch handle stops forward motion. The mower can be hand pushed forward or in reverse for trimming with the clutch handle released. The ground speed can be changed to a new setting at any time when in motion.

Use low speed setting and clutch for down hill braking.

STOPPING PROCEDURE: Pull engine control knob all the way back into the STOP position to stop engine. Forward motion on self propelled model is stopped by releasing the clutch handle.

Operating Instructions (continued)

MOWING / VACUUMING HINTS: The cutting deck should be level under all conditions. As a general rule, never cut more than $\frac{1}{3}$ off the height of the grass. If, for example, the grass has grown to 4 inches tall, set the mower height latches in the lowest position which establishes the cutting height at approximately $3\frac{1}{8}$ " (see cutting height chart) thereby cutting about $\frac{7}{8}$ " off the grass and staying well within the $\frac{1}{3}$ off limit. If you want the grass shorter, wait a few days then recut to the lower height. If cut too short, the grass will expend more energy for development of new leaf structures and less for a healthy root system and will be more subject to burning. On the other hand, if allowed to grow too long, the lower portion will be shaded and, as a result will discolor. In dry periods, allow the grass to grow longer than you normally would. **NOTE:** Do not mow across an area where dry type fertilizer has just been spread as most of the fertilizer will be vacuumed up.

Change your mowing pattern from time to time for a smoother cut lawn. Finely chopped clippings add nutrients to the soil to promote grass growth, however if the clippings become too heavy, they mat to form thatch which prevents proper breathing and holds moisture. If thatch is particularly heavy, the Thatcherizer accessory described on the back page will do an effective job of dislodging the decaying matter. To prevent grass disease from thatch, vacuuming and bagging is recommended for most cuttings along with an occasional broadcasting of the clippings into the lawn for nutritive value. Your Snapper can be quickly converted back and forth from bagging to side discharge with the accessories.

MOVING LATCHES INTO LOWER NOTCHES RAISES CUTTING DECK

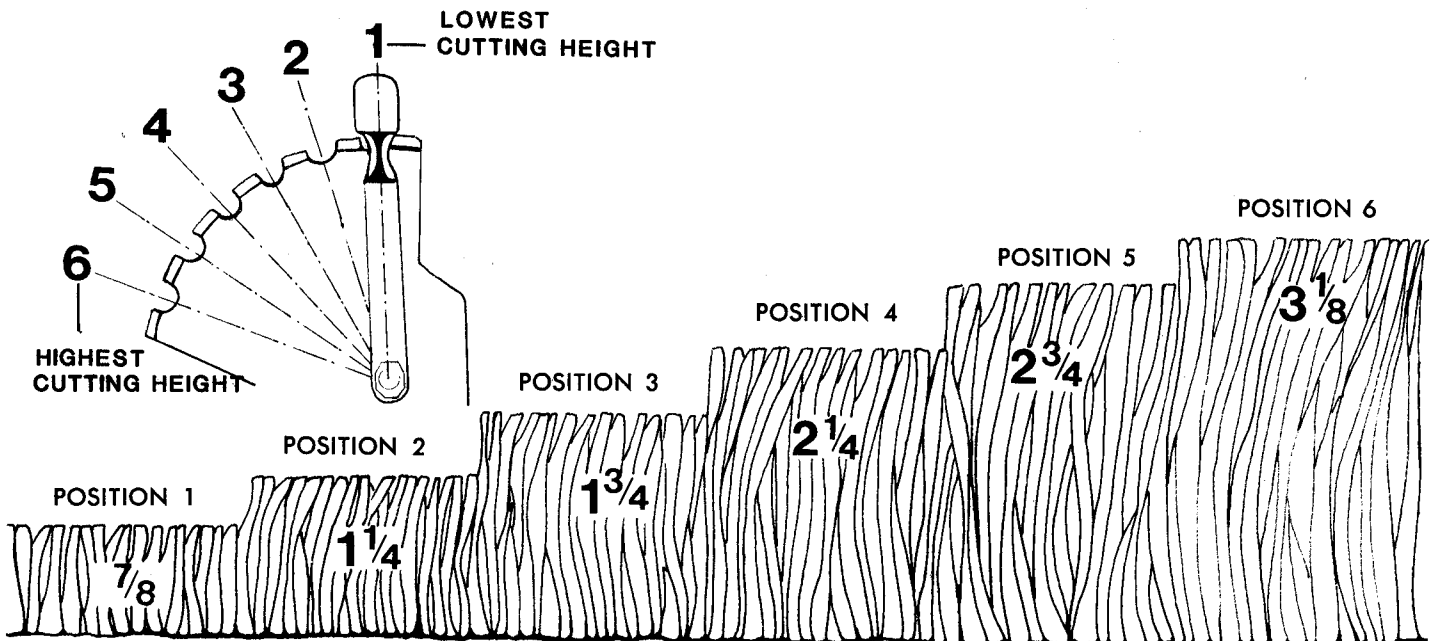


FIGURE 2 — CUTTING HEIGHT SETTINGS

CUTTING HEIGHT ADJUSTMENT

Always stop the engine and wait until the mower blade comes to a complete halt before readjusting the cutting height! To readjust, move the height adjusting latch on each wheel outward and slide each, one notch at a time, to the position desired. Positioning the latches in the highest notch sets the mower at the lowest cutting height while the lowest notches sets it in the highest cutting position. Refer to the chart above for the approximate cutting height afforded by each of the six latch positions. For best results, set both latches on one side first, then go to the other side and set these latches into corresponding notches. Before resetting the latches into lower notches, lift the weight of mower off the rear wheels first by pulling up on the handle, then reset.

EMPTYING GRASS CATCHER BAG

On mowers equipped with the grass catcher bag, stop engine when bag becomes full and empty contents as follows. Lift bag off bag adapter on mower and off lower handle at rear. To empty, pull the slider off the underside of bag and shake bag until all clippings have fallen out through opening. Before reinstalling bag on mower, fold edges into "Z" shape, align edges and hold together, then push slider over the edges. Make sure all edges are inside. To prolong the life of bag, always empty it after mowing is completed and before placing mower in storage. **Never** operate mower without bag and bag adapter in place — if bagging is not required, install the side discharge chute in place of the bag and adapter.

SERVICE

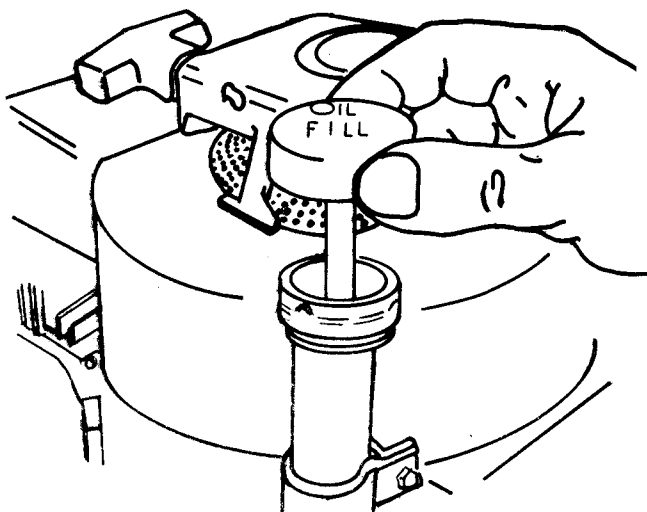


FIGURE 3 — ENGINE OIL CHECK

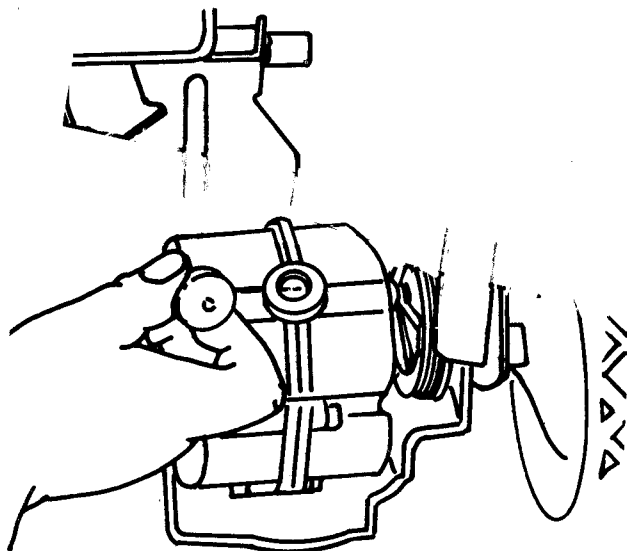


FIGURE 4 — TRANSMISSION OIL CHECK

The mower itself requires very little service, however, it is important that the engine be serviced at the intervals specified in the engine manual furnished with your mower. When performing any services on the mower, always disconnect the spark plug wire from the spark plug to prevent unintentional starting. When tipping the mower to work on the underside, always tilt with spark plug up to prevent flooding the engine with gasoline and oil which would cause hard starting after servicing.

LUBRICATION SERVICES

ENGINE — Change oil every 25 hours as specified in engine manual.

TRANSMISSION (Self-Propelled Models) — Remove plug and check every 25 hours of operation. If grease is not visible on the input gear, add small amount of Snapper "00" grease. CAUTION: Avoid over lubricating — capacity not to exceed 2 ounces of grease. Snapper "00" grease is available in a convenient quart size container (Part No. 1-1050) at your Snapper dealer. Replace plug after servicing transmission.

MOVING PARTS — Occasionally put a few drops of oil on movable surfaces of components such as the height adjusting levers, wheel axles, shift levers, etc. Be careful not to spill oil on surface of drive disc on self-propelled models.

CUTTING BLADE SERVICE

CAUTION: Before checking or doing any work on the blade, disconnect the spark plug wire and secure it away from the plug to prevent unintentional starting.

CHECK at frequent intervals to make sure the blade is securely tightened and that it is in good condition.

REPLACE blade if badly chipped, bent, out of balance or as soon as a notch starts wearing in the tip between the flat surface and upturned lift as depicted in View B, Figure 5. This type wear pattern occurs more rapidly under sandy soil conditions. **CAUTION:** Never operate the mower with blade worn to the extent shown in View C as the tip could fly off causing personal injury or property damage.

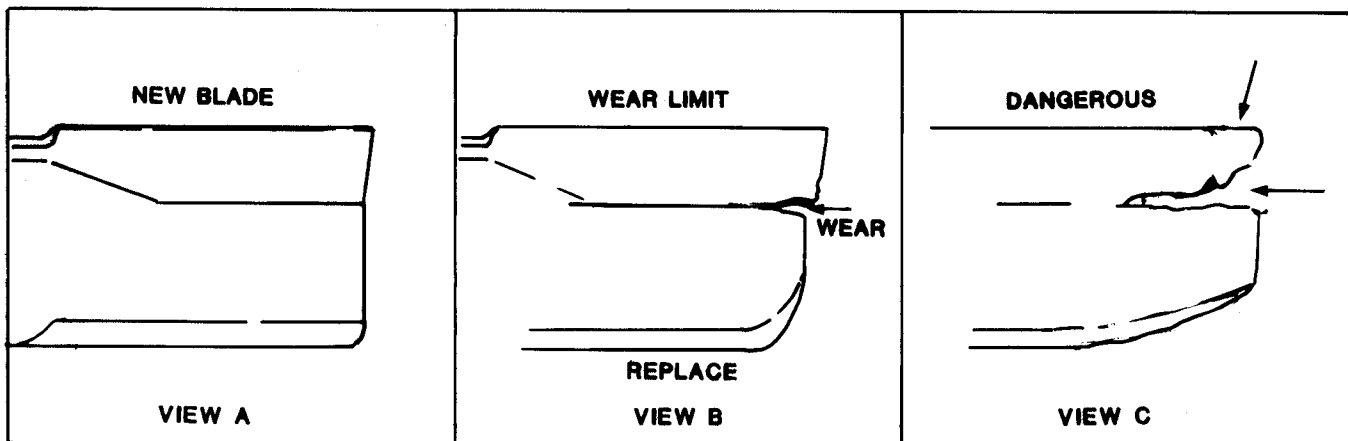


FIGURE 5 — BLADE WEAR PATTERNS

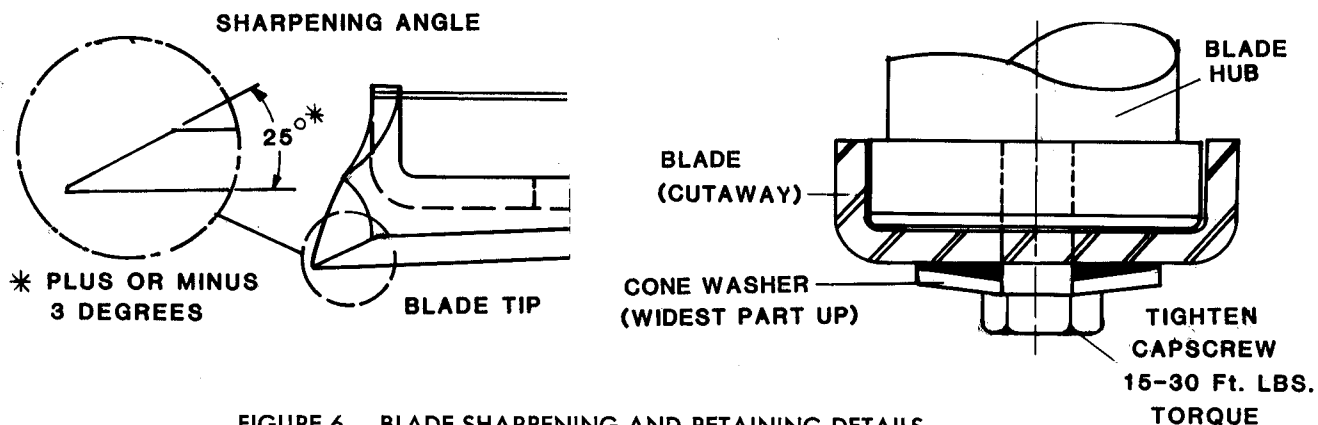


FIGURE 6 — BLADE SHARPENING AND RETAINING DETAILS

SHARPEN blade when the cutting edges become dull if the blade is in otherwise good condition. When dull the grass cut ends will be ragged and usually turn brown soon after mowing. For best results, remove the blade and sharpen it on a grinding wheel at an angle of 22 to 28 degrees. The cutting surface should extend in about 3½" from the tips. Check the blade after sharpening to determine that it is still balanced. It will cause excessive vibration if unbalanced. **BE CAREFUL TO AVOID CUTTING YOURSELF ON SHARP BLADE!**

INSTALL sharpened or replacement blade with components in sequence shown in Figure 6. Make sure that the turned-up rims in the center of the blade fit over the edges of the blade drive hub when installing. Do not substitute any components here. Tighten the blade retaining capscrew to 15-30 foot pounds torque value.

CLUTCH LINKAGE (Self-Propelled)

Make sure the vinyl cover remains over the spring(s) connecting the clutch pull rod to the clutch idler components (see Figure 7). This not only keeps the springs clean but prevents it from rubbing against and wearing a hole in the grass bag on mowers so equipped.

ADJUSTMENTS: If excessive pressure is required to hold the clutch lever in the engaged or drive position, the clutch pull rod springs are probably out of adjustment. This is checked with the engine stopped and the clutch handle released. When properly adjusted there should be 1/16" to 1/8" clearance between the inside hook of the spring and inside eye of the push rod as shown in Figure 7. To adjust, unhook and rotate the inner and outer springs in opposite direction, rehook and check clearance. Repeat this procedure until the clearance is correct. If the clutch handle does not snap back to disengage the drive when the handle is released, check the clip holding the pull rod to the handle bar for binding. Position this clip about 5" from the upper handle and rotate to best position to allow the rod to slide without interference. **Note:** If the clip is placed too high, it may create excessive pressure on the push nut holding the end of the pull rod to the clutch lever and eventually cause the push nut to pop off.

DRIVEN DISC SERVICE

If the mower does not pull properly with the clutch engaged, check for the following: Grease on drive disc causing slippage, broken or disconnected drive assembly spring (see Figure 10), driven disc too worn to contact the drive disc properly, driven disc out of adjustment. This condition could also be caused by worn belts. If the belts are in good condition and the clutch is properly adjusted, service the drive system as follows:

DRIVEN DISC ADJUSTMENT: With the engine stopped and the speed lever shifted into highest speed setting, the driven disc should be 1/8" to 1/4" from the edge of the drive disc as illustrated in Figure 8. Readjust with engine stopped as follows: Shift the speed selector into the highest speed setting, loosen the connector hex nut and slide the driven disc assembly inward or outward until 1/8" to 1/4" from the edge of the drive disc. Retighten connector nut to lock as new setting.

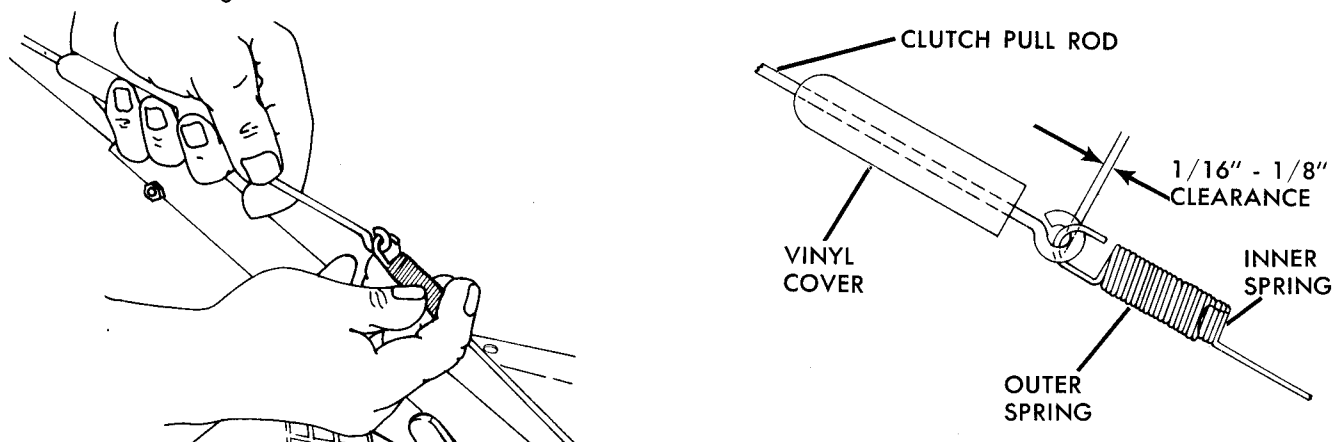


FIGURE 7 — CLUTCH SPRING LOCATION AND ADJUSTMENT DETAIL

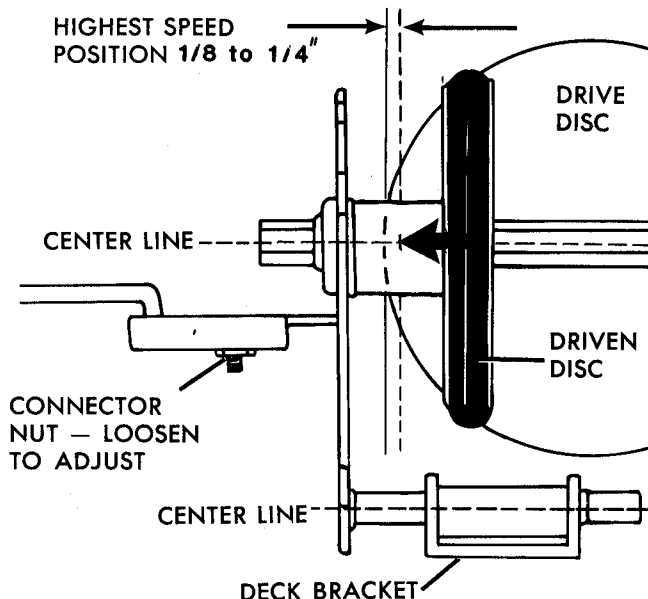


FIGURE 8 — DRIVEN DISC ADJUSTMENT

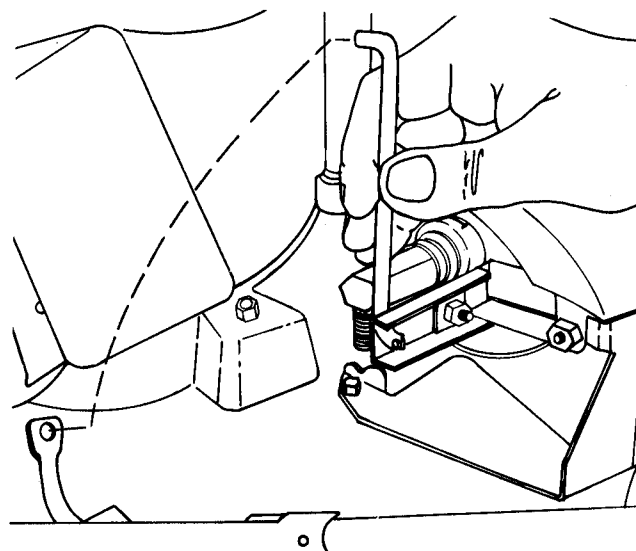


FIGURE 9 — DETACHING TRANSFER ROD

DRIVEN DISC REPLACEMENT: If the rubber of driven disc is badly chunked or worn down to within 1/16" of the metal rim, remove the driven disc assembly and replace the driven disc as follows: Remove the clip and detach the transfer rod from the speed control lever (Figure 9). Using a pair of needle nose pliers, unhook the drive spring and slide the driven disc assembly off as shown in Figures 10 and 11. Remove the five machine screws securing the rubber driven disc and separate the worn disc from the hub. Reverse this procedure to install the replacement disc and to reconnect the drive components.

BELT SERVICE

Slippage of worn belts will cause self-propelled models to pull poorly. On these models the engine belt transmits this power to the poly-V-belt which, in turn, engages the clutch to drive the transmission and rear drive wheels. Replace faulty belts as follows:

ENGINE BELT REPLACEMENT: Since it will be necessary to work on the underside of the cutting deck to replace the engine belt, disconnect the spark plug boot from the plug and empty the fuel tank or tape the vents in the filler cap to prevent fuel spillage then proceed as follows. Unhook the idler arm spring from the right rear wheel bracket and remove the driven disc assembly as described under DRIVEN DISC service. Tilt the mower up on its right wheels and remove the cutting blade and hub, then remove the drive disc retaining nut and internal tooth lockwasher. Lift the drive disc-idler assembly off the deck and remove the faulty belt. Loop one end of the replacement belt over the engine drive pulley and insert the belt through the deck opening. Loop the belt around the drive disc pulley and push the drive disc-idler assembly down into position on the deck. Install the internal tooth lockwasher and disc retaining nut on the drive disc stud and securely tighten these. Test to make sure the idler arm is free to pivot without interference then reinstall the cutting blade components (refer to BLADE SERVICE), driven disc assembly, then using a stiff wire (Hint: coat hanger) with hooked end, pull the hooked end of the idler arm spring through the larger hole in the right wheel bracket and hook the end through the smaller hole.

POLY V-BELT REPLACEMENT: This belt can be replaced after pulling the driven disc assembly as described earlier. Note the arrangement of old belt around pulleys before cutting and removing it. Slip the replacement belt over the end of hex shaft pulley and work over idler pulley. Twist the belt sideways and pull it upward between the differential bracket and transmission pulley. Slip belt over grooves in the hex shaft, clutch idler and transmission pulleys. **Note:** When properly installed, the lower span of the Poly V-Belt will be **above** the belt guide.

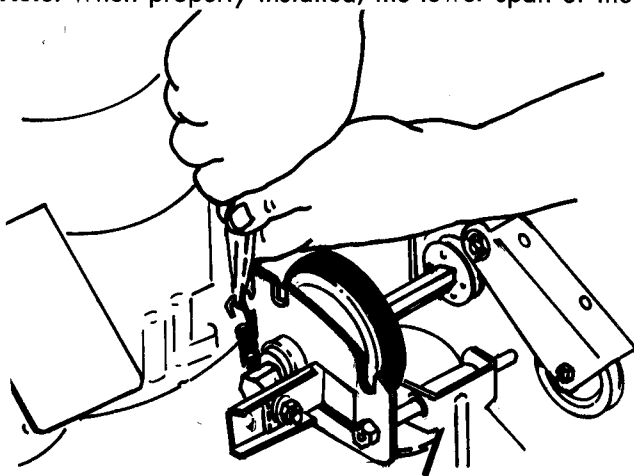


FIGURE 10 — UNHOOKING DRIVE SPRING

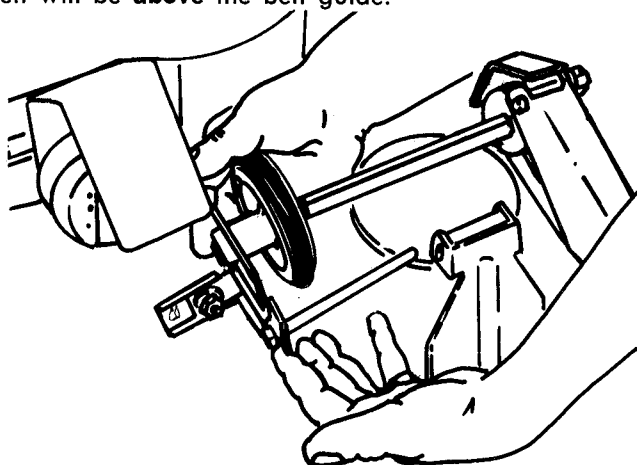


FIGURE 11 — REMOVING DRIVEN DISC ASSEMBLY

SERVICE ASSISTANCE — REPLACEMENT PARTS

To retain the quality of your mower, use Genuine Snapper Replacement Parts only. To obtain the correct part for your particular mower, always specify model and serial number as found on name plate. Contact your local Snapper Dealer for parts and service assistance. We recommend returning your mower to an authorized Snapper Dealer on a yearly basis for inspection and addition of any new devices which might upgrade the safety of your mower. For the nearest Snapper Dealer, check the yellow pages under the heading **LAWN MOWERS**. For engine parts and service, look for the engine manufacturer's dealers under the heading **ENGINES—gasoline**.

STORAGE PROCEDURE

Take the following steps to prepare your mower for storage at the end of the mowing season. Refer to the engine manual for directions for preserving the engine. With the spark plug wire disconnected from plug, turn the mower on its side and thoroughly clean underside of deck. Scrape away accumulations of grass with putty knife and/or wire brush first, then wash down with water from a hose. **CAUTION:** Avoid spraying water into exhaust or air intake while washing deck — tape openings closed to prevent this. Clean external surfaces of mower and allow to dry, then lubricate all exposed metal surfaces with a light coating of oil to prevent corrosion. Make sure grass bag is completely emptied to prevent decay and formation of mold inside the bag while in storage. The grass bag may be washed in detergent but allow to dry thoroughly after washing. Store mower during off season in a storage shed or dry area protected from weather.

POPULAR ACCESSORIES

Depending on how your mower is originally equipped, it can be converted to perform other lawn care duties with the kits described below.

SNAPPERIZER KIT: Converts mower into an outdoor vacuum and shredder to broadcast shredded clippings and leaves with side discharge chute or for bagging with the grass catcher. Specify model mower when ordering.

MULCHERIZER KIT: Converts mower into effective mower/mulcher to cut and chop the grass before blowing clippings directly into the lawn as nutritive mulch. Specify model when ordering.

THATCHERIZER KIT: Attaches to front of self propelled models to dislodge thatch for vacuuming into grass catcher. One kit fits all 21" models.

SIDE CHUTE KIT: If your mower is equipped with the grass catcher, it can be quickly converted to side discharge with a side chute kit to broadcast clippings and eliminate bagging whenever desired, and to quickly convert back to bagging operation. Specify model when ordering.

GRASS CATCHER BAG KIT: If your mower is equipped with side discharge chute, it can be converted for bagging operation whenever desired with a grass bag kit. Specify model when ordering.

ZIP KIT: Includes metal hoop for installing under grass catcher bag to allow dumping clippings and leaves directly into a standard disposable trash bag. One kit fits all size mowers.

MANUFACTURER'S 90 DAY LIMITED WARRANTY

For Ninety (90) days from purchase date for a non-commercial user, or for Thirty (30) days from purchase date for a commercial user, SNAPPER POWER EQUIPMENT, through any factory authorized service dealer, will replace for the original purchaser, free of charge, any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

All transportation cost incurred by the purchaser in submitting material to an authorized service dealer for replacement under this warranty must be borne by the purchaser.

This warranty does not apply to engines and their components, as these items are warranted separately by their manufacturers. Neither does it apply to parts that have been damaged by accident, alteration, abuse, improper lubrication, normal wear, or other cause beyond our control.

There is no other express warranty.

Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to ninety (90) days from purchase for non-commercial users, and for thirty (30) days from purchase for commercial users and to the extent permitted by law any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages under any and all warranties are excluded.

Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARNING: Use of replacement parts other than genuine SNAPPER parts may impair the safety of your mower.

IMPORTANT: Please fill out the attached Snapper Guarantee Card and mail to:

SNAPPER POWER EQUIPMENT, McDONOUGH, GEORGIA 30253

SNAPPER Power Equipment
McDonough, Georgia 30253

