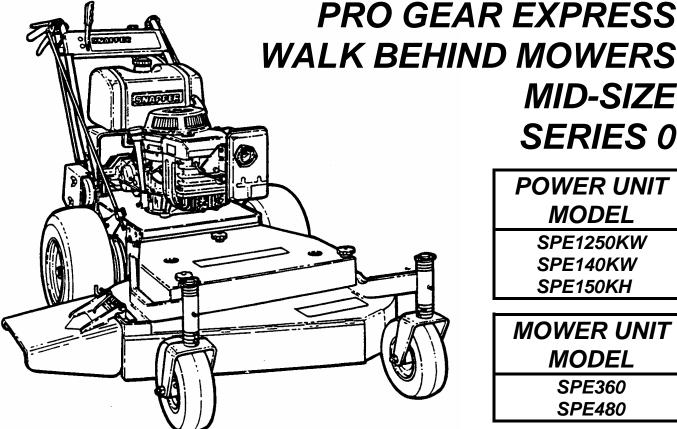
Safety Instructions and Operator's Manual for





POWER UNIT MODEL

MID-SIZE

SERIES 0

SPE1250KW SPE140KW SPE150KH

MOWER UNIT MODEL

> **SPE360 SPE480**

MODEL NUMBER EXPLANATION								
	S	Р	Ε	125	0	KW		
MODEL DESIGNATION — MODEL TYPE ———— MODEL OPTION ————						L	SE	ENGINE TYPE RIES DESIGNATION ENGINE HP
S – Snapper Commercial Model P – Pro Mid Size Model	ENGINE HOR 125 – 12.5 En			NG DECK W 6" Cutting De		0 - Series Des	ignation	KW – Kawasaki Engine KH – Kohler Engine
E – Express Model	140 – 14.0 En 150 – 15.0 En	gine HP		8" Cutting D				•

Thank you for buying a SNAPPER Product! Before operating your PRO GEAR WALK BEHIND, read this manual carefully and pay particular attention to the "IMPORTANT SAFETY INSTRUCTIONS" on Pages 2 & 3. 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!

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



IMPORTANT SAFETY INSTRUCTIONS



WARNING: This powerful cutting machine is capable of amputating hands and feet and can throw objects that can cause injury and damage! Failure to comply with the following SAFETY instructions could result in serious injury or death to the operator or other persons. The owner of the machine must understand these instructions and must allow only persons who understand these instructions to operate machine. Each person operating the machine must be of sound mind and body and must not be under the influence of any substance, which might impair vision, dexterity or judgment. If you have any questions pertaining to your machine which your dealer cannot answer to your satisfaction, call or write the Customer Service Department at SNAPPER, McDonough, Georgia 30253. Phone: (1-800-935-2967).

PROTECTION FOR CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.

- 1. KEEP children out of the mowing area and under the watchful care of a responsible adult.
- 2. DO NOT allow children in yard when machine is operated (even with the blades OFF).
- 3. DO NOT allow children or others to ride on machine or on attachments (even with the blades OFF). They may fall and be seriously injured.
- 4. DO NOT allow pre-teenage children to operate machine.
- 5. ALLOW only adults or responsible teenagers with mature judgment under close adult supervision to operate machine.
- 6. DO NOT operate blades in reverse. STOP BLADES. LOOK and SEE behind and down for children, pets and hazards before and while backing.
- 7. USE EXTRA CARE when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

SLOPE OPERATION

- Slopes are a major factor related to slip and fall accidents, which can result in severe injury. All slopes require extra caution. If you feel uneasy on a slope, DO NOT mow it.
- Mow across slopes, never up and down. Exercise extreme CAUTION when changing directions on slopes. Practice operation of machine on slopes with blades off.
- 3. Use extra care with grass catchers or other attachments: these affect the handling and the stability of the machine.
- 4. DO NOT use tow behind attachments on slopes.
- 5. AVOID uphill starts.
- 6. DO NOT operate machine under any condition where traction, steering or stability is doubtful.

PREPARATION

- 1. Read, understand and follow instructions and warnings in this manual and on the machine, engine, and attachments. Know the controls and the proper use of the machine before starting.
- 2. Only mature, responsible persons shall operate the machine and only after proper instruction.
- Data indicates that operators age 60 and above, are involved in a large percentage of mowerrelated injuries. These operators should evaluate their ability to operate the mower safely enough to protect themselves and others from serious injury.
- 4. Handle fuel with extra care. Fuels are flammable and vapors are explosive. Use only an approved fuel container. DO NOT remove fuel cap or add fuel with engine running. Add fuel outdoors only with engine stopped and cool. Clean spilled fuel from machine. DO NOT smoke.
- 5. Practice operation of machine with BLADES OFF to learn controls and develop skills.
- 6. Check the area to be mowed and remove all objects such as toys, wire, rocks, limbs and other objects that could cause injury if thrown by blade or interfere with mowing.
- 7. Keep people and pets out of mowing area. Immediately, STOP blades, STOP engine, and Stop machine if anyone enters the area.
- 8. Check shields, deflectors, switches, blade controls and other safety devices frequently for proper operation and location.
- Make sure all safety decals are clearly legible. Replace if damaged.
- 10. Protect yourself when mowing and wear safety glasses, long pants and substantial footwear.
- 11. Know how to STOP blades and engine quickly in preparation for emergencies.
- 12. Use extra care when loading or unloading the machine into a trailer or truck.
- 13. Check grass catcher components frequently for signs of wear or deterioration and replace as needed to prevent injury from thrown objects going through weak or worn spots.



IMPORTANT SAFETY INSTRUCTIONS



OPERATION

- DO NOT put hands or feet near or under rotating parts. Keep clear of the discharge area while the engine is running.
- 2. Stop Blades when crossing gravel drive, walks, and under any conditions where thrown objects might be a hazard.
- 3. Mow only in daylight or good artificial light.
- 4. DO NOT operate the machine while under the influence of alcohol or drugs.
- After striking a foreign object or if the mower vibrates abnormally, STOP the blades and engine. Remove the key. Disconnect and secure the spark plug wire. Inspect the mower for any damage and repair the damage.
- 6. DO NOT operate machine near drop offs, ditches, or embankments. Operator could lose footing or balance.
- 7. STAY ALERT for holes and other hidden hazards. Tall grass can hide obstacles. Keep away from ditches, washouts, culverts, fences and protruding objects.
- DO NOT operate machine on wet grass. Always be sure of your footing: keep a firm grip on the handle and walk: never run. Slipping could cause injury.
- DO NOT leave the machine with the engine running. STOP BLADES, STOP ENGINE and REMOVE KEY before leaving the operator position for any reason.
- 10. Before cleaning, repairing, or inspecting make certain blades, engine and all moving parts have STOPPED. Remove key and secure spark plug wire away from spark plug key to prevent accidental starting.
- 11. STOP BLADES and ENGINE and make sure blades have stopped before removing grass catcher or unclogging mower to prevent loss of fingers or hand.
- 12. Blades must be OFF except when cutting grass. Set blades in highest position when mowing over rough ground.
- 13. Keep hands and feet away from rotating blades underneath deck.
- 14. DO NOT operate machine without entire grass catcher or guards in place. DO NOT point discharge at people, passing cars, windows or doors.
- 15. Slow down before turning.
- 16. Watch out for traffic when near or crossing roadways.
- 17. Move motion control levers SLOWLY to maintain control during speed and directional changes.
- 18. DO NOT operate engine in enclosed areas. Engine exhaust gases contain carbon monoxide, a deadly poison.

MAINTENANCE

- DO NOT store machine or fuel container inside where fumes may reach an open flame, spark or pilot light such as in a water heater, furnace, clothes dryer or other gas appliance. Allow engine to cool before storing machine in an enclosure. Store fuel container out of the reach of children in a well ventilated, unoccupied building.
- 2. Keep engine free of grass, leaves or excess grease to reduce fire hazard and engine overheating.
- When draining fuel tank, drain fuel into an approved container outdoors and away from open flame.
- 4. Check brakes frequently (if equipped); adjust, repair or replace as needed.
- 5. Keep all bolts, nuts and screws properly tight. Check that all cotter pins are in proper position.
- 6. Always provide adequate ventilation when running engine. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- 7. Disconnect negative (black) cable from battery (if equipped) before performing maintenance or service. Cranking engine could cause injury.
- 8. DO NOT work under machine without safety blocks.
- Service engine and make adjustments only when engine is stopped. Remove key. Remove spark plug wire(s) from spark plug(s) and secure wire(s) away from spark plug(s).
- 10. DO NOT change engine governor speed settings or overspeed engine.
- 11. Lubricate machine at intervals specified in manual to prevent controls from binding.
- 12. Mower blades are sharp and can cut. Wrap the blades or wear heavy leather gloves and use CAUTION when handling them.
- 13. DO NOT test for spark by grounding spark plug next to spark plug hole; spark plug could ignite gas exiting engine.
- 14. Have machine serviced by an authorized SNAPPER dealer at least once a year and have the dealer install any new safety devices.
- Use only genuine SNAPPER replacement parts to assure that original standards are maintained.

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SECTION 1 - FAMILIARIZATION

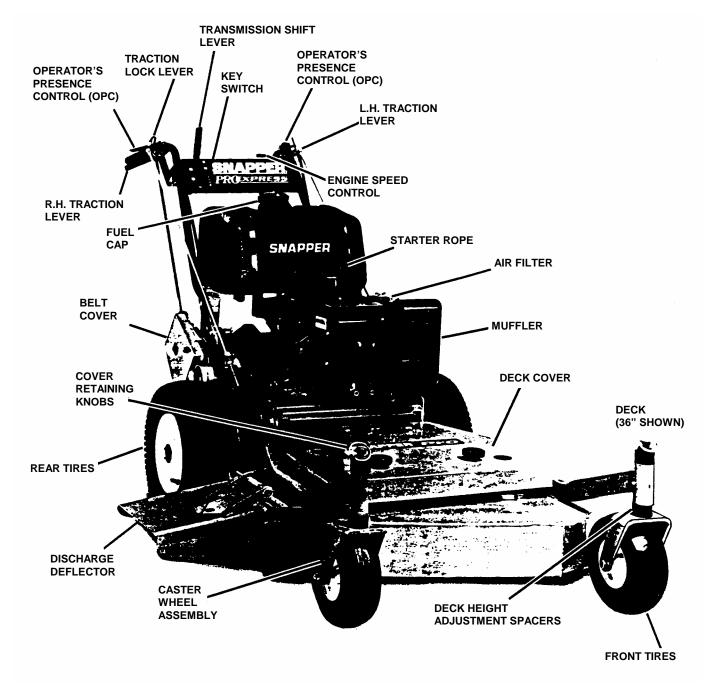


FIGURE 1.1

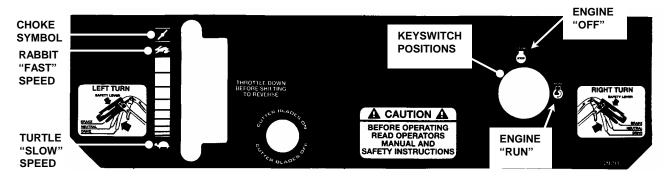
1.1 INTRODUCTION

This manual has been prepared for the operator's of the SNAPPER PRO GEAR WALK BEHIND MOWER. Its purpose, aside from recommending standard operating procedures and routine service requirements, is to promote SAFETY through the use of accepted operating practices. Read, Understand and Follow the IMPORTANT SAFETY INSTRUCTIONS on Pages 2 & 3 of this manual and All SAFETY messages on the PRO GEAR WALK BEHIND MOWER and its attachments before operating. SNAPPER recommends returning the MACHINE to an authorized SNAPPER dealer annually for inspection and addition of any new devices which might upgrade the safety of the mower.

1.2 NOMENCLATURE

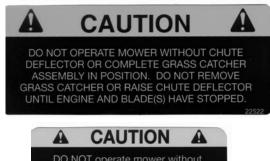
It is recommended that all operator's of this equipment become thoroughly familiar with the controls, components, and operation of this machine before operating. Specific details involving the engine are found in the separate engine owner's manual. Study these manuals before operating and keep both handy for future reference. For the nearest SNAPPER dealer in your area, 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.

SECTION 2 - SAFETY MESSAGES AND DECALS

















SECTION 2 - CONTROLS

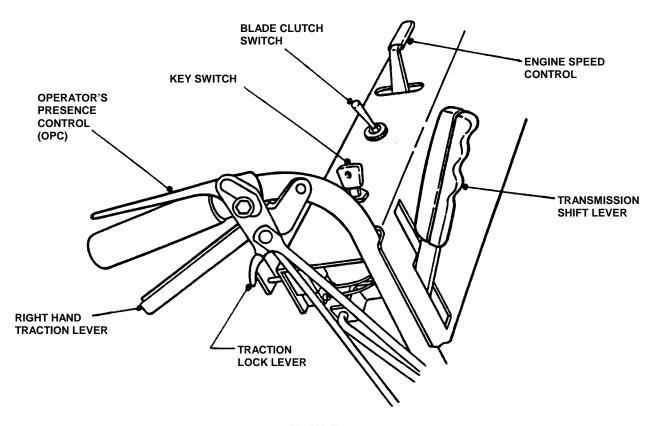


FIGURE 2.1

3.1 BEFORE OPERATING

Be Thoroughly familiar with all controls and how to use them <u>before</u> operating the machine. Know beforehand how to **STOP** the Traction Wheel Drives, Mower Blades and Engine in preparation for possible emergencies.

3.2 EMERGENCY STOP - PISTOL GRIP

- Firmly squeeze both Traction Levers towards the handle to STOP forward or reverse motion. Using your index finger, pull Traction Lock Lever until it locks in Brake Locked position. See Figure 3.1.
- 2. Pull Blade Clutch Switch backward to the **OFF** position. See Figure 3.1.
- 3. Move Engine Speed Control Lever to **SLOW** (turtle) position. See Figure 3.1.

STOP ENGINE by turning Key Switch to **OFF** position. See Figure 3.1.

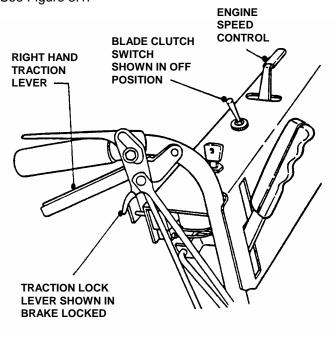


FIGURE 3.1

3.3 NORMAL OPERATING STOP - PISTOL GRIP

- 1. Pull both Traction Levers towards the handle to stop forward or reverse motion while pulling the Traction Lock Lever rearward until it locks the Traction Lever in Brake Locked position. See Figure 3.1.
- 2. Pull the Blade Clutch Switch backward to the **OFF** position. See Figure 3.1.
- 3. Place Transmission Shift Lever in **NEUTRAL**(N) position. See Figure 3.2.
- 4. Move Engine Speed Control Lever to **SLOW** (turtle) position. See Figure 3.1.

STOP ENGINE by turning Key Switch to **OFF**.

NOTE: Close Fuel Shut-Off Valve at the end of each mowing operation.

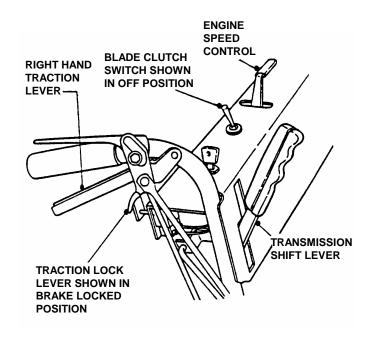


FIGURE 3.2



WARNING



When the Operator's Presence Control (OPC) is released, the machine will continue to operate a few feet. DO NOT use this Operator's Presence Control (OPC) to routinely stop the machine.

3.4 PRE-START CHECK LIST

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

- 1. If required, make cutting height adjustments. Refer to Section "CUTTING HEIGHT ADJUSTMENT"...
- 2. Check tires and add air as needed to bring pressure to 25 psi in front and 12-15 psi in rear tires.
- 3. Check Guards, Deflector, and Belt Covers to make sure all are in place and secure.
- Check Condition of Cutter Deck Belt(s). If damaged, replace with original part. Refer to Section "CUTTER DECK BELT REMOVAL".
- Clean Interior and Exterior Surfaces of cutting deck and clean Engine of any accumulation of dirt, grass, oil, etc. Keep Engine air intake screens and cooling fins clear at all times.
- 6. Check Engine Oil and add oil as needed to bring level up to (but not over) the **FULL** mark. (Refer to Engine manual for oil specifications).
- 7. Add Fuel to tank after pushing the Mower outside where **fumes** can be dissipated. Make sure Fuel Tank Cap is tightened after refueling. (Refer to Engine manual for fuel specifications).

NOTE: DO NOT add fuel while engine is running. Use fresh, clean, lead-free gasoline. DO NOT use gasoline that has been stored for long periods. Leaded gasoline or gasohol is NOT recommended.

3.5 STARTING & OPERATING 3.5.1. ENGINE: START ENGINE AS FOLLOWS:

- 1. Turn Fuel Shut-Off Valve ON. See Figure 3.3.
- Pull both Traction Levers toward the Handle while pulling Traction Lock Levers rearward until BOTH traction levers are LOCKED in the Brake Locked position. See Figure 3.3.

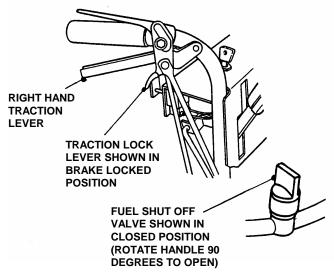
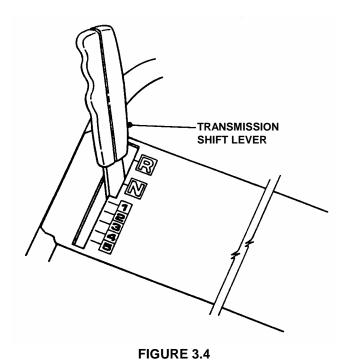
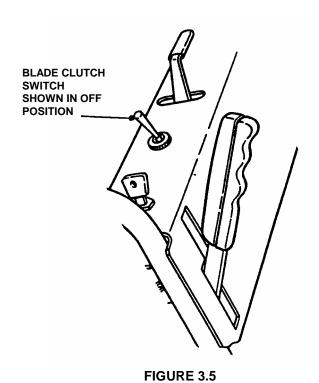


FIGURE 3.3

3. Place Transmission Shift Lever in **NEUTRAL**(N) position. See Figure 3.4.



4. **PISTOL GRIP -** Pull Blade Clutch Switch backward to the **OFF** position. See Figure 3.5.



(Continued on next page)

3.5 STARTING & OPERATING -

PISTOL GRIP (Continued from previous page)

- Move Engine Speed Control Lever to the CHOKE position. See Figure 3.6.
- 6. Turn Key Switch to RUN position.

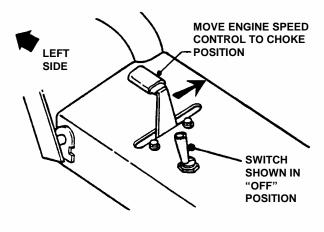


FIGURE 3.6

IMPORTANT: DO NOT jerk the engine recoil starter handle or allow it to snap back.

NOTE: Engine will not start unless the transmission is in NEUTRAL position and Blade Clutch Switch is in **OFF** position.

- 7. Pull Engine Recoil Starter Handle until you hear the first firing sound. Move Engine Speed Control Lever to the FAST (rabbit) position. Pull Recoil Starter Handle and Engine should start.
- **8. PISTOL GRIP -** Depress Operator's Presence Control (OPC) against handle. See Figure 3.7.

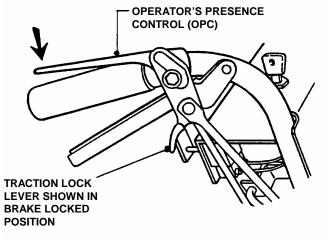


FIGURE 3.7

- **9.** Place Transmission Shift Lever in No. 1 position (first gear). See Figure 3.4.
- **10. PISTOL GRIP -** Push Blade Clutch Switch to **ON** position. See Figure 3.5.

<u>NOTE:</u> Releasing the Operator's Presence Control (OPC) while Transmission is in **GEAR** and/or Blades **ON**, will Ground the Ignition Circuit and cause the Engine to **STOP**, allowing the **Machine to travel only a few feet** before coming to a complete **STOP**.

$oldsymbol{\Lambda}$

WARNING



Start mowing with a slow ground speed and gradually increase speed to determine the most comfortable travel speed.

11. To START MACHINE MOVEMENT, squeeze both Traction Levers firmly against the handlebar allowing the Traction Lock Lever to release. Simultaneously move both Traction Levers forward slowly, allowing machine to start forward movement.

IMPORTANT: Always STOP machine movement and engage both traction lock levers <u>before</u> changing to a different ground speed. Transmission damage could result if ground speed is changed when machine is moving.

A

WARNING



During initial training time with machine, it is advised that the operator(s) practice all mower movements while operating the mower with the transmission shift lever in no. 1 (first gear) travel speed position and blade clutch switch in off position! DO NOT make sharp turns at high speeds!

12. The machine is TURNED by declutching wheel drive belts while engaging wheel brakes - turn left by squeezing the left hand traction lever or turn right by squeezing the right hand traction lever. See Figure 3.11 pistol grip. The more pressure applied while squeezing the traction lever, the sharper the mower will turn.

(Continued on next page)

3.5 STARTING & OPERATING

(Continued from previous page)

- 13. PISTOL GRIP TO STOP MACHINE,
 - Simultaneously squeeze both Traction Levers firmly against the handle while pulling the Traction Lock Levers rearward with index finger until latched.
- **14.** Pull the Blade Clutch Switch backward to the **OFF** position. See Figure 3.8.

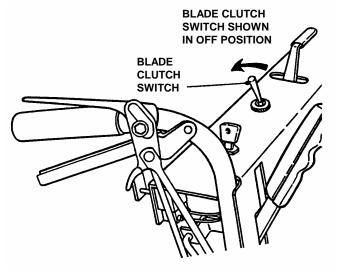


FIGURE 3.8

- **15.** Place the Transmission Shift Lever into the NEUTRAL (N) position.
- **16.** Move engine speed control to slow (Turtle) position.
- **17.** Stop engine. Turn key switch to "OFF" position. See Figure 3.8.



WARNING



DO NOT leave machine with engine running. Stop engine. Stop blades. Latch Traction Lock Levers. Remove key. DO NOT park machine on slopes.

A

WARNING



DO NOT operate blades in reverse. Stop blades. LOOK and SEE behind and down for children, pets and hazards before and while backing. Engine speed must be set to SLOW before operating in reverse.

3.6 REVERSE OPERATION

3.6.1. TO REVERSE DIRECTION

- 1. To **REVERSE DIRECTION OF MACHINE**, STOP Machine and **latch** Traction Lock Lever(s).
- 2. Pull Blade Clutch Switch backward to the **OFF** position. Move Engine Speed Control Lever to IDLE.
- Move Transmission Shift Lever to REVERSE (R) position.
- 4. Hold Operator's Presence Control (OPC) against handlebar.
- To START MACHINE MOVEMENT, simultaneously squeeze both Traction Levers firmly against the handle allowing the Traction Lock Lever to release.
- Slowly release both Traction Levers, allowing machine to start rearward movement.
- PISTOL GRIP TO STOP MACHINE, Simultaneously squeeze both Traction Levers firmly against the handle while pulling the Traction Lock Lever rearward with index finger until latched. See Figure 3.9.

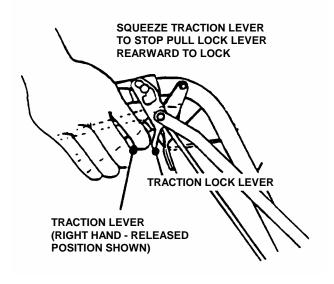


FIGURE 3.9



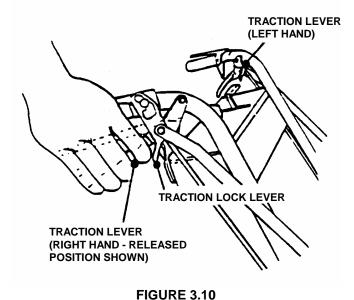
WARNING



Brakes require maintenance. Inspect for proper operation before operating machine. Refer to Section "ADJUSTMENTS, STEERING AND BRAKES".

3.7 TRACTION LOCK OPERATION - PISTOL GRIP

- 1. Simultaneously squeeze both Traction Levers toward the handle, to **stop mower movement**.
- 2. Using index finger, pull Traction Lock Lever rearward until it latches Traction Levers in **Brake** Lock position.
- 3. To **release** Traction Lock, squeeze both Traction Levers firmly against the handle. Simultaneously release both Traction Levers slowly, allowing machine to start forward movement. See Figure 3.10.





WARNING



Machine should always be in forward motion before attempting a turn. DO NOT attempt a turn from a stopped position.

3.8 TURNING MOWER 3.8.1. GRADUAL RIGHT & LEFT HAND TURN

IMPORTANT: Squeezing the right or left traction lever applies the brake to the right or left wheel. The brake turns the machine right or left.

- With machine in motion gradually squeeze the right hand traction lever. The machine will turn to the right.
- 2. With machine in motion gradually squeeze the left hand traction lever. The machine will turn to the left.

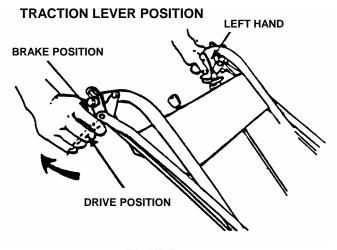


FIGURE 3.11

3.9 MOWING AND TURNING ON HILLSIDES

 Always mow hillsides starting at bottom of hill. Mow across slopes, never up and down. Exercise caution when changing directions on slopes. DO NOT mow steep slopes!



WARNING



DO NOT mow on steep slopes. DO NOT use with any type rider attachment on slopes. DO NOT park machine on slopes.

- Hillside mowing is accomplished by squeezing Traction Lever on the **UPHILL SIDE** of machine. This helps reduce side slipping of mower.
- 2. When turning mower on hillsides, always turn toward the **UPHILL SIDE** of mower for better control and balance.

3.10 CUTTING HEIGHT ADJUSTMENT (Fixed Decks)

Mower has three methods of adjusting cutting height:

- 1. Moving position of BLADE on cutter spindle shaft.
- 2. Moving position of CASTER WHEEL on support.
- 3. Moving position of MOWER DECK on power unit.



WARNING

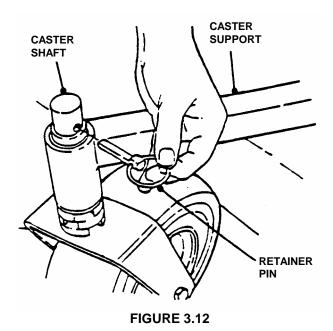


DO NOT attempt any maintenance, adjustments or service with the engine running. Stop engine. Stop blades. Latch Traction Lock Levers. Remove key. Disconnect spark plug wires from spark plugs and secure wires away from spark plugs. Engine and components are HOT. Avoid serious burns by allowing all parts sufficient time to cool before working on machine.

3.11. ADJUSTING CASTER WHEELS

The Caster Wheel Assembly has four (4) 1/2" and one (1) 1/4" thick spacer. When placed above or below Caster Support Tube, they raise or lower cutting height in 1/2" increments, thus providing a "Quick-Adjust" method. The deck mounting has to be changed to correspond to the caster repositioning as described in **ADJUSTING FIXED DECK ATTACHMENT**.

 Remove Retainer Pin from Caster Shaft. See Figure 3.12.



2. Lift Caster Support while adding or removing bottom spacer. See Figure 3.13.

NOTE: Remove (or add) spacers by rotating slots to align with flat area on caster shaft.

3.12 ADJUSTING BLADE ON CUTTER SPINDLE

To change cutting height of Blades, move the Spacers from under the Cutter Housing to above the Cutter Housing Pulley. Each Spacer moved above the Cutter Housing Pulley will provide an additional 1/4" of cutting height. **DO NOT put any Spacers below Blade.** See Figure 3.14.

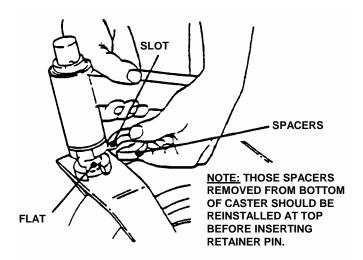


FIGURE 3.13

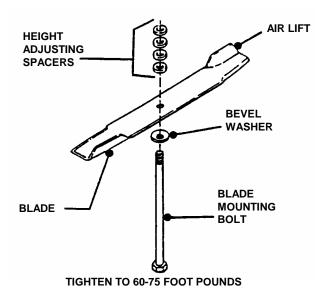


FIGURE 3.14

3.12.1 ADJUSTING BLADE ON CUTTER SPINDLE

NOTE: Changing cutting height of blades does not change the deck ground clearance. If an undesirable cutting pattern results, then cutting height adjustment must be made by adjusting mower deck height and caster wheels.

Install Blades (Air Lift Up) with retaining hardware as shown below and tighten to 60 to 75 ft.-lbs. See Figure 3.15.

(Continued on Next Page)

3.12.1 ADJUSTING BLADE ON CUTTER SPINDLE (Continued)

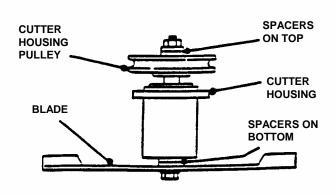
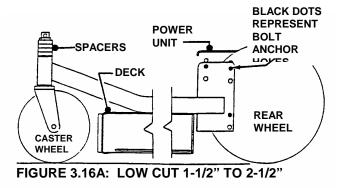


FIGURE 3.15

3.13 ADJUSTING FIXED DECK ATTACHMENT

The mower deck has four different positions for attaching it to the power unit. The lowest setting provides a cutting height range of 1-1/2" to 2-1/2", the middle low cut is 2-1/4" to 3-1/4", the middle high cut is 3" to 4", and highest cut is 3-3/4" to 4-3/4". Make sure the spacers on the caster wheels are moved up or down as shown to correspond with the bolt positions to keep deck level. Once a desired cutting height is reached, attach the mower deck to the power unit by installing 3 bolts on each side in selected height of cut holes. Tighten bolts to 70 to 80 foot pounds torque. See Illustration.

SIDE PROFILE OF UNIT



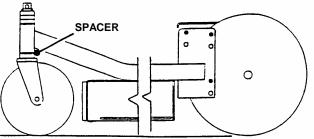


FIGURE 3.16B: MIDDLE LOW CUT 2-1/4" TO 3-1/4"

FIGURES 3.16A-B

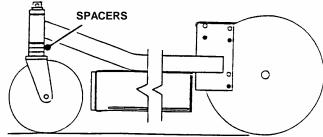


FIGURE 3.16C: MIDDLE HIGH CUT 3" TO 4"

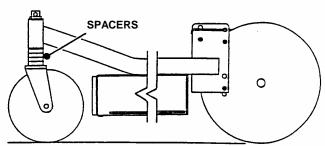


FIGURE 3.16D: HIGH CUT 3-3/4" TO 4-3/4"

FIGURES 3.16C-D

SECTION 4 - TROUBLESHOOTING ENGINE TROUBLESHOOTING

does not	PROBLEM Key OFF Fuel Tank empty Fuel Shut-Off Closed Engine Throttle Control not at FAST (Rabbit) position. Choke NOT closed. Spark Plug Wire loose or disconnected. Operator Presence Control (OPC) Switch out of adjustment. Blade Clutch Switch in ON position. Spark Plug bad. Dirty Air Filter. Transmission not in NEUTRAL.	Fill Fuel TankOpen Fuel Shut-OffPut Engine Throttle Control to FASTPut Throttle Control in CHOKE position. Check choke adjustmentConnect Spark Plug WireAdjust SwitchPull Blade Clutch Lever to OFF positionInstall new Spark PlugClean Air Filter.
Starts Hard or Loses Power Engine	Dirt or water Fuel Tank	fresh FuelClean Vent or install new Gas CapClean or install new Air FilterCheck and set Spark Plug gapInstall new Spark PlugInstall new Spark PlugClean and set Spark Plug gap.
Engine	Dirty Air Filter	Clean or replace Filter.
	Engine Oil low in CrankcaseEngine Cooling Fins clogged	
Vibrates Excessive	Blade Mounting Bolts looseBlade out of BalanceEngine Mounting Bolts looseDamaged or Severed Belt	Sharpen and balance Blade. Tighten Mounting Bolts.
	Mowing grass too tall	

MOWER TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
Mower does	. Transmission in neutral	Select Gear
not move	. Traction Control Rod adjustment	Adjust Rod
when Traction	. Engine to Transmission Belt Damaged or Broken	Replace Belt
Levers released	. Idler Spring Damage or Broken	Replace Spring
Mower does	. Slipping or broken Traction Belt	Adjust or replace Belt.
	Tire pressure in both Traction Wheels	
straight	•	
DI. I. DO		
	Belt slipping or broken.	
	. Clutch does not engage	
NOT engage		Check Electrical Connections & Clutch
NOT engage	. Clutch does not engage	Check Electrical Connections & ClutchReduce ground speed.
Mowermows	Clutch does not engage Travel speed too fast	Check Electrical Connections & ClutchReduce ground speedReduce ground speed.
Mowermowsunevenly	Clutch does not engage Travel speed too fast Operator making mower turn corner too fast	Check Electrical Connections & ClutchReduce ground speedReduce ground speed.
Mowerunevenly.	Clutch does not engage Travel speed too fast Operator making mower turn corner too fast. Rough terrain Unequal number of Blade Spacers on Cutter Shafts or Caster Wheels.	Check Electrical Connections & ClutchReduce ground speedChange mowing patternInstall equal number of Spacers.
Mowerunevenly.	Clutch does not engage Travel speed too fast Operator making mower turn corner too fast. Rough terrain Unequal number of Blade Spacers on	Check Electrical Connections & ClutchReduce ground speedChange mowing patternInstall equal number of SpacersFill Tires with Correct Air Pressure

SECTION 4 - TROUBLESHOOTING MOWER TROUBLESHOOTING (Continued)

SYMPTOM	PROBLEM	SOLUTION
	Broken or slipping Blade Belt	
Deflector Becomes	. Grass wet Mower too low Engine overloaded.	Raise cutting height

TRANSMISSION TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
Noisy	Worn Bearings - mainly input Shaft	Return to Authorized Snapper Dealer
	Teeth of Gears are worn beyond tolerancesSpring in Shifter Fork weak or broken.	

SERVICE & LUBRICATION

HOURS	PROCEDURE	COMMENTS
BREAK-IN		
	Change Engine Oil and Filter at 5 hours	(See Engine Manual)
DAILY	Check Engine Oil	Change Oil if extreme dusty conditions.
	Clean Air Filter	More often if needed.
	Clean Air Intake Screen	
	Remove Debris from under Belt Cover	More often if needed.
	Sharpen Cutter Blades	Tighten to 60-75 FtLbs.
	Grease Cutter Spindle Bearings	(A II O I A I O)
	Inspect Interlock Switches for Damage	,
	Inspect Belts for Wear or Damage	
	Inspect brakes	
	'	, , , , , , , , , , , , , , , , , , , ,
WEEKLY	Check Tire Pressure	Add or Adjust as required.
		Inspect OPC Switch for proper Operation.
	Lube Traction (Drive) Levers	
	Inspect Traction Lock for Wear	
	Change Engine Oil and Filter	
	Replace Air Filter	More often if needed.
	Grease Caster Wheel Bearings	
	Grease Caster Support Arms	
	Grease Traction Wheels	General Purpose Grease.
	Grease Idler Arm Pivots on Cutter Deck	
	Fuel Filter	
	Grease Traction Idler Pulley (Located on the	
	Underside of Power Unit)	General Purpose Grease.
MONTHLY	Clean and Adjust Spark Plugs	(See Engine Manual)
_	Lube Controls and Linkages.	
	Lubo Controlo and Limagoo	Ooo Modiam Daty Oll.

SECTION 5 - ADJUSTMENTS

5.1 STEERING/BRAKES

If machine is not as responsive as desired when either Traction lever is squeezed, one or both brakes should be adjusted as follows:

- Operate mower on level terrain with Transmission Shift Lever in No. 1 position. Determine which brake requires adjustment.
- 2. Stop engine, remove the key from switch and disconnect spark plug wire from spark plug. Secure wire away from plug.
- 3. Turn nut clockwise to increase brake tension. See Figure 5.1.

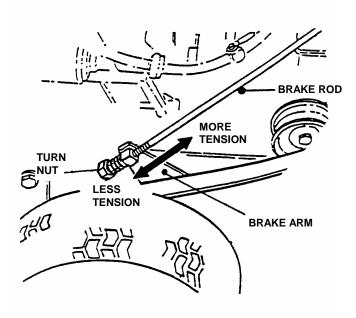


FIGURE 5.1

 Place spark plug wire onto spark plug. Start engine and operate mower with transmission in the No. 1 position to check for proper adjustment. If further adjustment is required, follow all steps above.

5.2 TRACTION LEVERS/RODS

If the Traction Wheel Drive Belts become slack or new belts have been installed, it will be necessary to adjust the Traction Levers as follows:

- Move the machine to a smooth, level surface and turn the engine OFF. Release the traction locks. Disconnect the Brake Rods from the Brake Arms keeping the hairpins in the swivels.
- 2. Remove the key from the switch, remove the spark plug wire from the spark plug and secure it away from the plug.
- 3. Shift the transmission to No. 1 position.

PISTOL GRIP: Pull rearward hard on the traction levers. The space used to lock the traction lock lever should not bottom in the slot. Set the Traction Lock Levers into the Brake Lock positions. The Idler Pulleys, Upper and Lower should have completely declutched the belt. Release the traction locks and adjust as required.

 Remove the hairpins from the traction rod adjustment blocks and remove the adjustment blocks from the traction links on each side of the mower. See Figure 5.2.

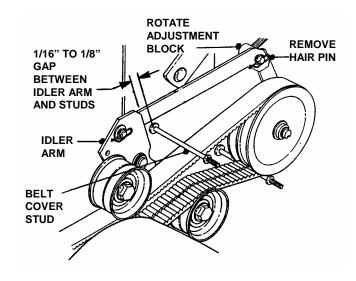


FIGURE 5.2

- Rotate the adjustment block as required to make the idler arms almost touch against the belt cover studs when the traction levers are locked. There should be about 1/16" to 1/8" gap between the idler arms and studs.
- 6. Reinstall the adjustment blocks and the hairpins. Check the settings as described above. Repeat as necessary.
- 7. Reassemble the Brake Rods to the Brake Arms with the hairpins removed earlier.
- 8. Replace the Spark Plug Wire onto the Spark Plug. Start the mower according to the Safety Instructions and operate it to check the adjustments.

NOTE: It may be necessary to adjust the Traction Brakes after adjustment of the Traction Belts is complete.



WARNING



DO NOT attempt to operate machine without belt cover and studs secured into the proper position.

SECTION 5 - ADJUSTMENTS

5.3 HANDLE HEIGHT

The operator handle can be adjusted for operator comfort as follows:

- 1. Loosen the upper carriage bolt and nut on both sides of handlebar.
- Remove lower carriage bolt and nut on both sides of handlebar.
- 3. Raise or lower handlebar to desired height. See Figure 5.4.
- 4. Install the carriage bolt and nut in the lower hole in handlebar and securely tighten nut. See Figure 5.4.
- 5. Securely tighten the upper carriage bolt and nut.
- 6. After adjusting the handle height readjust traction links as described earlier. Shift rod (Connects the ground speed control lever and the transmission) will have to be readjusted.
- 7. Readjust traction levers/rods when handle height is changed.

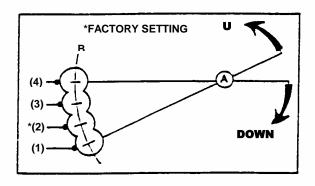


FIGURE 5.3

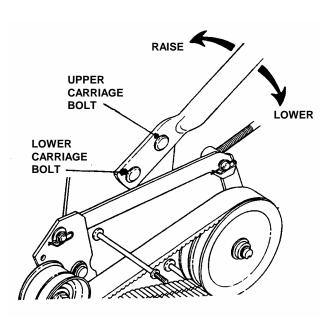


FIGURE 5.4

5.4 GROUND SPEED CONTROL LEVER ADJUSTMENT

- 1. Disconnect the hair pin from shift rod that connects to the ground speed control lever. See Figure 5.5.
- 2. Move the ground speed control lever to the neutral position. Move the shift lever, located on the transmission, to the neutral position.
- 3. Rotate the shift rod clockwise or counter clockwise to allow the upper portion of shift rod to be inserted into the ground speed control lever without moving the speed control lever or the transmission shift lever. Reinstall hair pin. See Figure 5.6.

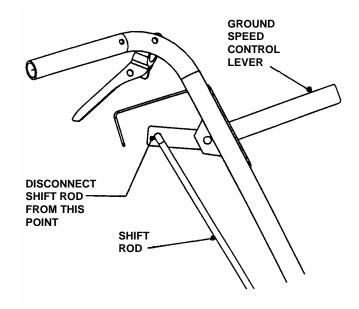


FIGURE 5.5

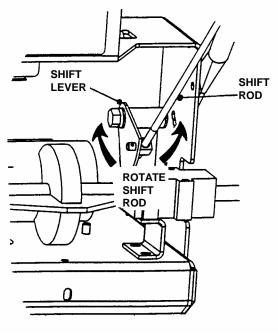


FIGURE 5.6

SECTION 6 - POWER UNIT SERVICE

6.1 REPLACEMENT PARTS

To retain the quality of your mower, use Genuine SNAPPER Replacement Parts only! Contact your local SNAPPER dealer for parts and service assistance. For the correct part or information for your mower, always mention Model and Serial Number of Power Unit and Mower Attachment. 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 performance and 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. For transmission parts and service, look for Tecumseh Engines & Transmission under Engines-Gasoline.



WARNING



DO NOT attempt any maintenance, adjustments or service with the engine running. Stop engine. Stop blades. Latch Traction Lock Levers. Remove key. Disconnect spark plug wires from spark plugs and secure wires away from spark plugs. Engine and components are HOT. Avoid serious burns by allowing all parts sufficient time to cool before working on machine.

NOTE: All mid-size mowers should be tilted with engine carburetor side UP.

6.2 TRANSMISSION PARTS & SERVICE

For the nearest Peerless Transmission Dealer, check the Yellow Pages under heading, Engine-Gasoline. Look for Tecumseh Engine and Transmission under Engine-Gasoline.

6.2.1. GENERAL TRANSMISSION SERVICING

1. GENERAL TRANSMISSION SERVICING Introduction:

The following service procedures should be understood and practiced whenever service must be performed on a Peerless MST 205 Series Transmission.

- 2. Before removing transmission from mower, make sure another part of machine is not causing problem, look for:
 - a) Loose drive belt.
 - b) Sheared keys in pulleys.
 - c) Oil saturated drive belts.
 - d) Transmission shift lever secure.

6.2.2. TRANSMISSION

The Peerless MST 205 Series Transmission requires no routine maintenance. Return machine to an authorized Snapper dealer for service, maintenance or problems.

6.2.3. TRANSMISSION LUBE

The transmission is permanently sealed. But, lubrication can be added if leakage should occur. The transmission case holds 16 ounces of 80W-90 gear oil. To Lubricate:

- Remove transmission switch wire plug and remove the transmission interlock switch. Remove the fiber washer seated on switch.
- 2. Transmission oil is added through the switch hole.
- 3. Install new fiber washer, part number 2-9662, onto switch. Install switch into transmission and tighten securely. Attach wire plug onto switch.

SECTION 7 - MOWER ATTACHMENT SERVICE

7.1 TRANSMISSION BELT REMOVAL/REPLACEMENT

Should it become necessary to replace the transmission drive belt, contact an authorized SNAPPER Dealer for service.



WARNING



DO NOT attempt any maintenance, adjustments or service with the engine running. Stop engine. Stop blades. Latch Traction Lock Levers. Remove key. Disconnect spark plug wires from spark plugs and secure wires away from spark plugs. Engine and components are HOT. Avoid serious burns by allowing all parts sufficient time to cool before working on machine.

- 1. Disconnect idler arm spring.
- Remove existing belt. Replace with new belt, part no. 2-9118.
- 3. Reconnect idler arm spring. See Figure 7.1.

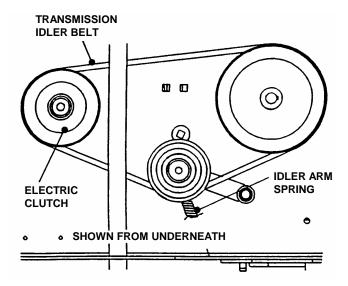


FIGURE 7.1

7.2 TRACTION BELT REMOVAL & REPLACEMENT

7.2.1. TRACTION BELT REMOVAL

- 1. **STOP ENGINE!** Remove two wing-nuts retaining fender. Remove fender. See Figure 7.2.
- 2. Remove Traction Belt from Wheel Pulley first by running Belt off as Wheel is turned. Remove belt from Transmission output Pulley next.
- 3. Lay new Traction Belt part no. 4-6240 flat on ground (around tire) and roll Mower Wheel over Traction Belt, removing Traction Belt from machine.

7.2.2. TRACTION BELT INSTALLATION

 STOP ENGINE! Lay Traction Belt flat on ground in front of Traction Wheel, roll Traction Wheel over Traction Belt until wheel is in middle of belt.

- 2. Place Traction Belt on Wheel Pulley followed by Transmission Output Pulley.
- 3. Reinstall Fender and tighten two wing-nuts.
- Adjust Traction Rod and Brake Rod as necessary.
 Refer to Section "ADJUSTMENTS -STEERING/BRAKES and TRACTION LEVERS/RODS".

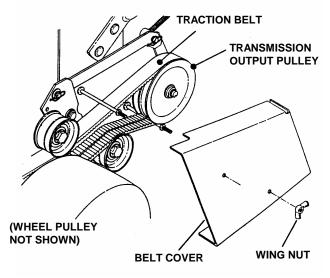


FIGURE 7.2

7.3 CUTTER DECK BELT REMOVAL & INSTALLATION

- 1. Remove mower deck belt cover.
- 2. Remove idler spring and swing idler away from belt.
- 3. Remove old belt from spindle pulleys and electric clutch pulley.
- 4. Route new belt, part number 3-5710 for 36" Deck & 2-9261 for 48" Deck around spindle pulleys.

NOTE: 36" Deck Belt also connects to electric clutch.

- 5. Move idler to belt and re-attach tension spring.
- 6. For 48" Deck to electric clutch use belt 2-9262.

36" DECK SHOWN

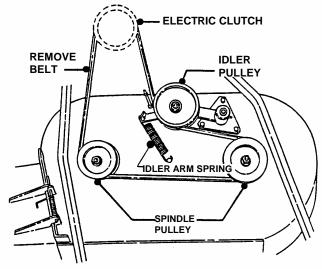


FIGURE 7.3

SECTION 7 - MOWER ATTACHMENT SERVICE

7.4 CUTTING BLADE SERVICE

Check blades after each use for signs of excessive wear and damage. See Figure 7.4 for blade wear limits.

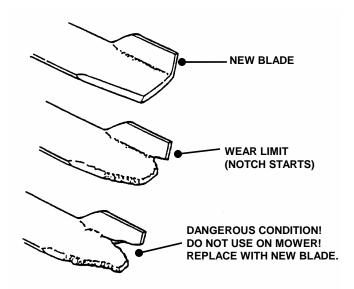


FIGURE 7.4

1. Use the following chart for ordering replacement Blades for the 36" & 48" Mowing Decks.

STANDARD REPLACEMENT BLADES		
36" DECK	48" DECK	
2-9246	2-9247	

7.4.1. BLADE REMOVAL AND SHARPENING

- 1. Place the mower on a smooth level surface, turn engine **OFF**, remove key, disconnect Spark Plug Wire from Spark Plug and secure Wire away from Plug.
- 2. Remove blades.

<u>IMPORTANT:</u> Note the number of blade spacers that are under the Blade Mounting Nuts and on the Spindle side of the Blade.

- Clean and inspect each Blade for excessive wear and damage. Refer to Section "BLADE WEAR LIMITS".
- Refer to the STANDARD REPLACEMENT BLADE chart above for correct SNAPPER Replacement Blades.
- 5. Should Blades be in acceptable condition, sharpen at 22 to 28 degrees. DO NOT sharpen beyond original cutting edge. See Figure 7.5.
- 6. Balance each Blade after sharpening by grinding metal from the heavy end of the Blade.
- 7. Place the Blade mounting bolt through bevel washer and into Blade and place Blade Spacers over Bolt. Make certain each Blade is installed with the same amount of Spacers.

WARNING



Blades are extremely sharp and can cause severe injury. Wear heavy leather gloves when handling or working around blades. DO NOT use a blade that is excessively worn or damaged.

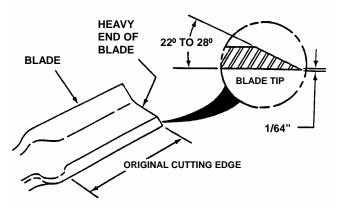


FIGURE 7.5

NOTE: When sharpening Blades, leave 1/64" untouched. Razor sharp Blades dull quicker and damage easier. Commercial balancers are available and should be used in accordance with the manufacturers instructions.

- 8. Install Blade Mounting Bolt with spacers and Blade into spindle.
- 9. Install an equal amount of Blade Spacers onto each blade mounting bolt.
- 10. Install the Blade Mounting Nut on each Blade Mounting Bolt. See Figure 7.6.
- 11. Torque each Blade Mounting Bolt and Nut to 60 to 75 ft. lbs of torque.

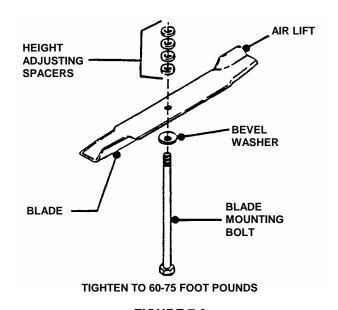


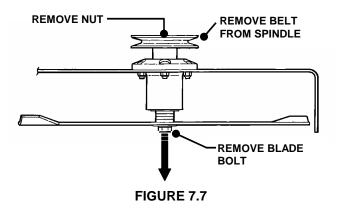
FIGURE 7.6

SECTION 7 - MOWER ATTACHMENT SERVICE

7.5 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 7.7.



- 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 7.8.

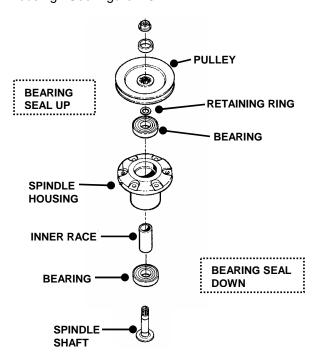


FIGURE 7.8

- **5.** Thoroughly clean all parts removing all old contaminated grease.
- **6.** Install new bottom bearing first.

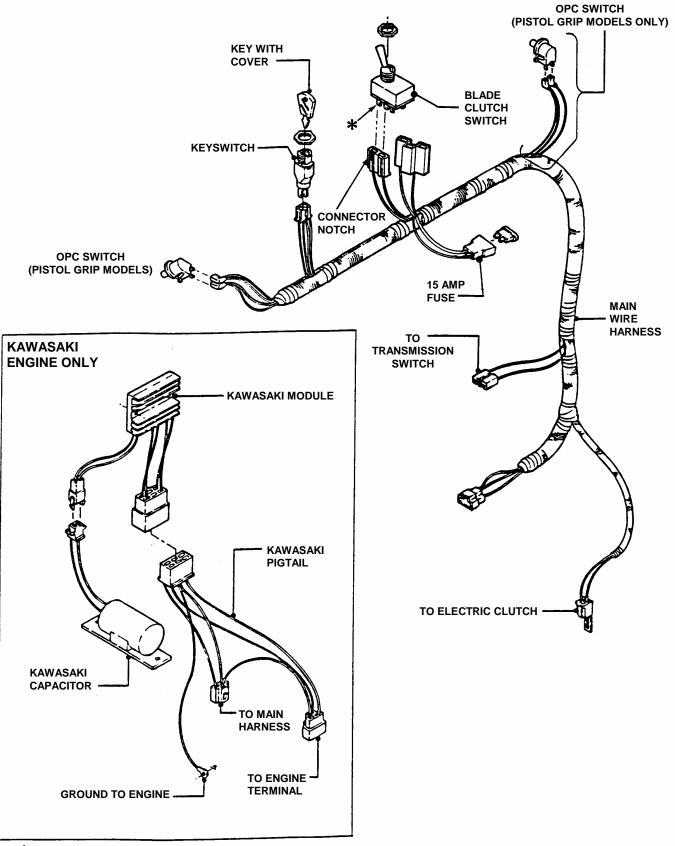
NOTE: The bearing is sealed/shielded on one side only. The bottom bearing must be installed with the sealed/shielded side DOWN.

- **7.** Insert spindle shaft up through the bottom bearing. Slide spacer down over spindle shaft.
- **8.** Install new top bearing. Install the top bearing with the seal/shield UP.
- **9.** Slide circular retaining ring down spindle shaft until it fully locks into groove on shaft.
- **10.** Place spindle pulley and spacer on top of spindle shaft.
- **11.** Reinstall blade bolt, washer, blade and four spacers.
- 12. Torque blade bolt and nut to 60 to 75 ft. lbs.

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

- **13.** Pump grease into spindle housing until grease purges from vent on housing.
- **14.** After the first 5 hours of operation, grease spindle housing to insure it is full, then every 25 hours.

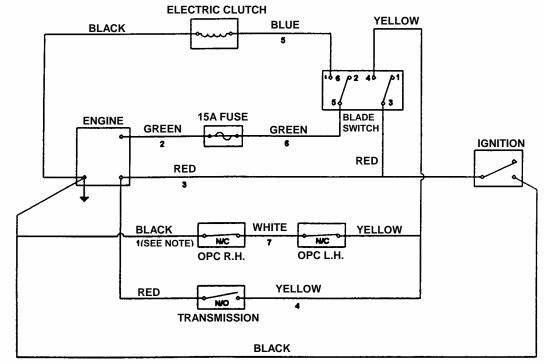
ELECTRICAL



^{*} NOTE: THIS TERMINAL HAS A LOCK-OUT BARB WHICH MUST SLIDE INTO THE CONNECTOR NOTCH.

FIGURE 7.9

ELECTRICAL



WIRING SCHEMATIC FOR PISTOL GRIP HANDLE & ELECTRIC BLADE BRAKE CLUTCH
FIGURE 7.10

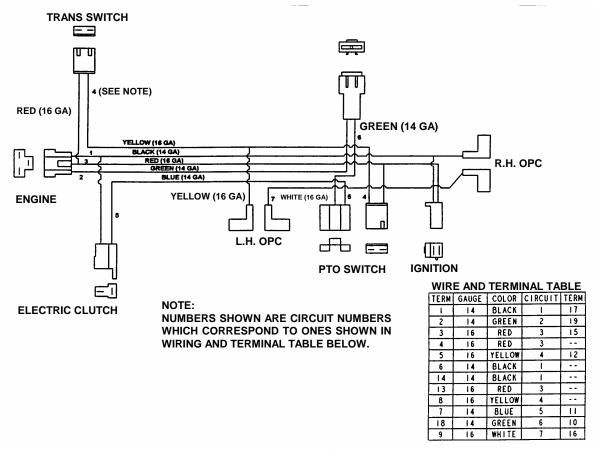


FIGURE 7.11



2 YEAR LIMITED WARRANTY

For two (2) years from purchase date for the original purchaser's use, **SNAPPER**, through any authorized **SNAPPER** dealer will replace, free of charge (except for taxes where applicable), any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

SNAPPER FIELD SERVICEABLE SPINDLES and their components used on **SNAPPER PRO**[®] Mid Size walks and **SNAPPERZRIDER**[®] ride on commercial equipment have a three (3) year limited warranty against defects in material or workmanship or both.

All transportation costs incurred by the purchaser in submitting material to an authorized **SNAPPER** dealer for replacement under this warranty must be paid by the purchaser.

This warranty does not apply to engines and their components, and batteries, as these items are warranted separately. This warranty does not apply to parts that have been damaged by accident, alteration, abuse, improper lubrication, normal wear, or other cause beyond the control of **SNAPPER**. This warranty does not cover any machine or component that has been altered or modified, changing safety, performance, or durability.

Batteries have a one (1) year prorated warranty period with free replacement if required during the first ninety (90) days from the original purchase date. **SNAPPER** will not be responsible for any installation cost incurred. The battery warranty only covers original equipment batteries and does not cover damage to the battery or machine caused by neglect or abuse, destruction by fire, explosion, freezing, overcharging, improper maintenance, or use of improper electrolyte.

There is no other express warranty.

DISCLAIMER OF WARRANTY

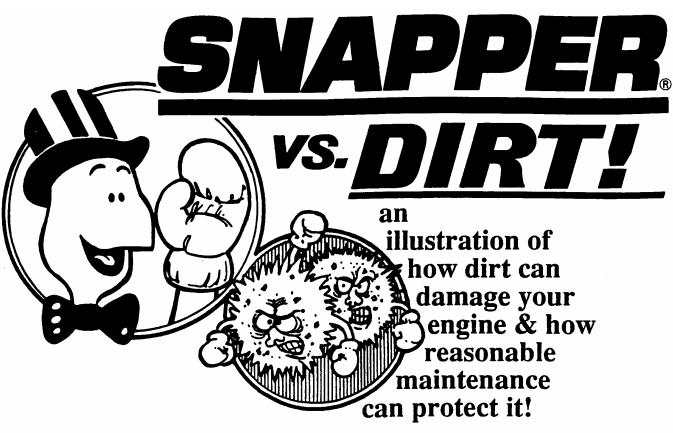
Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to two (2) years from purchase date for the original purchaser's use, and up to the extent permitted by law and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages, under any and all warranties are excluded.

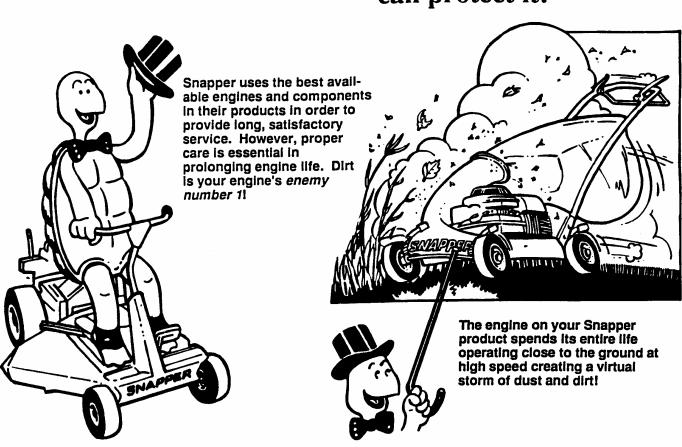
Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

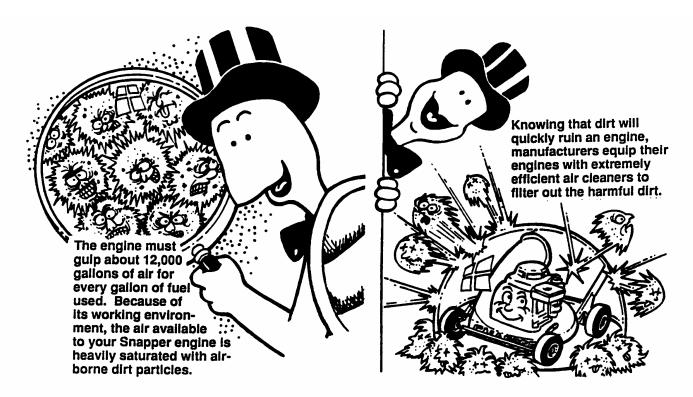
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARNING: THE USE OF REPLACEMENT PARTS OTHER THAN GENUINE SNAPPER PARTS MAY IMPAIR THE SAFETY OF SNAPPER PRODUCTS AND WILL VOID ANY LIABILITY AND WARRANTY BY SNAPPER ASSOCIATED WITH THE USE OF SUCH PARTS.

IMPORTANT: Please fill out the attached **SNAPPER** Product Registration Card immediately and mail to: **Snapper's Product Registration Center,** P.O. Box 1379, McDonough, Georgia. 30253







As the dirt particles are stopped, they build up and begin to clog the outside of the filter. This reduces the amount of air available to the engine and causes an over-rich fuel mixture which results in the following adverse effects:

An improperly serviced, dirt cloqued air cleaner will:

clogged air cleaner will:

. Increase fuel consumption

2. cause power loss

3. result in hard starting

4. create smoke from unburned fuel

5. produce carbon build-up internally

6. foul spark plug electrodes

7. score cylinder walls

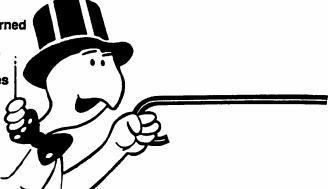
8. burn valves

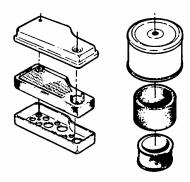
9. wear out the engine prematurely

10. COST YOU MONEY!

Damage caused by a poorly serviced air cleaner is not covered under the engine warranties. So, save yourself unnecessary expenses and undue aggravation by keeping the air cleaner properly serviced at the intervals specified in the engine owner's manual.

It doesn't take long to service an air cleaner. Follow the specific instructions in the engine owner's manual for the type filter used. Prevent dirt from falling into the carburetor intake when servicing your air cleaner. Make sure components are installed in correct sequence after servicing to prevent unfiltered air from entering the engine. Some servicing hints on several common types are:





Generally, wash foam-type filters in a dishwashing detergent and water solution. Rinse and wring dry, then saturate with oil and squeeze out excess. Fallure to re-oil this type filter will ruin the engine.

Clean paper elements by tapping lightly. Blowing with air will rupture paper elements.

Use a flashlight to detect clogged or torn paper elements - replace if damaged in any way.



Air is also needed to keep your engine cool. Dirt, dust & debris build up to restrict and clog cooling air intake screens and fins. Clean screens and fins at frequent intervals. The engine blower housing and shrouds should be removed at least once each season or more often under dry, dusty conditions for a thorough cleaning of fins.

Fallure to keep external surfaces clean not only presents fire hazards, but causes overheating and resulting engine damages such as:

1. distorted valve guides

2. sticking valves

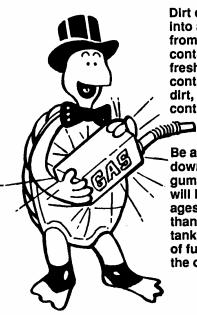
. 3. scuffed, scored cylinder walls

4. overspeeding

5. loss of power

complete failure of engine.



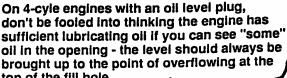


Dirt can also be introduced into an engine in dirty fuel from a contaminated container. Always use clean fresh fuel from a clean container to guard against dirt, sludge and water contamination.

Be aware that fuel breaks down in storage and forms gummy compounds which will block carburetor passages. Never use fuel more than 3 months old. Drain tank then run the engine out of fuel before storing during the off-season.



An engine must also have proper lubrication. All engines use some oil. On 4-cycle engines, CHECK OIL LEVEL BEFORE EACH START-UP. Wipe area clean around the oil check plug or dipstick opening to keep dirt from falling into the engine when checking the oil. Always check with the machine on a level surface. On engines with dipstick, keep the level up to, but not over, the FULL mark. When adding oil, allow time for all of the oil to flow down the fill tube to prevent a false full reading when the level could actually be low and result in engine damage.



top of the fill hole.

Change oil at regular intervals using a a high quality oil such as Snapper's small engine formulated 4-cycle engine oll. Refer to the engine owner's manual for oil details.

STARTING CHECK LIST

Engine Oil 1.

- To full level (4-cycle)
- Properly mixed with gas (2 cycle)
- 2. Air Cleaner
- Clean and properly serviced
 - Full fresh clean gasoline

Operating properly

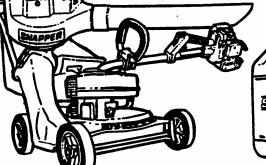
3. **Fuel Tank**

4.

- Fuel valve open
- Cap vent open
- Inline filter clean
- Choke Primer (on 5.
- **Used properly**
- some engines) Safety Inter-
- In proper position
- lock Switches
- All wires properly connected
- Switch & 7.
- Switch On
- **Blade Control**
- **Blade control properly** positioned on walk mower
- Spark plug
- Wire connected
- **Throttle**
- Good connection
- control
- Start position
- 10. Blade
- Properly installed and torqued
- Sharpened
- Muffler
- Good condition
- Not cloaged
- Grass & leaves cleaned away

On 2-cycle engines, lubrication must be provided by an exact mixture of gasoline and 2-cycle air-cooled engine oil. A 2-cycle engine that is mistakenly run on straight gasoline will be ruined in less than 5 minutes! If you keep straight gasoline in addition to pre-mixed 2-cycle engine fuel, be sure the containers are clearly marked to avoid mix-up.

Snapper 2-cycle engines require a 32 to 1 mixture of gasoline and BIA certified TC-W oil such as Snapper's 2-cycle engine oil. Many of the 2-cycle engine oils on the market today make fantastic claims, but for the best performance and long engine life, always use Snapper 2-cycle oll. Pre-mix the fuel and always shake the container before filling the tank.



TWO CYCLE ENGINE OIL

Read and follow all safety Instructions in safety booklets and manuals.

Keep in mind that dirt is your engine's enemy #1 both internally and externally! Internally, dirt will quickly ruin an engine and externally it will cause overheating and resulting internal damages. Damage caused by Improper lubrication, poor air cleaner service or overheating due to dirt cannot be covered under warranty.

It only takes a few moments to service the engine (and equipment) on a routine basis but the rewards will be a quick starting, responsive engine that will provide long satisfactory service with minimum maintenance cost. The prestart checklist in the next column and instructions in your Snapper Operator's Manual are designated to help you keep your Snapper in top operating condition with minimum effort!

NOTES

NOTES

Safety Instructions and Operator's Manual for



PRO GEAR EXPRESS MID-SIZE WALK BEHIND MOWERS SERIES 0

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:

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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

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