

SKI-DOO



OPERATOR'S GUIDE

**FORMULA MX/MX E/
MX XTC/MX XTC E**

**FORMULA PLUS/PLUS E/
PLUS XTC/PLUS XTC E**

**FORMULA MACH 1/
MACH 1 XTC**

SAFETY WARNING

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

This *Operator's Guide* & the *Snowmobiler's Safety Handbook* should remain with the vehicle at the time of resale.

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



The following are trademarks of Bombardier Inc.

ALPINE®
BOMBARDIER®
CITATION®

ÉLAN®
FORMULA*
NORDIK®

SAFARI*
SKI-DOO®
TUNDRA*

Sta-Bil® is a trademark of Gold Eagle Co.

NOTICE

The *Operator's Guide* 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 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.

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 precision 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.

◆ **WARNING** : The engines and the corresponding components identified in this guide should not be utilized on products 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.

▼ **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

SAFETY MEASURES	5
THE 1991 SNOWMOBILE LIMITED WARRANTY	6
OFTEN ASKED QUESTIONS	8
LISTING OF AREA DISTRIBUTORS	10
HOW TO IDENTIFY YOUR SNOWMOBILE	12
CONTROLS/INSTRUMENTS	13
Throttle Lever	14
Brake Lever	14
Parking Brake Button	14
Ignition Switch	14
Headlamp Dimmer Switch	15
Emergency Cut-Out Switch	15
Tether Cut-Out Switch	15
Rewind Starter Handle	15
Primer Button	15
Adjustable Steering Handle	15
Speedometer/Odometer	16
Trip Meter Reset Button	16
Tachometer	16
Temperature Gauge	16
Injection Oil Level Pilot Lamp	16
High Beam Pilot Lamp	17
Heated Grip Switch	17
Fuel Tank Cap	17
Electric Fuel Level Gauge	17
Fuel Level Indicator	17
Hood Latches	17
Tool Kit	17
Spare Drive Belt Holder	17
Storage Compartment	17
Spark Plug Holder	18
Tachometer Fuse	18
Starting System Fuse	18
Fuel Shut-Off Valve	19
Rear Bumper	20
Front Grab Handle	21
BREAK-IN PERIOD	22
Engine	22
Belt	22
10-Hour Inspection	22
10-Hour Inspection Check List	23
FUEL & OIL	24
Recommended Fuel	24
Recommended Oil	24
Oil Injection System	24
PRE-START CHECK	25
Check Points	25
STARTING PROCEDURE	26
Manual Starting	26
Electric Starting	26
Before Riding	26
Emergency Starting	27

LUBRICATION	28		
Frequency	28	Brake Caliper	31
Steering and Front Suspension Mechanism	29	Slide Suspension	32
Drive Axle	31	Chaincase Oil Level	33
Countershaft (Bake Disc and Driven Pulley)	31	Oil Injection System	33
		Rotary Valve System	33
MAINTENANCE	34		
Service and Maintenance Chart ..	34	Steering and Front Suspension Mechanism	45
Belt Guard Removal	35	Skis and Runners	45
Drive Belt Removal and Installation ..	35	Steering and Ski Leg Camber Adjustment	45
Drive Belt Condition	36	Exhaust System	45
New Drive Belt	36	Engine Compartment	45
Brake Condition	36	Air Filter	46
Brake Adjustment	37	Carburetor Adjustment	46
Spark Plugs	37	High Altitude Kit	46
Battery	37	Oil Injection System	47
Suspension Condition	40	Cooling System	47
Suspension Adjustments	40	Headlamp Beam Aiming	48
Limiter Screw	42	Bulb Replacement	48
Track Condition	43	Wiring Harnesses, Cables and Lines ..	49
Track Tension and Alignment	43	General Inspection	49
Drive and Driven Pulleys	44		
Drive Chain Tension	45		
STORAGE	50		
Track	50	Engine	51
Controls	50	Drive and Driven Pulleys	52
Battery	50	Fuel Tank and Carburetors	52
Countershaft (Brake Disc and Driven Pulley)	51	General Inspection	52
IMPORTANT PRE-SEASON PREPARATION	53		
Pre-Season Preparation Chart	53		
TROUBLESHOOTING	54		
TOOLS	57		
SPECIFICATIONS	58		
SI METRIC INFORMATION GUIDE	64		

SAFETY MEASURES

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 headlamp, 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.
- 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 engines 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 engines 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 vehicles are designed for the driver only and no provisions have been made for a passenger.
- The performance of some vehicles may significantly exceed that of other snowmobiles you have operated. Therefore, use of these vehicles by novice or inexperienced operators is not recommended.
- 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 1st and December 1st of a year will expire on December 1st 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 labor, 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 labor, 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 labor, such as, but not limited to, transportation, towing, telephone calls, taxis, or any other incidental or consequential damage.

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 30th. The remainder of the 12-month period will be pro-rated as follows :

- 50% from April 30th to December 1st.
- 40% from December 1st to December 31st.
- 30% from January 1st 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

®*Trademarks of Bombardier Inc.

OFTEN ASKED QUESTIONS

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 voided 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 pre-delivered 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.

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 any dealers 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



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, MN 55807 U.S.A.
(218) 628-2881

SALES OFFICE

BOMBARDIER CORPORATION
7575 Bombardier Court
P.O. Box 8035
Wausau, WI 54402-8035 U.S.A.
(715) 842-8886

OR

BOMBARDIER CORPORATION
7575 Bombardier Court
P.O. Box 8035
Wausau, WI
54402-8035
U.S.A.
(715) 842-8886

WESTERN REGION

SERVICE OFFICE

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

SALES OFFICE

BOMBARDIER CORPORATION
7575 Bombardier Court
P.O. Box 8035
Wausau, WI 55402-8035 U.S.A.
(715) 842-8886

EASTERN REGION

SERVICE OFFICE

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

SALES OFFICE

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

OR

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

ALASKA

SERVICE OFFICE

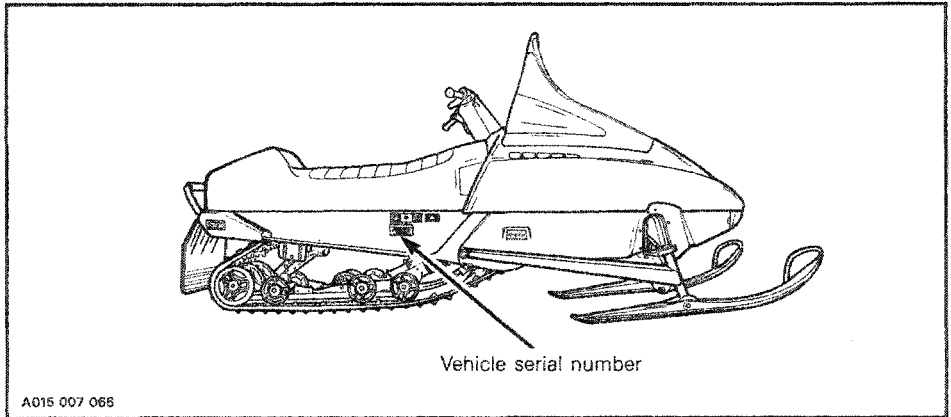
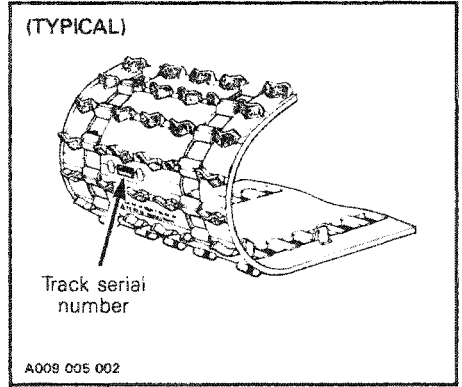
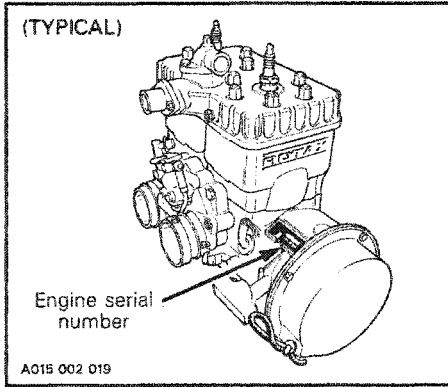
THE BRYANT CORPORATION
NE. 190th & Woodinville
Snohomish Road
P.O. Box 389
Woodinville, Wa 98072 U.S.A.
(206) 483-0110

SALES OFFICE

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

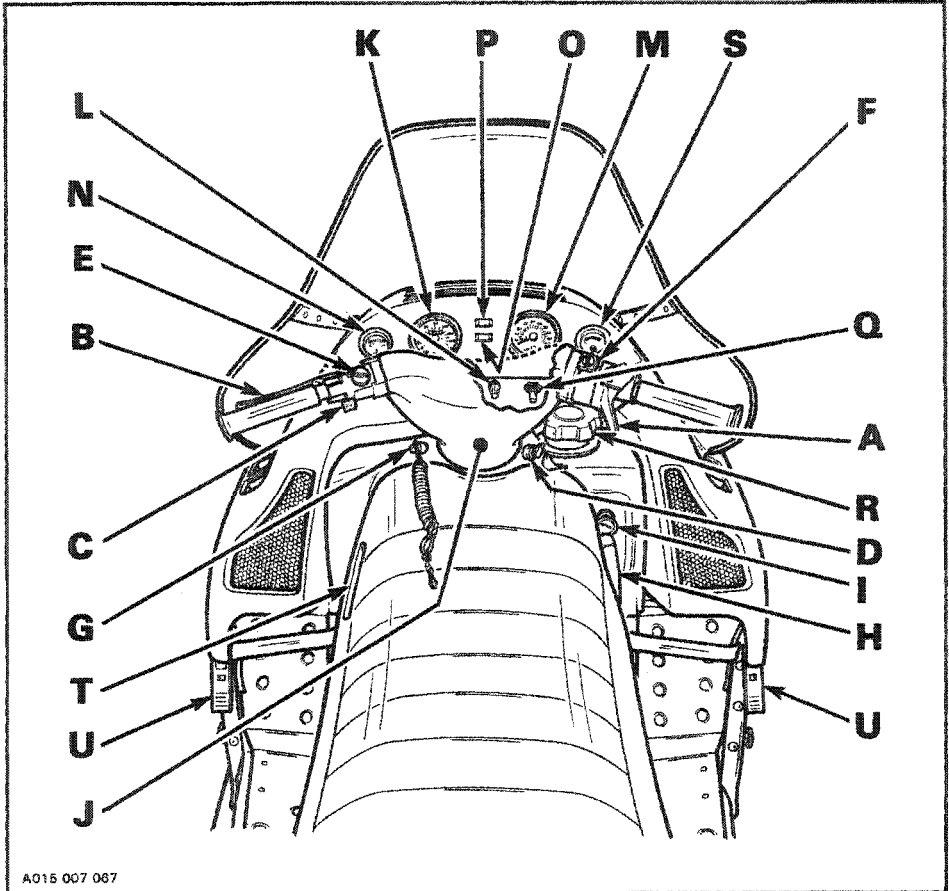
HOW TO IDENTIFY YOUR SNOWMOBILE

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



A015 007 067

- | | |
|-------------------------------|--|
| A) Throttle Lever | L) Trip Meter Reset Button |
| B) Brake Lever | M) Tachometer |
| C) Parking Brake Button | N) Temperature Gauge |
| D) Ignition Switch | O) Injection/Oil Level Pilot
Lamp (Red) |
| E) Headlamp Dimmer Switch | P) High Beam Pilot Lamp (Blue) |
| F) Emergency Cut-Out Switch | Q) Heated Grip Switch* |
| G) Tether Cut-Out Switch | R) Fuel Tank Cap |
| H) Rewind Starter Handle | S) Electric Fuel Level Gauge* |
| I) Primer Button | T) Fuel Level Indicator* |
| J) Adjustable Steering Handle | U) Hood Latches |
| K) Speedometer/Odometer | |

*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

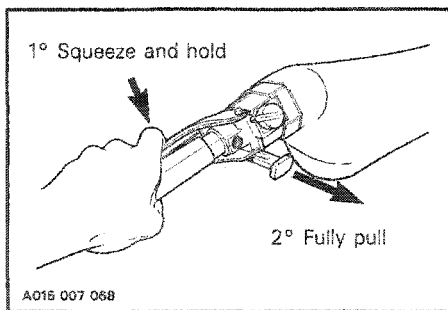
Located on the left side of handlebar. When compressed, the brake is applied. When released, it automatically returns to its original position. Braking effect is proportional to the pressure applied on the lever and to the type of terrain and its snow coverage.

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.

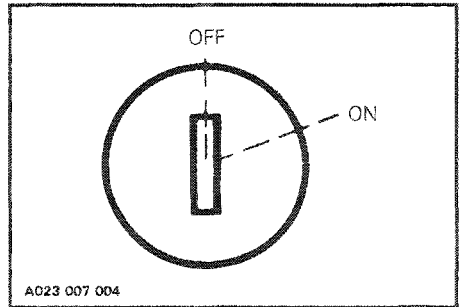
To release mechanism, squeeze brake lever then fully push parking brake button.



D) Ignition Switch

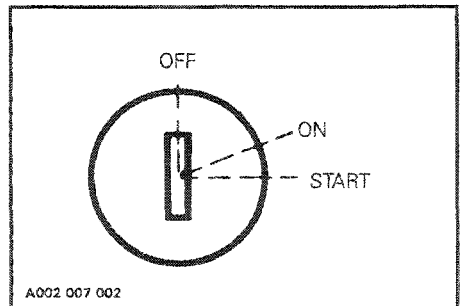
The lights are automatically ON whenever the engine is running.

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)



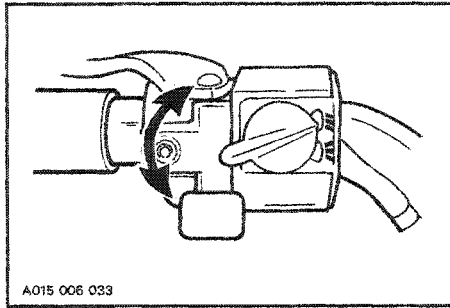
Key operated, three-position switch. To start engine, turn key to START position and hold. Release key to ON position immediately when engine has started. If engine does not start on first try, key must be turned fully back to OFF each time. To stop engine, turn key to OFF position.

▼ **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.

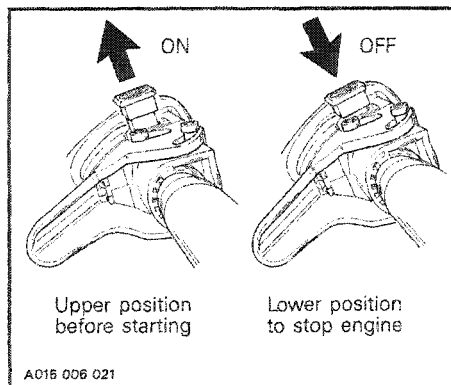
E) Headlamp Dimmer Switch

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



F) 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.

G) 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 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.

H) 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.

I) Primer Button

Pull and push button (two-three times) to start a cold engine.

J) Adjustable Steering Handle

Steering handle height is adjustable, see your authorized dealer.

K) Speedometer/Odometer

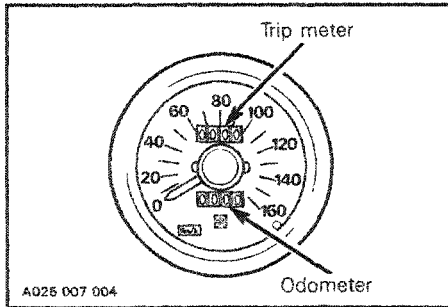
The speedometer is linked directly to the drive axle. Direct-reading dial indicates the speed of the vehicle in kilometers or in miles per hour. Odometer records the total distance travelled in kilometers or in miles.

L) Trip Meter Reset Button

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

Trip Meter

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.

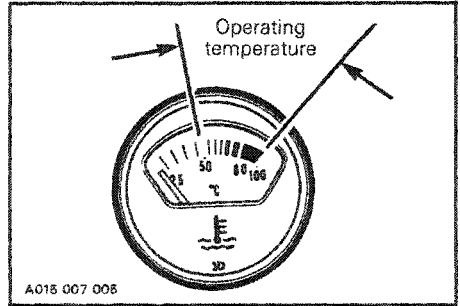


M) Tachometer

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

N) Temperature Gauge

The gauge indicates engine coolant temperature. Normal operating temperature is from 50° to 100°C (120° - 212°F).



However, coolant temperature can vary according to driving conditions. If coolant temperature exceeds 100°C (212°F), reduce speed and run vehicle in loose snow or stop engine immediately.

◆ **WARNING :** To remove coolant tank cap, place a cloth over the cap and unscrew it to the first stop to release the pressure. If this notice is disregarded, loss of fluid and severe burns could occur.

O) 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.

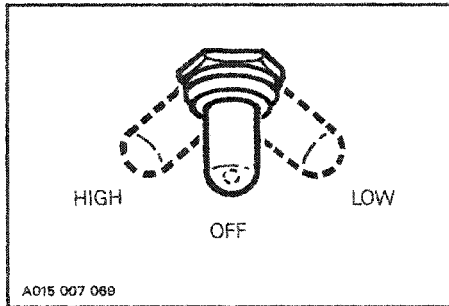
○ **NOTE :** Whenever brake lever is actuated, oil injection level pilot lamp should light up. If not replace lamp.

P) High Beam Pilot Lamp (Blue)

Lights when headlamp is on high beam.

Q) Heated Grip Switch (some models only)

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



R) Fuel Tank Cap

Unscrew to fill up tank then fully tighten.

S) Electric Fuel Level Gauge (some models only)

The electric fuel gauge is located in the dashboard and allows driver to observe the fuel level while riding the snowmobile.

T) Fuel Level Indicator (some models only)

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

U) Hood Latches

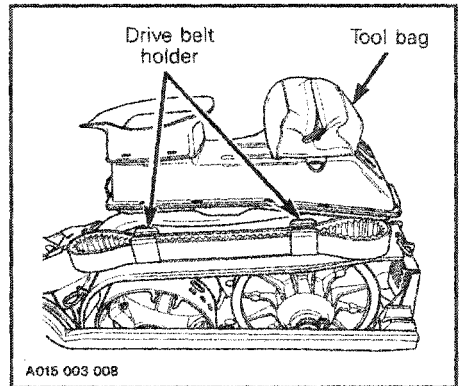
Pull down the latches to unlock the hood from its anchors.

○ 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.

Tool Kit

Tool kit is located in tool bag. To gain access, tilt hood.



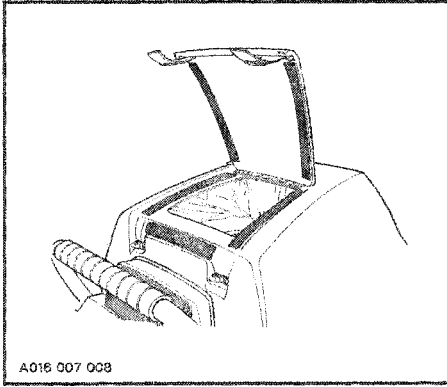
Spare Drive Belt Holder

A spare drive belt can be installed in drive belt holder clips on belt guard. To gain access, tilt hood.

Storage Compartment (some models only)

To gain access, turn quarter-turn locking devices to release strap. Lift cover.

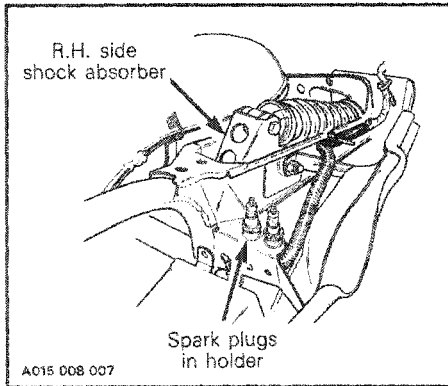
WARNING: Do not sit on cover at rear of seat while riding.



Spark Plug Holder

To keep spark plugs dry and prevent shocks that might affect the adjustment or break them, a holder is provided under hood, close to top of R.H. side shock absorber.

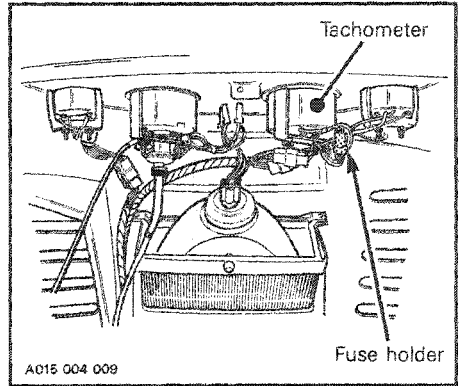
Fully tighten them into the holder.



Tachometer Fuse

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.

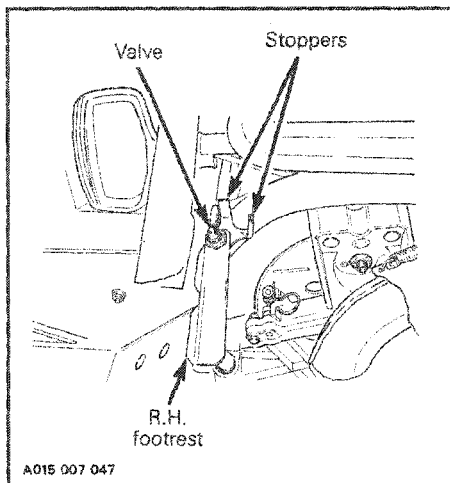
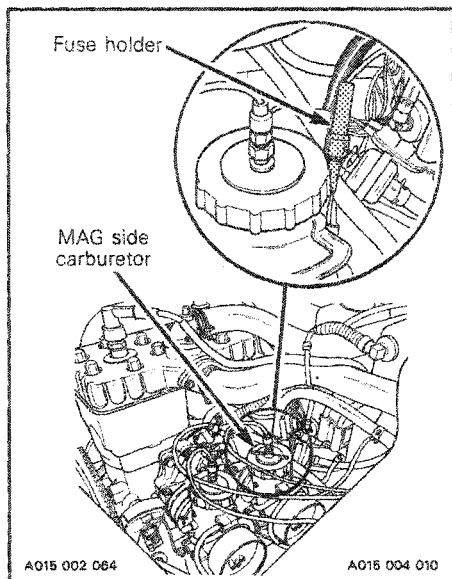
CAUTION: Do not use a higher rated fuse as this can cause severe damage to the tachometer.



Starting System Fuse (electric start models only)

Starting system is protected with a 30 amperes rated fuse. Fuse holder is located near oil injection filter beside MAG side carburetor. If starter does not operate, check fuse condition and replace if necessary.

NOTE: In the following illustrations, air intake silencer has been removed for clarity purpose.



When opening or closing valve, always rotate lever so that it flips over the stopper and maintains its position.

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

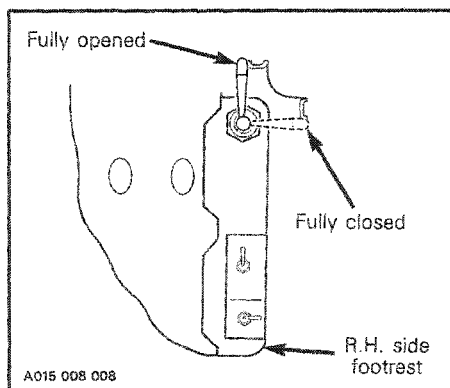
Fuel Shut-Off Valve (some models only)

The following pertains to vehicle having a manual shut-off valve.

It is recommended to close it when transporting or storing vehicle. The valve is under hood, on top of R.H. side footrest.

Two stoppers are provided on the fuel shut-off valve to prevent the lever from rotating due to vibration.

These stoppers are set so that the inner tip of the lever contacts the stoppers while in the fully opened or fully closed positions.



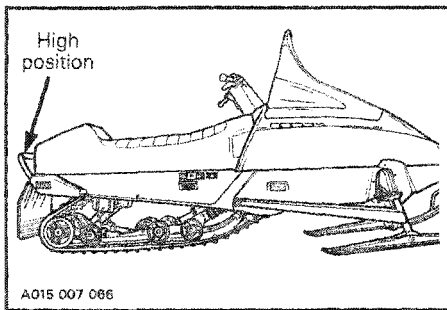
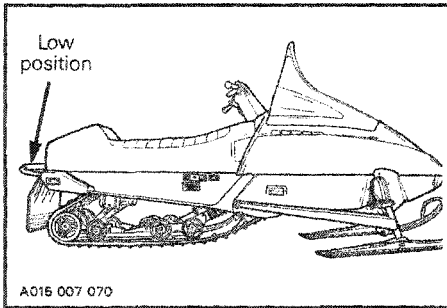
Fully open the valve in order to operate the vehicle.

▼ **CAUTION** : Always fully open the valve before riding. Never allow the valve lever to remain between stoppers.

○ **NOTE** : It may be necessary to push against stopper if lever is hard to get in position.

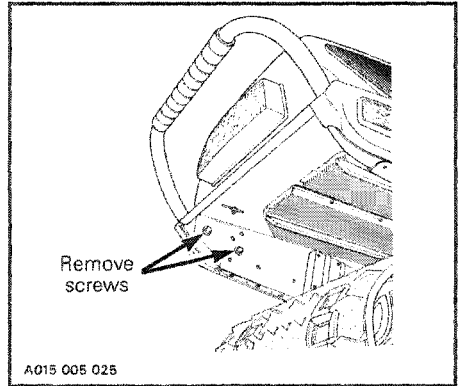
Rear Bumper (some models only)

The rear bumper can be installed in two positions, as desired by the driver. The low position can be used in deep snow to provide a grip at a more convenient level.

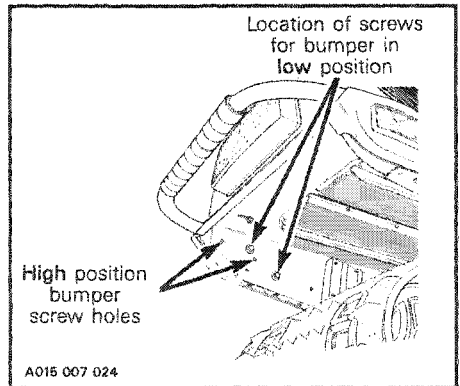


To install bumper in lower position, proceed as follows :

- Lift snow guard and block in that position.
- From inside tunnel, remove bumper retaining screws ; two per side.

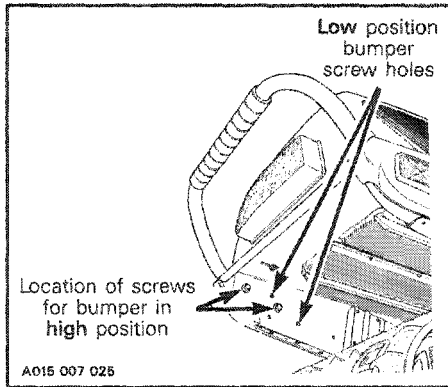


- Remove bumper.
- Reverse bumper position and insert in tunnel.
- When installing bumper in lower position, the retaining screws have to be relocated to different holes, as shown.



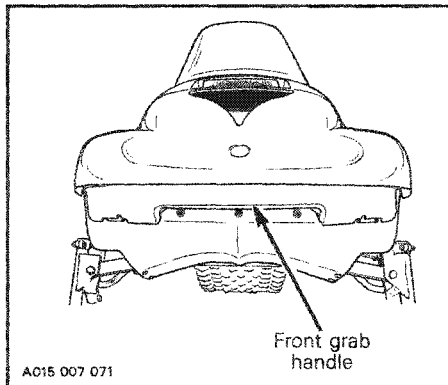
- Firmly tighten bumper screws.
- Lower snow guard.

NOTE : When installing bumper at upper position, bumper retaining screws have to be relocated to different holes, as shown.



Front Grab Handle

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



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

BREAK-IN PERIOD

Engine

With Bombardier-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 fuel tank filling.

▼ **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 your authorized dealer. This inspection will give you the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation.

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

10 - HOUR INSPECTION CHECK LIST	✓
Engine timing	
Spark plug condition : (remove and clean)	
Carburetor adjustments	
Oil injection pump adjustment	
Engine head nuts	
Drive pulley screw (torque)	
Engine mount screws	
Muffler attachment	
Chaincase oil level	
Drive chain tension	
Injection system oil level	
Engine coolant level	
Brake operation and lining condition	
Ski alignment (runners condition), ski leg camber adjustment	
Steering arm, retorque to 25 N•m (18 lbf•ft)	
Handlebar bolts, retorque to 26 N•m (19 lbf•ft)	
Driven pulley preload	
Pulley alignment and drive belt condition	
Track condition, tension and alignment	
Suspension, torque rear axle screw to 48 N•m (35 lbf•ft)	
Lubrication (steering, suspension, drive axle, 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 cut-out switch	
Battery electrolyte (electric start only)	

We recommend that you have your dealer sign this inspection.

Date of 10-hour inspection

Dealer signature

FUEL & OIL

Recommended Fuel

Use regular unleaded gasoline, available from most service stations or gasohol containing less than 10% 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. Always manipulate in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity.

Recommended Oil

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

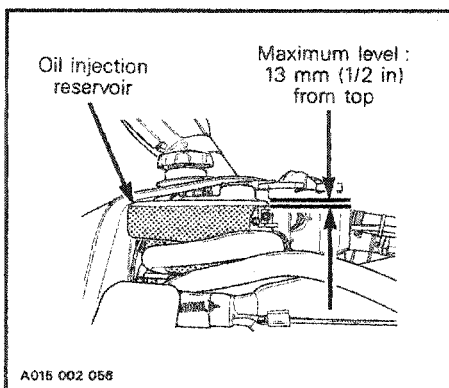
If BOMBARDIER Snowmobile Injection Oil is unavailable, substitute with BLIZZARD Oil (P/N 496 0135 00).

▼ **CAUTION** : Never mix brands of two cycle oil as serious chemical reactions 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 tank.

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



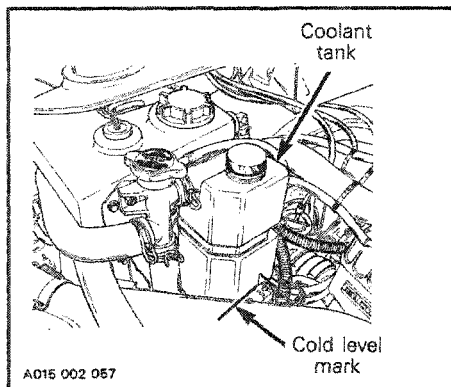
▼ **CAUTION** : Check level and refill every time you refuel. Do not overflow. Wipe off any spillage.

○ **NOTE** : For initial engine break-in, fill up fuel tank and add 500 mL (18 imp. oz) of BLIZZARD Oil or the same quantity of BOMBARDIER Injection Oil.

PRE-START CHECK

Check Points

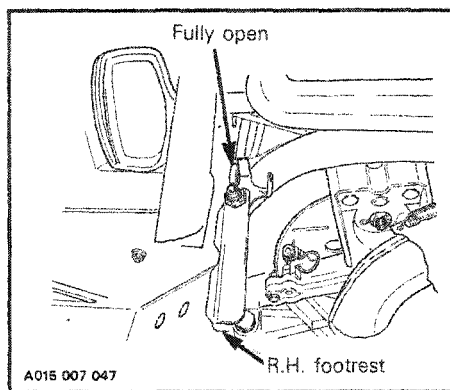
- ACTIVATE THE THROTTLE CONTROL LEVER SEVERAL TIMES to check that it operates easily and smoothly. It must return to idle position when released.
- Check that the skis and the track are not frozen to the ground or snow surface and that steering operates freely.
- Check that air filter is free of snow.
- Activate the brake control lever and make sure the brake fully applies before the brake control lever touches the handlebar grip.
- Check coolant level. Liquid should be at level mark (engine cold) of coolant tank.



If additional coolant is necessary or if entire system has to be refilled, refer to an authorized dealer.

WARNING : If radiator cap has to be removed, place a cloth over the cap and unscrew it to the first step to release the pressure. Never drain or refill the cooling system when engine is hot. Loss of fluid and severe burns could occur if this notice is disregarded.

- Check injection oil level.
- Check fuel level.
- Ensure fuel shut-off valve is in fully opened position (if applicable).



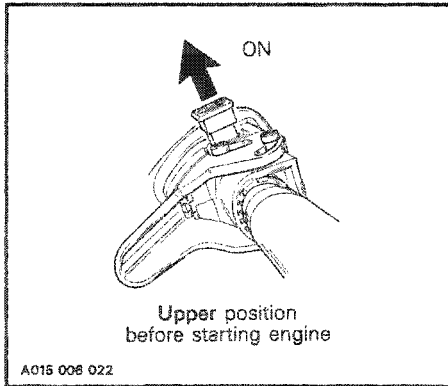
- Verify that the path ahead of the vehicle is clear of bystanders and obstacles.
- Clean and check operation of the headlamp, taillight and brake light.

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 button two or three times.

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

▼ **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 rewind starter handle.

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

Electric Starting (some models only)

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

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.

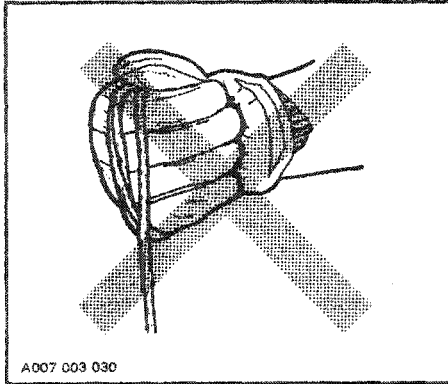
○ **NOTE** : Engine is warm when operating temperature has been reached on temperature gauge.

◆ **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.

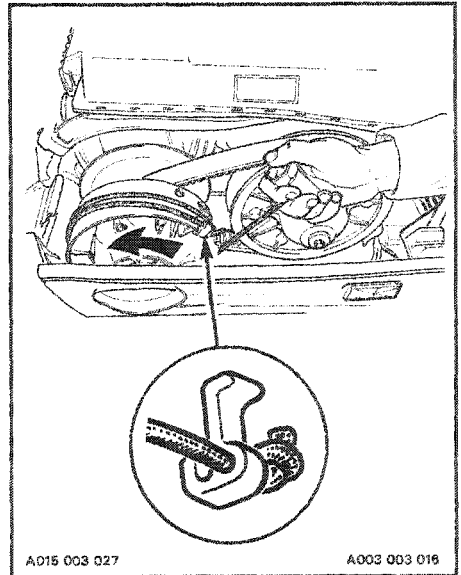
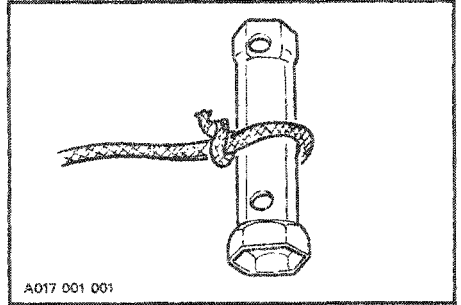
◆ **WARNING :** Do not wind starting rope around your hand. Hold rope by the handle only.



◆ **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.

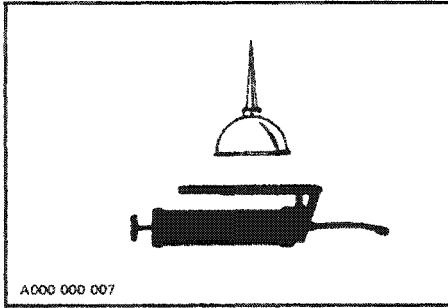
○ **NOTE :** The spark plug socket can be used as an emergency starter grip.



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



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.

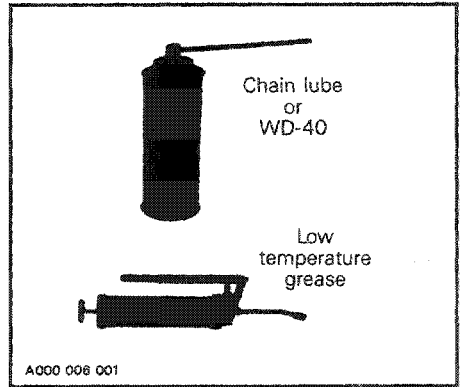
It is recommended that the steering system and suspension be lubricated monthly or every 40 hours of operation. If the vehicle is operated in wet snow or in severe conditions these items should be lubricated more frequently.

Penetrating lubricant is recommended on moving parts. Use either :

- chain lube from BARDAHL (BCS 362, dry)
- WD-40

Other grease fittings require low temperature grease (P/N 413 7061 00) using standard grease gun.

The following symbols will be used to show what type of lubricant should be used at required locations.



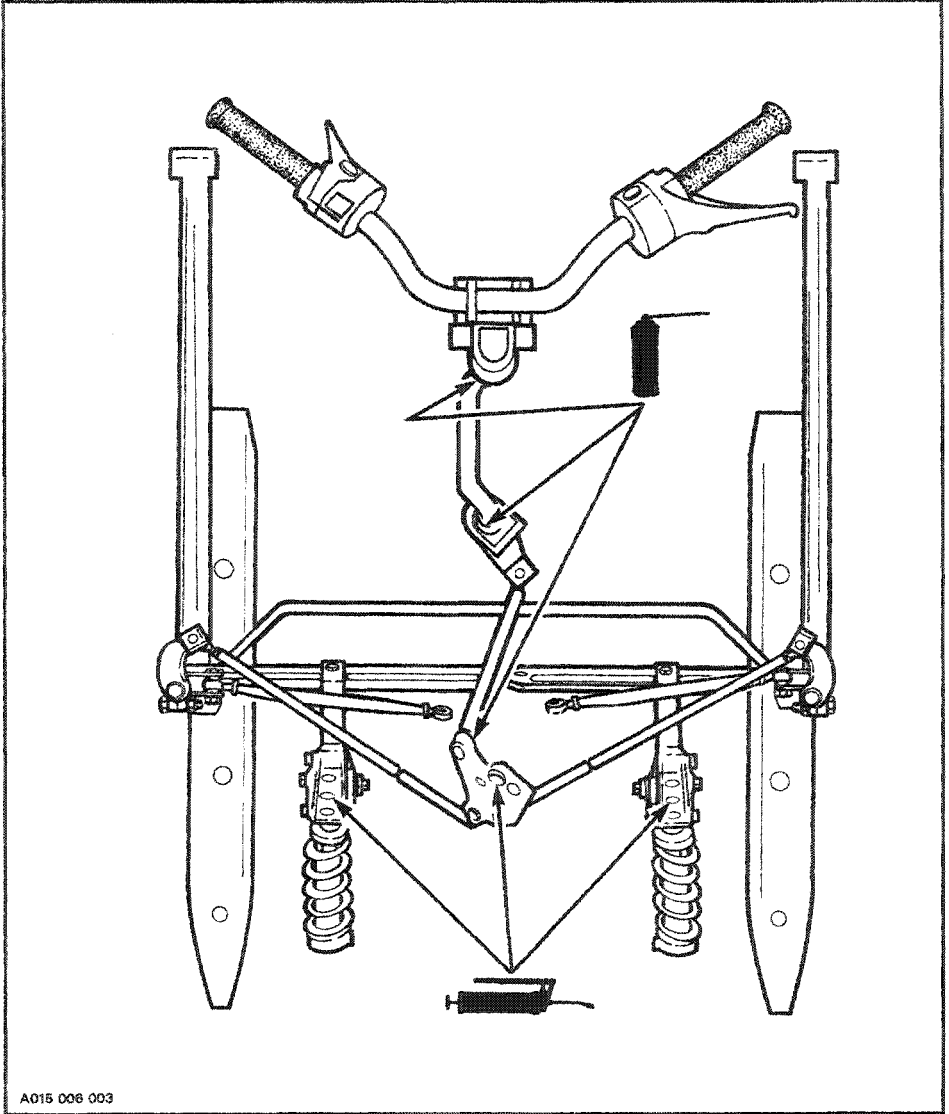
○ **NOTE :** When lubricating through grease fittings, slowly pump grease gun until grease appears at joints. Always use low temperature grease (P/N 413 7061 00).

◆ **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 and Front Suspension Mechanism

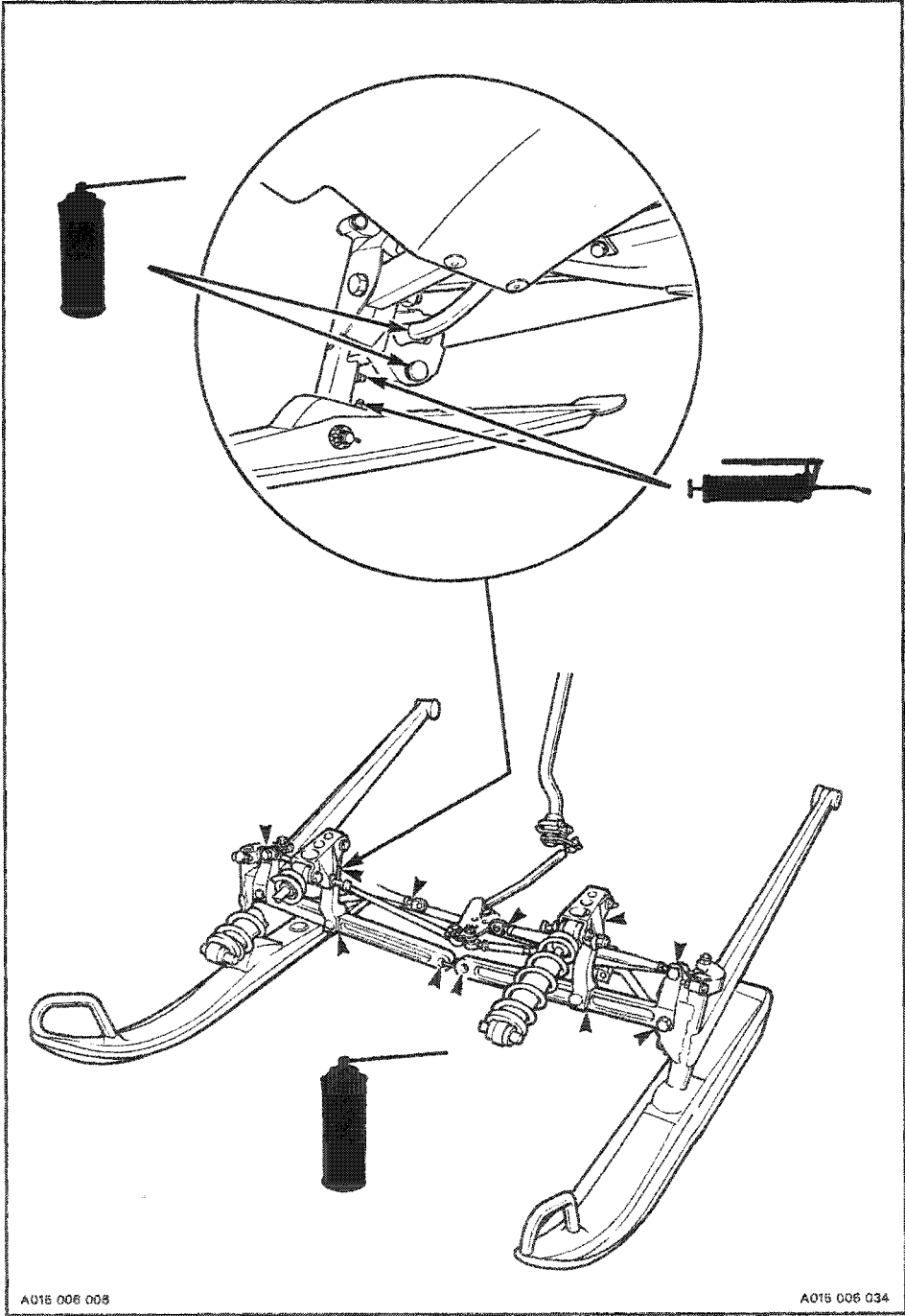
— Lubricate upper and lower control arms and tie rod ends (steel on steel only).

- Grease ski legs, ski pivots and idler arm.
- Lubricate moving parts at end of stabilizer bar.



A015 006 003

○ NOTE: Take this opportunity to verify tightness of fasteners and ball joints.

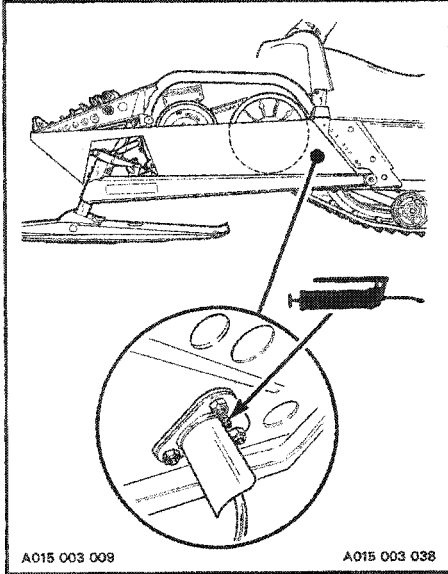


A015 006 008

A015 006 034

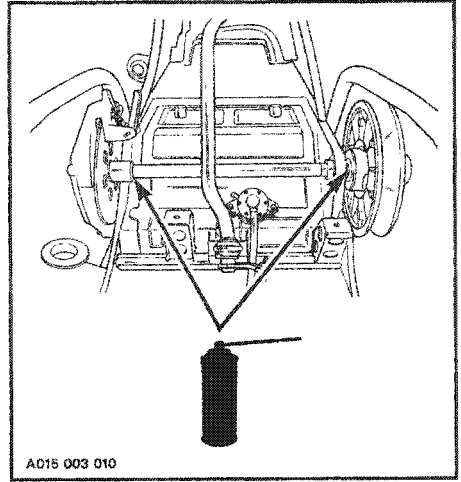
Drive Axle

Lubricate through grease fitting using low temperature grease only.



Countershaft (Brake Disc & Driven Pulley)

For proper operation, brake disc and driven pulley must slide freely on countershaft. Lubricate sparingly.



▼ **CAUTION** : Do not lubricate excessively as the lubricant could contact and soil brake pads and/or drive belt.

Brake Caliper

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

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

Slide Suspension

Lubricate suspension through following grease fittings :

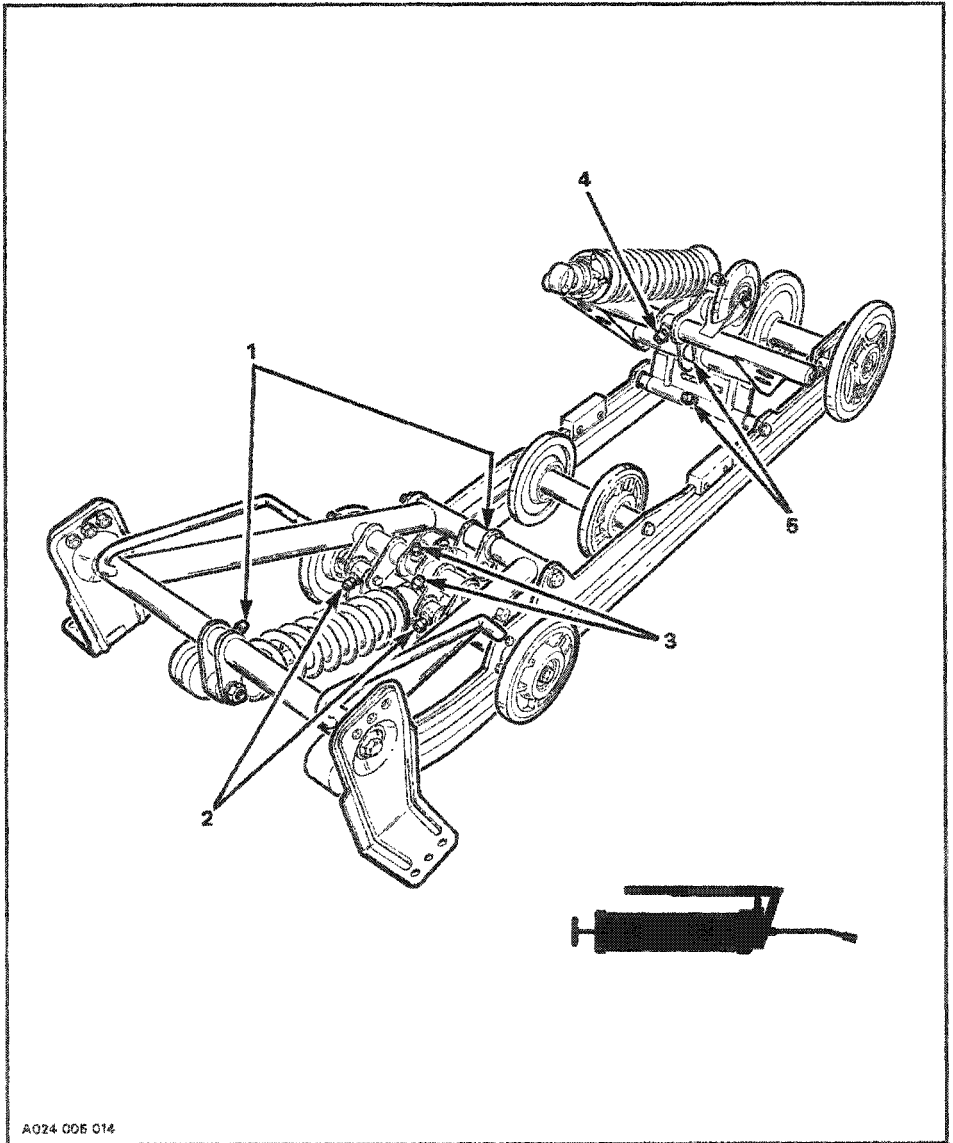
1. Front arm : upper and lower axles.
2. Front swing arm : upper and lower axle.

3. Front shackles.

4. Rear arm : upper axle.

5. Rear shackle : upper and lower axles.

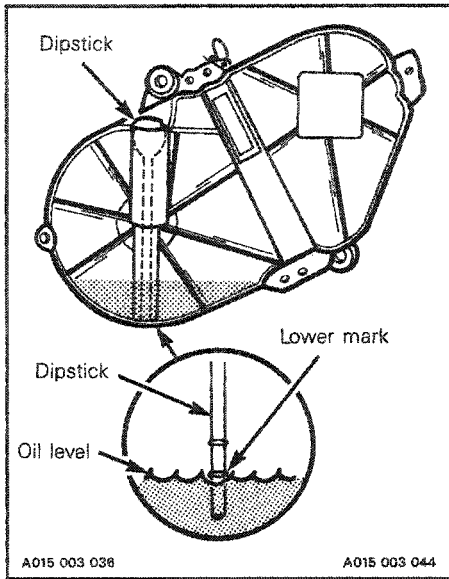
○ NOTE : There are nine lubrication points.



A024 00E C14

Chaincase Oil Level

With vehicle on a level surface, check the oil level by removing the oil filler cap. With dipstick **unscrewed**, oil level must be at **lower mark**. Refill as required using BOMBARDIER chaincase oil (P/N 413 8019 00 - 250 mL).



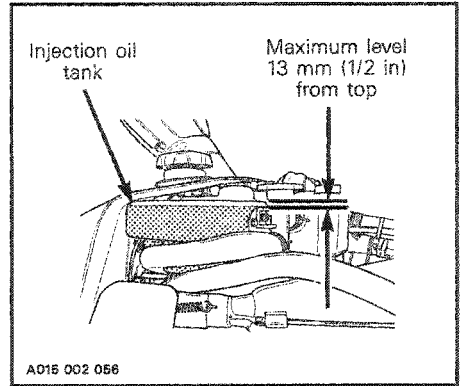
○ **NOTE** : The chaincase oil capacity is approximately 200 mL (7 imp. oz).

Oil Injection System

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

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

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



Rotary Valve System


The rotary valve system is lubricated with oil from the injection oil reservoir.


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

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


MAINTENANCE

The following Maintenance Chart indicates regular servicing scheduled to be performed by you or your authorized dealer. If these services are performed as suggested, your snowmobile will provide 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.

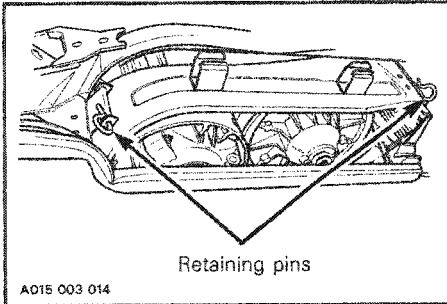
SERVICE AND MAINTENANCE CHART	Weekly or every 240 km (150 mi)	Monthly or every 800 km (500 mi)	Once a year or every 3200 km (2000 mi)	Refer to page
Drive belt condition				36
Brake condition				36
Brake adjustment				37
Spark plugs				37
Battery (electric start only)				37
Suspension condition				40
Suspension adjustments		(as required)		40
Track condition				43
Track tension and alignment		(as required)		43
Drive and driven pulleys				44
Drive chain tension				45
Steering and front suspension mechanism				45
Ski and runners				45
Steering and ski leg camber adjustment				45
Exhaust system				45
Engine compartment				45
Air filter cleaning				46
Carburetor adjustment (cable inspection)				46
Injection oil filter condition				47
Oil injection pump adjustment				47
Cooling system				47
Headlamp beam aiming				48
Wiring harness, cables and lines				49
General inspection				49

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

Belt Guard Removal

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

1. Open hood.
2. Pull out both belt guard retaining pins.
3. Lift and remove the belt guard.



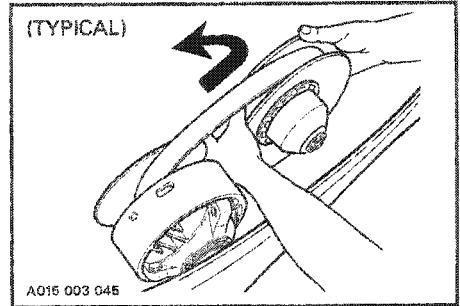
Drive Belt Removal and Installation

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

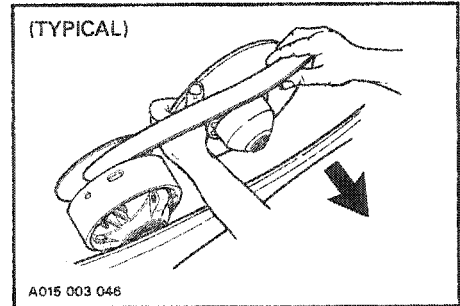
1. Remove ignition key.
2. Open hood and remove belt guard.

○ **NOTE:** Removal and installation of drive belt is easier when driven pulley is held with brake so that it can not rotate. Starter rope, in tool kit, may be tight-tied around brake lever at handlebar for this purpose. Drive pulley access plug can be removed from side pan to make room for belt removal.

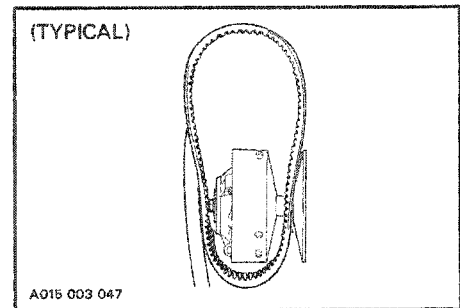
3. Open the driven pulley by twisting and pushing the sliding half. Hold in fully open position.



4. Slip the belt over the top edge of the fixed half, as shown.

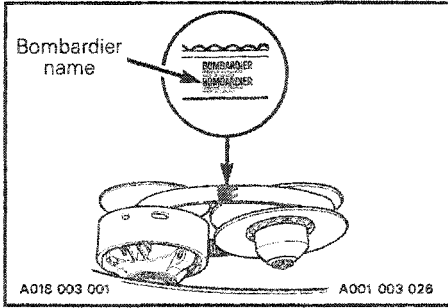


5. Slip the belt out from the drive pulley and remove from the vehicle.



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

Maximum drive belt life span is achieved when 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 belt. Contact an authorized dealer.

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

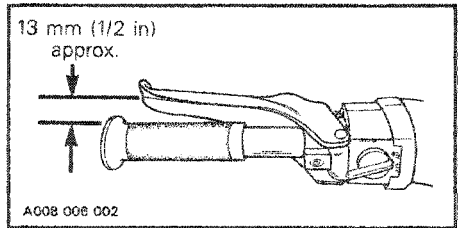
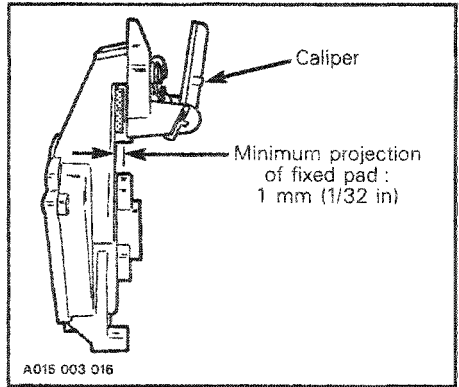
New Drive Belt

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

Brake Condition

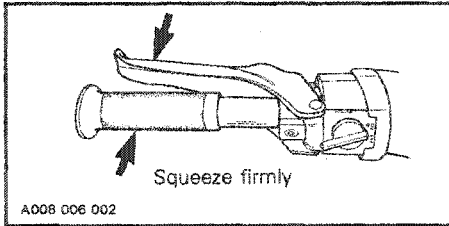
The brake mechanism on your snowmobile is an essential safety device. Keep this mechanism in proper working condition. Above all, do not operate the snowmobile without an effective brake system.

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

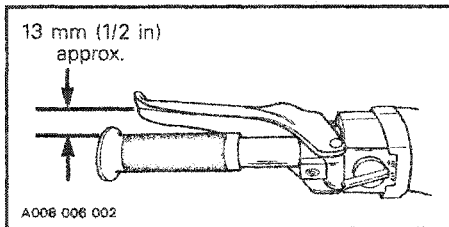


Brake Adjustment

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 your servicing dealer.

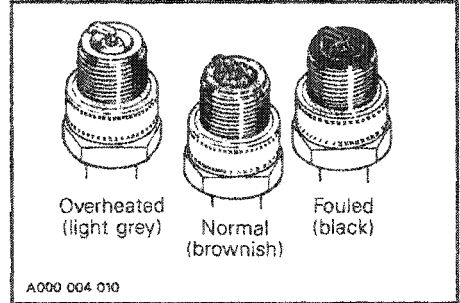


Spark Plugs

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 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 an authorized dealer.

Check spark plug gap using a wire feeler gauge, adjust according to technical data chart.

Reinstall plugs and connect wires.

Battery (electric start only)

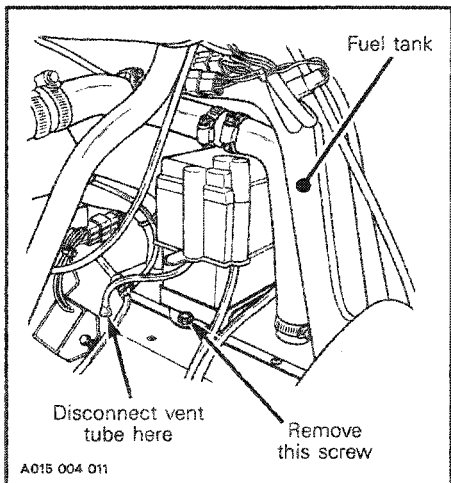
Check electrolyte level monthly.

Battery is located in a recessed area of fuel tank which is accessed from engine side. To check electrolyte level, it is necessary to remove battery from vehicle.

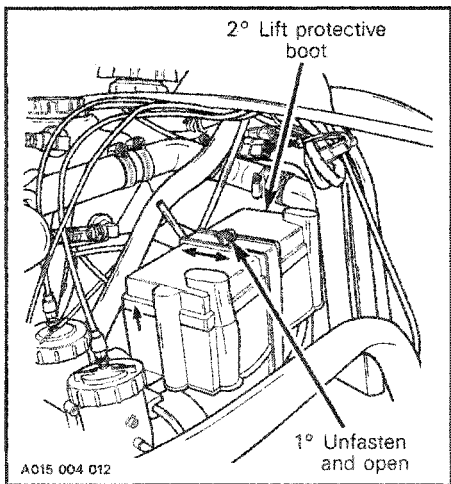
WARNING : Never charge or boost battery while installed on vehicle.

Battery Removal

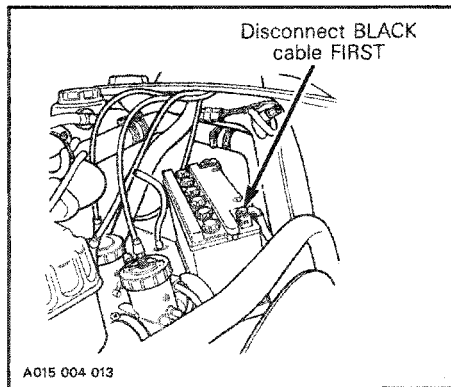
1. Remove air intake silencer.
2. Disconnect vent tube from vehicle fitting.
3. Remove battery rack retaining screw.



4. Pull battery and rack forward.
5. Unfasten retaining strips.
6. Open strips and lift battery protective boot.



7. Disconnect BLACK negative cable FIRST.



8. Then, disconnect RED positive cable LAST.

◆ **WARNING :** Always disconnect battery cables exactly in the specified order. Electrolyte or fuel vapors can be present in engine compartment and a spark might ignite them and possibly cause personal injuries.

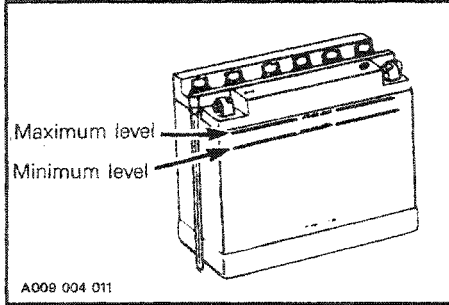
9. Withdraw battery from vehicle being careful not to lean it so that electrolyte flows out of vent tube.

▼ **CAUTION :** Should any electrolyte spillage occur, immediately wash off with a solution of baking soda and water to prevent damage to vehicle components.

10. Withdraw battery from rack.

Electrolyte Level Verification

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

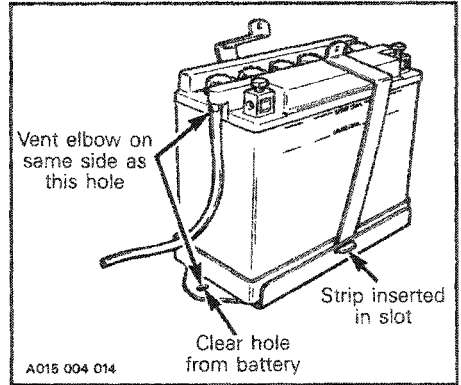


If necessary add distilled water. Battery connections must also be free of corrosion. If cleaning is necessary, remove corrosion using a stiff brush then clean with a solution of baking soda and water. Rinse and dry well.

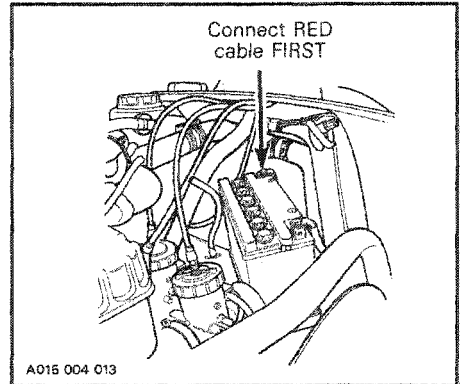
▼ **CAUTION** : Do not allow cleaning solution to enter battery. It will destroy the chemical properties of the electrolyte.

Battery Installation

1. Install retaining strips in slots of battery rack. Hold in position.
2. Locate retaining screw hole in rack and position battery so that vent elbow is on same side. Push battery rearward enough to clear hole of retaining screw.



3. Connect RED positive cable FIRST.



4. Then, connect BLACK negative cable LAST.

◆ **WARNING** : Always connect battery cables exactly in the specified order.

5. Apply silicone dielectric grease (P/N 413 7017 00) or petroleum jelly on battery posts and connectors.
6. Ensure vent tube is properly installed on battery elbow then, install protective boot over battery.
7. Close and fasten retaining strips.
8. Slide battery in its emplacement and move it until it is properly held by its retaining device.
9. Secure rack to chassis.
10. Connect vent tube to vehicle fitting.
11. Ensure that 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.

○ **NOTE** : Always keep battery fully charged. (To charge, refer to "Battery" in "Storage" section).

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

12. Reinstall air intake silencer.

▼ **CAUTION** : Ensure air intake silencer boots are properly secured to carburetors.

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.

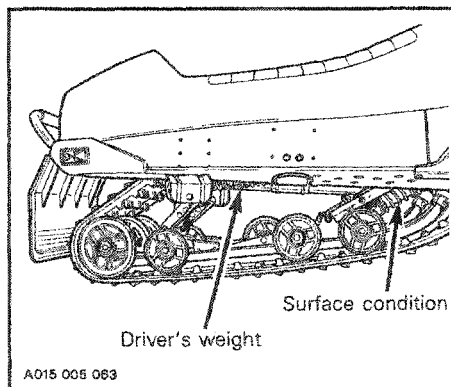
Suspension Adjustments

The front suspension can be customized by changing springs and/or changing attachment position or rocker arm to shock absorber. Refer to an authorized dealer for more information.

The rear suspension has three adjustments :

- The front shock spring to control weight distribution on ski/track.
- The rear shock spring for driver's weight.
- Limiter screw to control vehicle weight transfer.

Shock Absorber Spring Adjustment



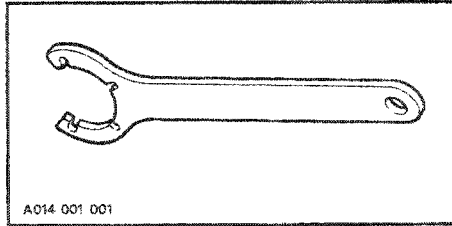
Each shock absorber has a five-position cam located at the bottom of the shock. Spring preload may be increased or decreased by turning the cam.

To adjust, use the adjustment key supplied in tool kit. Spray WD-40 between spring and spring cam to ease adjustment.

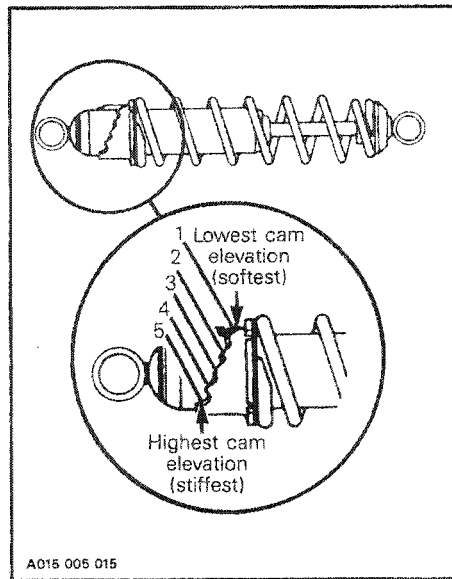
Front Spring

○ **NOTE** : The front shock absorber of the rear suspension should be removed to adjust spring collar.

Use the following key.



Fit the key on the shock spring cam and turn so that spring compress to stiffen suspension or so that spring extends to soften suspension.

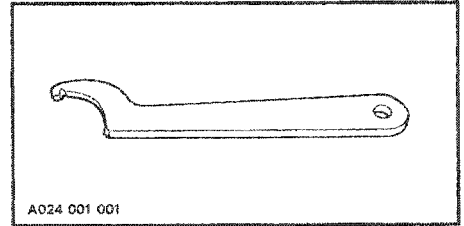


When the front spring cam is at the lowest elevation more weight is distributed on the skis.

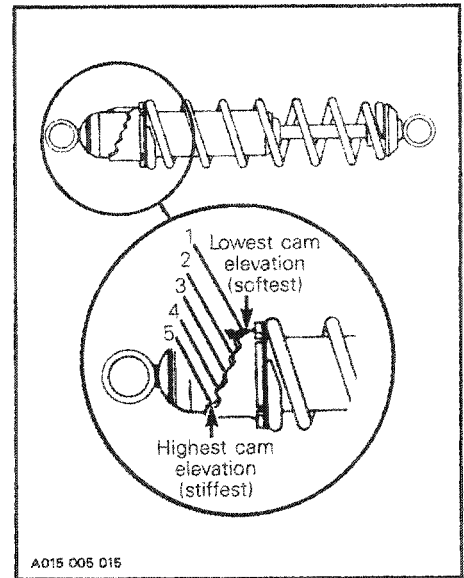
At the highest position more weight is transferred from the skis to the track.

Rear Spring

Use the following key.



Fit the key on the shock spring cam and turn so that spring compress to stiffen suspension or so that spring extends to soften suspension.



○ **NOTE** : As carrying load increases, a higher cam elevation is required.

Choice of cam positions depends on operator's weight, riding speed and field conditions.

Cam position	1	2	3	4	5
Operator's weight	Light → Heavy				
Riding speed	Low → High				
Field condition	Flat → Bumpy				

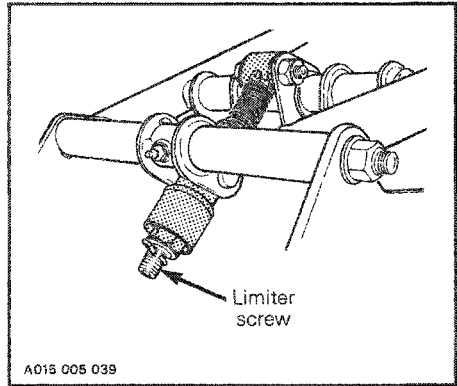
Slight suspension bottoming occurring under the worst riding conditions indicates a good choice of preload adjustment (cam position).

The rear suspension can be customized by changing springs and/or changing attachment position of shock absorber pivot to chassis. Refer to an authorized dealer for more information.

Limiters Screw

The function of the suspension limiter screw is to control the vehicle weight transfer.

The closer the nut is to the cotter pin, the more the weight will be transferred to the track to provide better traction. The farther the nut is from the cotter pin the less weight will be transferred to the track, maintaining a more positive steering. Limiter screw allows weight transfer adjustment according to driver's requirement, field and/or snow conditions.

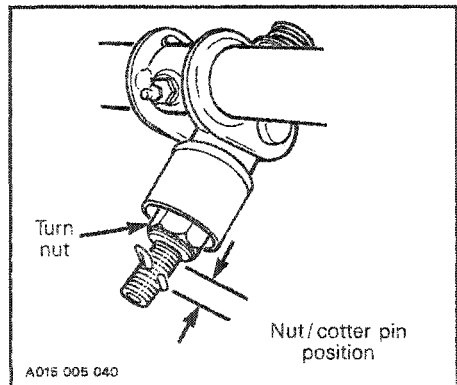


A015 005 039

The following table is a general guideline only :

Snow condition	Nut/cotter pin position
Hill climbing	Close
Hard surface	Far

▼ **CAUTION :** Whenever limiter screw adjustment is changed, track tension must be readjusted to prevent any possibility of operating vehicle with a too loose or too tight track tension.



A015 005 040

In Deep Snow

When operating the vehicle in deep snow, it may be necessary to vary the position of front spring adjustment cam, limiter screw and/or 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

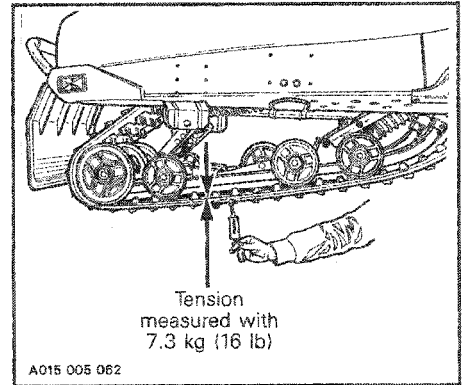
NOTE: Ride the vehicle in snow about 15 to 20 minutes prior to adjusting track tension.

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

Allow the suspension to extend normally and check gap half-way along slider shoe. The gap should be as specified between the slider shoe and the bottom inside of the track when applying a downward pull of 7.3 kg (16 lb). If the track tension is too loose, track will have a tendency to thump.

Specifications

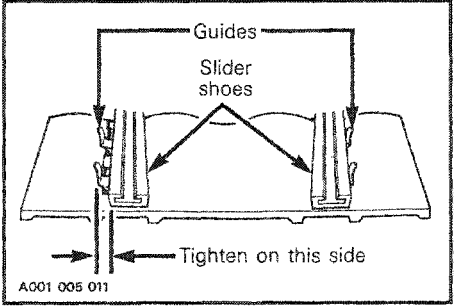
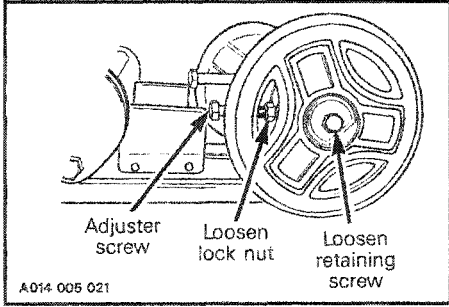
Model	Tension mm (in)
All Formulas, except MACH 1 series	40 (1-9/16)
Formula MACH 1 series	30 (1-3/16)



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 adjuster screw lock nuts, then loosen or tighten the adjuster screws located on the inner side of the rear idler wheels. If correct tension is unattainable, contact an authorized dealer.

NOTE: Torque retaining screw to 48 N•m (35 lbf•ft) after adjustment.



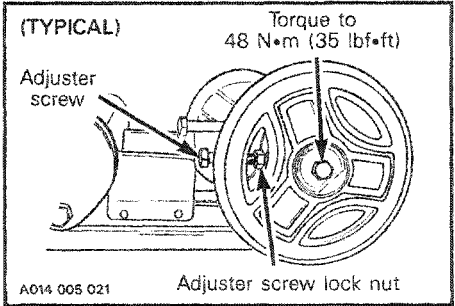
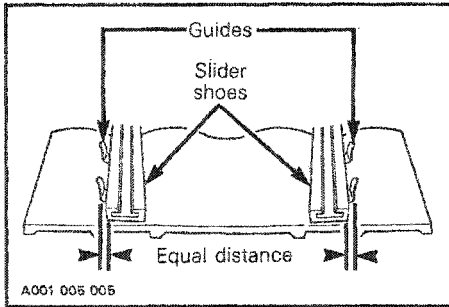
NOTE: Track tension and alignment are inter-related. Do not adjust one without the other.

Alignment

Start the engine and accelerate just so that track turns **slowly**. Check that the track is well centered; equal distance on both sides between edges of track guides and slider shoes.

Tighten adjuster screw lock nuts and idler wheel retaining screws.

NOTE: Torque retaining screw to 48 N•m (35 lbf•ft) after adjustment.



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

Drive and Driven Pulleys

WARNING: Before checking track alignment, ensure that the track is free of 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.

To correct, **stop the engine**, loosen the retaining screws of both idler wheels as well as adjuster screw lock nuts. Tighten the adjuster screw on side where slider shoe is farthest from track guides.

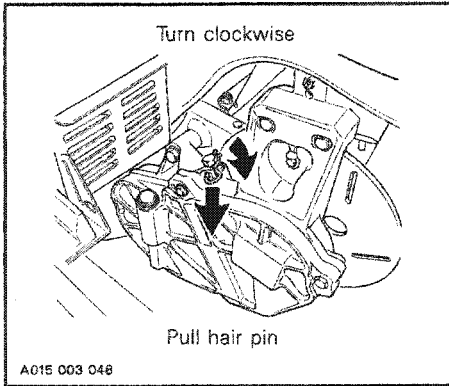
There are complex mechanism which operate a high rotational speeds. Each pulley is dynamically balanced at the factory. Any tampering by the owner may disrupt this precision balancing and create an unstable condition.

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.

Drive Chain Tension

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



This adjustment should provide 3-5 mm (1/8 - 13/64 in) free-play when measured at the outer circumference of the brake disc.

▼ **CAUTION** : Free-play must not exceed 5 mm (13/64 in), readjust if necessary.

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

Steering and Front Suspension Mechanism

Visually inspect steering and front suspension mechanism for tightness of components (steering arms, control arms and links, tie rods, ball joints, ski coupler bolts etc.). If necessary, replace or retighten.

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 and Ski Leg Camber Adjustment

There are accurate front suspension geometry adjustments to perform on these vehicles and they should be done only by an authorized dealer.

Exhaust System

Replace any components which have 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 ; serious engine damage will occur.

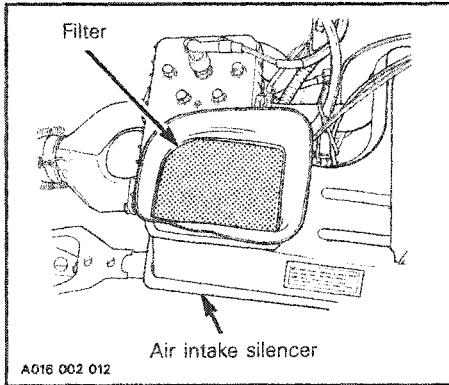
Engine Compartment

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

Air Filter

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

Lift hood and remove air filter from intake silencer.



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

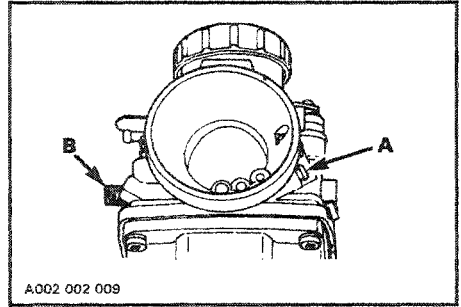
Check that the air box is clean and dry and properly reinstall the filter.

▼ **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.

▼ **CAUTION :** 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 1-1/2 turn (2 turns on Formula MACH 1 series).

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.

High Altitude Kit

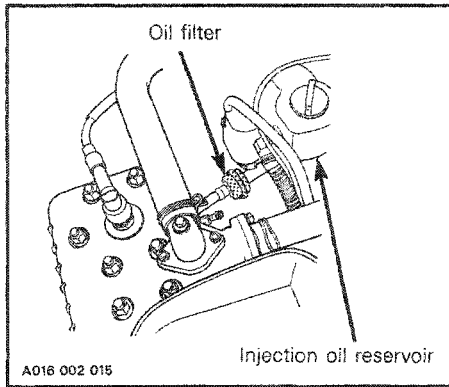
Snowmobiles used in high altitude areas (1200 m (4000 ft) and up) are subjected to lose power as temperature, elevation and snow condition are different. The carburetor and power train have to be recalibrated to meet those particular requirements. See an authorized dealer for high altitude kit installation.

▼ **CAUTION** : Do not change original jetting 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.

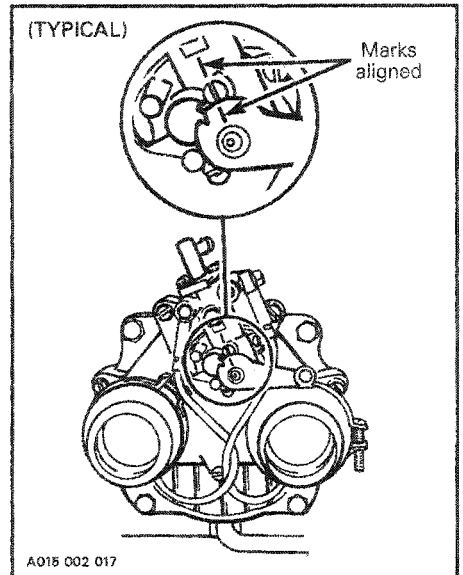
○ **NOTE** : After a storage period, it is important that your dealer replace the injection oil filter, that he verifies the oil flow of the injection pump and adjust it.

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

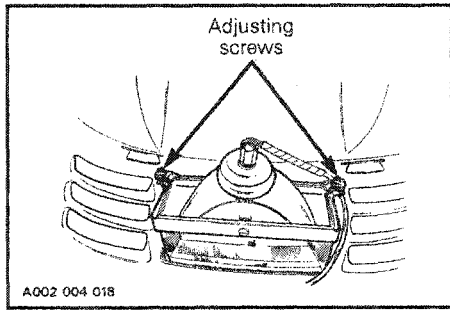
Check condition of hoses and tightness of clamps.

NOTE: If coolant temperature rises above recommended range of 50 to 100°C (120 to 212°F), hose off grime from the heat exchanger (underneath the frame above the track).

If necessary, contact an authorized dealer.

Headlamp Beam Aiming

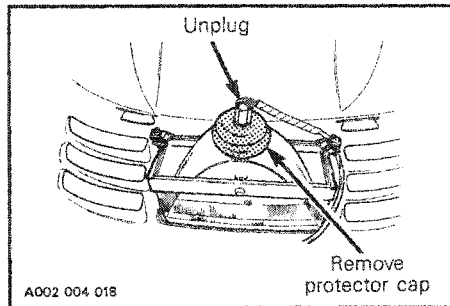
Open hood to adjust. From inside of hood, turn adjusting screw to obtain desired beam position.



Bulb Replacement

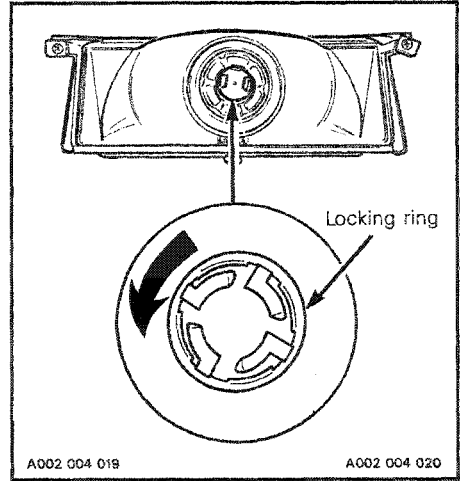
Headlamp

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



To remove bulb, rotate locking ring counterclockwise then pull bulb.

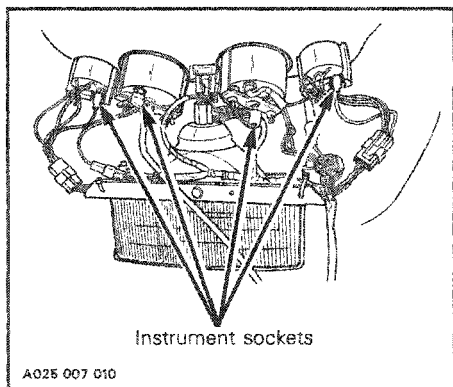
CAUTION: On applicable models, never touch glass portion of an halogen bulb with bare fingers, it shortens it's operating life. If by mistake glass is touched, clean it with isopropyl alcohol which will not leave a film on the bulb.



Properly re-install parts.

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.

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

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

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 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.

Battery (electric start only)

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

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 interior 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 or open flames. Avoid skin contact with electrolyte.

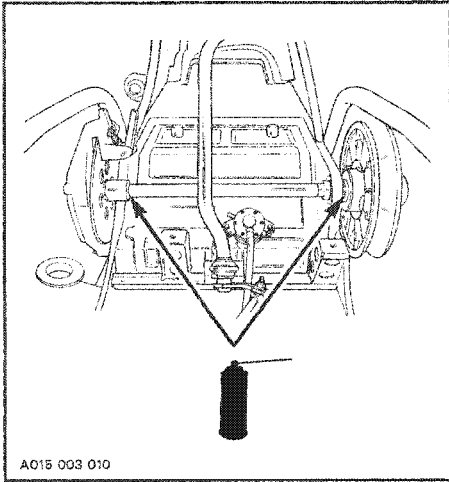
Coat battery posts with silicone dielectric grease (P/413 7017 00), if unavailable, use petroleum jelly.

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.

Countershaft (Brake Disc & Driven Pulley)

For proper operation, brake disc and driven pulley must slide freely on countershaft. Lubricate sparingly.



CAUTION: Do not lubricate excessively as lubricant could contact and soil brake pads and/or drive belt.

Engine

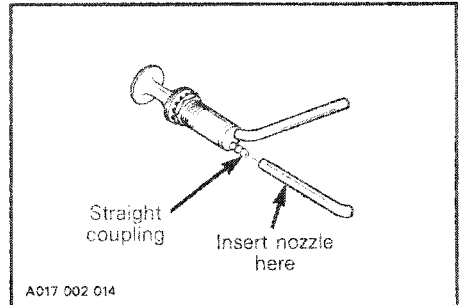
Engine internal parts must be lubricated to protect them from possible rust formation during the storage period.

To perform the storage procedures, proceed as follows:

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



6. Insert storage oil (P/N 496 0141 00) nozzle into primer outlet hose.
7. Restart engine and run at idle speed.
8. Inject storage oil until the engine stalls or until a sufficient quantity of oil has entered the engine (approximately half a can).
9. With the engine stopped, remove the spark plug and spray storage oil (P/N 496 0141 00) into each cylinder.
10. Crank slowly two or three revolutions to lubricate cylinders.
11. 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 pulley 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.

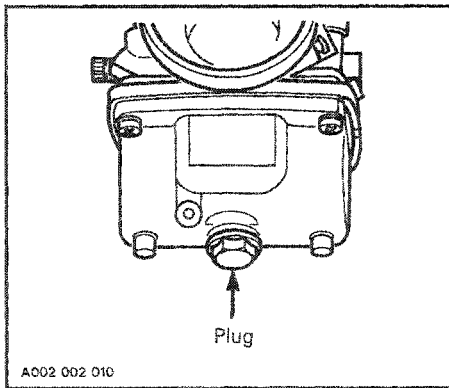
If above fuel stabilizer is not used, drain fuel system as described below.

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.

Carburetors 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.



A002 002 010

Reinstall plug.

General Inspection

Remove any dirt or rust. Grease or oil at all recommended lubrication points. Wipe off surplus.

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

▼ **CAUTION:** Plastic alloy components such as fuel tank, windshield, controls, etc., can be cleaned using mild detergents or isopropyl alcohol and a soft clean cloth. Never clean plastic parts with strong detergent, degreasing agent, paint thinner, acetone, etc. Never clean RIM Metton hood with cleaners or products containing chlorine. Do not apply isopropyl alcohol directly on decals.

Inspect the hood and repair any damage. Clean the frame. For the unpainted aluminum portion use only "Aluminum cleaner" and follow instructions on the container.

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.

IMPORTANT PRE-SEASON PREPARATION _____

We cannot overstate the importance of proper pre-season preparation. We have drawn up a chart which indicates service points to be performed by an authorized dealer. Make an appointment before first snow.

PRE-SEASON PREPARATION CHART	To be performed by dealer ●	Refer to page
	To be performed by owner ○	
Change spark plugs*	○	33
Drain chaincase oil	○	28
Check drive chain tension	○	33
Refill chaincase	○	28
Replace fuel and oil filter	●	—
Clean air filter	○	43
Remove cloths from air intake and exhaust system holes	○	49
Refill fuel tank	○	22
Check track condition, tension and alignment	○	40
Check and lubricate suspension	○	27
Check pulleys, verify components and clean	●	—
Inspect drive belt and install	○	30
Check throttle cable for free operation	○	24
Check steering, ski leg camber adjustment and ski runner condition	●	42
Check electrical wiring and connections	○	46
Inspect condition of starting rope	○	16
Check tightness of all bolts, nuts and links	○	—
Change coolant	●	—
Inspect seals for possible cuts or leaks	○	—
Test battery, clean and install (electric starting models only)	●	—
Inspect brake condition, operation and lubricate ratchet wheel	●	—
Refill injection oil tank	○	22
Adjust oil injection pump	●	—
Set engine timing	●	—
Adjust carburetors	●	—

○ *NOTE: Before installing new spark plugs, it is suggested to burn excess storage oil by starting the engine with the old spark plugs. Only perform this operation in a well ventilated area.

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 over prime. 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.</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, being careful to hold away from spark plug hole. Follow engine starting procedure and check for spark. If no spark appears, replace spark plug. If trouble persists, contact an authorized dealer.</p>

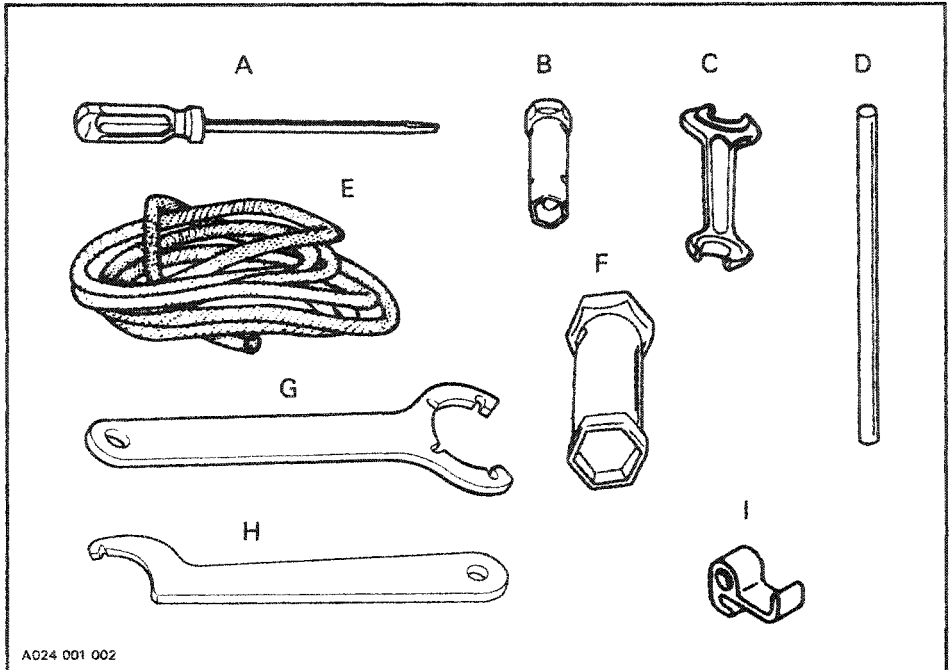
SYMPTOMS	POSSIBLE CAUSES	WHAT TO DO
	6. Engine compression.	As the engine is pulled over with the rewind starter, "cycles" of resistance should be felt as piston goes past top dead center (each piston on twin-cylinder engines). If no pulsating resistance is felt, it suggest a major loss of compression. 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.

SYMPTOMS	POSSIBLE CAUSES	WHAT TO DO
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 settings.
	3. Pulleys misaligned.	Contact an 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



A024 001 002

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 mm
- G. Front shock spring cam adjustment key
- H. Rear shock spring cam adjustment key
- I. Emergency starting clip

PART NUMBERS

- 414 6424 00
- 414 6426 00
- 414 6428 00
- 414 6427 00
- 412 5001 00
- 414 6425 00
- 529 0053 00
- 529 0098 00
- 420 8523 40

SPECIFICATIONS

Engine/Electrical

	MX SERIES	PLUS SERIES
ENGINE		
Type	467	536
N° of cylinders	2	2
Bore	69.5 mm (2.736 in)	72.0 mm (2.835 in)
Stroke	61.0 mm (2.402 in)	64.0 mm (2.520 in)
Displacement	462.8 cm ³ (28.24 in ³)	521.2 cm ³ (31.81 in ³)
Compression ratio (corrected)	7.25 : 1	6.12 : 1
Maximum horsepower RPM	7000 RPM	7000 RPM
Carburetor type	Variable Venturi, float type	
Carburetor adjustment :		
— air screw	1-1/2 turn	1-1/2 turn
— idle speed	1800-2000 RPM	1800-2000 RPM
Cooling system capacity :		
— SI	4.2 L	4.2 L
— U.S.	142 oz	142 oz
Antifreeze/water mixture (% by volume)	60/40	60/40
Thermostat	43°C (109°F)	43°C (109°F)
Radiator pressure cap	90 kPa (13 lb/in ²)	90 kPa (13 lb/in ²)
ELECTRICAL		
Lighting system (output)	12 V 160 W	12 V 160 W
Bulb :		
— headlamp	60/55 W halogen	60/55 W halogen
— tail/stop	8.3/26.9 W	8.3/26.9 W
— speedometer	5 W	5 W
— tachometer	5 W	5 W
— temperature gauge	2 W	2 W
Fuse :		
— tachometer	0.1 A	0.1 A
— starting system	30 A ①	30 A ①
Spark plug :		
— type	NGK BR9ES	NGK BR9ES
— gap	0.45 mm (.018 in)	0.45 mm (.018 in)

① Applies to electric start models only.

Engine/Electrical

MACH 1/MACH 1 XTC

ENGINE

Type	643
N° of cylinders	2
Bore	76.0 mm (2.992 in)
Stroke	68.0 mm (2.677 in)
Displacement	617.0 cm ³ (37.7 in ³)
Compression ratio (corrected)	6.3 : 1
Maximum horsepower RPM	7600 RPM
Carburetor type	Variable Venturi, float type
Carburetor adjustment :	
— air screw	2 turns
— idle speed	1800-2000 RPM
Cooling system capacity :	
— SI	4.2 L
— U.S.	142 oz
Antifreeze/water mixture (% by volume)	60/40
Thermostat	42°C (108°F)
Radiator pressure cap	90 kPa (13 lb/in ²)

ELECTRICAL

Lighting system (output)	12 V 160 W
Bulb :	
— headlamp	60/55 W halogen
— tail/stop	8.3/26.9 W
— speedometer	5 W
— tachometer	5 W
— electric fuel level gauge	2 W
— temperature gauge	2 W
Fuse :	
— tachometer	0.1 A
Spark plug :	
— type	NGK BR9ES
— gap	0.45 mm (.018 in)

Power train

	MX/MX E	MX XTC/MX XTC E
Track :		
— width	40.9 cm (16.1 in)	40.9 cm (16.1 in)
— length	307 cm (121 in)	352 cm (139 in)
— tension	40 mm (1-9/16 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	26/44	26/44
Drive belt :		
— number	414 6338 00	414 6338 00
— maximum width	35 mm (1-3/8 in)	35 mm (1-3/8 in)
— minimum width	32 mm (1-1/4 in)	32 mm (1-1/4 in)
Chaincase oil	200 mL (7 oz)	200 mL (7 oz)
	PLUS/PLUS E	PLUS XTC/PLUS XTC E
Track :		
— width	40.9 cm (16.1 in)	40.9 cm (16.1 in)
— length	307 cm (121 in)	352 cm (139 in)
— tension	40 mm (1-9/16 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	22/40	22/40
Drive belt :		
— number	414 6338 00	414 6338 00
— maximum width	35 mm (1-3/8 in)	35 mm (1-3/8 in)
— minimum width	32 mm (1-1/4 in)	32 mm (1-1/4 in)
Chaincase oil	200 mL (7 oz)	200 mL (7 oz)
	MACH 1	MACH 1 XTC
Track :		
— width	40.9 cm (16.1 in)	40.9 cm (16.1 in)
— length	307 cm (121 in)	352 cm (139 in)
— tension	30 mm (1-3/16 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	26/44	26/44
Drive belt :		
— number	414 7413 00	414 7413 00
— maximum width	35 mm (1-3/8 in)	35 mm (1-3/8 in)
— minimum width	32 mm (1-1/4 in)	32 mm (1-1/4 in)
Chaincase oil	200 mL (7 oz)	200 mL (7 oz)

Brake/Fuel

ALL FORMULA SERIES	
BRAKE	
Type	Disc, self-adjusting
Lining minimum thickness	Fixed pad must project 1 mm (1/32 in) minimum from caliper.
Control lever adjustment	13 mm (1/2 in) minimum distance from handlebar grip when fully applied.
FUEL	
Gas type	Regular unleaded
Fuel tank capacity :	
– SI	33 L ①
– U.S.	8.7 gal
Injection oil	BOMBARDIER Snowmobile Injection Oil
Tank capacity :	
– SI	2.9 L
– U.S.	98 oz

① 40.9 L (10.8 gal) on manual start models.

Chassis

	MX		MX E	
Length, overall	276.5 cm	(108.8 in)	276.5 cm	(108.8 in)
Width, overall	104.1 cm	(41 in)	104.1 cm	(41 in)
Height, overall	121 cm	(47.6 in)	121 cm	(47.6 in)
Ski stance (center to center)	92.1 cm	(36.25 in)	92.1 cm	(36.25 in)
Weight	230 kg	(506 lb)	243.5 kg	(536 lb)
Bearing area	6735 cm ²	(1044 in ²)	6735 cm ²	(1044 in ²)
Ground pressure	3.34 kPa	(.498 lb/in ²)	3.53 kPa	(.527 lb/in ²)
	MX XTC		MX XTC E	
Length, overall	296.5 cm	(116.7 in)	296.5 cm	(116.7 in)
Width, overall	104.1 cm	(41 in)	104.1 cm	(41 in)
Height, overall	121 cm	(47.6 in)	121 cm	(47.6 in)
Ski stance (center to center)	92.1 cm	(36.25 in)	92.1 cm	(36.25 in)
Weight	239 kg	(526 lb)	252 kg	(554 lb)
Bearing area	7656 cm ²	(1187 in ²)	7656 cm ²	(1187 in ²)
Ground pressure	3.06 kPa	(.457 lb/in ²)	3.21 kPa	(.479 lb/in ²)
	PLUS		PLUS E	
Length, overall	276.5 cm	(108.8 in)	276.5 cm	(108.8 in)
Width, overall	104.1 cm	(41 in)	104.1 cm	(41 in)
Height, overall	121 cm	(47.6 in)	121 cm	(47.6 in)
Ski stance (center to center)	92.1 cm	(36.25 in)	92.1 cm	(36.25 in)
Weight	233.6 kg	(514 lb)	247.2 kg	(544 lb)
Bearing area	6735 cm ²	(1044 in ²)	6735 cm ²	(1044 in ²)
Ground pressure	3.40 kPa	(.507 lb/in ²)	3.59 kPa	(.536 lb/in ²)

Chassis

	PLUS XTC		PLUS XTC E	
Length, overall	296.5 cm	(116.7 in)	296.5 cm	(116.7 in)
Width, overall	104.1 cm	(41 in)	104.1 cm	(41 in)
Height, overall	121 cm	(47.6 in)	121 cm	(47.6 in)
Ski stance (center to center)	92.1 cm	(36.25 in)	92.1 cm	(36.25 in)
Weight	249.5 kg	(549 lb)	263 kg	(579 lb)
Bearing area	7656 cm ²	(1187 in ²)	7656 cm ²	(1187 in ²)
Ground pressure	3.19 kPa	(.476 lb/in ²)	3.36 kPa	(.501 lb/in ²)
	MACH 1		MACH 1 XTC	
Length, overall	276.5 cm	(108.8 in)	296.5 cm	(116.7 in)
Width, overall	104.1 cm	(41 in)	104.1 cm	(41 in)
Height, overall	121 cm	(47.6 in)	121 cm	(47.6 in)
Ski stance (center to center)	92.1 cm	(36.25 in)	92.1 cm	(36.25 in)
Weight	238 kg	(524 lb)	249 kg	(548 lb)
Bearing area	6735 cm ²	(1044 in ²)	7656 cm ²	(1187 in ²)
Ground pressure	3.46 kPa	(.516 lb/in ²)	3.18 kPa	(.475 lb/in ²)

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 ²	cm ²	6.45
in ³	cm ³	16.39
ft	m	0.3
oz	g	28.35
lb	kg	0.45
lbf	N	4.4
lbf•in	N•m	0.11
lbf•ft	N•m	1.36
lbf•ft	lbf•in	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.