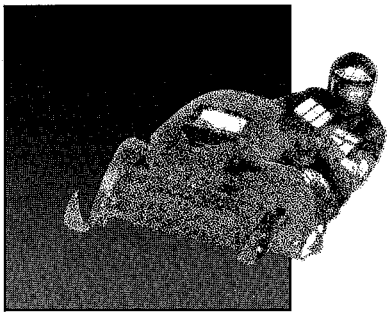

OPERATOR'S GUIDE

Formula

BOMBARDIER ski-doo

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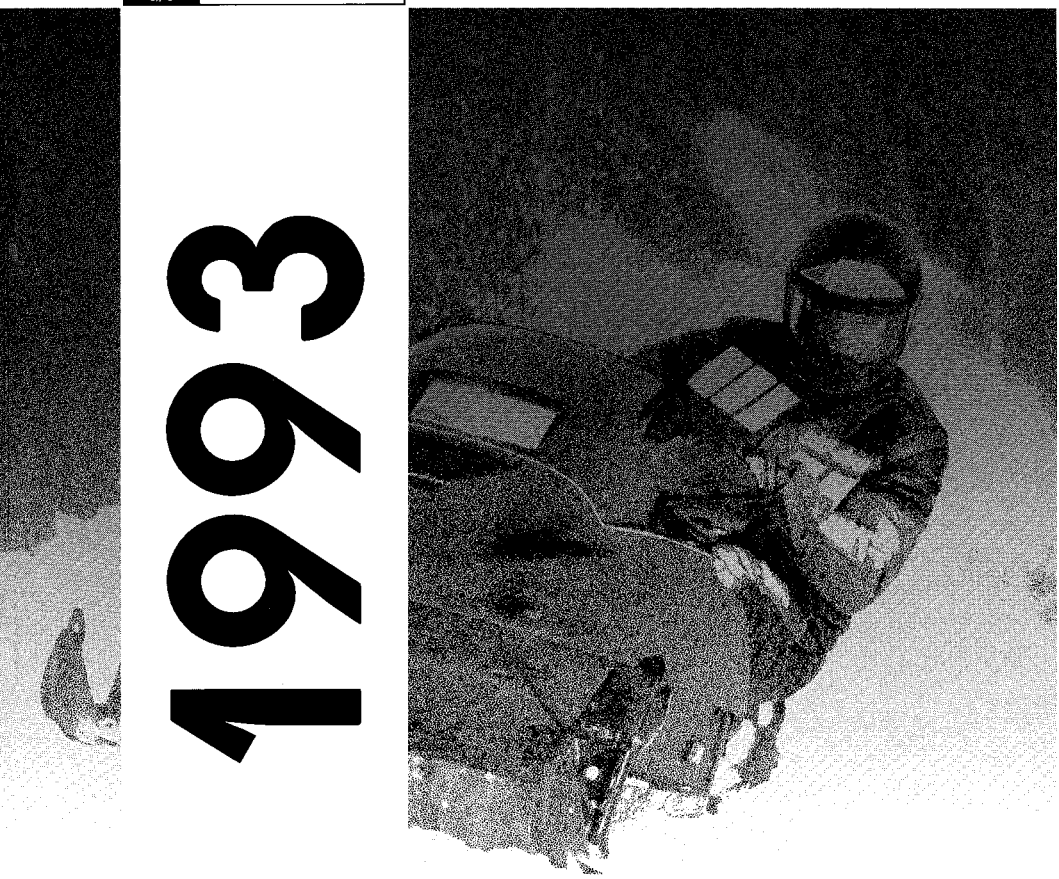

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SAFETY WARNING

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

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

AFTER SALES SERVICE
BOMBARDIER INC.
VALCOURT, QUEBEC
CANADA J0E 2L0

Litho'd in Canada

NOTICE

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

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

These guides use the following symbols.

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

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

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

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

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

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

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

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

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

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

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

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

Observe the following precautions :

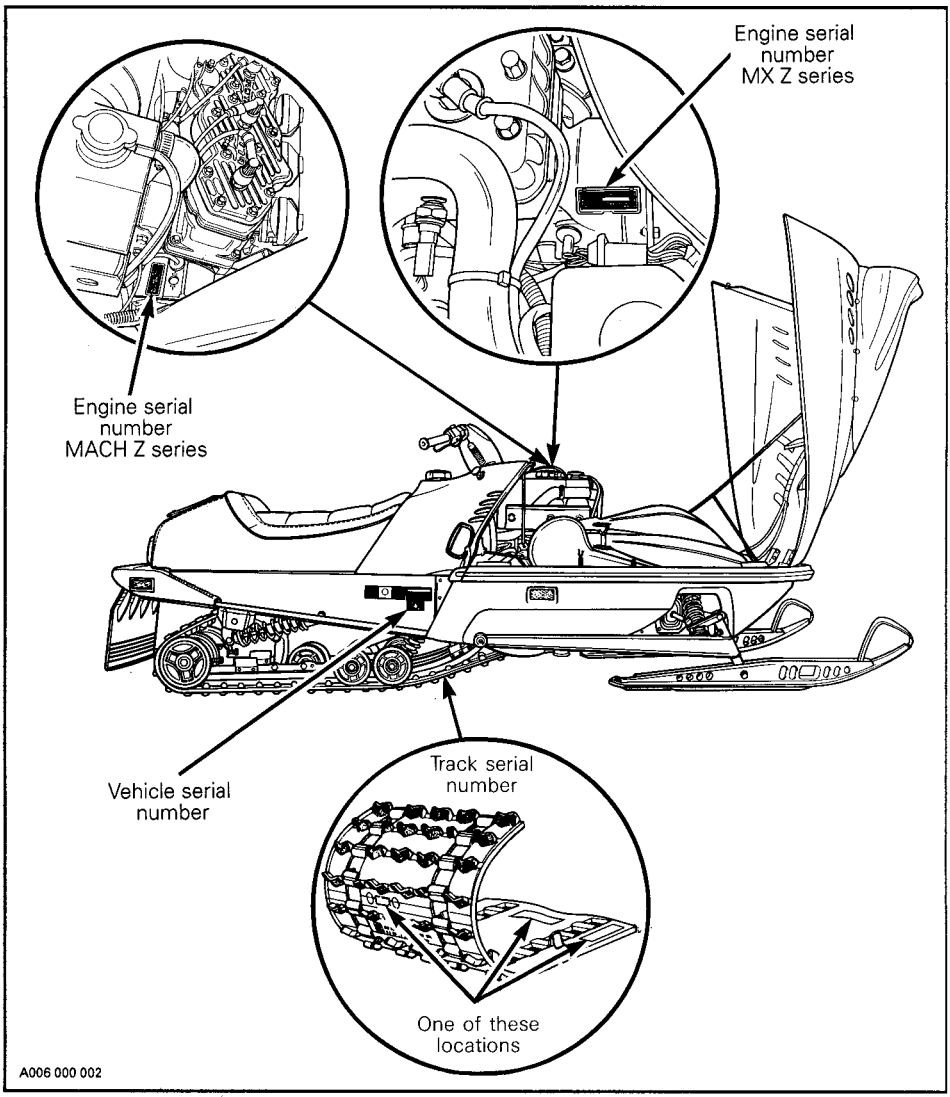
- Throttle mechanism should be checked for free movement before starting engine.
- Do not operate vehicle near snow making equipment.
- The snowmobile engine can be stopped by activating the emergency cut-out or tether switch or turning off the key.
- Clean and check operation of the headlight, taillight and brake light.
- Engine should be running only when belt guard and / or pulley guard is secured in place.
- Never run the engine without drive belt installed. Running an unloaded engine can prove to be dangerous.
- Never run the engine when the track is raised off the ground.
- It can be dangerous to run engine with the hood removed.
- Fuel is flammable and explosive under certain conditions. Always manipulate in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. If fuel fumes are noticed while driving, the cause should be determined and corrected without delay.
- Maintain your vehicle in top mechanical condition at all times.
- Your snowmobile is not designed to be driven or operated on black top, bare earth, ice, hard pack or other abrasive surfaces. On such surfaces, abnormal and excessive wear of critical parts is inevitable.
- Your snowmobile is not designed to be operated on public streets, road or highways. In most States and Provinces, it is considered an illegal operation.
- **Electric start models only :** Never charge or boost a battery while installed on vehicle.
- Never drive the vehicle with the parking brake applied. This may overheat the brake disc and reduce braking ability.
- Installation of other than standard equipment, including ski-spreaders, bumpers, pack racks, etc., could severely affect the stability and safety of your vehicle. Avoid adding on accessories that alter the basic vehicle configuration.
- Whenever the vehicle is parked outdoors, overnight or for a long period, it is suggested to protect it against the inclemency of the weather with a snowmobile cover.
- Do not lubricate throttle and / or brake cables and housings.
- Only perform procedures as detailed in this guide. Unless otherwise specified, engine should be turned OFF for all lubrication and maintenance procedures.
- **Liquid cooled 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 models are designed for the driver only. 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.*

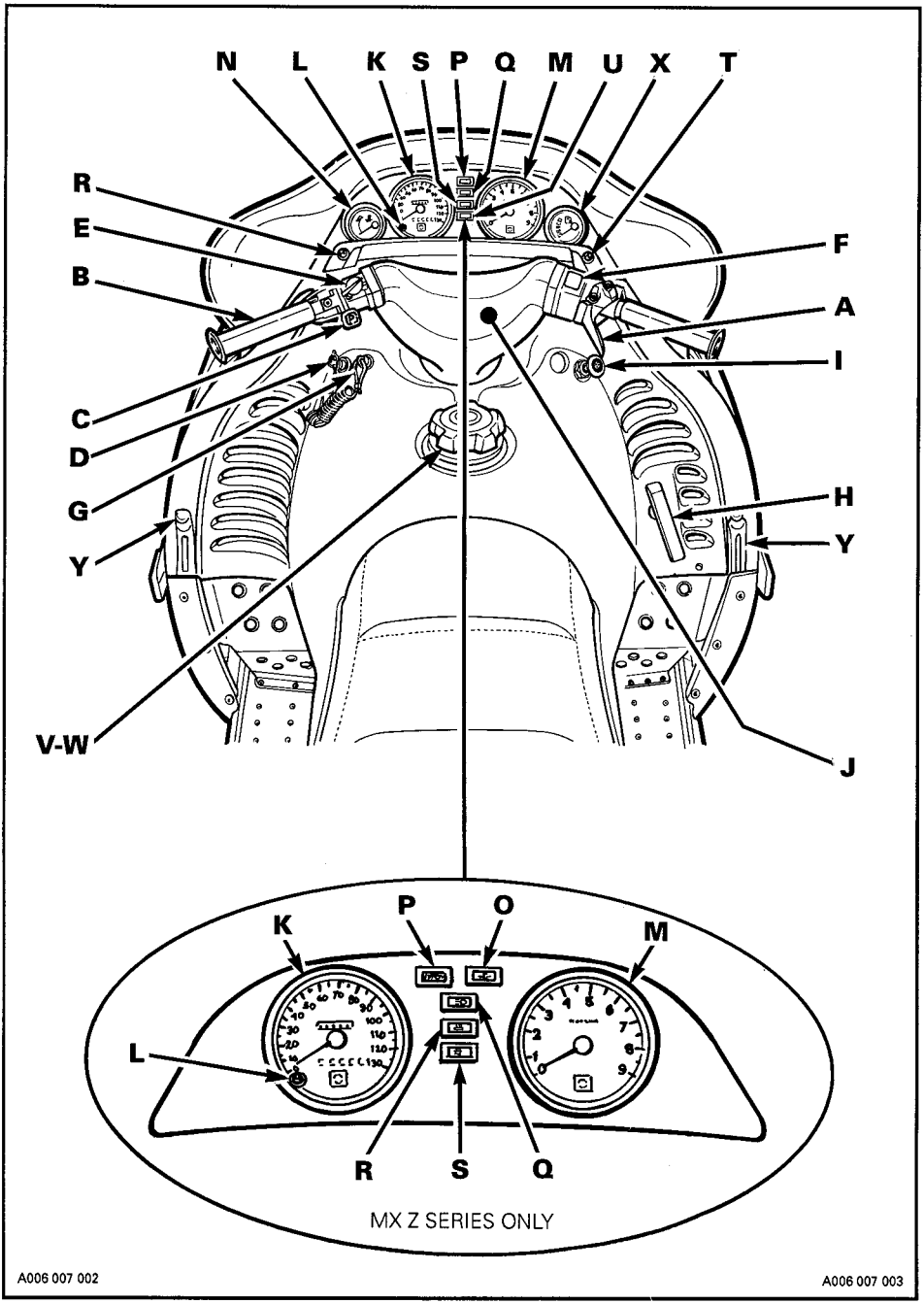
TABLE OF CONTENTS

HOW TO IDENTIFY YOUR SNOWMOBILE

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

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

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MX Z SERIES ONLY
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A006 007 003

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

**Some models only*

A) Throttle Lever

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

B) Brake Lever

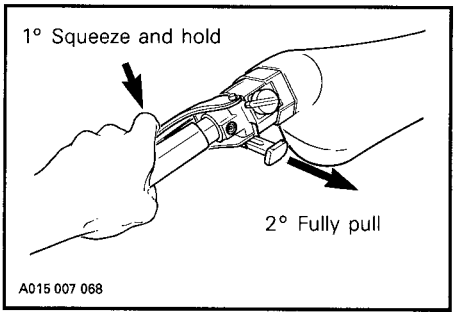
Located on the left side of handlebar. When compressed, the brake is applied. When released, it automatically returns to its original position. Braking effect is proportional to the pressure applied on the lever and to the type of terrain and its snow coverage.

C) Parking Brake Button

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

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

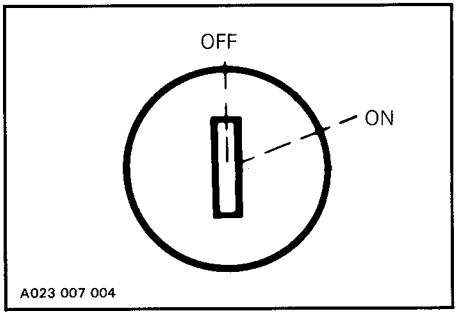
To release mechanism, squeeze brake lever then fully push parking brake button.



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

D) Ignition Switch

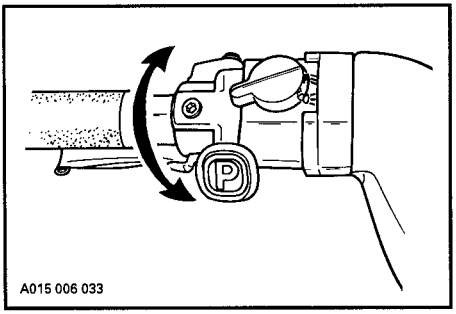
The lights are automatically ON whenever the engine is running.



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.

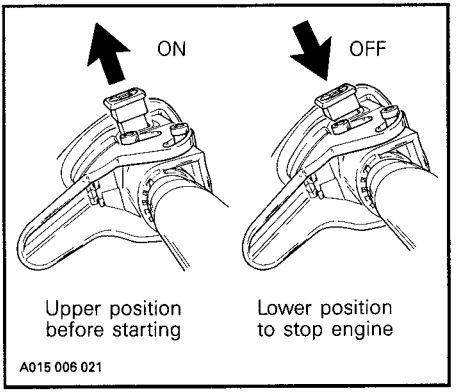
E) Headlamp Dimmer Switch

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. Not necessary when engine is warm.

J) Adjustable Steering Handle

Steering handle height is adjustable, see an authorized dealer.

K) Speedometer / Odometer

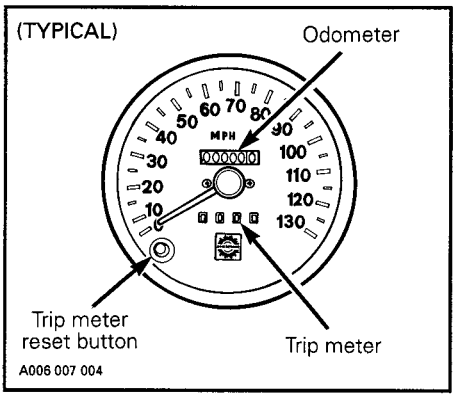
The speedometer is linked directly to the drive axle. Direct-reading dial indicates the speed of the vehicle in kilometers per hour (miles per hour on ZA series). Odometer records the total distance travelled in kilometers (miles on ZA series).

L) Trip Meter Reset Button

Trip meter reset button is located in speedometer glass. To reset, push button.

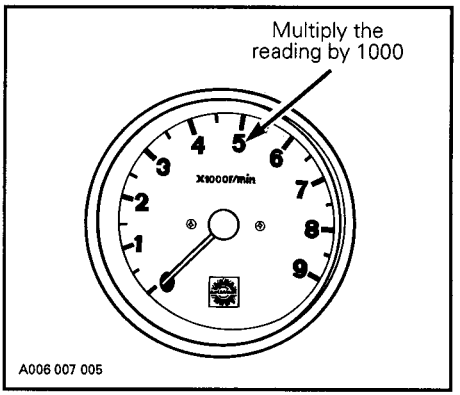
Trip Meter

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



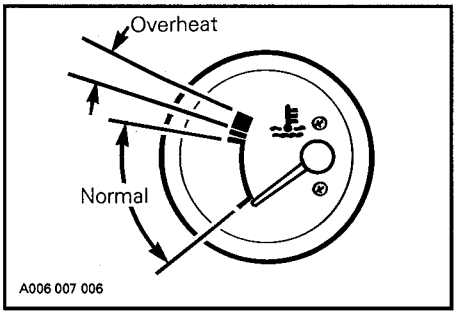
M) Tachometer

The tachometer registers the impulses of magneto. Direct-reading dial indicates the number of revolutions per minute (RPM) of the engine. It is necessary to multiply the reading by 1000 to obtain the actual engine RPM.



N) Temperature Gauge (some models only)

The gauge indicates engine coolant temperature. The needle moves to the normal range as engine warms up. Under all riding conditions, the needle should stay within this range. If needle moves in the overheat range, reduce vehicle 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) Engine Overheat Warning Lamp (Red) (some models only)

If this lamp glows, reduce vehicle 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.

P) 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.

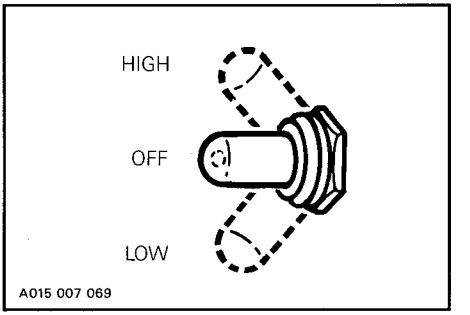
○ NOTE : Whenever brake lever is actuated, oil injection level pilot lamp should light up. If not replace lamp.

Q) High Beam Pilot Lamp (Blue)

Lights when headlamp is on high beam.

R) Heated Grip Switch

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



S) Heated Grip Pilot Lamp (Amber)

Lights when heated grip switch is on the high position. Ligths dimmed when switch is in the low position.

T) Heated Throttle Lever Switch

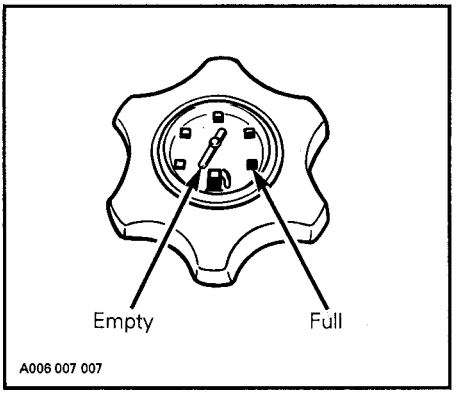
The three-position toggle switch is located on RH side of dashboard. Select the desired position to keep right thumb at a comfortable temperature. Refer to illustration above.

U) Heated Throttle Lever Pilot Lamp (Amber)

Lights when heated throttle lever switch is on the low position. Lights dimmed when switch is in the low position.

V) Fuel Tank Cap / Gauge (some models only)

In-cap direct-reading fuel level gauge. Unscrew to fill up tank then fully tighten.

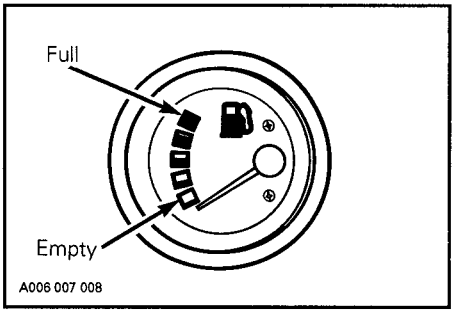


W) Fuel Tank Cap

Unscrew to fill up tank then fully tighten.

X) 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.



Y) Hood Latches

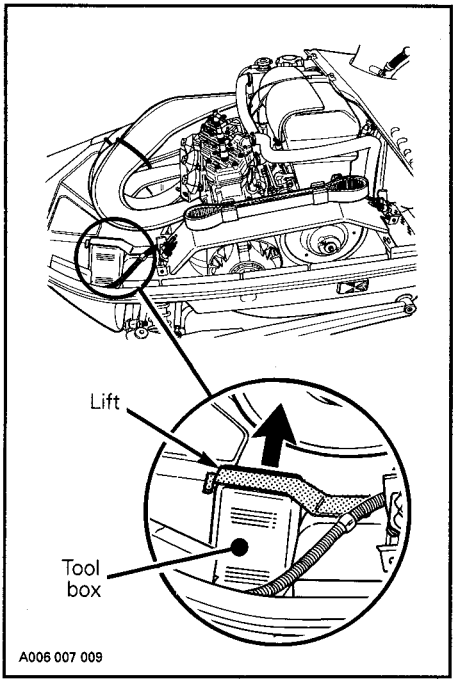
Pull up the latches to unlock the hood from its anchors.

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.

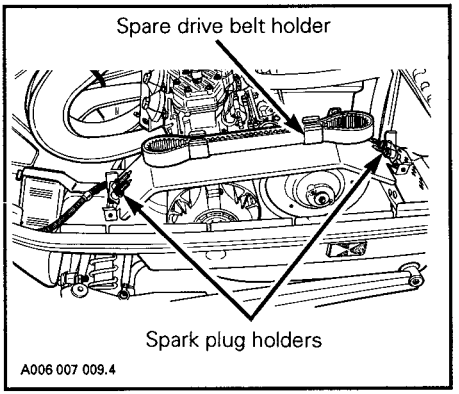
Tool Kit

Tool kit is located in tool box. To gain access, tilt hood. Lift metal support to take tool box.



Spare Drive Belt Holder

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



NOTE : Spare drive belt is not supplied with vehicle.

Spark Plug Holder

To keep spark plugs dry and prevent shocks that might affect the adjustment or break them, two holders are provided under hood, on belt guard. See illustration above.

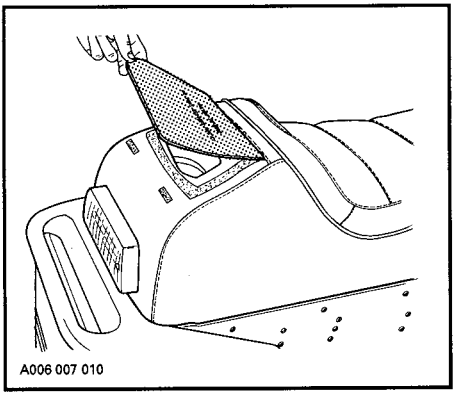
Firmly tighten them into the holder with spark plug socket (in tool kit) to ensure that they will not be loosened by vibrations.

NOTE : Spare spark plugs are not supplied with vehicle.

Storage Compartment

Lift flap to gain access.

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

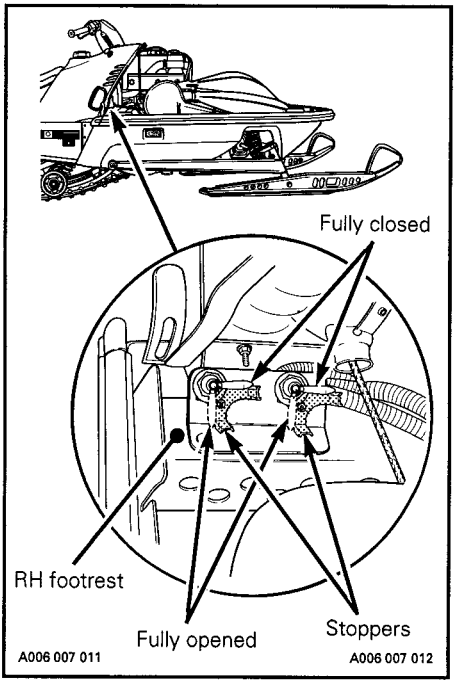


Fuel Shut-Off Valve(s)

It is recommended to close it (them) when transporting or storing vehicle. The valve(s) is (are)under hood, on top of RH 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.



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

Fully open the valve(s) in order to operate the vehicle.

▼ **CAUTION : Always fully open the valve(s) 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.

Front Bumper

It must be used whenever front of vehicle is lifted or whenever vehicle is towed.

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

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

Recommended Fuel

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

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

CAUTION : Never experiment with other fuels or fuel ratios. The use of fuel containing methanol, or similar products including naphta 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.

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 -40°C (-40°F).

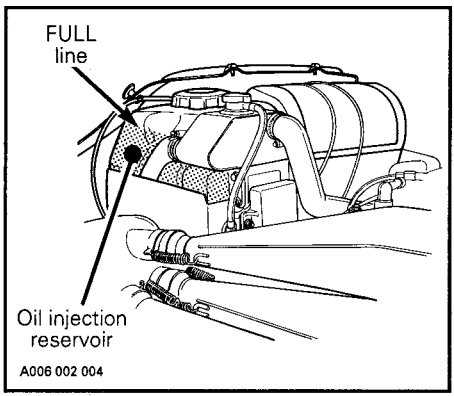
If BOMBARDIER Snowmobile Injection Oil is unavailable, substitute with BLIZZARD Oil (P / N 496 0135 00).

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 up to FULL line every time you refuel. Do not overfill. Wipe off any spillage.

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

Engine

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

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

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

Belt

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

10 - Hour Inspection

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

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

Check Points

NOTE : Refer to appropriate sections of this guide for instructions of how to perform the following checks.

- 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 filters are 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 COLD LEVEL mark (engine cold) of coolant tank.
- Check injection oil level.
- Check fuel level.
- Ensure fuel shut-off valve(s) is (are) in **fully opened position**.
- Verify that the path ahead of the vehicle is clear of bystanders and obstacles.
- Clean and check operation of the headlight, taillight and brake light.

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

- Test throttle control lever operation.
- Check that the emergency cut-out switch is in the ON position.
- Ensure the tether cut-out cap is in position and that the cord is attached to your clothing.
- Activate the primer two or three times.

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

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

Manual Starting

- Insert the key in the ignition switch and turn to ON position.
- Grasp manual starter handle firmly and pull slowly until a resistance is felt then pull vigorously. Slowly release the rewind starter handle.

WARNING : Do not apply throttle while starting.

Before Riding

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

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

Allow the engine to warm before operating at full throttle.

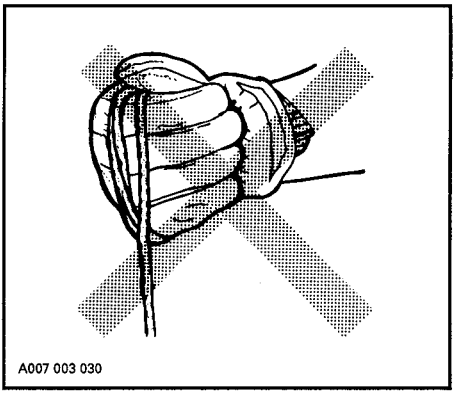
NOTE : Engine is warm when operating temperature has been reached on temperature gauge.

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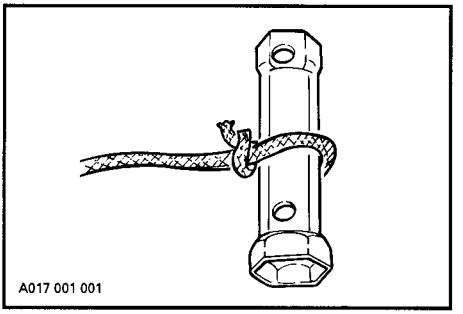
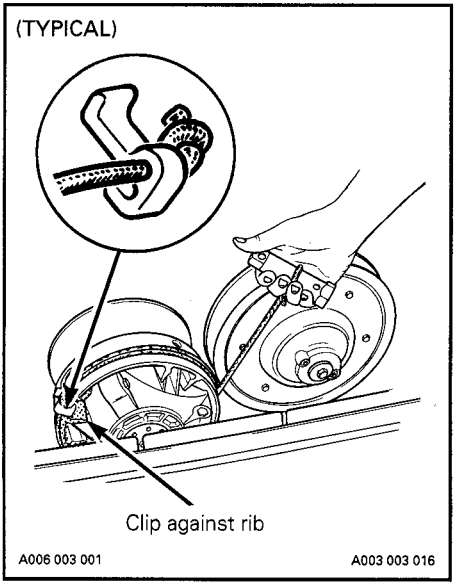
WARNING : Do not start the vehicle by the drive pulley unless it is a true emergency situation. Have the vehicle repaired as soon as possible.

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.

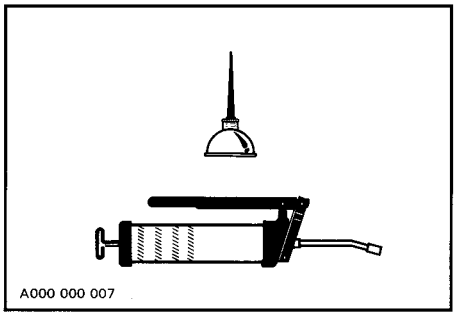
NOTE : The spark plug socket can be used as an emergency starter grip.





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.



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.

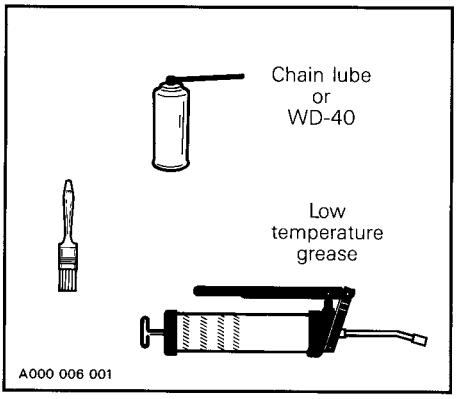
It is recommended that the steering system and suspension be lubricated monthly or every 40 hours of operation. If the vehicle is operated in wet snow or in severe conditions these items should be lubricated more frequently.

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.

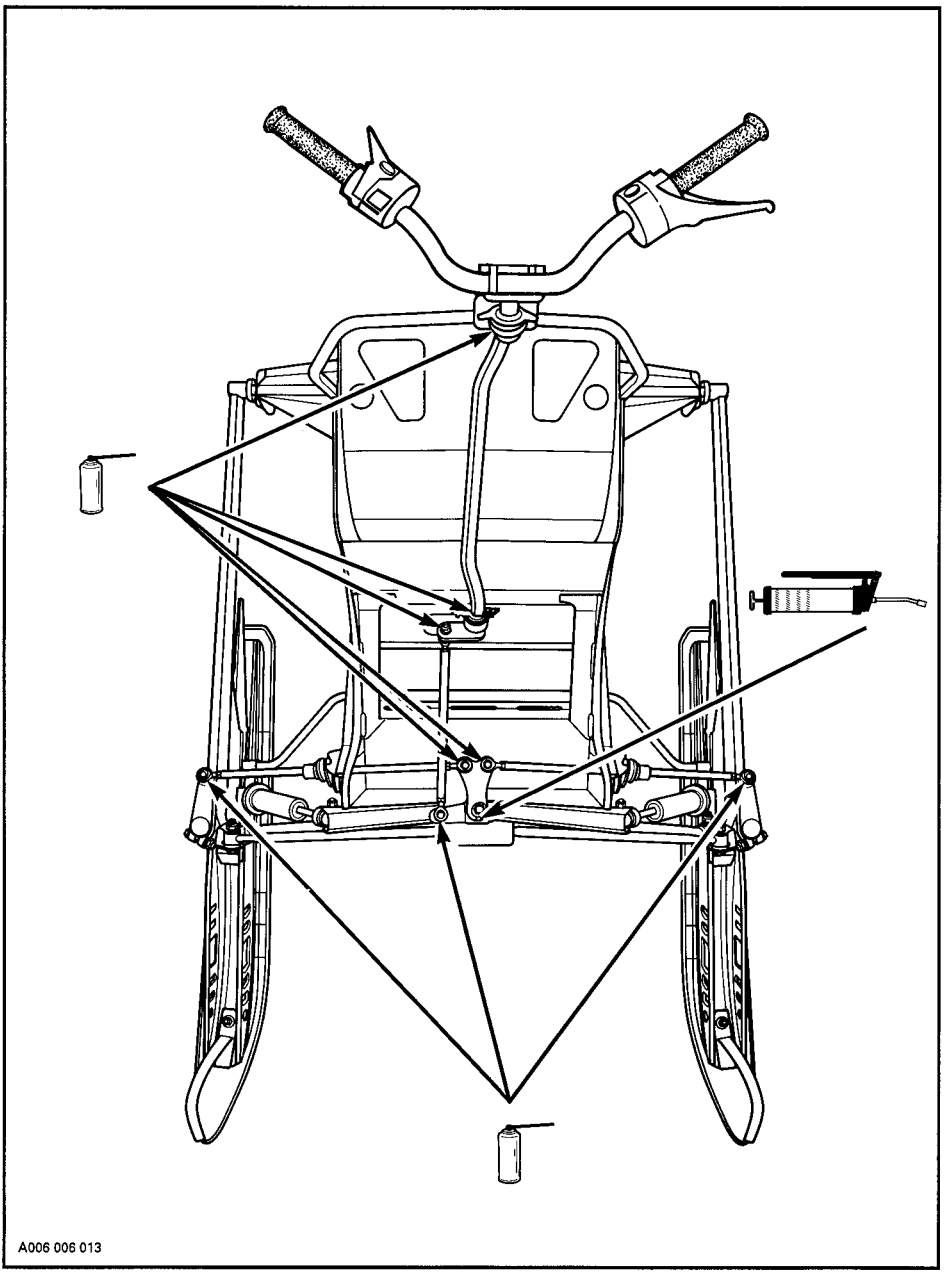


○ NOTE : When lubricating through grease fittings, slowly pump grease gun until grease appears at joints. Always use low temperature grease (P / N 413 7061 00).

◆ **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.**

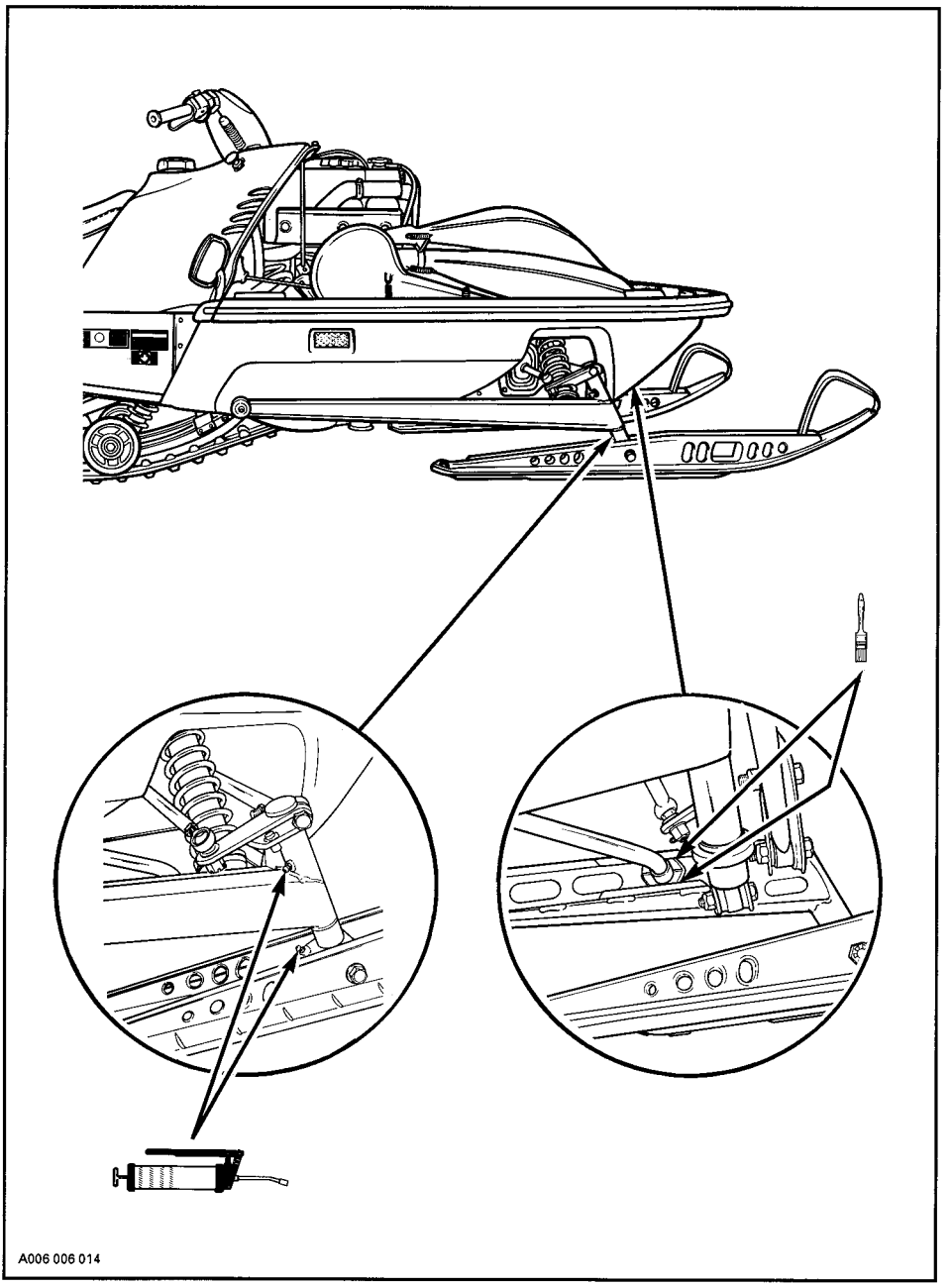
Steering and Front Suspension Mechanism

- Lubricate tie rod ends and steering column bushings (eight places).
- Grease idler arm (one place).



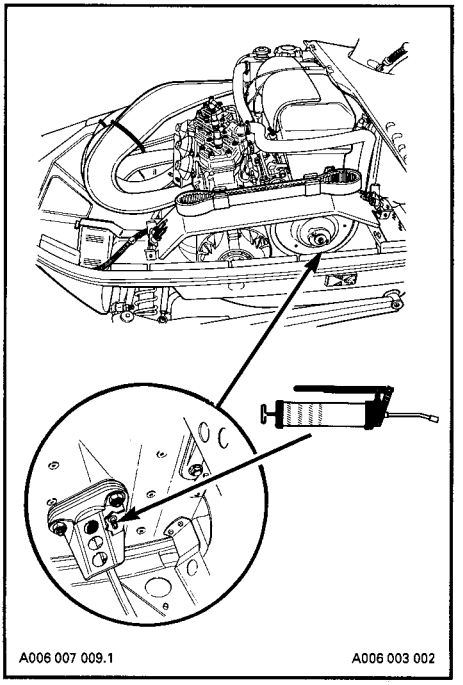
A006 006 013

– Grease ski legs and ski pivots (four places).
– Lubricate sliding blocks of stabilizer bar (two places).



Drive Axle

Lubricate through grease fitting using low temperature grease only.



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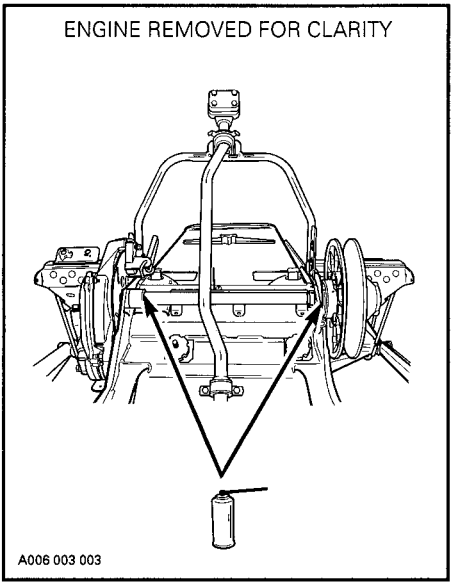
Countershaft

(brake disc and 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

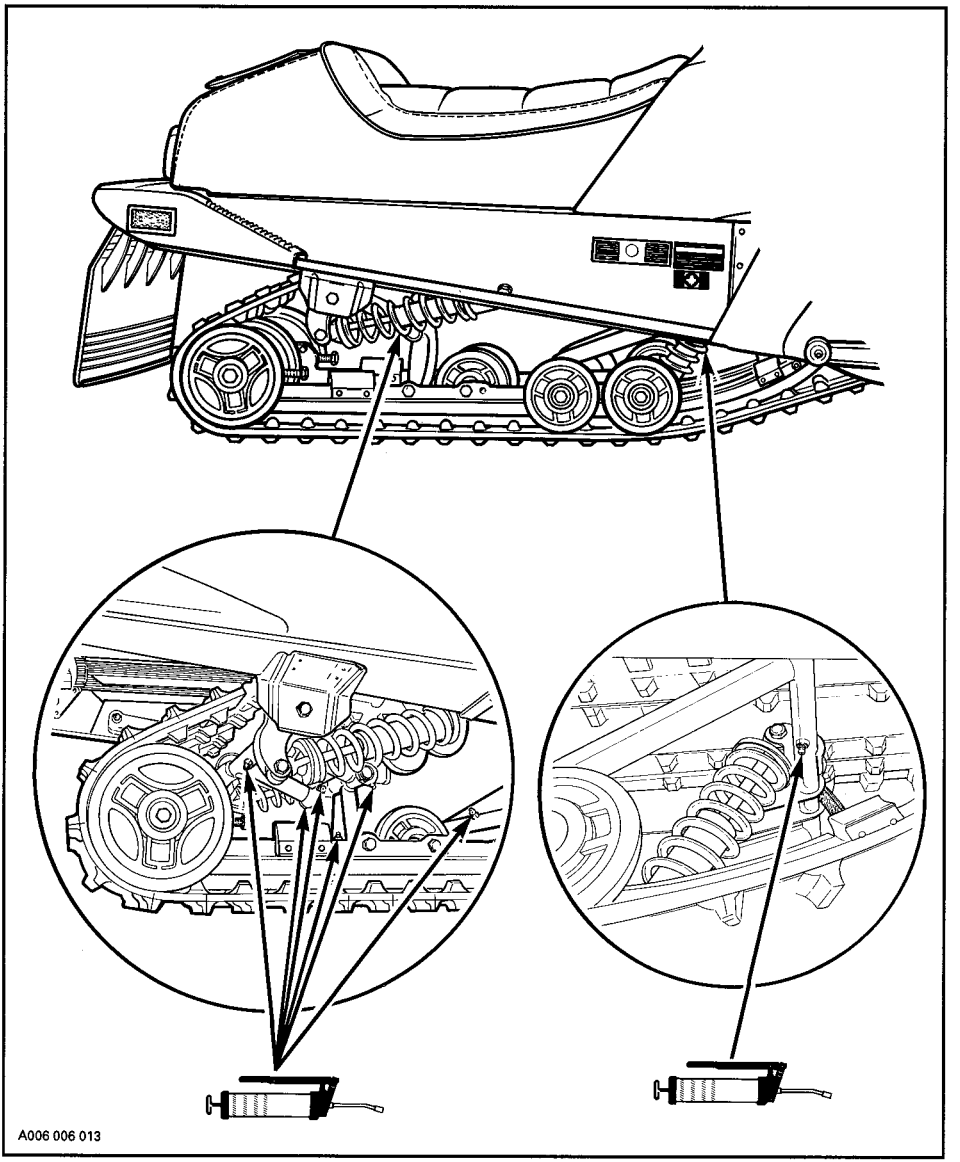
See an authorized dealer for proper lubrication of brake caliper ratchet wheel.

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

Slide Suspension

Lubricate suspension through following grease fittings :

- Front arm : upper and lower axles (two places).
- Rear arm (one place).
- Rear shackle : upper and lower axles (four places).



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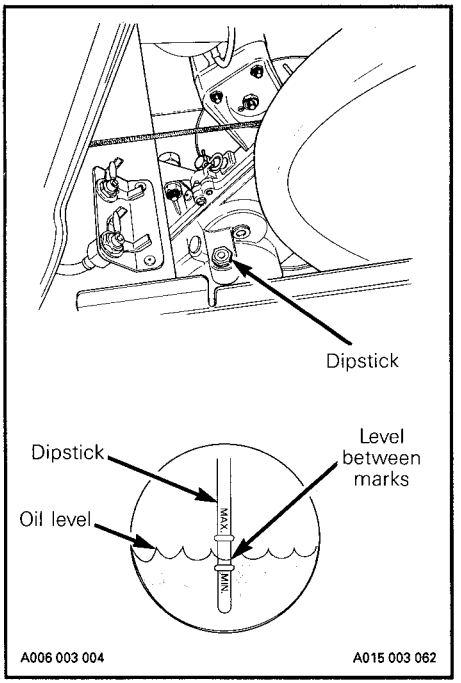
Chaincase Oil Level

With vehicle on a level surface, check the oil level by removing dipstick. With dipstick **unscrewed**, oil level must be **between** lower and upper marks. Refill up to upper mark using BOMBARDIER synthetic chaincase oil (P / N 413 8028 00 – 250 mL (9 oz)). Use spark plug socket to unscrew / screw dipstick.

▼ CAUTION : Do not use other types of oil than synthetic chaincase oil (P / N 413 8028 00) when servicing. Do not mix this synthetic oil with other types of oil.



○ NOTE : The chaincase oil capacity is approximately 350 mL (12 oz).

Chaincase Draining

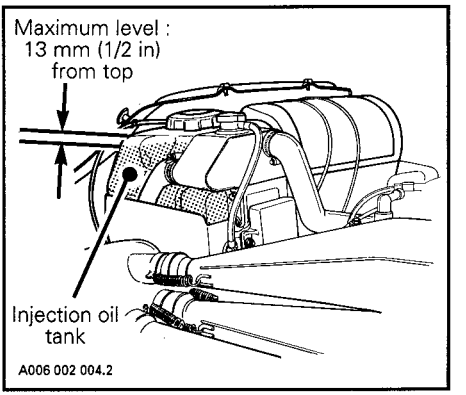
Remove muffler and chaincase cover. After chaincase filling, ensure to wipe all spilled oil in bottom pan. Refer to an authorized dealer if necessary.

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
(except for MACH Z series)

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

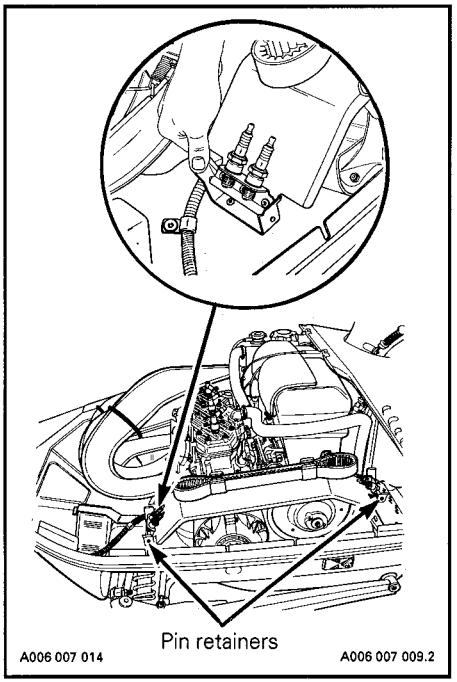
Always maintain a sufficient amount of BOMBARDIER Snowmobile Injection Oil in the injection oil tank.

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

Belt Guard Removal

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

1. Open hood.
2. Open retainers to release pin then firmly lift belt guard. Proceed one end at a time.



When reinstalling belt guard, position its cut-away toward front of vehicle.

○ NOTE : Belt guards are purposely made slightly oversize to maintain tension on their pins and retainers preventing undue noise and vibration. It is important that this tension be maintained when reassembling.

Drive Belt Removal and Installation

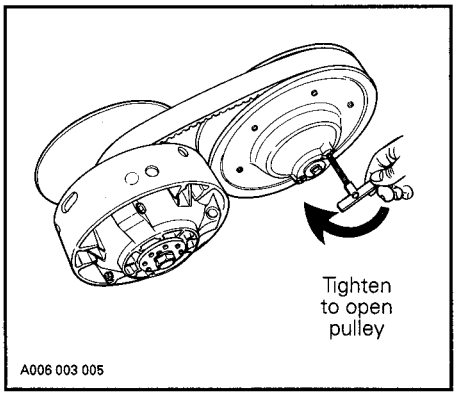
◆ WARNING : Never start or run engine without the drive belt installed. Running an unloaded engine is dangerous.

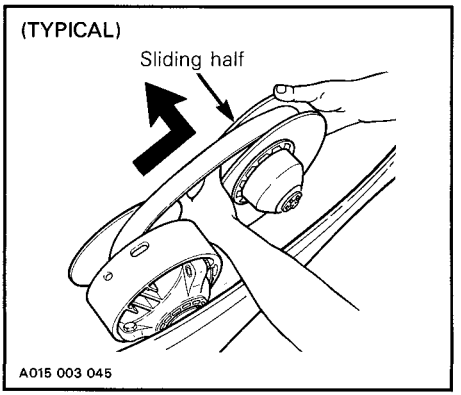
1. Remove ignition key.
2. Open hood and remove belt guard.

○ NOTE : Removal and installation of drive belt is easier when driven pulley is held with brake so that it can not rotate. Apply parking brake for this purpose. Drive pulley access plug can be removed from side pan to make room for belt removal.

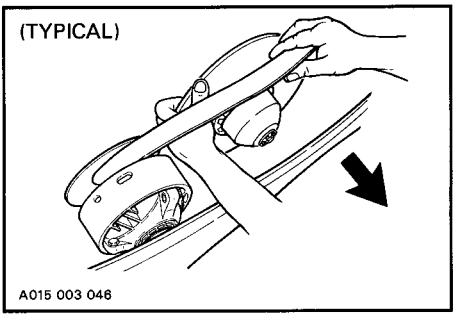
3. Open the driven pulley with the drive belt installer / remover (P / N 529 0195 00) provided in tool box.

– Remove and discard one Allen screw, nut and washer on driven pulley (if there are two screws).
– Screw tool in the threaded hole and tighten to open the pulley.

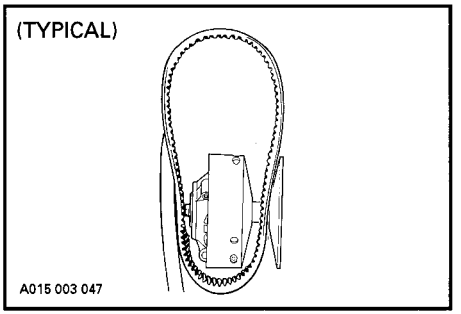




4. Slip the belt over the top edge of the fixed half, as shown.

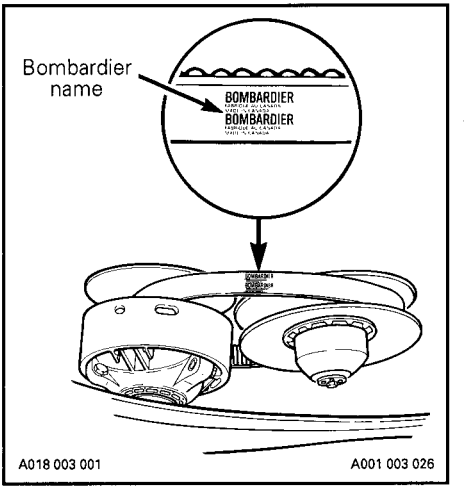


5. Slip the belt out from the drive pulley and remove from the vehicle.



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.**

○ NOTE : It is not necessary to reinstall Allen screw, nut and washer.

Remove tool from driven pulley.

◆ **WARNING : Always remove tool before operating vehicle.**

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).

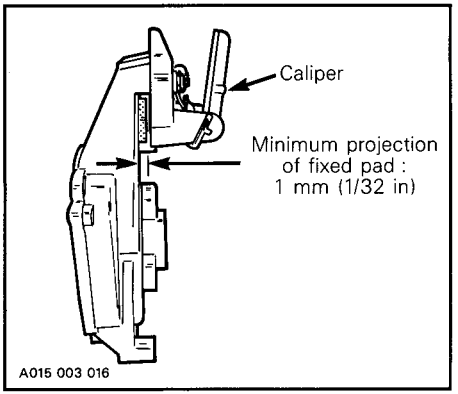
New Drive Belt

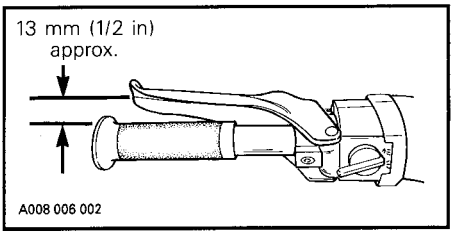
When installing a new drive belt, break-in period of 25 km (15 miles) is strongly recommended.

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.

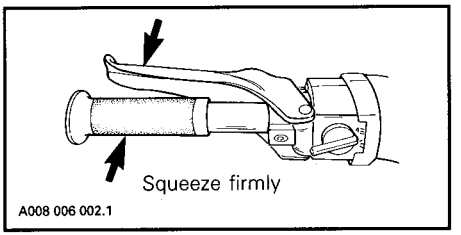
◆ **WARNING : Brake pads must be replaced when fixed pad projects 1 mm (1/32 in) or less from caliper. Replacement must be performed by an authorized dealer.**



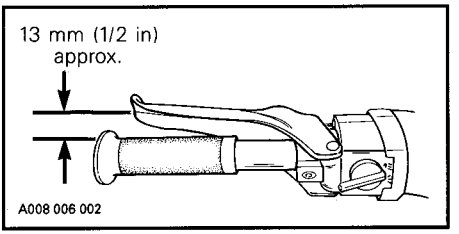


Brake Adjustment

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.

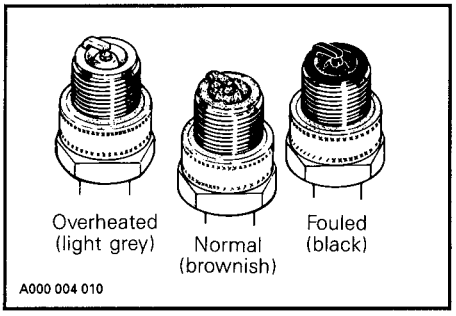


Spark Plugs

Disconnect the spark plug wires and remove the spark plugs.

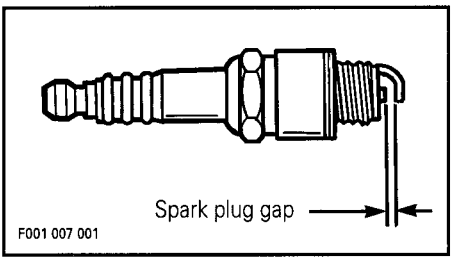
Check the condition of the plugs.

- 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 and / or high 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 specifications section.



Reinstall plugs and connect wires.

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

Overview

The front and rear suspensions are adjustable.

The **front suspension** includes two shock absorber/spring combination that have an adjustment cam that controls the preload.

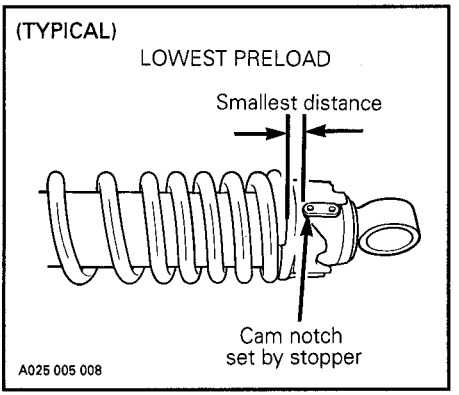
The **front portion** of **rear suspension** includes one shock absorber / spring combination while the **rear portion** has two. Each of them has an adjustment cam that controls the preload.

In addition, the **rear suspension** includes an adjustable stopper strap.

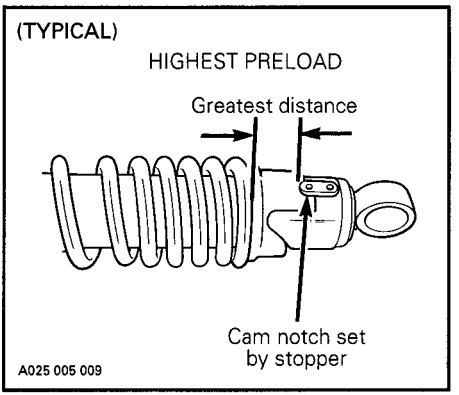
Spring Preload Adjustment

Spring preload is adjusted by turning spring cam. Turning adjustment cam moves its notches over a stopper that change spring compressed length which controls spring preload. The more compressed the spring, the higher the preload and conversely, the less compressed the spring, the lower the preload.

The lowest preload is reached when the selected cam notch is the closest to the spring end.



The highest preload is reached when selected cam notch is the farthest to spring end.



Adjustment Tools

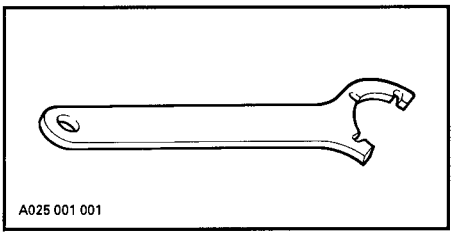
Cam is turned with the special keys supplied in tool kit. Fit the key on the shock spring cam and turn to the desired positon.

NOTE : If cam is difficult to turn, spray WD-40 between spring and spring cam to ease cam rotation.

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

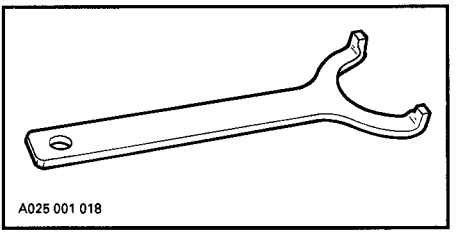
Front Suspension

Use the following key.



Rear Suspension

Use the following key.

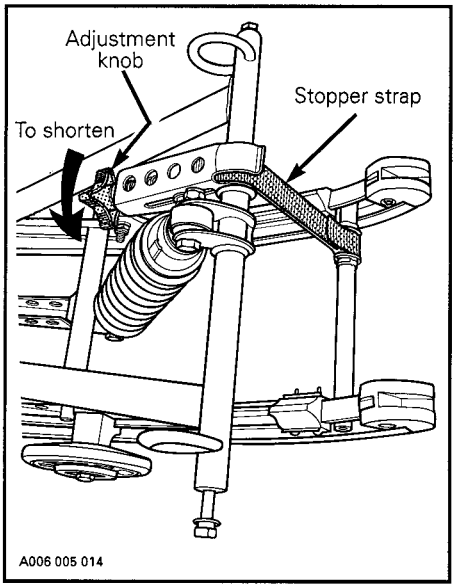


Stopper Strap Adjustment

The function of the suspension stopper strap is to control the vehicle weight transfer.

The longer the strap, the more the weight will be transferred to the track to provide a better traction. The shorter the strap, the less the weight will be transferred to the track, maintaining a more positive steering. Stopper strap allows weight transfer adjustment according to driver's requirement, field and / or snow conditions.

The stopper strap is set by turning the adjustment knob by hand. When facing knob, turning the knob clockwise shortens stopper strap and conversely turning it counterclockwise lengthens it.

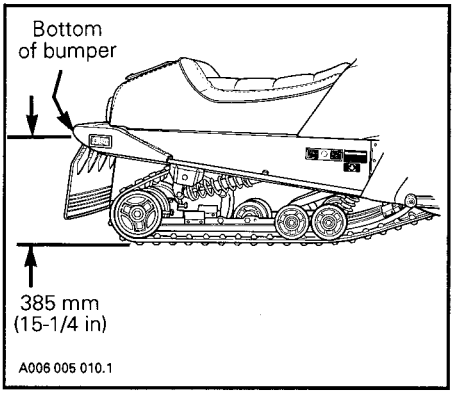


NOTE : Ensure that adjustment knob is tightened enough so that front shock absorber is compressed by approximately 5 mm (1/4 in) when rear of vehicle is lifted and track does not touch the ground. Stopper strap must act as the limiter of suspension travel.

CAUTION: Shock absorber damage might occur if stopper strap is not tightened enough.

Guidelines to adjust suspension

The suspension will work softly when the rear of vehicle is at a certain height. Above this height the suspension will stiffen slightly and below, it will stiffen gradually for trail bumps and high speed operation. A comfort zone exists when the distance between ground and rear bumper tube is approximately 385 mm (15-1/4 in) with the driver sit on vehicle. The spring preload purposely controls the height of vehicle's rear end in order to keep the comfort zone.



The rear shock springs have the greatest effect on driver's comfort since he is seated above them. As driver's weight increases, a higher preload is required on rear springs to relocate vehicle height to the comfort position. Remember if vehicle goes down past the comfort zone, the suspension stiffens. In this regard, INCREASING spring preload will SOFTEN suspension until the comfort zone is reached.

Choice of suspension adjustments depends on driver's weight, personal preference, riding speed and field condition. See the Rear Suspension Setting Guidelines table for adjustments. Keep in mind that it gives general guidelines that apply for most situations but, in extreme cases such as a very light driver the effects of adjustments will change.

The best way to set up suspension, is to start from factory settings then customize each adjustment one at a time (refer to next table). Then, test run the vehicle always at the same conditions; trail, speed, snow, driver riding position etc. Change adjustment and retest. Proceed methodically until you get satisfied.

▼ CAUTION: Whenever adjusting rear suspension, check track tension and adjust as necessary.

FACTORY SETTINGS (Cam Position From Lowest Preload)	
Front Suspension	2
Front Portion of Rear Suspension	4
Rear Portion of Rear Suspension	4

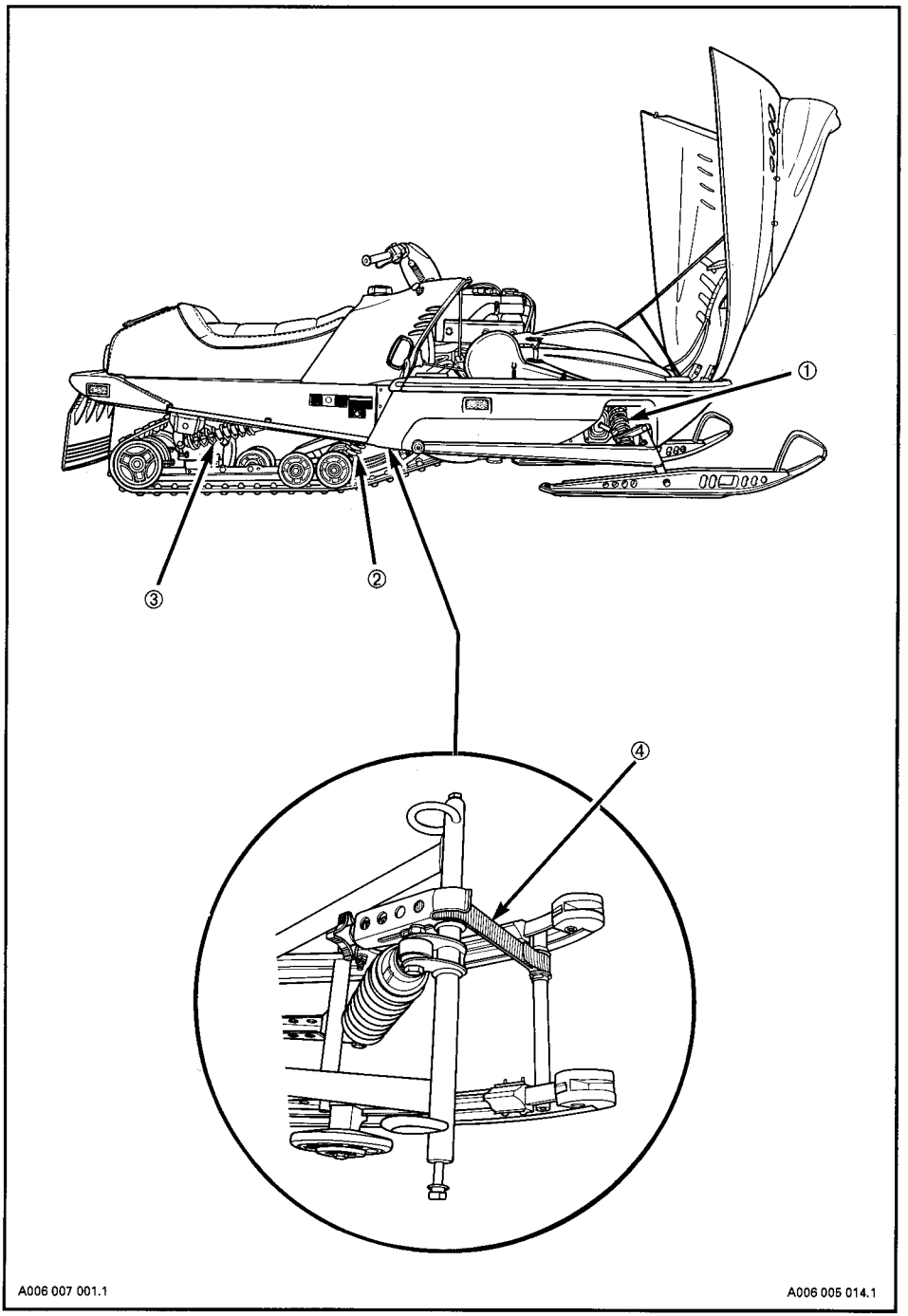
Slight suspension bottoming occuring under the worst riding conditions indicates a good choice of spring preload.

In Deep Snow

When operating the vehicle in deep snow, it may be necessary to vary the position of front spring adjustment cam (rear suspension) stopper strap 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.

OVERALL EFFECTS OF COMPONENTS ADJUSTMENT	
Front Suspension	Vehicle handling and stability.①
Front Portion of Rear Suspension	Steering behavior.②
Rear Portion of Rear Suspension	Driver's ride comfort.③
Stopper Strap	Vehicle weight transfert.④

①②③④ : See illustration on next page.


①
②
③
④
A006 007 001.1
A006 005 014.1

REAR SUSPENSION SETTING GUIDELINES		
SHOCK ABSORBER LOCATION	INCREASING PRELOAD	DECREASING PRELOAD
SPRING OF FRONT SUSPENSION	• Gives a more agressive steering. • Stiffens action of suspension. • Increases ski ground pressure.	• Eases steering action. • Softens action of suspension. • Decreases ski ground pressure.
FRONT SPRING OF REAR SUSPENSION	• Tends to reduce steering effort. • Produces a more responsive steering. • Reduces bottoming of rear suspension front spring in rough trails. • Reduces ski ground pressure.	• Softens rear suspension reaction. • Increases comfort at a moderate speed. • Increases ski ground pressure.
REAR SPRINGS OF REAR SUSPENSION	• Softens suspension reaction by placing the rear shocks in their comfort zone. • Lifts rear of vehicle and increases rear suspension travel during compression. • Increases ski ground pressure.	• Stiffens rear suspension reaction. • Lowers rear of vehicle and produces a more sporty handling. • Reduces ski ground pressure.
STOPPER STRAP	LENGTHENING	SHORTENING
	• Increases vehicle weight transfer to the track.	• Reduces vehicle weight transfer to the track.

TROUBLESHOOTING CHART	
PROBLEM	CORRECTIVE MEASURES
Front suspension wandering	Check ski alignment and camber angle adjustment. See an authorized dealer. Reduce ski ground pressure. • Reduce front suspension spring preload. • Increase rear suspension front spring preload. • Reduce rear suspension rear spring preload.
Vehicle is unstable and seems to pivot around its center	Reduce rear suspension front arm pressure. • Reduce rear suspension front spring preload. • Increase rear suspension rear spring preload. • Increase front suspension spring preload.
Steering is too heavy	Reduce ski ground pressure. • Reduce front suspension spring preload. • Increase rear suspension front spring preload.
Rear of vehicle seems too stiff	Increase rear suspension rear spring preload.
Rear of vehicle seems too soft	Reduce rear suspension rear spring preload.
Rear suspension front shock absorber is frequently bottoming	Loosen stopper strap as much as is allowed as described in this section. Increase rear suspension front shock preload.
Track slides too much at start	Loosen stopper strap as much as is allowed as described in this section. Spread track ground pressure evenly.

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 or rotate a track under power if torn or damaged.**

Track Tension and Alignment

Tension

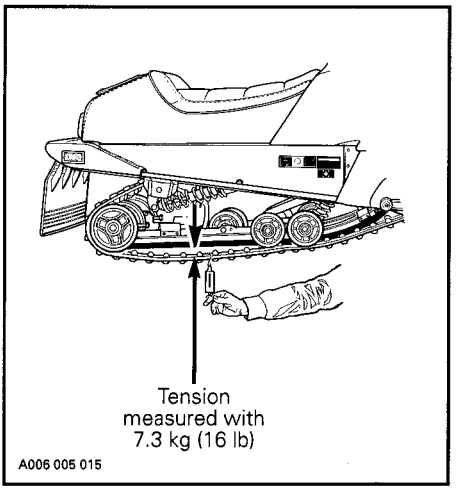
○ NOTE : Ride the vehicle in snow- about 15 to 20 minutes prior to adjusting track tension.

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 Formula Z series	45 - 50 (1-3/4 - 2)

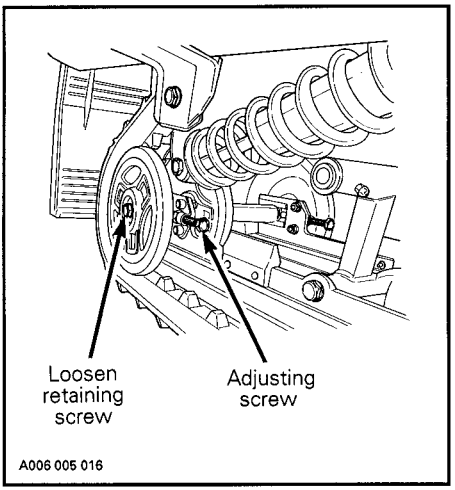


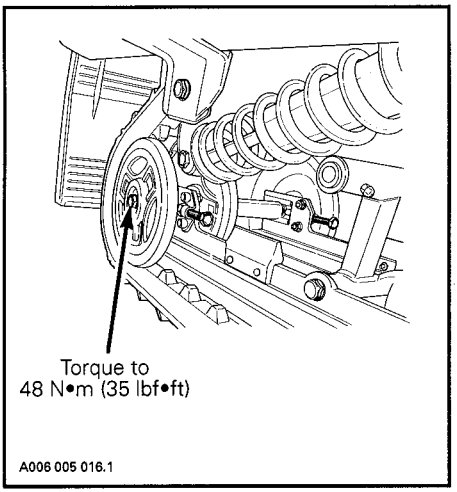
▼ **CAUTION : Too much tension will result in power loss and excessive stresses on suspension components.**

If adjustment is necessary, loosen the rear idler wheel retaining screws then loosen or tighten the adjusting 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.

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

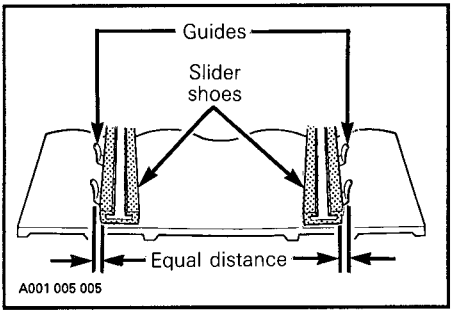




▼ CAUTION : Track tension and alignment are inter-related. Do not adjust one without the other.

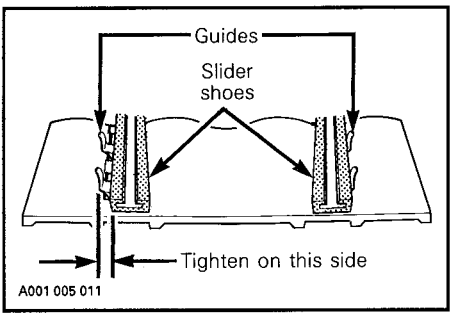
Alignment

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.



◆ 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. Tighten the adjusting screw on the side where slider shoe is farthest from track guides.



Tighten idler wheel retaining screws as specified above.

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

Condition of Drive and Driven Pulleys

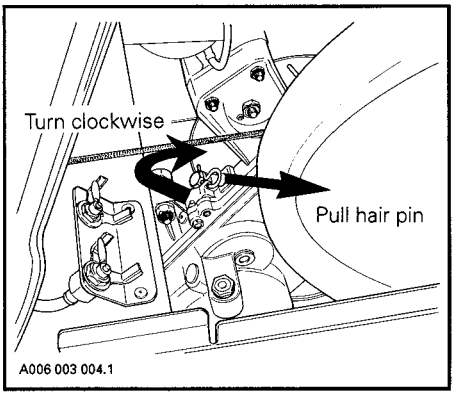
There are complex mechanism which operate at high rotational speeds. Each pulley is dynamically balanced at the factory. Any tampering by the owner may disrupt this precision balancing and create an unstable condition.

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

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

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.

Wear and Condition of Skis and Runners

Check the condition of the skis and the ski runners. If worn, contact your 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.

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

▼ **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.

Engine Mount Screws and Engine Head Screws

Refer to an authorized dealer for inspection.

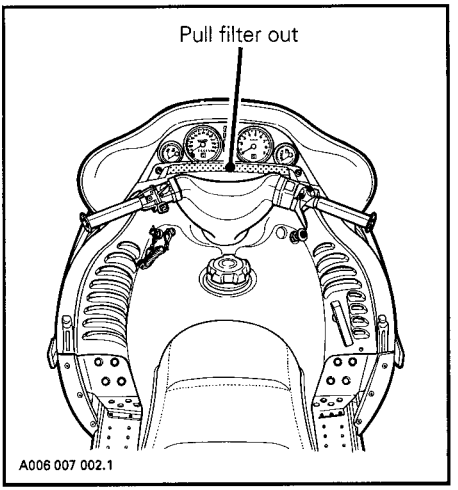
Air Filters Cleaning

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

There are two air filters; one in hood and one on air intake silencer (the Mach Z series has three filters; one more is installed on air intake silencer).

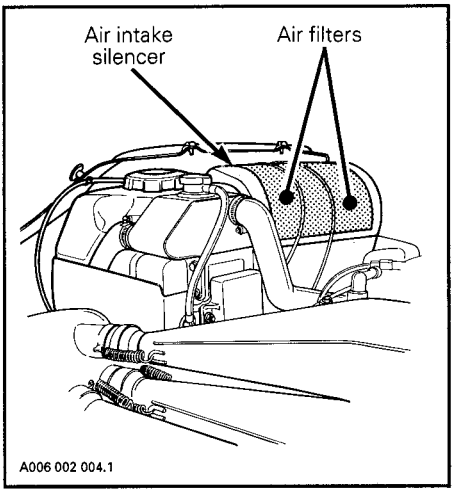
Hood Air Filter

Pull air filter out. Shake the snow out of it then, dry it out.



Air Intake Silencer Filter(s)

Lift hood and remove air filter from air intake silencer.



Shake the snow out of filter(s) then, dry it out.

Check that the air intake silencer is clean and dry and properly reinstall the filter(s).

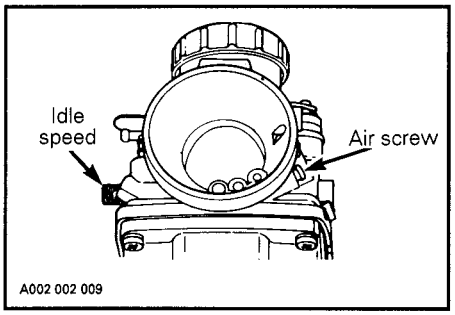
▼ CAUTION : These vehicles have been calibrated with the filter(s) installed. Operating the vehicle without the filter(s) may cause engine damage.

Carburetors Adjustment

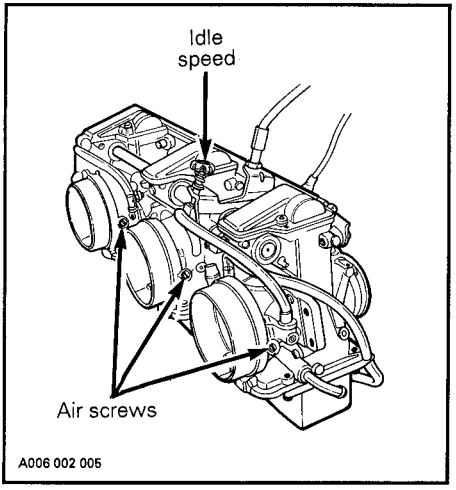
▼ CAUTION : Never operate your snowmobile with the air intake silencer disconnected. Serious engine damage will occur if this notice is disregarded.

▼ CAUTION : Make sure each carburetor start to operate simultaneously. Otherwise, refer to an authorized dealer.

MX Z Series



Mach Z Series



Air Screw Adjustment

Slowly close the **air** screw until a slight seating resistance is felt then unscrew as follows :

Model	Air screw setting (nb of turns)
MX Z series	1.5
Mach Z series	1

▼ CAUTION : Ensure that each carburetor has the same air screw setting.

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.

Model	Idle speed RPM
MX Z series	1500-1700
Mach Z series	1700-1800

Fuel Filter Replacement

Fuel filter should be inspected and replaced by an authorized dealer. Fuel filter is located in fuel tank at the end of fuel line.

High Altitude Kit

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

An engine loses about 3-1/2 percent of its power for each 300 m (1000 ft) increase in elevation. For example, an engine operating at 3000 m (10 000 ft) elevation would produce approximately 65 percent of the power it would have at sea level. Although this power cannot be regained, changes to the carburetor and drive system can be made to allow the engine to operate within its power band.

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

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

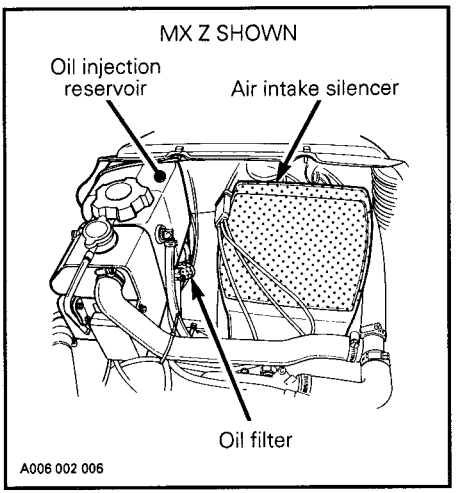
Oil Injection System

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.

Oil filter is located between air intake silencer and oil injection reservoir.

○ **NOTE : On Mach Z series**, it is necessary to remove air intake silencer to get access to oil filter. Refer to an authorized dealer if necessary.



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

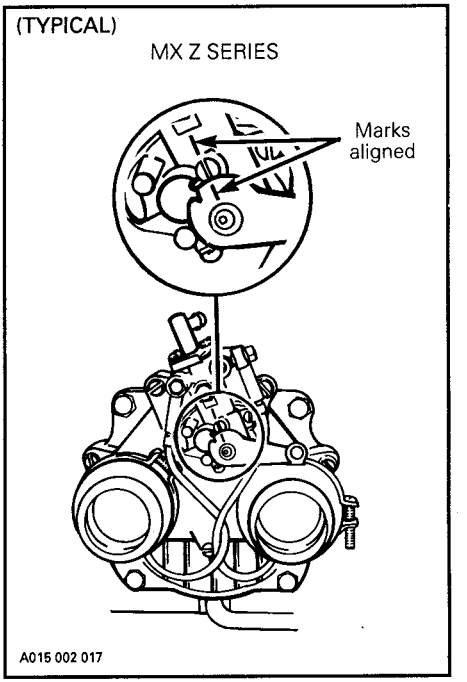
○ NOTE : After a storage period, it is **important** that your dealer replace the injection oil filter, that he verifies the oil flow of the injection pump and adjust it.

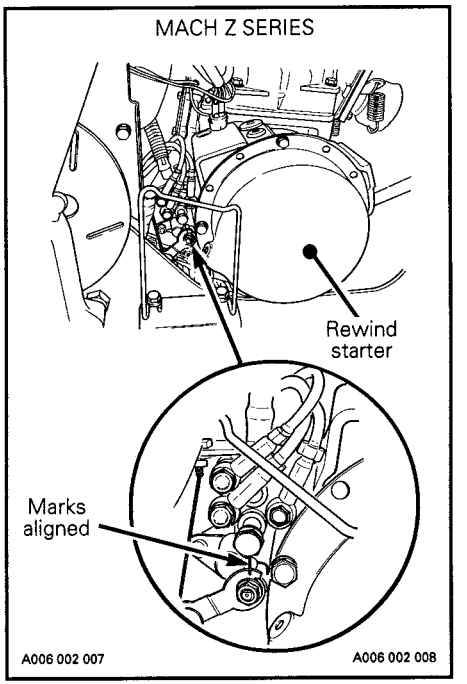
Oil Injection Pump Adjustment

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

▼ CAUTION : The carburetors must be adjusted before adjusting the oil injection pump. Make sure idle speed is properly adjusted.

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.





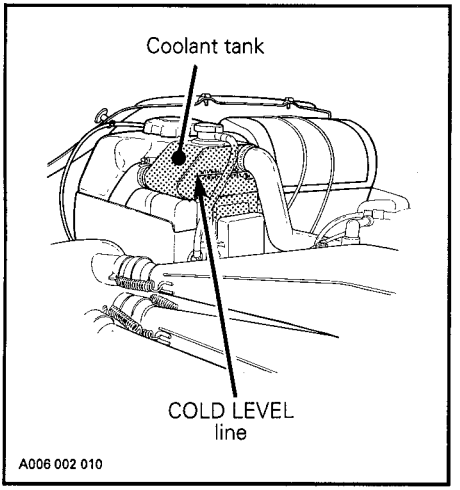
NOTE : On Mach Z series, it is easier to see marks when exhaust system is removed. Refer to an authorized dealer if necessary.

Cooling System Condition

Check condition of hoses and tightness of clamps.

Check coolant level when engine is COLD and vehicle is on a level surface.

Liquid must be at COLD LEVEL line of coolant tank.



If level is low, simply add a mixture of 60% antifreeze and 40% water in coolant tank to correct level.

CAUTION : To prevent rust formation or freezing condition, always replenish the system with 60% antifreeze and 40% water. Pure antifreeze without water freezes. Always use ethylene glycol antifreeze containing corrosion inhibitors specifically recommended for aluminum engines.

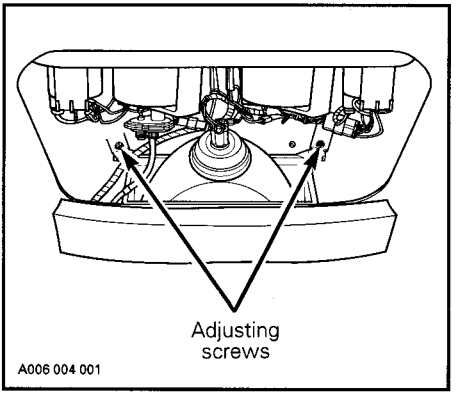
If expansion reservoir is empty, the cooling system is likely to miss cooling fluid. It is recommended to consult an authorized dealer for cooling system verification.

WARNING : If coolant tank 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.

NOTE : If temperature gauge needle continuously stay in the upper range of temperature, check cleanliness of heat exchangers under vehicle frame. Hose off grime as necessary. If necessary, contact an authorized dealer.

Headlamp Beam Aiming

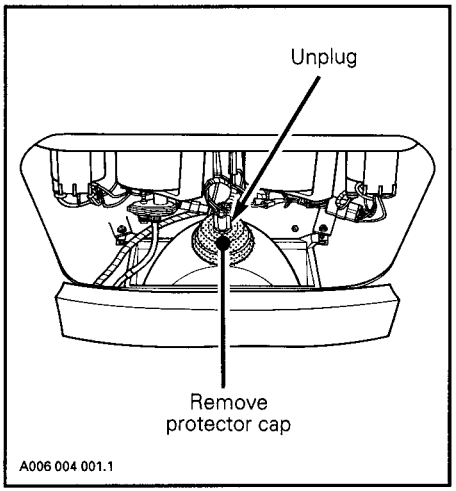
Open hood to adjust. From inside of hood, turn adjusting screw to obtain desired beam position.



Bulb Replacement

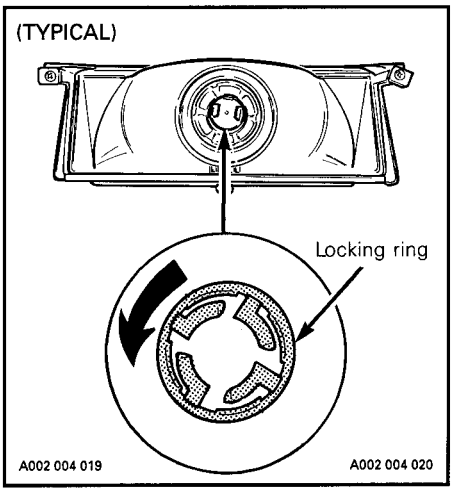
Headlight

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



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

▼ **CAUTION : 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.**

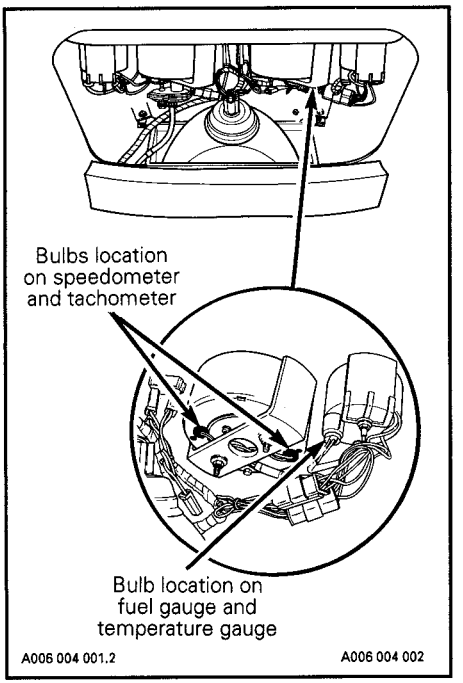


Properly reinstall parts.

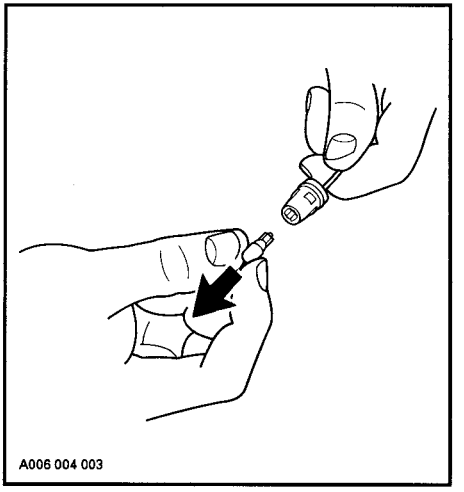
Instrument(s)

Bulb socket is always behind the instrument under a black rubber boot. Pull rubber boot and socket to expose bulb. To release bulb, pull it out.

○ NOTE : Speedometer and tachometer have 2 bulbs per meter.



NOTE : Some meters are optional on some models.



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 skis and ski runners. Replace if worn.

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

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

Track

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

○ NOTE : Do not release track tension.

Controls

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

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

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

Chaincase

Drain the chaincase and refill to proper level, using fresh Bombardier synthetic chaincase oil (P / N 413 8028 00 - 250 mL (9 oz)).

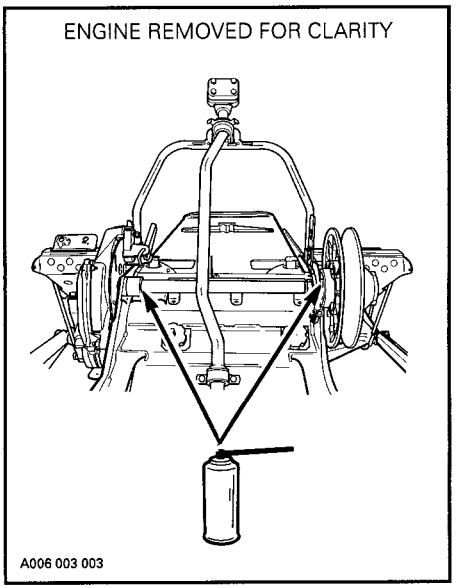
▼ **CAUTION : Do not use other types of oil than synthetic chaincase oil (P / N 413 8028 00). Do not mix this synthetic oil with other types of oil.**

○ NOTE : Chaincase oil capacity is about 350 mL (12 oz).

Countershaft

(Brake Disc and 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

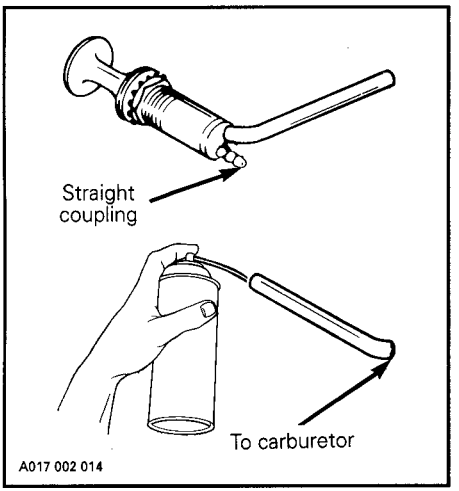
Engine internal parts must be lubricated to protect them from possible rust formation during the storage period.

To perform the storage procedures, proceed as follows :

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

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

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



- Insert storage oil (P / N 496 0141 00) nozzle into primer outlet hose.

All models

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

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

Drive and Driven Pulleys

Remove belt guard and slip off drive belt.

Spray antirust product on pulleys.

Fuel Tank and Carburetors

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

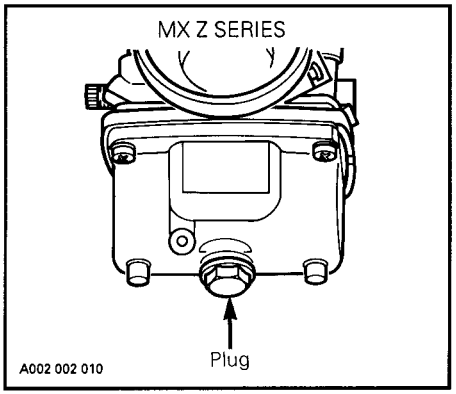
If above fuel stabilizer is not used, drain fuel system as described below.

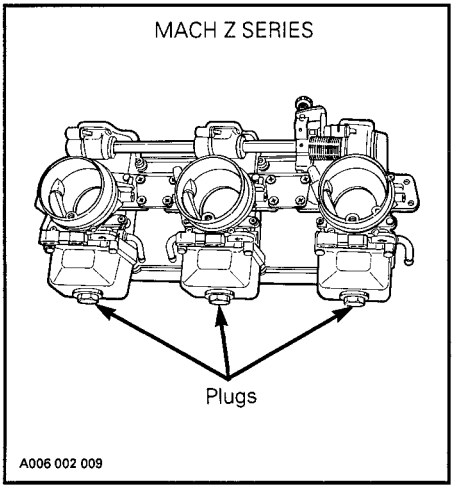
Remove the cap and using a siphon, drain fuel tank.

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

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.





Reinstall plugs.

General Inspection

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

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

Remove any dirt or rust.

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

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

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

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

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

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

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

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

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

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

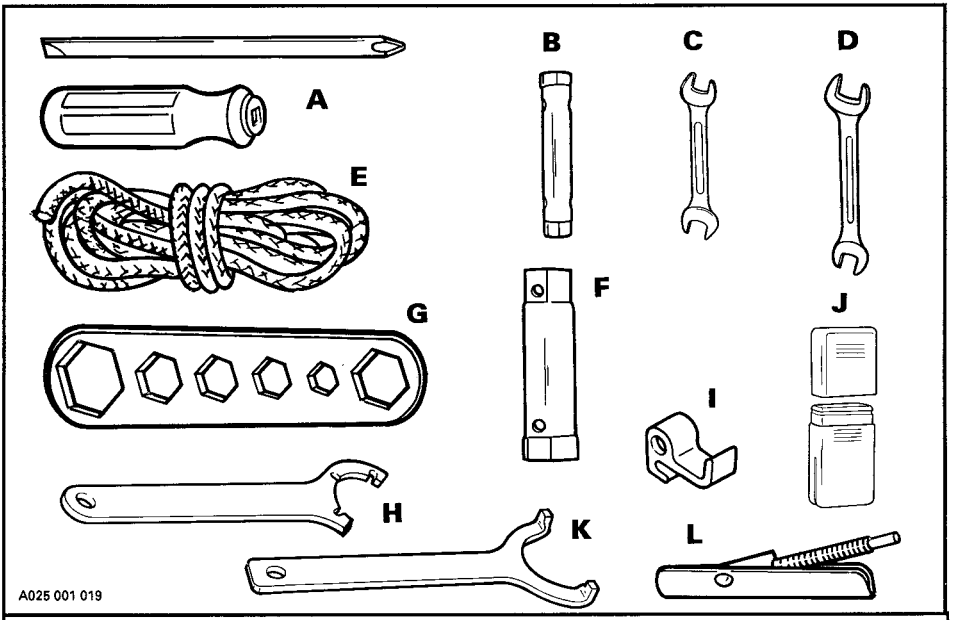
SYMPTOMS	POSSIBLE CAUSES	WHAT TO DO
Engine turns over but fails to start.	1. Ignition switch, emergency cut-out switch or tether switch is in the OFF position.	Place all switches in the RUN or ON position.
	2. Mixture not rich enough to start cold engine.	Check fuel tank level and check starting procedure, particularly use of the primer.
	3. Flooded engine (spark plug wet when removed).	Do not overprime. Remove wet spark plug, turn ignition switch to OFF and crank engine several times. Install clean dry spark plug. Start engine following usual starting procedure. If engine continues to flood, see an authorized dealer.
	4. No fuel to the engine (spark plug dry when removed).	Check fuel tank level ; turn fuel valve on if applicable ; check fuel filter ; replace if clogged ; check condition of fuel and impulse lines and their connections. A failure of the fuel pump or carburetor has occurred. Contact an authorized dealer.
	5. Spark plug / ignition (no spark).	Check that emergency cut-out switch is at the upper position ON and the tether cut-out switch cap is snapped over the receptacle. Replace spark plug. If trouble persists, contact an authorized dealer.
	6. Engine compression.	As the engine is pulled over with the rewind starter, "cycles" of resistance should be felt as piston goes past top dead center (each piston on twin-cylinder engines). If no pulsating resistance is felt, it suggests a major loss of compression. Contact an authorized dealer.

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

TOOLS

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

Standard Tools



DESCRIPTION	PART NUMBERS
A. Screwdriver	529 0192 00
B. Socket 10 / 13 mm	529 0149 00
C. Open end wrench 10 / 13 mm	529 0173 00
D. Open end wrench 15 / 17 mm	529 0193 00
E. Emergency starting rope	529 0175 00
F. Socket 21 / 26 mm	529 0148 00
G. Multi-purpose key	529 0147 00
H. Shock absorber spring collar adjustment key for front suspension	529 0122 00
I. Emergency starting clip	529 0194 00
J. Tool box	572 0363 00
Tool box cover	572 0364 00
K. Shock absorber spring collar adjustment key for rear suspension (front and rear shocks)	529 0190 00
L. Drive belt installer / remover	529 0195 00

SPECIFICATIONS

	FORMULA MX Z SERIES		FORMULA MACH Z SERIES	
ENGINE				
Type	467-Z		779	
No. of cylinders	2		3	
Bore	69.5 mm	(2.736 in)	69.5 mm	(2.736 in)
Stroke	61.0 mm	(2.402 in)	68.0 mm	(2.677 in)
Displacement	462.8 cm^3	(28.24 in^3)	774.0 cm^3	(47.23 in^3)
Compression ratio (corrected)	6.8 : 1		6.3 : 1	
Maximum horsepower RPM	7350 RPM		7650 RPM	
Carburetor type	VM-34 Variable Venturi, float type		TM 38 Variable Venturi, float slide, float type	
Carburetor adjustment :				
– air screw	1-1/2 turns		1 turn	
– idle speed	1500-1700 RPM		1700-1800 RPM	
Cooling system capacity :				
– SI	4.7 L		5.0 L	
– U.S.	159 oz		169 oz	
Antifreeze / water mixture (% by volume)	60 / 40		60 / 40	
Thermostat	43°C (109°F)		42°C (108°)	
Radiator pressure cap	90 kPa (13 lb / in^2)		90 kPa (13 lb / in^2)	
CHASSIS				
Length overall	280 cm	(110.2 in)	280 cm	(110.2 in)
Width overall	116.8 cm	(46 in)	116.8 cm	(46 in)
Height overall	108 cm	(42.5 in)	108 cm	(42.5 in)
Ski stance (center to center)	101.6 cm	(40 in)	101.6 cm	(40 in)
Weight	213 kg	(470 lb)	240 kg	(530 lb)
Bearing area	6692 cm^2	(1037 in^2)	6692 cm^2	(1037 in^2)
Ground pressure	3.12 kPa	(.453 lb / in^2)	3.52 kPa	(.511 lb / in^2)
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.			
POWER TRAIN				
Track :				
– width	38.1 cm	(15 in)	38.1 cm	(15 in)
– length	306.7 cm	(121 in)	306.7 cm	(121 in)
– tension	45-50 mm (1-3/4 - 2 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 gears (small / big)	24/44		26/40	
Drive belt :				
– number	414 8287 00		414 7498 00	
– maximum width	34.5 mm	(1-23/64 in)	34.5 mm	(1-23/64 in)
– minimum width	31.8 mm	(1-1/4 in)	31.8 mm	(1-1/4 in)
Chaincase oil	350 mL	(12 oz)	350 mL	(12 oz)

	FORMULA MX Z SERIES	FORMULA MACH Z SERIES
ELECTRICAL		
Lighting system (output)	12 V 220 W	12 V 220 W
Bulb :		
– headlamp	60/55 W H-4 halogen	60/55 W H-4 halogen
– tail / stop	8 / 27 W	8 / 27 W
– speedometer	2 x 1.7 W	2 x 1.7 W
– tachometer	2 x 1.7 W	2 x 1.7 W
– temperature gauge	N.A.	1.7 W
– electric fuel level gauge	N.A.	1.7 W
– pilot lamps (each)	.5 W	
Accessories :		
– heated throttle handle (hi / lo)	7 / 5 W	
– heated grips (hi / lo)	38 / 18 W	
Fuse :		
– tachometer	N.A.	
Spark plug :		
– type	NGK BR9ES	
– gap	0.45 mm (.018 in)	
Ignition timing :		
– timing mark (BTDC)	2.29 mm (.090 in)	1.88 mm (.074 in)
– stroboscopic timing (dynamic)	6000 RPM	
– trigger coil / flywheel protrusion gap	0.55 mm - 1.45 mm (.022 - 057 in)	
FUEL		
Gas type	Regular unleaded with a minimum octane number (R + M / 2) of 87.	
Fuel tank capacity :		
– SI	42.1 L	
– U.S.	11.1 gal	
Injection Oil	BOMBARDIER Snowmobile Injection Oil	
Tank capacity :		
– SI	4.1 L	
– U.S.	139 oz	

Hal. : Halogen

N.A. : Not applicable

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

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
land velocity	kilometer per hour	km / h
navigation velocity	knot	kn

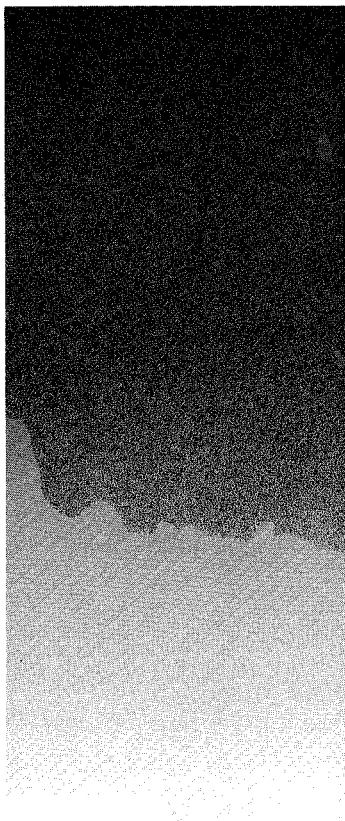
PREFIXES			
PREFIX	SYMBOL	MEANING	VALUE
kilo	k	one thousand	1000
centi	c	one hundredth of	0.01
milli	m	one thousandth of	0.001
micro	μ	one millionth of	0.000001

CONVERSION FACTORS		
TO CONVERT	TO ①	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
knot	MPH	1.15
MPH	km / h	1.61
Fahrenheit	Celsius	(°F - 32) ÷ 1.8
Celsius	Fahrenheit	(°C x 1.8) + 32
hp	kW	.75

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

① To obtain the reverse sequence, divide by the given factor. To convert "millimeters" to "inches", divide by 25.4.

NOTE : Conversion factors are rounded off to two decimals for easier use.



Quality Service