

Ariens

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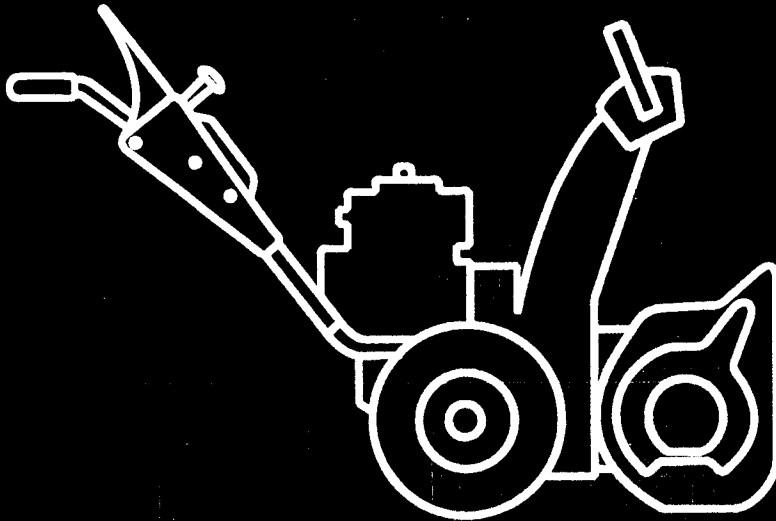
Series

▲ SAFETY MESSAGE ▲

The product for which you have requested information or replacement parts is not a current product. The replacement models incorporate product designs, safety features, safety instructions or warnings which represent the latest "State Of The Art" developments. For your safety and those around you please contact your nearest Ariens/Gravely Dealer for a demonstration of the current product safety provisions and features.

Sno-Thro[®]

Owner's Manual



Model

Contents

Model 924050 (ST 824) 8 HP W/24" Attachment Serial No. 064101 and up	Model 824006 (ST 24) 24" Sno-Thro Serial No. 039701 and up
Model 924051 (TT 8) 8 HP Tractor Serial No. 000601 and up	Model 824007 (ST 24) 24" Sno-Thro Serial No. 036601 and up
Model 924071 (ST 1136) 11 HP W/36" Attachment Serial No. 002501 and up	Model 824008 (ST 32) 32" Sno-Thro Serial No. 019201 and up
Model 924073 (ST 1032) 10 HP W/32" Attachment Serial No. 007901 and up	
Model 924075 (ST 724) 7 HP W/24" Attachment Serial No. 000101 and up	

ATTACHMENTS

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This manual covers the above models. Specific Model and Serial Numbers of your equipment are on a label on units frame. Record numbers below and use them whenever parts or service are required.

Model Number - Sno-Thro_____
Serial Number - Sno-Thro_____
Serial Number - Engine_____

NOTE: All references to "Left", "Right", "Front" and "Rear" are given from operator's position.

A Message to Ariens Customers...

Welcome to the world of Ariens equipment. We are pleased that you have selected Ariens and sincerely believe you have purchased the best equipment available. The care you give your new Ariens equipment will determine the satisfaction and service life you will obtain from it. Use this manual and the engine manual supplied, as your guide. By observing the instructions and suggestions in these manuals, your Ariens equipment will serve you well for many years.

Your Ariens dealer will be happy to supply any service or advice which may be required to keep your Ariens equipment operating at peak efficiency. He stocks genuine Ariens parts and lubricants; manufactured with the same precision and skill as the original equipment. His factory trained staff is kept well informed on the best methods of servicing

Ariens equipment and is ready and able to serve you. If engine repairs or services are required, they can be obtained from an Ariens dealer or from an authorized engine manufacturer's service center. If service is required, be prepared to supply the service person with the Model Number and Serial Number of the equipment and the engine, as well as a full description of the problem encountered.

NOTE: The descriptions and specifications contained in this manual were in effect at the time the manual was approved for printing. Ariens company reserves the right to discontinue models without notice and without incurring obligation. The equipment described within this manual may not be identified as either standard or optional and the various illustrations may not all be applicable to your particular unit. If you have questions, always check with your Ariens dealer.

Safety Alert Symbol And Notations

The following safety notations are used throughout this manual to call attention to special information or operating procedures. Understand the message in each notation and be alert to unsafe conditions and the possibility of personal injury.

NOTE: A **NOTE** points out general reference information regarding proper operation and maintenance practices.

IMPORTANT: An **IMPORTANT** statement indicates specific procedures or information that is required to prevent damage to the machine or its attachments.



This safety alert symbol is used to attract your attention! **PERSONAL SAFETY IS INVOLVED!** When you see this symbol – **BECOME ALERT – HEED ITS MESSAGE.**



CAUTION: A **CAUTION** identifies safe operating practices or indicates unsafe conditions that could result in personal injury.



WARNING: A **WARNING** describes a condition where failure to follow the instructions could result in severe personal injury.



DANGER: A **DANGER** designates a condition where failure to follow instructions or heed warning will most likely result in serious personal injury or death.

Safety Precautions

TRAINING

Read and understand this Owner's Manual and engine instructions before operating unit. Be thoroughly familiar with controls and proper use of equipment. Know how to stop unit and disengage controls quickly in an emergency.

Use only attachments or accessories designed for your unit. See your Ariens Dealer for a complete list of recommended attachments or accessories.

Understand and follow each Warning, Caution, Danger and instruction decal installed on equipment.

NEVER allow children to operate equipment. **DO NOT** allow adults to operate unit without proper instruction.

Keep the area of operation clear of all persons, particularly children and pets.

PREPARATION

The following safety notations are used throughout this manual to call attention to special information or operating procedures. Understand the message in each notation and be alert to unsafe conditions and the possibility of personal injury.

Thoroughly inspect and clear work area of objects which might be picked up and thrown. Remove all doormats, sleds, boards, wires, bones and other foreign objects.

Wear adequate winter outer garments and footwear which will improve footing on slippery surfaces.

Wear eye protection such as safety goggles to protect eyes from objects that may be thrown from machine.

DO NOT wear loose clothing or scarves that may get caught in rotating parts of unit.

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

NEVER allow smoking materials, sparks or flame (match, pilot light, etc.) near equipment or fuel container.

Check fuel supply before starting engine. Fill fuel tank outdoors with extreme care; **DO NOT** fill fuel tank indoors, when engine is running or while engine is still hot from operation. Replace fuel cap securely and wipe up spilled fuel before starting engine.

Adjust auger/impeller housing height to clear gravel or crushed rock surfaces.

Safety Precautions (Continued)

NEVER attempt to make any adjustments to unit while engine is running (except where specifically recommended).

Disengage all clutches and shift into neutral before starting engine (motor).

Use grounded three-wire plug-in for electric starter, if so equipped.

OPERATION

DO NOT put hands or feet near or under rotating parts. Keep clear of discharge opening at all times.

Keep equipment in good condition: Keep all shields in place and safety devices operating properly.

Open doors if engine is run in garage, exhaust fumes are dangerous. DO NOT run engine in an enclosed area.

Operate equipment only when there is good visibility and light.

Always be sure of your footing (Walk, never run). Exercise caution to avoid slipping or falling, especially when operating in reverse.

DO NOT operate unit at high transport speeds on slippery surfaces. Use care when backing.

Disengage power to auger/impeller when unit is being transported or is not in use.

DO NOT overload machine capacity by attempting to clear snow at too fast a rate.

NEVER direct discharge of material toward bystanders nor allow anyone in front of equipment while unit is in operation. Be familiar with area of operation.

Stay alert for holes, rocks, roots and hidden hazards in area of operation.

Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hazards and traffic. DO NOT operate Sno-Thro near glass enclosures, automobiles, window wells, drop-offs, etc., without proper adjustment of discharge direction and angle.

DO NOT clear snow across face of slopes. Exercise extreme caution when changing direction on slopes. DO NOT attempt to clear steep slopes.

Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug (keep wire away from spark plug to prevent accidental starting) before leaving operator's position for any reason such as unclogging auger/impeller housing, discharge chute, when making any repairs, adjustments, inspections or cleaning unit.

DO NOT touch equipment parts which might be hot from operation. Before attempting to maintain, adjust or service allow such parts to cool.

If equipment vibrates abnormally disengage attachment, stop engine at once, and remove key. Abnormal vibration is a warning of trouble. Repair any damage before restarting unit.

Stop engine and remove wire from spark plug after striking a foreign object. Thoroughly inspect Sno-Thro for any damage and repair damage before restarting and operating unit.

Run unit a few minutes after throwing snow to prevent freeze-up of auger/impeller in housing.

Take all possible precautions when leaving unit unattended, such as disengaging power to attachment, stopping engine and removing key to prevent unauthorized use.

MAINTENANCE AND STORAGE

DO NOT change engine governor setting or over-speed engine.

Keep all nuts, bolts and screws tight and be sure equipment is in safe working condition. Check shear bolts and all hardware at regular intervals.

Refer to Owner's Manual for important instructions if Sno-Thro is to be stored for an extended period.

Never store equipment with fuel in tank inside a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.

Maintain or replace safety and instruction decals, as necessary.


Safety Decals

⚠ WARNING

MUFFLER & ADJACENT AREAS MAY EXCEED 150°F.

Attention
When using summer attachments, remove heater box and install air cleaner.

Engine Instructions

CAUTION
 For your personal protection read all safety notes in engine owner's manual


OPERATION
For detailed lubrication starting & operating instructions see engine owner's manual & equipment mfr's instructions

LUBRICATION

Summer	SAE 30 Oil
Winter	SAE 5W-30 Oil

⚠ DANGER

ROTATING PARTS
Stop engine & remove ignition key before clearing.



⚠ DANGER

ROTATING PARTS
Keep clear of auger while engine is running.

SAFETY INSTRUCTIONS

AVOID POTENTIAL HAZARDS

1. Read owners manual for operating and safety instructions.
2. Observe all labels and instructions.
3. Stop engine, remove ignition key and wait for all movement to stop before unclogging or servicing machine.
4. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
5. Keep the area of operation clear of all persons, especially children.
6. Never direct discharge at bystanders or allow anyone in front of unit.
7. Keep machine properly maintained and serviced with all shields, guards, and protective devices in place.

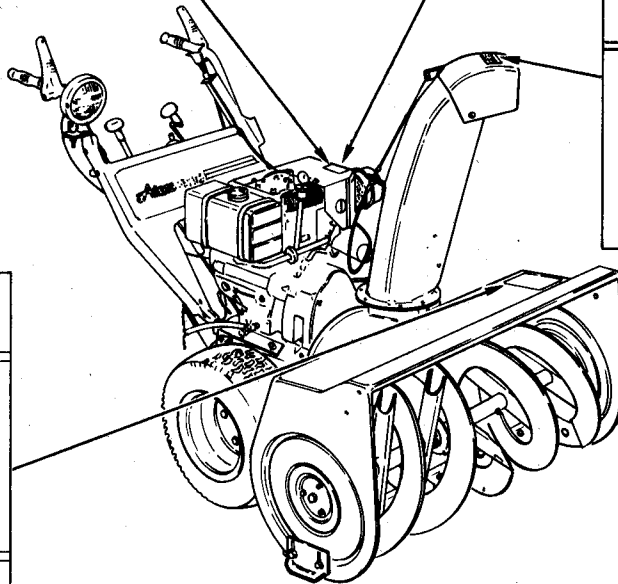
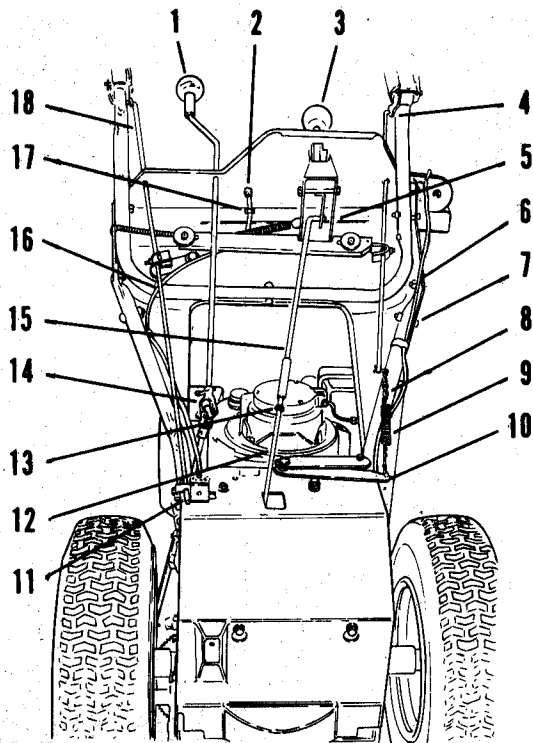


Figure 1: Safety Decal Locations

Dealer Preparation For Operation



1. Chute Crank
2. Key Switch
3. Speed Selector Lever
4. Attachment Clutch Rod
5. Cotter Pin
6. 5/8" Carriage Bolt
7. 1-1/2" Carriage Bolt
8. Chain
9. Spring
10. Attachment Clutch Arm
11. Traction Clutch Arm
12. Lower Shift Rod
13. Locknut
14. Universal Joint
15. Upper Shaft Rod
16. Wiring Harness
17. Clip
18. Traction Clutch Rod

Figure 2: Dealer Preparation

Customer Note: Your Ariens Dealer is expected to complete these preparation steps and review important information, including this manual, with you before or upon delivery of machine or attachment.

The preparation information is included here so that you and your dealer may review it together.



WARNING: Failure to follow all instructions could result in personal injury and/or damage to Sno-Thro. Remove wire from spark plug before attempting any adjustment or assembly procedures.

HANDLEBAR

Install lower handlebars on frame studs using 3/8" Lock washers and Nuts. Chute crank bracket is positioned on left rear stud over handlebar.

NOTE: DO NOT tighten hardware at this time.

Secure upper handlebar assembly to lower handlebars with carriage bolts and locknuts (1-1/2" carriage bolts in bottom holes, and 5/8" carriage bolts in top holes). On Model ST 1136 install remote con-

trol deflector assembly bracket to left handlebar using existing hardware.

NOTE: For easier assembly it may be necessary to clamp handlebar panel and lower handlebars for installation of short carriage bolts. (Protect clamped surfaces to avoid marring paint).

HEADLIGHT

On models equipped with standard headlight, install headlight bracket (level with floor) on right handlebar and headlight to bracket with hardware provided.

NOTE: Two washers go between bracket and handlebar at top hole.

Position headlight wire harness behind name plate, along handlebar and plug into alternator connection on right side of engine under fuel tank. Secure to handlebar with two clips.

Tighten all handlebar hardware securely.

Dealer Preparation For Operation (Continued)

DISCHARGE CHUTE

Remove mounting clips from discharge chute, oil and position chute on auger/impeller housing. Secure discharge chute with mounting clips and hardware.

NOTE: Chute must rotate freely.

DEFLECTOR

On ST 1136 remove one jam nut from deflector cable, route cable through retainer mounted on engine and chute bracket. Replace jam nut and secure cable threaded connector (from left side) to deflector bracket with cotter pin. Position deflector in its lowest position with cable control pushed full in and tighten jam nuts on chute bracket.

NOTE: Check deflector movement to highest position. Adjust jam nuts and/or threaded connector if necessary to obtain full travel.

CHUTE CRANK

Slide chute crank down through hole in handlebar panel, into universal joint and secure with hairpin.

IMPORTANT: Chute should rotate easily, if not refer to Chute Crank in Adjustments Section, page 14.

SPEED SELECTOR

Place Speed Selector in Reverse (R) position. While pulling lower rod up to its maximum up position, turn upper shift rod into lower rod until end of upper rod lines up with hole in shift handle. Insert upper rod into shift handle, install cotter pin and tighten lock nut on shift rod.

ATTACHMENT CLUTCH

Secure clutch chain to attachment clutch rod using cotter pin. Hook spring on clutch lever, pull clutch chain taut and connect chain link to spring with both clutch lever and clutch arm in disengaged position. Spring should expand approximately 3/8" beyond compressed state when clutch is engaged but allow clutch arm at lower end to return to its maximum down position when clutch is disengaged.



WARNING: Attachment Brake must function properly or severe personal injury could result.

Check attachment brake and clutch for proper function per instructions on page 14.

TRACTION CLUTCH

Install traction clutch rod into rod adaptor. Move traction clutch lever up and forward as far as possible and secure rod to adaptor with setscrew.

IMPORTANT: With traction clutch engaged, clutch arm should be within 1/16" of top of slot in frame.

NOTE: To adjust traction clutch refer to Adjustments Section page 15.

INTERLOCK



WARNING: Failure of interlock, together with improper usage or adjustment of unit, could result in severe personal injury.

Both clutches must operate freely. Check interlock action by pressing down (engaging) both clutch levers. Remove hand from attachment clutch lever, attachment clutch should remain engaged until traction clutch lever is released then both clutches must disengage. To adjust refer to Adjustments Section page 14.

RUNNERS

On ST 1032, 1136 install runners on both sides of blower housing with carriage bolts, washers and lock nuts (install with heads inside of housing; short carriage bolts go in front holes, long in rear).

KEY SWITCH

Route key switch wire harness as shown in Figure 2, secure with clips and connect wires to switch terminals. (Either wire may be connected to either switch terminal).

IMPORTANT: Position wire harness so that chute crank and/or clutch rods do not rub against it, a short may develop.

AUGER GEARCASE

Check oil level in auger gearcase. Refer to Lubrication/Maintenance Section.

Dealer Preparation For Operation (Continued)

TIRE PRESSURE

Check tire pressure and adjust to 12 PSI for operation. 20 PSI after tire chains (if used) are installed.

ENGINE

On ST 1136 remove oil drain plug from right side of engine base, install reducer, elbow and tighten elbow until outlet is facing to rear of machine. Secure drain hose to elbow with clamp. Remove and discard plastic cover on oil filler tube and add oil according to engine manufacturer's instructions. Insert dipstick and check oil level. Secure throttle control knob onto rod on top of engine. Remove protective covers, install spark plug and fuel cap.

IMPORTANT: Engines on all Sno-Thro models are shipped without oil in crankcase. Refer to Engine Instruction Manual for proper type oil and crankcase capacity.

FUEL



WARNING: Gasoline is highly flammable and its vapors are explosive. Handle with care. Use an approved (Red) gasoline container.



CAUTION: Check function of all controls before starting engine. All safety devices and guards must be in position and operating properly or personal injury may result.

Fill fuel tank with unleaded gasoline. Tank capacity is 1 gallon.

REGISTRATION

Complete Sno-Thro Prewarranty Registration Form and mail original copy to Ariens Company.

Warranty is registered under model and serial number found on plate attached to frame near engine.

DELIVERY

Using the Owner's Manual instruct the customer on controls and operation of unit. Emphasize safety and discuss the Safety Precautions.

Explain recommended lubrication and maintenance of the unit.

IMPORTANT: Remind customer to observe break-in requirements and change engine oil after first five (5) hours of operation.

Advise customer on adjustments, demonstrate how to put on and remove attachments if any.

Explain Ariens Company, Limited Warranty Policy, fill out Original Purchaser Registration Card, Parts and Repair Manuals Order Form and return to Ariens Company. Place Model and Serial Number on page (i) of this manual.

Give customer his Owner's Manual and engine manufacturer instructions. Advise him to thoroughly read and understand them.

Operation

PRE-STARTING



WARNING: Wear adequate winter outer garments, footwear which will improve footing on slippery surfaces and eye protection such as safety goggles. **DO NOT** wear loose clothing or scarves that may get caught in rotating parts of unit.



CAUTION: Make sure all hardware is tight, all safety devices in place and all adjustments correct.

IMPORTANT: Check impeller to be sure it is not frozen by removing spark plug wire, engaging attachment clutch and pulling rewind starter. If impeller is frozen, move Sno-Thro to a heated area and thaw to prevent possible damage to unit.

NOTE: 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.

Check that engine crankcase oil is full using dipstick. Refer to Lubrication and Maintenance Section.

FUEL



WARNING: Gasoline is highly flammable and must be handled with care. Never fill tank when the engine is running or hot from operation. **DO NOT** allow open flame, matches or smoking in area. **DO NOT** overfill. Wipe up any spills. Use approved (Red) gasoline container.

Check fuel supply. Fill gasoline tank with good grade of fresh unleaded gasoline (leaded if unleaded is unavailable). **DO NOT** use premium, gasahol or mix gasoline with oil.

NOTE: To prevent foreign particals from entering tank while filling; wipe snow, dust, dirt and debris from around cap before removing.

INTERLOCK



CAUTION: If Interlock does not operate properly, repair or adjust interlock before operating unit.

Check interlock by pressing down on clutch levers (engaging both clutches). Remove hand from attachment clutch lever, attachment clutch should remain engaged until traction clutch lever is released then both clutches must disengage. Refer to Adjustments Section page 14, to adjust if necessary.

DIFFERENTIAL LOCK

To engage differential lock (ST 824, 1032, 1136) pull and turn knob to "IN" position and release (it will snap in when positioned correctly). To resume differential action, for transport etc., pull and turn knob to "OUT" and release.

With differential locked, power is applied equally to both wheels. Engage differential lock (located in left wheel hub) for best traction when throwing snow.

RUNNERS



CAUTION: Adjust auger/impeller housing height to clear gravel or crushed rock surfaces.

Runners should be adjusted as conditions require. Raising or lowering runners controls distance scraper blade is held above surface being cleared.

When operating machine on gravel surface, lower runners so that housing will not pick up gravel. On concrete, blacktopped or packed down snow surfaces raise runners so that scraper blade scrapes clean. To reduce tendency of housing to ride up over heavy wet or hard-packed snow, remove runners and re-install with their narrow edge down.

Position Sno-Thro on a flat level surface. Adjust runners by inserting a spacer of desired thickness under center of scraper blade, loosen hardware, slide runners to flat surface and retighten hardware.

NOTE: Above method keeps housing level by adjusting runners equally. Uneven runners make machine difficult to steer and results in uneven clearing.

CHUTE DEFLECTOR

Position Deflector at desired height. **DO NOT** throw snow any higher than necessary. (Remote control on ST 1136, turn knob 1/4 turn to unlock, push in or out to desired height and turn knob to lock deflector in position).

Operation (Continued)

DISCHARGE CHUTE



DANGER: DO NOT put hands or feet near or under rotating parts. Keep clear of discharge opening at all times.



WARNING: NEVER direct discharge of material toward bystanders nor allow anyone in front of equipment while unit is in operation. Be familiar with area of operation.

IMPORTANT: DO NOT operate Sno-Thro near glass enclosures, automobiles, window wells, drop-offs etc., without proper adjustment of discharge direction and angle.

Direct snow away from area to be cleared and with direction of wind whenever possible. Chute rotates 230 degrees.

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

STARTING



CAUTION: DO NOT attempt to start your engine at this time. Thoroughly read this entire Owner's Manual and engine manufacturers operating instructions first.

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

ENGINE IGNITION



WARNING: If equipment vibrates abnormally disengage attachment, stop engine at once, and remove key. Abnormal vibration is a warning of trouble. Repair any damage before restarting unit.



CAUTION: Turn Key "OFF" and remove it before attempting any maintenance, adjustment or leaving unit unattended.

To start engine, place Key in Switch and turn it clockwise to "RUN" position.

THROTTLE

Throttle controls engine speed. To increase engine speed (Pull-Up), to decrease (Push-Down) throttle. Set throttle at part-throttle position for cold weather starts and at fast position for normal operation or warm starts.

CHOKE

Move choke control to "Choke" position. When engine has started, open choke gradually.

NOTE: A warm engine requires less choking than a cold engine. If fuel drips out of carburetor while trying to start engine, engine is over-choked. Pull starter several times with choke open.

PRIMER BULB

On ST 724, 824 and 1032 push primer bulb two or three times when engine is cold. When temperatures go below -15° Fahrenheit additional priming may be needed.

REWIND STARTER



WARNING: To prevent discharge toward operators starting position, always turn discharge chute straight ahead for starting unit.

Stand to right of unit and grasp starter handle and pull rope out slowly until it pulls harder, this is compression stroke, let rope rewind slowly. Then pull rope with a rapid continuous full arm stroke. Let rope rewind slowly.

IMPORTANT: DO NOT let starter handle snap against starter.

Repeat above instructions until engine starts. (Refer to engine manufacturers instructions).

After engine has started and choke has been opened, set throttle at its fast position.

NOTE: If Sno-Thro is equipped with electric starter, refer to instructions provided with starter accessory.

Operation (Continued)

OPERATION

HEADLIGHT



CAUTION: Operate equipment only with good visibility and light.

NOTE: Headlight is standard equipment on ST 1032 and 1136. Headlight with add on alternator is optional for ST 724 and 824.

Headlight operates only when engine is running. Adjust headlight by loosening hardware, position light and tighten hardware.

NOTE: Lamp remains "ON" at all times for longer lamp life. Lamp is more sensitive to fatigue failure when unlit than when lit.

SPEED SELECTOR



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

Speed Selector controls units forward speed and reverse motion. Moving Speed Selector forward increases forward travel speed. Moving it rearward decreases forward motion and/or engages reverse motion.

IMPORTANT: Position Speed Selector in notch of desired speed. Forward speed can be changed without declutching. DO NOT change motion from forward to reverse with clutch engaged.

NOTE: Low speed (1) is recommended for removing deep or hard-packed snow.

WHEEL DRIVE CLUTCH



CAUTION: Stay alert for holes, rocks, roots and hidden hazards in area of operation. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.

Pressing down on left clutch lever engages wheel drive for propelling unit. Releasing clutch lever stops forward or reverse movement.



CAUTION: Disengage power to auger/impeller when unit is being transported or is not in use. DO NOT operate unit at high transport speeds on slippery surfaces. Use care when backing.

NOTE: When transporting unit to or from area to be cleared, press down on handlebars enough to raise front of Sno-Thro slightly off surface and engage wheel drive clutch without engaging attachment drive clutch.

ATTACHMENT CLUTCH



CAUTION: Stop engine and remove wire from spark plug after striking a foreign object. Thoroughly inspect Sno-Thro for any damage and repair damage before re-starting and operating unit.

Pressing down on right attachment clutch lever engages attachment and releasing it disengages attachment unless wheel drive clutch lever is depressed. Both clutch levers must be released to insure stopping of attachment drive.

NOTE: Attachment clutch should be engaged before wheel drive clutch when attempting to throw snow.

To clear an area, run Sno-Thro in an overlapping series of paths. For large areas start in middle and blow snow to each side so you do not have to move it more than once.

STOPPING



WARNING: Take all possible precautions when leaving unit unattended, such as disengaging power to attachment, stopping engine and removing key to prevent unauthorized use.

IMPORTANT: Run attachment a few minutes after throwing snow to prevent freeze-up of auger/impeller.

Release attachment clutch, throttle down and turn engine ignition key to "OFF".

Lubrication And Maintenance

Ariens Dealers will provide any service which may be required to keep your Sno-Thro operating at peak efficiency. Should engine service be required, it can be obtained from an Ariens dealer or an authorized engine manufacturer's service center.



WARNING: Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug (keep wire away from spark plug to prevent accidental starting) before any lubrication or maintenance procedures.



CAUTION: DO NOT touch engine or Sno-Thro drive parts which are hot from operation. Allow such parts to cool before servicing unit.

ENGINE OIL

CHECKING

The engine crankcase oil should be checked daily or every 5 hours of operation. Oil level **MUST** be maintained in safe operating range on dipstick at all times or engine damage will result.

To check oil, park Sno-Thro on a flat level surface. Wipe all debris from around dipstick, remove it and wipe oil off. Screw dipstick assembly firmly but slowly until cap bottoms on tube. Remove dipstick and observe oil level. If low add clean fresh oil, of same type and viscosity as is in engine, to bring oil level to Full (F) mark (per engine manufacturer's instructions).

IMPORTANT: DO NOT overfill. Level must not exceed full (F) mark.

CHANGING

IMPORTANT: Change oil after first 5 hours of operation, thereafter change oil every 25 hours of operation (more often in dusty, dirty conditions). See Engine Manufacturer's Instructions for proper type, viscosity and amount required.

NOTE: Run engine just prior to changing oil. Oil will flow more freely and carry away more contamination when warm.

Drain crankcase by removing oil drain plug (open petcock on ST 1136). When oil has drained replace plug (close petcock on ST 1136) and refill engine crankcase with new oil of proper grade (per engine manufacturer's instructions). Recheck oil level with dipstick.

ENGINE COOLING

The engine is air cooled. Air must circulate freely around engine from air intake screen, over cooling fins on cylinder head and block to prevent overheating.

Every 100 operating hours or yearly (more often if conditions require) remove cooling shrouds and clean cooling fins. Also clean external surfaces of your engine of dust, dirt and oil deposits which can contribute to improper cooling.

IMPORTANT: DO NOT operate engine with cooling shrouds removed - this will cause overheating and engine damage.

SHEAR BOLT REPLACEMENT



WARNING: Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug before leaving operator's position and attempting to maintain or inspect auger.

IMPORTANT: Use only Ariens Shear Bolts for replacement. Use of any other type of shear bolt may result in severe damage to unit.

Occasionally an object may enter auger/impeller housing and jam auger, breaking shear bolts which secures auger to shaft. This allows auger to turn freely on shaft preventing damage to gear drive.

To replace shear bolt, slide auger outward against roll pin and align hole in shaft with hole in auger (holes in shaft for roll pins and shear bolts line up). Drive shear bolt through hole (if shear bolt was broken this will drive remaining part from shaft) and secure with nut.

Lubrication And Maintenance (Continued)

ATTACHMENT DRIVE BELT



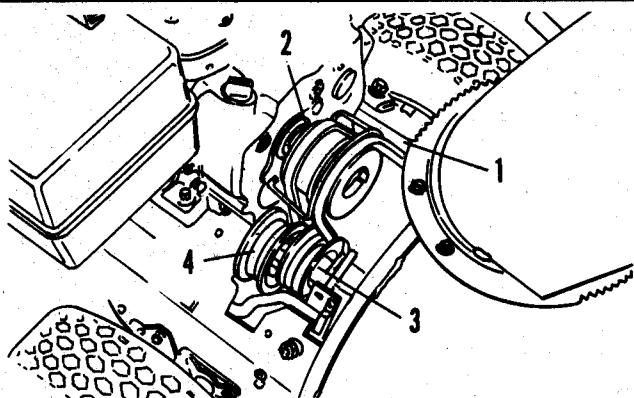
WARNING: Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug before attempting any repairs, adjustments, inspections or cleaning unit.



WARNING: Gasoline is highly flammable and its vapors are explosive. Handle with care. Never allow smoking materials, sparks or flame (match, pilot light, etc.) near equipment or fuel container.



CAUTION: When unit is tipped up onto housing remove enough fuel so that no spillage will occur.



1. Attachment Drive Belt 3. Attachment Belt Idler
2. Traction Drive Belt 4. Traction Belt Idler

Figure 4: Drive Belts

To separate housing from unit, remove two screws securing belt guard to unit and remove belt guard. Remove hairpin from chute crank assembly at "U" joint and separate.

Remove attachment drive belt from engine pulley (it may be necessary to turn engine pulley using rewinding starter).

IMPORTANT: To avoid bending bottom cover, when tipping unit apart, support handlebars firmly or tip unit up on housing and remove bottom cover by removing four cap screws before separating unit.

Remove cap screws securing housing to frame (one on each side). Tip housing and frame apart on pivot pin.

Remove attachment drive belt from pulley (hold brake away from belt).

Replace attachment drive belt in reverse order making sure pulleys align. If alignment is necessary, loosen attachment sheave set screws, reposition sheave and retighten set screws.



WARNING: When clutch is engaged, impeller brake disengages. If brake is not 1/16 to 1/8" from belt when disengaged, refer to Adjustments Section page 14.

TRACTION DRIVE BELT

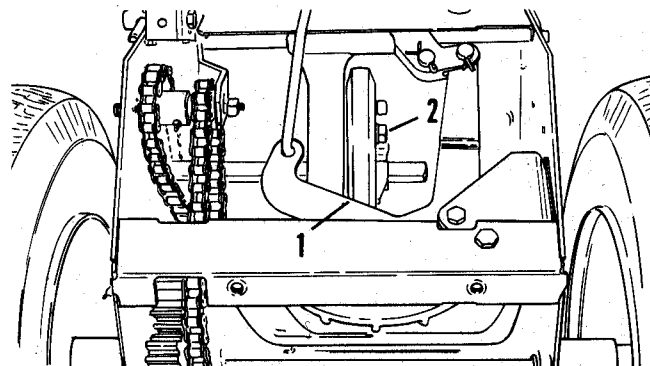
NOTE: Housing and frame must be tipped apart to change traction drive belt. (See Attachment Drive Belt above).

Pull idler away from belt and remove belt from idler pulley, engine and driven pulley (it may be necessary to turn engine pulley using rewind starter).

NOTE: To gain clearance engage traction clutch and if necessary pull back attachment idler arm clevis pin.

Replace traction drive belt in reverse order making sure pulleys align. If alignment is necessary, loosen engine pulley set screws, reposition pulley and retighten set screws. Check alignment of attachment driven pulley and align if necessary.

FRICTION WHEEL



1. Friction Wheel
2. Cap Screw

Figure 5: Friction Wheel

To replace friction wheel, tip unit up onto housing on a flat level surface.

Remove bottom cover by removing four cap screws.

Place Speed Selector in first "1" position, depress Traction Clutch Lever to hold friction wheel and loosen five cap screws securing friction wheel to

Lubrication And Maintenance (Continued)

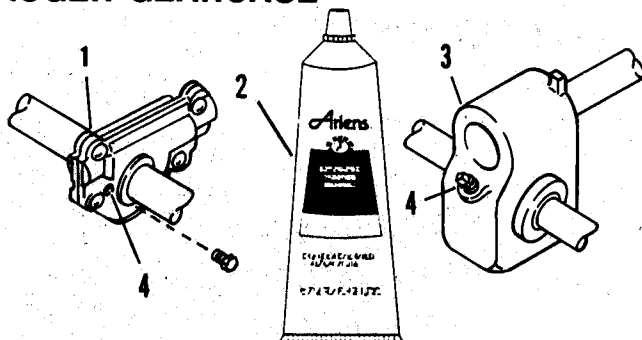
hub. Release traction clutch lever, remove cap screws, shift to third "3" position, disconnect shift link and remove friction wheel.

Secure new friction wheel on hub with five cap screws and torque cap screws to 8-10 foot pounds.

Replace shift link and bottom cover.

Adjust Traction Drive Clutch per instructions in Adjustment Section page 15.

AUGER GEARCASE



1. Auger Gearcase (ST 724, 824, 24)
2. Ariens Liquid Grease (ST 724, 824, 24)
Ariens Gear Lube L-2 (ST 1032, 1136)
3. Auger Gearcase (ST 1032, 1136)
4. Oil Fill

Figure 6: Auger Gearcase

Check auger gearcase lubricant level every 25 hours of operation.

ST 724, 824 and 24 gearcases are lubricated with Ariens Liquid Grease (Part Number 000072). ST 1032 and 1136 gearcases are lubricated with Ariens special Gear Lube L-2 (Part Number 000080).

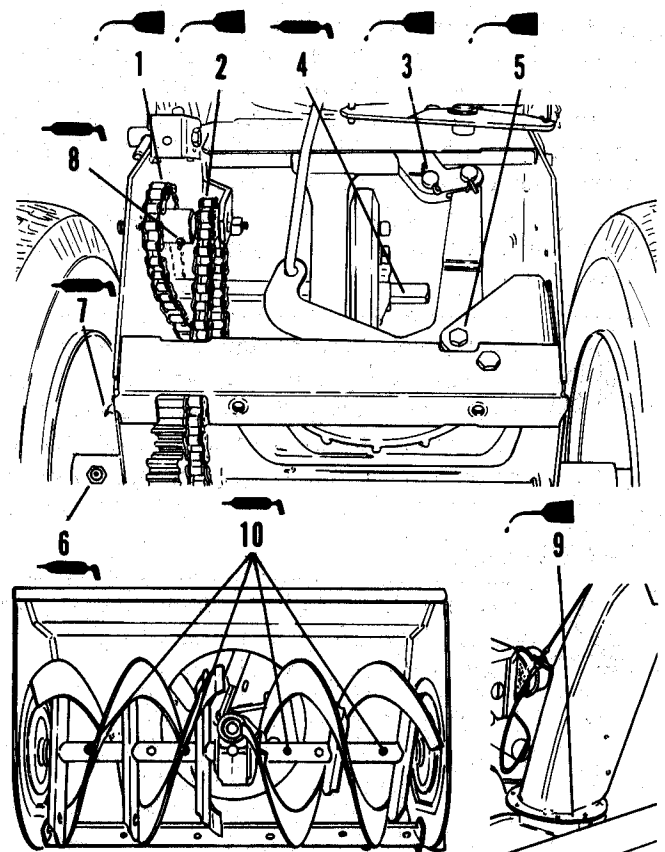
To check, place unit in a warm location overnight to allow lubricant to flow to level. Remove filler plug. Lubricant must be at least up to bottom of filler hole with unit resting on a level surface (extra lubricant will not damage gearcase).

OIL AND GREASE LOCATIONS



CAUTION: DO NOT touch engine or Sno-Thro drive parts which are hot from operation. Allow such parts to cool before servicing unit.

IMPORTANT: Wipe each fitting clean before and after lubrication.



1. Idler Chain
2. Pinion Chain
3. Shift Link
4. Hex Shaft
5. Shift Lever Arm & Bracket
6. Axle Shaft
7. Pinion Shaft
8. Sprocket Assembly
9. Deflector Chute
10. Auger and Shaft

Figure 7: Oil and Grease Location

NOTE: Use Ariens Multi-Purpose Grease (Part Number 000150) or good grade of general purpose grease at zerk fittings and oil at lubrication points.

Sno-Thro should be lubricated at beginning of season or every 25 operating hours. Grease and oiling points are indicated in Figure 7.

IMPORTANT: DO NOT allow grease or oil to get on friction wheel, drive disc or belts.

NOTE: To grease auger shaft, remove shear bolt nuts, shear bolts and turn auger on shaft while applying grease. Replace shear bolt per instructions in Shear Bolt Replacement.

Adjustments

Ariens Company recommends that you have adjustments made by your Ariens dealer. He has tools and the know-how to properly perform adjustments which may be required to keep your Sno-Thro operating at peak efficiency. Should you decide to make the following adjustments on your Sno-Thro yourself, Ariens Company recommends that you call your dealer for answers to any questions that might arise.

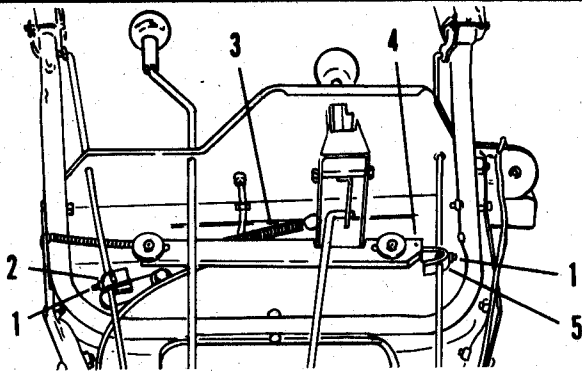


WARNING: Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug (keep wire away from spark plug) to prevent accidental starting before attempting to make adjustments.

INTERLOCK



WARNING: Interlock malfunction, together with improper usage of unit, could result in severe personal injury.



- | | |
|---------------------------|-----------------------------|
| 1. Set Screw | 4. Roller |
| 2. Traction Clutch Clevis | 5. Attachment Clutch Clevis |
| 3. Slider | |

Figure 8: Interlock

With traction clutch lever "UP" (disengaged) loosen clevis set screw on traction clutch rod, pull clevis down until slider is at end of slot and tighten set screw.

Engage both clutch levers "DOWN", loosen clevis set screw on attachment clutch rod and slide clevis to clear roller on slider by 1/16 inch. Tighten set screw with leg of clevis parallel to slider.

Refer to Interlock in Operation Section to check for proper operation.

RUNNERS

See Operating Section, Page 8.

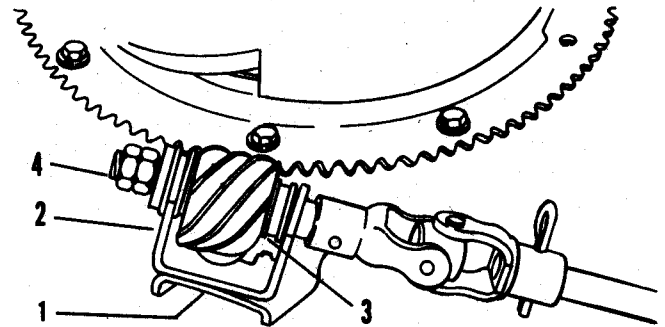
SCRAPER BLADE

IMPORTANT: If blade wears too far auger/impeller housing may be damaged.

Scraper blade is adjustable to compensate for wear.

To adjust scraper blade, tip unit back onto handlebar, support housing and loosen nuts retaining blade. With runners adjusted to their full up position, reposition scraper blade down, flush with runners, and tighten lock nuts.

CHUTE CRANK



- | | |
|------------|-----------------------|
| 1. Nut | 3. Worm Gear |
| 2. Bracket | 4. Jam Nuts (ST 1136) |

Figure 9: Chute Crank

Smooth and easy rotation of properly lubricated chute with crank (without binding) is obtained by adjusting clearance between worm and discharge chute gear teeth. To adjust, loosen nut on bracket supporting worm, position worm to fully engage (without binding), gear teeth on discharge chute and tighten nut.

On ST 1136 to prevent discharge chute from rotating by itself when unit is being operated, tighten jam nuts on end of crank rod to put increased tension on worm gear.

ATTACHMENT CLUTCH/ IMPELLER BRAKE



WARNING: With improper use, injury may result if attachment clutch lever is released and brake DOES NOT STOP auger/impeller within 5 seconds.

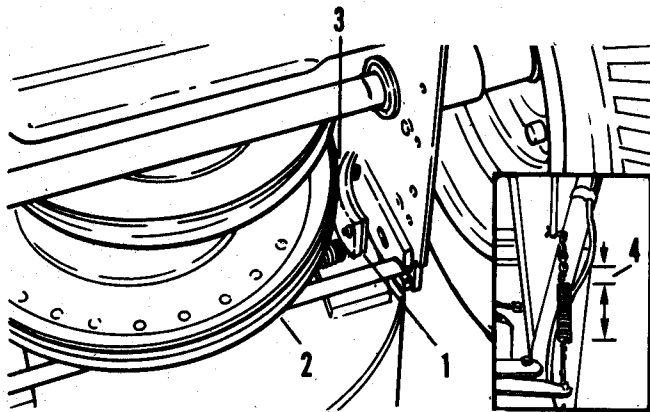


WARNING: Gasoline is highly flammable and its vapors are explosive. Handle with care. Never allow smoking materials, sparks or flame (match, pilot light, etc.) near equipment or fuel container.

Adjustments (Continued)



CAUTION: When unit is tipped up onto housing, remove enough fuel so that no spillage will occur.



- 1. Brake Shoe
- 2. Drive Belt
- 3. 1/16" - 1/8", Between Shoe and Belt
- 4. Spring Extension - 3/8"

Figure 10: Impeller Brake

To check and/or adjust impeller brake, tip unit forward onto auger/impeller housing. Remove bottom cover by removing four cap screws. Measure distance between impeller brake shoe and belt with attachment clutch engaged (refer to Figure 10). When attachment clutch is disengaged, brake must contact belt.

If impeller brake shoe is not 1/16 to 1/8 inch from belt, disengage clutch, loosen attachment idler nut, reposition idler to compensate for belt length, tighten nut and adjust attachment clutch per instructions below. If proper brake adjustment cannot be obtained see your Ariens Dealer.

Adjust attachment clutch with both clutch lever and clutch arm in disengaged position, pull clutch chain taut and connect chain link to spring. Spring should extend approximately 3/8" when clutch is engaged but allow clutch arm (at lower end) to return to its maximum down position when clutch is disengaged.

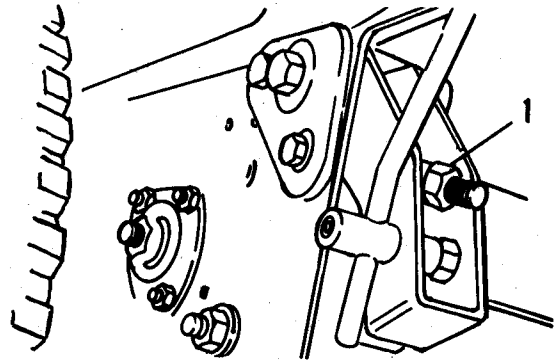
TRACTION DRIVE CLUTCH



WARNING: Gasoline is highly flammable and its vapors are explosive. Handle with care. Never allow smoking materials, sparks or flame (match, pilot light, etc.) near equipment or fuel container.



CAUTION: When unit is tipped up onto housing remove enough fuel so that no spillage will occur.



- 1. Adjustment Nut

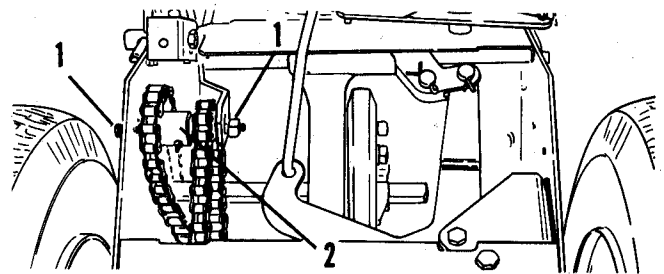
Figure 11: Traction Drive Clutch

Adjust traction clutch to compensate for wear of friction wheel when slippage occurs.

To adjust traction clutch, place speed selector in First (1) and tip machine forward onto housing.

With traction clutch disengaged turn wheels while tightening adjustment nut, at clutch yoke, until wheels begin to drag. Engage and release traction clutch to align clutch linkage. Repeat procedure as necessary. When wheel drag is obtained with linkage aligned, turn nut back three turns. Wheels will then turn freely.

DRIVE CHAIN



- 1. Reduction Shaft Nut
- 2. Reduction Sprocket

Figure 12: Drive Chains

Chain should be taut with little or no play in it. To compensate for looseness or excessive tightness in drive chain, tip unit forward onto housing. Remove bottom cover by removing four cap screws.

Loosen two nuts on reduction shaft, move reduction sprocket up or down equally in slot as necessary and torque nuts to 170-180 inch pounds.

Storage



WARNING: Never store Sno-Thro in an enclosed area where fuel fumes may reach flame, sparks, pilot lights or an ignited object. Drain fuel outdoors away from any ignition source. Use only approved fuel container.

Your authorized Ariens Dealer is trained and equipped to service your Sno-Thro. A periodic check-up by your dealer will help reduce your maintenance costs.

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

Clean unit thoroughly. Touch up all unpainted areas to avoid rust and store in a cool, dry protected place.

ENGINE

When storing Sno-Thro for an extended period refer to Engine Manufacturer's Instruction Manual.

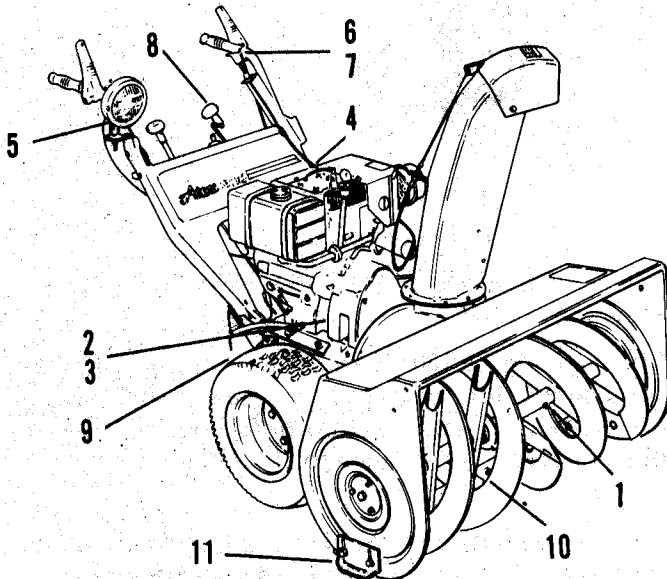
User Service Components

NOTE: For engine lubrication and parts refer to engine instructions manual supplied with unit. Contact your Ariens Dealer or authorized engine manufacturer's service center.

Parts Manual Part No. PM-24
Repair Manual Part No. RM-924
Mail Request to: Ariens Service
 655 West Ryan Street
 Brillion, WI 54110-1098

Publications are available for Sno-Thro owners who wish to perform some of their own maintenance and service operations. Should a complete parts and/or repair manual (less engine) be desired order under the following part numbers. For engine parts list and repair instructions, contact engine manufacturer's dealer.

User service components are illustrated on this page and are described in the text of this manual. These components are most commonly used for consumer repair.



Item No.	Description
1	Shearbolt and Nut
2	Attachment Drive Belt
3	Traction Drive Belt
4	Hair Pin
5	Headlight Bulb (ST 1032, 1136)
6	Remote Control Deflector Knob (ST 1136)
7	Remote Control Deflector Screw (ST 1136)
8	Chute Crank Knob
9	Friction Wheel
10	Scraper Blade
11	Runner

Specifications

MODEL	ST 1136	ST 1032	ST 824	TT 8	ST 524
Engine	11 hp	10 hp	8 hp	8 hp	5 hp
Rewind Start	Standard	Standard	Standard	Standard	Standard
Clearing Width	36" (91 cm)	32" (81 cm)	24" (61 cm)	24" (61 cm)	24" (61 cm)
Speeds: Forward	5	5	5	5	5
Reverse	1	1	1	1	1
Discharge Distance	5' - 35' (1.5-10.5 M)	3' - 30' (.9-9.1 M)	3' - 30' (.9-9.1 M)	3' - 30' (.9-9.1 M)	3' - 30' (.9-9.1 M)
Chute Turning Radius	230°	230°	230°	230°	230°
Tires	Pneumatic 16/6.50 x 8	Pneumatic 16/6.50 x 8	Pneumatic 4.80/4.00 x 8	Pneumatic 4.10/3.50 x 6	Pneumatic 4.10/3.50 x 6
Gas Tank Capacity	1.5 Gallon (5.7 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)
Adjustable Runners	Standard	Standard	Standard	Standard	Standard
Disc-O-Matic Drive	Standard	Standard	Standard	Standard	Standard
Lockout Differential	Standard	Standard	Standard	Standard	Optional
Dimensions: Length	60" (152 cm)	60" (152 cm)	60" (152 cm)	60" (152 cm)	60" (152 cm)
Height	40" (101.6 cm)	40" (101.6 cm)	40" (101.6 cm)	40" (101.6 cm)	40" (101.6 cm)
Width	34½" (87.6 cm)	34½" (87.6 cm)	26¼" (67 cm)	26¼" (67 cm)	26¼" (67 cm)
Shipping Weight	355 lbs (150 Kg)	330 lbs. (149.7 Kg)	280 lbs. (127 Kg)	255 lbs. (115.7 Kg)	255 lbs. (115.7 Kg)

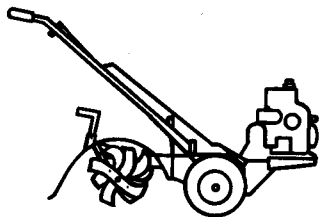
Attachment

824004 (RB36) 36" Rotary Brush

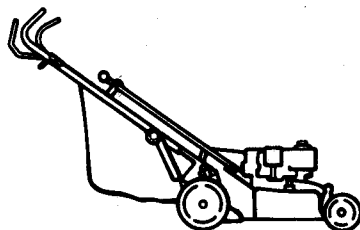
Accessories

724011	Tire Chains (ST 724)
703985	Tire Chains (ST 1032, 1136)
703944	Tire Chains (ST 824)
710983	Differential (ST 724)
724036	120V Electric Starter (ST 824, 1032)
724019	120V Electric Starter (ST 1136)
710997	Slicer Bar
724028	Air Cleaner Adaptor (ST 1132) (Required for RB36 Attachments)
724040	Light/Alternator (ST 724, 824)

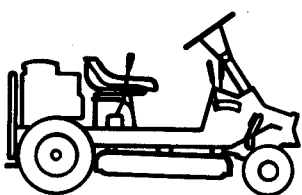
Ask your dealer for information
about these other fine Ariens
products:



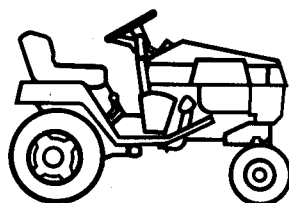
Garden Tillers



Walk Behind Mowers



Riding Mowers



Lawn & Garden Tractors

Ariens

Ariens Company
655 W. Ryan Street
Brillion, WI 54110-1098