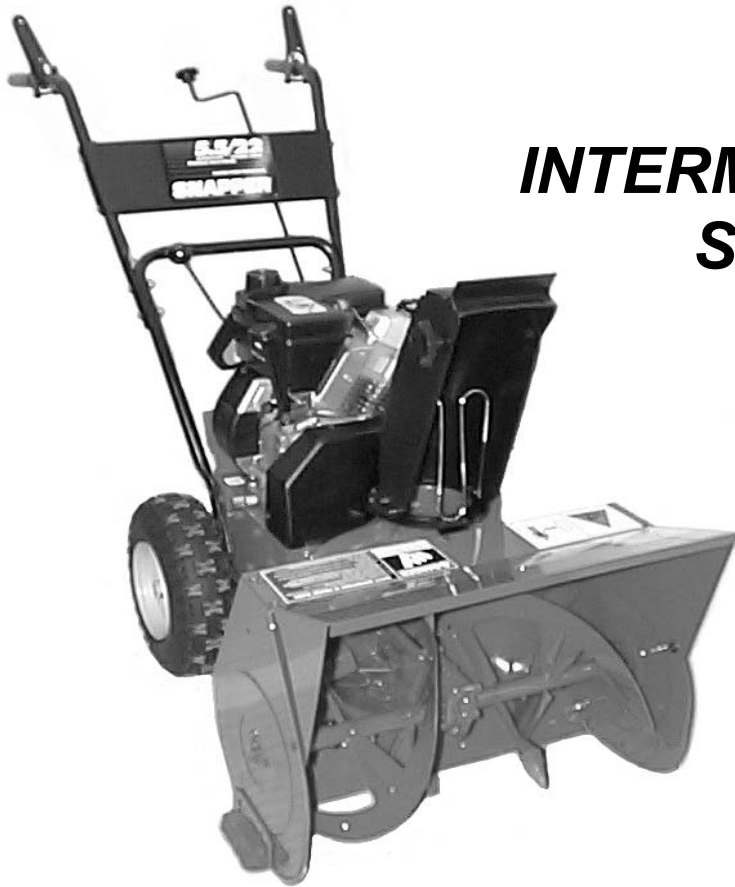


Safety Instructions & Operator's Manual for

SNAPPER®

EUROPEAN TWO STAGE INTERMEDIATE FRAME SNOW THROWER SERIES 4



MODELS
E155224
E17244

MODEL NUMBER EXPLANATION							
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E	I	55	22	4			
MODEL DESIGNATION _____	_____	SERIES DESIGNATION _____					
ENGINE HP _____	_____	AUGER WIDTH _____					
E – European Model	55 – 5.5 Engine HP (Engine Horse Power)	22 – 22” Auger Width					
I – Intermediate Frame Model	7 – 7.0 Engine HP (Engine Horse Power)	24 – 24” Auger Width					
		4 – Series Designation					

Thank you for buying a SNAPPER Product! Before operating your Snow Thrower, 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 machine is capable of amputating hands and feet and can throw objects that can cause injury and damage! Failure to comply with the following instructions may result in serious injury to the operator or other persons. The owner of the snow thrower must understand these instructions and, furthermore, must allow only persons who understand these instructions to operate snow thrower. Each person operating the snow thrower 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 snow thrower which your dealer cannot answer to your satisfaction, call or write the Customer Service Department at SNAPPER, McDonough, Georgia 30253. Phone: 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 snow removal activity. Never assume that the children will remain where you last saw them.

1. **DO NOT** allow children in the area when snow thrower is being operated.
2. **DO NOT** allow pre-teenage children to operate snow thrower.
3. **ALLOW** only responsible adults and teenagers with mature judgment to operate the machine and then only after being thoroughly instructed and under the close supervision of an experienced adult operator.
4. Keep the area clear of all persons, particularly small children and pets.
5. Know how to **STOP** the snow thrower and disengage the controls quickly.

PREPARATION

1. Warn everyone in advance to stay clear of area. Keep especially watchful for children and pets darting into area while operating.
2. Read, understand, and follow instructions and warnings in this manual and on the machine. Know the controls and the proper use of the snow thrower before starting.
3. Data indicates that operators, age 60 and above, are involved in a large percentage of snow thrower-related injuries. These operators should evaluate their ability to operate the snow thrower safely enough to protect themselves and others from serious injury.
4. Disengage all clutches and shift into neutral before starting the engine (motor).
5. Wear adequate winter clothing including boots which will give you maximum footing on slippery surfaces. Exercise **CAUTION** to avoid slipping or falling.
6. Before the first snow fall, check the area to be cleared and remove all objects such as doormats, sticks, toys, wires, rocks, etc., which could be hurled or jam the snow thrower.

PREPARATION

(Continued From Previous Column)

7. Survey the area to be cleared beforehand and plan where snow is to be blown. Be prepared to release auger/impeller clutch or to change discharge chute direction quickly to discharge away from windows, cars, buildings and doorways to avoid property damage or personal injury from hurled objects.
8. Use only approved extension cords and receptacles in good condition and with sufficient capacity to carry the current to the machine if equipped with electric starting motors.
9. Handle fuel with extra care. Fuels are flammable and vapors are explosive. Store only in an approved fuel container. Never remove fuel cap or add fuel with the engine running. Add fuel outdoors only with the engine stopped and cool. Clean spilled fuel and oil from machine. **DO NOT** smoke. **DO NOT** run engine indoors.

OPERATIONAL PRECAUTIONS

1. Before starting, make visual check to make sure auger/impeller housing is clear and all guards and shields are in place and tight.
2. **DO NOT** operate machine without proper guards shields, deflectors, or other safety protective devices in place and functioning properly.
3. Should the auger/impeller become clogged, release the auger/impeller clutch control and, as an additional precaution, **STOP** the engine before attempting to unclog the auger/impeller or discharge chute.
4. **DO NOT** attempt to unclog the auger/impeller or discharge chute by reaching in with your hands. Use a long stick or similar implement to unclog.
5. **DO NOT** attempt to unclog the auger/impeller or discharge chute with the engine running. **STOP** engine and remove key.
6. **STOP** engine (motor) and remove key before leaving the operator position for any reason.



IMPORTANT SAFETY INSTRUCTIONS



OPERATIONAL PRECAUTIONS

(Continued From Previous Page)

7. DO NOT put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
8. Start engine only where exhaust fumes will be safely dissipated. Allow a brief warm-up period, and practice operation of controls outside before putting the machine to work.
9. After striking a foreign object, STOP the engine (motor), remove the key, and remove the wire from spark plug. Thoroughly inspect the snow thrower for any damage, and repair the damage before restarting and operating the snow thrower.
10. STOP the engine if the machine starts to vibrate excessively as this normally indicates mechanical problems. Remove the key and disconnect the spark plug wire to prevent unintentional starting before servicing or repairing the machine.
11. DO NOT clear snow across the face of slopes. Exercise extreme CAUTION when changing direction on slopes. DO NOT attempt to clear steep slopes.
12. DO NOT leave machine unattended with the engine running. STOP engine and remove key to prevent unauthorized operation.
13. Release clutch control and make sure auger/impeller has STOPPED before adjusting deflector, or placing hands near auger/impeller.
14. DO NOT use snow thrower on surfaces above ground level, such as, a roof of a building.
15. Exercise extreme CAUTION when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
16. DO NOT overload the machine capacity by attempting to clear snow at too fast a rate.
17. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
18. Disengage power to the auger/impeller when snow thrower is transported or not in use.
19. Use only attachments and accessories approved by the manufacturer of the snow thrower (such as wheels weights, counterweights, cabs and the like).
20. Never operate the snow thrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.

MAINTENANCE AND STORAGE

1. DO NOT store machine or fuel container inside where fumes may reach an open flame, spark, or pilot light 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 reach of children in a well ventilated, unoccupied building.
2. Keep machine and engine free of excess oil, grease and spilled fuel to reduce fire hazard.
3. When draining fuel tank, drain fuel into an approved container outdoors and away from open flame.
4. Inspect all bolts, nuts and screws frequently and keep properly tightened.
5. Use only recommended shear bolts (if equipped) to prevent possible damage to machine.
6. Service engine and make adjustments only when engine is stopped. Remove key, remove wire from spark plug, secure wire away from plug, and disconnect cord from electric starting motors to prevent accidental starting.
7. DO NOT change engine governor speed settings or overspeed engine.
8. DO NOT test for spark by grounding the spark plug next to spark plug hole. Spark from the plug could ignite gas exiting engine.
9. Have machine serviced by an authorized SNAPPER dealer at least once a year and have the dealer install any new safety devices.
10. Use only genuine SNAPPER replacement parts to assure that original standards are maintained.

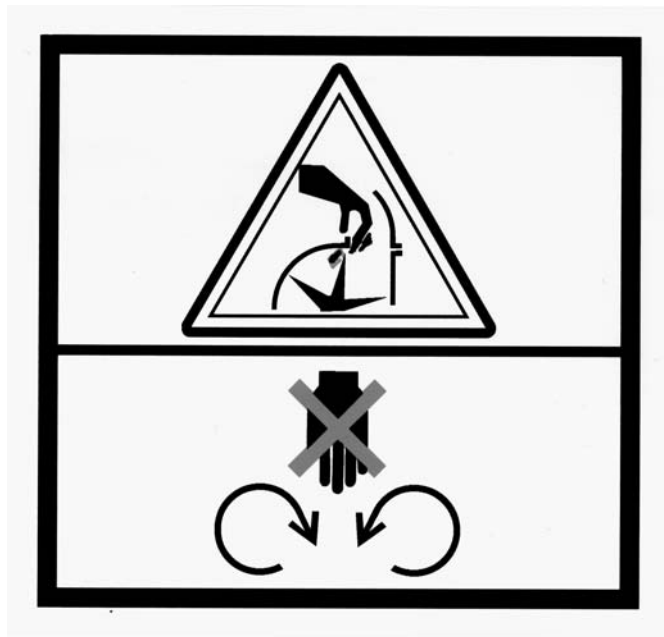
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IMPORTANT

The figures and illustrations in this manual are provided for reference only and may differ from your specific model. Contact your Snapper dealer if you have questions.

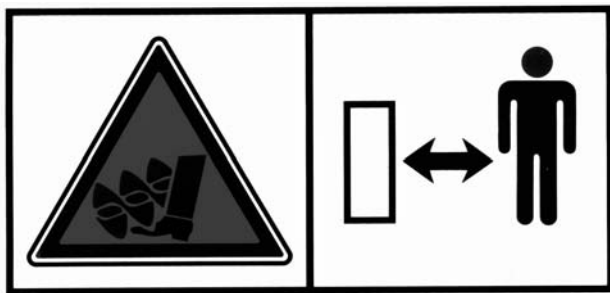
DECALS: SYMBOLS AND SAFETY LABELS



DANGER ROTATING IMPELLER. DO NOT use hand to unclog auger/impeller or discharge chute. Stop engine and remove key before unclogging.



GROUND SPEED CONTROL. Snowthrower has 4 Forward speeds and 1 Reverse speed. Rabbit/Fast. Turtle/Slow. R/Reverse.



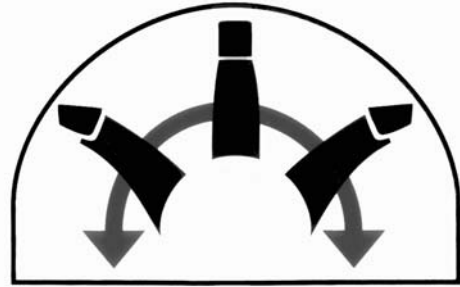
DANGER ROTATING AUGER. Keep Away. DO NOT allow children or others in the area when Snowthrower is being operated.



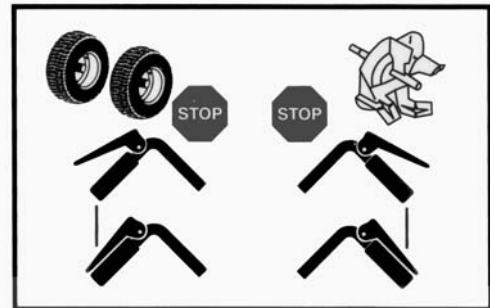
YEAR OF MANUFACTURE



EUROPEAN COMMUNITY



DISCHARGE CHUTE. Rotate control to discharge snow in desired direction.



DEADMAN CONTROLS. Depress to engage. Release to disengage/stop. Left control – wheel drive. Right control – auger/impeller.



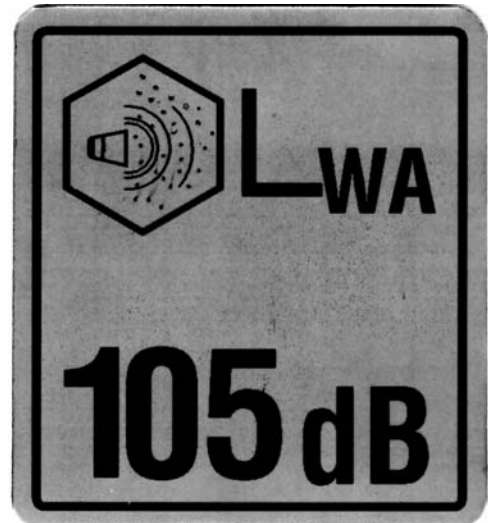
READ, UNDERSTAND & FOLLOW all manuals and instructions furnished with the Snowthrower.

DECALS: SYMBOLS AND SAFETY LABELS



HEARING PROTECTION REQUIRED.

MAXIMUM HANDLE VIBRATION 34 M/SEC².



SOUND POWER LEVEL



DANGER – ROTATING AUGER. KEEP AWAY.

SAFETY INSTRUCTIONS TO PREVENT INJURY:

- 1) Read Owner's Manual for operating and safety instructions.
- 2) Observe all labels and instructions.
- 3) DO NOT defeat safety features of controls. They are for your protection.
- 4) Stop engine, wait for all moving parts to stop, remove spark plug wire before unclogging or servicing machine.
- 5) Never allow children to operate the equipment. Never allow adults to operate equipment without proper instruction.
- 6) Keep area of operations clear of all persons, especially children.
- 7) Never direct discharge at bystanders or allow anyone in front of unit.
- 8) Keep machine properly maintained and serviced with all shields, guards, or protective devices in place.



DANGER FIRE HAZARD. Remove fuel from fuel tank and carburetor before tipping machine.

Section 2 - OPERATING INSTRUCTIONS

2.1 PRE-START CHECK LIST

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

2.1.1. 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.

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

2.1.3. Check auger control and wheel drive control to insure cables are connected and both levers operate freely. See Figure 2.1.

IMPORTANT: On 7 HP models only. Standing in the operator's position, the left handle bar lever is for wheel drive engagement and disengagement. The right handle bar lever is for auger/impeller engagement and disengagement. Hold both levers down to handle bar for engagement and release levers for disengagement. When both levers are pressed down to the handle bar at the same time, the operator can release the right hand lever and the right lever will remain engaged as long as the left hand lever is held down to handle bar. Release the left hand lever and both levers will disengage.

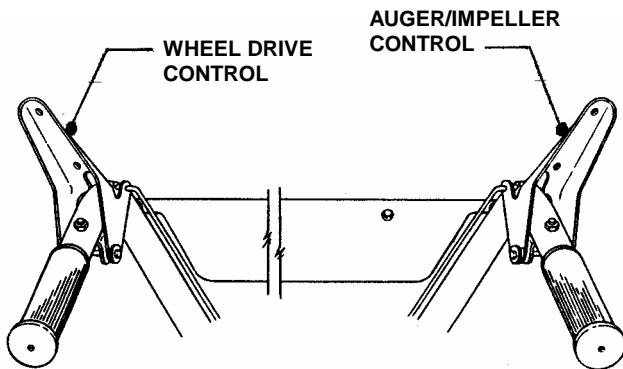


FIGURE 2.1

2.1.4. Check chute operation. Rotate chute crank to insure smooth rotation throughout its range.

2.1.5. Check tires and add or release air as needed to bring air pressure to 12 psi without tire chains. Air pressure with tire chains should be 16 psi.

2.1.6. Add fuel to tank after pushing the machine outside where fumes can safely dissipate. Make sure cap is tightened after refueling. Wipe up any spilled fuel on machine and surrounding area. Refer to Engine Owners Manual for specifications.

2.1.7. Check auger housing and discharge chute, both must be free of all obstructions. Clean engine of any accumulation of spilled fuel, dirt, etc.

⚠ WARNING ⚠

DO NOT use an electrical extension cord that is damaged. A damaged electrical extension cord could cause a shock or fire. Thoroughly inspect electrical extension cord before using machine. If cord is damaged, do not use and do not operate machine. Replace damaged cord immediately. Contact your Snapper service dealer for assistance. To reduce the risk of electric shock, use only with an extension cord intended for outdoor use having a cord type: SW-A, SOW-A, STW-A, STOW-A, SJW-A, SJTW-A or SJTOW-A.

IMPORTANT: Electric Start Kit optional accessory on some models.

2.1.8. Check and make sure extension cord is in good condition. Extension cord should not have any broken insulation or exposed wires. Use an extension cord that is heavy enough to carry the correct amount of current to the machine. See Figure 2.2 for correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge cord.

MINIMUM GAUGE FOR CORD SETS					
120 or 230 Volt		Total Length of Cord in Feet			
Rating - Amps		25 ft.	50 ft.	100 ft.	150 ft.
More Than	Not More Than	A.W.G.			
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Recommended	

FIGURE 2.2

⚠ WARNING ⚠

Use approved fuel container. DO NOT smoke near open fuel container. DO NOT fill fuel tank indoors or when engine is running. Allow engine to cool for at least ten minutes before refilling. Wipe off any spilled fuel before starting engine. DO NOT run engine indoors.

Section 2 - OPERATING INSTRUCTIONS

2.2 STARTING, OPERATION & STOPPING (RECOIL START MODELS) (Go to Page 10 for Electric Start Models)

2.2.1. ENGINE

1. Turn fuel shut off valve to the "ON" position. See Figure 2.3.

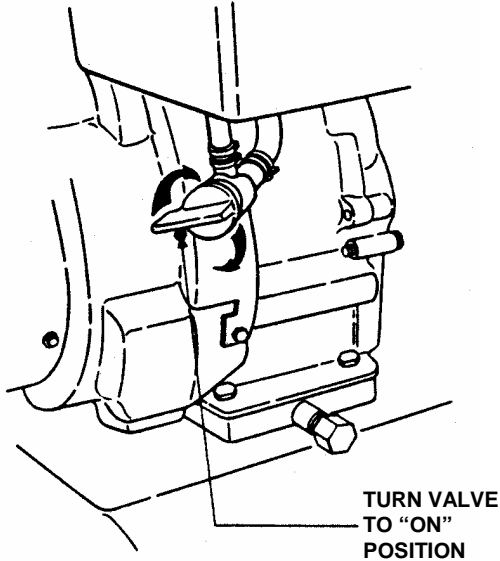


FIGURE 2.3

2. Insert key into ignition switch. See Figure 2.4.
3. Move choke control to the choke, "ON" position. See Figure 2.4.
4. Move engine speed control to the "FAST" position. See Figure 2.4.

IMPORTANT: Stop the auger and wheel drive by releasing the auger and wheel drive control levers. Stop the engine by moving the engine speed control to the stop position or removing the key from the switch.

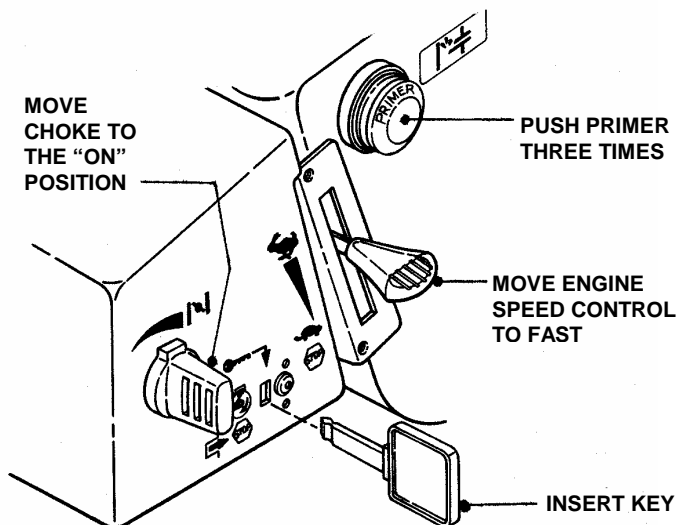


FIGURE 2.4

5. Push primer button three times to start a cold engine. **NOTE:** Do not use primer button to start warm engine. See Figure 2.4.

6. Pull rope start handle to crank engine.

7. After engine starts, move the choke control to the no choke "OFF" position. Allow a brief warm-up until engine runs smooth.

2.2.2. PROPELLING SNOW THROWER

IMPORTANT: This snow thrower has four forward speeds and one reverse speed.

1. Move ground speed control to the desired speed position. See Figure 2.5.

2. Proceed to Section 2.2.3. to engage auger and 2.2.4. to engage wheel drive.

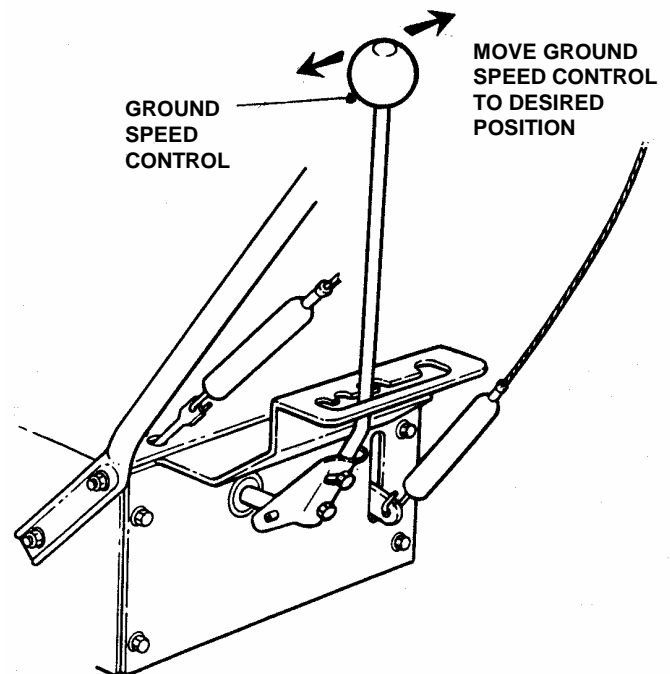


FIGURE 2.5

Section 2 - OPERATING INSTRUCTIONS

WARNING

Objects can be thrown by the snow thrower while it is in operation. Thrown objects could cause serious injury to the operator or bystanders. Always wear safety goggles or other suitable eye protection. Keep people and pets away from area.

2.2.3. ENGAGING AUGER

1. Move auger control lever against handle to engage auger. See Figure 2.6.

2.2.4. ENGAGING WHEEL DRIVE

1. Move wheel drive control lever against handle to engage wheel drive. See Figure 2.6. Ground speed can be changed while the machine is in operation by changing position of the ground speed control. **IMPORTANT:** This snow thrower has four forward speeds and one reverse speed. See Figure 2.5.

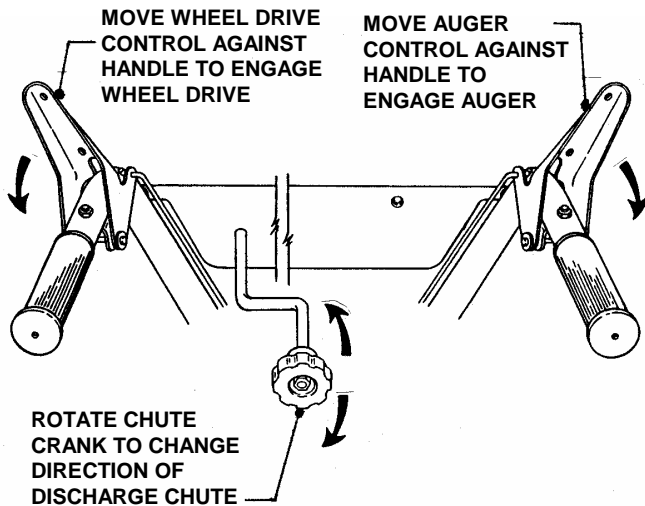


FIGURE 2.6

2.2.5. DISCHARGE CHUTE and DEFLECTOR ADJUSTMENT

1. Release auger control and wheel drive control levers to allow auger and ground speed to come to a complete stop. See Figure 2.6.
2. Loosen deflector knob and position deflector to desired angle. Retighten knob.
3. Rotate chute crank to position discharge chute in desired direction. See Figure 2.6.

2.2.6. STOPPING - ENGINE, AUGER & WHEEL DRIVE

Stop the auger and wheel drive by releasing the auger and wheel drive control levers. See Figure 2.6. Stop the engine by removing the key from the switch or moving engine speed control to the STOP position. Always remove key from key switch before leaving machine unattended. See Figure 2.7.

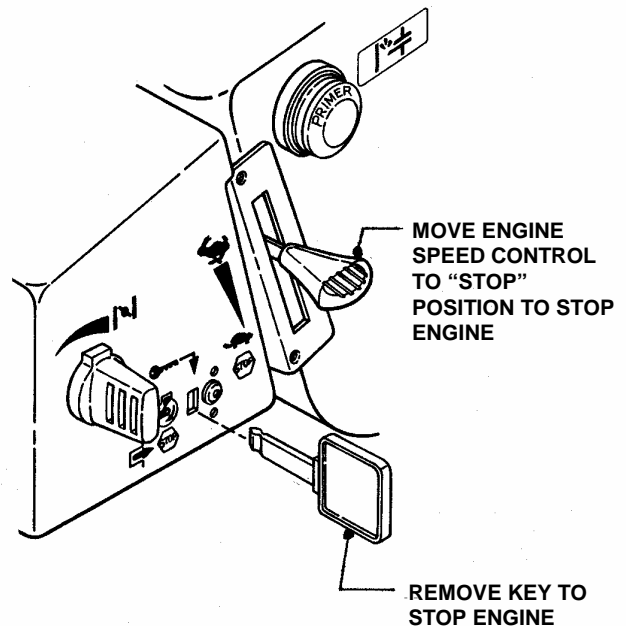


FIGURE 2.7

WARNING

Release auger clutch and wheel drive controls and make sure auger/impeller and wheel drive have STOPPED before rotating discharge chute, adjusting deflector, or placing hands near auger/impeller.

Section 2 - OPERATING INSTRUCTIONS

2.2 STARTING, OPERATION & STOPPING (ELECTRIC START MODELS) (Go to Page 8 for Recoil Start Models)

WARNING

DO NOT use an electrical extension cord that is damaged. A damaged electrical extension cord could cause a shock or fire. Thoroughly inspect electrical extension cord before using machine. If cord is damaged, do not use and do not operate machine. Replace damaged cord immediately. Contact your Snapper service dealer for assistance. To reduce the risk of electric shock, use only with an extension cord intended for outdoor use having a cord type: SW-A, SOW-A, STW-A, STOW-A, SJW-A, SJTW-A or SJTOW-A.

2.2.7. ENGINE

1. Turn fuel shut off valve to the "ON" position. See Figure 2.3.
2. Insert key into ignition switch. See Figure 2.8.
3. Connect the power cord to the starter switch box on the engine, then plug the other end into 230 volt AC receptacle.
4. Move choke control to the choke, "ON" position. See Figure 2.8.

IMPORTANT: Stop the auger and wheel drive by releasing the auger and wheel drive control levers. Stop the engine by moving the engine speed control to the stop position or removing the key from the switch.

5. Move engine speed control to the "FAST" position. See Figure 2.8.
6. Push primer button three times to start a cold engine. **NOTE:** Do not use primer button to start warm engine.
7. Push the electric starter button. DO NOT hold button for more than 20 seconds to avoid damaging the starting motor. See Figure 2.8.
8. After engine starts, move the choke control to the no choke "OFF" position. Allow a brief warm-up until engine runs smooth.
9. Disconnect power cord from AC receptacle. Disconnect power cord from machine and remove cord from area where machine will be in operation.

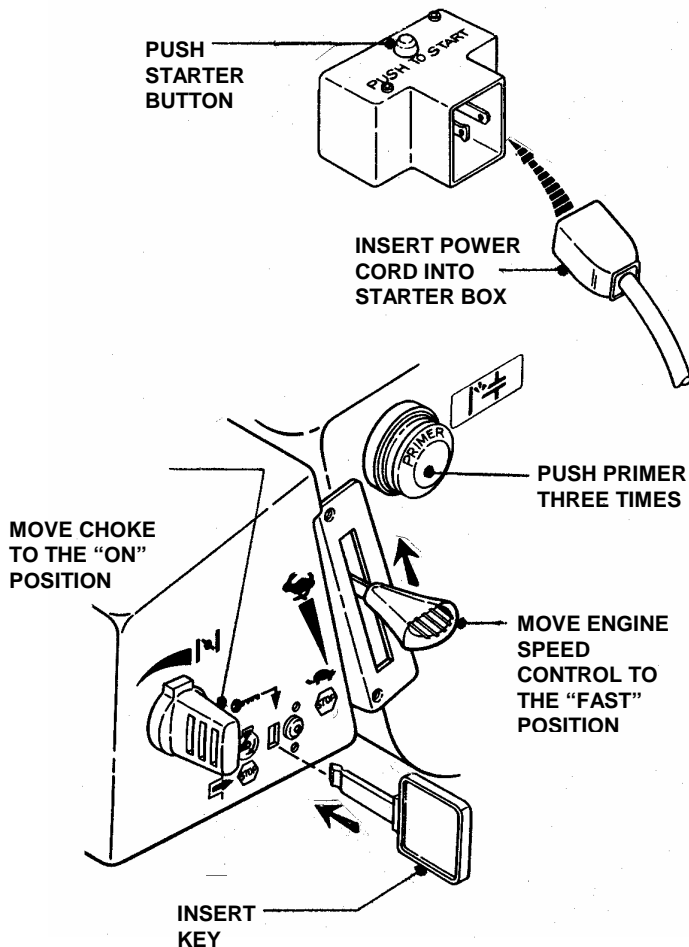




FIGURE 2.8

2.2.8. PROPELLING SNOW THROWER

IMPORTANT: This snow thrower has four forward speeds and one reverse speed.

1. Move ground speed control to the desired speed position. See Figure 2.5.
2. Proceed to Section 2.2.9. to engage auger and Section 2.2.10. to engage wheel drive.

Section 2 - OPERATING INSTRUCTIONS

	WARNING	
<p>Objects can be thrown by the snow thrower while it is in operation. Thrown objects could cause serious injury to the operator or bystanders. Always wear safety goggles or other suitable eye protection. Keep people and pets away from area.</p>		

2.2.9. ENGAGING AUGER

1. Pull auger control lever against handle to engage auger. See Figure 2.6.

2.2.10. ENGAGING WHEEL DRIVE

1. Move wheel drive control lever against handle to engage wheel drive. Ground speed can be adjusted while the machine is moving by changing position of the ground speed control. Machine has four forward speeds and one reverse. See Figure 2.6.

	WARNING	
<p>Release auger clutch control and make sure auger/impeller has STOPPED before rotating discharge chute, adjusting deflector or placing hands near auger/impeller.</p>		

2.2.11. DISCHARGE CHUTE and DEFLECTOR ADJUSTMENT

1. Release auger control and wheel drive control levers to allow auger and ground speed to come to a complete stop.
2. Loosen deflector knob and position deflector to desired angle. Retighten knob.
3. Rotate chute crank to position discharge chute in desired direction. See Figure 2.6.

2.2.12. STOPPING - ENGINE, AUGER & WHEEL DRIVE

Stop the auger and wheel drive by releasing the auger and wheel drive control levers. Stop the engine by moving the engine speed control the stop position or removing the key from the switch. Always remove key from key switch before leaving machine unattended. See Figure 2.7.

Section 3 - MAINTENANCE

WARNING

Before attempting any adjustments, maintenance, service, or repairs, stop engine and auger, always remove key from ignition switch, remove spark plug wire and secure wire away from spark plug.

3.1 INTRODUCTION

To retain the quality of the snow thrower, use only genuine SNAPPER replacement parts. Contact a local SNAPPER dealer for parts and service assistance. For the correct part or information for a particular snow thrower, always mention model and serial number.

3.2 SERVICE - AFTER FIRST 5 HOURS

3.2.1 CHECK AUGER DRIVE BELT

1. Visually check engine drive belt for cracking, fraying, severed or belt strands exposed. Replace belt before operating snow thrower. See Figure 3.1

3.2.2 CHECK WHEEL DRIVE BELT

1. Visually check wheel drive belt for cracking, fraying, severed or belt strands exposed. Replace belt before operating snow thrower. See Figure 3.1.

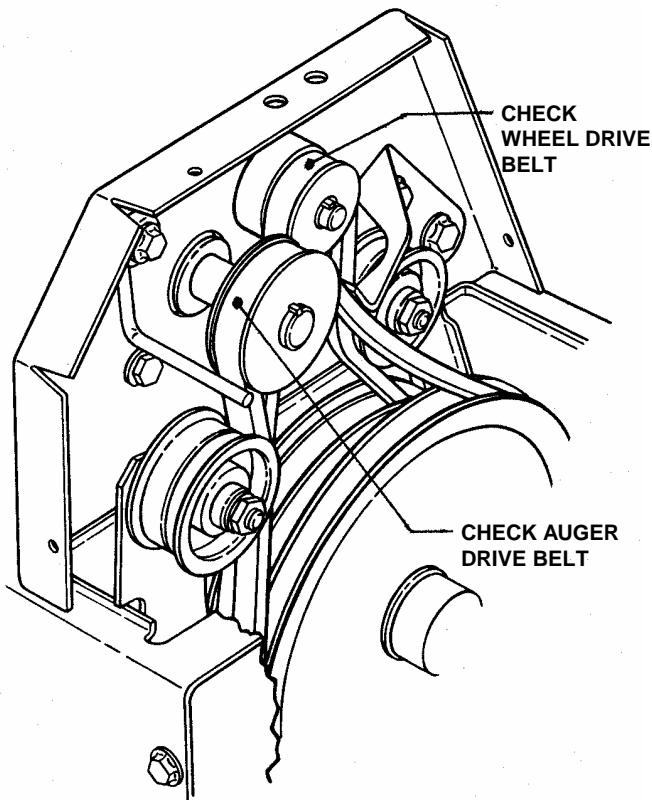


FIGURE 3.1

3.3 GENERAL LUBRICATION

Lubricate machine as instructed before and after operation each season.

3.3.1. GEAR CASE, AUGER SHAFT and AUGER BEARING LUBRICATION

1. Before each season of operation, apply two shots of grease (Snapper suggests using Benelene 900) from a grease gun into gear case. The grease fitting for the gear case is located in front of the gear case. See Figure 3.2.

2. Before each season of operation, apply two shots of grease (Snapper suggests using Benelene 900) from a grease gun into auger bearing. The grease fitting for the auger bearing is located on each end of the auger. See Figure 3.2.

3. Before each season of operation, apply two shots of grease (Snapper suggests using Benelene 900) from a grease gun into the auger shaft. The grease fitting for the auger shaft is located in the middle of each auger. Remove shear bolts and rotate auger to distribute grease evenly around shaft. Reinstall shear bolts and nuts. Tighten to 5 to 10 ft. lb. of torque. See Figure 3.2.

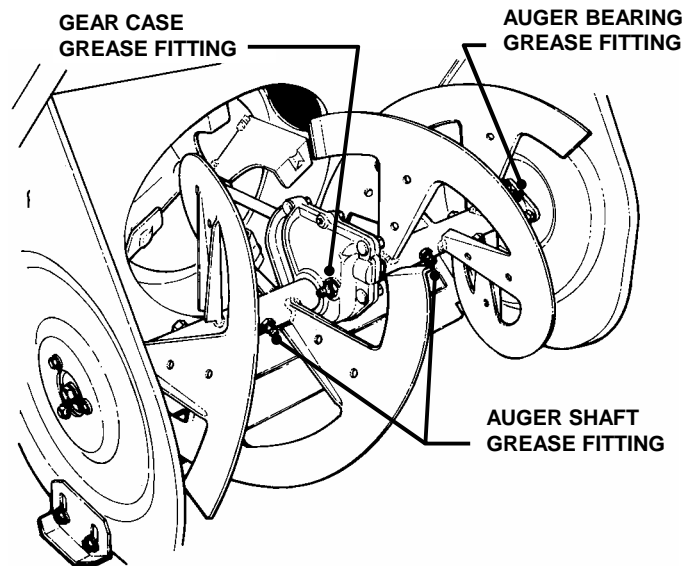


FIGURE 3.2

3.3.2. GENERAL LUBRICATION

After each season of operation, spread a small amount of grease on: The axle shafts for easy wheel removal. The discharge chute and mounting flange retainers for smooth rotation.

Section 3 - MAINTENANCE

3.4 ANNUALLY (END OF EACH SEASON)

Perform all maintenance as described in the maintenance schedule.

3.4.1. Engine

Refer to engine owner's manual for service instructions.

3.4.2. Spark Plug

Refer to engine owner's manual for service instructions.

3.5 STORAGE PROCEDURE

Refer to the Engine Owner's Manual for directions regarding engine storage preparations. Prepare the snow thrower for "end of season" storage as follows:

1. Drain fuel from fuel tank and let engine run until all fuel is out of the carburetor.
2. **Disconnect and remove the spark plug wire away from spark plug before any other preparations are made!**
3. Tape all openings closed to prevent spraying water into exhaust or air intakes during washing.
4. Tilt snow thrower up on its wheels and thoroughly clean the underside of the auger.
5. Lubricate all exposed metal with a light coating of oil to prevent corrosion.
6. Store the machine in a shed or other dry area, protected from weather.

3.6 MAINTENANCE and SERVICE PARTS

MAINTENANCE and SERVICE PARTS	
Auger Drive Belt (Tecumseh Engines)	1-5152
Wheel Drive Belt (4 HP & 5 HP Engines)	1-5151
Wheel Drive Belt (5.5 HP Engines)	4-5214
Wheel Drive Belt (6 HP & 7 HP Engines)	2-3416
Scraper Blade (22" Width Auger)	3-3298
Scraper Blade (24" Width Auger)	3-6163
Rubber Drive Tire	2-3364
Shear Bolts - 1/4-20 x 1-1/2"	1-5257
Hex Nuts - 1/4-20	7-6978
Parts Manual for Intermediate Frame Snow Thrower - Series 4 Domestic Models: I4223, I5223, I55223, I6223, I7243, European Models: EI5223, EI55223, EI55224, EI7243, EI7244	#06068

Section 4 - REPAIR & ADJUSTMENTS

WARNING

Before attempting any adjustments, maintenance, service, or repairs, stop engine and auger, always remove key from ignition switch, remove spark plug wire and secure wire away from spark plug.

4.1 AUGER BELT ADJUSTMENT/REPLACEMENT

When operating machine release the auger clutch control, auger should come to a complete stop in 5 seconds. If auger does not come to a complete stop in the required time, check and adjust belt tension. Inspect belt frequently for signs of excessive wear. Observe drive belt for slippage due to wear when operating machine. If slippage does occur adjust as follows.

4.1.1. AUGER and DRIVE BELT ADJUSTMENT (CABLE ADJUSTMENT)

1. Measure control cable extension from a relaxed position to full extended position. Move control lever against handle. Measure from the top of spring (The top is in relation to where spring connects into connector). Proper extension should be $3/8$ " extension. See Figure 4.1.

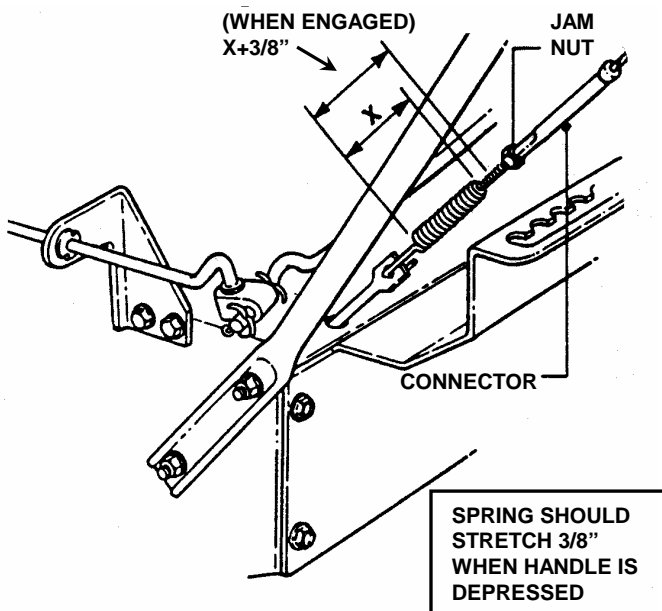


FIGURE 4.1

2. Adjust control cable by loosening jam nut at the upper end of cable. Hold threaded end of cable and then turn cable clockwise or counter clockwise until correct extension is achieved. Retighten jam nut.

IMPORTANT: DO NOT rotate cable beyond the point to where all of slack is out of cable. Cables have to have a certain amount of slack: When control lever is in the released position the cable slack allows: 1) Auger brake to stop auger. 2) Wheel drive to disengage. If all of the adjustment is utilized at the cable connector go to Section 4.1.2. for alternate adjustment.

4.1.2. AUGER BELT ADJUSTMENT (IDLER PULLEY ADJUSTMENT)

NOTE: Wheel drive belt idler pulley is not adjustable. If upper cable adjustment performed in Section 4.1.1. and correct cable extension can not be accomplished, adjustment can be made at the idler pulley. All adjustment made in Section 4.1.1. will have to be reversed from the upper end of cable.

1. Loosen jam nut at the end of cable. Hold threaded end of cable and then turn metal housing of cable counter clockwise until threaded portion of cable is extracted from metal housing. Reinstall $1/2$ " of the threaded portion of cable back into metal housing. Retighten jam nut.

2. Remove belt cover. See Figure 4.2

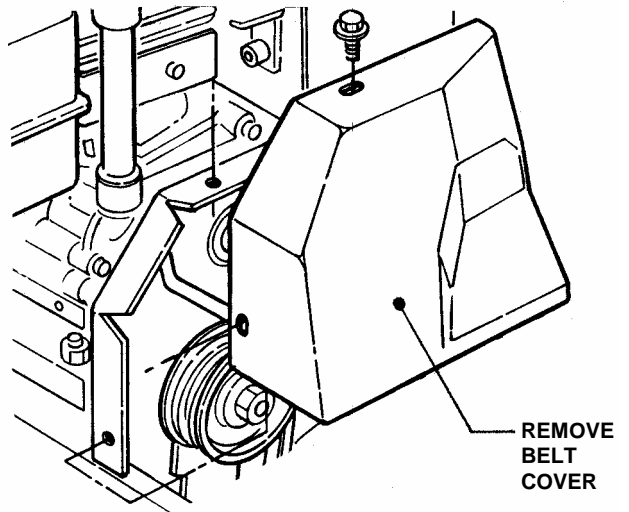


FIGURE 4.2

3. Loosen nut and bolt that secures the idler pulley. Move idler pulley toward belt for more tension or away from belt for less tension. See Figure 4.3. Retighten bolt and nut securely.

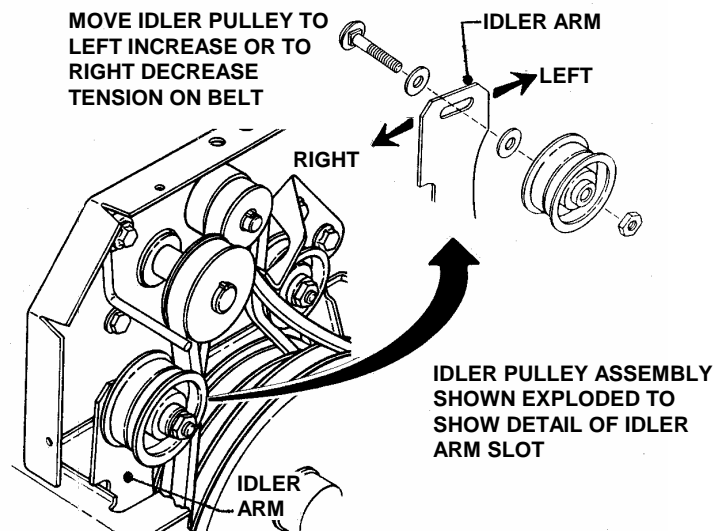


FIGURE 4.3

Section 4 - REPAIR & ADJUSTMENTS

WARNING

Before attempting any adjustments, maintenance, service, or repairs, stop engine and auger, always remove key from ignition switch, remove spark plug wire and secure wire away from spark plug. Before tilting machine, drain all the fuel from fuel tank. Allow engine to run, outdoors where fumes can be safely dissipated, until all fuel is removed from carburetor.

4.1.2. AUGER BELT ADJUSTMENT (IDLER PULLEY ADJUSTMENT) (Continued From Previous Page)

4. Recheck cable for proper extension.
5. Reinstall belt cover.

4.1.3. AUGER BELT REPLACEMENT

Inspect belt frequently for signs of excessive wear. Visually check engine drive belt for cracking, fraying, severed or belt strands exposed. **NOTE:** Auger and Drive Belts are difficult to install. It may be necessary to allow an authorized Snapper Dealer to install these belts.

1. Remove belt cover. See Figure 4.2.
2. Remove discharge chute.
3. Loosen both auger/impeller belt guides. See Figure 4.4.

IMPORTANT: Wheel drive belt will have to be removed from around engine drive pulley and engine shaft to install auger drive belt.

4. Remove auger drive belt from around engine pulley. See Figure 4.4.

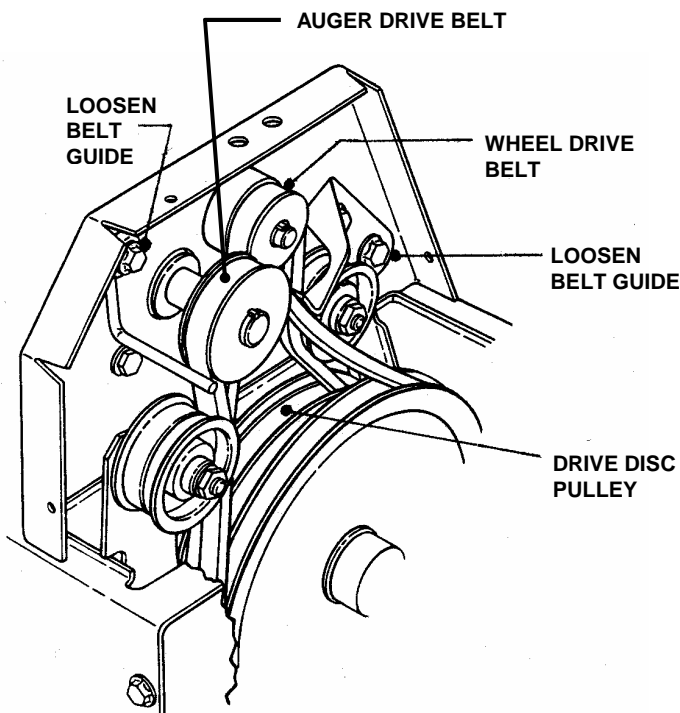


FIGURE 4.4

5. Tilt machine forward to gain access to drive system area. Secure machine in the tilted position to prevent tipping over. Remove drive system cover plate. See Figure 4.5.

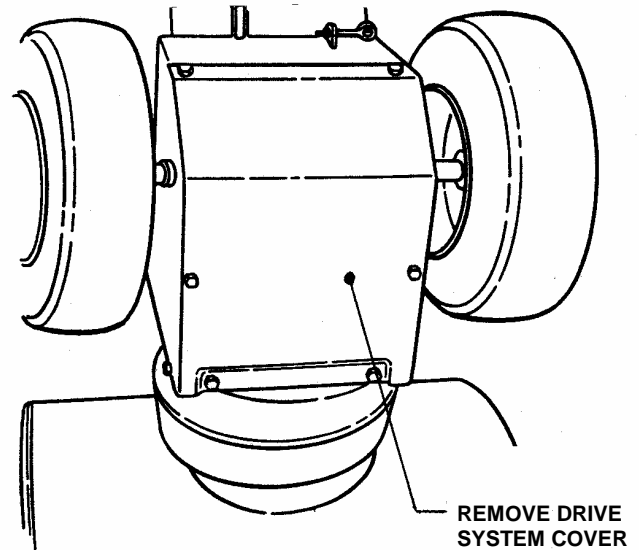


FIGURE 4.5

6. Remove auger drive belt from drive disc pulley. Route auger belt through drive system in between rubber drive tire and drive disc.
7. Route new auger drive belt through drive system. **NOTE:** New belt has to be routed in between rubber drive tire and drive disc to position it around auger pulley.
8. Reinstall wheel drive belt onto engine wheel drive pulley. Make sure belt is also positioned in the drive disc pulley groove.
9. Route auger drive belt around engine auger drive pulley. Make sure belt is also positioned in the drive disc pulley groove.
10. Position both belt guides to have a clearance of 1/8" from auger drive belt (when engaged) and tighten securely.
11. Reinstall discharge chute, belt and drive system covers and tighten screws securely.
12. Reinstall drive system cover plate.
13. See Sections 4.1.1. & 4.1.2. Auger Belt Adjustment for new belt adjustment. Adjust belt as described in these sections.

Section 4 - REPAIR & ADJUSTMENTS

WARNING
Before attempting any adjustments, maintenance, service, or repairs, stop engine and auger, always remove key from ignition switch, remove spark plug wire and secure wire away from spark plug. Before tilting machine, drain all the fuel from fuel tank. Allow engine to run, outdoors where fumes can be safely dissipated, until all fuel is removed from carburetor.

4.1.4. WHEEL DRIVE BELT REPLACEMENT

Inspect belt frequently for signs of excessive wear. Visually check engine drive belt for cracking, fraying, severed or belt strands exposed. **NOTE:** Auger and Drive Belts are difficult to install. It may be necessary to allow an authorized Snapper Dealer to install these belts.

1. Remove belt cover. See Figure 4.2.
2. Remove discharge chute.
3. Loosen belt guide closest to the auger drive belt. See Figure 4.6.

IMPORTANT: Wheel drive belt will have to be removed from around engine drive pulley and engine shaft to install auger drive belt.

4. Remove wheel drive belt from around engine pulley. See Figure 4.6.

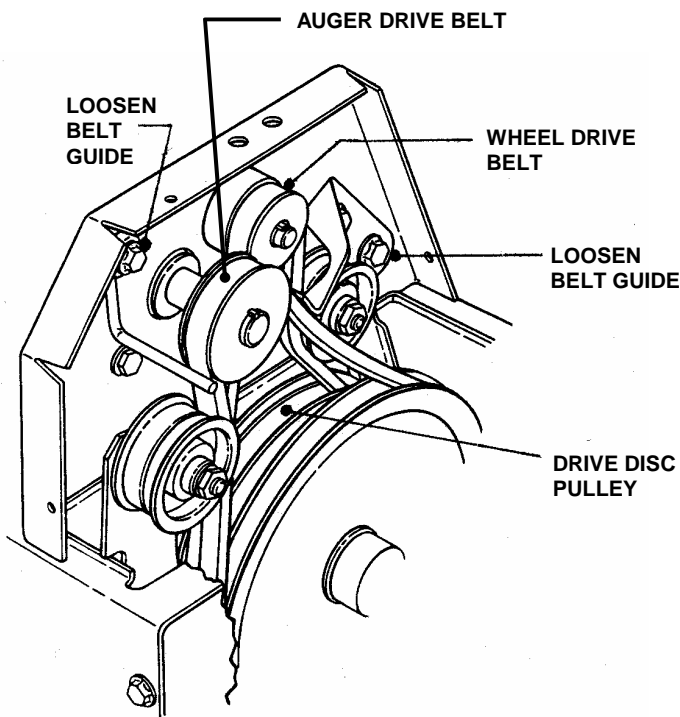


FIGURE 4.6

5. Tilt machine forward to gain access to drive system area. Secure machine in the tilted position to prevent tipping over. Remove drive system cover plate. See Figure 4.7.

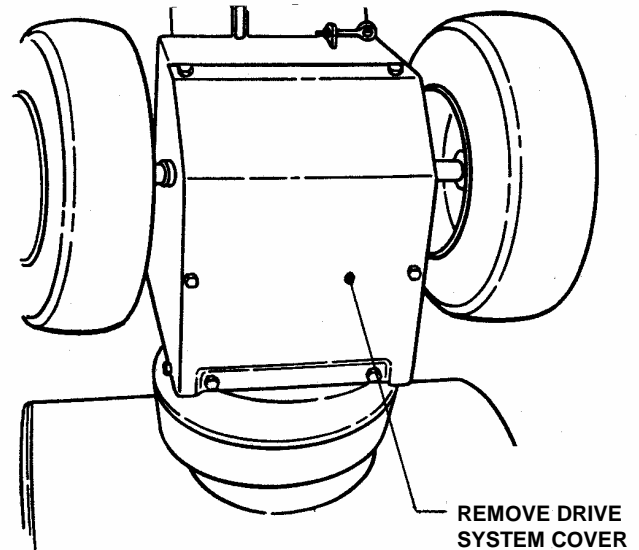


FIGURE 4.7

6. Remove wheel drive belt from drive disc pulley. Route wheel belt through drive system in between rubber drive tire and drive disc.
7. Route new wheel drive belt through drive system. **NOTE:** New belt has to be routed in between rubber drive tire and drive disc to position it around auger pulley.
8. Reinstall wheel drive belt onto engine wheel drive pulley. Make sure belt is also positioned in the drive disc pulley groove.
9. Engage auger control and position belt guide to have a clearance of 1/8" from auger drive belt. Tighten belt guide securely.
10. Reinstall discharge chute, belt and drive system covers and tighten screws securely.
11. Reinstall drive system cover plate.
12. See Sections 4.1.1. & 4.1.2. Auger Belt Adjustment for new belt adjustment. Adjust belt as described in these sections.

Section 4 - REPAIR & ADJUSTMENTS

4.1.5. GROUND SPEED ADJUSTMENT

NOTE: It is recommended to remove the drive system cover and check rubber drive engagement with drive disc when adjusting ground speed.

1. Tilt machine forward to gain access to drive system area. Secure machine in the tilted position to prevent tipping over. Remove drive system cover plate. See Figure 4.7.
2. Loosen the top screw that connects the shift rod to the shift hub. See Figure 4.8.
3. Move shift rod clockwise to obtain more ground speed or counter clockwise for less ground speed. Retighten top screw after adjustment. See Figure 4.8.

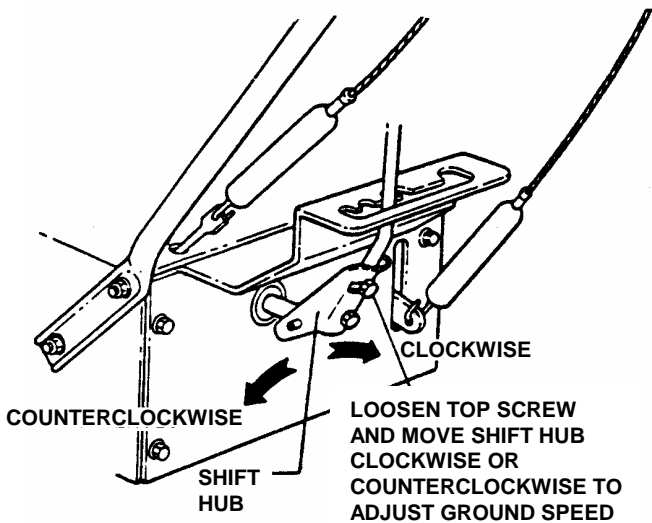


FIGURE 4.8

4. Check drive system to insure the rubber drive tire has full contact with drive disc. Shift through all speeds and note the position of rubber drive tire on the drive disc. See Figure 4.9.

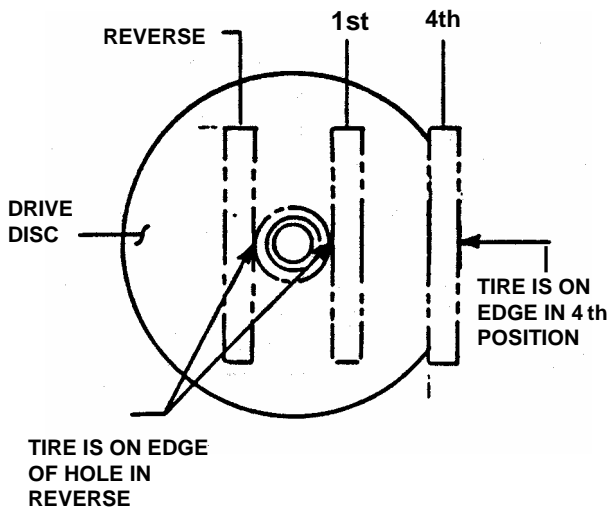


FIGURE 4.9

4.1.6. SKID SHOE ADJUSTMENT

NOTE: It is recommended to raise the auger housing when clearing rough or graveled surfaces. To raise auger the skid shoes should be lowered.

1. Tilt machine up and place a wooden block under auger housing.
2. Loosen bolts on both skid shoes. Move shoes down to raise auger housing or move skid shoes up to lower auger housing. See Figure 4.10.

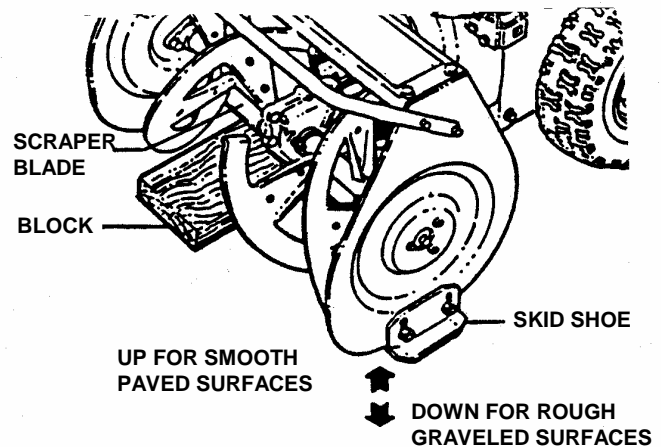


FIGURE 4.10

4.1.7. AUGER SHEAR BOLT REPLACEMENT

IMPORTANT: If engine is operating correctly and auger/impeller drive belt is not damaged or severed, but the auger/impeller does not rotate it is possibly the auger shaft shear bolt.

1. Remove shear bolt and nut from auger. Discard old shear bolt and nut. DO NOT reuse bolt or nut under any circumstances. Always replace existing hardware with genuine Snapper new replacement shear bolts and nuts. DO NOT substitute these shear bolts and nuts with hardware other than what is specified as auger/impeller and engine damage can result.
2. Install new shear bolts and nuts. Tighten to 5 to 10 ft. lb. of torque. See Figure 4.11.

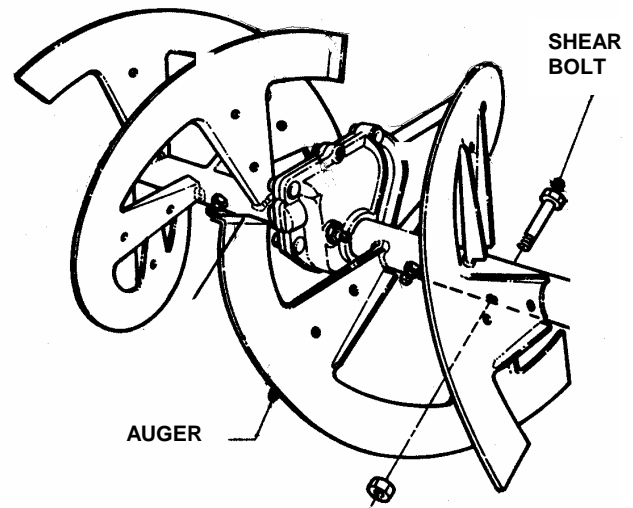


FIGURE 4.11

Section 4 - REPAIR & ADJUSTMENTS

4.1.8. SINGLE HANDLE CONTROL ADJUSTMENT (7 HP Models Only)

IMPORTANT: Standing in the operator's position, the left handle bar lever is for wheel drive engagement and disengagement. The right handle bar lever is for auger/impeller engagement and disengagement. Hold both levers down to handle bar for engagement and release levers for disengagement. When both levers are pressed down to the handle bar at the same time, the operator can release the right hand lever and the right lever will remain engaged as long as the left hand lever is held down to handle bar. Release the left hand lever and both levers will disengage.

1. Hold the wheel drive control lever down against the handle. See Figure 4.12.

2. Check position of the cam lock. It must align with the adjusting line located on the cam lock bracket.

3. To adjust, loosen the nuts on the cable guide support bracket and move the bracket in or out until the cam lock aligns with the adjusting line. Retighten nuts.

4. Hold the wheel drive control lever down to the handle bar, at the same time press the auger/impeller control lever down to the handle bar and hold in position.

5. Check the position of the cable ferrule in relation to the cam lock. The ferrule must be located $1/16"$ (.060) above the hook of the cam lock. To adjust, loosen the three nuts that secure the cam lock bracket. Slide bracket up or down until correct measurement is achieved. Retighten nuts securely. See Figure 4.12.

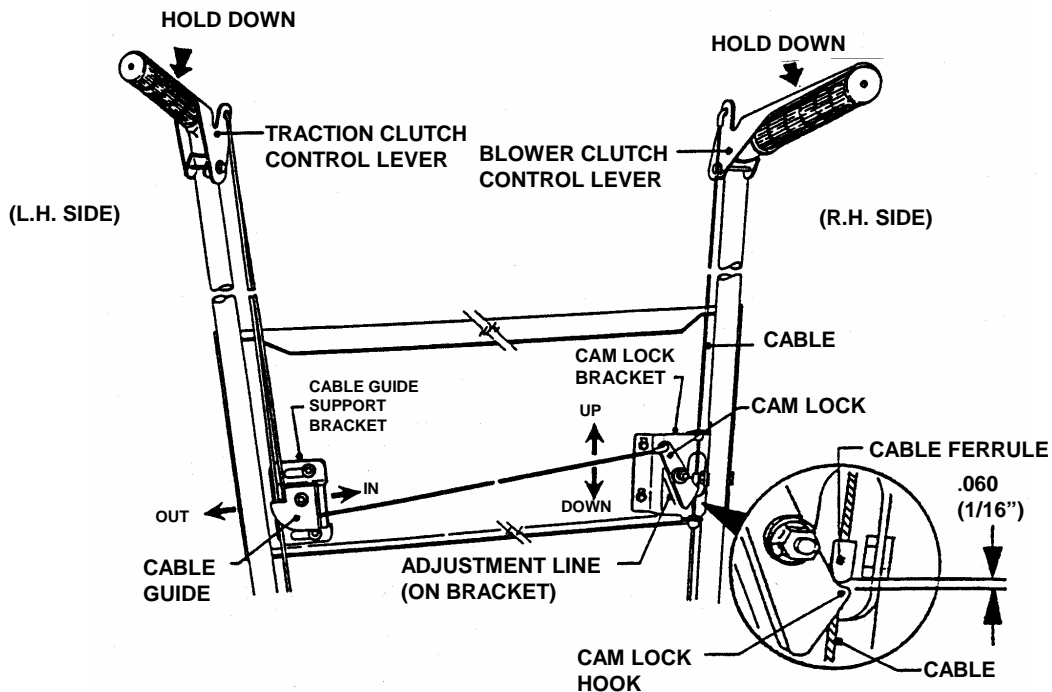


FIGURE 4.12

Section 4 - REPAIR & ADJUSTMENTS



WARNING



Before attempting any adjustments, maintenance, service, or repairs, stop engine and auger, always remove key from ignition switch, remove spark plug wire and secure wire away from spark plug. Before tilting machine, drain all the fuel from fuel tank. Allow engine to run, outdoors where fumes can be safely dissipated, until all fuel is removed from carburetor.

4.1.9. CHUTE CRANK ADJUSTMENT

1. Loosen adjustment bolt. Move crank worm bracket away from ring gear slightly. NOTE: The worm gear should always maintain full contact with ring gear after adjustment. Retighten adjustment bolt. If crank still does not operate satisfactorily, lubricate worm gear and ring gear with grease. See Figure 4.13.

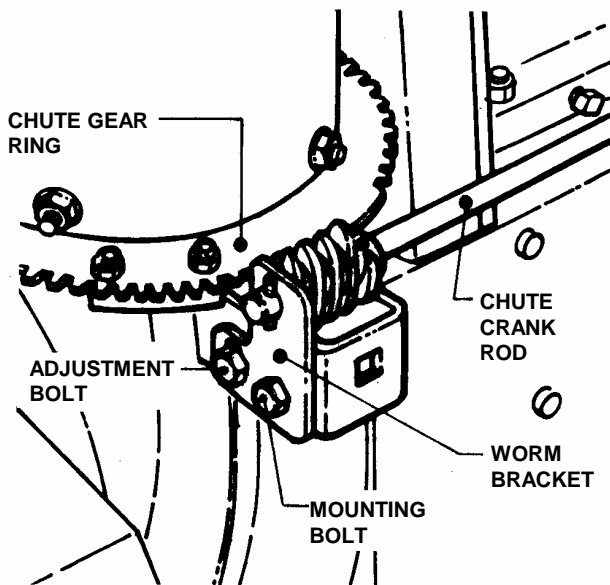


FIGURE 4.13

4.1.10. RUBBER DRIVE DISC REPLACEMENT

1. Tilt machine forward to gain access to drive system area. Secure machine in the tilted position to prevent tipping over. Remove drive system cover plate. See Figure 4.5.
2. Remove the five bolts that secure rubber drive disc to the drive hub. Remove drive tire. See Figure 4.14.
3. Install new rubber drive disc. Reinstall the five bolts. Torque to 25 to 40 in. lbs. See Figure 4.14.

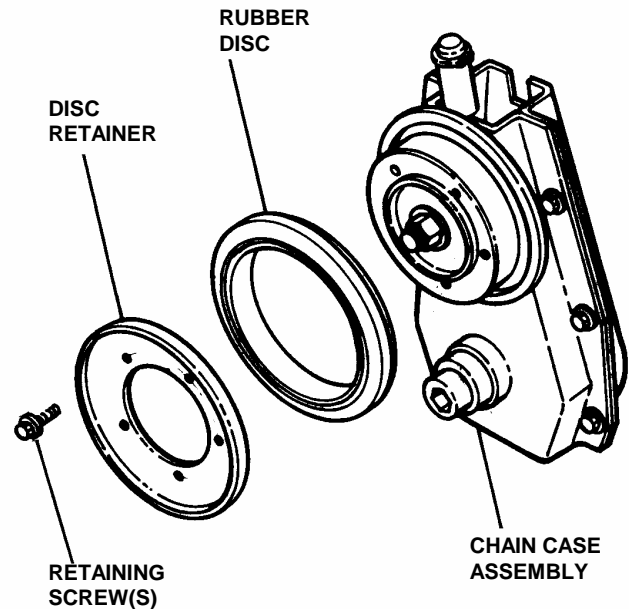


FIGURE 4.14

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Engine Will Not Start Using Recoil Starter	1. Fuel tank empty.	1. Fill fuel tank with fresh fuel/oil mix.
	2. Engine needs choking and priming.	2. Move choke control to "CHOKE" position. Push primer bulb three times.
	3. Spark plug wire disconnected.	3. Place spark plug wire onto spark plug.
	4. Fuel shut off valve closed.	4. Move fuel shut off valve to the on position.
Engine Will Not Start Using Electric Starter	1. Power extension cord not plugged into machine or 120 Volt outlet for U.S.A. or 230 Volt for Europe.	1. Plug power extension cord into machine & into 120 Volt outlet for U.S.A. or 230 Volt for Europe.
	2. Power extension cord damaged.	2. Discard damaged power extension cord.
	3. Starter switch damaged or faulty.	3. Replace starter switch.
Engine Stalls or Stops After Running	1. Water, debris or stale fuel in fuel system.	1. Drain and clean fuel system.
	2. Choke control in the "CHOKE" position.	2. Move choke control to "OFF" position.
	3. Fuel tank empty.	3. Fill with fuel to proper level.
	4. Air intake clogged with snow or debris.	4. Unclog air intake.
	5. Spark plug defective or gap set improperly.	5. Service spark plug.
Engine Loses Power	1. Engine lubrication oil level is low.	1. Add oil to the engine to full level.
	2. Spark plug faulty.	2. Service spark plug.
	3. Water, debris or stale fuel in fuel system.	3. Drain and clean fuel system.
Excessive Vibration	1. Damaged, out of balance or bent auger.	1. Service auger.
	2. Loose engine or auger components.	2. Service and tighten loose components.
	3. Bent or loose Idler pulley.	3. Tighten or replace pulley.
	4. Cracked, severed or frayed belt.	4. Replace belt.
Poor Snow Discharging	1. Clogged discharge chute.	1. Stop engine and unclog discharge chute.
	2. Damaged or bent auger or components.	2. Service auger or components.
	3. Cracked, severed or frayed belt.	3. Replace belt.
	4. Belt tension out of adjustment.	4. Adjust belt tension.
	5. Insufficient lubrication in auger bearings.	5. Lubricate all bearings as specified in manuals.

SERVICE SCHEDULE

ITEM	SERVICE PERFORMED	REF.	EACH USE	5 HRS	25 HRS	50 HRS	100 HRS	EACH SEASON
Spark Plug	Replace	Engine Manual					X	
Engine Oil	Check Oil Level	Engine Manual	X					
	Initial Oil Change	Engine Manual		X				
	Periodic Oil Change	Engine Manual			X			
Engine Cooling System	Clean Shroud & Fins	Engine Manual					X	
Drive Belts	Check For Adjustment, Wear and Tension	Page 12-16			X	X		X
Auger & Impeller	Check For Damage & Lubrication	Page 12	X					X
Tires	Check Air Pressure	Page 7	X					

SNAPPER®

3 YEAR LIMITED WARRANTY

For three (3) years from purchase date for the original purchaser's residential, non-commercial 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.

For ninety (90) days from purchase date for the original purchaser's commercial, rental, or other non-residential use, **SNAPPER**, through any authorized **SNAPPER** dealer will replace, free of charge, any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

All transportation 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 part 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 three (3) years from purchase date for the original purchaser's residential or other non-commercial use, and ninety (90) days from purchase for the original purchaser's commercial, rental or other non-residential use, and to the extent permitted by law, any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages, under any and all warranties are excluded.

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

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

WARNING: 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

Safety Instructions & Operator's Manual for

SNAPPER®

**EUROPEAN
TWO STAGE
INTERMEDIATE FRAME
SNOW THROWER
SERIES 4**

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

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