

# Safety Instructions & Operator's Manual for **SNAPPER**<sup>®</sup>

## MID MOUNT Z-RIDER ZERO TURNING HYDRO DRIVE SERIES 3



### MODELS

NZM19483KWV  
NZM21523KWV  
NZM25523KWV  
NZM25613KWV  
NZM27613KH

### MODEL NUMBER EXPLANATION

**N Z M 19 48 3 KWV**

MODEL DESIGNATION — N  
DRIVE SYSTEM TYPE — Z  
MOWER ORIENTATION — M  
ENGINE HP \* — 19, 21, 25, 27  
POWER UNIT — 19, 21, 25, 27  
48 — 48" Mower Width  
52 — 52" Mower Width  
61 — 61" Mower Width  
3 — Series Designation  
KW — Kawasaki Engine  
KH — Kohler Engine  
V — Over Head Valve  
ENGINE TYPE — KW, KH  
SERIES DESIGNATION — 3  
MOWER DECK SIZE — 48, 52, 61

POWER UNIT			
N – Model Designation	19.0 – Engine Horse Power	48 – 48" Mower Width	3 – Series Designation
Z – Zero Turning – Hydro Drive	21.0 -- Engine Horse Power	52 – 52" Mower Width	KW – Kawasaki Engine
M – Mid Mount Mower	25.0 – Engine Horse Power	61 – 61" Mower Width	KH – Kohler Engine
	27.0 – Engine Horse Power		V – Over Head Valve

Thank you for buying a SNAPPER Product! Before operating your machine, read this manual carefully and pay particular attention to the "IMPORTANT SAFETY INSTRUCTIONS" on Pages 2 - 4. Remember that all power equipment can be dangerous if used improperly. Also keep in mind that SAFETY requires careful use in accordance with the operating instructions and common sense!

NOTE: Specifications are correct at time of printing and are subject to change without notice.

\* Actual sustained equipment horsepower will likely be lower due to operating limitations and environmental factors.

**SNAPPER**® McDonough, GA., 30253 U.S.A.

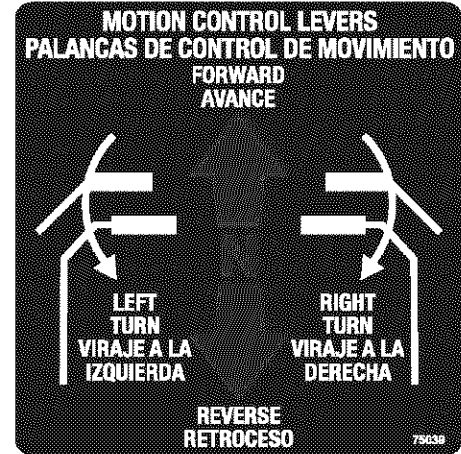
COPYRIGHT © 2005  
SNAPPER – A DIVISION OF SIMPLICITY MFG., INC.  
ALL RIGHTS RESERVED

MANUAL No. 7100080 (Rev. 1, 9/20/2005)

## Section 2 – SAFETY MESSAGES AND SYMBOLS



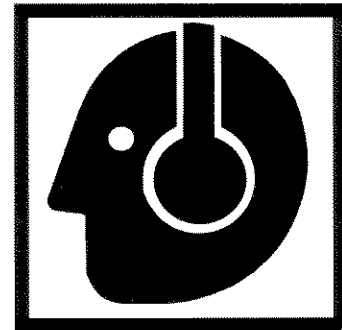
**DANGER ! ROTATING PARTS  
KEEP AWAY FROM MOVING PARTS**



**MOTION CONTROL LEVER OPERATION**



**PARKING BRAKE LEVER OPERATION**



**WEAR HEARING PROTECTION**

**WARNING ADVERTENCIA**

**TO AVOID INJURY OR DEATH**

- Read Operator's Manual.
- Do not operate unless you are fully trained.
- Keep all guards, shields and other safety devices in place and working.
- Do not operate when children or others are around.
- Avoid sudden movement of control levers and sharp turns.
- Turn off engine before leaving the seat or servicing.
- Mow up and down hills never across or on slopes greater than 15°.

**PARA EVITAR LESIONES O LA MUERTE**

- Lea el Manual del Operador
- No maneje esta máquina a menos que esté capacitado para hacerlo.
- Mantenga todos los protectores, escudos y otros dispositivos de seguridad instalados y funcionando.
- No maneje la máquina mientras hayan niños u otras personas en la zona de trabajo.
- Evite mover bruscamente las palancas de control y hacer virajes muy cerrados.
- Apague el motor antes de levantarse del asiento o realizar trabajos de mantenimiento.
- En colinas, corte la hierba en sentido ascendente y descendente nunca en sentido transversal ni en pendientes superiores a 15°. Si no puede retroceder en una colina - NO maneje la máquina en ese lugar.

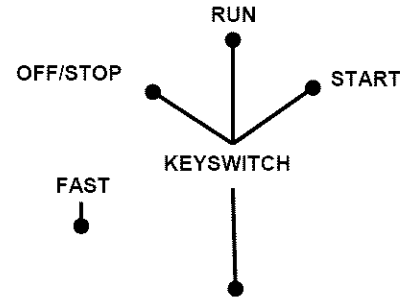
**WARNING ! AVOID SERIOUS INJURY OR DEATH  
STARTING, OPERATION & STOPPING OF MACHINE**

# Section 2 – SAFETY MESSAGES AND SYMBOLS

HOUR METER



PULL SWITCH "UP" TO  
 ENGAGE BLADES  
 PUSH SWITCH "DOWN" TO  
 DISENGAGE BLADES



CONTROL PANEL IDENTIFICATION

CHOKE CONTROL

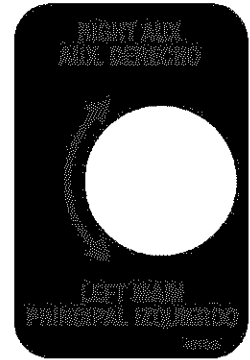


ENGINE SPEED CONTROL

SLOW

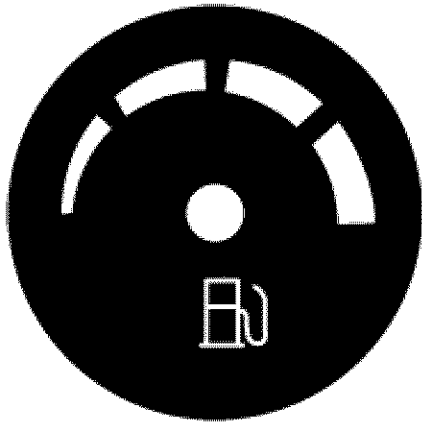


	<b>⚠ DANGER</b> KEEP HANDS AND FEET AWAY. DO NOT OPERATE MOWER UNLESS GUARDS OR THE ENTIRE GRASS CATCHER IS IN ITS PROPER PLACE.	<b>⚠ PELIGRO</b> MANTENGA LAS MANOS Y LOS PIES LEJOS DE LAS CHUCHILLAS. NO MANEJE EL CORTACÉSPED A MENOS QUE LOS PROTECTORES O EL RECOGEDOR DE HIERBA COMPLETO ESTEN INSTALADOS EN SU LUGAR CORRESPONDIENTE.	
<b>ASSEMBLE CHUTE DEFLECTOR TO THIS UNIT BEFORE OPERATING. INSTALE EL DEFLECTOR DEL TUBO DE DESCARGA ANTES DE MANEJAR LA MÁQUINA.</b>			

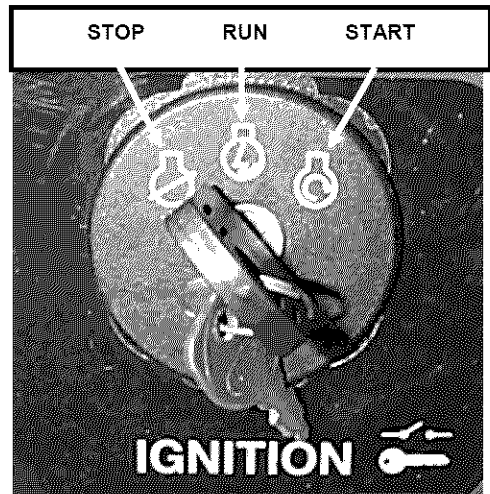


**DANGER! ROTATING BLADES**  
KEEP CHILDREN AND OTHERS OUT OF MOWING AREA

FUEL TANK SELECT



FUEL GAUGE (2)



IGNITION SWITCH

# Section 2 – SAFETY MESSAGES AND SYMBOLS

**WARNING**

**LOW OVERHANGING OBSTACLES HAZARD**

Check for overhead clearances before driving under any objects. Do NOT allow roll bar to contact low overhanging obstacles, such as tree branches and guide wires.




**PELIGRO DE OBSTÁCULOS COLGANTES A BAJA ALTURA**

Verifique el margen de altura antes de conducir por debajo de cualquier objeto. NO deja que la barra antivuelco choque con obstáculos colgantes a baja altura, como ramas de árboles y alambres de guía.

7100284

**WARNING**



**AVOID SERIOUS INJURY OR DEATH FROM ROLL OVER:**

Keep roll bar in the raised position and use seat belt.

**THERE IS NO ROLL OVER PROTECTION WHEN THE ROLL BAR IS DOWN**

Lower the roll bar only when necessary and NEVER remove it.


Do NOT use seat belt when the roll bar is down.

Raise the roll bar as soon as clearance permits.

Do NOT jump off if mower tips.

Read and follow all operating instructions and warnings in the operator's manual.

**PRECAUCIÓN**



**EVIE SUFRIR LESIONES GRAVES LA MUERTE DEBIDO A UN VUELCO:**

Mantenga la barra antivuelco levantada y abróchese el cinturón.

**NO TENDRA PROTECCION CUANDO LA BARRA ANTIVUELCO ESTÁ ABAJO.**

Baje la barra antivuelco cuando sea necesario y NUNCA la quite de la máquina.

NO use el cinturón de seguridad cuando la barra antivuelco está abajo.

Levante la barra antivuelco tan pronto el espacio libre lo permita.

NO salte del cortacésped si éste se vuelca.

Lea el manual del operador y siga las instrucciones de operación y las advertencias allí incluidas.

7100173

**CAUTION**

**ROLL OVER PROTECTIVE STRUCTURE**

To maintain operator protection and roll bar certification:

Replace a damaged roll bar, do NOT attempt to repair or modify.

Any alteration of the roll bar must be approved by the manufacturer.

**DO NOT** exceed the machine weight rating of the roll bar.

**PRECAUCIÓN**

**ESTRUCTURA PROTECTORA DE BARRA ANTIVUELCO**

Para mantener protegido al operador y conservar la certificación de la barra antivuelco:

Reemplace una barra antivuelco que esté dañada, NO intente repararla ni modificarla.

Cualquier cambio de la barra antivuelco debe ser aprobado por el fabricante.

NO exceda la capacidad nominal de soportar el peso de la máquina de la barra antivuelco.

7100171

ROLL BAR PROTECTIVE STRUCTURE DECALS

**CAUTION**

**SPRING LOADED MECHANISM. SPRING TENSION MUST BE RELIEVED BEFORE WORKING ON DECK LINKAGE OR REMOVING DECK FROM MACHINE. LOOSEN NUT ON EYEBOLT. REFER TO OPERATOR'S MANUAL FOR INSTRUCTIONS.**

**PRECAUCIÓN**

**MECANISMO ACTIVADO POR RESORTE. quite TENSION DEL RESORTE ANTES DE TRABAJAR EN EL VARILLA JE DE LA PLATAFORMA O DE DESMONTAR LA PLATAFORMA DE LA MÁQUINA. AFLOJE LA TUERCA EN EL PERNO DE ANILLA. CONSULTE EL MANUAL DEL OPERADOR PARA LAS INSTRUCCIONES.**

75296

CAUTION! SPRING LOADED MECHANISM

## Section 3 - OPERATING INSTRUCTIONS

### 3.1 PRE-START CHECK LIST

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

**3.1.1.** Check tires and add or release air as needed to bring pressure to 12 psi in drive tires. Pressure in front caster wheels should be 25 psi.

**3.1.2.** Check guards, deflectors and covers to make sure all are in place and securely tightened.

**3.1.3.** Check engine oil and add oil as needed to bring level up to the FULL mark. Refer to engine owner's manual for oil specifications. See Figure 3.1.

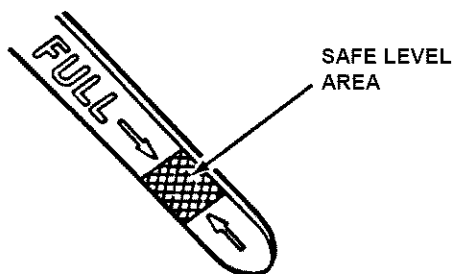


FIGURE 3.1

**3.1.4.** Check Blade Switch to insure it works freely.

1. Pull the Blade Switch up to the "ON" position to engage or turn "ON" the mower blades.

2. Push Blade Switch down to the "OFF" position to disengage (or turn "OFF") the blades.

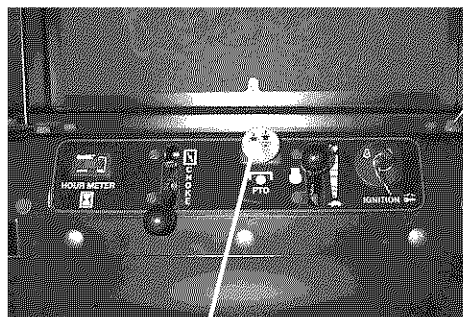


FIGURE 3.2

**3.1.5.** Clean exterior surfaces of cutting deck, engine and pumps of any accumulation of dirt, grass, oil, etc. Keep engine and pump air intake screens and cooling fins clear at all times.

**3.1.6.** Add fuel to both tanks of the machine outside where fumes can safely dissipate. Make sure both fuel filler caps are tight. Note the fuel tank selector valve. Refer to engine owner's manual for fuel specifications.

**3.1.7.** Adjust position of operator's seat. The seat is mounted on slides. Locate latch lever beneath the seat. Move lever towards the left and slide seat to the desired position. Release latch. If equipped, adjust seat suspension for operator weight.

**3.1.8.** Place mower in desired cutting height setting. Grasp deck lift lever and depress release latch located underneath the lever. Move lever to desired cutting height setting and release latch. Insert stop pin to desired cutting height.

**IMPORTANT:** There is a foot assist pedal located to the right front side of the footrest. Always use this assist pedal to raise or lower the deck to the desired cutting height. See Figure 3.3.

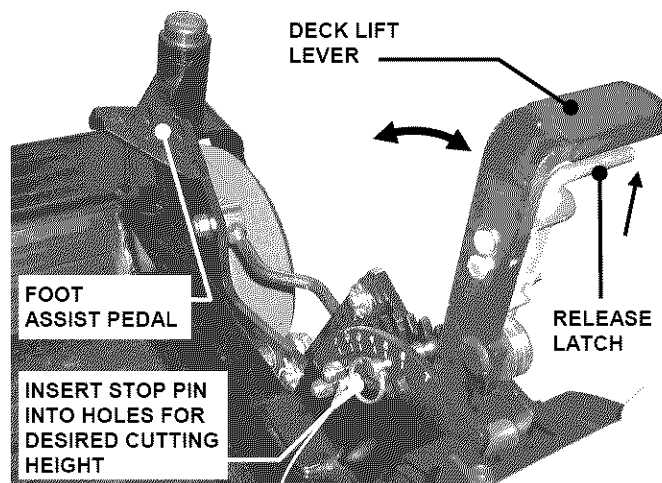
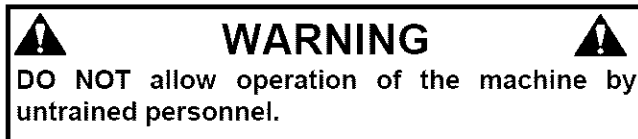


FIGURE 3.3

**3.1.9.** Check seat belts. Mounting hardware must be tight. Buckle must latch securely and release easily. Webbing must not display signs of deterioration, wear or damage.

**3.1.10.** Check roll bar protective structure for structural soundness (i.e. no cracks, damage, corrosion, etc.) All hardware must be tight. Roll bar must be raised and locked unless absolutely necessary (i.e. low overhead clearance). Both locking pins must be installed and securely fastened to prevent inadvertent removal. **DO NOT** operate a machine that has had any part of the roll bar protective structure removed, damaged, or modified in any way.

**IMPORTANT:** This machine is equipped with hydrostatic drive. The direction of motion and the speed of motion are controlled by the left and right motion control levers. A small movement of these controls can cause the machine to move instantly. **DO NOT** attempt to operate the machine until you read this manual and become familiar with its operation. Practice with the blades "OFF" disengaged, engine speed at a slow setting and in an open area away from obstacles.



## Section 3 - OPERATING INSTRUCTIONS

### 3.4.2. STOPPING MACHINE

1. Return motion control lever to the neutral position & the neutral lock position.

**IMPORTANT:** Operator must use hand assistance to bring both motion control levers to the neutral position & the neutral lock position.

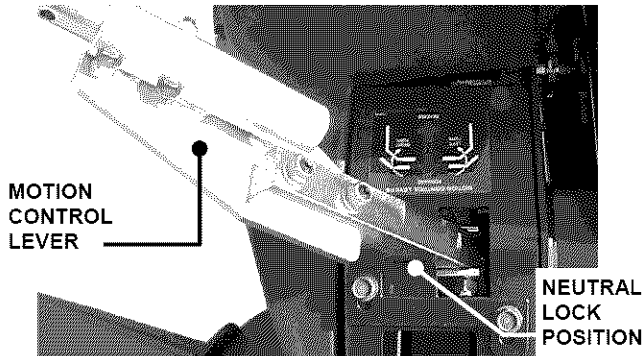
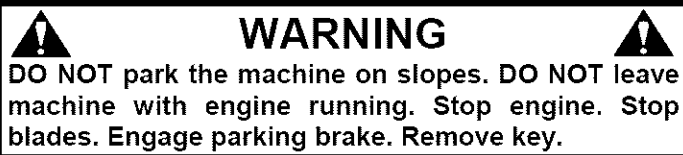


FIGURE 3.13

2. Engage parking brake.
3. Push Blade Switch down to the "OFF" position to disengage or turn "OFF" the blades.
4. Stop engine. Move engine speed control to turtle "SLOW" position. Turn key to stop position.
5. Remove key.



### 3.5 FOLDING THE ROLL BAR PROTECTIVE STRUCTURE

The roll bar protective structure should be folded ONLY when absolutely necessary – i.e. when there is low overhead clearance. NEVER remove any part of the structure. To fold:

1. Shut off engine and remove key.
2. Loosen star knobs and remove locking pins. See Figure 3.14.
3. Fold roll bar down against backs of side bars.
4. Tighten star knobs and replace pins to prevent loss.

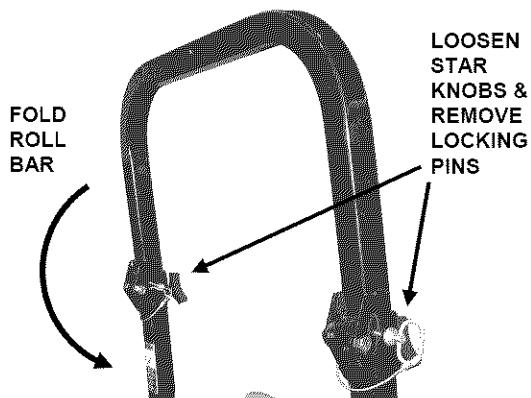


FIGURE 3.14

5. Raise and lock roll bar as soon as clearance permits.  
**IMPORTANT:** DO NOT use seat belt when roll bar is folded.



### 3.6 SAFETY INTERLOCK SYSTEM CHECKS

This machine is equipped with an electrical safety interlock system that is provided for the safety of the operator and others. All safety devices must be in place and functioning properly before operating the machine. Perform the following interlock system checks periodically during the operating season. Contact your authorized Snapper dealer if you have questions.



#### ENGINE MUST NOT START IF:

1. Motion Control Lever(s) are not in the neutral lock position OR,
2. Parking Brake disengaged and Operator not seated in the Operator's Seat OR,
3. Blade Switch in the "ON" blades engaged position.

#### ENGINE SHOULD START IF:

1. Blade Switch in the "OFF" blades disengaged position AND,
2. Motion Control Levers are both in the neutral lock position AND,
3. Operator properly seated in the Operator's Seat OR,
4. Parking Brake engaged.

**NOTE:** The engine can be started with the parking brake disengaged only if conditions in 1, 2 and 3 have been met.

#### ENGINE MUST BEGIN TO STOP IF:

1. Motion Control Levers are moved from the neutral lock position with Parking Brake engaged OR,
2. Operator rises off of seat with Blade Switch in "ON" blades engaged position OR,
3. Operator rises off of seat with Parking Brake disengaged.

**IMPORTANT:** Engine and blades will continue to run if Operator becomes reseated prior to engine coming to a complete stop. After coming to a complete stop, the blade switch must be moved to the "OFF" position before engine can be restarted. Engine and blades must come to a complete stop within 7 seconds after the operator rises off the seat or the blade switch is moved to the "OFF" position.

# Section 4 - MAINTENANCE

**WARNING**

Allow engine to cool for at least ten minutes before performing service or maintenance. **DO NOT** smoke near fuel components when performing service or maintenance. **DO NOT** perform service and maintenance near an open flame. Wipe off any spilled fuel before starting engine. **DO NOT** run engine indoors.

## 4.5 ANNUALLY (END OF EACH SEASON) (Continued from previous Page)

### 4.5.2. FUEL FILTER

Service fuel filter as instructed below. Turn key to "OFF" position. Engine **MUST** be stopped and **MUST** be cold before removing filter. Clamp fuel line to prevent fuel spillage or perform filter change when fuel tank and fuel line are empty.

1. Remove fuel line clamps from fuel filter.
2. Remove fuel lines from filter. Discard filter.
3. Install new fuel filter. **IMPORTANT:** Some fuel filters are fuel flow directional. Check for arrow that shows fuel flow direction. Reinstall fuel line clamps. See Figure 4.8.

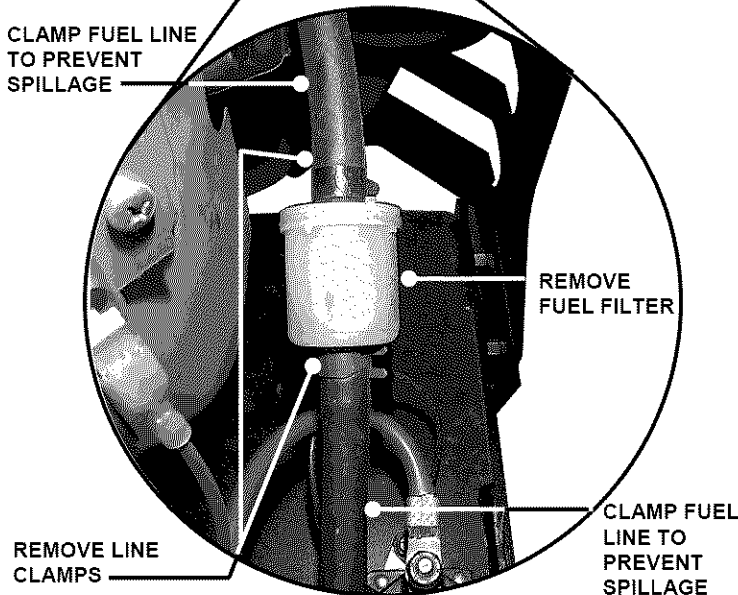
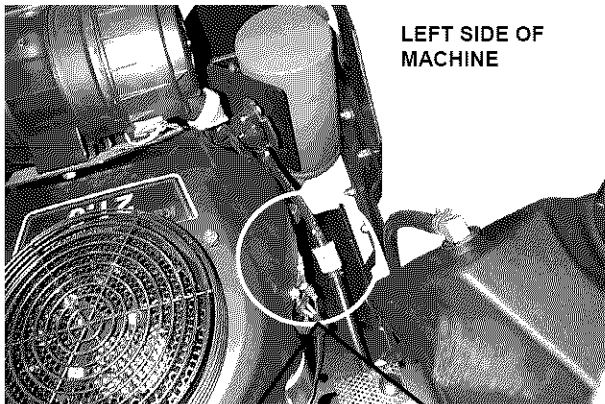
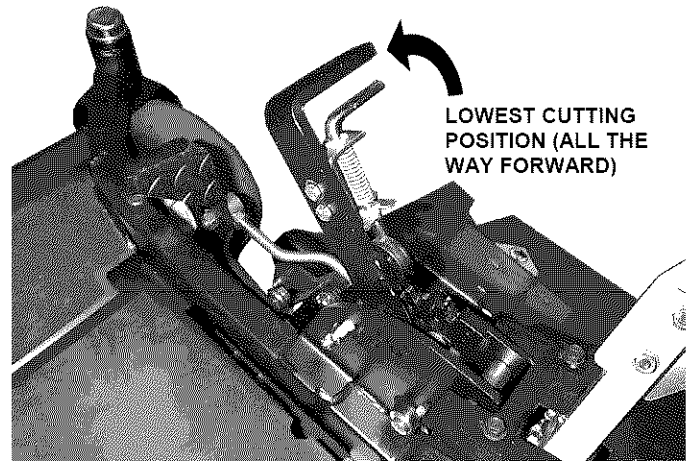


FIGURE 4.8

## 4.6 DECK REMOVAL

Move power unit/mower deck to an area where the mower deck is to be disconnected. Turn engine "OFF" and remove key from switch. Remove spark plug wire(s) and secure away from spark plug(s). Move motion control levers to the neutral position. Engage parking brake.

1. Move deck lift lever and set the mower deck to the highest cutting position. See Figure 4.9.
2. **IMPORTANT - STORED ENERGY.** Relieve tension on deck lift assist spring by backing off nut on eyebolt. Failure to relieve tension could result in personal injury. See Figure 4.9.
3. Place a wooden block under the front and rear edge of the mower deck.
4. Move deck lift lever and set the mower deck to a lower cutting position until deck rests on wooden blocks. Position the deck to where there is no tension on the deck hanger chains. See Figure 4.9.



POSITION DECK LIFT LEVER IN HIGHEST CUTTING POSITION. PLACE WOODEN BLOCKS UNDER FRONT AND REAR OF DECK. LOWER DECK ONTO BLOCKS

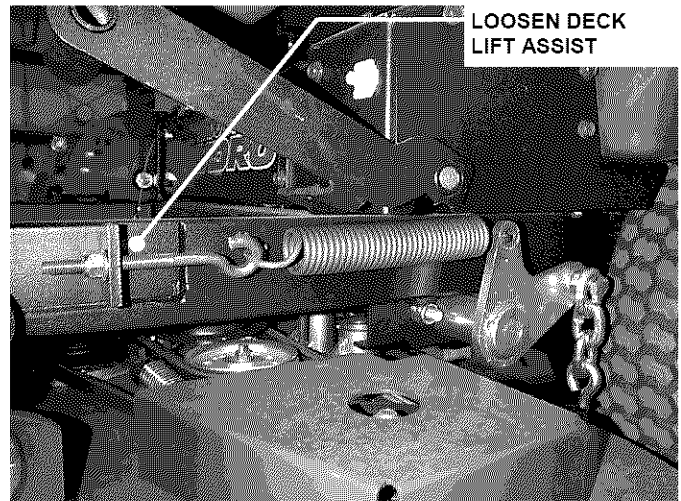


FIGURE 4.9

(Continued On Next Page)

## Section 5 - ADJUSTMENTS & REPAIR

**⚠ DANGER ⚠**  
Exercise **EXTREME CAUTION** when making this adjustment, due to close proximity of moving parts.

### 5.1 NEUTRAL POSITION ADJUSTMENTS

The motion control levers control the movement and stopping of the machine. Move the control levers to the center or neutral position to stop machine.

**IMPORTANT:** Always return both motion control levers with hand assistance to the neutral position. If machine does not come to a complete stop or machine has movement when control levers are moved to the neutral lock position, adjustment must be made.

1. Turn key to "OFF" position.
2. Move motion control levers to the neutral lock position. Refer to Figure 3.7.
3. Raise both rear wheels off the ground. Secure machine with safety blocks.
4. Remove cover screen to expose top of hydro pumps and linkages. See Figure 5.1.
5. Remove both fans from top of hydro pumps.
6. Disconnect motion lever connecting rods from hydro pump activation assembly. See Figure 5.2.

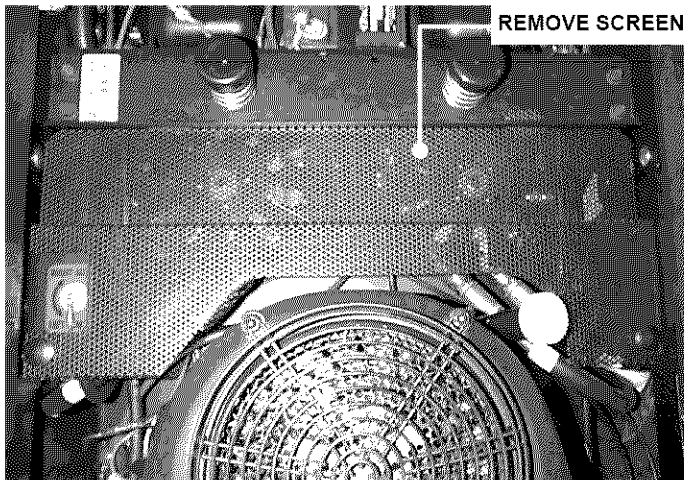


FIGURE 5.1

7. Turn key to start position and start machine. Move engine speed control to the Rabbit "FAST" position.
8. Disengage parking brake.
9. Both wheels should not have any movement, not rotating.
10. If wheel(s) are rotating, loosen the hydro pump activation assembly retaining screw. Move activation assembly forward or rearward to stop rotation of wheel. Retighten retaining screw. Repeat this step for other hydro pump. See Figure 5.3.
11. Stop engine.

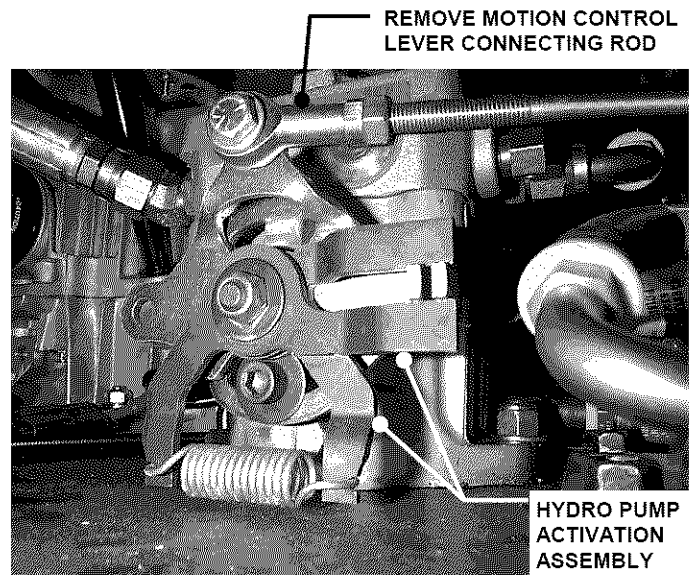


FIGURE 5.2

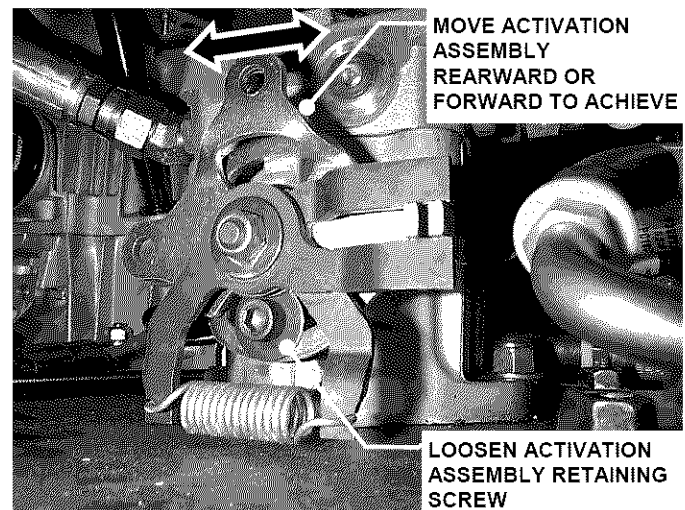


FIGURE 5.3

(Continued On Next Page)



# Section 5 - ADJUSTMENTS & REPAIR

## 5.1 NEUTRAL POSITION ADJUSTMENTS (Continued From Previous Page)

12. With motion control levers remaining in the neutral lock position, See Figure 3.7, hold connecting rod up to the activation assembly and check length of rod. Tie rod end bolt must align with the activation assembly. If bolt is not aligned with the activation assembly, adjust tie rod. Loosen jam nut that secures tie rod. Rotate tie rod in or out to align with hole in activation assembly. Repeat step for other hydro pump. See Figure 5.4.

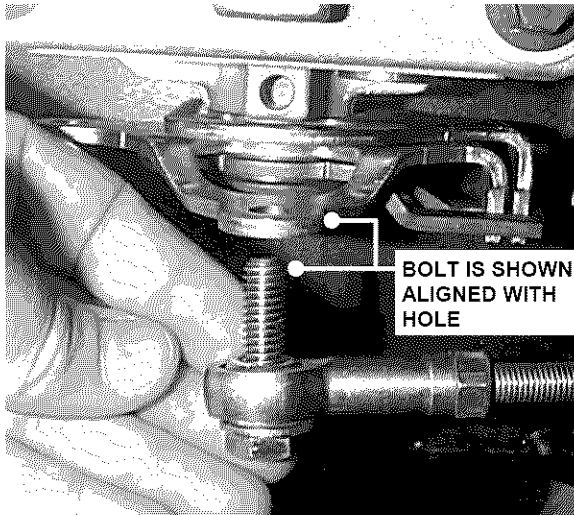
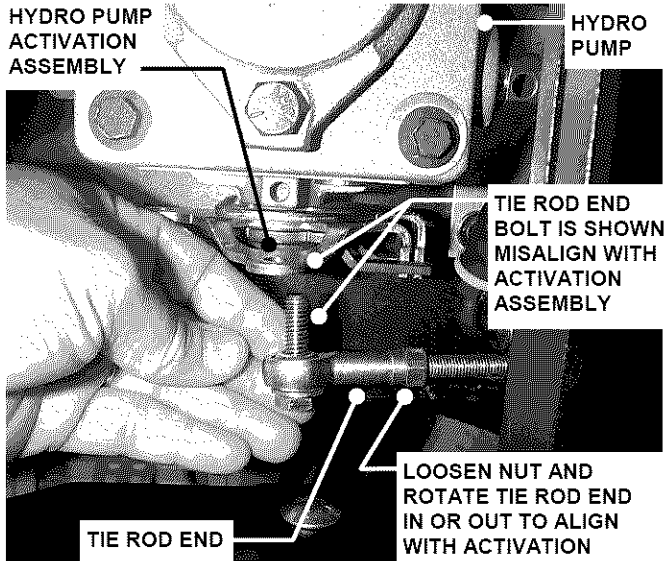


FIGURE 5.4

13. Once tie rod end bolt is aligned with activation assembly insert into hole and reinstall washers and nut that secure bolt to assembly. Tighten securely. Tighten tie rod jam nut securely.

14. Start engine, disengage parking brake, and check rotation of the rear wheels.

15. Reinstall both hydro pump fans. Reinstall washer and bolt. Tighten bolt securely.

16. Reinstall screen and tighten retaining hardware securely.

## 5.2 MOWER DECK & COMPONENT ADJUSTMENTS

The leveling procedures for the 61 deck differ from the 48 and 52 decks. The 61 deck replaces the two rear eyebolts with slotted brackets, and uses 1 1/4" leveling blocks in place of the 1" blocks. Follow and complete each step carefully.

### 5.2.1. MOWER DECK ADJUSTMENT (LEVELNESS) SIDE to SIDE and FRONT to REAR

Before making deck leveling adjustments, inflate rear tires to 12 PSI and front tires to 25 PSI. When adjusted correctly, the deck will be level side to side within 1/8", have a low cut setting of approximately 1" (1 1/4" for 61 deck) and the blades pitched approximately 3/16" higher at the rear.

1. Place machine on a smooth level surface.
2. Check side to side level by rotating blades until tips are pointing to the sides of the deck. Check the measurement of outside blade tips to the ground on both blades. The measurement of each of the outside blade tips should be within 1/8" of each other. If measurement of the blade tips is not within 1/8", adjustment should be made.
3. Move deck lift lever and set the mower deck to the highest cutting position.
4. Relieve tension on deck lift assist spring by loosening nut on eyebolt. Refer to Section "Removing Deck".
5. Place 1" blocks (1 1/4" for 61 deck) under the front and rear edge of the mower deck.
6. Move deck lift lever and set the mower deck to the lowest cutting position.
6. Loosen the nuts and bolts that secure both front deck support chains. Adjust chains until tight and retighten bolts and nuts. Torque to 20 to 30 ft. lbs. See Figure 5.5.

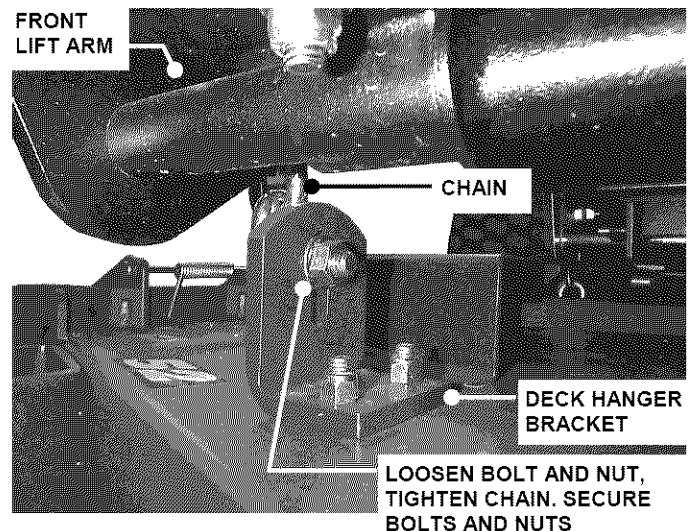


FIGURE 5.5

## Section 5 - ADJUSTMENTS & REPAIR

**WARNING**  
DO NOT attempt any maintenance, adjustments or service with engine running. STOP engine. STOP blades. Set brake. Remove key. Remove spark plug wires and secure away from spark plugs. Engine and components are HOT. Avoid serious burns, allow sufficient time for all parts to cool.

### 5.3 TRACTION BELT TENSION

The traction drive belt tension does not require adjustment. If the belts are slipping, they will have to be replaced.

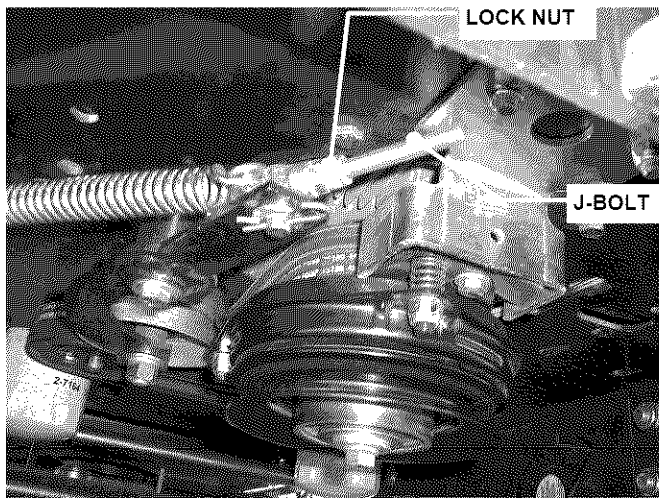


FIGURE 5.9

### 5.4 TRACTION BELT REPLACEMENT

1. Remove clutch to deck belt. See Figure 5.10.
2. Turn lock nut out to the end of J-Bolt, reducing spring tension. Unhook traction idler spring from bolt in frame. See Figure 5.9
3. Remove anti-rotation bracket. See Figure 5.10
4. Disconnect the electric clutch from main wire harness.
5. Remove traction belts from around engine pulley and hydro pumps.
6. Install new belts and route around engine pulley and hydro pump pulleys.
7. Reconnect electric clutch to main wire harness.
8. Reinstall anti-rotation bracket and tighten nuts securely.
9. Reattach traction idler spring. Run lock nut all the way to the end of the threads on the J-Bolt. See Figure 5.10.
10. Reinstall electric clutch to deck belt onto electric clutch.

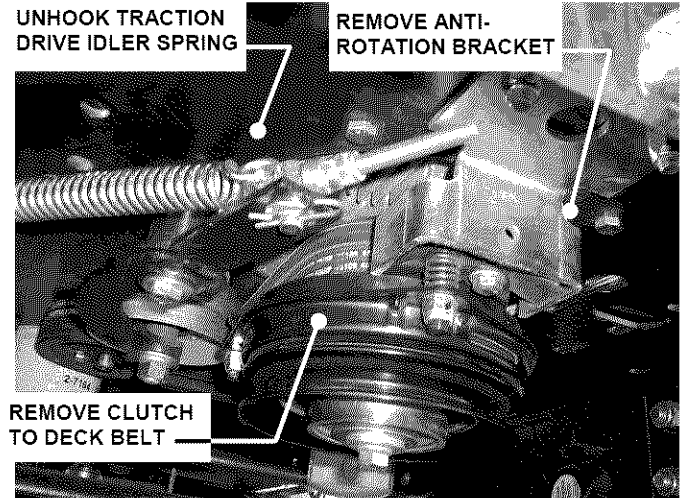


FIGURE 5.10

### 5.5 BLADE BRAKE/ELECTRIC CLUTCH ADJUSTMENT

The blade switch engages the electric clutch when pulled out to the "ON" position. When the blade switch is in the "ON" position the cutting blade(s) are engaged. The blade switch disengages the electric clutch when the blade switch is pushed in to the "OFF" position. When the blade switch is in the "OFF" position the cutting blade(s) are disengaged. The electric clutch is adjustable. The blades should stop rotation in 7 seconds or less. If the electric clutch fails to stop the blades rotation in 7 seconds, adjustment is necessary.

1. Insert a feeler gauge into the three slots on the electric clutch.
2. Check gap through all three slots in the side of the clutch. The gap should be set at .015.
3. If gap is incorrect rotate nuts in or out to achieve the correct gap. See Figure 5.11.

**NOTE:** Electric Clutch is shown removed from the machine. Removal is not necessary for adjustment.

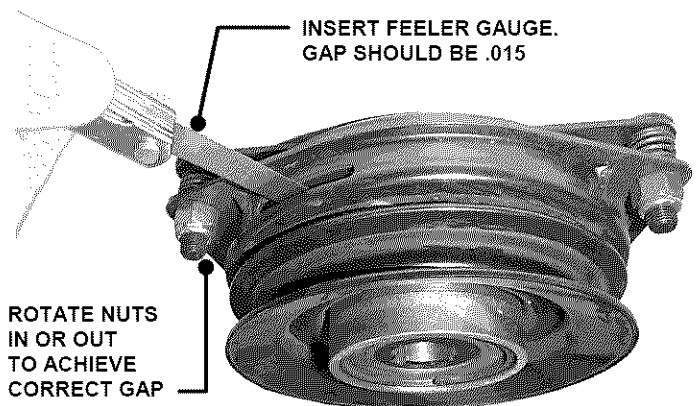


FIGURE 5.11

## Section 5 - ADJUSTMENTS & REPAIR

### 5.6 TRACKING ADJUSTMENT

If the machine does not track straight when the Motion Control Levers are in the maximum forward speed position, perform the following adjustment. Rear tire pressure must be set to 12 PSI before making this adjustment.

1. Loosen bolts that secure adjustment plates and slide plates all the way forward. Retighten bolts.
2. Start machine and drive in smooth flat open area at maximum forward speed.
3. If machine tracks to the right, loosen bolts that secure the left adjustment plate. Move plate rearward to slow the left wheel. Retighten bolts.
4. If machine tracks to the left, loosen bolts that secure the right adjustment plate. Move plate rearward to slow the right wheel down. Retighten bolts. See Figure 5.12.
5. Drive machine again. Repeat adjustment as necessary until machine tracks straight.

LOOSEN BOLTS.  
SLIDE PLATE TO  
MAKE MACHINE  
TRACK STRAIGHT

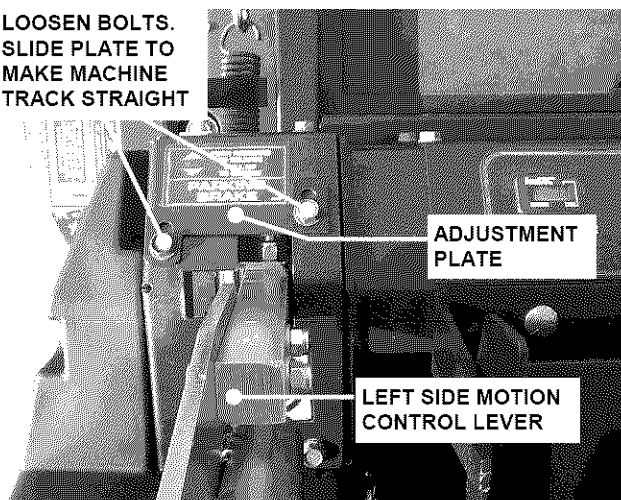


FIGURE 5.12

### 5.7 MOWER DRIVE BELT REPLACEMENT

Inspect mower drive belt. Replace belt if it shows signs of excessive wear, damage and/or is broken.

#### 5.7.1. BELT REMOVAL

1. Remove power unit footrest.
2. The engine to deck belt must be removed before the deck belt can be removed. Remove engine to deck belt.
3. Disconnect deck belt tension spring.
4. Remove old deck belt. Note the belt routing. See Figure 5.12.

#### 5.7.2. BELT REPLACEMENT

1. The deck belt must be installed first and the engine to deck belt installed last.
2. Route deck belt around blade pulleys and idler pulley in the same position as old belt was removed. See Figure 5.13.
3. Reconnect idler pulley spring.
4. Reinstall engine to deck belt.
5. Reinstall power unit footrest.

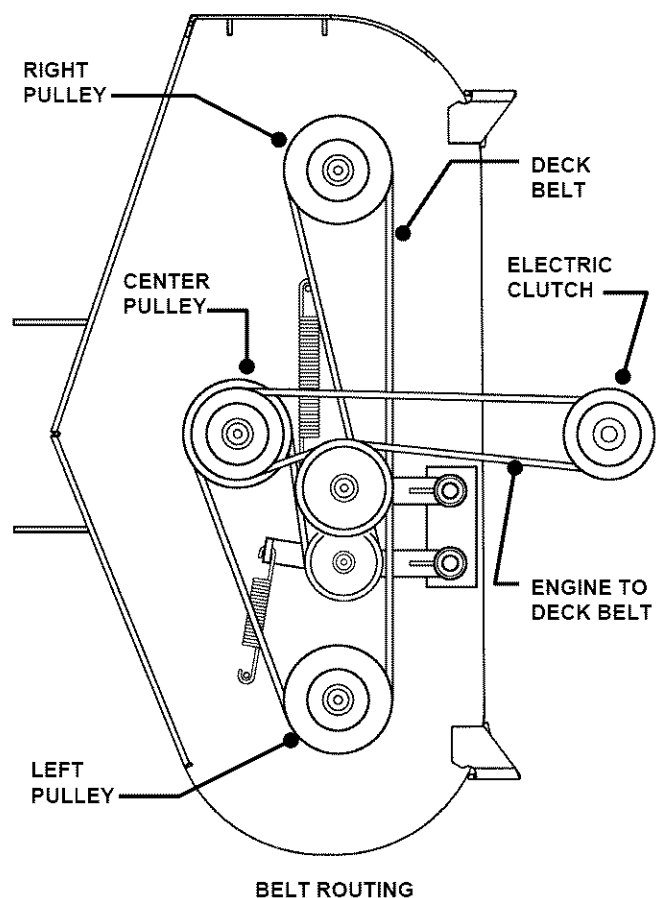


FIGURE 5.13

# Section 5 - ADJUSTMENTS & REPAIR

## 5.11 MOWER SPINDLES (Field Serviceable Spindles) BEARING REPLACEMENT

In the event that a spindle bearing requires replacement, the SNAPPER Field Serviceable Spindles have been designed so that no special tools or presses are required.

1. Remove belt. Loosen blade nut and remove. Allow blade bolt, washer, blade and four spacers to drop down out of the spindle housing. See Figure 5.19.

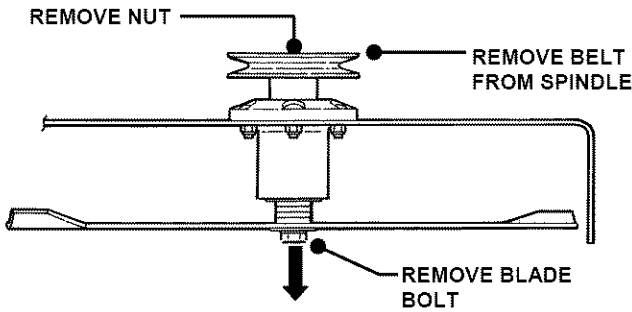


FIGURE 5.19

2. Remove spindle pulley from spindle shaft.
3. Locate circular retaining ring on spindle shaft at top bearing. Remove retaining ring. Allow spindle shaft to drop out of housing.
4. Top and bottom bearings are now removable. Pull out on inner race to slide bearing from housing. See Figure 5.20.
5. Thoroughly clean all parts removing all old contaminated grease.
6. Install new bottom bearing first.
7. NOTE: The bearing is sealed/shielded on one side only. The bottom bearing must be installed with the sealed/shielded side DOWN.
8. Insert spindle shaft up through the bottom bearing. Slide spacer down over spindle shaft.
9. Install new top bearing. Install the top bearing with the seal/shield UP.
10. Slide circular retaining ring down spindle shaft until it fully locks into groove on shaft.
11. Apply a generous amount of general-purpose grease to the concave side of the nylos seal. Install the nylos seal with concave greased side down.
12. Place spindle pulley and spacer on top of spindle shaft.
13. Reinstall blade bolt, washer, blade and four spacers. See Figure 5.15
14. Torque blade bolt and nut to 70 to 80 ft. lbs.
15. Pump grease into spindle housing until grease purges from vent on housing.
16. After the first 5 hours of operation, grease spindle housing to insure it is full, then every 25 hours.

**IMPORTANT:** Spindle housing must be filled with grease before operating mower. Failure to fill housing will cause premature bearing failure.

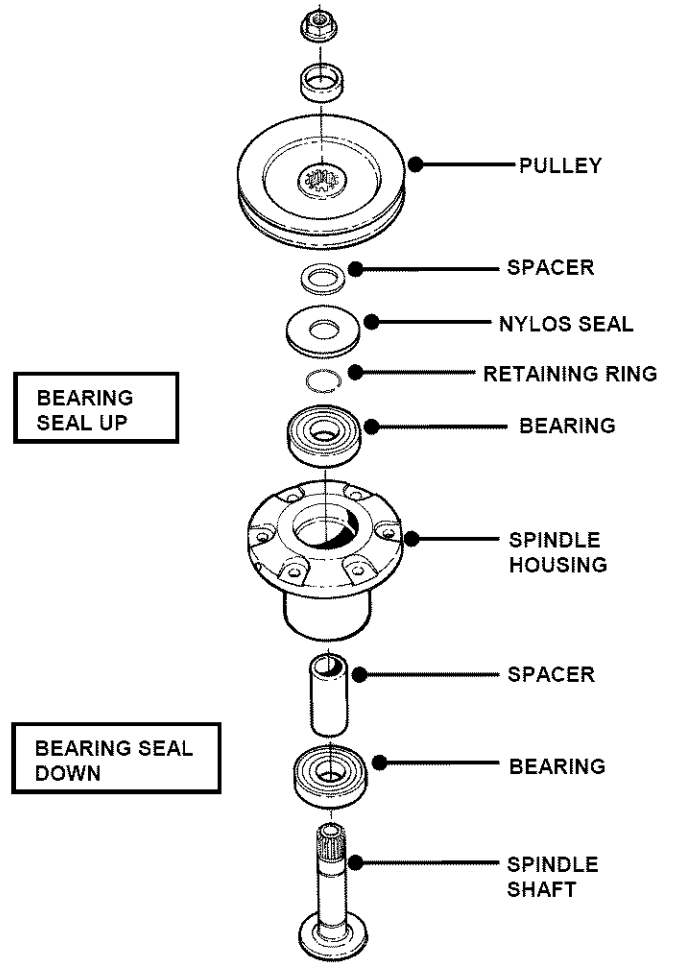


FIGURE 5.20

## Section 5 - ADJUSTMENTS & REPAIR

### 5.12 HYDRAULIC SYSTEM, PURGING

After replacing or repairing hydraulic system components, one or both of the wheel drives may not pull properly. This is likely to be caused by air entrapped in the system. If you experience a pulling issue after completing repairs, perform the following procedure to purge the air from one or both of the hydraulic drive systems.

**IMPORTANT: WHEN REPLACING THE HYDRAULIC FLUID FILTERS, PRE-FILL BOTH WITH OIL (SAE 20W50 API SL) BEFORE INSTALLING. PRE-FILLING THE FILTERS WITH OIL WILL REDUCE OR POSSIBLY ELIMINATE THE NEED TO PURGE THE SYSTEM OF ENTRAPPED AIR**

1. Locate hydraulic reservoir underneath operator's seat. After thoroughly cleaning the area around the top of the reservoir, remove filler cap. Bring fluid to proper level (1 ½" below the top of the filler neck). With engine off, add SAE 20W50 automotive oil. See Figure 4.6.
2. Open pressure relief valve on hydraulic pump, turning counter clockwise 2 full turns. See Figure 3.3.
3. Carefully raise the rear of the machine so the wheels are off of the ground. Securely block the machine to prevent it from falling.
4. While seated in the operator's position, start the engine. Place engine speed control in FAST position.
5. Release parking brake and move motion control levers out of the neutral lock position.
6. Slowly move motion control levers to the full forward and then to the full reward positions. Repeat this process 6 times.
7. Stop engine and wait for all rotation to stop before leaving the operator's position.
8. Close pressure relief valve on hydraulic pump, turning clockwise. Tighten snugly.
9. With pressure relief valve closed, repeat Steps 4 thru 7.
10. Remove blocks and lower rear of machine.
11. Check fluid level in reservoir. Add SAE 20W50 automotive oil as required to bring fluid level to 1 ½" from top of filler neck. Do Not over fill.
12. Install and tighten filler cap.



## Safety Instructions & Operator's Manual for

# **SNAPPER**<sup>®</sup>

**MID MOUNT Z-RIDER**

**ZERO TURNING**

**HYDRO DRIVE**

**SERIES 3**

### **IMPORTANT**

Snapper products are built using engines that meet or exceed all applicable emissions requirements on the date manufactured. The labels on those engines contain very important emissions information and critical safety warnings. Read, Understand, and Follow all warnings and instructions in this manual, the engine manual, and on the machine, engine and attachments. If you have any questions about your Snapper product, contact your local authorized Snapper dealer or contact Snapper Customer Service at Snapper, McDonough, GA. 30253. Phone: (1-800-935-2967).



#### **WARNING**

BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.



#### **WARNING**

ENGINE EXHAUST, SOME OF ITS CONSTITUENTS, AND CERTAIN VEHICLE COMPONENTS CONTAIN OR EMIT CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR OTHER REPRODUCTIVE HARM.

**SNAPPER**<sup>®</sup> McDonough, GA., 30253 U.S.A.