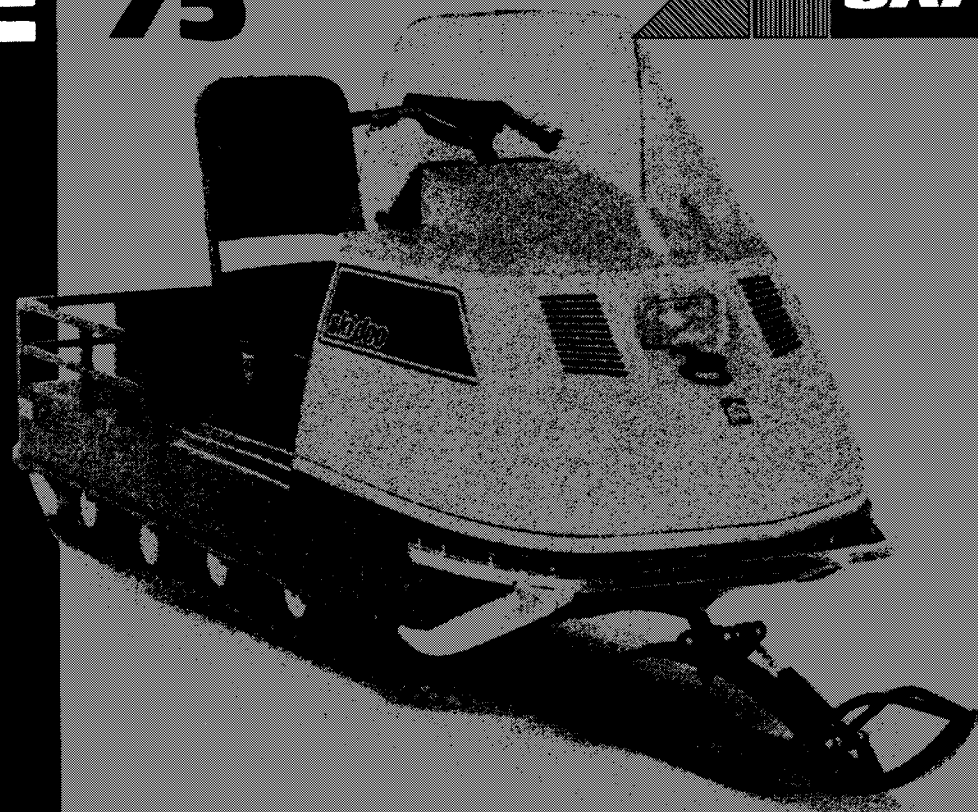


Alpine '75

ski-doo



Operator's Manual



480 0108



YOUR KEY TO WINTER

In the past sixteen years, over seven million people have discovered that winter can be both fun and enjoyable. The key of course is to do as you have done . . . participate in the exciting, invigorating sport of snowmobiling. We commend your decision, and thank you for selecting the Ski-Doo snowmobile as your partner in the many winter seasons to come.

To truly enjoy this wonderful sport, we urge you to join your local snowmobile club. You will find its activities and trail systems are planned for both fun and safety.

If your area does not have such benefits, you can find added social enjoyment by forming a new club and assisting with the

layout, construction and marking of a snowmobile trail. You will find the activities both stimulating and rewarding. And only you can make it happen.

We also suggest that you enroll in a safety/driver education program. The benefits derived are invaluable toward the safe and sane operation of any snowmobile.

We, at Bombardier Limited, fully realize the ramifications associated with the sport, and toward this end this manual is prepared. Please take the time to have every member of your family read and fully understand the content of this manual . . . Ride safe . . . and have fun!

Laurent Beaudoin,
President - Executive Officer,
Bombardier Limited.



This manual has been published by the
TECHNICAL INFORMATION CENTRE
SERVICE DEPARTMENT
BOMBARDIER LIMITED
VALCOURT, QUEBEC, CANADA.

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Ski-Doo	T'NT	Bombardier
Ski-Boose	Elan	Elite
Nordic	Blizzard	Everest
Alpine	Carry-Boose	

PATENTS and DESIGNS

This vehicle is covered by one or more of the following patents and design registrations.

Canadian Patents: 605, 317 - 710, 592 - 724, 395 - 853, 505 - 895, 749 - 897, 747 - 914, 457 - 916, 204

United States Patents: 2,899, 242 - 3,066,546 - 3,536,153 - 3,637,254 - 3,666,323 - 3,673,884 - 3,693,884 - 3,693,992 - 3,704,918.

Canadian Designs: D1/217 F/28172 - D1/249 F/31317 and 316 - D32,479 - D32,535 - D32,655 to 657 - D32,661 to '669 - 33,982 - 33,933 - 34,006 and '007.

United States Design Patents:

Des. 221,332 to '334-

Des 221,637 and '638-

Des. 222,244 to '247

Others: Swedish Design No. 6038-

Swiss Design No. 104,756-

Norwegian Design No. 51,444.

Other patent and design applications pending.

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WHAT YOU SHOULD KNOW . . . before first ride.

To many of us, Winter is a revealing experience. Weather, atmospheric conditions, snow surfaces, individual driving habits and vehicle usage have considerable affects. We ask that you familiarize yourself with them . . . **read** the owner's manual; it has been prepared to acquaint you with the operation of your vehicle, its safety aspects and systems as well as preventative maintenance procedures that must be periodically upheld . . . all aimed toward a more enjoyable Winter season.

Observe the following precautions:

- Throttle mechanism should be checked for free movement **before** starting engine.
- Engine should be running **only when** pulley guard is secured in place.
- **Never** run engine without drive belt installed. Running an unloaded engine

can prove to be dangerous.

- **Never** run the engine at high R.P.M. when the tracks of the vehicle are raised off the ground.
- It can be dangerous to run engine with the **cab open**.
- Prolonged sitting while riding over rough terrain may cause kidney and/or spinal discomfort, specially for the driver or passenger having an existing back weakness.
- Gasoline is flammable and explosive under certain conditions. Always perform procedures in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. If gasoline fumes are noticed while driving, the cause should be determined and corrected without delay.
- **Under no circumstances** should you wear loose clothing or scarves that could become entangled with moving

parts of your snowmobile.

- Your snowmobile **is not** designed to be operated on public streets, road or highways. In most States and Provinces, it is considered an **illegal** operation.
 - Hidden telephone guy wires or roadside ditches can cause serious **accidents**.
 - Your snowmobile **is not** designed to be driven or operated on black top, bare earth, or other abrasive surfaces. Abnormal and excessive wear of critical parts is inevitable.
 - **Always** wear an approved snowmobile safety helmet. Be informed on local laws legislating the sport.
 - Maintain your vehicle in top mechanical condition at all times.
- Please read and understand all other warnings contained elsewhere in this manual.**



We recommend you contact your local Authorized Ski-Doo dealer when your Ski-Doo snowmobile requires service. However, for further inquiries, you may contact your Regional Distributor listed below.

SERVICE AREAS

CANADIAN DISTRIBUTORS

Name of Distributors

ALPINE DISTRIBUTORS
3206 28th Avenue, Vernon, B.C.

BOMBARDIER LIMITED

EASTERN CANADA DISTRIBUTION
DIVISION
(Atlantic Branch)
P.O. Box 670 Shediac, N.B.

BOMBARDIER LIMITED

EASTERN CANADA DISTRIBUTION
DIVISION
(Quebec Branch)
1350 Nobel, Boucherville, Que.

BOMBARDIER (ONTARIO) LTD
26 Currie St. Barrie, Ont.

BROOKS EQUIPMENT LTD
1616 King Edward St.
P.O. Box 985, Winnipeg R3C 2U8, Man.

HUDSON'S BAY CO.
121 Richmond West,
Toronto, Ont.

J.W. RANDALL LIMITED
P.O. Box 757, Corner Brook
Newfoundland

TRACK EQUIPMENT LTD
14325 - 114th Ave.,
Edmonton, Alta.

Coverage Area

British Columbia

Prince Edward Island

Magdalen Island
Nova Scotia
New Brunswick

Quebec

Est of Ontario

Ontario (less East
of province)

Manitoba
Saskatchewan

North-West Territories
Franklin District &
Kewatin

Newfoundland
Labrador

Yukon
Alberta

AMERICAN DISTRIBUTORS

Name of Distributors

BOMBARDIER EAST INC.
Railroad St., Lee
Massachusetts 01232

BOMBARDIER CORPORATION,
326 South Lake Ave.
Duluth 2, Minn. 55802

CRAIG TAYLOR EQUIPMENT CO.
P.O. Box 3338, Anchorage,
Alaska 99501

ELLIOTT & HUTCHINS INC.
East Main Street Road,
Malone, New York 12953

Coverage Area

Massachusetts
Connecticut
Rhode Island

Arkansas, Alabama
Mississippi, Tennessee
Kentucky, W. Virginia
Wisconsin, Iowa
Illinois, Minnesota
North Dakota,
South Dakota
Upper Michigan, Oregon
Washington, California,
Arizona, Nevada,
Idaho, Montana,
Wyoming, Utah,
New Mexico, Colorado
Kansas, Nebraska

Alaska

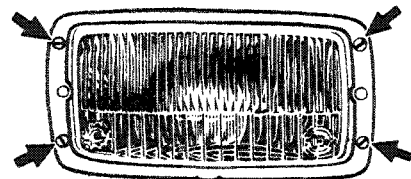
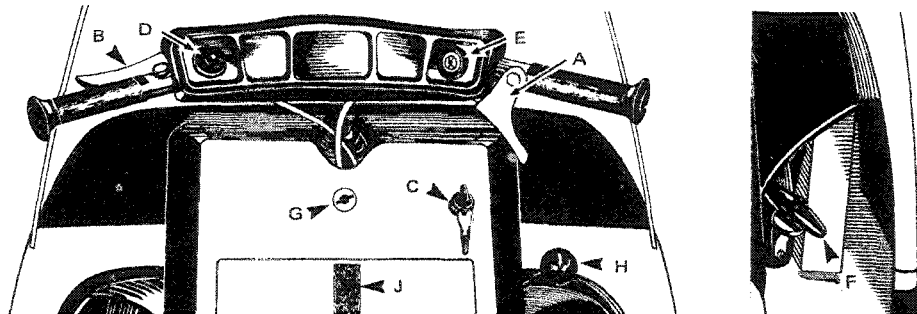
New York
Pennsylvania
New Jersey
Maryland
Delaware

HEATH INTERNATIONAL, INC.
33737 - 32 Mile Road,
Richmond, Mich 48062

TIMBERLAND MACHINES INC.
10 Main St. North, Lancaster,
New Hampshire 03594

Sud du Michigan
Indiana
Ohio

Maine
New Hampshire
Vermont



CONTROLS/INSTRUMENTS

Steering

Rotation of the handlebar causes a push pull action on the steering linkage and forces the ski to turn in the required direction. Incorporated in the crash padded handlebar are the dimmer switch, cut-out button, brake and throttle levers:

Throttle Lever (A)

Located on right side of handlebar. When depressed, the lever controls the **engine speed** and the **engagement of the transmission**. When lever is released engine speed returns automatically to idle.

Brake Lever (B)

Located on left side of handlebar. When lever is depressed, the brake is applied. When released, it automatically returns to its original position. Braking effect is proportionate to the applied pressure on the lever.

Ignition / Light Switch (C)

Key operated, 4 position switch, (OFF/LIGHTS/ON/START). To start engine, turn key fully clockwise to START position and hold. Return key to ON position **immediately** engine has started. To illuminate both headlamp and taillight turn key to LIGHTS position.

Headlamp Dimmer Switch (D)

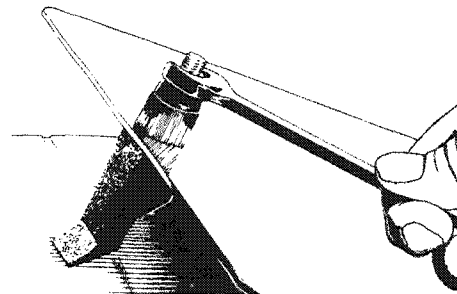
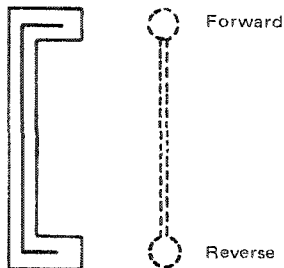
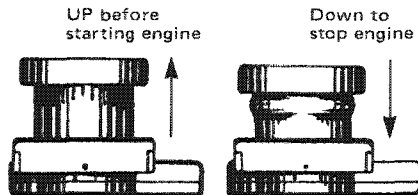
The dimmer switch, located on left side of handlebar, allows correct selection of headlamp beam. To obtain Hi or Low beam simply depress switch.

Note: The angle of your headlamp beam has been pre-adjusted prior to delivery. Should you wish readjustment, remove headlamp chrome ring and turn upper or lower adjusting screws to obtain desired beam position.

Cut-Out Button (E)

A push-button switch located on right side of handlebar. For emergency stops, press button down into **lower** position. Before re-starting engine always depress button into released **upper** position.

The driver of this vehicle should familiarize himself with the function of this device by using it several times on first outing, thereby being mentally prepared



for emergency situations requiring its use. After such a situation, the source of malfunction should be determined and corrected before re-starting engine.

Manual Starter (F)

Auto-rewind type located at lower right side of console. To start engine, pull handle. (See Starting Procedure)

Choke (G)

A push-pull button. Pull button to engage choke, push to disengage. The choke should always be used for easier cold engine starts. After engine is warmed up however, it is not necessary to use choke when starting.

Gear Shift Lever (H)

A 2 position, (FORWARD/REVERSE) gear shift lever. Push **up** for forward and **down** for reverse.

Warning: Do not activate gear shift lever while snowmobile is in motion.

Access Door (J)

To gain access to the carburetor or spark plugs, lift pressure lock tab and pull open access door. To adjust locking device turn nut in required direction.

Fuel Gauge

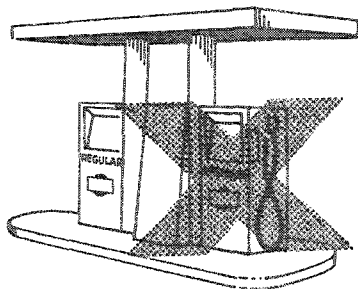
Graduated dipstick gauge with screw on fuel tank cap. Unscrew cap and withdraw dipstick to check fuel level.

Seat Compartment

Remove backrest and tilt seat. Ideal location for spare plugs, belt, rope, etc.

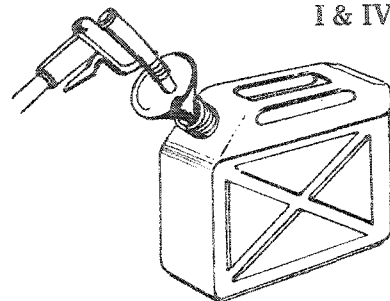
Tips

Emergency materials should be wrapped in foam or similar material. This will prevent possible damage to breakable items when traveling over rough or bumpy terrain.



50:1

I & IV



FUEL MIXING

With Ski-Doo snowmobiles, the **oil** must be added to the **gasoline** in pre-measured amounts then both oil and gasoline should be thoroughly mixed together **before** fueling the tank.

Which Gasoline to Use

The correct gasoline is **regular** gasoline. (not less than 92 octane), available from all service stations.

Caution: Never experiment with other than recommended fuels or fuel ratios. Never use no lead gasoline†, naphta, methanol or similar products.

Which Oil to Use

Use **concentrated** Ski-Doo oil available from your Ski-Doo dealer. This type of oil has specially formulated oil bases to meet the lubrication requirements of the Bombardier-Rotax engine.

Caution: The carburetors of the Ski-Doo snowmobile have been calibrated for a mixture of gasoline and concentrated Ski-Doo oil.

Unless absolutely necessary, do not use regular snowmobile oil. If such oil is used, observe mixing instructions on the container. Never use outboard or straight mineral oils.

Fuel Mixing Ratio

The importance of using the correct fuel mixture cannot be overstressed. Prior experience has shown that an incorrect fuel ratio results in serious engine damage. The correct fuel/oil ratio is 50/1.

5 gallons, recommended gasoline plus one can of 50/1 Ski-Doo oil= correct fuel mixture.

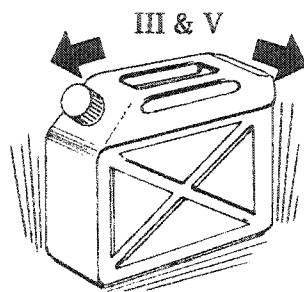
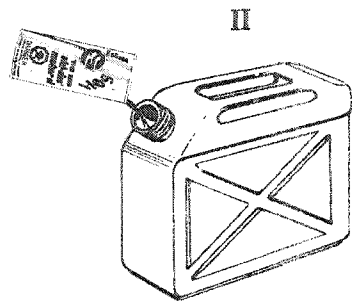
Note: To facilitate fuel mixing, oil should be kept at room temperature.

Fuel Mixing Procedure

To mix the gasoline and oil always use a separate clean container. Never mix directly in your snowmobile tank. For best results, acquire two containers, either plastic or metal. Draw from one until empty then use the second one.

Warning: Gasoline is flammable and explosive under certain conditions. Always perform procedures in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. If gasoline fumes are noticed while driving, the cause should be determined and corrected without delay. Never add fuel while engine is running.

†Tests are not conclusive enough therefore we do not recommend the use of no-lead gasolines



BREAK-IN

1. Pour approximately one gallon of gasoline into a clean container.

II. Add the full amount of concentrated Ski-Doo oil.

III. Shake the container thoroughly.

IV. Add the remainder of the gasoline.

V. Once again thoroughly agitate the container. Using a funnel with a fine mesh screen to prevent the entry of water and foreign particles, transfer mixture from container into the snowmobile tank.

Note: When using pre-mixed fuel, always shake the container thoroughly as the oil has a tendency to settle.

Warning: Never 'top up' gas tank before placing vehicle in a warm area. At certain temperatures, gasoline will expand and overflow.

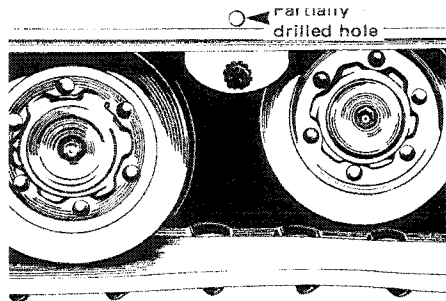
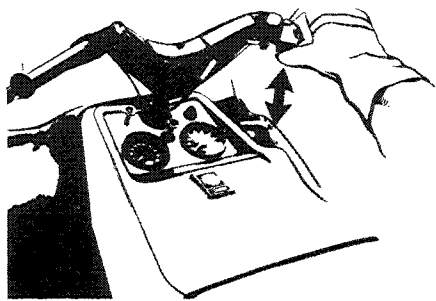
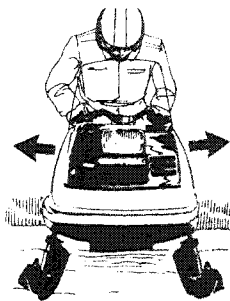
Fuel Consumption

A good idea is for you to rate the fuel consumption of your snowmobile at the first opportunity. Starting with a full fuel tank, mark the time of your departure then note time elapsed until tank is half-full. Repeat on different occasions to get a mean average of your snowmobiles' consumption and length of running time under varying conditions.

With Ski-Doo snowmobile engines, a break-in period is required **before** running the vehicle at full throttle. Manufacturer's recommendation for the Bombardier-Rotax engine is 10 operating hours. During this period, maximum throttle should not exceed $\frac{3}{4}$. However, brief full accelerations and speed variations contribute to a good break-in. Continued wide open throttle accelerations, prolonged 'cruising' speeds and lugging are detrimental during the break-in period.

Inspection

After the first 10 hrs of operation, each Ski-Doo snowmobile must have an inspection check. This inspection is at the expense of the vehicle owner.



PRE-START CHECK

Fuel Tank Quantity

Check that there is sufficient fuel in the tank for your trip. A good habit to acquire is to refill the tank before starting out each day.

Since mixed fuel has a tendency to settle overnight, agitate the fuel in the tank by standing on the footboards and rocking the vehicle from side to side.

Steering Operation

Check operation of steering mechanism by moving the ski several times from side to side. If roughness or binding is felt, check for ice or snow that may be blocking the mechanism.

Throttle and Brake

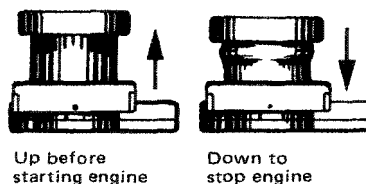
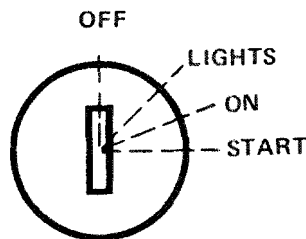
Depress and release levers several times to check that they operate easily and smoothly. The throttle lever should return to the idle position when released. The brake lever should be fully applied when it has minimum clearance from the handlebar grip (see Maintenance, Brake). If the levers do not return swiftly, remove cables and/or housings and replace. Re-check lever operation.

Warning: Throttle mechanism should be checked for free movement before starting engine. Once all components are checked and functioning properly, you can start your Ski-Doo snowmobile.

Tips

By raising the outer attachment of the bogie wheel sets vehicle manoeuvrability in deep snow will increase. You will note that there are partially drilled holes, located approx. $1\frac{3}{8}$ " above the original cross shaft holes of the frame. To reposition bogie wheel sets, drill holes fully through using a $\frac{5}{16}$ " dia. drill. Remove capscrews securing bogie wheel cross shafts to frame and reinstall in new position.

Note: Once holes have been drilled, both positions are interchangeable.



STARTING PROCEDURE

Warning: Never run the engine at high RPM when the tracks of the vehicle are raised off the ground.

Note: Before starting the engine make sure the cut-out button is in the released position.

1. Insert key in ignition switch.
2. Engage choke. (Choke is not necessary if engine is warmed up).
3. **Test throttle operation then apply throttle lever slightly.**
4. Turn ignition key clockwise until starter engages.

Caution: Do not engage starter longer than 30 seconds. If engine does not start on first try, key must be turned fully back to OFF each time. Allow starter to cool for 2 minutes before repeating procedure.

5. **Release** throttle and key **immedi-**

ately engine has started. Disengage choke.

6. Allow the engine to warm up before operating at full throttle.

If for some reason the vehicle cannot be started electrically, place ignition in ON position and start engine manually

Caution: Never operate the Ski-Doo snowmobile with the battery removed or disconnected.

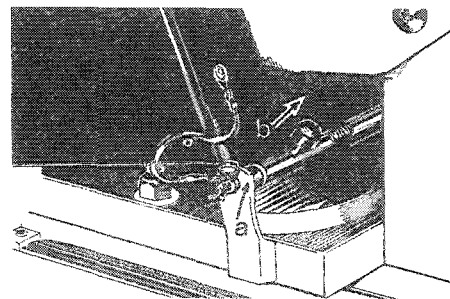
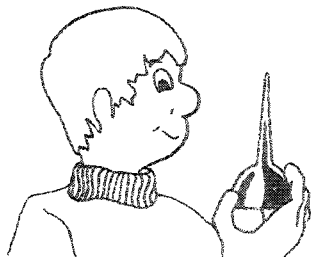
Flooding

If cold engine is difficult to start, continued choking will only lead to a 'flooded' condition.

If engine has not started after the first few tries but appears ready to start, return choke to OFF position. Depress throttle lever fully and try to start the engine.

Warning: Release throttle lever immediately after engine starts.

If engine will not start, check for possible cause.



LUBRICATION

Frequency of Lubrication

It is recommended that the steering mechanism and suspension be lubricated monthly or after every 40 hours of operation. However, if the vehicle is operated in wet snow, the suspension and steering system should be lubricated more frequently.

Cab Removal

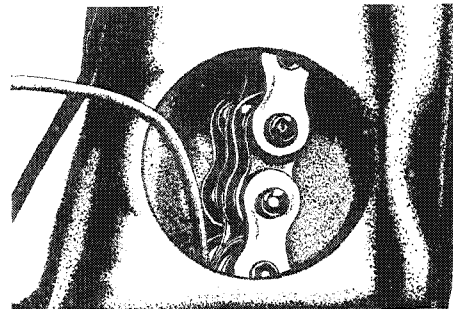
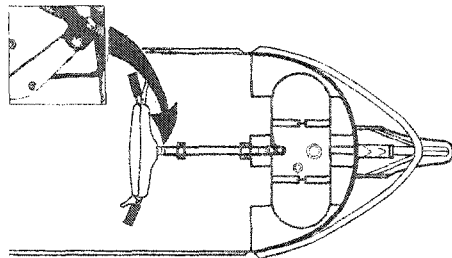
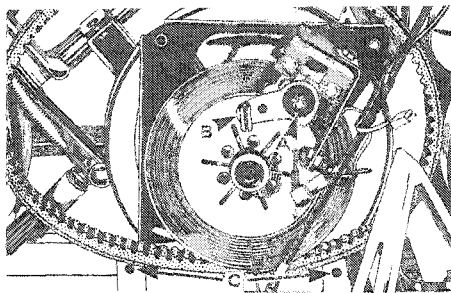
Unlock latches (2), disconnect junction block at right side of engine, remove fuel tank cap and lift cab.

Warning: It can be dangerous to run engine with cab off.

Pulley Guard Removal

1. Remove cab.
2. Pull out retaining clip and push on spring bolt to disengage pin from bracket.
3. Move pulley guard toward front of vehicle to disengage it from bracket.

Warning: Engine should be running only when pulley guard is secured in place.



Drive Belt Removal

1. Remove cab and pulley guard.
2. Remove hair cotter pin and brake adjusting nut (A). Detach brake light switch spring and remove lower brake lever (B).
3. Remove the two bolts holding disc brake bracket to the frame. Pivot the brake bracket assembly half a turn.
4. Open the driven pulley. Twist and push the sliding half then **hold** in open position.
5. Slip the belt out from the drive pulley and remove from vehicle by passing it under the driven pulley and disc brake assembly.
6. To install drive belt follow reverse procedure. Check brake adjustment.

Warning: Never run the engine without drive belt installed. Running an unloaded engine can prove to be dangerous.

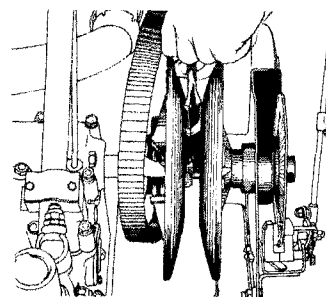
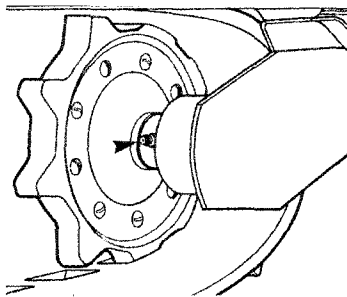
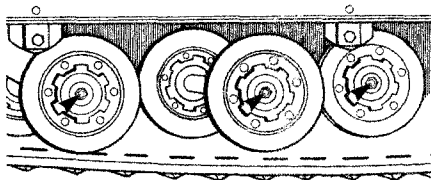
Steering Mechanism

Using light machine oil, lubricate the spring located on top of steering column housing. Allow oil to run in. Oil the mobile contact point at bottom end of steering arm. Using a small brush, dipped in low temp grease, lubricate steering arm ball joint. Grease the ski leg at grease fitting until new grease appears at the joint. Lubricate spring coupler bolt with oil.

Gearbox Oil Level

The gearbox oil capacity is 16 ozs. To check level:

1. Remove rubber inspection cover located on bottom right side of gearbox.
2. Using a rigid piece of wire as dipstick, check oil level. Oil level must reach 3 1/4" on dipstick. To fill, remove filler cap, from top of gearbox. Refill as required using Ski-Doo chaincase oil.



Bogie wheels

Grease the suspension bogie wheels with low-temperature grease. Pump through the grease fitting at the center of each wheel until new grease appears at the joint of inner side of shaft. To grease the inner side bogie wheels, tilt vehicle on its side and apply pressure on track to expose grease fittings.

Rear Axles

Lubricate the rear axles with low-temperature grease. Pump grease through the rear axle fittings.

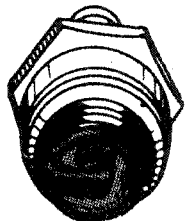
Caution: Always use a low-pressure grease gun.

Driven Pulley

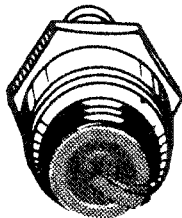
With cab removed, grease the driven pulley shaft as follows:

1. Remove pulley guard and slip off drive belt. Open the driven pulley, (push and twist sliding half).
2. Thoroughly clean the driven pulley shaft.
3. Apply a light coat of low-temp grease on the shaft. Always lubricate lightly and wipe off surplus.

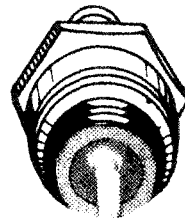
Note: Activate the sliding half several times to distribute lubricant over full length of shaft. Be careful that lubricant does not get on inner halves of pulley.



Carbonized



Normal



Burnt

MAINTENANCE

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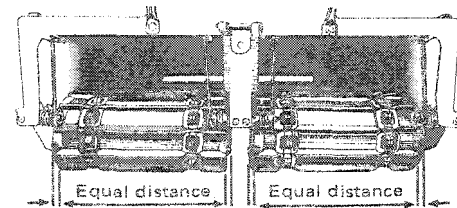
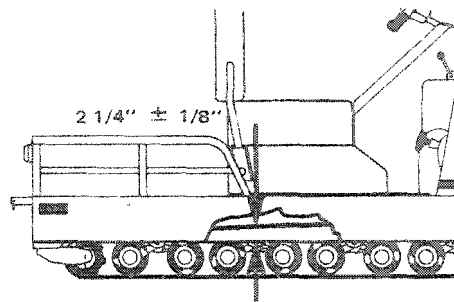
(W1) Spark Plugs.

1. Open access door. Disconnect spark plug wires and remove plugs.
2. Check condition of plugs.
 - A brownish tip reflects ideal conditions. (proper carburetor adjustment, spark plug heat range, etc.)
 - A black insulator tip indicates fouling caused by; carburetor idle speed mixture too rich, incorrect fuel mixing ratio, wrong type of spark plug (heat range), or excessive idling.
 - A light grey insulator tip indicates a lean mixture caused by; carburetor idle speed mixture adjusted too lean, wrong spark plug heat range, incorrect fuel mixing ratio, or a leaking seal or gasket.

Caution: Having a spark plug with too hot a heat range will cause serious engine damage if the severity of engine operating conditions are greater than the plugs' intended range.

3. Check spark plug gap using a wire feeler gauge. Gap must be .020".
4. Reinstall plugs and connect wires.

Caution: If when checking spark plug color, you find that the engine is not running under ideal conditions, contact your authorized Ski-Doo dealer.



(W2) Battery

Remove battery caps then check electrolyte level at each cell. Electrolyte level must touch bottom of filler hole. If necessary, add distilled water.

(W3) Suspension Springs

With engine **off**, visually inspect suspension springs. Replace any weak or broken spring.

(W4) Tracks

Lift rear of vehicle and support it off the ground. Place gear shift lever in forward position. With engine **off**, rotate tracks by hand and inspect condition. If bad cuts or missing track inserts are noted, see your dealer.

Note: Without these inserts continual abrasion would wear and cut the track therefore, always replace a missing or damaged insert as soon as possible.

(W5) Track Tension and Alignment

Lift the rear of vehicle and support it off the ground. Using a rule, check track tension at the second set of bogie wheels from rear.

The tension of each track should be 2 1/4" + 1/8" between top inside edge of track and bottom of footboard.

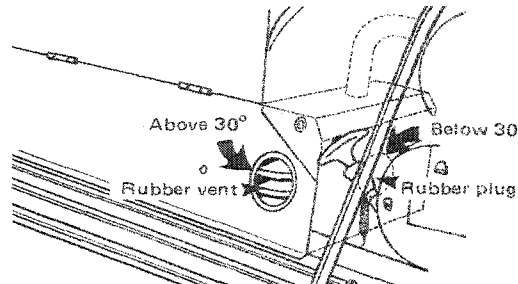
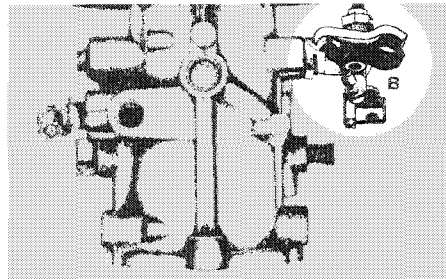
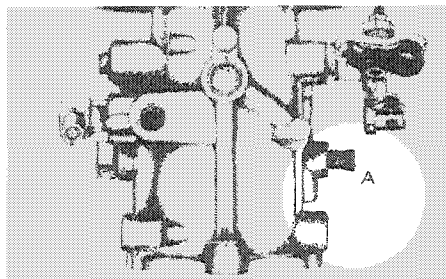
To adjust track use the following procedure:

1. Loosen link plate spring lock nuts (4) located on inner side of link plate springs.
2. Turn adjuster bolts clockwise to tighten tracks, counter-clockwise to slacken.
3. Start engine and allow tracks to rotate **slowly**. Check if tracks are well centered and turn evenly on the rear sprockets. The distance between track edges and link plates should be equal.

To correct:

1. Turn inner side adjuster bolt(s) counter-clockwise to bring track closer to center link plate(s), turn clockwise to withdraw track(s) from link plate(s).
2. Tighten link plate spring lock nuts.
3. Rotate tracks slowly and recheck alignment.

Warning: Before checking track alignment, ensure that the track is free of all particles which could be thrown out while track is rotating. Keep hands, feet and clothing clear of track.



(W6) Carburetor Adjustment Maximum Throttle Opening

With engine **off** and air silencer tube removed, depress throttle lever at handlebar and hold. Throttle butterfly should be horizontal when the lever gently touches the handlebar grip.

To adjust for maximum opening, loosen screw at point where cable joins carburetor throttle lever. Clamp throttle lever to handlebar. With finger, hold carburetor throttle lever in fully open position, pull cable until taut and retighten screw. **Un-clamp throttle lever from handlebar.** Install air silencer tube.

Warning: Before starting engine, carburetor throttle lever must return to idle position (butterfly closed). Do not start engine unless this is verified.

Idle Mixture Adjustment (A)

A primary adjustment (with engine **off**) should be made by first turning Idle Mixture Screw fully clockwise until closed. Back off screw $\frac{3}{4}$ of a turn counter-clockwise.

Note: Do not close too tightly as needle and/or seat can be damaged.

For final adjustment, start engine and allow it to warm up. Turn Idle Mixture Screw until engine reaches maximum R.P.M. and obtain a steady idle and a fast response of the engine to the throttle.

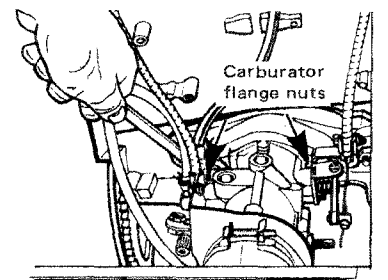
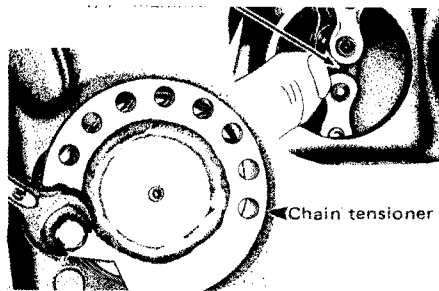
Idle Speed Adjustment (B)

Turn the Idle Speed Adjusting Screw clockwise to increase idling speed, counter-clockwise to decrease.

Air Silencer Box

When operating the vehicle in temperatures exceeding 30°F, the rubber plug must block the engine side orifice and the rubber vent must be positioned on the side of the silencer box to allow cold air circulation. In temperatures below 30°F the rubber plug must block the entry of fresh air and the rubber vent must allow the warm air being emitted from the engine to be directed over the carburetor.

Caution: Observe temperature changes and locate plugs accordingly. Incorrect location of plugs may cause carburetor ice-up or engine overheating.



(W7) Drive Belt Condition

With engine **off**, inspect drive belt. If belt is less than $\frac{7}{8}$ " wide or if it shows abnormal or uneven wear it should be replaced.

Note: Probable cause of abnormal wear is pulley misalignment. Contact your dealer.

(W8) Drive Chain Tension

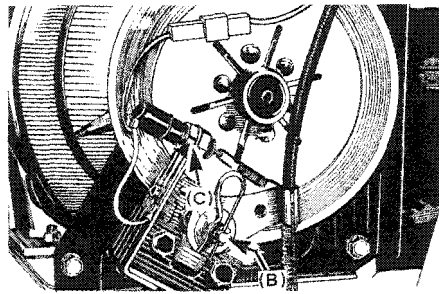
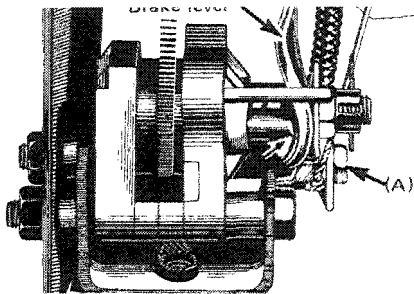
Run vehicle forward so that true free-play can be taken. Check tension then turn driven pulley $\frac{1}{2}$ turn counter-clockwise and recheck. Starting from maximum reading, adjust chain tension to $\frac{1}{4}$ " free-play.

1. Remove capscrew locking chain tensioner in place. (Tensioner is located at bottom left of gearbox).
2. Rotate the tensioner as required to obtain correct chain tension.
3. Replace capscrew to lock chain tensioner in place.

(M1) Carburetor Flange Nuts

After the first 2 hours of operation, check tightness of carburetor flange nuts. Open tab locks, tighten nuts and close tab locks.

Caution: Tab locks must be replaced after opening them three times.



(M2) Brake

Brake should be fully applied when lever is 1" from handlebar. To adjust:

1. With cab removed, slacken cable lock nut (A) located at cable end nearest frame. Manoeuvre the lower brake lever and brake cable until the pin pushers are seated directly in the "cam" of brake lever. Lock cable in position.
2. Remove the hair pin and tighten the caliper nut (B) until a disc (puck friction) is felt. Back off nut slightly.
3. Check operation of brake.

Note: Always check the stop light to see if it functions after performing brake adjustment. To adjust, loosen stop-light switch lock nuts (C) and adjust to proper length.

(M3) Steering Adjustment

Ski should be perpendicular to handlebar. To align:

1. Remove bolt securing handlebar to steering column.
2. Remove handlebar to expose splined end of steering column.
3. Reposition handlebar on splines so that it is perpendicular with ski. Install and tighten bolt to 30-35 ft/lbs.

(M4) Engine Head Nuts

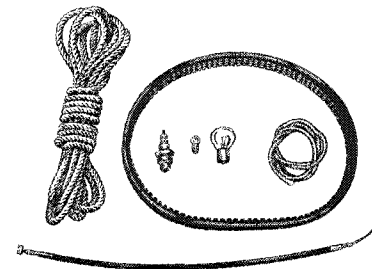
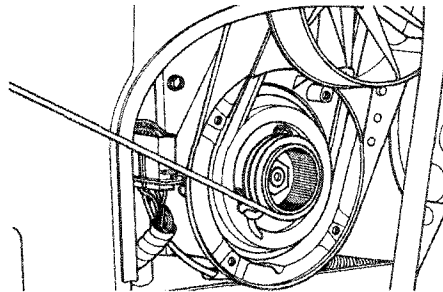
After the first 5 hours of operation, check that engine head nuts are tight and equally torqued (13 to 17 ft/lbs when **cold**).

(M5) Engine Mount Nuts

With cab and pulley guard removed, check engine mount nuts. Retighten if necessary.

(M6) Vehicle General Inspection

With cab removed, check electrical wiring and components, retighten loose connections. Check for stripped wires or damaged insulation. Repair or replace as necessary. Thoroughly inspect the vehicle and tighten loose bolts, nuts and linkage. Install cab and clean the chassis.



EMERGENCY GUIDE

Burnt Light Bulb

If headlamp is burnt, stop engine and remove cab. Unfasten bulb retainer clips. Detach bulb and replace. If tail-light is burnt, expose bulb by removing red plastic lens. To remove, unscrew the two (2) Phillips head screws.

Note: Before replacing bulb, check condition of fuse.

Broken Throttle Cable

Remove throttle cable and replace. Check lever operation. If necessary replace housing. **Do not** start the engine until handlebar and carburetor levers return swiftly.

Broken Rewind Starter Rope

Abuse of the rewind starter may cause the rope to fray and break. Should this situation arise, remove starter. Transfer rope grip to your emergency rope. Place starter unit in seat compartment. Make a knot at the end of emergency starter rope and wind rope around starting pulley. Pull vigorously as per usual manual start. See your dealer for immediate repair of starter unit.

Emergency Materials

In addition to those tools which the manufacturer provides, you should also carry the following:

Tools: General Purpose Pliers—Adjustable Wrench (3/4" opening)—Flashlight.

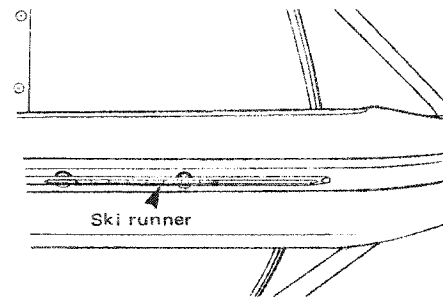
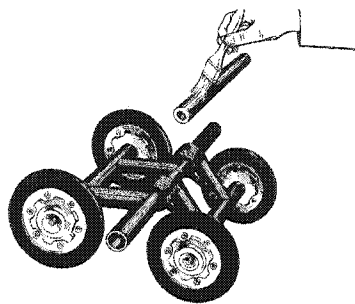
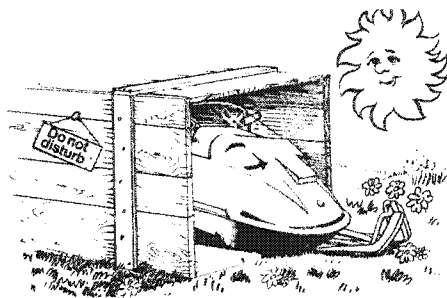
Spare Parts: Spark Plugs—Drive belt—Headlamp and Taillight bulbs—Throttle Cable and Housing—Starting and towing rope—Fuses.

Important: Always carry spare plugs and drive belt.

TROUBLE SHOOTING GUIDE

Symptoms	Possible Causes	What To Do
Engine turns over but fails to start or starts with difficulty	1. No fuel to the engine	Check the tank level and fill up with correct gas-oil mixture. Check for possible clogging of fuel line, item 5.
	2. Spark plugs	Check for fouled or defective spark plugs. Disconnect spark plug wires, unscrew plugs and remove from cylinder heads. Reconnect wires and ground exposed plugs on engine heads being careful to hold away from spark plug holes. Follow engine starting procedure and check for spark. If no sparks appear, replace spark plugs. If trouble persists, check item 3.
	3. Faulty ignition	Disconnect spark plug wires from plugs, unscrew the spark plug cap then position wires about 1/8" from the cylinder heads. Follow engine starting procedure and if no sparks appear, it means a faulty ignition system. Do not attempt to repair. Contact your dealer.
	4. Flooded engine	Disengage choke, wait 60 seconds or more then depress throttle lever fully and try to start engine. Release throttle lever immediately after engine starts.
	5. Clogged fuel line (water or dirt)	Remove and clean the fuel filter. Change filter cartridge if necessary. Check condition and connections of fuel lines. Check the cleanliness of the fuel tank. Clean tank if necessary. (See Fuel Tank, Storage Section).
	6. Faulty Carburetor	First make primary adjustments on carburetor (See Maintenance Section). If carburetor is still faulty, contact your dealer for repair.
	7. Too much oil in fuel	Drain the fuel tank and refill with the correct gas/oil mixture.
	8. Breaker points	Breaker points may be worn or out of adjustment. Contact your dealer.
	9. Poor engine compression	Running with a lean fuel mixture may produce excessive engine wear resulting in poor engine compression. If this occurs, contact your dealer at once.
Engine will not turn manually	1. Seized engine	In the case of a seized engine, contact your dealer. Seizure is a direct result of poor lubrication.

Symptoms	Possible Causes	What To Do
Engine will not start Note: If failure is in starting system, engine will start manually	1. Battery	Check condition of battery by turning lights ON. If lights are dim or out, battery may be discharged or defective. Contact your dealer. If battery is good check item 2.
	2. Poor connections	Check for loose or corroded battery or starter connections. Tighten and clean if necessary. Try to restart engine electrically.
	3. Starter	If connections are tight and battery is in working order, most probable cause of trouble is defective starter. Contact your dealer for repair.
Engine lacks acceleration or power	1. Fouled or defective spark plug	Check item 2 of "Engine turns over but fails to start or starts with difficulty".
	2. Clogged fuel line (water or dirt)	Check fuel line condition. (See item 5 of "Engine turns over but fails to start or starts with difficulty").
	3. Carburetor	Readjust the carburetor. (See Maintenance Section). If trouble persists, contact your dealer.
	4. Defective ignition	First check item 2 and 3 of "Engine turns over but fails to start or starts with difficulty". If the ignition system still seems defective, contact your dealer.
	5. Engine	If unable to locate specific symptoms, contact your dealer.
Engine continually backfires	1. Faulty spark plugs	Check item 2 of "Engine turns over but fails to start or starts with difficulty".
	2. Overheated	Contact your dealer.
	3. Engine timing incorrectly set	Contact your dealer.
Snowmobile cannot reach full speed	1. Drive belt	Check for defective or worn drive belt. Replace if necessary.
	2. Incorrect track adjustment	Check track tension and alignment. Readjust to specifications. (See Maintenance Section).
	3. Faulty engine	Check items 1 to 5 of "Engine lacks acceleration or power"
	4. Pulley misaligned	Contact your dealer.



OFF-SEASON STORAGE

It is during Summer, or when a vehicle is not in use for a month or more, that proper storage is a **necessity**. If you lack the time or proper tools, be sure to see your authorized Ski-Doo dealer.

Tracks

1. Inspect tracks for cuts, missing track inserts or broken rods and make any necessary replacement.
2. Lift rear of vehicle until tracks are clear of ground then support with brace or trestle. The Ski-Doo snowmobile should be stored in such a way that the tracks do not stay in contact with cement floor or bare ground.

Note: The tracks should be rotated periodically, (every 40 days).

Suspension

1. Remove the bogie wheel sets from the vehicle.
2. Remove cross shaft from bogie wheel set. Clean bogie wheel assembly

and cross shaft of dirt or rust.

3. Grease each bogie wheel until all old grease is flushed out.
4. Spray bogie wheel springs with Ski-Doo metal protector. If unavailable, wipe with cloth or rag soaked in oil. Check condition of shaft and replace if bent or worn. Apply a coat of low temp. grease on cross shaft.
5. Reassemble entire bogie wheel set, making sure assembly moves freely.
6. Reinstall bogie wheel set.
7. Repeat above steps on remaining bogie wheel sets.
8. Lubricate rear hubs through grease fittings.

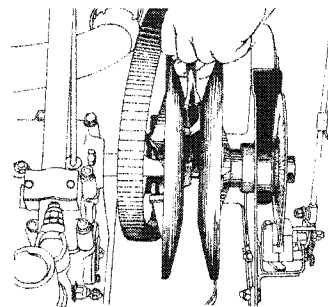
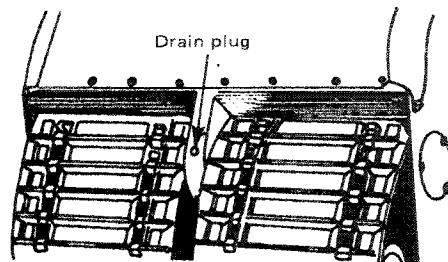
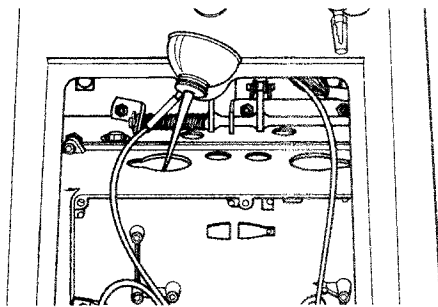
Ski Assembly

1. Wash or brush all dirt or rust accumulation from ski and spring.
2. Grease ski leg at grease fitting.
3. Check condition of ski runner. Replace if worn.
4. Apply Ski-Doo metal protector on ski assembly. If unavailable, wipe the entire ski with a cloth soaked in oil to prevent rust formation.

Fuel Tank

Remove cap then using a syphon, remove gasoline from tank.

Warning: Gasoline is flammable and explosive under certain conditions. Always perform this procedure in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity.



Carburetor

The carburetor must be dried out completely to prevent gum formation during the storage period.

1. Assure that fuel lines are disconnected then start the engine and run it out of gas.

2. Disconnect the air silencer tube, engage choke then pack the carburetor throat with a clean piece of cloth and turn the engine a few more times. The suction should eliminate the remaining fuel.

Cylinder Lubrication

1. Remove spark plugs.

2. Operate rewind starter to bring piston at **top** position.

3. Pour about one spoonful of Ski-Doo oil into spark plug hole.

4. Slowly crank engine 10 to 12 times using manual starter.

Caution: To prevent magneto damage, make sure that the ignition switch is at the OFF position.

5. Repeat above steps for other cylinder. Install spark plugs.

Note: This operation should be repeated every 40 days during storage.

Gearbox

Drain gearbox and refill with 16 ozs. of fresh Ski-Doo chaincase oil. (Drain plug is located beneath frame).

Controls

1. Oil steering mechanism linkage.

2. Oil moving joints of brake mechanism.

Avoid getting oil on brake pucks.

3. Coat all electrical connections and switches with Ski-Doo metal protector (greaseless).

Driven Pulley

1. Remove cab and drive belt.

2. Thoroughly clean the driven pulley shaft. Apply a light coat of low-temp. grease on shaft.

3. Activate the sliding half several times to distribute lubricant.

4. Spray internal pulley surfaces with Ski-Doo metal protector.

Note: Leave drive belt **off** during entire storage period.

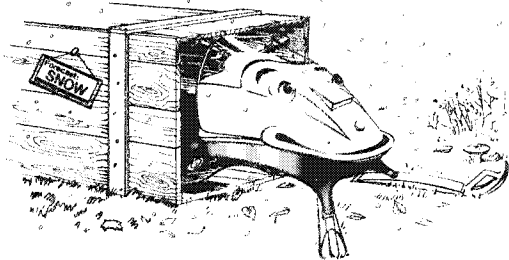
Battery

1. Disconnect battery and remove it from vehicle.

2. Clean outside surfaces of battery. **Do not** allow cleaning solution to enter battery.

3. Fully charge battery (trickle charge) and store in a cool, dry place.

Note: Recharge battery at least every 40 days to prevent sulphation.



PRE-SEASON PREPARATION

Snow is falling and you are now anticipating the next snowmobile safari. If you have observed and adhered to the storage procedures outlined in this manual, your vehicle preparation becomes a relatively easy task.

To simplify the pre-season preparation we have drawn up a small check list.

Many items have been forementioned in the Lubrication or Maintenance sections of this manual therefore quick and easy reference is possible.

Again we mention, should you lack the time or tools to complete the task, to contact the Ski-Doo dealer of your choice and obtain his professional assistance.

- Spark plugs; change.
- Gearbox; check oil level.
- Pulleys; Clean, lubricate (driven only) and align.

- Steering Adjustment
- Fuel Filter; Change.
- Fuel lines; Connect then check attaching points at tank and carburetor.
- Tracks; Check tension and alignment.
- Suspension; Lubricate, wipe off excess grease.
- Drive belt; Inspect and install.
- Cables; Check for damage.
- Brake; Inspect pucks, adjust.
- Oil seals; Inspect for possible cuts or leaks.
- Battery; Test, clean and install.
- Engine Timing; Replace breaker points. Set timing.
- Wiring; Check electrical wiring for broken or damaged insulation. Inspect connections.
- Manual Starter. Inspect condition of starting rope.
- Fasteners; Check tightness of all nuts, bolts and linkage. Pay particular at-

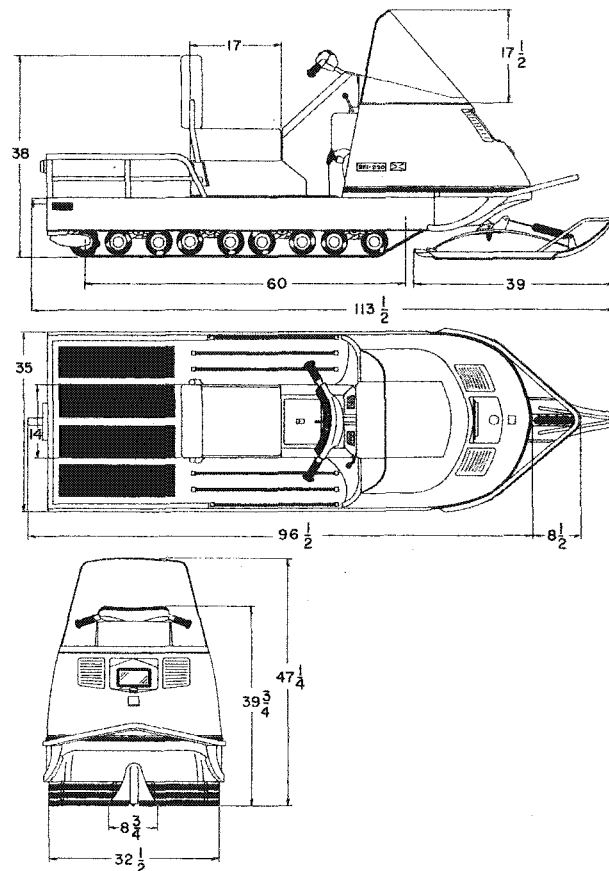
tention to engine head nuts—13-17 ft/lbs torque. Drive pulley bolt 83-92 ft/lbs torque.

- Gas Tank; Refill.
- Carburetor; Adjust

IMPORTANT: Observe all Warnings and Cautions mentioned throughout this manual which are pertinent to the item being checked. When component conditions seem less than satisfactory, replace with genuine Bombardier parts.

SPECIFICATIONS

MODEL	ALPINE	640ER
Engine	No. of Cylinders	Two
	Bore	76mm
	Stroke	70mm
	Displacement	635.1cc
	Compression Ratio	9:1
	Carburetor (Tillotson)	HD
	Starting	Electric
Chassis	Overall Length	113 1/2"
	Overall Width	35"
	Height w/o Windshield	39 3/4"
	Weight (lbs)	610
	Bearing Area	2160 sq in
	Ground Pressure (p.s.i.)	.282
Power train	Track Width	2 X 15"
	Std. Gear Ratio	17/38
Electrical System	Lighting Coil Output	120 Watts
	Headlamp (Watt)	60/60
	Tail/Stop Light (Watt)	8/23
	Spark Plug (Bosch)	M225T1
	Spark Plug Gap	.020"
Fuel	Tank Capacity — Imp.	5 gals
	Tank Capacity — U.S.	6.25 gals
	Gasoline	Regular
	Gas/Concentrated Oil Ratio	50:1



All information, illustration and component/system description, contained in this manual are correct at the time of publication. However, Bombardier Limited reserves the right to make changes in design and specifications, and/or to make additions to, or improvements in its product without imposing any obligations upon itself to install them on its products previously manufactured.

1975 SKI-DOO® SNOWMOBILE T'NT® F/A AND ALPINE® WARRANTY

Bombardier Limited (Bombardier) as manufacturer, warrants every 1975 Ski-Doo® snowmobile models T'NT® F/A and Alpine®, SOLD AS A NEW VEHICLE, BY AN AUTHORIZED SKI-DOO DEALER, to be free from defects in material, and workmanship under normal use and service, **for a period of ninety (90) consecutive days starting at whichever of the following dates come first:**

- For all vehicles delivered **prior to December 1st, 1974**, the first day of use.
- For vehicles delivered between **December 1st, 1974 and March 31st, 1975**, the date of sale. All vehicles delivered on or after **January 2nd, 1975**, but prior to **March 31st, 1975**, shall have a warranty carry-over into the next season, starting the day of first use or no later than **December 1st, 1975** for the unused portion of the ninety (90) days warranty.

If defective, Bombardier obligation is strictly limited to the repair and/or replacement at its option, and such repair or replacement is valid only at an authorized dealer in Canada or in the United States.

CONDITIONS FOR WARRANTY VALIDITY

- Proof of ownership submitted to the servicing dealer, by means of the Ski-Doo service card.
 - An INSPECTION of the vehicle **MUST BE PERFORMED** by an authorized dealer after ten (10) hours of use or no later than thirty (30) days after first use. Such inspection will be at the owner's expense. (The time for such an inspection should be approximately two (2) hours).
 - Proper maintenance; to be performed at owner's expense.
- Guidelines for proper use and maintenance are detailed in each operator's manual.**

EXCLUSIONS: non-warrantable

- Variable speed drive belt, windshield, filters, spark plugs, ignition breaker points, condensers, light bulbs, protective lenses, brake linings, ski runner shoes, slider shoes on suspension and variable speed pulleys, labels, soft trim, appearance items, lubricants and paints and all tune-ups and adjustments required.
- Defects resulting from accident and/or installation of parts other than genuine Bombardier parts.
- If the vehicle is used for racing purpose.
- Any losses incurred to the vehicle owner other than parts and labour.
- Any damage or premature wear incurred as a result of operating the snowmobile on other than snow covered terrain.

This warranty is expressly in lieu of all other expressed or implied warranties of Bombardier, its distributors and the selling dealer, including any implied warranty of merchantability of fitness for any particular purpose. Neither Bombardier, its distributors nor the selling dealer shall be responsible, under any circumstances, for any loss or damage as a result of hidden defects, accidents, misuses or other faults.

Neither the distributor, the selling dealer nor any other person has been authorized to make any affirmation, representation or warranty other than those contained in this warranty and if made, such affirmation, representation or warranty shall not be enforceable against Bombardier or any other person.

November 1973
BOMBARDIER LIMITED
Valcourt, Quebec, Canada

INDIVIDUAL WARRANTY RESPONSIBILITIES

The following has been prepared for ease of understanding the actual warranty policy. In no manner, way or form should these responsibilities be misconstrued as being the actual terms of the current warranty policy.

The Manufacturer will:

- 1) Produce a quality vehicle.
- 2) Comply with safety/engineering standards.
- 3) Make available replacement parts.
- 4) Provide dealer/mechanic training, and repair procedures.
- 5) Absorb cost of parts and labour on warranty repairs.
- 6) Retain right to cancellation if snowmobile is subject to abuse or modification.

The Dealer will:

- 1) Perform adequate pre-delivery.
- 2) Stock and use genuine replacement parts.
- 3) Have trained staff, facilities and tools.
- 4) Honour warranty policy terms.
- 5) Observe recommended labour time for ten (10) hour inspection.
- 6) Properly complete warranty form.
- 7) Inspect snowmobile for abuse/modification.
- 8) Notify owner of routine lubrication and maintenance changes.

The Owner will:

- 1) Observe routine lubrication and maintenance.
- 2) Observe break-in period recommendations.
- 3) Submit snowmobile to the ten (10) hour inspection.
- 4) Operate snowmobile in a responsible manner on adequate snow covered terrain.
- 5) Not modify or abuse snowmobile.
- 6) Submit proof of ownership, by means of the Ski-Doo Service Card.
- 7) Utilize only genuine quality tested manufacturers parts.
- 8) Return snowmobile for servicing to the authorized selling Ski-Doo dealer, if within realistic travelling distance.
- 9) Provide adequate seasonal preparation, spring and fall maintenance. This precaution will inhibit rust formation of vital parts, gum formation in fuel system, plus other benefits.

Ski-Doo snowmobiles are designed for operation at sea level and/or altitudes below 5,000 ft. When operating the snowmobile above 5,000 feet, maximum performance is affected, therefore it is suggested that a suitable carburetor calibration be employed. This modification can be performed by an authorized Ski-Doo dealer, and at the owners' expense.

Important: Operating a snowmobile which has been modified for high altitude operation, below 5,000 feet, can cause over heating of engine and could contribute to engine failure/damage.

In the event of change of ownership, complete the NOTICE OF TRANSFER form in order to qualify the new owner for balance of warranty.

All such transfers should be reported to an authorized Ski-Doo dealer for modification of the Ski-Doo Service Card.



In the event of a lost Service Card, contact the original selling dealer for completion of the "Request for New Service Card" form.

For a \$2.00 handling charge, Bombardier will mail your new personalized Service Card to you.



NOTICE OF TRANSFER

Model

Vehicle Serial No.

The ownership of this vehicle is transferred
From

Signature of registered owner

To

Full name of purchaser Block letters

Address

NO Street or Village

City

County

Signature of purchaser

Date

REPLACEMENT REQUEST FORM/LOST SERVICE CARD

Date of sale

Month Day Year

Name

Block letters

Street/Address

City

State

Zip code

Dealer's name

Dealer's number

Model

Serial No.

