



# **OPERATOR'S GUIDE**

**Safari, Skandic II**



**ski-doo®**

**1993**



Version française  
également disponible

**414 7907 00**



**Safari**

**Rally**

**Skandic II**

**503 R**

**503 R SLT**

## **SAFETY WARNING**

Disregarding any of the safety precautions and instructions contained in this *Operator's Guide*, the *Warranty Guide and Vehicle Logbook* and the *Snowmobiler's Safety Handbook* could cause injury, including the possibility of death.

This *Operator's Guide*, the *Warranty Guide and Vehicle Logbook* and the *Snowmobiler's Safety Handbook* should remain with the vehicle at the time of resale.

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# NOTICE

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The *Operator's Guide*, the *Warranty Guide and Vehicle Logbook* and the *Snowmobiler's Safety Handbook* have been prepared to acquaint the owner/operator or passenger of a new snowmobile with the various vehicle controls, maintenance and safe operating instructions. **Each is indispensable for the proper use of the product, and should be kept with the vehicle at all times.**

Should you have any questions pertaining to the warranty and its application, please consult the "Often Asked Questions" section of the *Warranty Guide and Vehicle Logbook*, or an authorized dealer.

These guides use the following symbols.

◆ **WARNING** : Identifies an instruction which, if not followed, could cause serious personal injuries including possibility of death.

▼ **CAUTION** : Denotes an instruction which, if not followed, could severely damage vehicle components.

○ **NOTE** : Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, your understanding of the information will promote its correct use.

The information and components/system descriptions contained in this guide are correct at time of publication. Bombardier Inc. however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured.

Bombardier Inc. reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

The illustrations show the typical construction of the different assemblies and, in all cases, may not reproduce the full detail or exact shape of the parts shown, however, they represent parts which have the same or a similar function.

Most specifications are given in both metric and customary units. Where precise accuracy is not required, some conversions are rounded to even numbers for easier use.

A *Shop Manual* can be obtained for complete service, maintenance and repair information.

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◆ **WARNING** : The engine and components implemented in a particular model should not be used on other models. Use of Rotax® snowmobile engines in other than Ski-Doo snowmobiles is not recommended or authorized by Bombardier Inc.

◆ **WARNING** : Maintenance procedures and tightening torques must be strictly adhered to, never attempt repairs unless the appropriate tools are available.

▼ **CAUTION** : Most components of this vehicle are built with parts dimensioned in the metric system. Most fasteners are metric and must not be replaced by customary fasteners or vice versa.

# SAFETY MEASURES

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## Observe the following precautions :

- ◆ Throttle mechanism should be checked for free movement before starting engine.
- ◆ Do not operate vehicle near snow making equipment.
  - The snowmobile engine can be stopped by activating the emergency cut-out or tether switch or turning off the key.
- ◆ Clean and check operation of the headlight, taillight and brake light.
- ◆ Engine should be running only when belt guard and/or pulley guard is secured in place.
- ◆ Never run the engine without drive belt installed. Running an unloaded engine can prove to be dangerous.
- ◆ Never run the engine when the track is raised off the ground.
- ◆ It can be dangerous to run engine with the hood removed.
- ◆ Fuel is flammable and explosive under certain conditions. Always manipulate in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. If fuel fumes are noticed while driving, the cause should be determined and corrected without delay.
- ◆ Maintain your vehicle in top mechanical condition at all times.
- ◆ Your snowmobile is not designed to be driven or operated on black top, bare earth, ice, hard pack or other abrasive surfaces. On such surfaces, abnormal and excessive wear of critical parts is inevitable.
- ◆ 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.
- ◆ **Electric start models only** : Never charge or boost a battery while installed on vehicle.
- ◆ Never drive the vehicle with the parking brake applied. This may overheat the brake disc and reduce braking ability.
- ◆ Installation of other than standard equipment, including ski-spreaders, bumpers, pack racks, etc., could severely affect the stability and safety of your vehicle. Avoid adding on accessories that alter the basic vehicle configuration.
- ◆ Whenever the vehicle is parked outdoors, overnight or for a long period, it is suggested to protect it against the inclemency of the weather with a snowmobile cover.
- ◆ Do not lubricate throttle and/or brake cables and housings.
- ◆ Only perform procedures as detailed in this guide. Unless otherwise specified, engine should be turned OFF for all lubrication and maintenance procedures.
- **Liquid cooled models only** : Since engine cooling is fully in effect only when the vehicle is in motion and driven on snow, it is not recommended that you allow the engine to idle for more than brief periods and/or you drive the vehicle on icy surfaces. Prolonged idling and/or continuous driving on ice may cause engine damage.
- ◆ **Liquid cooled models only** : When removing coolant tank cap, first place a cloth over cap then turn cap to its first step to release pressure. Never drain or refill the cooling system when engine is hot.
- ◆ Some models are designed for the driver only. No provisions have been made for a passenger.
- ◆ Should removal of a locking device be required when undergoing repairs/disassembly, always replace by new ones. Tighten fasteners as specified in the applicable *Shop Manual*.

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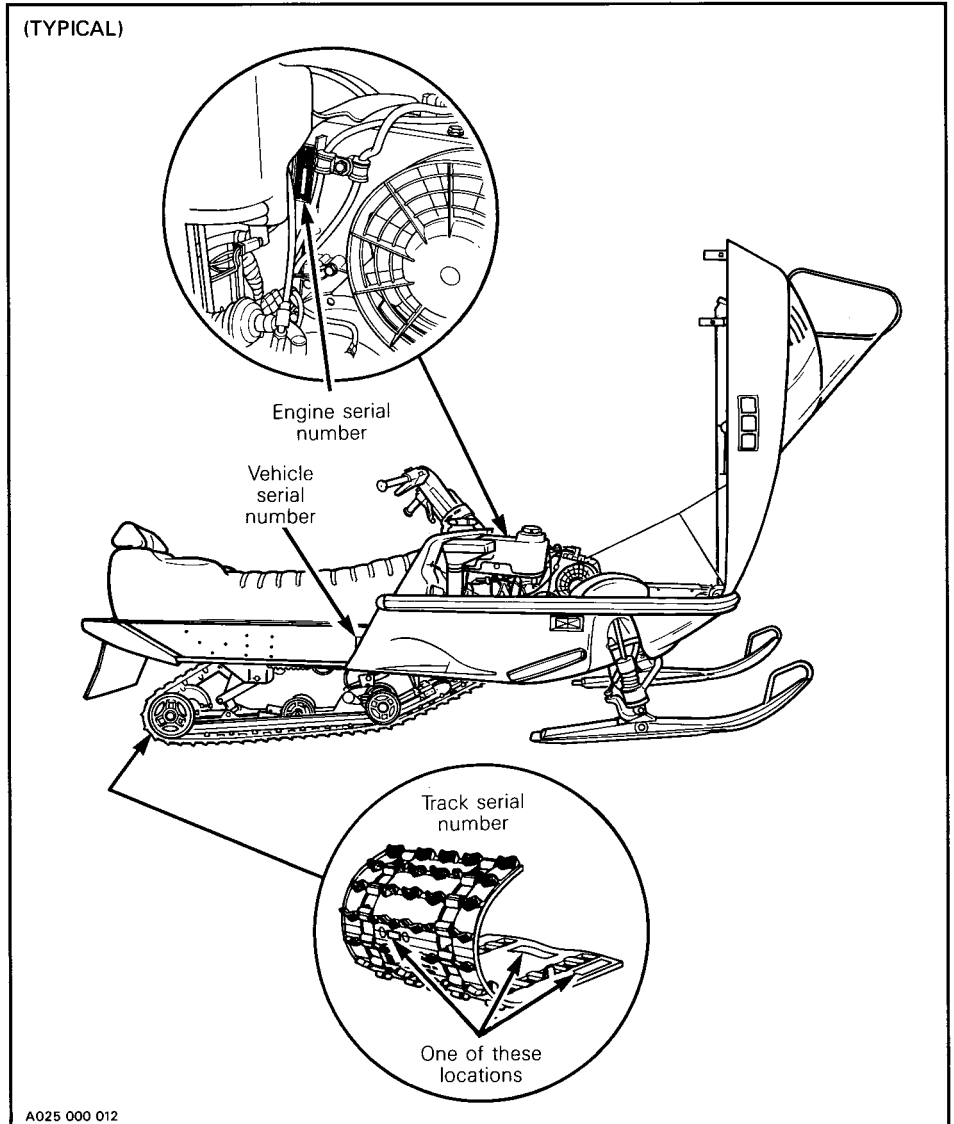
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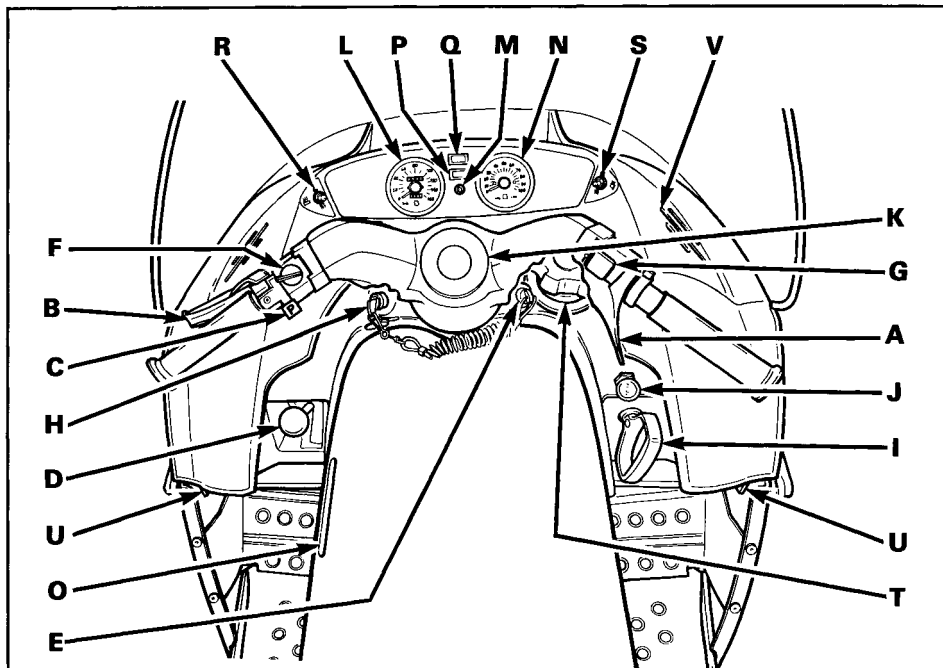
# HOW TO IDENTIFY YOUR SNOWMOBILE

The main components of your snowmobile (engine, track and frame) are identified by different serial numbers. It may sometimes become necessary to locate these numbers for warranty purposes or to trace your snowmobile in the event of loss. These numbers are required by the dealer to complete warranty claims properly. No warranty will be allowed by Bombardier Inc. if the engine serial number or VIN is removed or mutilated in any way.

**NOTE :** We strongly recommend that you take note of all the serial numbers on your vehicle and supply them to your insurance company.



# CONTROLS/ INSTRUMENTS



A025 007 113

- |   |  |
|---|--|
| A ) Throttle Lever                                      | N ) Tachometer<br>(some models only)                   |
| B ) Brake Lever   | O ) Fuel Level Indicator                               |
| C ) Parking Brake Button                                | P ) High Beam Pilot Lamp                               |
| D ) Gear Shift Lever<br>(models with reverse gear only) | Q ) Injection Oil Level Pilot Lamp                     |
| E ) Tether Cut-Out Switch                               | R ) Heated Grip Switch                                 |
| F ) Headlamp Dimmer Switch                              | S ) Heated Throttle Lever Switch<br>(some models only) |
| G ) Emergency Cut-Out Switch                            | T ) Fuel Tank Cap                                      |
| H ) Ignition Switch                                     | U ) Hood Latches                                       |
| I ) Rewind Starter Handle                               | V ) Snow Deflector                                     |
| J ) Primer Button                                       |  |
| K ) Adjustable Steering Handle                          |  |
| L ) Speedometer/Odometer                                |  |
| M ) Trip Meter Reset Button<br>(some models only)       |  |

## A) Throttle Lever

Located on the right side of handlebar. When compressed, it controls the engine speed and the engagement of the transmission. When released, engine speed returns automatically to idle.

## B) Brake Lever

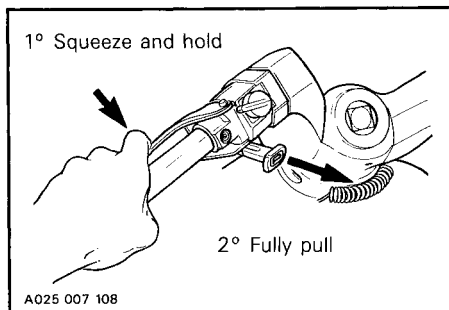
Located on the left side of handlebar. When compressed, the brake is applied. When released, it automatically returns to its original position. Braking effect is proportional to the pressure applied on the lever and to the type of terrain and its snow coverage.

## C) Parking Brake Button

Located on left side of handlebar. Parking brake should be used whenever vehicle is parked.

To engage mechanism, squeeze brake lever and maintain while pulling button with the other hand. There are two retaining notches on button lever; pull button until it locks on a notch then release brake lever.

To release mechanism, squeeze brake lever then fully push parking brake button.



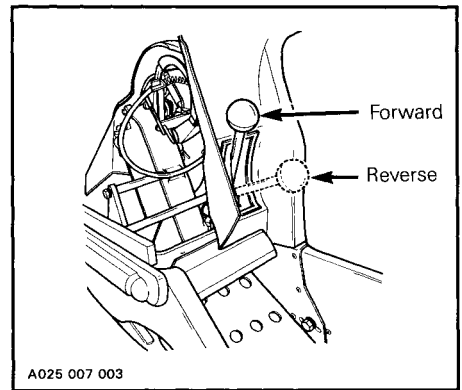
◆ **WARNING : DO NOT** operate the snowmobile when the parking brake is engaged or when any component in the brake system is damaged, worn, or adjusted improperly.

## D) Gear Shift Lever (models with reverse gear only)

A two-position lever.

Up position : forward gear.

Down position : reverse gear.



## Shifting Procedure

Proceed as follows :

- Apply brake until vehicle completely stops.
- Select desired position using gear shift lever.

○ **NOTE** : A buzzer should sound every time the shift lever is in reverse gear position.

◆ **WARNING** : This snowmobile is capable of a fast reverse. On first outing, operator should become familiar with this operation by practicing on level ground. Always apply the brake before shifting and come to a complete stop then, change gear. This is particularly important while on a slope. Ensure the path behind is clear of obstacles or bystanders. Fast reverse, while turning, could result in loss of stability.

### E) Tether Cut-Out Switch

A pull switch located on right side of console. Attach tether cord to wrist or other convenient location then snap tether cut-out cap over receptacle before starting engine.

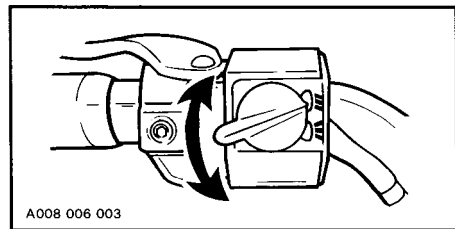
If emergency engine shut off is required, completely pull cap from safety switch and engine power will be automatically shut off.

○ **NOTE** : The cap must be installed on the safety switch at all times in order to operate the vehicle.

◆ **WARNING** : If the switch is used in an emergency situation the source of malfunction should be determined and corrected before restarting engine.

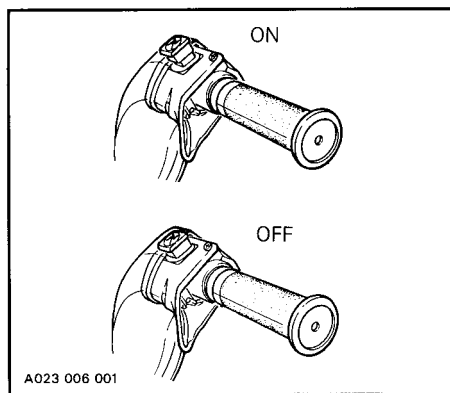
### F) Headlamp Dimmer Switch

The dimmer switch, located on left side of handlebar, allows correct selection of headlamp beam. To obtain high or low beam simply flick switch.



### G) Emergency Cut-Out Switch

A push-pull type switch located on the right side of the handlebar. To stop the engine in an emergency, push the button to the lower OFF position and simultaneously apply the brake. To start engine, button must be at the upper ON position.



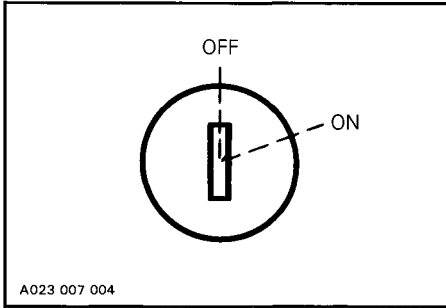
The driver of this vehicle should familiarize himself with the function of this device by using it several times on first outing. Thereby being mentally prepared for emergency situations requiring its use.

◆ **WARNING** : If the switch has been used in an emergency situation the source of malfunction should be determined and corrected before restarting engine.

## H) Ignition Switch

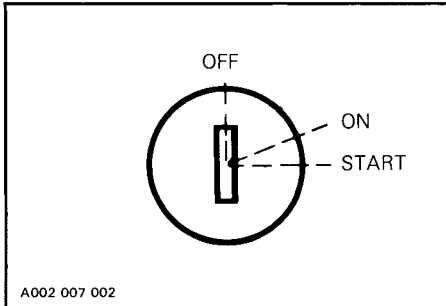
The lights are automatically ON whenever the engine is running.

### Manual Starting (some models only)



Key operated, two-position switch. To start the engine, first turn the key to ON position. To stop the engine, turn the key to OFF position.

### Electric Starting (some models only)



Key, operated, three-position switch. To start engine, turn key to START position and hold.

▼ **CAUTION** : Do not hold key at START position more than 30 seconds.

Release key immediately when engine has started. Key return to ON position as soon as it is released.

If engine does not start on first try, key must be turned fully back to OFF each time. To stop engine, turn key to OFF position.

▼ **CAUTION** : Holding key in START position when engine has started could damage starter mechanism.

○ **NOTE** : Engine may be manually started with rewind starter if necessary.

## I) Rewind Starter Handle

Auto-rewind type located on right hand side of vehicle. To engage mechanism, pull handle slowly until a resistance is felt then pull vigorously.

## J) Primer Button

Pull and push button two or three times to start a cold engine. Not necessary when engine is warm.

## K) Adjustable Steering Handle

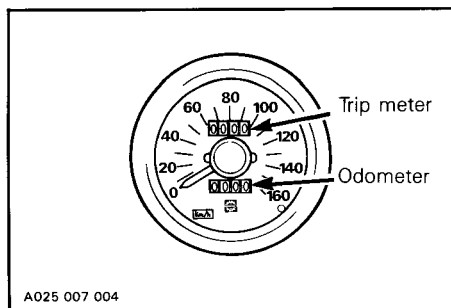
Steering handle height is adjustable, see an authorized dealer.

## L) Speedometer/Odometer

The speedometer is linked directly to the drive axle. Direct-reading dial indicates the speed of the vehicle in kilometers or in miles per hour. Odometer records the total distance travelled in kilometers or in miles.

### **Trip Meter (some models only)**

Speedometer features a trip meter that records a distance travelled in kilometers or in miles until it is reset. It can be used to record a fuel tank range or distance between two relays for instance.



### **M) Trip Meter Reset Button (some models only)**

Trip meter reset button is located on center of dashboard. To reset, turn button until all numbers read zero.

### **N) Tachometer (some models only)**

The tachometer registers the impulses of magneto. Direct-reading dial indicates the number of revolutions per minute (RPM) of the engine.

### **O) Fuel Level Indicator**

Mounted on left side of fuel tank, it provides visual indication of fuel level in tank.

### **P) High Beam Pilot Lamp (Blue)**

Lights when headlamp is on high beam.

### **Q) Injection Oil Level Pilot Lamp (Red)**

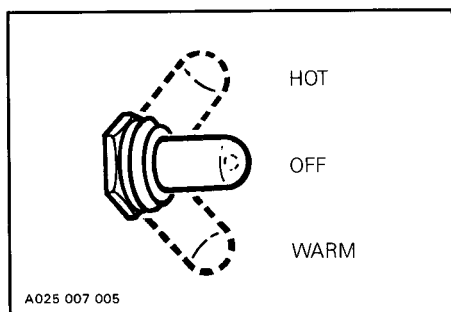
Will light up when injection oil level is low. Check level and replenish as soon as possible.

▼ **CAUTION:** Do not run engine out of oil. Serious engine damage will occur.

○ **NOTE:** Whenever brake lever is actuated, oil injection level pilot lamp should light up. If not replace lamp.

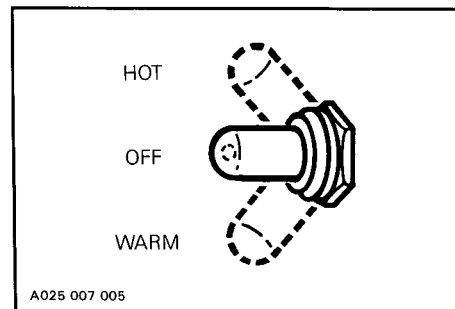
### **R) Heated Grip Switch**

The three-position toggle switch is located on left side of dashboard. Select the desired position to keep hands at a comfortable temperature.



### **S) Heated Throttle Lever Switch (some models only)**

The three-position toggle switch is located on right side of dashboard. Select the desired position to keep right thumb at a comfortable temperature.



## T) Fuel Tank Cap

Unscrew to fill up tank then fully tighten.

◆ **WARNING** : Never use an open flame to check fuel level.

## U) Hood Latches

Pull down the latches to unlock the hood from its anchors.

○ **NOTE** : Always lift hood gently until stopped by retaining device.

◆ **WARNING** : It is dangerous to run an engine with the hood opened, unfastened or removed.

## V) Snow Deflector

Close snow deflector when riding in powdered snow or when vehicle is stored outdoor without a tarpaulin.

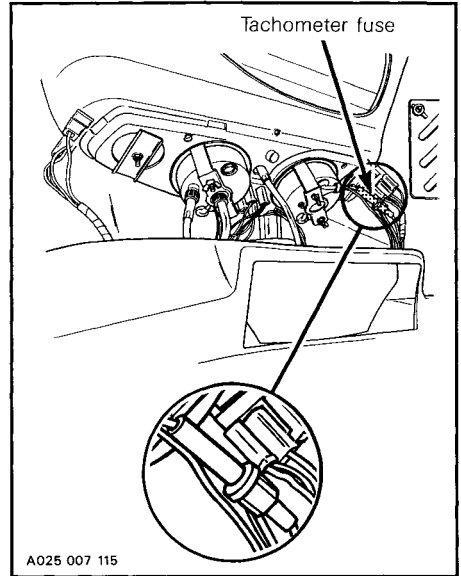
## Tool Kit

Tool kit is located in engine compartment at front.

## Tachometer Fuse (some models only)

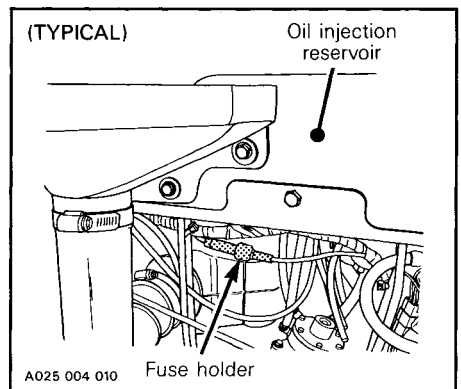
The tachometer is protected by a 0.1 ampere rated fuse. Fuse holder is located under the hood beside the tachometer. If tachometer stops operating, check fuse condition and replace if necessary.

▼ **CAUTION** : Do not use a higher rated fuse as this can cause severe damage to the tachometer.



## Starting System Fuse (some models only)

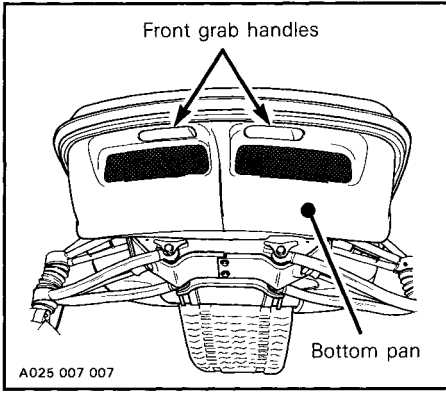
Starting system is protected with a 30 ampere rated fuse. See following illustrations for fuse holder location. If starter does not operate, check fuse condition and replace if necessary.



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## Front Grab Handles

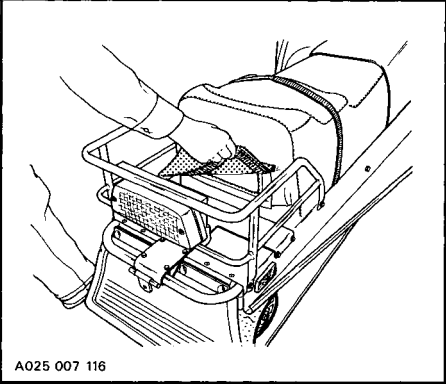
Located at the front of the bottom pan, these grab handles must be used whenever front of vehicle is lifted.



▼ **CAUTION:** Do not use skis to pull or lift vehicle.

## Storage Compartment (some models only)

Lift flap to get access to storage compartment.





# FUEL AND OIL

○ **NOTE** : During the break-in period, engine requires a richer fuel/oil mixture. Refer to BREAK-IN section.

## Recommended Fuel

Use regular unleaded gasoline, available from most service stations or gasohol containing less than 10% of ethanol. The gasoline used must have an octane number (R + M/2) of 87 or higher.

◆ **WARNING** : Never top up the fuel tank before placing the vehicle in a warm area. As temperature increases, fuel expands and might overflow. Do not fill the fuel tank all the way to the top. When the machine is tilted, this could cause the fuel to overflow. Fuel is flammable and explosive under certain conditions. Always handle in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. If fumes are noticed while driving, the cause should be determined and corrected without delay. Never add fuel while engine is running. Avoid skin contact with fuel when temperature is below freezing point. Always wipe off any fuel spillage from the vehicle.

▼ **CAUTION** : Never experiment with other fuels or fuel ratios. The use of fuel containing methanol, or similar products including naphtha is not recommended. The use of unrec-ommended fuel can result in vehicle performance deterioration and damage to critical parts in the fuel system and engine components.

## Recommended Oil

Use BOMBARDIER Snowmobile Injection Oil (P/N 496 0133 00 - 1 liter) available from the authorized dealer. This type of oil will flow at temperatures as low as minus 40°C (-40°F).

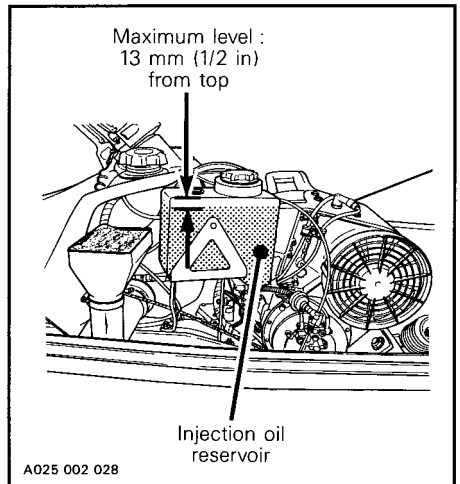
If BOMBARDIER Snowmobile Injection Oil is unavailable, substitute with BLIZ-ZARD Oil (P/N 496 0135 00).

▼ **CAUTION** : Never mix brands of two-cycle oil as serious chemical reaction can cause severe damage. Never use outboard or straight mineral oils.

## Oil Injection System

Always maintain a sufficient amount of BOMBARDIER Snowmobile Injection Oil in the injection oil reservoir.

▼ **CAUTION** : Never allow oil level to drop more than 2/3.



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▼ **CAUTION** : Check level and refill every time you refuel. Do not overfill. Wipe off any spillage.

○ **NOTE** : For initial engine break-in, add 500 mL (18 oz) of BLIZZARD oil or the same quantity of BOMBARDIER Injection Oil to the first full filling of fuel tank.

## BREAK-IN PERIOD

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### Engine

With Rotax® snowmobile engines, a break-in period is required before running the vehicle at full throttle. Engine manufacturer's recommendation is 10 to 15 operating hours. During this period, maximum throttle should not exceed 3/4. However, brief full acceleration and speed variations contribute to a good break-in. Continued wide open throttle accelerations, prolonged cruising speeds, and engine overheating are detrimental during the break-in period.

○ **NOTE** : To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of BLIZZARD Oil (P/N 496 0135 00) or the same quantity of BOMBARDIER Injection Oil (P/N 496 0133 00) should be added to fuel for the first full filling of fuel tank.

▼ **CAUTION** : Remove and clean spark plugs after engine break-in.

### Belt

A new drive belt requires a break-in period of 25 km (15 miles).

### 10 - Hour Inspection

As with any precision piece of mechanical equipment, we suggest that after the first 10 hours of operation or 30 days after the purchase, whichever comes first, your vehicle be checked by an authorized dealer. This inspection will give you the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation. Refer to the *Warranty Guide and Vehicle Logbook*.

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**The 10-hour inspection is at the expense of the vehicle owner.**

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# PRE-START CHECK ---

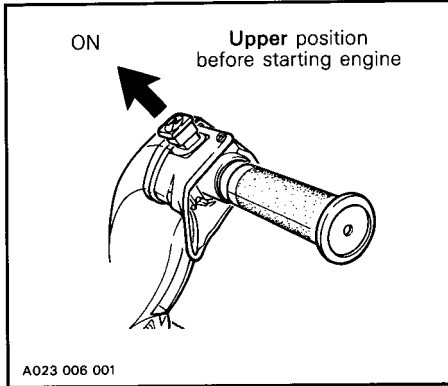
## Check Points:

- **ACTIVATE THE THROTTLE CONTROL LEVER SEVERAL TIMES** to check that it operates easily and smoothly. It must return to idle position when released.
- Check that the skis and the track are not frozen to the ground or snow surface and that steering operates freely.
- Check that air filter is free of snow.
- Activate the brake control lever and make sure the brake fully applies before the brake control lever touches the handlebar grip. It must fully return when released.
- Check injection oil level.
- Check fuel level.
- Check gear shift lever position (models with reverse gear only).
- Verify that the path ahead of the vehicle is clear of bystanders and obstacles.
- Clean and check operation of the headlight, taillight and brake light.

 **WARNING : Only start your snowmobile once all components are checked and functioning properly.**

# STARTING PROCEDURE

Test throttle control lever operation.  
Check that the emergency cut-out switch is in the ON position.



Ensure the tether cut-out cap is in position and that the cord is attached to your clothing.

Activate the primer two or three times.

○ **NOTE** : Priming is not necessary when engine is warm. To prime, activate button until a pumping resistance is felt. This indicates that fuel has reached primer valve. From this point, pump two or three times to inject fuel in intake manifold. After priming, ensure that primer button is pushed all the way in to avoid fuel from draining.

▼ **CAUTION** : Use of ether and/or other types of fluid as a starting aid can cause damage to engine components and is not recommended.

## Manual Starting

Insert the key in the ignition switch and turn to ON position.

Grasp manual starter handle firmly and pull slowly until a resistance is felt then pull vigorously. Slowly release the re-wind starter handle.

◆ **WARNING** : Do not apply throttle while starting.

## Electric Starting (some models only)

To start engine, follow either manual or electric starting procedure.

▼ **CAUTION** : Never operate your snowmobile with the battery removed or disconnected. As it reduces voltage fluctuations, operating vehicle without battery might cause instrument or bulb failures.

Insert key in ignition switch.

Turn key clockwise until starter engages.

▼ **CAUTION** : To avoid starter overheating, the cranking period should never exceed 30 seconds and a rest period should be observed between the cranking cycles to let starter cool down.

Release key immediately when engine has started. If engine does not start on first try, key must be turned fully back to OFF each time.

○ **NOTE** : If for some reason, the vehicle cannot be started electrically, place ignition key to ON position and start engine manually.

## Before Riding

Check operation of the emergency cut-out switch and tether switch. Restart engine.

◆ **WARNING** : If engine does not shut-off when applying the emergency cut-out switch and/or when pulling the tether cut-out cap, stop the engine by turning OFF the ignition key. Do not operate the vehicle further, see an authorized dealer.

Allow the engine to warm before operating at full throttle.

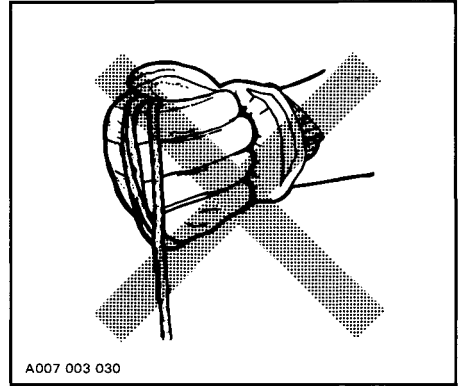
○ **NOTE** : Let engine idle three to five minutes.

◆ **WARNING** : This snowmobile is propelled by a revolving track which must be partially exposed for proper operation. Serious injuries may be caused by operator carelessness, resulting in hands, feet or clothing becoming entangled in the track.

## Emergency Starting

Should the rewind starter rope fray and break, the engine can be started with the emergency starter rope supplied with the tool kit.

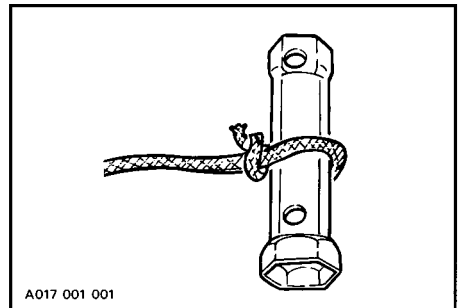
◆ **WARNING** : Do not wind starting rope around your hand. Hold rope by the handle only.

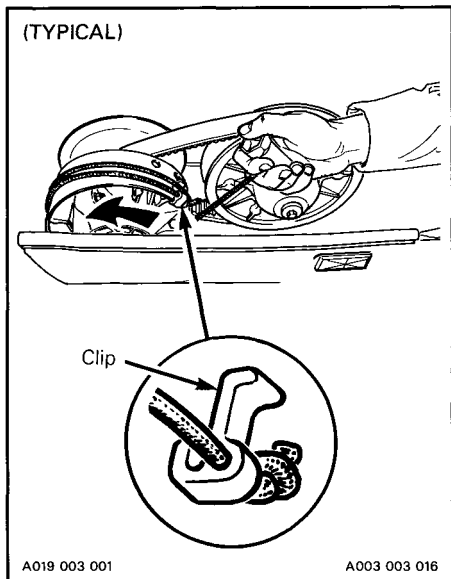


◆ **WARNING** : Do not start the vehicle by the drive pulley unless it is a true emergency situation. Have the vehicle repaired as soon as possible.

Attach emergency rope to any available handle and to the starter clip supplied in the tool box. Wind the rope tightly around drive pulley so that when pulled, pulley will rotate counterclockwise.

○ **NOTE** : The spark plug socket can be used as an emergency starter grip.

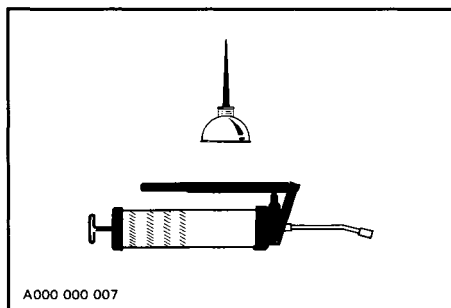




Start engine as per usual manual starting.

◆ **WARNING** : When starting the vehicle in an emergency situation, using drive pulley, do not reinstall the belt guard and return slowly to have vehicle repaired.

## LUBRICATION



It is recommended that the suspension be lubricated monthly or every 40 hours of operation. The steering system needs to be lubricated once a year. If the vehicle is operated in wet snow or in severe conditions these items should be lubricated more frequently.

○ **NOTE** : When lubricating through grease fittings, slowly pump grease gun until grease appears at joints. Always use low temperature grease (P/N 413 7061 00).

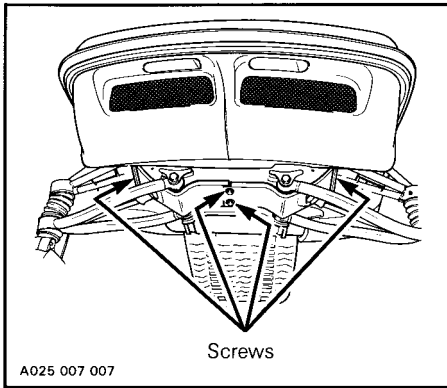
### Frequency

Routine maintenance is necessary for all mechanized products, and snowmobiles are no exception. A weekly vehicle inspection greatly contributes to the life span of the snowmobile.

◆ **WARNING :** Only perform such procedures as detailed in this guide. It is recommended that dealer assistance be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine should be turned OFF for all lubrication and maintenance procedures. Do not lubricate throttle and/or brake cables and housings.

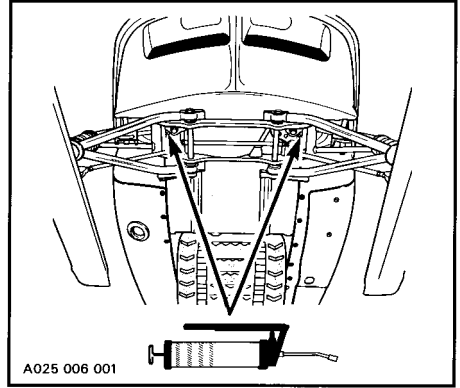
## Steering Mechanism

On models so equipped, remove protector plate to gain access to steering mechanism.



◆ **WARNING :** Check tightness of fasteners and ball joints.

From underneath of bottom pan, lubricate both rocker arms of steering system.

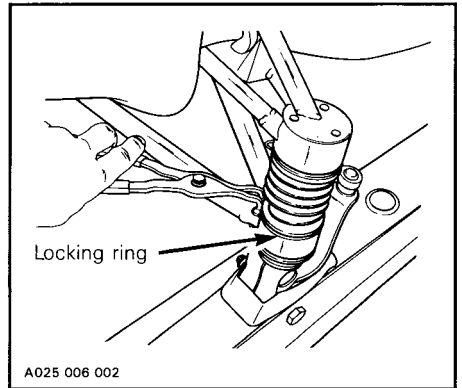


Oil upper and lower steering column bushings.

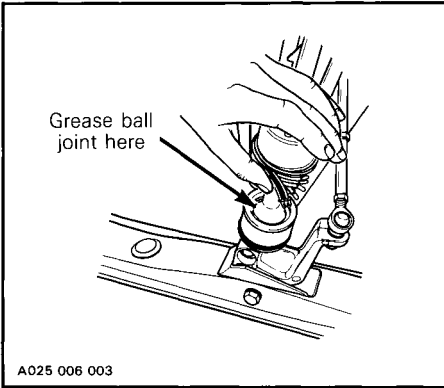
Inspect ski leg boots for damage such as tears or cracks. If damaged, refer to an authorized dealer.

Once a year, ski leg ball joints and ski pivot should be lubricated.

— Remove boot locking rings.



- Slide boot to access ball joints.
- Apply small amount of grease on all ball joints.

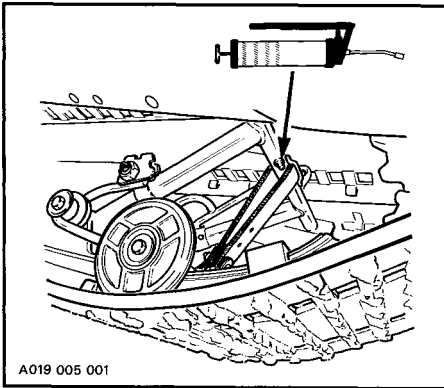


- Properly secure boot.
- Remove ski and apply grease on ski pivot.
- Proceed the same way on the other side.

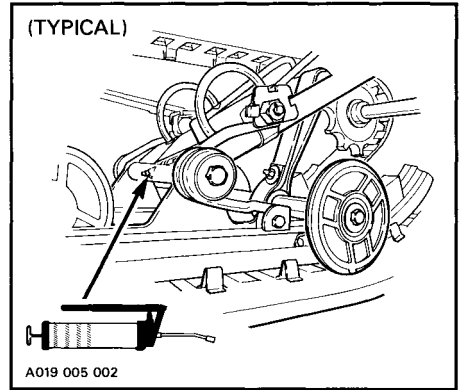
### Slide Suspension

Lubricate the following parts at grease fitting until grease appears at joints. Use low temperature grease only.

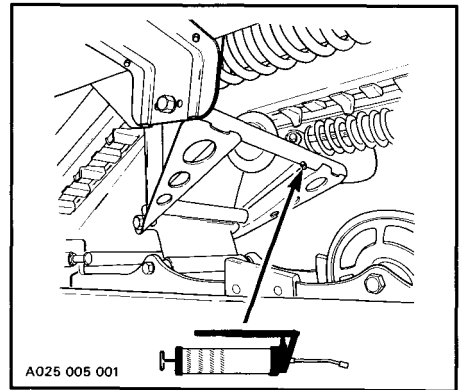
Front upper cross shaft.



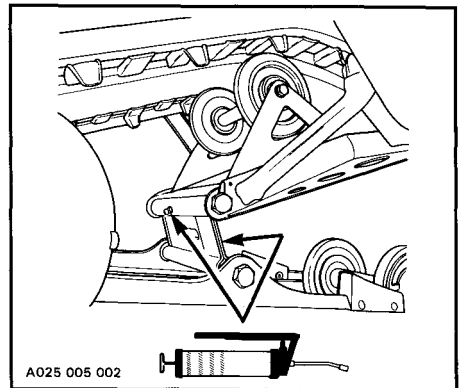
Front lower cross shaft.



Rear upper cross shaft.



Rear pivot arm shafts.



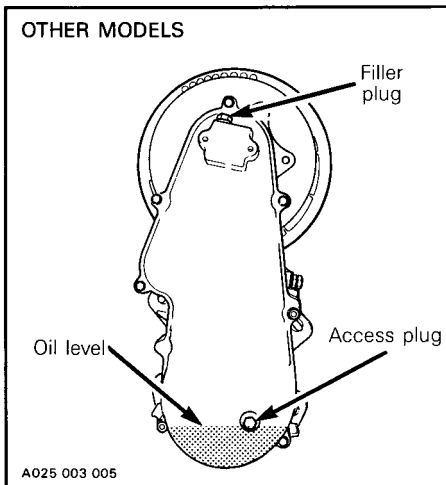
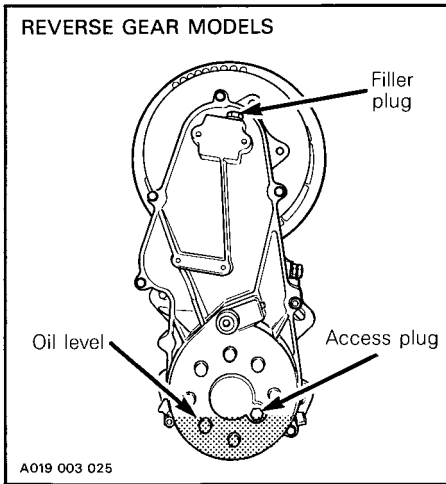


## Brake Caliper

See an authorized dealer for proper lubrication of brake caliper ratchet wheel.

◆ **WARNING** : Do not lubricate throttle and/or brake cables and housings.

## Chaincase/Transmission Oil Level

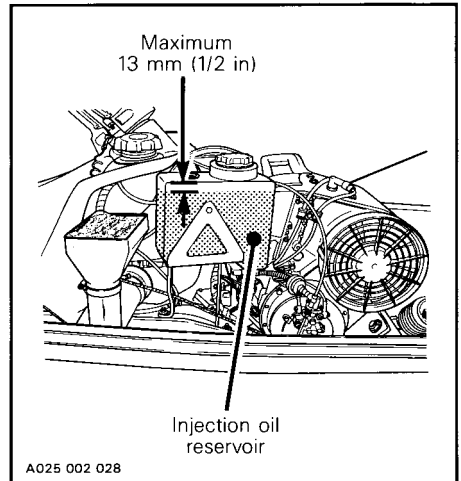


To fill, remove filler plug from top of transmission. Refill as required using Bombardier chaincase oil (P/N 413 8019 00 - 250 mL).

○ **NOTE** : The chaincase oil capacity is approximately 250 mL (9 imp. oz) on models without reverse gear and 500 mL (18 imp. oz) on transmission with reverse gear.

## Oil Injection System

Always maintain a sufficient amount of Bombardier Snowmobile Injection Oil in the injection oil reservoir.

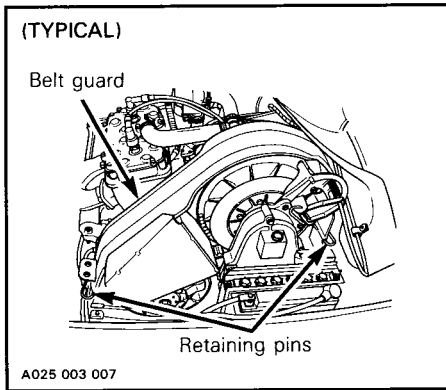


▼ **CAUTION** : Check level and re-fill every time you refuel. Do not overfill. Wipe off any spillage.

# MAINTENANCE

## Drive Belt Removal and Installation

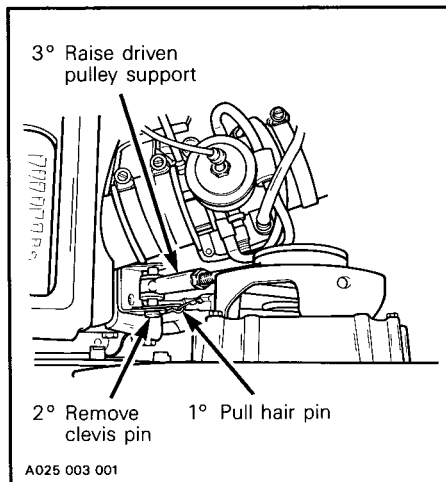
1. Remove ignition key.
2. Tilt the hood.
3. Pull out both retaining pins on ends of belt guard.



4. Lift and remove the belt guard.

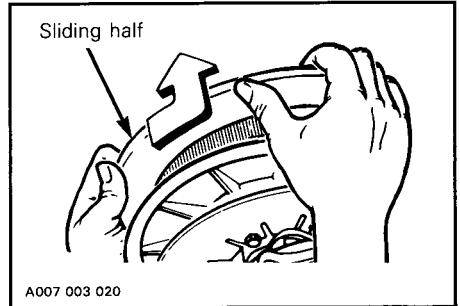
◆ **WARNING** : Engine should be operated only when belt guard is properly secured.

5. Unlock and raise driven pulley support.

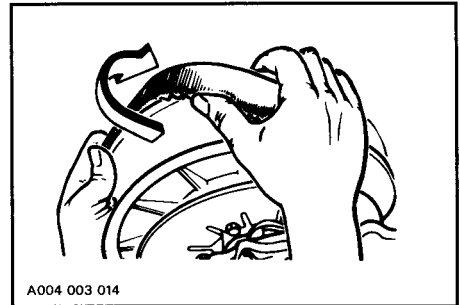


○ **NOTE** : Removal and installation of drive belt is easier when driven pulley is held with parking brake on.

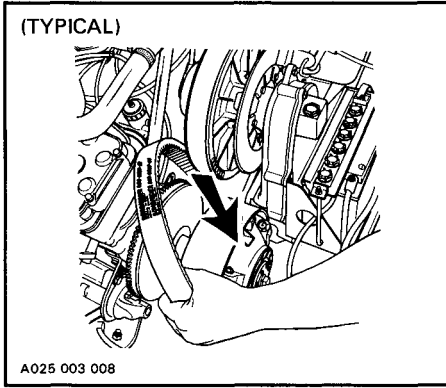
6. Open the driven pulley by twisting and pushing the sliding half. Hold in fully open position.



7. Slip the belt over the top edge of the sliding half, as shown.



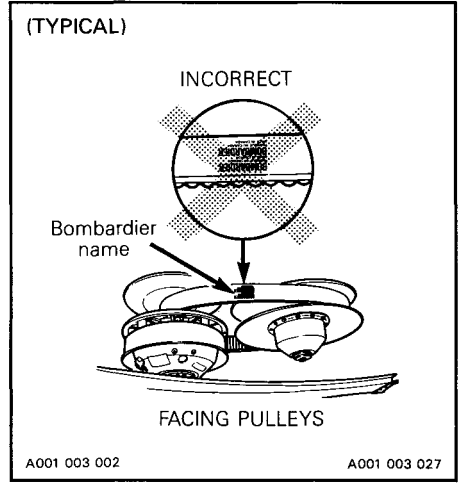
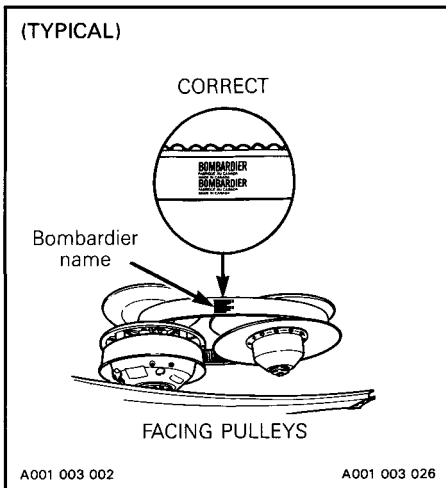
8. Slip the belt out from the drive pulley and remove completely from vehicle.



**WARNING :** Never start or run engine without the drive belt installed. Running an unloaded engine is dangerous.

To install the drive belt, reverse the procedure, however pay attention to the following :

The maximum drive belt life span is achieved when the belt runs in the same direction. Always install drive belt so Bombardier name can be read when facing pulleys.



**CAUTION :** Do not force or use tools to pry the belt into place, this could cut or break the cords in the belt.

### Drive Belt Condition

Inspect belt for cracks, fraying or abnormal wear (uneven wear, wear on one side, missing cogs, cracked fabric). If abnormal wear is noted, probable cause could be pulley misalignment, excessive RPM with frozen track, fast starts without warm-up period, burred or rusty sheave, oil on belt or distorted spare belt. Contact an authorized dealer.

Check the drive belt width. Replace if less than 32 mm (1-1/4 in).

### New Drive Belt

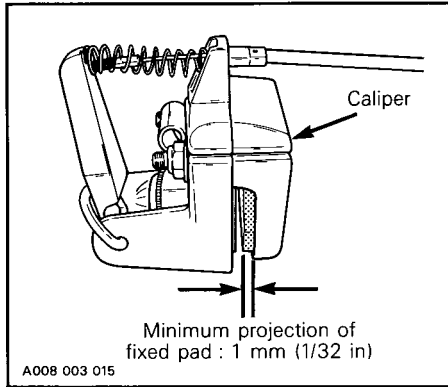
When installing a new drive belt, break-in period of 25 km (15 miles) is strongly recommended.

○ **NOTE** : Always store a spare belt in a manner to allow its natural shape to be maintained.

## Brake Condition

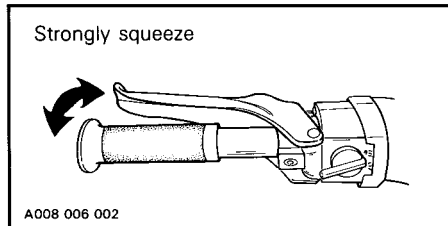
The brake mechanism on your snowmobile is an essential safety device. Keep this mechanism in proper working condition. Above all, do not operate the snowmobile without an effective brake system.

◆ **WARNING** : Brake pads must be replaced when fixed pad projects only by 1 mm (1/32 in) from caliper. Replacement must be performed by an authorized dealer.

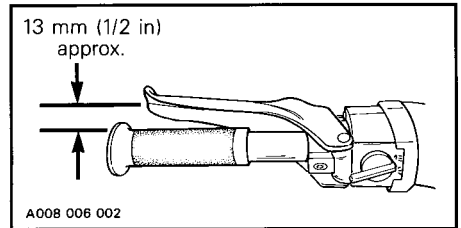


## Brake Adjustment

The brake mechanism is a self-adjusting type. If a quicker brake response is desired, strongly squeeze the brake lever several times, this will actuate the adjusting mechanism.

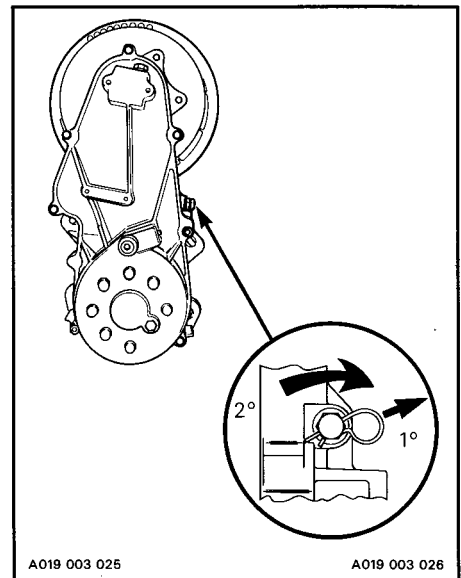


After the adjustment, brake should apply fully when lever is approximately 13 mm (1/2 in) from handlebar grip. If not, do not tamper with the brake, contact an authorized dealer.



## Drive Chain Tension

Run vehicle forward so that true free-play can be taken. To adjust, remove the adjusting screw hair pin. Fully tighten adjusting screw **by hand** then back off only far enough for hair pin to engage in locking hole and install hair pin.



○ **NOTE** : If chattering is experienced when the transmission is shifted into reverse, the linkage may have to be adjusted. Refer to an authorized dealer for adjustment.

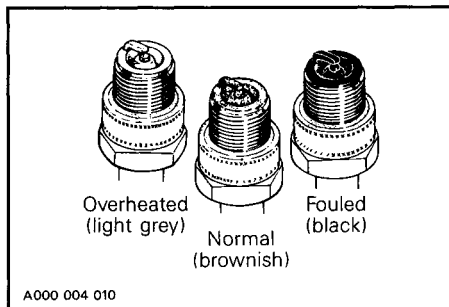
◆ **WARNING** : If specified free-play is not reached with the tensioner screw fully tightened, consult an authorized dealer.

## Spark Plugs

Disconnect the spark plug wires and remove the spark plugs.

Check the condition of the plugs.

- A brownish tip reflects ideal conditions (carburetor adjustments, spark plug heat range, etc., are correct).
- A black insulator tip indicates fouling caused by : carburetor idle speed mixture and/or high speed mixture too rich, incorrect oil injection pump adjustment wrong type of spark plug (heat range), or excessive idling.
- A light grey insulator tip indicates a lean mixture caused by : carburetor high speed mixture adjusted too lean, wrong spark plug heat range, incorrect oil injection pump adjustment, or a leaking seal or gasket.



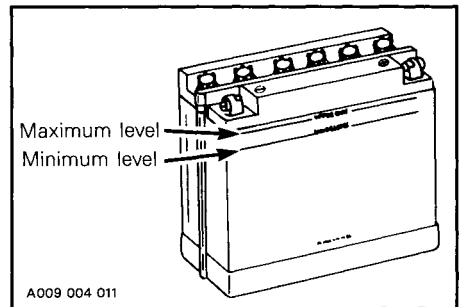
▼ **CAUTION** : If spark plug condition is not ideal, contact an authorized dealer.

Check spark plug gap using a wire feeler gauge, adjust as specified in SPECIFICATIONS section.

Reinstall plugs and connect wires.

## Battery Condition (electric starting only)

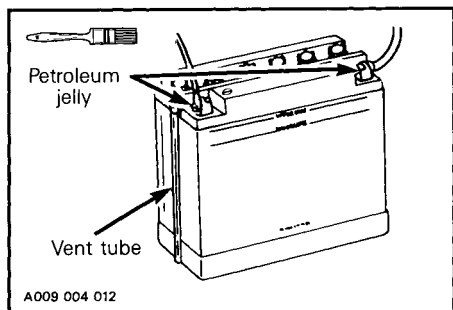
Check electrolyte level weekly. Electrolyte must be at UPPER LEVEL line on battery casing.



If necessary add distilled water. Battery connections must also be free of corrosion. If cleaning is necessary remove corrosion using a stiff brush then clean with a solution of baking soda and water. Rinse and dry well.

▼ **CAUTION** : Do not allow cleaning solution to enter battery. It will destroy the chemical properties of the electrolyte.

After reconnecting battery, coat battery terminals and connectors with silicone dielectric grease (P/N 413 7017 00) or petroleum jelly to prevent corrosion. Check that battery is well secured and that battery vent tube is not kinked or blocked.



**WARNING :** Vent tube must be free and open. If not, it will restrict ventilation and create a gas accumulation that could result in an explosion. Avoid skin contact with electrolyte. Gases given off by a battery being charged are highly explosive. Always charge in a well ventilated area. Keep battery away from cigarettes, open flames and sparks.

**CAUTION :** Prior to charging the battery, always remove it from the vehicle to prevent electrolyte spillage. Be careful not to ground positive terminal with the chassis. Always disconnect black negative cable first.

**NOTE :** Always keep battery fully charged. To charge, refer to battery in STORAGE section.

**CAUTION :** A poorly charged or a discharged battery will freeze and damage its elements and possibly damage its casing and parts surrounding battery.

## Suspension Condition

Visually inspect all suspension components.

**NOTE :** During normal driving, snow will act as a lubricant and coolant for the slider shoes. Extensive riding on ice or sanded snow will create excessive heat build-up and cause premature slider shoe wear.

## Suspension Stopper Strap Condition

Inspect strap for wear and cracks, bolt and nut for tightness. If loose inspect holes for deformation. Replace as required. Torque nut to 10 N•m (89 lbf•in).

## Suspension Adjustment

The front and rear suspensions are adjustable. **Front suspension** includes two-shock absorber / spring combination that have a three-position adjustment cam. See an authorized dealer for adjustment.

### Front Suspension Adjustment

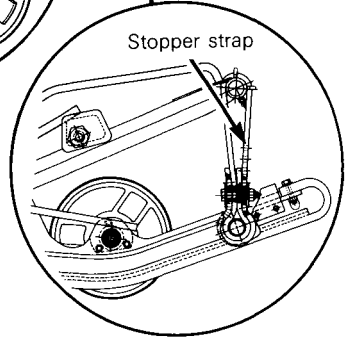
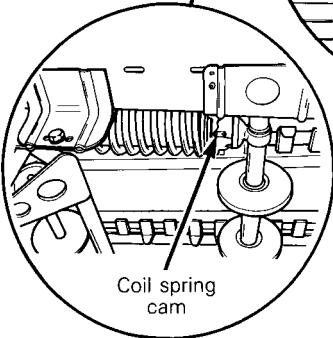
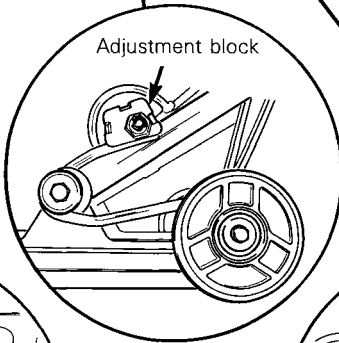
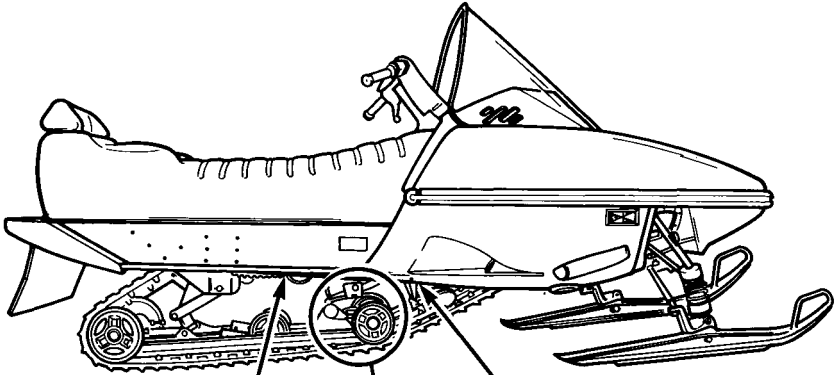
The preload of shock absorber spring can be adjusted as follows :

SPRING END / STOPPER DISTANCE	CONDITION
Smallest	Soft riding, smooth trail
Intermediate	Normal riding
Greatest	Hard surface

**NOTE :** Exhaust muffler or shock absorber may be removed to ease adjustment cam access. See an authorized dealer.

**Rear suspension** includes two torsional springs at **front portion** that have a four-position adjustment block, and adjustable stopper strap and finally two shock absorber / spring combination at **rear portion** that have a five-position adjustment cam.

(TYPICAL)



The front suspension is adjustable for surface condition, vehicle handling and stability.

The front portion of rear suspension is adjustable for surface condition and steering effects.

The stopper strap is adjustable for vehicle weight transfer control.

The rear portion of rear suspension is adjustable for driver's weight.

Choice of suspension adjustments depends on carrying load, driver's weight, personal preference, riding speed and field condition.

Cam/block position	Soft → Stiff
Operator's Weight	Light → Heavy
Riding speed	Low → High
Field condition	Flat → Bumpy

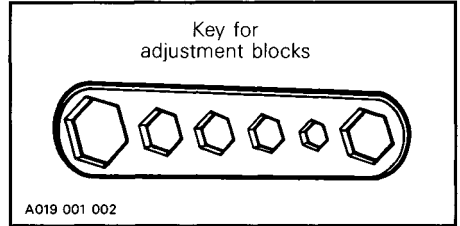
Slight suspension bottoming occurring under the worst riding conditions indicates a good choice of preload adjustment (cam/block position).

Optional different rate springs are available for your convenience. Ask an authorized dealer for more information.

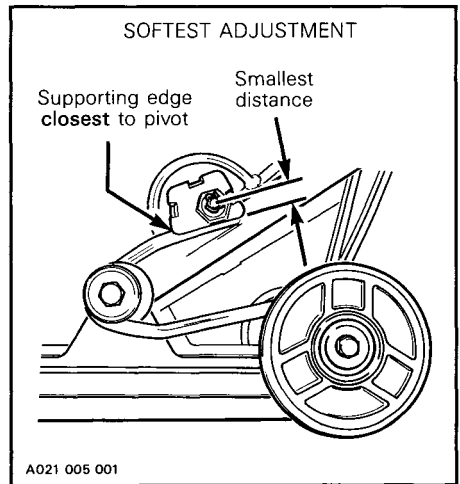
Suspension is adjusted as outlined in the following lines.

### Adjustment Block Tool

To adjust rear suspension adjustment blocks, use the special key supplied in tool kit.

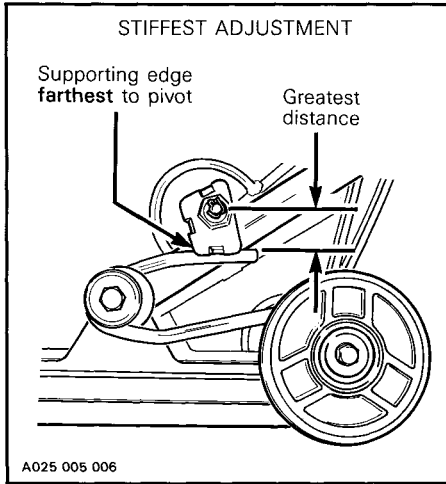


Turning adjustment block moves edges of block supporting spring rod. The softest adjustment is reached when the supporting edge of block is the closest to pivot of block.

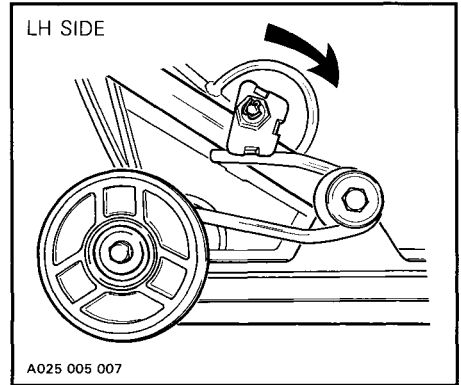
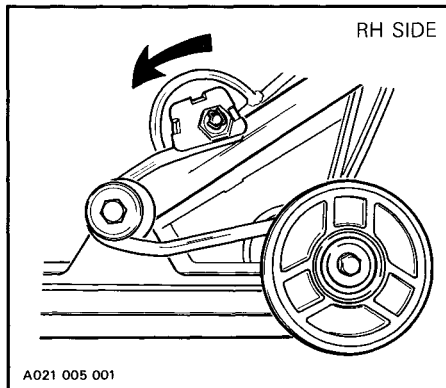




The stiffest adjustment is reached when the supporting edge of block is the farthest to pivot of block.

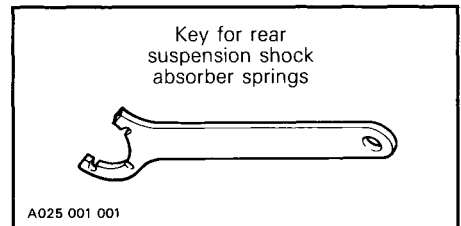


▼ **CAUTION** : Always turn the left side adjustment block in a clockwise direction, the right side block in a counterclockwise direction. Left and right adjustment blocks must always be set at the same position.



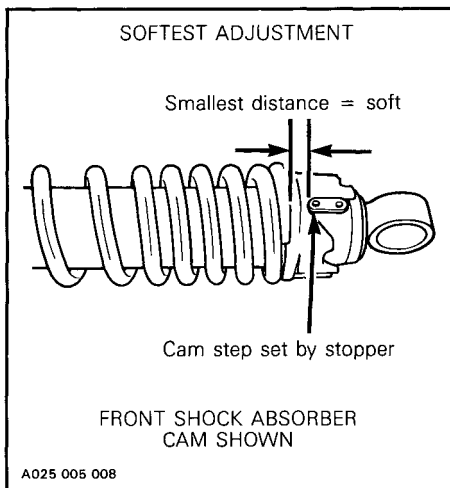
### Shock Absorber Spring Cam Tool

To adjust rear suspension shock absorber springs, use the special key supplied in tool kit.

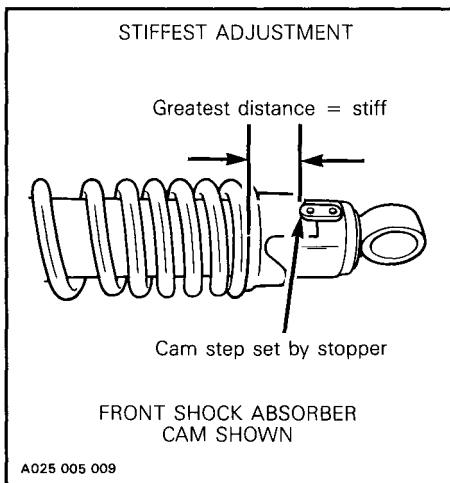


Turning adjustment cam moves steps of cam over a stopper and controls cam height which in turn, change compressed length of spring. Spring preload can be increased or decreased by turning the cam.

The softest adjustment is reached when selected cam step is the closest to spring end.



The stiffest adjustment is reached when selected cam step is the farthest to spring end.



**CAUTION:** Always adjust left and right shock absorber spring cams at the same position.

## Rear Suspension Adjustment

### Adjustment Blocks

When the adjustment blocks are set at the softest adjustment, more vehicle weight is distributed to the skis thus giving a more positive steering. Track lead angle will be reduced in this position.

Steering stiffness can be reduced by setting adjustment blocks at their stiffest adjustment.

### Shock Absorber Spring Cam

The preload of shock absorber springs can be adjusted as follows :

SPRING END/ STOPPER DISTANCE	DRIVER'S WEIGHT kg (lb)	
	FROM	UP TO
Smallest	—	68 (150)
Intermediate	68 (150)	82 (180)
Greatest	82 (180)	—

### Stopper Strap

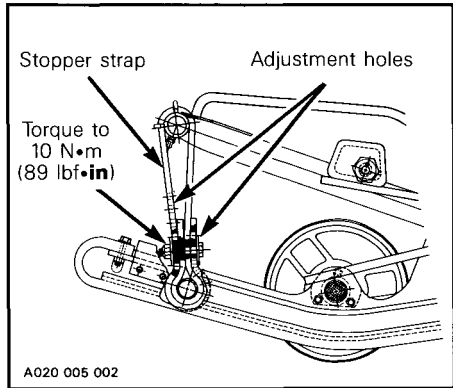
The function of the suspension stopper strap is to control the transfer of vehicle weight during acceleration and to control track lead angle.

The longer the belt, the more the weight will be transferred to the track to provide a better traction. The shorter the belt, the lesser the weight transferred to the track, thus maintaining a more positive direction.

The longer the belt, the greater will be the track lead angle. A shorter belt will reduce track lead angle which may help when negotiating a particular snow condition.

Adjusting holes on the stopper strap allow to adjust it according to driver's requirements, field and/or snow conditions.

○ **NOTE** : The stopper strap may be adjusted to the second holes (counting from top) to get a softer suspension when riding mostly in trails with Skandic models.



◆ **WARNING** : Always torque the nut to 10 N•m (89 lbf•in).

### Deep Snow Operation

When operating the vehicle in deep snow, it may be necessary to vary position of adjustment blocks, shock absorber spring cams, stopper strap and/or driver's riding position, to change the angle at which the track rides on the snow. Operator's familiarity with the various adjustments as well as snow conditions will dictate the most efficient combination.

### Track Condition

Lift the rear of the vehicle and support it off the ground. With the engine off, rotate the track by hand, and inspect condition. If worn or cut, or if track fibers are exposed, or if missing or defective inserts or guides are noted ; contact an authorized dealer.

◆ **WARNING** : Do not operate a snowmobile with a cut, torn or damaged track.

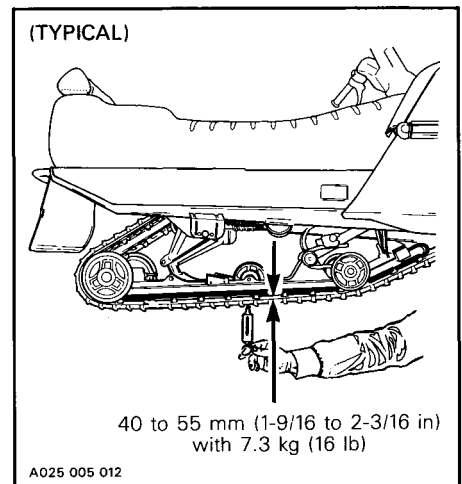
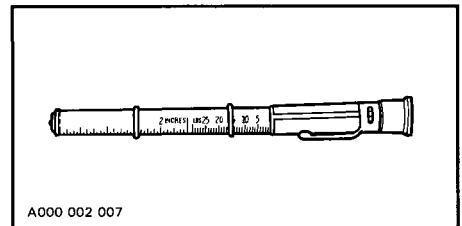
## Track Tension and Alignment

### Tension

Lift the rear of vehicle and support with a mechanical stand.

Allow the slide to extend normally and check the gap half-way along slider shoe. The gap should be 40 to 55 mm (1-9/16 to 2-3/16 in) between the slider shoe and the bottom inside of the track when applying a downward pull of 7.3 kg (16 lb). The gap should be measured close to suspension center idler wheel.

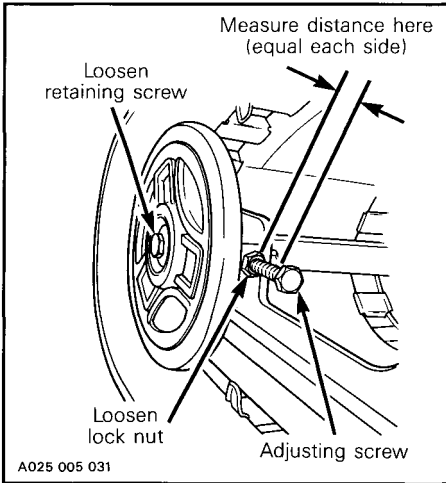
○ **NOTE** : A belt tension tester (P/N 414 3482 00) may be used to measure deflection as well as force applied.



If the track tension is too loose, the track will have a tendency to thump.

**CAUTION** : Too much tension will result in power loss and excessive stresses on suspension components.

If adjustment is necessary : loosen the rear idler wheel retaining screws and the adjusting screw lock nut, then loosen or tighten the adjusting screw located on the inner side of the rear idler wheels. Turn screws the same amount each side to prevent changing alignment. If correct tension is unattainable, contact an authorized dealer.



**NOTE** : Track tension and alignment are inter-related. Do not adjust one without the other.

## Alignment

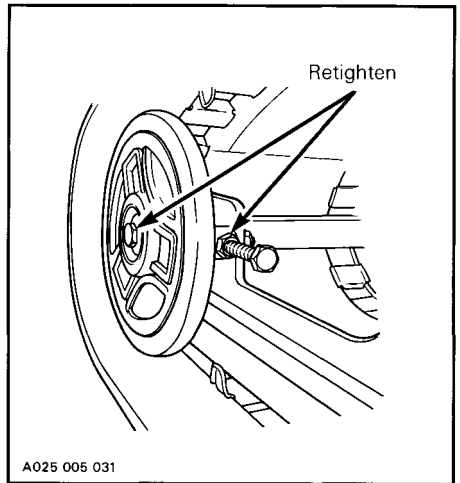
Measure distance between adjusting screw head and lock nut (see illustration above). The distance should be the same each side. Otherwise, turn adjusting screw as necessary.

Start the engine and accelerate slightly so that track turns **slowly**. Recheck track tension.

**WARNING** : Before checking track tension, ensure that the track is free of all particles which could be thrown out while it is rotating. Keep hands, tools, feet and clothing clear of track. Ensure no one is standing in close proximity to the vehicle.

Tighten lock nuts and the idler wheel retaining screws.

**WARNING** : If lock nuts or retaining screws are not tightened properly, the adjusting screws could loosen causing the track to become extremely loose and, under some operating conditions, allow the idler wheels to climb over the track lugs forcing the track against the tunnel causing the track to "lock".



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## Condition of Drive and Driven Pulleys

These are complex mechanisms which operate at high rotational speeds. Each pulley is dynamically balanced at the factory. Any tampering by the owner may disrupt this precision balancing and create an unstable condition.

Pulleys are factory-adjusted to provide the best performance under most riding conditions. However certain conditions, such as deep snow, high altitude, pulling a load, etc., may require different adjustments. Contact an authorized dealer for adjustment.

◆ **WARNING** : The drive and driven pulleys must be inspected and cleaned by an authorized dealer at least annually.

## Steering and Front Suspension Mechanism

Inspect the steering mechanism and front suspension.

◆ **WARNING** : Tighten all fasteners.

## Wear and Condition of Skis and Runners

Check the condition of the skis and the ski runners. If worn, contact an authorized dealer.

◆ **WARNING** : Excessively worn skis and/or ski runners will hinder proper vehicle control.

## Steering Adjustment

Skis should have a toe out of 3 mm (1/8 in).

To check, measure the distance between each ski runner at the front and rear. The front distance should be 3 mm (1/8 in) more than the rear when the handle bar is horizontal.

If adjustment is necessary, refer to an authorized dealer.

## Exhaust System

Replace any components which have developed cracks or holes. Ensure muffler is properly secured in its mount and the ends of retaining springs have not been over-stretched. The tail pipe of the muffler should be centered with the exit hole in the bottom pan.

▼ **CAUTION** : The exhaust system is designed to reduce noise and to improve the total performance of the engine. If any exhaust system component is removed from the engine, severe engine damage will result.

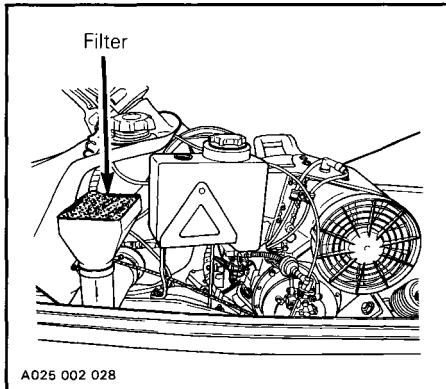
## Engine Compartment

Keep clean of grass, twigs, clothes, etc. These are combustible under certain conditions.

## Air Filter Cleaning

Leaving the vehicle uncovered during a snowfall or riding in deep powder snow may block air filter.

Lift hood and remove air filter from air intake silencer.



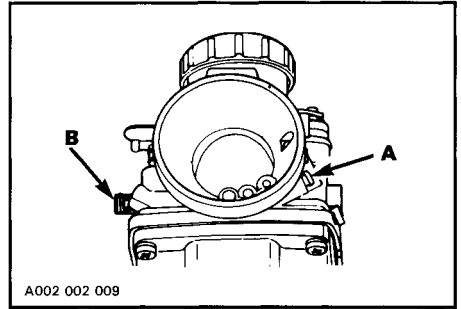
To clean the filter, shake the snow out of it then, dry it out.

Check that the air box is clean and dry and properly reinstall the filter.

▼ **CAUTION** : These vehicles have been calibrated with the filter installed. Operating the vehicle without it may cause engine damage.

## Carburetor Adjustment

▼ **CAUTION** : Never operate your snowmobile with the air intake silencer disconnected. Serious engine damage will occur if this notice is disregarded. On twin-carburetor models, make sure both carburetors start to operate simultaneously.



### A) Air Screw Adjustment

Slowly close the air screw (until a slight seating resistance is felt) then unscrew as per specified in "specifications" section.

### B) Idle Speed Adjustment

Turn **idle speed** screw clockwise until it contacts the throttle slide then continue turning two additional turns. This will provide a preliminary idle speed setting. Start engine and allow it to warm up. Adjust idle speed to 1800-2000 RPM by turning the idle speed screw clockwise or counterclockwise.

▼ **CAUTION** : Severe engine damage can occur if idle speed is unattainable. Contact your authorized dealer.

## High Altitude Kit

Altitude and temperature affect the carburation needed for optimum engine performance. The carburetor jetting and drive system must be changed in conjunction with changes in operating altitude and temperature. As the ambient temperature rises or as snowmobile is operated at a higher altitude, the jetting must be replaced with leaner jets. The original equipment (production) jets need to be changed (depending upon your operating altitude and temperature), following the break-in period, to the proper size.

An engine loses about 3-1/2 percent of its power for each 300 m (1000 ft) increase in elevation. For example, an engine operating at 3000 m (10000 ft) elevation would produce approximately 65 percent of the power it would have at sea level. Although this power cannot be regained, changes to the carburetor and drive system can be made to allow the engine to operate within its power band.

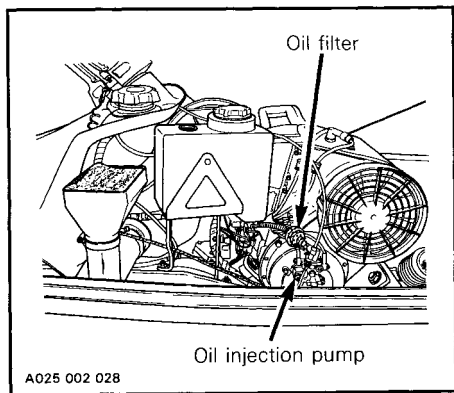
If your snowmobile is used in high altitude areas (1200 m (4000 ft) and up), the carburetor and drive system have to be recalibrated to meet those particular requirements. See an authorized dealer for high altitude kit installation.

▼ **CAUTION** : Do not change original jetting calibration if vehicle is used below 1200 m (4000 ft).

## Oil Injection System

### Injection Oil Filter Condition

Inspect oil filter at least once a month. Insure that filter is not obstructed by foreign particles ; if so, see an authorized dealer.



▼ **CAUTION** : An obstructed injection oil filter will cause oil starvation resulting in serious engine damage.

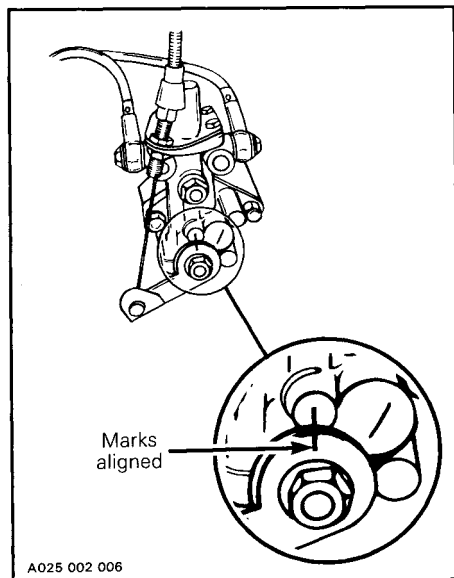
○ **NOTE** : After a storage period, it is **important** that a dealer replace the injection oil filter, that he verifies the oil flow of the injection pump and adjust it.

### Oil Injection Pump Adjustment

Proper oil injection pump adjustment is critical, any delay in the opening of the pump can result in serious engine damage.

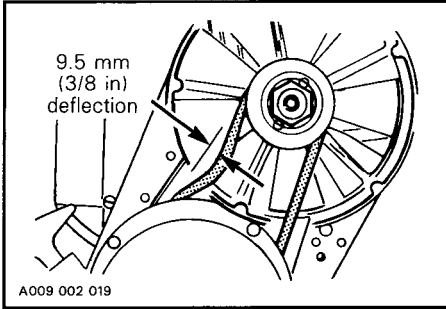
▼ **CAUTION** : The carburetor must be adjusted before adjusting the oil injection pump. Make sure idle speed is 1800-2000 RPM.

To check adjustment, eliminate the throttle cable free-play by pressing the throttle lever until a slight resistance is felt then hold in place. The marks on the pump casting and lever must align perfectly. If not, contact an authorized dealer.



## Cooling System Condition

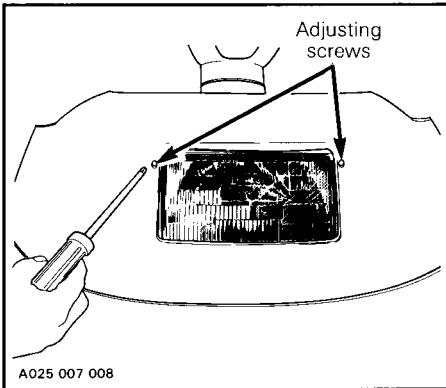
Inspect belt for cracks, uneven wear, etc. Check fan belt tension, 9.5 mm (3/8 in) deflection should exist when applying a 5 kg (11 lbf) force between pulleys.



If belt seems damaged or if deflection is incorrect, contact an authorized dealer immediately.

## Headlight Beam Aiming

To adjust, remove windshield. Turn adjusting screw to obtain desired beam position. Reinstall windshield.

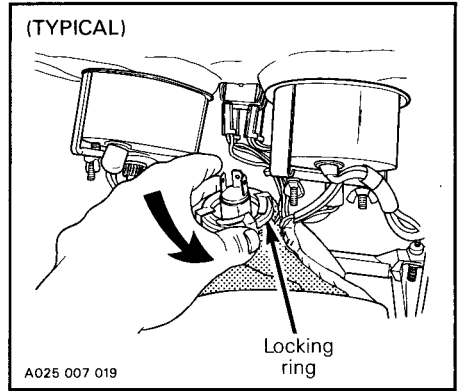


## Bulb Replacement

◆ **WARNING:** Always check light operation after bulb replacement.

### Headlight

If the headlight bulb is burnt, tilt hood, unplug the connector from the headlight. Remove the rubber boot and unfasten bulb retainer ring. Detach the bulb and replace. Properly reinstall parts.

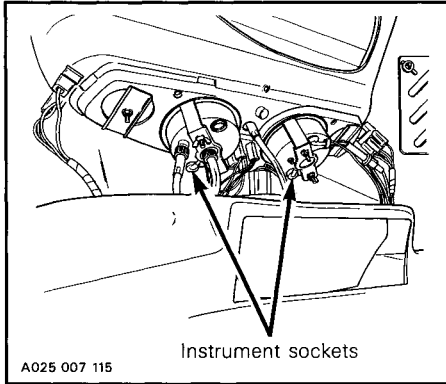


▼ **CAUTION:** On applicable models, never touch glass portion of an halogen bulb with bare fingers, it shortens its operating life. If by mistake glass is touched, clean it with isopropyl alcohol which will not leave a film on the bulb.

### Instrument(s)

Bulb socket is always behind the instrument under a black rubber boot. Pull rubber boot and socket to expose bulb. To release bulb, push bulb and at the same time, rotate bulb counterclockwise.





### Taillight

If taillight bulb is burnt, expose the bulb by removing the red plastic lens. To remove, unscrew the two screws.

### Wiring Harnesses, Cables and Lines

◆ **WARNING :** Ensure each routing is well secured with proper fastening device (locking tie, clip, grommet, etc.) away from hot or rotating components.

### General Inspection

Check electrical wiring and components, retighten loose connections. Check for stripped wires or damaged insulation. Thoroughly inspect the vehicle and tighten loose bolts, nuts and linkage. Inspect skis and ski runners for wear.

# STORAGE

---

It is during summer, or when a vehicle is not in use for more than one month that proper storage is a necessity.

◆ **WARNING** : Only perform such procedures as detailed in this guide. It is recommended that dealer assistance be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine should be turned OFF for all lubrication and maintenance procedures.

## Track

Lift rear of vehicle until track is clear of the ground and support with a brace or trestle.

○ **NOTE** : Do not release track tension.

## Controls

Lubricate the steering and front suspension mechanism. Inspect all components for tightness. Oil all moving joints of the brake mechanism.

◆ **WARNING** : Do not lubricate the throttle and/or brake cables and housings. Avoid getting oil on the brake pads.

Coat all electrical connections and switches with silicone dielectric grease (P/N 413 7017 00). If unavailable, use petroleum jelly.

## Chaincase/Gearbox

Drain the chaincase and refill to proper level, using fresh chaincase oil (P/N 413 8026 00 - 250 mL (9 oz)). To drain chaincase, remove its cover. To drain gearbox on models with reverse gear, remove drain plug.

○ **NOTE** : Chaincase oil capacity is about 250 mL (9 oz) on models without a reverse gear and 500 mL (17 oz) on models equipped with a reverse gear.

## Battery (electric start)

Battery should be removed from vehicle when storing vehicle. Refer to MAINTENANCE section for removal instructions.

▼ **CAUTION** : A poorly charged or discharged battery will freeze and damage its elements and possibly damage its casing and parts surrounding battery.

Clean outside surface of battery with a solution of baking soda and water. Remove all deposits from posts then rinse with clear tap water.

▼ **CAUTION** : Do not allow cleaning solution to enter battery since it will destroy the electrolyte.

Check electrolyte level. Refill if necessary with distilled water. Fully charge battery at a maximum rate of 2.0 A.

▼ **CAUTION** : Prior to charging the battery, always remove it from the vehicle to prevent electrolyte spillage.

◆ **WARNING** : Gases given off by a battery being charged are highly explosive. Always charge in a well ventilated area. Keep battery away from cigarettes, open flames and sparks. Avoid skin contact with electrolyte.

Coat battery posts with silicone dielectric grease (P/N 413 7017 00), if unavailable, use petroleum jelly.

Store battery in a cool, dry place.

○ **NOTE** : To prevent battery from discharging, store it on a wooden shelf away from moisture. A stored battery must be recharged at least every 40 days.

## Engine

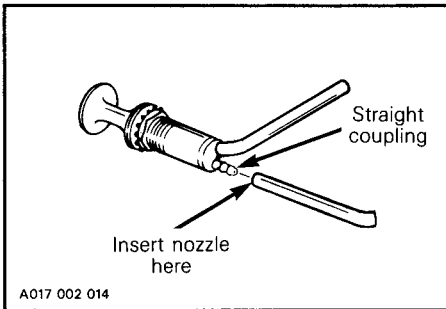
Engine internal parts must be lubricated to protect them from possible rust formation during the storage period.

To perform the storage procedures, proceed as follows :

1. Start the engine and allow it to run at idle speed until the engine reaches its operating temperature.

◆ **WARNING :** Ensure the track is free of all particles which could be thrown out while it is rotating. Keep hands, tools, feet and clothing clear of track. Ensure no one is standing in close proximity to the vehicle.

2. Stop the engine.
3. To prevent fuel from draining, primer button should be pushed all the way in.
4. Disconnect the outlet primer hose from the primer valve (straight coupling).



5. Insert storage oil (P/N 496 0141 00) nozzle into primer outlet hose.
6. Restart engine and run at idle speed.
7. Inject storage oil until the engine stalls or until a sufficient quantity of oil has entered the engine (approximately half a can).

8. With the engine stopped, remove the spark plug and spray storage oil (P/N 496 0141 00) into each cylinder.
9. Crank slowly two or three revolutions to lubricate cylinders.
10. Reinstall the spark plugs and the outlet primer hose.

◆ **WARNING :** This procedure must only be performed in a well ventilated area. Do not run engine during storage period.

## Drive and Driven Pulleys

Remove belt guard and slip off drive belt.

Spray antirust product on pulleys.

## Fuel Tank and Carburetors

A fuel stabilizer, such as Sta-Bil® (or equivalent), can be added in fuel tank to prevent fuel deterioration and avoid draining fuel system for storage. Follow manufacturer's instructions for proper use.

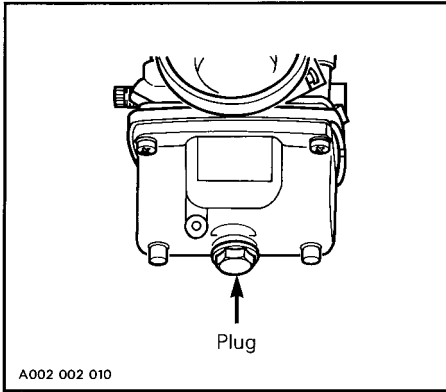
If above fuel stabilizer is not used, drain fuel system as described below.

Remove the cap and using a siphon, drain fuel tank.

◆ **WARNING :** Fuel is flammable and explosive under certain conditions. Always manipulate in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity.

Carburetor(s) must be dried out completely to prevent gum formation during the storage period.

Once the fuel tank is emptied, remove the float chamber drain plug on each carburetor and drain carburetor.



Reinstall plug.

## General Inspection

Grease or oil at all recommended lubrication points. Wipe off surplus.

Block air intake hole and exhaust system hole using clean cloths.

Remove any dirt or rust.

To clean the entire vehicle, use only flannel clothes or Kimtowels® wipers no. 58-380 from Kimberly-Clark.

▼ **CAUTION** : It is necessary to use flannel cloths or "Kimtowels" wipers on windshield and hood to avoid damaging further surfaces to clean.

To clean the entire vehicle, including metallic parts with a **thick** coat of grease, use "Endust" imported by Bristol Myers, available at hardware stores or supermarkets.

To clean the entire vehicle, including metallic parts with a **thin** coat of grease, use "Simple Green" from Sunshine Makers Inc., available at hardware stores or at automotive parts retailer.

To remove scratches on windshield or hood : Start with "Slip Streamer Motorcycle Windshield Heavy Duty Scratch Remover". Finish with "Slip Streamer Motorcycle Cleaner and Polish".

○ **NOTE** : The latest product may be use alone if only light scratches are noticeable.

▼ **CAUTION** : Never clean plastic parts or hood with strong detergent, degreasing agent, paint thinner, acetone, products containing chlorine, etc.

Inspect the hood and repair any damage. Touch up all metal spots where paint has been scratched off. Spray all metal parts with antirust product. Wax the hood and the painted portion of the frame for better protection.

○ **NOTE** : Apply wax on glossy finish only. Protect the vehicle with a cover to prevent dust accumulation during storage.

▼ **CAUTION** : The snowmobile has to be stored in a cool and dry place and covered with an opaque tarpaulin. This will prevent sun rays and grime from affecting plastic components and vehicle finish.

# TROUBLESHOOTING

SYMPTOMS	POSSIBLE CAUSES	WHAT TO DO
<p>Engine turns over but fails to start.</p>	<p>1. Ignition switch, emergency cut-out switch or tether switch is in the OFF position.</p>	<p>Place all switches in the RUN or ON position.</p>
	<p>2. Mixture not rich enough to start cold engine.</p>	<p>Check fuel tank level and check starting procedure, particularly use of the primer.</p>
	<p>3. Flooded engine (spark plug wet when removed).</p>	<p>Do not overprime. Remove wet spark plug, turn ignition switch to OFF and crank engine several times. Install clean dry spark plug. Start engine following usual starting procedure. If engine continues to flood, see an authorized dealer.</p>
	<p>4. No fuel to the engine (spark plug dry when removed).</p>	<p>Check fuel tank level ; turn fuel valve on if applicable ; check fuel filter ; replace if clogged ; check condition of fuel and impulse lines and their connections. A failure of the fuel pump or carburetor has occurred. Contact an authorized dealer.</p>
	<p>5. Spark plug/ignition (no spark).</p>	<p>Check that emergency cut-out switch is at the upper position ON and the tether cut-out switch cap is snapped over the receptacle.</p> <p>Check for fouled or defective spark plug. Disconnect spark plug wire, unscrew plug and remove from cylinder head. Reconnect wire and ground exposed plug on a metallic part of engine <b>being careful to hold away from spark plug hole</b>. Follow engine starting procedure and check for sparks. If no spark appears, replace spark plug. If trouble persists, contact an authorized dealer.</p>

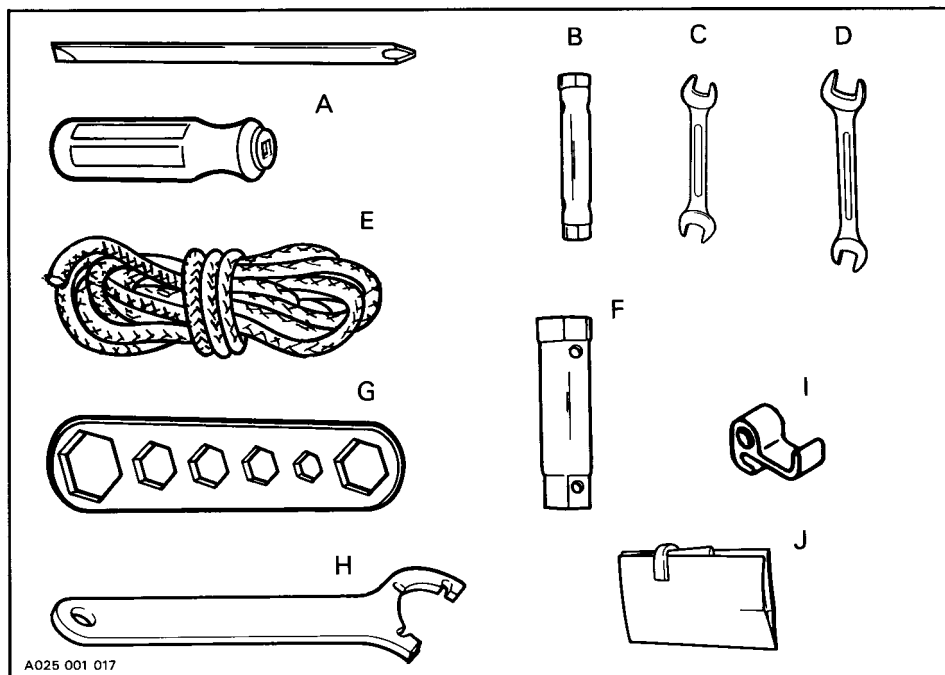
<b>SYMPTOMS</b>	<b>POSSIBLE CAUSES</b>	<b>WHAT TO DO</b>
	6. Engine compression.	As the engine is pulled over with the rewind starter, "cycles" of resistance should be felt as piston goes past top dead center (each piston on twin-cylinder engines). If no pulsating resistance is felt, it suggests a major loss of compression. Contact an authorized dealer.
Engine lacks acceleration or power.	1. Fouled or defective spark plug.	Check item 5 of "Engine turns over but fails to start."
	2. Lack of fuel to engine.	Check item 4 of "Engine turns over but fails to start."
	3. Carburetor adjustments.	Contact an authorized dealer.
	4. Drive belt worn too thin.	If the drive belt has lost more than 3 mm (1/8 in) of its original width, it will affect vehicle performance.
	5. Drive and driven pulleys require servicing.	Contact an authorized dealer.
	6. Engine is overheating.	On liquid cooled engines, check coolant level, pressure cap, thermostat and for air locks in cooling system.  On fan cooled engines, check fan belt and its tension ; clean cooling fins of engine ; if heating persists, contact an authorized dealer.

<b>SYMPTOMS</b>	<b>POSSIBLE CAUSES</b>	<b>WHAT TO DO</b>
Engine backfires.	1. Faulty spark plug.	See item 5 of "Engine turns over but fails to start".
	2. Water in fuel.	Drain fuel system and refill with clean fuel.
	3. Engine is running too hot.	See item 6 of "Engine lacks acceleration or power".
	4. Ignition timing is incorrect or there is an ignition system failure.	Contact an authorized dealer.
Snowmobile cannot reach full speed.	1. Drive belt.	Check item 4 of "Engine lacks acceleration or power".
	2. Incorrect track adjustment.	See maintenance section for proper alignment and tension adjustments.
	3. Pulleys misaligned.	Contact an authorized dealer.
	4. Engine.	See items 1, 2, 3 and 6 of "Engine lacks acceleration or power".

# TOOLS

As standard equipment, each new snowmobile is supplied with basic tools such as screwdriver, wrenches, emergency starting rope, etc.

## Standard Tools



A025 001 017

DESCRIPTION	PART NUMBERS
A. Screwdriver	529 0192 00
B. Socket 10/13 mm	529 0149 00
C. Open end wrench 10/13 mm	529 0173 00
D. Open end wrench 15/17 mm	529 0193 00
E. Emergency starting rope	529 0175 00
F. Socket 21/26 mm	529 0148 00
G. Multi-purpose key	529 0147 00
H. Shock absorber spring collar adjustment key for rear suspension	529 0122 00
I. Emergency starting clip	529 0194 00
J. Tool bag	529 0191 00



# SPECIFICATIONS

## SAFARI RALLY

### ENGINE

Type	503
No. of cylinders	2
Bore	72 mm (2.835")
Stroke	61 mm (2.402")
Displacement	496.7 cm <sup>3</sup> (30.3 in <sup>3</sup> )
Compression ratio (corrected)	6.3:1
Shift speed (RPM)	6850
Carburetor type	Variable venturi, float type
Carburetor adjustment :	
— air screw	1 turn
— idle speed (RPM)	1800-2000
Fan belt deflection	9 mm (5/16")

### CHASSIS

Overall length	277 cm (109")
Overall width	103 cm (40.6")
Overall height	114 cm (45")
Ski stance (center to center)	92.0 cm (36.2")
Ski alignment (toe out)	3 mm (1/8")
Weight	213 kg (470 lb)
Bearing area	7156 cm <sup>2</sup> (1109 in <sup>2</sup> )
Ground pressure	2.92 kPa (.423 lb/in <sup>2</sup> )

### BRAKE

Type	Disc, self-adjusting.
Lining minimum thickness	Fixed pad must projects 1 mm (1/32") minimum from caliber.
Control lever adjustment	13 mm (1/2") minimum distance from handlebar grip when fully applied.

## SAFARI RALLY

### POWER TRAIN

Track :

- width 41.9 cm (16-1/2'')
- length 315 cm (124'')
- tension 40-55 mm (1-9/16 - 2-3/16 in) gap between slider shoe and bottom inside of track when exerting a downward pull of 7.3 kg (16 lb) to the track.
- alignment Equal distance between edges of track guides and slider shoes.

Standard gear ratio

21 / 44

Drive belt :

- number 414 6175 00
- maximum width 35.0 mm (1-3/8'')
- minimum width 32.0 mm (1-1/4'')

Chaincase oil

250 mL (9 oz)

### ELECTRICAL

Lighting system (output)

12 V 240 W

Bulb :

- headlamp 60 / 55 W hal. (H-4)
- tail / stop 8 / 27 W
- speedometer 5 W
- tachometer N.A.
- electric fuel level gauge N.A.

Fuse :

- tachometer N.A.
- starting system N.A.

Spark plug :

- type NGK BR9ES
- gap 0.45 mm (0.018'')

### FUEL

Gas type

Regular unleaded with a minimum octane number (R + M/2) of 87.

Fuel tank capacity :

- SI 28.6 L
- U.S. 7.6 gal

Injection oil

Bombardier snowmobile injection oil.

Tank capacity :

- SI 2.6 L
- U.S. 86 oz

Hal. : Halogen

N.A. : Not applicable

*Bombardier Inc. reserves the right to make changes in design and specifications and/or to make additions to, or improvements in its product without imposing any obligation upon itself to install them on its products previously manufactured.*

**SKANDIC II 503 R****SKANDIC II  
503 R SLT****ENGINE**

Type	503	503
No. of cylinders	2	2
Bore	72 mm (2.835'')	72 mm (2.835'')
Stroke	61 mm (2.402'')	61 mm (2.402'')
Displacement	496.7 cm <sup>3</sup> (30.3 in <sup>3</sup> )	496.7 cm <sup>3</sup> (30.3 in <sup>3</sup> )
Compression ratio (corrected)	6.3:1	6.3:1
Shift speed (RPM)	6850	6850
Carburetor type	Variable Venturi, float type	Variable Venturi, float type
Carburetor adjustment :		
— air screw	1 turn	1 turn
— idle speed (RPM)	1800-2000	1800-2000
Fan belt deflection	9 mm (5/16'')	9 mm (5/16'')

**CHASSIS**

Lenght overall	277 cm (109'')	313 cm (123'')
Width overall	103 cm (40.6'')	103 cm (40.6'')
Height overall	114 cm (45'')	114 cm (45'')
Ski stance (center to center)	92.0 cm (36.2'')	92.0 cm (36.2'')
Ski alignment (toe out)	3 mm (1/8'')	3 mm (1/8'')
Weight	232 kg (510 lb)	234 kg (515 lb)
Bearing area	8205 cm <sup>2</sup> (1272 in <sup>2</sup> )	8036 cm <sup>2</sup> (1246 in <sup>2</sup> )
Ground pressure	2.77 kPa (.401 lb/in <sup>2</sup> )	2.85 kPa (.413 lb/in <sup>2</sup> )

**BRAKE**

Type	Disc, self-adjusting.
Lining minimum thickness	Fixed pad must project 1 mm (1/32'') minimum from caliper.
Control lever adjustment	13 mm (1/2'') minimum distance from handlebar grip when fully applied.

**SKANDIC II 503 R****SKANDIC II  
503 R SLT****POWER TRAIN**

## Track :

– width	41.9 cm (16-1/2'')	38.1 cm (15'')
– length	354 cm (139'')	396 cm (156'')
– tension	40 - 55 mm (1-9/16 - 2-3/16 in) gap between slider shoe and bottom inside of track when exerting a downward pull of 7.3 kg (16 lb) to the track.	
– alignment	Equal distance between edges of track guides and slider shoes.	

## Standard gear ratio

21 / 44

20 / 44

## Drive belt :

– number	414 6175 00	414 6175 00
– maximum width	35.0 mm (1-3/8'')	35.0 mm (1-3/8'')
– minimum width	32.0 mm (1-1/4'')	32.0 mm (1-1/4'')
Chaincase oil	500 mL (17 oz)	500 mL (17 oz)

**ELECTRICAL**

## Lighting system (output)

12 V 240 W

12 V 240 W

## Bulb :

– headlamp	60 / 55 W hal. (H-4)	60 / 55 W hal. (H-4)
– tail / stop	8 / 27 W	8 / 27 W
– speedometer	5 W	5 W
– tachometer	N.A.	N.A.
– electric fuel level gauge	N.A.	N.A.

## Fuse :

– tachometer	N.A.	N.A.
– starting system	N.A.	N.A.

## Spark plug :

– type	NGK BR9ES	NGK BR9ES
– gap	0.45 mm (0.018'')	0.45 mm (0.018'')

**FUEL**

## Gas type

Regular unleaded with a minimum octane number (R + M / 2) of 87.

## Fuel tank capacity :

– SI	28.6 L	28.6 L
– U.S.	7.6 gal	7.6 gal

## Injection oil

Bombardier snowmobile injection oil.

## Tank capacity :

– SI	2.6 L	2.6 L
– U.S.	86 oz	86 oz

Hal. : Halogen

N.A. : Not applicable

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# SI\* METRIC INFORMATION GUIDE

BASE UNITS			
DESCRIPTION	UNIT	SYMBOL	
length	meter	m	
mass	kilogram	kg	
force	Newton	N	
liquid	liter	L	
temperature	Celsius	°C	
pressure	kilopascal	kPa	
torque	Newton meter	N•m	
speed	kilometer per hour	km/h	

PREFIXES			
PREFIX	SYMBOL	MEANING	VALUE
kilo	k	one thousand	1 000
centi	c	one hundredth	0.01
milli	m	one thousandth	0.001
micro	μ	one millionth	0.000 001

CONVERSION FACTORS			
TO CONVERT	TO †	MULTIPLY BY	
in	mm	25.4	
in	cm	2.54	
in <sup>2</sup>	cm <sup>2</sup>	6.45	
in <sup>3</sup>	cm <sup>3</sup>	16.39	
ft	m	0.3	
oz	g	28.35	
lb	kg	0.45	
lbf	N	4.4	
<b>lbf•in</b>	N•m	0.11	
<b>lbf•ft</b>	N•m	1.36	
<b>lbf•ft</b>	<b>lbf•in</b>	12	
PSI	kPa	6.89	
imp. oz	U.S. oz	0.96	
imp. oz	mL	28.41	
imp. gal	U.S. gal	1.2	
imp. gal	L	4.55	
U.S. oz	mL	29.57	
U.S. gal	L	3.79	
MPH	km/h	1.61	
Fahrenheit	Celsius	$(°F - 32) ÷ 1.8$	
Celsius	Fahrenheit	$(°C × 1.8) + 32$	

\* The international system of units abbreviates SI in all languages.

† To obtain the inverse sequence, divide by the given factor.  
To convert "mm" to "in", divide by 25.4.

**NOTE** \_\_\_\_\_





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