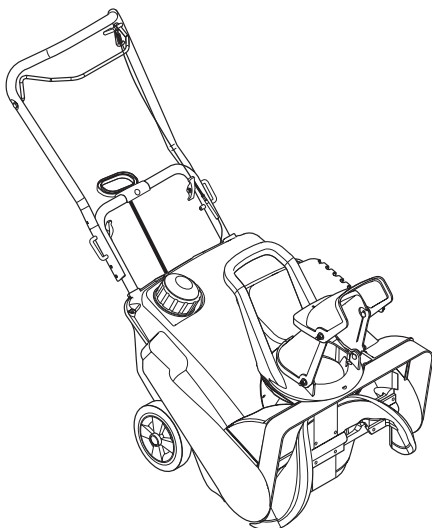




Snow Thrower

Owner/Operator Manual

Model
938400 - 522



U.S. Patents
5758436 and 5966846



- (GB)** ENGLISH
- (F)** FRANÇAIS
- (E)** ESPAÑOL

Transfer model & serial number label from product registration here.

Coller l'autocollant du modèle et du numéro de série dans cet encadré.

Transferir aquí la etiqueta del modelo y número de serie del registro del producto.

03812600 6/01
Printed in USA

CONTROLS AND FEATURES

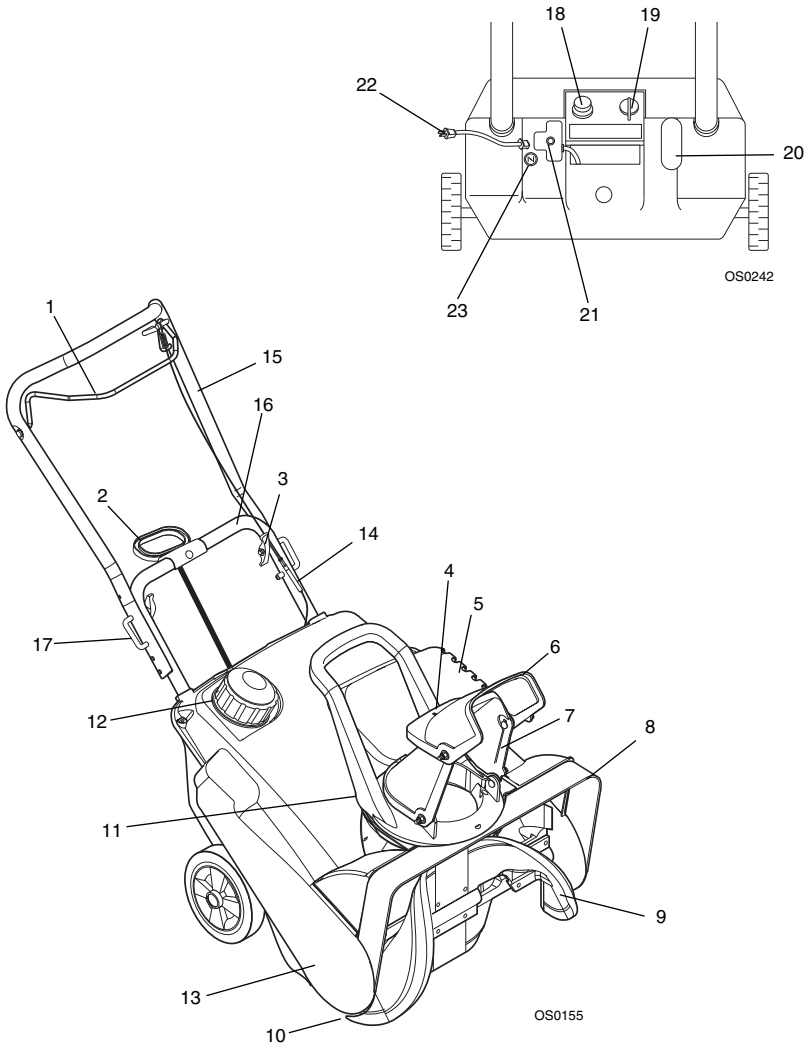


Figure 1

⚠ WARNING ⚠

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

ENGLISH

1. Auger Clutch Bail
2. Recoil Starter Handle
3. Handlebar Knob
4. Chute Deflector Handle
5. Exhaust
6. Discharge Chute Deflector
7. Discharge Chute
8. Auger Housing
9. Auger
10. Scraper Blade
11. Discharge Chute Rotation Handle
12. Fuel Tank and Cap
13. Cowl
14. Auger Control Cable
15. Upper Handlebar
16. Lower Handlebar
17. J - Bolt
18. Primer Bulb
19. Ignition Switch
20. Fuel Level Indicator
21. Starter Button
22. Power Cord
23. Choke Control Knob

FRANÇAIS

1. Commande d'embrayage de la turbine
2. Poignée du démarreur à cordon
3. Bouton du guidon
4. Poignée du déflecteur de la goulotte
5. Échappement
6. Déflecteur de la goulotte de décharge
7. Goulotte d'évacuation
8. Carter de la turbine
9. Rotor
10. Lame racleuse
11. Poignée de rotation de la goulotte d'évacuation
12. Réservoir de carburant et bouchon
13. Garant
14. Câble de commande du rotor
15. Guidon supérieur
16. Guidon inférieur
17. Vis en J
18. Poire d'amorçage
19. Commande d'allumage
20. Indicateur de niveau de carburant
21. Bouton du démarreur
22. Cordon d'alimentation
23. Bouton du starter

ESPAÑOL

1. Asa del embrague del sinfín
2. Manilla de retroceso del arranque
3. Perilla del manillar
4. Asa del deflector de la tolva
5. Escape
6. Deflector de la tolva de descarga
7. Tolva de descarga
8. Alojamiento del sinfín
9. Sinfín
10. Cuchilla raspadora
11. Asa de rotación de la tolva de descarga
12. Depósito del combustible y tapón
13. Cubierta
14. Cable de control del sinfín
15. Manillar superior
16. Manillar inferior
17. Perno en J
18. Botón del cebador
19. Interruptor de encendido
20. Indicador del nivel de combustible
21. Botón del motor de arranque
22. Cable de alimentación
23. Perilla de control del estrangulador

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INTRODUCTION

THE MANUAL

Before operation of unit, carefully and completely read your manuals. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

All reference to left, right, front, or rear are given from operator standing in operation position and facing the direction of forward travel.

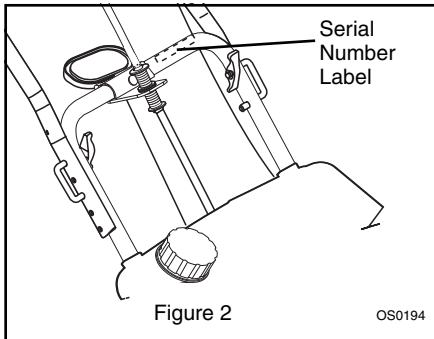
MODEL AND SERIAL NUMBERS

Transfer model & serial number label from product registration here.

When ordering replacement parts or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration form in the unit literature

package. They are printed on a serial number label, located on the frame of your unit.



- Record Unit Model and Serial numbers here.

- Record Engine Model and Serial numbers here.

PRODUCT REGISTRATION

A warranty registration card must be filled out, signed, and returned at time of purchase. This card activates the warranty. Claims meeting requirements during limited warranty period will be honored.

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. The replacement of any part on this vehicle with anything other than an Ariens authorized replacement part may adversely affect the performance, durability, or safety of this unit and may void the warranty. Ariens disclaims liability for any claims or damages, whether warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts.

DISCLAIMER

Ariens reserves the right to discontinue, make changes to, and add improvements upon its products at any time without public notice or obligation. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your unit.

DELIVERY

Customer Note: If you have purchased this product without complete assembly and instruction by your retailer, it is your responsibility to:

- Read and understand all assembly instructions in this manual.



WARNING: Improper assembly or adjustments can cause serious injury.

If you do not understand or have difficulty following the instructions, contact your nearest Ariens Dealer for assistance. To locate your nearest Ariens Dealer, call 1-866-622-5633.

- Do not operate the snow thrower unless all controls function as described in this manual.

Before attempting to operate your snow thrower:

1. Make sure all assembly has been properly completed.
2. Understand all Safety Precautions provided in the manuals.
3. Review control functions and operation of the unit.
4. Review recommended lubrication, maintenance and adjustments.
5. Review Limited Warranty Policy.
6. Fill out Original Purchaser Registration Card and return the card to Ariens Company.

SAFETY

SAFETY ALERTS



Look for these symbols to point out important safety precautions. They mean:

Attention! Personal Safety Is Involved!



Become Alert! Obey The Message!

The safety alert symbols above and signal words below are used on decals and in this manual.

Read and understand all safety messages.



DANGER: IMMINENTLY HAZARDOUS SITUATION! If not avoided, **WILL RESULT** in death or serious injury.



WARNING: POTENTIALLY HAZARDOUS SITUATION! If not avoided, **COULD RESULT** in death or serious injury.



CAUTION: POTENTIALLY HAZARDOUS SITUATION! If not avoided, **MAY RESULT** in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTATIONS

NOTE: General reference information for proper operation and maintenance practices.

IMPORTANT: Specific procedures or information required to prevent damage to unit or attachment.

PRACTICES AND LAWS

Practice usual and customary safe working precautions, for the benefit of yourself and others. Understand and follow all safety messages. Be alert to unsafe conditions and the possibility of minor, moderate, or serious injury or death. Learn applicable rules and laws in your area.

REQUIRED OPERATOR TRAINING

Original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than original purchaser; loaned, rented or sold, **ALWAYS** provide this manual and any needed safety training before operation.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged Safety Decals. Refer to Figure 3 below for Safety Decal locations.

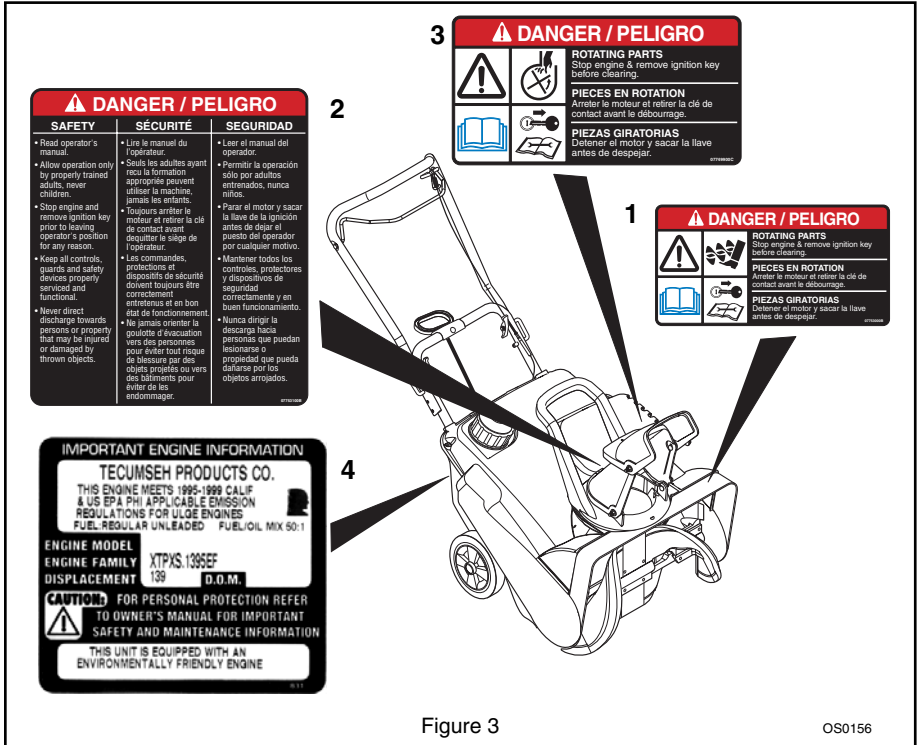


Figure 3

OS0156

1 & 2 DANGER



Stop engine and remove ignition key before clearing.



Stop engine and remove ignition key prior to leaving operator's position for any reason.

SAFETY



Read operator's manual.

- Allow operation only by properly trained adult, never children.

- Keep all controls, guards and safety devices properly serviced and functional.
- Never direct discharge towards persons or property that may be injured or damaged by thrown objects.

3. DANGER! ROTATING PARTS!



Stop engine and remove ignition key before clearing.

OL0900

4. IMPORTANT ENGINE INFORMATION

CAUTION: For personal protection refer to owner's manual for important safety and maintenance information.

SAFETY RULES

Walk Around Inspection

Complete a walk around inspection of unit and work area to understand:

- Work area.
- Your unit.
- All safety decals.

Work Area

ALWAYS check overhead and side clearances carefully before operation. ALWAYS be aware of traffic when operating along streets or curbs.

Keep children and people away. Keep children out of work area and under watchful care of a responsible adult.

DO NOT allow adults to operate unit without proper training.

Keep area of operation clear of all toys, pets, and debris. Thrown objects can cause injury.

Check for weak spots on dock, ramps or floors. Avoid uneven work areas and rough terrain. Stay alert for hidden hazards.

Always be sure of your footing, especially when operating in reverse. Walk, never run during operation.

Falling snow, fog, etc. can reduce vision and cause an accident. Operate unit only when there is good visibility and light.

Unit

ALWAYS keep protective structures, guards, and panels in good repair, in place and securely fastened. NEVER modify or remove safety devices.

Check clutch and brake operation frequently. Adjust and service as required. Auger must stop quickly when control bail is released.

Use only approved extension cords and receptacles when starting units equipped with Electric starter. DO NOT connect electric starter cord to any wiring system that is not a three wire grounded system.

Operation

Understand:

- How to operate all controls
- The functions of all controls
- How to STOP in an Emergency

Before starting engine, disengage control(s). DO NOT operate at too fast a rate. DO NOT change engine governor settings or over-speed engine.

Slow down and turn corners slowly.

Disengage attachment drive when traveling from one work area to another.

ALWAYS allow unit and engine to adjust to outdoor temperatures before clearing snow.

ALWAYS disengage attachment drive, stop unit and engine, remove key, allow moving parts to stop before leaving operator's position for any reason.

Run unit a few minutes after clearing snow to prevent freeze-up of attachment.

Disengage attachment when not in use.

Do not operate in reverse unless absolutely necessary. ALWAYS back up slowly. Always look down and behind before and while backing.

Never leave a running unit unattended.

ALWAYS shut off engine before leaving unit. ALWAYS remove key to prevent unauthorized use.

Never carry passengers.

Avoid uneven and rough terrain. DO NOT operate near drop offs, ditches, or embankments. Unit can suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Abnormal Vibrations are a warning of trouble.

Striking a foreign object can damage unit.

Immediately stop unit and engine. Remove key and wait for all moving parts to stop.

Remove wire from spark plug. Inspect unit and make any necessary repairs before restart.

Hazardous Slopes

DO NOT operate on steep slopes. DO NOT clear snow across the face of slopes. Keep all movement on slopes slow and gradual. DO NOT make sudden changes in speed or direction.

DO NOT park unit on a slope unless absolutely necessary. When parking on a slope always block the wheels.

Child Safety

NEVER allow children to operate or play on or near unit. Be alert and shut off unit if children enter area.

Personal Safety

Only trained adults may operate unit.

Training includes actual operation.

NEVER operate unit after or during the use of medication, drugs or alcohol. Safe operation requires your complete and unimpaired attention at all times.

NEVER allow anyone to operate this unit when their alertness or coordination is impaired.

DO NOT operate unit without wearing adequate winter outer garments. Wear adequate safety gear and protective gloves. Wear proper footwear to improve footing on slippery surfaces.

Protect eyes, face and head from objects that may be thrown from unit. Wear appropriate hearing protection.

Avoid sharp edges. Sharp edges can cut. Moving parts can cut off fingers or a hand.

ALWAYS keep hands and feet away from all rotating parts during operation. Rotating parts can cut off body parts.

ALWAYS keep hands away from all pinch points.

DO NOT touch unit parts which might be hot from operation. Allow parts to cool before attempting to maintain, adjust or service.

NEVER place your hands or any part of your body or clothing inside or near any moving part while unit is running.

DO NOT wear loose clothing or jewelry and tie back hair that may get caught in rotating parts. Keep children and people away from unit during operation.

Never direct discharge towards persons or property that may be injured or damaged by thrown objects. Use extreme caution on gravel surfaces. Stay alert for hidden hazards or traffic.

Deflected materials can cause injury and property damage.

Always stand clear of the discharge area when operating this unit.

Fumes from engine exhaust can cause injury or death. DO NOT run engine in an enclosed area. Always provide good ventilation.

Service

Before cleaning, removing clogs or making any inspections, repairs, etc.: disengage clutch(es), stop unit and engine, remove key, allow moving parts to stop. Allow hot parts to cool.

Before tipping unit up onto housing, remove enough fuel so no spills will occur. Ensure unit is secure and will not tip over during maintenance.

Fuel is highly flammable and its vapors are explosive. Handle with care. Use an approved fuel container.

NO smoking, NO sparks, NO flames. ALWAYS allow engine to cool before servicing.

NEVER fill fuel tank when engine is running or hot from operation.

NEVER fill or drain fuel tank indoors.

Replace fuel cap securely and clean up spilled fuel.

ALWAYS maintain unit in safe operating condition. Damaged or worn out muffler can cause fire or explosion.

Keep all hardware properly tightened.

Cleaning

Keep unit free of ice or other debris. Clean up oil or fuel spills.

Storage

For unit storage or extended storage:

- NEVER store with fuel in fuel tank, inside a building where any ignition sources are present.
- Allow engine to cool completely.
- For extended storage, clean unit thoroughly. See Engine Manual for proper storage.

Transport

ALWAYS shut off engine and drain fuel when transporting unit on a truck or trailer.

Use extra care when loading or unloading unit onto trailer or truck.

Secure unit chassis to transport vehicle. NEVER secure from rods or linkages that could be damaged.

DO NOT transport machine while engine is running.

Spark Arrester

This product is equipped with an internal combustion type engine. DO NOT use unit on or near any unimproved, forest-covered or brush covered land unless exhaust system is equipped with a spark arrester meeting applicable local, state or federal laws. A spark arrester, if it is used, must be maintained in effective working order by operator.

ASSEMBLY

TOOLS REQUIRED

7/16" Open-end wrench

TO REMOVE UNIT FROM CARTON

1. Cut off top of carton.
2. Remove front and rear inserts and literature pack.
3. Cut out back of carton and roll unit out.
4. Remove protective packaging materials.

ASSEMBLY

Handlebar Assembly

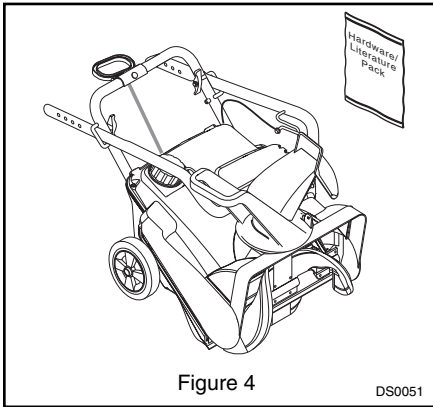


Figure 4

DS0051

1. Remove retaining nuts and handlebar knobs and release J-bolts from lower handlebar (Figure 5).
2. Unfold upper handlebar.

NOTE: Adjust handlebar to a height comfortable for the operator. Refer to *Handlebars* in *Operation*.

3. Put J-bolts through the upper handlebar and lower handlebar holes.
4. Replace retaining nuts and tighten handlebar knobs to secure upper handlebar.

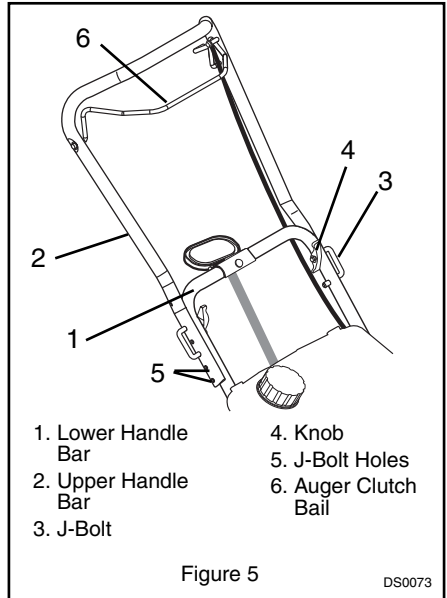


Figure 5

DS0073

Discharge Chute Assembly

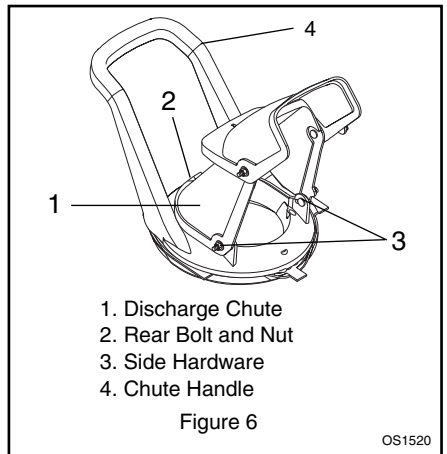


Figure 6

OS1520

1. Remove bolt and nut from rear of discharge chute (Figure 6).
2. Tip discharge chute up and install hardware just removed. Tighten hardware at rear of discharge chute first, then sides.

CHECKLIST

Please complete the following checklist before proceeding:

- All assembly instructions have been completed.
- No remaining loose parts in carton.
- Handlebar is adjusted comfortably and tightened securely.

While learning how to use your unit, pay extra attention to the following important items:

- Fill fuel tank with proper gasoline/oil mix.
- Become familiar with all controls – their location and function.
- Be certain that all hardware is properly tightened.

OPERATION

CONTROLS AND FEATURES

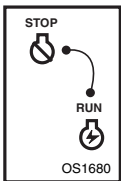
Refer to Figure 1 for controls and features locations.

Ignition Switch



WARNING: ACCIDENTAL ENGINE START UP or UNAUTHORIZED USE could result in death or serious injury. ALWAYS shut off unit and remove key before servicing or leaving unit unattended.

The ignition switch is operated with a removable key that has two positions.



"STOP" Position: Ignition system is shut down.

"RUN" Position: All controls are operable.

To start the engine, the key must be in the "RUN" position.

To stop the engine, turn the key to the "STOP" position.

Auger



WARNING: THROWN OBJECTS could cause personal injury and/or property damage. ALWAYS discharge in a safe direction. Disengage auger when unit is traveling to work area or is not in use. Use extreme caution when operating on or crossing gravel surfaces.



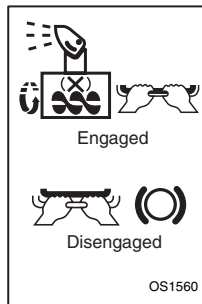
CAUTION: STRIKING FOREIGN OBJECTS may damage unit and result in minor or moderate injury. Shut off unit and engine. Check for any damage or loose parts and repair before restart.

When handlebar is lifted so auger contacts the ground, auger propels unit forward while collecting snow. Forward speed will vary according to depth and moisture content.

Auger Clutch Bail



WARNING: IMPROPER ADJUSTMENT could result in death or serious injury. AUGER BRAKE MUST DISENGAGE when clutch is engaged. BRAKE MUST STOP AUGER WITHIN 5 SECONDS of releasing auger clutch bail.



Squeeze the auger clutch bail against the handlebar to engage auger.

Release bail to disengage and brake auger.

IMPORTANT: Check auger to be sure it is not frozen. If belt squeals when clutch bail is engaged, auger is frozen. Immediately release the clutch bail and move the unit to a heated area to thaw.

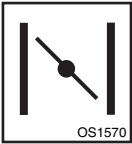
IMPORTANT: Check clutch/brake function before each use. If auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair unit before operating.

Primer Bulb



Push in the primer bulb to add fuel for easier engine start. See *Starting and Shut Off*.

Choke Control Knob



When pulled out (away from auger housing) the choke control knob chokes off air to the engine for easier start. When pushed in, control knob allows for normal operation.

IMPORTANT: When engine has started, open choke slowly by gradually pushing choke control in.

Recoil Starter Handle

When pulled, handle will crank engine.

IMPORTANT: DO NOT let handle snap back against unit.

Discharge Chute

Discharge Chute rotates 220°. Rotate chute with discharge chute handle.



DANGER: ROTATING PARTS will cause serious injury or death. NEVER reach into discharge chute or housing while engine is running.



WARNING: THROWN OBJECTS can result in personal injury and/or property damage. ALWAYS position discharge chute and deflector in safe direction and angle before starting engine. DO NOT allow anyone in front of unit during operation. Be familiar with area of operation.

IMPORTANT: DO NOT force frozen Chute controls. Start engine and run for 3-5 minutes to thaw. If still frozen, take to warm place until controls are free.

Discharge Chute Deflector



CAUTION: THROWN OBJECTS can cause personal injury and/or property damage. DO NOT throw snow any higher than necessary.

If chute deflector does not stay in set position, adjust as directed in *Service and Adjustments*, or repair before operation.

The discharge chute deflector controls how high snow is thrown.

Use handle at rear of deflector to position deflector at desired height.

Push down handle to increase height of discharge.

Pull up on handle to decrease height of discharge.

Handlebars

Adjust upper handlebar by selecting alternate holes for "J" Bolts.



CAUTION: Adjust auger control cable after changing handlebar height.

Tighten handlebar knobs to secure upper handlebar.

The upper handlebar can be folded for storage.

Scraper Blade

The scraper blade allows the back of the housing to keep better contact with the surface being cleared. It also prevents damage to the housing from normal wear.

IMPORTANT: DO NOT allow scraper blade to wear down too far or auger housing will become damaged.

Fuel Level Indicator

The fuel level indicator is an extension of the fuel tank that allows you to see the level of fuel in the tank without removing the fuel cap.

FILLING THE FUEL TANK

Check fuel level by looking at fuel level indicator on rear of unit. Add fuel as required.



WARNING: FLAMMABLE FUEL and its **EXPLOSIVE VAPORS** can result in death or serious injury.

Handle fuel with extreme care. **ALWAYS** use an approved fuel container.

No Smoking! No Lighted Materials! No Open Flames! Allow engine to cool before any service.

ALWAYS clean up any spilled fuel.

To add fuel to fuel tank:

IMPORTANT: Two cycle engines require that oil be mixed with fuel. Failure to mix oil with fuel will result in seizure and severe damage to engine. **DO NOT** use gasohol or gasoline containing alcohol because alcohol will cause internal parts to deteriorate.

See Engine Manual for correct type and grade of fuel.

1. **ALWAYS** place unit in open or well ventilated area.
2. Stop engine and allow to cool.
3. See engine manual for proper fuel/oil mixture.
4. Clean fuel cap and surrounding area to prevent dirt from entering fuel tank.
5. Remove cap.
6. Fill fuel tank with mixture. Tank capacity is 1.2 quarts (1.1 liters).
7. Replace fuel cap and tighten.

NOTE: Fuel mixture left standing for prolonged periods will begin to separate; thoroughly shake mixture before use.

STOPPING IN AN EMERGENCY

Immediately release auger clutch bail to stop unit movement.

Stop Engine, remove Key and wait for all rotating parts to stop before leaving operator's position.

BEFORE STARTING ENGINE



WARNING: IMPROPER CLOTHING AND SAFETY GEAR could result in death or serious injury. Wear adequate winter gear, protective gloves and footwear which will improve footing on slippery surfaces. **DO NOT** wear loose clothing or jewelry and tie back hair that may get caught in rotating parts. **THROWN OBJECTS** could result in death or serious injury. Wear safety goggles to protect eyes.



CAUTION: THROWN OBJECTS can result in personal injury and/or property damage. **DO NOT** throw snow any higher than necessary.

1. Check for Frozen Auger

- With key in "STOP" position, squeeze auger clutch bail to Engaged position and pull recoil starter handle.
- If you cannot pull starter handle, auger is frozen. Move unit to a heated area to thaw to prevent possible damage.

2. Check Function of Clutches



WARNING: FAILURE OF CLUTCHES OR BRAKES may result in death or serious injury. Check clutch and brake function before each use. Repair or adjust before operation.

1. With key in "STOP" position, squeeze auger clutch bail to Engaged position.
2. Pull recoil starter handle. Auger should rotate with the turning of the engine.
3. Release the auger clutch bail.
4. Pull recoil starter handle again. Auger must not rotate as engine turns.

If the auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair before operation.

3. Check Engine Fuel Level



WARNING: FLAMMABLE FUEL and its EXPLOSIVE VAPORS can cause death or serious injury. Handle fuel with extreme care. ALWAYS use an approved fuel container. NO Smoking! NO Lighted Materials! NO Open Flames! Allow engine to cool before any service.

Add fuel if required. Refer to *Filling the Fuel Tank*.

STARTING AND SHUTOFF



WARNING: FAILURE TO FOLLOW INSTRUCTIONS could result in personal injury and/or damage to unit. DO NOT attempt to start your unit at this time. Read entire Owner/Operator Manual and the Engine Manual first.

IMPORTANT: At start up, allow unit and engine to adjust to the outdoor temperatures before clearing snow. Before shut off, run auger a few minutes to prevent freeze-up of auger.

NOTE: Try out each control without the engine running to see how they work and what they do.



WARNING: THROWN OBJECTS could cause death or serious injury. ALWAYS position discharge chute straight ahead (away from operator) for starting.

Manual Start

1. Turn discharge chute straight ahead.
2. Push primer Bulb 1 to 3 times for cold engine.

NOTE: When temperature is below -15° F (-26° C) additional priming may be needed.

3. Pull choke control knob out.

NOTE: A warm engine requires less choking than a cold engine.

4. Insert key into ignition switch.
5. Turn key to "RUN" position.
6. Stand to right of unit. Grasp starter handle and pull rope out slowly until it pulls harder, this is compression stroke, let rope rewind slowly.

7. Pull rope with a rapid continuous full arm stroke. Let rope rewind slowly.

IMPORTANT: DO NOT let starter handle snap against unit.

8. Repeat until engine starts. (If engine does not start, refer to *Troubleshooting*.)
9. When engine has started, open choke slowly by gradually pushing choke control knob in.

Electric Start

IMPORTANT: DO NOT crank engine for more than 20 seconds. ALWAYS allow starter to cool down for 10 minutes between each try or starter will be damaged.

1. Turn discharge chute straight ahead.
2. Push primer Bulb 1 to 3 times for cold engine.

NOTE: When temperature is below -15° F (-26° C) additional priming may be needed.

3. Pull choke control knob out.

NOTE: A warm engine requires less choking than a cold engine.

4. Insert key into ignition switch.
5. Turn key to "RUN" position.
6. Connect Female End of power cord to switch Box.
7. Plug Male End of power cord into 120 Volt AC receptacle.
8. Push starter button to crank engine.
9. When engine starts, release starter button.
10. Open choke slowly by gradually pushing choke control knob in.
11. Disconnect power cord from receptacle first, then from switch box.

NOTE: Electric start models can be started manually. See *Manual Start* above.

Shutoff

1. Engage and run auger a few minutes after use to prevent freeze-up of auger.
2. Release auger clutch bail and allow auger to stop.
3. Turn ignition switch to "STOP" position.
4. Remove key.

TO THROW SNOW



CAUTION: HIDDEN HAZARDS may result in minor or moderate injury and/or damage to unit. Stay alert for holes, rocks, roots, traffic, and other hazards.

To propel unit and throw snow:

1. Start engine.
2. Squeeze auger clutch bail against handlebar to engage auger.

3. Lift handlebar so auger contacts surface to be cleared. Lift the handlebar only high enough to propel unit forward.

NOTE: Do not lift so high to allow snow to kick back from under unit.

Tips for Operation

Snow is best removed as soon as possible after a snow fall.

To clear an area, run unit in an overlapping series of paths. For large areas, start in the middle and throw snow to each side, so snow is not cleared more than once.

ALWAYS direct snow away from area to be cleared and with direction of the wind.

IMPORTANT: DO NOT overload unit capacity by attempting to clear snow at too fast a rate.

TO TRAVEL TO ANOTHER WORK AREA

1. Release auger clutch bail to disengage auger.
2. Press down on handlebar enough to raise front of unit slightly off the ground and push or pull unit.

TO TRANSPORT UNIT

- ALWAYS shut off engine and drain fuel when transporting unit on a truck or trailer.
- Use extra care when loading or unloading unit onto trailer or truck.
- Secure unit chassis to transport vehicle. NEVER secure by rods or linkages that could be damaged.
- Always shutoff engine for transport.

MAINTENANCE

GENERAL RECOMMENDATIONS



WARNING: ACCIDENTAL ENGINE START UP can cause death or serious injury. ALWAYS stop engine, remove key, and wait for moving parts to stop before performing maintenance or service.

HOT SURFACES can cause death or serious injury. DO NOT touch parts which are hot from operation. ALWAYS allow parts to cool.

MAINTENANCE SCHEDULE

The chart below shows the recommended maintenance schedule that should be performed on a regular basis. More frequent service may be required due to heavy loads or use.

See Engine Manual for further maintenance and troubleshooting information.

Some adjustments must be made periodically to properly maintain your unit. All adjustments in the SERVICE AND ADJUSTMENTS section of this manual should be checked at least once each season.

MAINTENANCE SCHEDULE

Service Performed	Before Each Use	After Each Use	Every 10 Hours	Every Season
Check Clutch Function	•			
Clean Unit		•		
Check Fasteners			•	
Clean Engine Cooling System				•

CHECK CLUTCH FUNCTION



WARNING: FAILURE OF CLUTCHES OR BRAKES may result in death or serious injury. Check clutch and brake function before each use. Repair or adjust before operation.

1. With key in "STOP" position, squeeze auger clutch bail to Engaged position.
2. Pull recoil starter handle. Auger should rotate with the turning of the engine.
3. Release the auger clutch bail.
4. Pull recoil starter handle again. Auger must not rotate as engine turns.

If the auger clutch bail moves freely with no resistance before contacting handlebar, adjust or repair before operation.

NOTE: The unit will require auger control cable and/or idler adjustment after 20 hours of operation on a new unit or new drive belt. See *Service and Adjustments* for instructions.



WARNING: IMPROPER ADJUSTMENT could result in death or serious injury. AUGER BRAKE MUST DISENGAGE when clutch is engaged. BRAKE MUST STOP AUGER WITHIN 5 SECONDS of releasing auger clutch bail.

CLEAN UNIT

After each use, brush snow and debris off with a soft bristled brush. Occasionally apply a light coat of spray lubricant to exposed metal joints and surfaces. Wipe off excess with soft cloth. Do not use abrasives or harsh cleaners.

Take steps to prevent rust and corrosion. Never spray unit with water or store unit outdoors.

CHECK FASTENERS

Keep all nuts, bolts, and screws properly tightened.

CLEAN ENGINE COOLING SYSTEM

Engine is air cooled. Air must circulate freely around engine to prevent overheating.

Clean external surfaces of engine of dust, dirt and oil deposits which can contribute to improper cooling.

Refer to Engine Manual.

IMPORTANT: DO NOT operate engine with cooling shrouds removed. Engine overheating and damage will result.

SERVICE AND ADJUSTMENTS



WARNING: ACCIDENTAL ENGINE START UP can cause death or serious injury. ALWAYS stop engine, remove key, and wait for moving parts to stop before performing maintenance or service.

HOT SURFACES can cause death or serious injury. DO NOT touch parts which are hot from operation. ALWAYS allow parts to cool.



CAUTION: FUEL SPILLS may result in minor or moderate injury and/or damage to unit. If unit must be tipped, remove enough fuel so that no spills will occur.

SERVICE POSITION

Place unit on a flat level surface.

HANDLEBARS

Adjust upper handlebar by selecting alternate holes for "J" Bolts.



CAUTION: Adjust auger control cable after changing handlebar height.

Tighten handlebar knobs to secure upper handlebar.

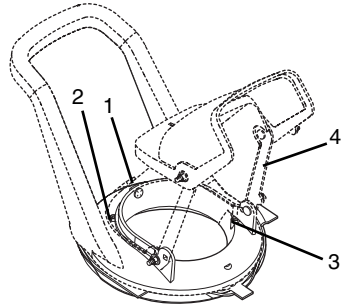
The upper handlebar can be folded for storage.

TO ADJUST DISCHARGE CHUTE

If discharge chute rotates while throwing snow, torque the four screws holding it to the housing to 11-12 in. -lbs (1.23-1.35 N-m). See Figure 7.

IMPORTANT: Overtightening screws will strip the screw holes.

1. Remove nut and bolt from rear of discharge chute.
2. Tip discharge chute forward.
3. Tighten two rear screws.
4. Tighten two front screws.
5. Reposition discharge chute and fasten with nut and bolt.



1. Rear Nut and Bolt
2. Rear Screw
3. Front Screw
4. Discharge Chute

Figure 7

OS0182

TO ADJUST DISCHARGE CHUTE DEFLECTOR

If discharge chute deflector does not stay in set position during operation, adjust chute by tightening fasteners evenly until deflector stays in position (Figure 8).

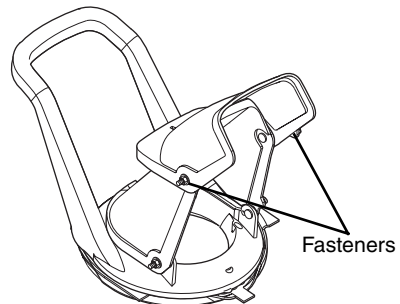


Figure 8

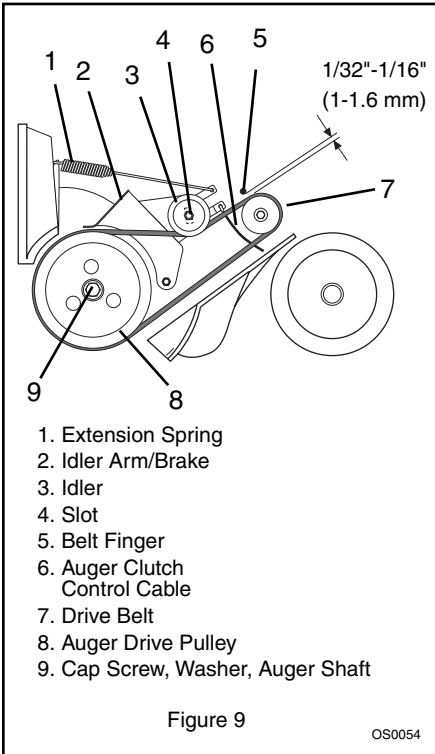
OS0181

NOTE: Use a T30 Torx Drive or a 3/16" (5mm) wide Straight Screwdriver to tighten.

TO REPLACE THE DRIVE BELT

1. Remove fuel cap.
2. Remove cowl and replace fuel cap.
3. Disconnect extension spring on idler arm/brake (Figure 9).
4. Remove cap screw and washer from end of auger shaft and pull off auger drive pulley.

5. Remove old belt.
6. Install new belt onto pulleys.
7. Reinstall auger drive pulley and secure with washer and cap screw.
8. Reconnect extension spring to idler arm/brake.
9. Ensure belt finger and auger clutch control cable are properly adjusted. See *To Adjust Belt Finger* and *To Adjust Auger Control Cable*.
10. Remove fuel cap and replace cowl.
11. Replace fuel cap.



TO ADJUST BELT FINGER

With the auger clutch engaged, there should be 1/32 to 1/16" (1-1.6 mm) clearance between the belt finger and drive belt.

To adjust:

1. Loosen bolt holding the belt finger.
2. Rotate the belt finger around the bolt to the correct position.
3. Tighten bolt.

TO ADJUST AUGER CONTROL CABLE



WARNING: IMPROPER ADJUSTMENT could result in death or serious injury. **AUGER BRAKE MUST DISENGAGE** when clutch is engaged. **BRAKE MUST STOP AUGER WITHIN 5 SECONDS** of releasing auger clutch bail.

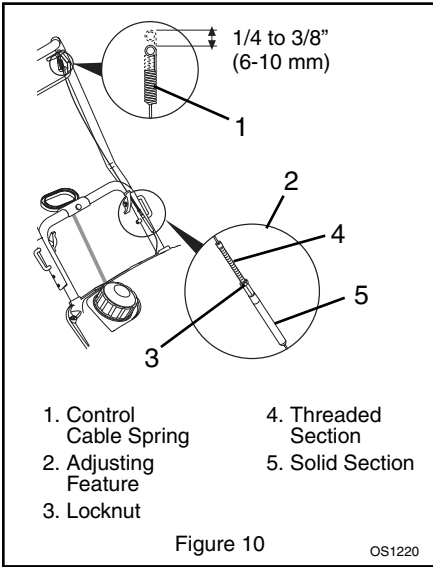
There must ALWAYS be some slight noticeable slack in the auger control cable when the auger is disengaged. This allows Extension Spring to pull idler Arm/Brake, which applies the brake to the Belt.

The auger clutch bail should travel 6-3/4 to 7-1/4" (17.1-18.4 cm) before contacting handlebar.

A properly adjusted clutch must extend control cable Spring approximately 1/4 to 3/8" (6-10 mm) before clutch bail contacts handlebar (Figure 10).

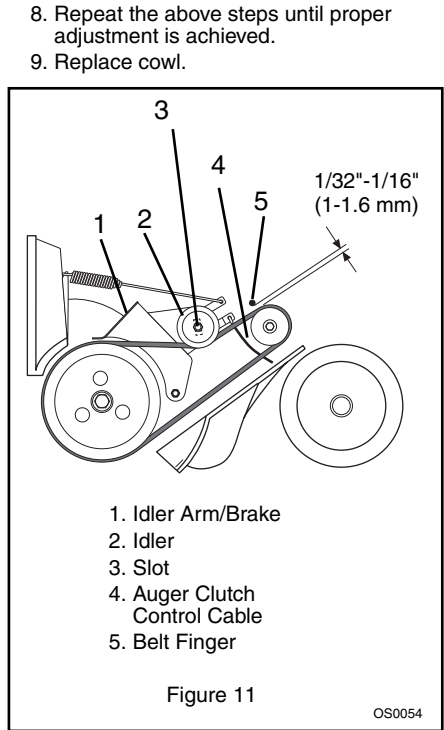
1. Shut off engine.
2. Loosen locknut on threaded section of control cable adjusting feature.
3. Turn solid section to provide some slight, noticeable slack in cable.
4. Hold the solid section with a pliers and gently, with a small wrench, tighten the locknut.

IMPORTANT: If there is still no resistance, the idler position must be adjusted. See *To Adjust Idler Position*.



TO ADJUST IDLER POSITION

The idler must be as close as possible to the drive belt when the auger clutch is disengaged, but not so close that it causes auger rotation.



WARNING: ROTATING PARTS can cut off body parts. Keep hands and feet away. Loose clothing, long hair or scarves can get caught in rotating parts and cause death or serious injury.

To adjust the idler position:

IMPORTANT: If adjustment cannot be achieved, the Drive Belt must be replaced.

1. Shut off engine, allow to cool, and remove cowl.
2. Ensure control cable has some slight, noticeable slack when auger clutch is disengaged (bail in lowered position).
3. Ensure belt finger is properly adjusted. See *To Adjust Belt Finger*.
4. Loosen idler hardware, reposition idler along slot in idler arm, and tighten hardware (Figure 11).
5. Check for proper extension of control cable spring. See *To Adjust Auger Control Cable*.
6. Start engine and ensure auger does not rotate when auger clutch is disengaged.
7. Shut off engine.

STORAGE

UNIT



WARNING: FLAMMABLE FUEL and its EXPLOSIVE VAPORS can cause death or serious injury. DO NOT store unit inside a building with fuel in the fuel tank where any ignition sources are present. Drain fuel outdoors away from any ignition source. Allow engine to cool before storing in any enclosure. Only use approved fuel containers.

Run with auger clutch engaged a few minutes after each use to free unit of any loose or melting snow.

Inspect unit for visible signs of wear, breakage or damage. Order any parts required and make necessary repairs to avoid delays when beginning use again.

Keep all nuts, bolts and screws properly tightened and know unit is in safe working condition.

ENGINE

When storing unit for extended periods of time, remove all fuel from tank and carburetor (run dry). Refer to Engine Manual.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Engine will not crank	<ol style="list-style-type: none"> 1. Ignition switch not in "RUN" position. 2. Bad starter or wire connection. 3. Electrical problem 	<ol style="list-style-type: none"> 1. Turn key to "RUN" position. 2. Check connections. See your Dealer. 3. Check wiring for wear, damage or poor connections. See your Dealer.
Engine will not start	<ol style="list-style-type: none"> 1. Ignition switch not in "RUN" position. 2. Bad starter or wire connection. 3. Engine ignition problem. 4. Fuel tank is empty. 	<ol style="list-style-type: none"> 1. Turn key to "RUN" position. 2. Check connections. See your Dealer. 3. See Engine Manual. 4. Fill tank with properly mixed fuel. Prime engine, set choke for easier start.
Engine stops	<ol style="list-style-type: none"> 1. Improperly mixed or contaminated fuel. 2. No spark. 	<ol style="list-style-type: none"> 1. Use only clean, properly mixed fuel. If necessary, drain tank and refill with new fuel mixture. 2. Check spark plug and connecting wire.
Discharge chute will not turn	<ol style="list-style-type: none"> 1. Chute gears are frozen. 	<ol style="list-style-type: none"> 1. Move unit to a warm area to thaw.
Auger will not turn or throw snow	<ol style="list-style-type: none"> 1. Auger is frozen in place. 2. Ice or debris is obstructing auger. 3. Auger control cable out of adjustment. 4. Drive belt slipping; idler out of adjustment. 	<ol style="list-style-type: none"> 1. Move unit to a warm area to thaw. 2. With engine off, and auger disengaged, check for obstructions and remove. 3. Adjust cable. See <i>Service and Adjustments</i>. 4. Adjust idler. See <i>Service and Adjustments</i>.

SPECIFICATIONS

Model Number	938400
Description	522
Engine - Tecumseh	HSK-850-8310C
Engine Power - HP (kW) - 2 Cycle	5 (3.73)
Engine Operating Fast Idle Speed - RPM	3600 ± 150
Engine Displacement - cu. in. (cc)	8.46 (139)
Fuel	See Engine Manual for type and grade
Fuel to Oil Mix	50:1
Fuel Tank Capacity - qt (liters)	1.2 (1.1)
Fuel Filter Neck Inside Dia. - in (cm)	2.8 (7.1)
Electric Start	120V
Snow Clearing Width - in (cm)	22 (56)
Snow Throwing Distance - ft (meters)	3-35 (0.9-10.6)
Chute Rotation Angle	220°
Chute Inside Dia - in (cm)	6.0 (15.2)
Handlebars Max. Extended Height - in (cm)	40.8 (104)
Minimum Folded Height - in (cm)	25.8 (65.5)
Length - in (cm)	43.2 (110)
Minimum Folded Length - in (cm)	34.5 (87.6)
Width - in (cm)	22 (56)
Weight - lbs (Kg)	80 (36.3)
Auger Dia. - in (cm)	9.0 (23)
Auger Speed - RPM	1310
Drive Belt	3L Section, Single "V" Construction, Raw Edge Kevlar Cord
Wheel Size - in (cm)	7.0 x 1.5 (18 x 3.8)

ACCESSORIES

See your authorized Ariens Dealer to add these optional accessories.

73800300	Discharge Chute Crank Kit
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SERVICE PARTS

Be sure to always use genuine Ariens parts to keep your unit running like new.

Part no.	Qty	Description
07236300	1	Drive Belt
03810600	1	Scraper Blade



Ariens Company
655 West Ryan Street
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Brillion, WI 54110-0157
1-866-622-5633
Fax 920-756-2407
www.ariens.com

2 Year Limited Warranty

Ariens Company warrants to the original purchaser that consumer products manufactured by Ariens Company will be free from defects in material and workmanship for a period of two (2) years after the date of purchase, and will repair any defect in material or workmanship, and repair or replace any defective part, subject to the conditions, limitations and exclusions set forth herein.

The two year duration of this warranty applies only if the product is put to ordinary, reasonable, and usual personal, family, or household uses. If the product is put to any business, commercial, or industrial use such as, but not limited to, commercial landscaping, mowing or snow removal services, or golf course or park maintenance, or agricultural or farmstead use, then the duration of this warranty is ninety (90) days after the date of purchase, or one (1) year after the date of purchase if the product is labeled as a Professional/Commercial Product. If any product is rented or leased, then the duration of this warranty is ninety (90) days after the date of purchase.

This warranty is subject to the following conditions, limitations, and exclusions:

This warranty is valid only if the following conditions are met:

- The warranty registration card must be completed and returned to Ariens Company.
- The purchaser must perform maintenance and minor adjustments explained in the owner's manual.
- The purchaser must promptly notify Ariens Company or an authorized Ariens service representative of the need for warranty service.

This warranty is subject to the following limitations:

- The purchaser must transport the product to and from the place of warranty service.
- Warranty service must be performed by an authorized Ariens service representative. (To find an authorized Ariens service representative, contact Ariens Company at the number or address above.)
- Batteries are warranted only for a period of twelve (12) months after date of purchase, on a prorated basis. For the first ninety (90) days of the warranty period, a defective battery will be replaced free of charge. If the applicable warranty period is more than 90 days, Ariens Company will cover the prorated cost of any defective battery, for up to twelve(12) months after the date of purchase.

The following items are not covered by this warranty:

- Engines and engine accessories are covered only by the warranty made by the engine manufacturer, and are not covered by this warranty.
- If the product is equipped with a Peerless gearbox and/or transmission, the gearbox and/or transmission are covered only by the warranty made by Peerless, and are not covered by this warranty.
- Parts that are not genuine Ariens service parts are not covered by this warranty.
- Shoes, runners, scraper blades, shear bolts, string trimmer height guide, mower blades, mower vanes, trimmer line, headlights, light bulbs, are not covered by this warranty.
- Any defect which is the result of misuse, alteration, improper assembly, improper adjustment, neglect, or accident, is not covered by this warranty.
- Products which were not purchased in the United States, Puerto Rico, or Canada are not covered by this warranty. In all other countries, contact place of purchase.

LIMITATION OF REMEDY AND DAMAGES

Ariens Company's liability under this warranty, and under any implied warranty that may exist, is limited to repair of any defect in workmanship, and repair or replacement of any defective part. Ariens Company shall not be liable for incidental, special, or consequential damages (including lost profits). Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company makes no warranty, express or implied, other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for particular purpose, or any other implied warranty, applies to Ariens Company, then any such implied warranty is limited to the duration of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation 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.

Form: MLW2-121300



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