

# ski-doo®



## OPERATOR'S GUIDE

**ÉLAN**

ÉLAN

Version française au revers

414 7187 00





## SAFETY WARNING

Disregarding any of the safety precautions and instructions contained in this *Guide* and the *Safety Handbook* could cause injury, including the possibility of death.

This *Guide* & the *Handbook* should remain with the vehicle at the time of resale.

AFTER SALES SERVICE  
BOMBARDIER INC.  
VALCOURT (QUEBEC)  
CANADA JOE 2LO



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CITATION®  
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NORDIK®  
ROTAX®

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TUNDRA\*


# FOREWORD


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The *Operator's is guide* and the *Snowmobile 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 Question" section of this guide, or your authorized dealer.

This guide uses 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.

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 **WARNING** : The engines and the corresponding components identified in this guide should not be utilized on product(s) other than those mentioned on the cover page of this guide.

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


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.

 **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. Mismatched or incorrect fasteners could cause damage to the vehicle or possible personal injury.



# TABLE OF CONTENTS

---

<b>SAFETY MEASURES</b> .....	<b>5</b>
<b>THE 1991 SNOWMOBILE LIMITED WARRANTY</b> .....	<b>6</b>
<b>OFTEN ASKED QUESTIONS</b> .....	<b>8</b>
<b>LISTING OF AREA DISTRIBUTORS</b> .....	<b>10</b>
<b>HOW TO IDENTIFY YOUR SNOWMOBILE</b> .....	<b>12</b>
<b>CONTROLS/INTRUMENTS</b> .....	<b>13</b>
Throttle Lever .....	13
Brake Lever .....	13
Ignition Switch .....	14
Headlamp Dimmer Switch .....	14
Emergency Cut-Out Switch .....	14
Tether Cut-Out Switch .....	14
Rewind Starter Handle .....	14
Primer Button .....	14
Decompressor Lever .....	15
Hood Latches .....	15
Fuel Level .....	15
Tool Box .....	15
Accessories .....	15
<b>BREAK-IN PERIOD</b> .....	<b>16</b>
Engine .....	16
Belt .....	16
10-Hour Inspection .....	16
Break-In Fuel/Oil Mixing Charts ..	17
10-Hour Inspection Checklist .....	18
<b>FUEL &amp; OIL</b> .....	<b>19</b>
Recommended Fuel .....	19
Recommended Oil .....	19
Fuel Mixture Ratio .....	19
Fuel/Oil Mixing Procedure .....	19
Fuel/Oil Mixing Charts .....	21
<b>PRE-START CHECK</b> .....	<b>22</b>
Check Points .....	22
<b>STARTING PROCEDURE</b> .....	<b>22</b>
Manual Starting .....	22
Before Riding .....	22
Emergency Starting .....	23
<b>LUBRICATION</b> .....	<b>24</b>
Frequency .....	24
Steering Mechanism .....	24
Bogie Wheels .....	25
Rear Axle .....	25
Chaincase Oil Level .....	25
Drive Pulley .....	26
Driven Pulley .....	26

<b>MAINTENANCE</b> .....	<b>27</b>		
Service and Maintenance Chart . . . . .	27	Steering Mechanism . . . . .	33
Console Removal . . . . .	28	Steering Adjustment . . . . .	33
Belt Guard/ Pulley Guard Removal . . . . .	28	Exhaust System . . . . .	34
Drive Belt Removal and Installation . . . . .	28	Engine Head Nuts . . . . .	35
Drive Belt Condition . . . . .	29	Engine Mount Nuts . . . . .	35
New Drive Belt . . . . .	30	Carburetor Adjustment . . . . .	35
Brake Condition . . . . .	30	Fuel Filter Replacement . . . . .	35
Brake Adjustment . . . . .	30	Engine Compartment . . . . .	35
Brake Light Switch Adjustment . . . . .	31	High Altitude Kit . . . . .	36
Spark Plug . . . . .	31	Headlamp Beam Aiming . . . . .	36
Suspension Condition . . . . .	32	Bulb Replacement . . . . .	36
Track Condition . . . . .	32	Wiring Harnesses, Cables and Lines . . . . .	37
Track Tension and Alignment . . . . .	32	General Inspection . . . . .	37
Drive and Driven Pulleys . . . . .	33		
<b>STORAGE</b> .....	<b>38</b>		<b>38</b>
Track . . . . .	38	Engine . . . . .	39
Suspension . . . . .	38	Driven Pulley . . . . .	40
Skis and Runners . . . . .	39	Fuel Tank and Carburetor . . . . .	40
Controls . . . . .	39	Chassis . . . . .	40
Chaincase . . . . .	39	General Inspection . . . . .	41
Drive Pulley . . . . .	39		
<b>PRE-SEASON PREPARATION</b> .....	<b>42</b>		
Pre-Season Preparation Chart . . . . .	42		
<b>TROUBLESHOOTING</b> .....	<b>43</b>		
<b>TOOLS</b> .....	<b>46</b>		
<b>SPECIFICATIONS</b> .....	<b>47</b>		
<b>SI* METRIC INFORMATION GUIDE</b> .....	<b>49</b>		



# 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 switch tether switches or turning off the key.
- Clean and check operation of the headlight, tail light 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.
- 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.
- This vehicle is designed for the driver only. No provision 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*.

# THE 1991 SNOWMOBILE LIMITED WARRANTY \_\_\_\_\_

## 1 - PERIOD

BOMBARDIER INC. as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER, every 1991 BOMBARDIER® snowmobile, sold as NEW AND UNUSED, and predelivered by an authorized BOMBARDIER® dealer for a period of :

- 12 consecutive months.
- Warranty coverage on all new snowmobiles delivered between August 1<sup>st</sup> and December 1<sup>st</sup> of a year will expire on December 1<sup>st</sup> of the following year.

## 2 - WHAT BOMBARDIER INC. WILL DO

BOMBARDIER INC. will repair and/or replace, at its option, components defective in material and/or workmanship (under normal use and service), with a genuine BOMBARDIER® component without charge for parts or labour, at any authorized BOMBARDIER® dealer during said warranty period.

## 3 - CONDITION TO HAVE WARRANTY WORK PERFORMED

Present to the servicing dealer, the hard copy of the BOMBARDIER® Warranty Registration card or proof of purchase received by the customer from the selling dealer at time of delivery.

## 4 - EXCLUSIONS - ARE NOT WARRANTED

- Normal wear on all items such as, but not limited to :
  - drive belts
  - bulbs
  - slider shoes
  - runners on skis
  - spark plugs
- Replacement parts and/or accessories which are not genuine BOMBARDIER® parts and/or accessories.
- Damage resulting from installation of parts other than genuine BOMBARDIER® parts.
- Damage caused by failure to provide proper maintenance as detailed in the *Operator's Guide*. The labour, parts and lubricants costs of all maintenance services, including tune-ups and adjustments will be charged to the owner.
- Cold seizure and piston scuffing caused by insufficient warm-up.
- Vehicles designed and/or used for racing purposes.
- All optional accessories installed on the vehicle. (The normal warranty policy for parts and accessories, if any, applies).
- Damage resulting from accident, fire or other casualty, misuse, abuse or neglect.
- Damage resulting from operation of the snowmobile on surfaces other than snow.
- Damage resulting from modification to the snowmobile not approved in writing by BOMBARDIER INC.
- Damage incurred by track studs.
- Losses incurred by the snowmobile owner other than parts and labour, such as, but not limited to, transportation, towing, telephone calls, taxis, or any other incidental or consequential damage.

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## 5 - BATTERY WARRANTY :

- 12 consecutive months (Pro-rated).

100% warranty coverage will start on the date the snowmobile was delivered and run to the following April 30<sup>th</sup>. The remainder of the 12 month-period will be pro-rated as follows :

- 50% from April 30<sup>th</sup> to December 1<sup>st</sup>.
- 40% from December 1<sup>st</sup> to December 31<sup>st</sup>.
- 30% from January 1<sup>st</sup> to end of warranty.

## 6 - EXPRESSED OR IMPLIED WARRANTIES

**This warranty gives you specific rights and you may also have other legal rights which may vary from state to state, or province to province. Where applicable this warranty is expressly in lieu of all other expressed or implied warranties of BOMBARDIER INC., its distributors and the selling dealer, including any warranty of merchantability or fitness for any particular purpose ; otherwise the implied warranty is limited to the duration of this warranty. However, some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply.**

**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 INC. or any other person.**

**Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply.**

**BOMBARDIER INC. reserves the right to modify its warranty policy at any time, being understood that such modification will not alter the warranty conditions applicable to vehicles sold while the above warranty is in effect.**

## 7 - CONSUMER ASSISTANCE

If a servicing problem or other difficulty occurs we suggest that you try to solve it with your selling dealer. Discuss your concern with the Service Manager or Owner. In most cases you will have your concern resolved at this level.

If you still have a service or product complaint, you may contact the Customer Service Department in Valcourt. Write or call to :

Bombardier Inc.  
Customer Service Department  
Snowmobile Division  
Valcourt, Quebec  
Canada JOE 2L0  
Phone no : (514) 532-2211

December 1989  
Bombardier Inc.  
Valcourt, Quebec, Canada JOE 2L0

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## OFTEN ASKED QUESTIONS

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Q : Why must my snowmobile be registered at the factory? After all I do have my original invoice as proof of when I purchased my snowmobile.

*A : Registration is very important and your dealer must register your snowmobile with Bombardier Inc. Make sure the card has been sent. All of this will allow you to :*

*a) have warranty work performed at any authorized Bombardier dealer in North America. Your registration card will provide the dealer with all the necessary data to complete warranty claim forms.*

*b) be advised by Bombardier should there be a safety recall or particular warranty campaign.*

*c) be contacted much faster by the police, the minute they find your stolen vehicle (if such a case occurs).*

Q : Why must my snowmobile be registered with the governing body having jurisdiction over snowmobile use?

*A : Snowmobile registration has two purposes : In many provinces or states it is mandatory to register a snowmobile in the same way as for a car. It allows the state or province to maintain records of existing snowmobiles and governmental agencies use part of the registration fees for establishing and maintaining trails.*

Q : Where can I find information on the lubrication and maintenance of my snowmobile?

*A : In this Operator's Guide provided with the vehicle at the time of delivery.*

Q : Will the entire warranty be void or cancelled, if I do not operate or maintain my new snowmobile exactly as specified in the *Operator's Guide*?

*A : The warranty of the new snowmobile cannot be "Voided" or "Cancelled" if predelivered by an authorized dealer. However, if a particular failure is caused by operation or maintenance other than is shown in the Operator's Guide, that failure may not be covered under warranty. This includes service work performed by the customer, especially the critical adjustments to ignition timing, carburation and oil injection or oil mixture.*

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Q : Would you give some examples of abnormal use or strain, neglect or abuse which may affect warranty?

*A : These terms are general and overlap each other in areas. Some specific examples may include : running the machine out of oil, chain failure caused by a lack of lubrication, operating the machine with a broken or damaged part which causes another part to fail, and so on. If you have any specific questions on operation or maintenance, please contact your dealer for advice.*

Q : What costs are my responsibility during the warranty period?

*A : The customer's responsibility includes all costs of normal maintenance services, non-warranty repairs, accidents and collision damage, as well as oils, and spark plugs, and incidental or consequential damages costs as explained in the warranty.*

Q : Are "Genuine" Bombardier replacement parts used in warranty repairs covered by warranty?

*A : Yes. When installed by an authorized dealer, any "Genuine" Bombardier part used in warranty repairs assumes the remaining warranty that exists on the machine.*

Q : If I sell my snowmobile within the warranty period, will the new owner qualify for the balance of the warranty?

*A : Yes, provided the unit has been registered with the manufacturer.*

Q : How can I receive the best owner assistance?

*A : The satisfaction and goodwill of the owners of Bombardier products are of primary concern to your dealer and Bombardier Inc. Normally, any problems that arise in connection with the sales transaction or the operation of your snowmobile will be handled by your Dealers Sales or Service Departments. It is recognized, however, that despite the best intentions of everyone concerned, misunderstandings will sometimes occur. Frequently, complaints are the result of a breakdown in communications and can quickly be resolved by a member of the dealership management. If the problem already has been reviewed with the Sales Manager or Service Manager, contact the Dealer himself or the General Manager.*

# LISTING OF AREA DISTRIBUTORS

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## CANADIAN DISTRIBUTORS

### PROVINCE OF QUEBEC

#### SERVICE OFFICE

BOMBARDIER INC.  
Valcourt (Quebec) JOE 2L0  
(514) 532-2211

#### SALES OFFICE

BOMBARDIER INC.  
1350 Nobel street  
Boucherville (Quebec) J4B 1A1  
(514) 655-6121

### PROVINCE OF ONTARIO

#### SERVICE OFFICE

BOMBARDIER INC.  
230 Bayview Drive  
Barrie (Ontario) L4N 5E9  
(705) 728-8600

#### SALES OFFICE

BOMBARDIER INC.  
230 Bayview Drive  
Barrie (Ontario) L4N 5E9  
(705) 728-8600

### MARITIMES

#### SERVICE OFFICE

BOMBARDIER INC.  
P.O. Box 7060  
Riverview (New Brunswick) E1B 1V0  
(506) 386-6117

#### SALES OFFICE

BOMBARDIER INC.  
1350 Nobel Street  
Boucherville (Quebec) J4B 1A1  
(514) 655-6121

### ALBERTA, BRITISH COLUMBIA, MANITOBA, SASKATCHEWAN, YUKON

#### SERVICE OFFICE

BROOKS EQUIPMENT LIMITED  
1616 King Edward Street  
P.O. Box 985  
Winnipeg (Manitoba) R3C 2V8  
(204) 633-7247

#### SALES OFFICE

BROOKS EQUIPMENT LIMITED  
1616 King Edward Street  
P.O. Box 985  
Winnipeg (Manitoba) R3C 2V8  
(204) 633-7247

### NEWFOUNDLAND, LABRADOR

#### SERVICE OFFICE

CHARLES R. BELL LIMITED  
Riverside Drive P.O. Box 1050  
Corner Brook (Newfoundland) A2H 6J3  
(709) 634-3533

#### SALES OFFICE

CHARLES R. BELL LIMITED  
Riverside Drive P.O. Box 1050  
Corner Brook (Newfoundland) A2H 6J3  
(709) 634-3533

### NORTH-WEST TERRITORIES, FRANKLIN DISTRICT & KEEWATIN

#### SERVICE OFFICE

NORTHERN STORES INC.  
165 Hymus Blvd  
Pointe-Claire (Quebec) H9R 1G2  
(514) 630-5279

#### SALES OFFICE

NORTHERN STORES INC.  
165 Hymus Blvd  
Pointe-Claire (Quebec) H9R 1G2  
(514) 630 5279



## **AMERICAN DISTRIBUTORS**

### **EAST-CENTRAL, CENTRAL REGIONS**

#### **SERVICE OFFICE**

BOMBARDIER CORPORATION  
4418 Grand Avenue  
Duluth, Minnesota 55807 U.S.A.  
(218) 628-2881

OR

BOMBARDIER CORPORATION  
7575 Packer Drive  
P.O. Box 8035  
Wausau, Wisconsin  
54402-8035  
U.S.A.  
(715) 842-8886

#### **SALES OFFICE**

BOMBARDIER CORPORATION  
7575 Parcker Drive  
P.O. Box 8035  
Wausau, Wisconsin 54402-8035 U.S.A.  
(715) 842-8886

### **WESTERN REGION**

#### **SERVICE OFFICE**

BOMBARDIER CORPORATION  
P.O. Box 1572  
Golden, Colorado 80402-1572 U.S.A.  
(303) 232-5284

#### **SALES OFFICE**

BOMBARDIER CORPORATION  
7575 Packer Drive  
P.O. Box 8035  
Wausau Wisconsin 55402-8035 U.S.A.  
(715) 842-8886

### **EASTERN REGION**

#### **SERVICE OFFICE**

BOMBARDIER CORPORATION  
East Main Street Road  
Malone, New-York 12953 U.S.A.  
(518) 483-4411

OR

BOMBARDIER INC.  
P.O. Box 7060  
Riverview (New Brunswick) E1B 1V0  
CANADA  
(506) 386-6117

#### **SALES OFFICE**

BOMBARDIER CORPORATION  
East Main Street Road  
Malone, New-York 12953 U.S.A.  
(518) 483-4411

### **ALASKA**

#### **SERVICE OFFICE**

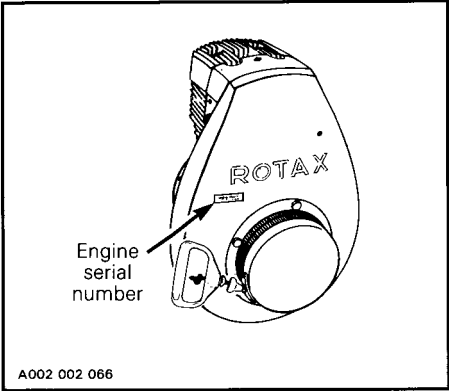
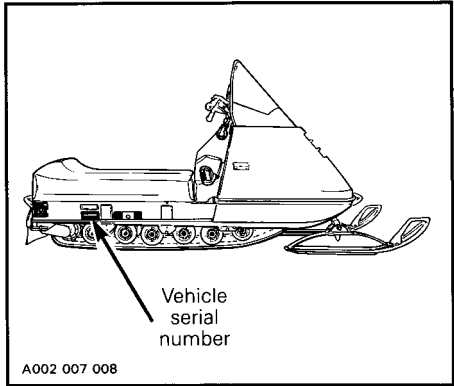
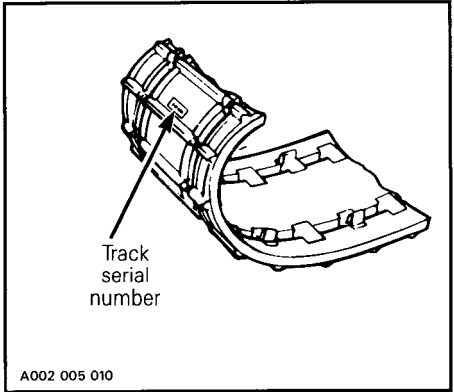
THE BRYANT CORPORATION  
NE. 190th & Woodinville  
Snohomish Road  
P.O. Box 389  
Woodinville, Wa 98072 U.S.A.  
(206) 483-0110

#### **SALES OFFICE**

BRYANT CORPORATION  
NE. 190th & Woodinville  
Snohomish Road  
P.O. Box 389  
Woodinville, Wa 98072 U.S.A.  
(206) 483-0110

# HOW TO IDENTIFY YOUR SNOWMOBILE

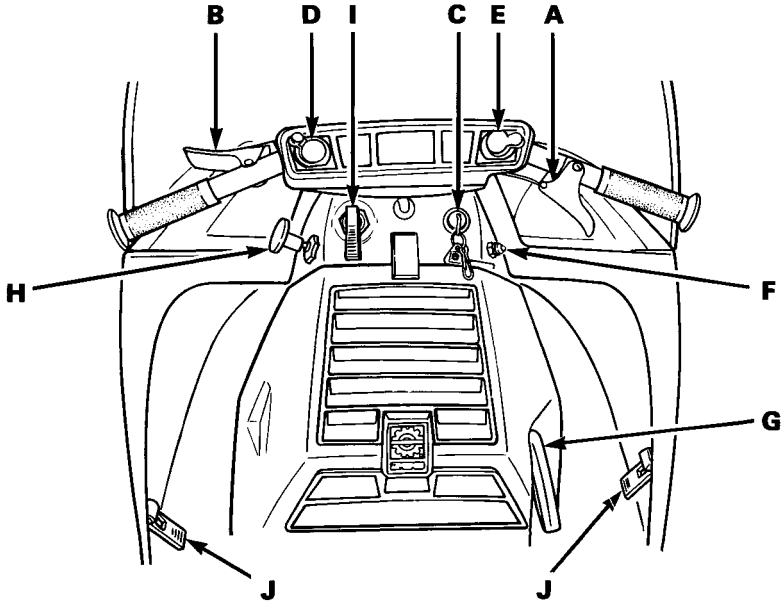
The main components of your snowmobile (engine, track and frame) are identified by different serial numbers. It may sometimes become necessary to locate these numbers for warranty purposes or to trace your snowmobile in the event of loss.



**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



A002 007 009

*A) Throttle Lever*

*B) Brake Lever*

*C) Ignition Switch*

*D) Headlamp Dimmer Switch*

*E) Emergency Cut-Out Switch*

*F) Tether Cut-Out Switch*

*G) Rewind Starter Handle*

*H) Primer Button*

*I) Decompressor Lever*

*J) Hood Latches*

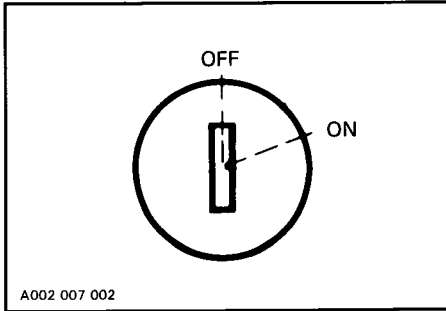
## **A) Throttle Lever**

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 proportionate to the pressure applied on the lever and to the type of terrain and its snow coverage.

## C) Ignition Switch



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.

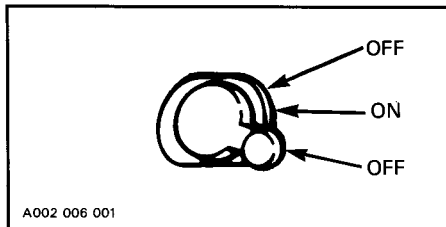
The lights are automatically ON whenever the engine is running.

## D) 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.

## E) Emergency Cut-Out Switch

A three position switch located on the right side of the handlebar. To stop the engine in an emergency, flick the lever to either upper or lower OFF position and simultaneously apply the brake. To start engine, lever must be in middle ON position (middle).



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

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.

## F) Tether Cut-Out Switch

A pull switch located below the handlebar.

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 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.

## G) Rewind Starter Handle

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

## H) Primer Button

A push-pull button. Pull and push button (two-three times) to start a cold engine. Not necessary to start a warm engine.

---

## I) Decompressor Lever

Lift lever to operate. Tip down when engine has started.

▼ **CAUTION** : The decompressor provides easier starting by reducing engine compression. However, leaving the decompressor lever lifted while running will damage your engine. Always pull down after the engine has started.

## J) Hood Latches

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

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

○ **NOTE** : Always lift the hood gently up until stopped by the restraining wire.

## Fuel Level

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

The tank is translucent and fuel level can be checked by opening hood and glancing at tank.

## Tool Box

Located under the hood. Ideal location for spare spark plug, rope, flash light, first aid kit, etc.

## Accessories

Some optional accessories may be added to your vehicle such as front bumper, carbide runner, hitch, etc. Ask your authorized dealer for more information.

# BREAK-IN PERIOD

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## Engine

With Bombardier-Rotax snowmobile engines, a break-in period is required before running the vehicle at full throttle. Engine manufacturer recommendation is 10 to 15 operating hours. During this period, a richer mixture is needed (i.e. 40 parts of fuel for 1 part of BLIZZARD oil. 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 over-heating are detrimental during the break-in period.

▼ **CAUTION** : Remove and clean spark plug 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, that your vehicle be checked by your dealer. This inspection will give you the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation.

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

---

## Break-In Fuel/ Oil Mixing Charts

▼ **CAUTION:** The following chart only applies to break-in period to give a richer mixture of 40 to 1 ratio.

### SI UNITS

500 mL oil to 20 liters= 40:1

### IMPERIAL UNITS

16 oz oil to 4.6 imp. gal= 40:1

or

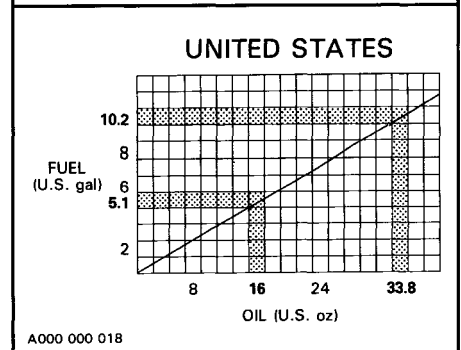
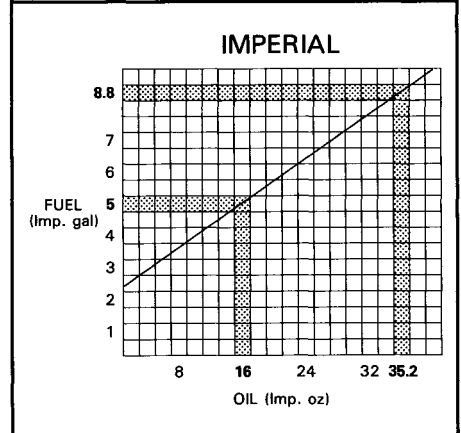
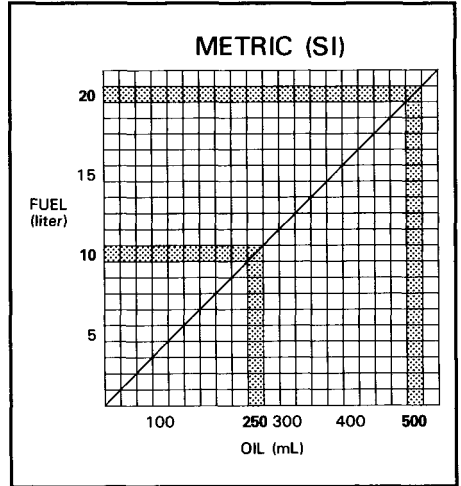
500 mL oil to 4.8 imp. gal= 40:1

### U.S. UNITS

16 oz oil to 5.1 U.S. gal= 40:1

or

500 mL oil to 5.3 U.S. gal= 40:1



<b>10-HOUR INSPECTION CHECKLIST</b>	✓
Engine timing	
Spark plug condition	
Carburetor adjustment	
Engine head nuts	
Drive pulley screw (torque)	
Engine mount nuts	
Muffler attachment	
Chaincase oil level	
Brake operation and lining condition	
Ski alignment (runner condition)	
Steering arm retorque to 31 N•m (23 lbf•ft)	
Pulley alignment and drive belt condition	
Track condition, tension and alignment	
Lubrication (steering, suspension, driven pulley, etc.)	
Electrical wiring (routing, connections) tighten all loose bolts, nuts and linkage	
Operation of lighting system (HI/LO beam, brake light, etc.), test operation of emergency cut-out switch and tether switch	

**We recommend that you have your dealer sign this inspection list.**

\_\_\_\_\_  
Date of 10-hour inspection

\_\_\_\_\_  
Dealer signature

# FUEL & OIL

---

Oil must be added to the fuel in premeasured amounts then both oil and fuel should be thoroughly mixed together before fueling the snowmobile tank.

## Recommended Fuel

Use regular leaded or unleaded gasoline available from all service stations or gasohol with less than 10% of ethanol.

▼ **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 unrecommended fuel can result in vehicle performance deterioration and damage to critical parts in the fuel system and engine components.

◆ **WARNING** : Never 'top up' the fuel tank before placing the vehicle in a warm area. At certain temperatures, fuel will expand and overflow. Always wipe off any fuel spillage from the snowmobile. Fuel is flammable and explosive under certain conditions.

## Recommended Oil

Use BLIZZARD OIL (P/N 496 0135 00-500 mL) available from your authorized dealer. This type of oil will flow at temperatures as low as minus 40°C (-40°F).

If BLIZZARD OIL is unavailable, substitute with Bombardier injection oil (P/N 496 0133 00-1 liter) or equivalent.

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

## Fuel Mixture Ratio

The importance of using the correct fuel/oil mixture cannot be overstressed. An incorrect fuel/oil ratio results in serious engine damage. Recommended fuel/oil ratio is 50:1 (40:1 during break-in period).

### SI UNITS

500 mL oil to 25 liters= 50:1

### IMPERIAL UNITS

16 oz oil to 5 imp. gal= 50:1

or

500 mL oil to 5-1/2 imp. gal= 50:1

### U.S. UNITS

12 oz oil to 5 U.S. gal= 50:1

or

500 mL oil to 6.6 U.S. gal= 50:1

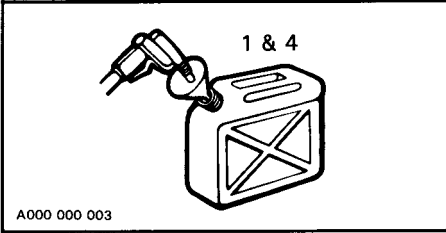
○ **NOTE** : To facilitate fuel/oil mixing, oil should be kept at room temperature.

## Fuel/Oil Mixing Procedure

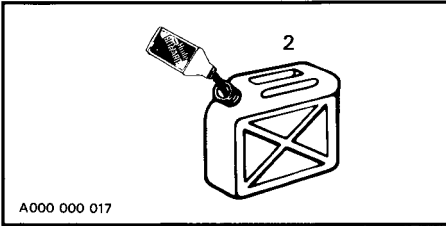
To mix the fuel and oil always use a separate clean container. Never mix directly in your snowmobile tank.

**◆ WARNING :** Never add fuel while the engine is running. Avoid skin contact with fuel at below freezing temperatures.

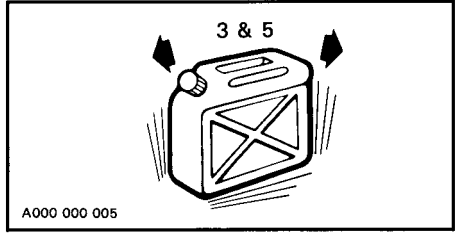
1. Pour approximately four liters (one gallon) of fuel into a clean container.



2. Add the amount of oil required for the total mixture.



3. Replace the container cap and shake the container thoroughly.



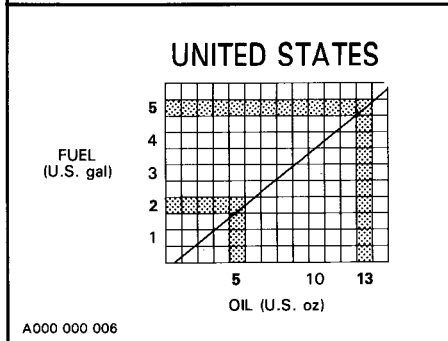
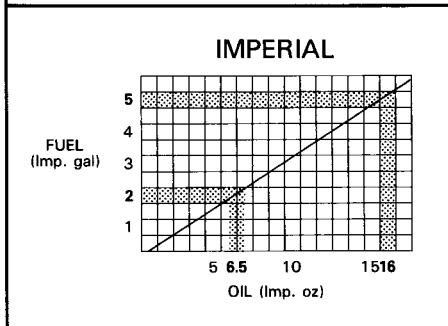
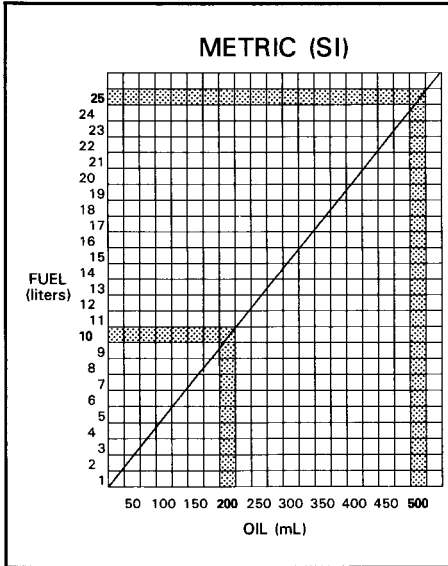
4. Add the remainder of the fuel.
5. Once again thoroughly agitate the container. Then using a funnel with a fine mesh screen to prevent the entry of foreign particles, pour the mixture into the snowmobile tank.

**◆ WARNING :** To prevent fuel spillage in the engine compartment, a funnel must always be used when filling the fuel tank.

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



# FUEL/OIL MIXING CHARTS (50 to 1 ratio)



A000 000 006

# PRE-START CHECK

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## 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 fuel level.
- Check that the skis and track are not frozen to the ground or snow surface and that the steering operates freely.

- 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.
- Verify that the path ahead of the vehicle is clear of bystanders and obstacles.

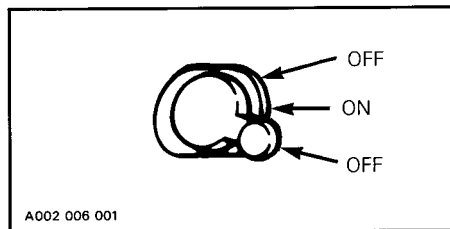
Clean and check operation of the headlight, taillight and brake light.

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

## STARTING PROCEDURE

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



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

Activate primer (two to three times).

○ **NOTE** : Priming is not necessary when the engine is warm.

Lift the decompressor lever.

▼ **CAUTION** : Use of ether or other types of fluid as a starting aid can cause damage to engine components.

## Manual Starting

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

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

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

Tip the decompressor lever down once engine has started.

## Before Riding

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

◆ **WARNING** : If engine does not shut-off when flicking 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 your authorized dealer.

Allow the engine to warm before operating at full throttle.

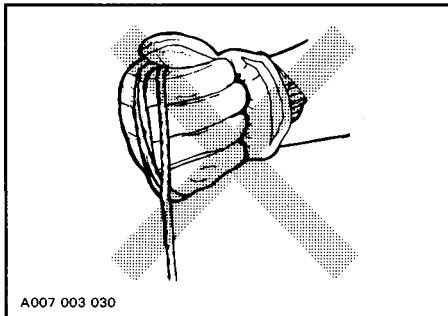
○ **NOTE** : Engine is warm when operating temperature has been reached on temperature gauge. On vehicle without temperature gauge, let engine idle three to five minutes.

◆ **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.

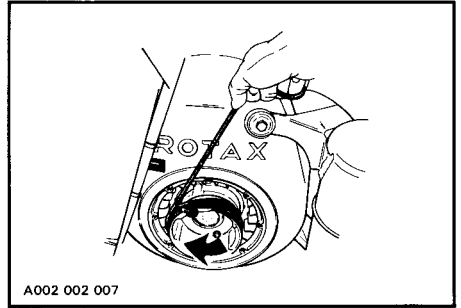
◆ **WARNING** : Do not start the vehicle by the drive pulley unless it is a true emergency situation, have the vehicle repaired as soon as possible. Do not wind starting rope around your hand. Hold rope by the handle only.



Remove the rewind starter assembly from the engine and transfer the rope handle to your emergency rope.

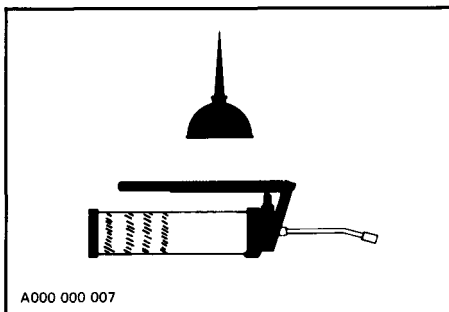
○ **NOTE** : The spark plug socket can be used as an emergency starter grip.

Wind the rope around the starter pulley start engine as per usual manual starting.



◆ **WARNING** : After starting the vehicle in an emergency situation by the starting pulley do not reinstall the rewind starter assembly. When starting the vehicle in an emergency situation by the starting pulley, do not make a knot at the end of the emergency rope.

# LUBRICATION



## Frequency

Routine maintenance is necessary for all mechanized products, and the snowmobile is no exception. A weekly vehicle inspection contributes to the life span of the snowmobile and retains dependable operation. It is recommended that the steering system and suspension be lubricated monthly or every 40 hours of operation. If the vehicle is operated in wet snow or in severe conditions these items should be lubricated more frequently.

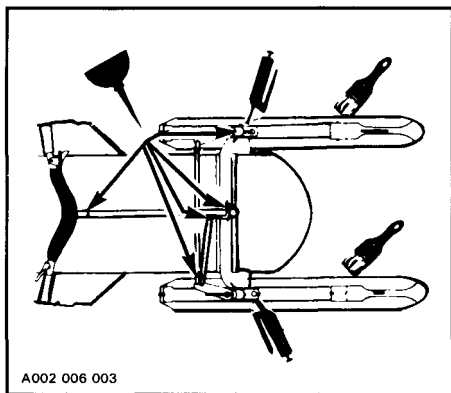
◆ **WARNING:** Only perform such procedures as detailed in this guide. It is recommended that dealer assistance be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine should be turned OFF for all lubrication and maintenance procedures.

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

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

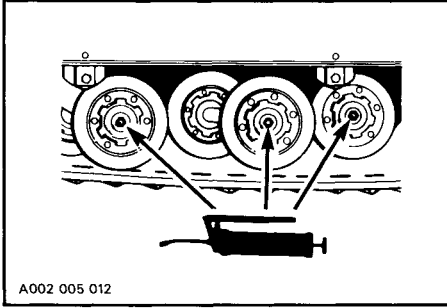
## Steering Mechanism

Lubricate the ski legs at the grease fittings until new grease appears at the joints. Coat spring slider cushion with grease. Oil the spring coupler bolts, the four ball joints and the two pivots on the main tube of the handlebar.



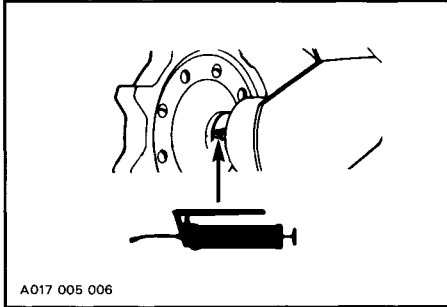
## Bogie Wheels

Using low-temperature grease, lubricate the suspension bogie wheels through the grease fittings until new grease appears at the inner side joints.



## Rear Axle

Lubricate the rear axles with low-temperature grease. Pump grease through the rear axle fittings using a low-pressure grease gun.



▼ **CAUTION** : When lubricating the rear axle bearing, do not apply excessive grease as the seal will be pushed out of its housing. Check seal position with finger.

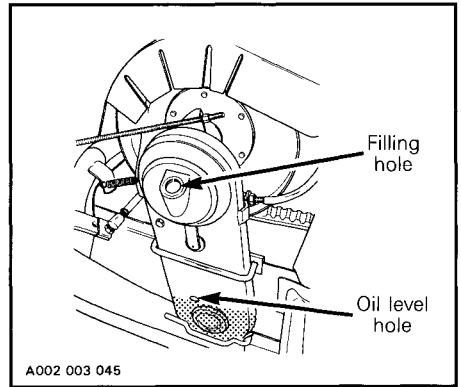
## Chaincase Oil Level

Remove tool box from vehicle. Remove access plug and check oil level through hole. If necessary to replenish, remove filler plug and pour chaincase oil (P/N 413 8019 00) until it flows through oil level hole.

○ **NOTE** : Chaincase oil capacity is 200 mL (7 oz).

Wipe off any oil spillage.

Re-install plugs and tool box.



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## Drive Pulley

No lubrication required.

## Driven Pulley

Remove pulley guard and slip off drive belt. Open the driven pulley, (push and twist sliding half.)

Thoroughly clean the driven pulley shaft.


Apply a light film of low-temperature grease (P/N 413 7061 00) on the shaft. Always 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.


# MAINTENANCE

The following Maintenance Chart indicates regular servicing schedules to be performed by you or your authorized dealer. If these services are performed as suggested, your snowmobile will give many years of use.

 **NOTE** : Shadow areas in chart indicate recommended frequency.

 **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.

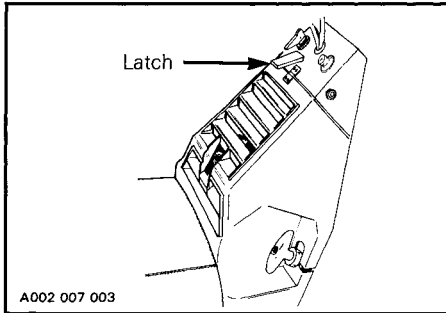
<b>SERVICE AND MAINTENANCE CHART</b>	Weekly or every 240 km (150 mi)	Monthly or every 800 km (500 mi)	Once a year or every 3200 km (2000 mi)	Refer to page
Drive Belt Condition				29
Brake Condition				30
Brake Adjustment				30
Spark Plug				31
Suspension Condition				32
Track Condition				32
Track Tension and Alignment	(As required)			32
Steering Mechanism				33
Ski and Runner Wear				33
Steering Adjustment				33
Exhaust System				34
Engine Head Nuts				35
Engine Mount Nuts				35
Carburetor Adjustment				35
Fuel Filter Replacement				35
Headlamp Beam Aiming				36
General Inspection				37

 **NOTE** : The 10-hour inspection is a very important part of proper service and maintenance.

## Console Removal

For any procedure that may require removal of the console, proceed as follows :

1. Unlock the latch where the console and dash panel meet.

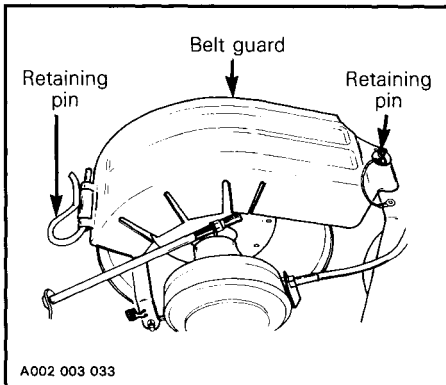


2. Push the console downward then tilt away from the engine. To reinstall, reverse the procedure.

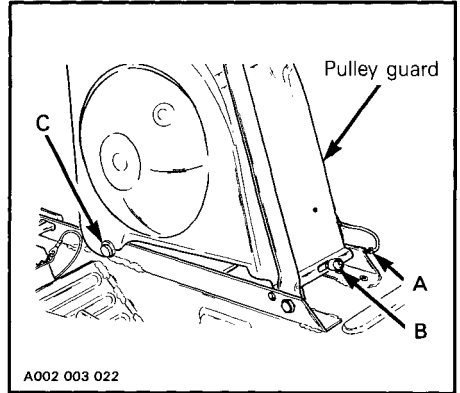
## Belt Guard/Pulley Guard Removal

◆ **WARNING :** Engine should be running only when belt guard and/or pulley guard are secured in place.

1. Tilt the hood and remove the console.
2. Remove the belt guard (front) by unlocking it from retaining pins.



3. To remove the pulley guard, pull out the retaining clip (A) and pull on the spring (B) to disengage the pin from the bracket.



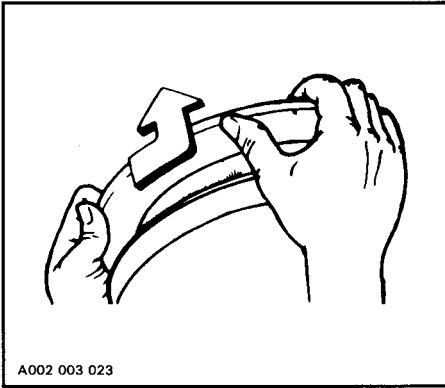
4. Push the pulley guard forward to disengage the front attachment (C) from the frame. Lift the guard from the vehicle.

## Drive Belt Removal and Installation

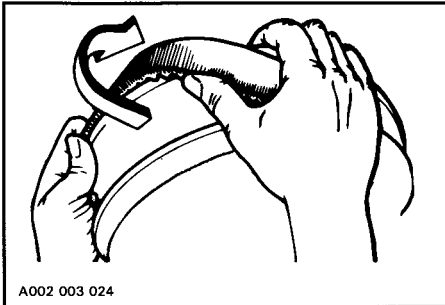
◆ **WARNING :** Never start or run the engine without the drive belt installed. Running an unloaded engine is dangerous.

1. Remove ignition key.
2. Tilt the hood and remove the pulley guard.
3. Open the driven pulley by twisting and pushing the sliding half. Hold in fully open position.



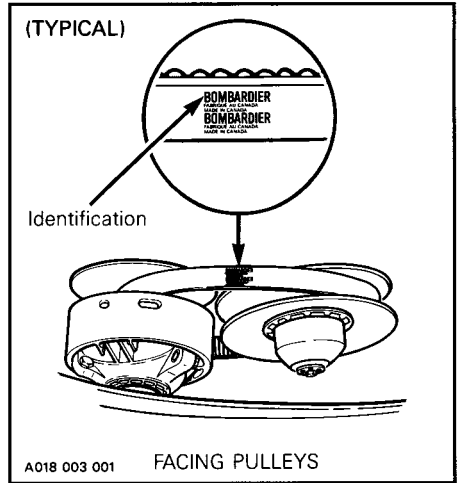


4. Slip the belt over the top edge of the sliding half.



5. Slip the belt out from the drive pulley and remove completely from the vehicle. To install the drive belt, reverse the procedure, however pay attention to the following.

The maximum drive belt life span is obtained when the belt has the proper rotation direction. Install it so the Bombardier name on the belt can be read when facing pulleys.



**CAUTION:** Do not force or use tools to pry the belt into place, as 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 your authorized dealer.

Check the drive belt width.

Replace the drive belt if width is less than 27 mm (1-1/16 in).

## New Drive Belt

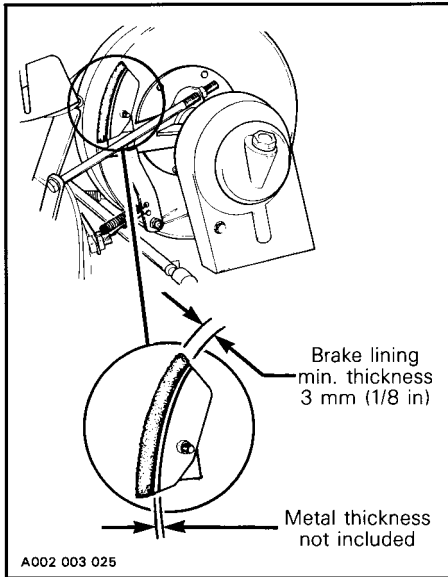
When installing a new drive belt, break-in period of 25 km (15 miles) is strongly recommended.

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

## Brake Condition

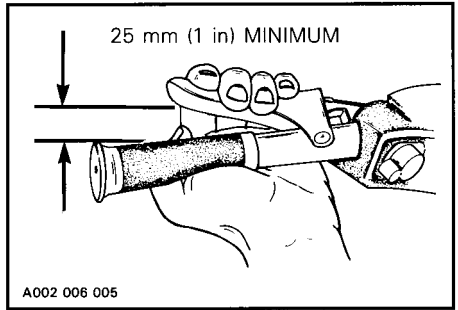
The brake mechanism on your snowmobile is an essential safety device. Keep this mechanism in proper working condition. Above all, do not operate your snowmobile without an effective brake system.

◆ **WARNING** : Brake lining less than 3 mm (1/8 in) thick must be replaced. Replacement must be performed by an authorized dealer.



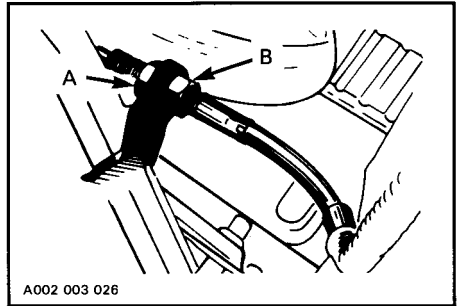
## Brake Adjustment

Brake should apply fully while brake control lever is still 25 mm (1 inch) minimum from the handlebar grip.



## Minor Adjustment

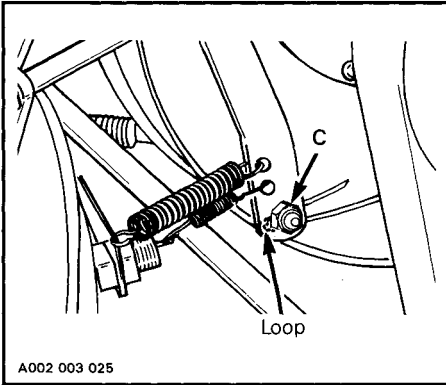
If a minor adjustment is necessary, slack off the cable housing nut (A) and tighten the nut (B) to reduce the lever clearance.



Once minor adjustment is completed, firmly tighten the nuts (A and B) against the bracket. If correct brake control lever clearance is unobtainable, proceed with major adjustment as follows :

## Major Adjustment

Slacken off the nut (C) retaining the brake cable to the lower brake lever. Adjust the cable to required length by lengthening or shortening the brake cable. Retighten the nut. Ensure that minor adjustment nuts are located approximately half way on the adjuster threads.



◆ **WARNING** : Brake cable must make a loop around the bolt head. Strongly pull the brake handle to check cable tightness. Always check the brake light to see if it functions after performing brake adjustment.

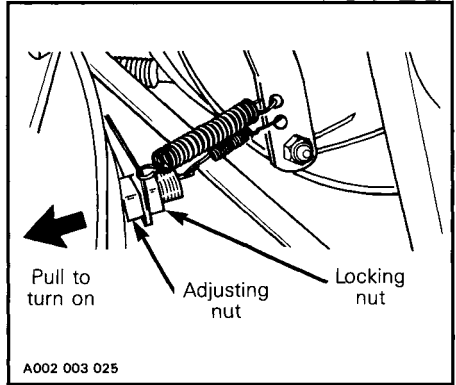
### Brake Light Switch Adjustment

To check operation :

Pull the brake lever and check that a light resistance is felt while rotating the driven pulley. This is the position where the switch should have turned the brake light on.

To adjust :

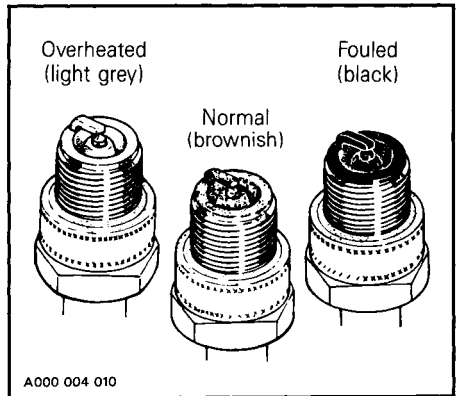
- Loosen the brake switch lock nut.
- While turning adjusting nut, pull switch outward to turn brake light on or push inward to turn it off.



### Spark Plug

Disconnect spark plug wire and remove plug. Check condition of plug.

- A brownish tip reflects ideal conditions. (Carburetor adjustment, spark plug heat range, etc. ; are correct.)
- A black insulator tip indicates fouling caused by ; carburetor idle speed mixture too rich, incorrect fuel mixture ratio, 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 fuel mixture ratio, or a leaking seal or gasket.



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

Check spark plug gap using a wire feeler gauge. Gap must be 0.5 mm (.020 in).

Reinstall plug and connect wire.

## Suspension Condition

Visually inspect suspension springs. Replace any weak or broken spring.

Check for wear or looseness. Correct as required.

## Track Condition

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

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

## Track Tension and Alignment

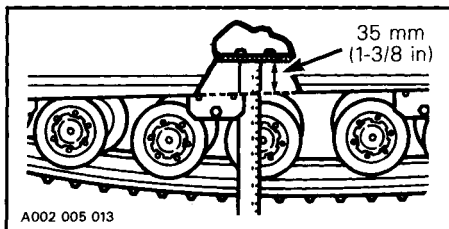
### Tension

Lift the rear of vehicle and support it off the ground. Using a ruler, check track tension.

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

○ **NOTE** : If the track tension is too loose, the track will have a tendency to thump.

The distance between the top inside edge of the track and the bottom of the footboard at the middle set of bogie wheels should be 35 mm (1-3/8 in).

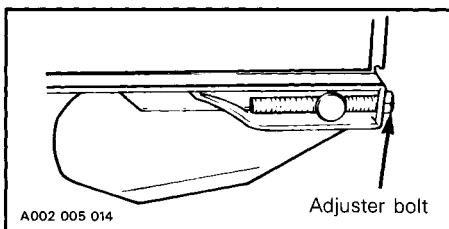


### Alignment

To adjust track use the following procedure :

Loosen link plate spring lock nuts located on inner side of link plate springs.

Turn adjuster bolts clockwise to tighten track, counterclockwise to slacken.

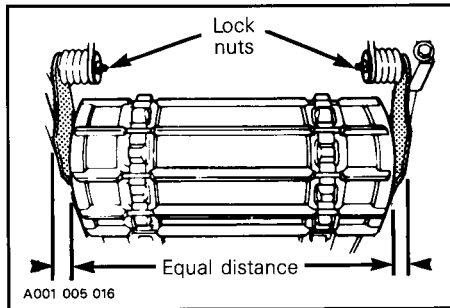


○ **NOTE** : Track tension and alignment are inter-related. Do not adjust one without checking the other.

◆ **WARNING :** Before checking track alignment, ensure that the track is free of particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track. Ensure nobody is standing near the vehicle.

Start engine and allow track to barely turn. Check if track is well centered and turns evenly on the rear sprockets. The distance between track edges and link plates should be equal on each side.

Misalignment can cause excessive wear of track edges and sprocket teeth.



To correct :

**Stop engine** and on appropriate side, turn adjuster bolt clockwise to withdraw track from link plate.

Tighten link plate spring lock nuts.

Restart engine and rotate track **slowly** and recheck alignment.

## Drive and Driven Pulleys

These are complex mechanism which operate at high rotational speeds. Each pulley is dynamically balanced at the factory. Any tempering 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 a different adjustment. 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 Mechanism

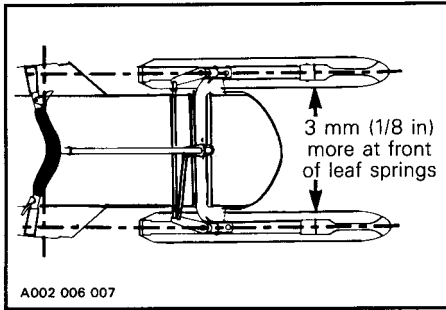
Inspect steering mechanism for tightness of components (steering arm, ball joints, etc.) or wear. If necessary, replace or retighten.

◆ **WARNING :** Check condition of skis, ski runners and leaf springs. Replace ski runners if more than half worn.

## Steering Adjustment

Skis should have a toe out of 3 mm (1/8 in). To check, measure distance between skis at front and rear of leaf springs.

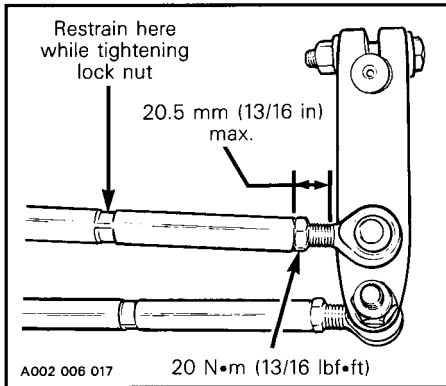
**IMPORTANT :** Close the front of the skis manually to eliminate all slack from the steering mechanism, using a rubber strap.



If necessary to adjust :

Loosen the lock nuts of the longer tie rod. Turn the tie rod manually until the skis are properly aligned. Firmly retighten the lock nuts.

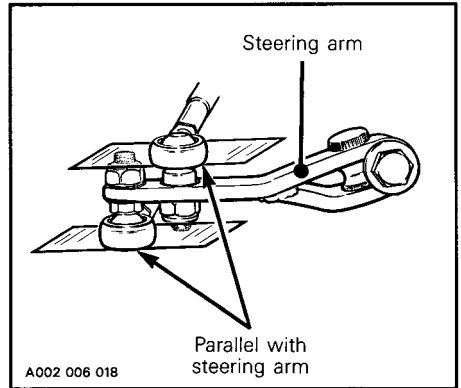
◆ **WARNING :** The maximum ball joint external threaded length not engaged in the tie rod end must not exceed 20.5 mm (13/16 in). Torque lock nut to 20 N•m (15 lbf•ft).



Handlebar should also be horizontal when the skis are pointed toward the front.

To adjust, loosen the lock nuts of the shorter tie rod. Turn the tie rod manually until the handlebar is horizontal. Retighten the lock nuts firmly. Check tightness of the steering arm locking bolts and the wear of the ball joints.

◆ **WARNING :** The ball joint socket must run parallel with the steering arm. When tightening lock nuts, restrain ball joint with appropriate size wrench.



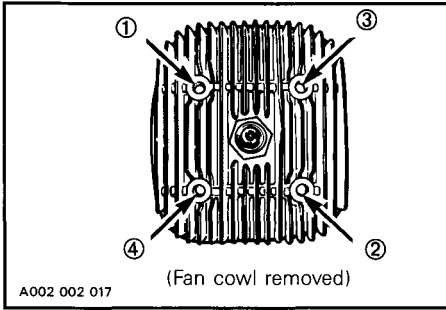
## Exhaust System

Repair or replace any components which has rusted or 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 :** Do not operate vehicle with muffler disconnected otherwise serious engine damage will occur.

## Engine Head Nuts

With the ENGINE COLD, check that engine head nuts are tight and equally torqued to 21 N•m (15 lbf•ft). Follow the illustrated sequence.



**IMPORTANT :** The engine head nut torque should be checked after the first 10 hours of operation.

## Engine Mount Nuts

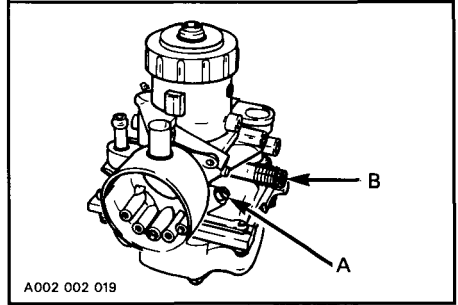
Check engine mount nuts for tightness. Retighten if necessary at 38 N•m (28 lbf•ft).

## Carburetor Adjustment

▼ **CAUTION:** Never operate your snowmobile with the air intake silencer disconnected. Serious engine damage will occur if this notice is disregarded.

### A) Air Screw Adjustment

Completely close the air screw (until a slight seating resistance is felt) then back off screw : 1-1/2 turn.



### B) Idle Speed Adjustment

Turn the 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 the engine and allow it to warm then adjust the idle speed by turning the idle speed screw clockwise or counterclockwise.

Idle speed : 1100-1300 RPM

## Fuel Filter Replacement

Remove fuel line grommet from fuel tank and pull out inlet fuel line from tank. Disconnect fuel filter from inlet line and replace it by a new one.

Reinstall inlet fuel line with its grommet.

## Engine Compartment

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

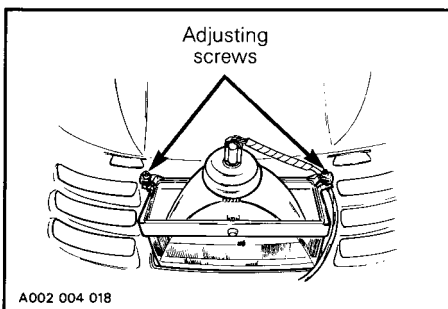
## High Altitude Kit

Snowmobiles used in high altitude areas (1200 m (4000 ft) and up) are subjected to loose power, as temperature, elevation and snow condition are different. The carburetor and power train have to be recalibrated to meet those particular requirements. Ask your authorized dealer for more information on high altitude kit availability.

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

## Headlamp Beam Aiming

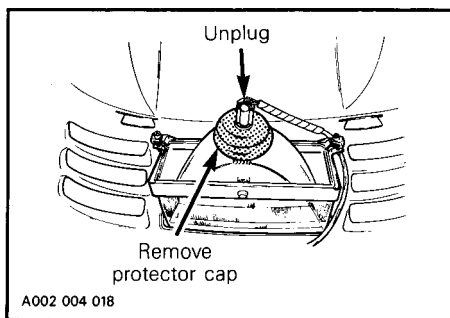
Open hood to adjust. From inside of hood, turn adjusting screws to obtain desired beam position.



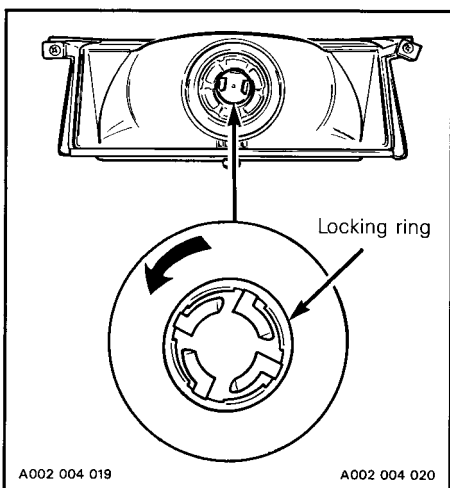
## Bulb Replacement

### Headlamp

If headlamp is burnt, open hood. Unplug connector from headlamp and remove protector cap.



To remove bulb, rotate locking ring counter-clockwise then pull bulb.



Properly re-install parts.

### Taillight

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

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



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## **Wiring Harnesses, Cables and Lines**

Ensure each routing is well secured with proper fasten 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 runner for wear.

◆ **WARNING : Check condition of ski runner and leaf spring. Replace if worn or weak.**

# STORAGE

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It is during summer, or when a vehicle is not in use for any length of time, that proper storage is a necessity. Storage of the snowmobile during long periods of inactivity consists of checking and replacing missing, broken or worn parts ; proper lubrication and treatment to insure that parts do not become rusted, cleaning items such as carburetor of oil mixtures, to prevent gum or varnish formation within the carburetor, and in general, preparing the vehicle so that when the time comes to use the snowmobile again it will be in top condition.

◆ **WARNING :** Only perform such procedures as detailed in this manual. 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

Inspect track for wear, cuts, missing track inserts or broken rods.

Make any necessary replacement.

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

Lift rear of vehicle until track is clear of ground then support it with a brace or trestle. The snowmobile should be stored in such a way that the track does not stay in contact with cement floor or bare ground.

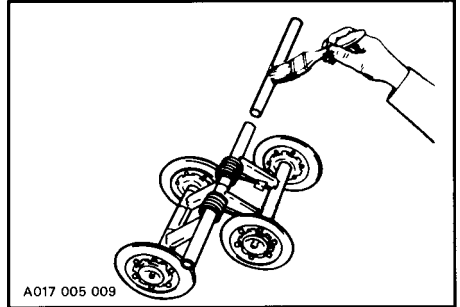
○ **NOTE :** The track should be rotated periodically (every 40 days). Do not release track tension.

▼ **CAUTION :** To prevent track damage, temperature in the storage area must not exceed 38°C (100°F).

## Suspension

Remove the bogie wheel sets from the vehicle. Remove cross shaft from bogie wheel set. Clean bogie wheel assembly and cross shaft of dirt or rust.

Check condition of shaft and replace if bent or worn. Apply a coat of low temperature grease on cross shaft.



Grease each bogie wheel until the old grease is flushed out. Spray bogie wheel springs with metal protector. If unavailable, wipe with a cloth or rag soaked in oil.

Reassemble entire bogie wheel set, making sure assembly moves freely. Reinstall bogie wheel set in the proper position.

Torque cross shaft bolts to 30 N•m (23 lbf•ft). Repeat above steps on remaining bogie wheel sets. Lubricate rear hubs through grease fittings.

## Skis and Runners

Wash or brush all dirt or rust accumulation from skis and springs. Grease ski leg at grease fitting. Apply metal protector on ski assembly. If unavailable, wipe the entire skis with a cloth soaked in oil to prevent rust formation.

◆ **WARNING : Check condition of ski runner and leaf spring. Replace if worn or weak.**

## Controls

Lubricate steering mechanism. Inspect components for tightness (spring coupler bolt, steering arm locking bolt, ball joints, etc.). Tighten if necessary. Oil metallic moving joints of brake mechanism.

◆ **WARNING : Do not lubricate throttle and/or brake cable or housing. Avoid getting oil on brake lining.**

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

## Chaincase

Drain the chaincase and refill to proper level with fresh chaincase oil. (P/N 413 8019 00 - 250 mL (9 oz)).

To drain the chaincase remove the tool box then access plug (lower plug) and tilt vehicle hard left.

## Drive Pulley

Inspection and cleaning must be performed by an authorized dealer at the beginning of each season.

## Engine

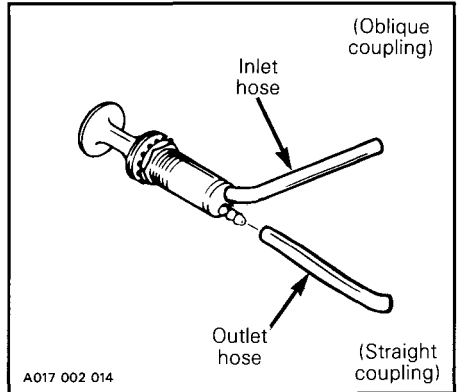
Engine internal parts must be lubricated to protect cylinder walls from possible rust formation during the storage period.

To perform the storage procedures proceed as follows :

1. Lift the rear of the vehicle and support it off the ground.

◆ **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. Start the engine and allow it to run at idle speed until the engine reaches its operational temperature.
3. Stop the engine.
4. To prevent fuel from draining, primer button should be pushed all the way.
5. Disconnect the outlet primer hose from the primer valve.



6. Insert storage oil (P/N 496 0141 00) can hose into primer outlet hose.
7. Restart engine and run at idle.
8. Inject storage oil until the engine dies or until a sufficient quantity of oil has entered the engine (approximately 30 seconds).
9. With the engine stopped, remove the spark plug and pour approximately 85 mL (3 oz.) of Bombardier oil into the cylinder.
10. Crank slowly two or three revolutions to lubricate cylinder.
11. Reinstall spark plug and outlet primer hose.

**Do not run engine during storage period.**

### Driven Pulley

Remove drive belt. Thoroughly clean the driven pulley shaft. Apply a light film of low-temperature grease on shaft. Activate the sliding half several times to distribute grease on shaft. Spray internal pulley surfaces with metal protector.

○ **NOTE** : Leave drive belt **off** during entire storage period.

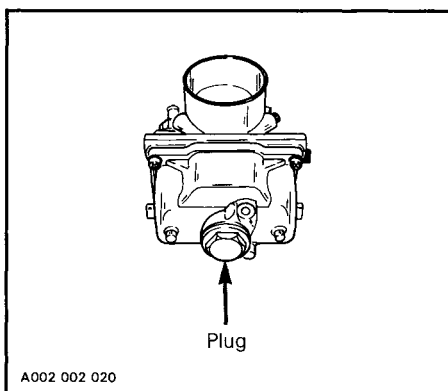
### Fuel Tank and Carburetor

Remove the cap then, using a syphon, remove fuel from 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.

The carburetor 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 from carburetor. Drain carburetor and reinstall plug.



Check all fuel lines, replace if necessary.

### Chassis

Clean the vehicle thoroughly, removing all dirt and grease accumulation.

▼ **CAUTION** : Plastic alloy components such as windshield, console, etc., can be cleaned using mild detergents or isopropyl alcohol and a clean cloth. Do not use strong soaps, degreasing solvents, abrasive cleaners, paint thinners, acetone, etc. Do not apply isopropyl alcohol directly on decals.

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Inspect hood and see an authorized Bombardier dealer for repair.

Touch up all metal spots where paint has been scratched off. Spray all metal parts of vehicle with metal protector. Wax the hood for better protection.

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

▼ **CAUTION** : Cover the snowmobile with an opaque tarpaulin. This caution will prevent the sun rays or grime from affecting the plastic components and the vehicle finish.

### **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.

◆ **WARNING** : Check condition of skis, ski runners and leaf springs. Replace if worn or weak.

# PRE-SEASON PREPARATION

To simplify the pre-season preparation we have drawn up a small chart. The chart indicates servicing points to be performed by you and your authorized dealer.

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

<b>PRE-SEASON PREPARATION CHART</b>	To be performed by dealer ●	Refer to page
	To be performed by owner ○	
Change spark plugs*	○	31
Check chaincase oil level	○	25
Check steering adjustment/ski runner wear	●	33
Replace fuel filter (located inside fuel tank)	○	35
Check fuel lines and attaching points	○	35
Check track condition, tension and alignment	○	32
Check and lubricate suspension	○	25
Inspect drive belt and install	○	28
Check throttle cable for free operation	○	22
Inspect brake condition and operation	○	24
Check electrical wiring (broken wire, damaged insulation)	○	37
Inspect condition of starting rope	○	—
Check tightness of all bolts, nuts and linkage	○	37
Refill fuel tank	○	19
Inspect oil seals for possible cuts or leaks	○	—
Set engine timing (if necessary replace breaker points)	●	Shop man.
Adjust carburetor	●	Shop man.
Checks pulleys, verify components and clean. Lubricate	●	Shop man.



\*NOTE : Before installing new spark plugs, it is suggested to burn excess storage oil by starting the engine, using the old spark plug.



CAUTION : Perform this operation in a well ventilated area.

# TROUBLESHOOTING

SYMPTOMS	POSSIBLE CAUSES	WHAT TO DO
Engine turns over but fails to start	1. Ignition switch, emergency cut-out switch or tether switch is in the off position	Place all switches in the "run" or "on" position.
	2. Mixture not rich enough to start cold engine	Check fuel tank level and check starting procedure, particularly use of the primer.
	3. Flooded engine. (Spark plug wet when removed)	Do not over prime. Remove wet spark plug, turn ignition to OFF and crank engine several times. Install clean dry spark plug. Start engine following usual starting procedure. If engine continues to flood, see your authorized dealer.
	4. No fuel to the engine. (Spark plug dry when removed)	Check fuel tank level ; turn fuel 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 your authorized dealer.
	5. Spark plug/ignition (no spark)	<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 engine cowl, <b>being careful to hold away from spark plug hole</b>. Follow engine starting procedure and check for spark. If no spark appears, replace spark plug. If trouble persists, contact your 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 recoil starter, "cycles" of resistance should be felt as each piston goes past top dead center. If no pulsating resistance is felt, it suggests a major loss of compression. Contact your 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 your 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 your authorized dealer.
	6. Engine is overheating	If applicable, check coolant level ; check pressure cap ; check thermostat.  Check for air locks in cooling system.  If applicable, check fan belt and its tension ; clean cooling fins of engine ; if heating persists, contact your authorized dealer.

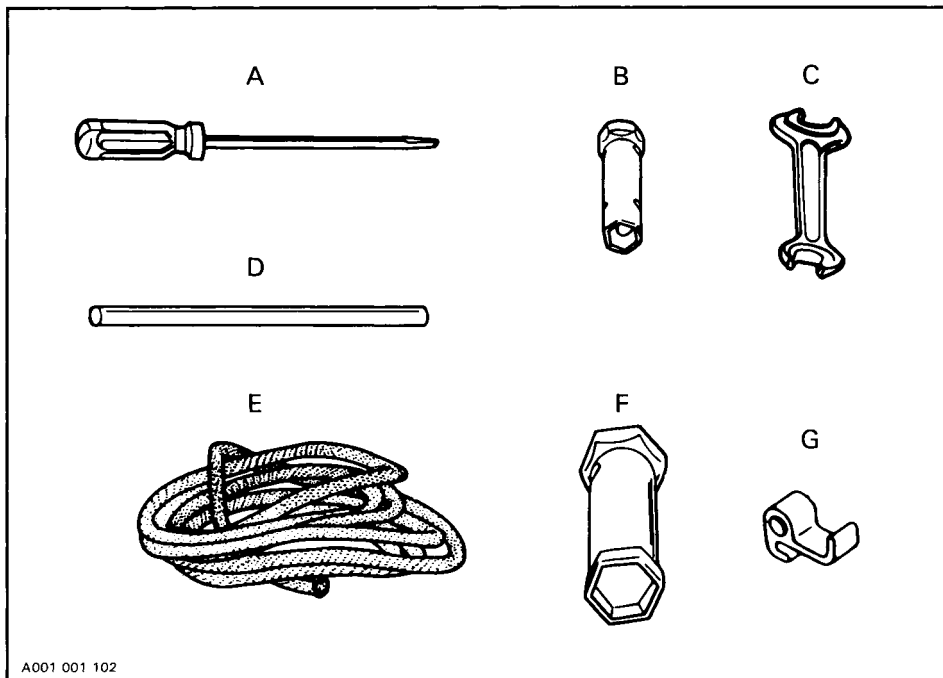


<b>SYMPTOMS</b>	<b>POSSIBLE CAUSES</b>	<b>WHAT TO DO</b>
Engine backfire	1. Faulty spark plug	See item 5 of "Engine turns over but fails to start."
	2. Water in fuel	Drain fuel system and refill with clean fuel.
	3. Engine is running too hot	See item 6 of "Engine lacks acceleration or power."
	4. Ignition timing is incorrect or there is an ignition system failure	Contact your 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 settings.
	3. Pulleys misaligned	Contact your authorized dealer.
	4. Engine	See items 1, 2, 3 & 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



A001 001 102

### DESCRIPTION

- A. Screwdriver
- B. Socket 10/13 mm
- C. Open end wrench 10/13 mm
- D. Socket wrench handle
- E. Emergency starting rope
- F. Socket 21/26
- G. Emergency starter clip

### PART NUMBERS

- 414 6424 00
- 414 6426 00
- 414 6428 00
- 414 6427 00
- 412 5001 00
- 414 6425 00
- 420 8523 40

# SPECIFICATIONS

<b>ENGINE</b>	
Type	247
No of cylinders	1
Bore	69.5 mm (2.736'')
Stroke	66 mm (2.598'')
Displacement	250.4 cm <sup>3</sup> (15.28 in <sup>3</sup> )
Compression ratio (corrected)	5.5:1
Maximum horse power RPM*	5700
Carburetor type	Mikuni, variable venturi, float type
Carburetor adjustment :	
- air screw	1-1/2 turn
- idle speed	1100-1300 RPM
Torque :	
- engine head nuts	M8 : 21 N•m (15 lbf•ft)
- crankcase nuts	M8 : 22 N•m (16 lbf•ft)
- magneto ring nut	M22 : 85 N•m (63 lbf•ft)
- crankcase/engine support nuts	38 N•m (28 lbf•ft)
- exhaust manifold bolts	21 N•m (15 lbf•ft)
<b>CHASSIS</b>	
Overall length	224.8 cm (88.5'')
Overall width	77.5 cm (30.5'')
Overall height	106.7 cm (42'')
Ski stance (center to center)	64.8 cm (25.5'')
Ski alignment	3 mm (1/8'') toe out
Torque :	
- steering arm/ski leg bolt	31 N•m (23 lbf•ft)
- tie rod/ball joint lock nuts	20 N•m (15 lbf•ft)
Dry weight	129.3 kg (285 lb)
Bearing area	6916 cm <sup>2</sup> (1072 in <sup>2</sup> )
Ground pressure	1.81 kPa (.266 lbf/in <sup>2</sup> )
<b>POWER TRAIN</b>	
Track :	
- width	38.1 cm (15'')
- length	290 cm (114'')
- tension	35 mm ± 3 (1-3/8'' ± 1/8'') distance between top inside edge of track and the bottom of the footboard.
- alignment	Equal distance between edges of track and link plates.
Standard gear ratio	10/25
Drive belt :	
- number	570 0411 00
- max. width	30.2 mm (1-3/16'')
- min. width	27 mm (1-1/16'')
Chaincase oil capacity	200 mL (7 oz)

\*The maximum horse power RPM is applicable with engine on the vehicle. It may vary under certain circumstances, Bombardier Inc. reserves the right to modify it without any obligation.

<b>ELECTRICAL</b>	
Lighting system (output)	12 V, 75/23 watts
Bulb :	
— headlamp	60/60 W
— tail/stop	5/21 W
— speedometer	N.A.
Fuse :	
— ignition switch	N.A.
— main wiring	N.A.
Breaker point gap	0.35 - 0.40 mm (.014 - .016")
Spark plug :	
— type	Bosch M7A (M175 T1)
— gap	0.50 mm (.020")
Ignition timing :	
— timing mark (BTDC)	3.98 mm (.157")
Dynamic edge gap	7 - 10 mm (9/32 - 25/64")
<b>FUEL</b>	
Gas type	Regular leaded or unleaded
Fuel tank capacity :	
— S.I.	13.6 liters
— Imp.	3 gallons
— U.S.	3.6 gallons
Premixed fuel/oil :	
— oil type	Blizzard oil
— ratio	50:1
<b>BRAKE</b>	
Type	Drum
Lining minimum thickness	3 mm (1/8")
Control lever adjustment (minimum distance from handlebar grip when fully applied)	25 mm (1")

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.*

# 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	1000
centi	c	one hundredth	0.01
milli	m	one thousandth	0.001
micro	μ	one millionth	0.000001

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>	<b>N•m</b>	0.11	
<b>lbf•ft</b>	<b>N•m</b>	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.

# NOTES

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