



WARNING

Read this guide thoroughly.
It contains important safety information.

2001



ski-doo
ski-doo

CK3 Series

484 100 027

Operator's
Guide

SAFETY WARNING

Disregarding any of the safety precautions and instructions contained in this *Operator's Guide, Safety Handbook, Safety Video* or on-product warnings may result in injury, including the possibility of death.

This *Operator's Guide, Safety Handbook and Safety Video* should remain with the unit at time of resale.

BOMBARDIER
RECREATIONAL PRODUCTS



The following are trademarks of Bombardier Inc.

BOMBARDIER®
SKI-DOO®

MACH*
CK3*

GRAND TOURING*

2001 SKI-DOO OPERATOR'S GUIDE

This guide is applicable to CK3 series:

Grand Touring SE

Mach Z STD

Mach Z Tech Plus

FOREWORD

Congratulations on your purchase of a new SKI-DOO snowmobile. Whatever model you have chosen, it is backed by the Bombardier warranty and a network of authorized SKI-DOO snowmobile dealers ready to provide the parts, service or accessories you may require.

The *Operator's Guide* and the *Snowmobiler's Safety Handbook* have been prepared to acquaint the owner/operator and passenger of a new snowmobile with the various snowmobile controls, maintenance and safe operating instructions. Each is indispensable for the proper use of the product.



The Safety Alert Symbol means ATTENTION!



Identifies an instruction which if not followed, may cause injuries including the possibility of death.

CAUTION: Denotes an instruction which if not followed, may damage the vehicle and/or components.

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

Your dealer is committed to your satisfaction. He has taken training to perform the initial set-up and inspection of your snowmobile as well as completed the final adjustment required to suit your specific weight and riding environment before you took possession. At delivery, your dealer would have explained the snowmobile controls and provided you with a brief explanation of the various suspension adjustments. We trust you have taken full advantage of this! If you need more complete servicing information, please ask your dealer about the proper model-year *Ski-Doo Shop Manual*.

At delivery, you were also informed of the warranty coverage and completed the Warranty Registration Form which is to be sent to us for processing.

The information and components/system descriptions contained in this guide are correct at time of publication.

We also reserve 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.

It is understood that this guide may be translated into another language. In the event of any discrepancy, the English version shall prevail.

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

We recommend genuine Bombardier products for replacement parts and accessories. They've been specially designed for your vehicle and manufactured to meet of Bombardier demanding standards.

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

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⚠ SAFETY MEASURES

Observe the Following Warnings:

- ⚠ For vehicles with a parking brake, always engage brake when vehicle is not in use.
- ⚠ Throttle mechanism should be checked for free movement before starting engine.
- ⚠ In an emergency, the snowmobile engine can be stopped by activating the emergency cut-out button, pulling the tether cord or turning off the key. Note that only the electric start models have an ignition key.
- ⚠ Engine should be running only when belt guard is secured in place. Never run the engine without drive belt installed. Running an unloaded engine such as without drive belt or with track raised, can prove to be dangerous.
- ⚠ Never run the engine with the hood opened or removed.
- ⚠ Maintain your snowmobile in top mechanical condition at all times.
- ⚠ Your snowmobile is not designed to be operated on public streets, roads 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 snowmobile.
- ⚠ 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 and cold for all lubrication, adjustment and maintenance procedures.
- ⚠ Some snowmobiles are designed for the driver only and no provisions have been made for a passenger.
- ⚠ The performance of this snowmobile may significantly exceed that of other snowmobiles you have operated. Therefore, use by novice or inexperienced operators is not recommended.
- ⚠ The engine and components used 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.
- ⚠ Do not stud the track.
- ⚠ Reverse models only: These snowmobiles are capable of a fast reverse. Always remain seated and apply the brake before shifting. Come to a complete stop before selecting reverse gear. Ensure the path behind is clear of obstacles or bystanders. Fast reverse while turning could result in loss of stability.

BOMBARDIER LIMITED WARRANTY 2001 SKI-DOO® SNOWMOBILE

1. WARRANTY COVERAGE PERIOD

In Canada, BOMBARDIER INC. ("Bombardier"), or in the USA, BOMBARDIER MOTOR CORPORATION OF AMERICA, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 2001 SKI-DOO snowmobile sold, as NEW and UNUSED and PREDELIVERED by an authorized North American SKI-DOO snowmobile dealer, will be free from any defects in material and/or workmanship for a period of:

TWELVE (12) CONSECUTIVE MONTHS, for private use owners. The warranty coverage period on a snowmobile delivered between June 1st and December 1st of a given year will expire December 1st of the following year; or

THREE (3) CONSECUTIVE MONTHS, for commercial use owners. The warranty coverage period on a snowmobile delivered between June 1st and December 1st of a given year will expire on March 1st of the following year.

All genuine Bombardier accessories, installed by an authorized SKI-DOO dealer at the time of delivery of the new and unused SKI-DOO, carry the same Warranty Coverage Period as for the SKI-DOO snowmobile.

2. WHAT BOMBARDIER WILL DO

BOMBARDIER will repair or replace, at its option, all genuine BOMBARDIER part found defective in material and/or workmanship, under normal use, maintenance and service, with a genuine BOMBARDIER part without charge for parts and labor, at any authorized SKI-DOO dealer during the Warranty Coverage Period.

3. CONDITION TO HAVE WARRANTY WORK VALIDATED

The customer must notify an authorized SKI-DOO dealer within two (2) days of the appearance of a defect in material and/or workmanship and present to the servicing authorized SKI-DOO dealer the SKI-DOO Warranty Registration Card or a proof of purchase of the NEW and UNUSED 2001 SKI-DOO snowmobile and must sign the repair/work order prior to the start of the repair in order to validate a warranty repair. All parts replaced under this limited warranty become the property of BOMBARDIER.

4. EXCLUSIONS - ARE NOT WARRANTED

- Normal wear and tear items;
- Labor, parts and lubricant costs of all maintenance services;
- Damage caused by failure to provide proper maintenance and/or storage, as described in the "2001 SKI-DOO snowmobile Operator's Guide";
- Damage resulting from improper repairs, modifications or use of non-approved parts or, repairs done by a non-authorized SKI-DOO dealer;
- Damage resulting from abuse, misuse, neglect, racing or using the SKI-DOO snowmobile on surfaces other than snow;
- Damage resulting from accident, fire, theft, vandalism or any act of God;
- Incidental or consequential damages, or damages of any kind as but not limited to towing charges, telephone calls or taxi; and
- Damages resulting from improper service or maintenance.

5. LIMITATIONS OF LIABILITY

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 GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

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

In no event shall BOMBARDIER be liable for special, consequential or incidental damages, including but not limited to loss of use and transportation costs. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply.

BOMBARDIER reserves the right to modify this warranty at any time, being understood that such modification will not alter the warranty conditions applicable to the SKI-DOO snowmobile sold while this warranty is in effect.

6. CONSUMER ASSISTANCE

- a. In the event of a controversy or a dispute arising in connection with this BOMBARDIER LIMITED WARRANTY, BOMBARDIER suggests that you try to resolve the issue at the dealership level. We recommend discussing the issue with the authorized dealer's service manager or owner.
- b. If further assistance is required, the DISTRIBUTOR's Service Department should be contacted in order to resolve the matter.
- c. If the issue has still not been resolved, please submit in writing your complaint to:

In Canada:

**BOMBARDIER
RECREATIONAL PRODUCTS**
75 J.-A. BOMBARDIER STREET
SHERBROOKE, QC
J1L 1W3
CANADA
Tel.: (450) 532-5000

In USA:

**BOMBARDIER MOTOR
CORPORATION OF AMERICA**
RECREATIONAL PRODUCTS
SNOWMOBILES
CUSTOMER ASSISTANCE CENTER
P.O. BOX 8035
7575 BOMBARDIER COURT
WAUSAU WI 54402-8035
Tel.: (715) 848-4957



BOMBARDIER
RECREATIONAL PRODUCTS

JUNE 1999

® Trademark of Bombardier Inc. and/or its subsidiaries.

BOMBARDIER INTERNATIONAL LIMITED WARRANTY 2001 SKI-DOO® SNOWMOBILE

1. WARRANTY COVERAGE PERIOD

BOMBARDIER INC. ("Bombardier"), as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 2001 SKI-DOO snowmobile sold anywhere in the world except the United States and Canada, as NEW and UNUSED and PREDELIVERED by an authorized North American SKI-DOO snowmobile dealer, will be free from any defects in material and/or workmanship for a period of:

TWELVE (12) CONSECUTIVE MONTHS, for private use owners. The warranty coverage period on a snowmobile delivered between June 1st and December 1st of a given year will expire December 1st of the following year; or

THREE (3) CONSECUTIVE MONTHS, for commercial use owners. The warranty coverage period on a snowmobile delivered between June 1st and December 1st of a given year will expire on March 1st of the following year.

2. WHAT BOMBARDIER WILL DO

BOMBARDIER through the local SKI-DOO International Distributor will, during the Warranty Coverage Period, repair or replace, at its option, all genuine BOMBARDIER part found defective in material and/or workmanship, under normal use, maintenance and service, with a genuine BOMBARDIER part without charge for parts and labor, at any local authorized SKI-DOO dealer.

3. CONDITION TO HAVE WARRANTY WORK VALIDATED

The customer must notify a local authorized SKI-DOO dealer within two (2) days of the appearance of a defect in material and/or workmanship and present to the servicing authorized SKI-DOO dealer the SKI-DOO Warranty Registration Card or a proof of purchase of the NEW and UNUSED 2001 SKI-DOO snowmobile and must sign the repair/work order prior to the start of the repair in order to validate a warranty repair. All parts replaced under this limited warranty become the property of BOMBARDIER.

4. EXCLUSIONS - ARE NOT WARRANTED

- Normal wear and tear items;
- Labor, parts and lubricant costs of all maintenance services;
- Damage caused by failure to provide proper maintenance and/or storage, as described in the "2001 SKI-DOO snowmobile Operator's Guide";
- Damage resulting from improper repairs, modifications or use of non-approved parts or, repairs done by a non-authorized SKI-DOO dealer;
- Damage resulting from abuse, misuse, neglect, racing or using the SKI-DOO snowmobile on surfaces other than snow;
- Damage resulting from accident, fire, theft, vandalism or any act of God;
- Incidental or consequential damages, or damages of any kind as but not limited to towing charges, telephone calls or taxi; and
- Damages resulting from improper service or maintenance.

5. LIMITATIONS OF LIABILITY

This warranty gives you specific rights, and you may also have other legal rights resulting from the application of mandatory national laws which may vary from country to country. **WHERE APPLICABLE, THIS WARRANTY IS EXPRESSLY GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

In no event shall BOMBARDIER be liable for special, consequential or incidental damages, including but not limited to loss of use and transportation costs. Some country do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply.

Neither the SKI-DOO International Distributor, the selling local SKI-DOO dealer nor any other person has been authorized to make any affirmation, representation or warranty other than those contained in this warranty, and if made, such affirmation, representation or warranty shall not be enforceable against BOMBARDIER or any other person.

Every SKI-DOO snowmobile is sold with the English version of this warranty. A specific SKI-DOO International Distributor may elect to translate this warranty into local language, it is then understood and agreed that in the event of any discrepancy among the two versions, the English version shall prevail.

It is the customer's responsibility to ensure that the SKI-DOO snowmobile complies with all snowmobile regulations and standards of any country, other than the original country of sale, where the SKI-DOO snowmobile is intended to be used. BOMBARDIER reserves the right to modify this warranty at any time, being understood that such modification will not alter the warranty conditions applicable to the SKI-DOO snowmobile sold while this warranty is in effect.

6. CONSUMER ASSISTANCE

- a. In the event of a controversy or a dispute arising in connection with this BOMBARDIER INTERNATIONAL LIMITED WARRANTY, BOMBARDIER suggests that you try to resolve the issue at the dealership level. We recommend discussing the issue with the authorized dealer's service manager or owner.
- b. If further assistance is required, the authorized local SKI-DOO INTERNATIONAL DISTRIBUTOR's Service Department should be contacted in order to resolve the matter.
- c. If the issue has still not been resolved, please submit in writing your complaint to:

BOMBARDIER
RECREATIONAL PRODUCTS
SNOWMOBILES
INTERNATIONAL SERVICE DEPARTMENT
VALCOURT QUEBEC J0E 2L0
CANADA



BOMBARDIER
RECREATIONAL PRODUCTS

JUNE 1999

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FREQUENTLY 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 SKI-DOO dealer must register your snowmobile with Bombardier. Make sure the registration form has been sent. All of this will allow you to:*

a) *have warranty work performed at any authorized SKI-DOO dealer in North America. Your registration form will provide the SKI-DOO 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 snowmobile (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 the Operator's Guide provided with the snowmobile 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 predelivered by an authorized SKI-DOO 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: ignition timing, carburetion 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 snowmobile out of oil, chain failure caused by a lack of lubrication, operating the snowmobile 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 SKI-DOO 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 damage 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 SKI-DOO dealer, any "Genuine" Bombardier part used in warranty repairs assumes the remaining warranty that exists on the snowmobile.*

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 re-sale has been registered with the manufacturer.*

Q: How can I receive the best owner assistance?

A: *The satisfaction and goodwill of the owners of Bombardier products are of primary concern to your SKI-DOO dealer and Bombardier. Normally, any problems that arise in connection with the sales transaction or the operation of your snowmobile will be handled by your SKI-DOO 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 SKI-DOO dealership management. If the problem already has been reviewed with the Sales Manager or Service Manager, contact the SKI-DOO dealer himself or the General Manager.*

We are always pleased to receive your comments on the SKI-DOO snowmobile.

LIST OF CUSTOMER RELATIONS OFFICES



CANADA

BOMBARDIER

Recreational Products

75 J.A. Bombardier Street
Sherbrooke, Quebec, Canada

J1L 1W3

Telephone: (819) 566-3366

Fax: (819) 566-3062



USA

BOMBARDIER MOTOR CORPORATION OF AMERICA

Telephone: (715) 848-5957

Fax: (715) 848-6879

OTHER COUNTRIES

For customer relations, contact your local distributor.
Your local SKI-DOO dealer can provide distributor contact information.

AUTHORIZED SKI-DOO DEALERS

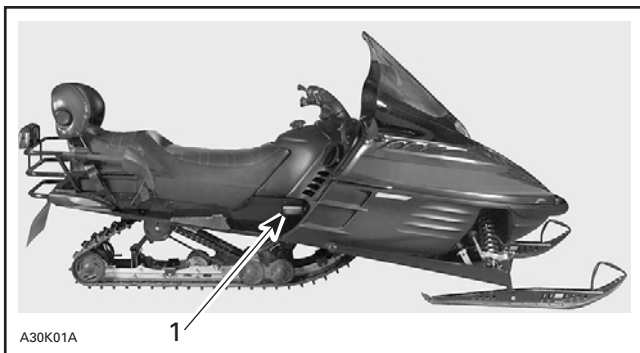
For Canada and USA Only

To find the nearest authorized SKI-DOO dealer, dial: 1-800-375-4366.

HOW TO IDENTIFY YOUR SNOWMOBILE

The main components of your snowmobile (engine 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 SKI-DOO dealer to complete warranty claims properly. No warranty will be allowed by Bombardier Inc. if the engine serial number or Vehicle Identification Number (VIN) is removed or mutilated in any way. We strongly recommend that you take note of all the serial numbers on your snowmobile and supply them to your insurance company.

Vehicle Identification Number Location

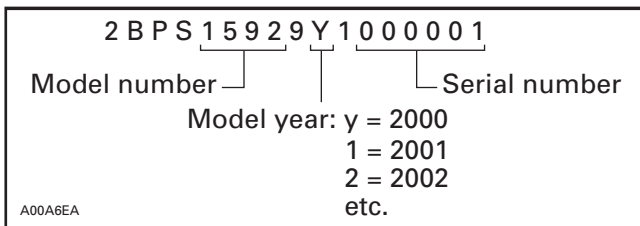


TYPICAL

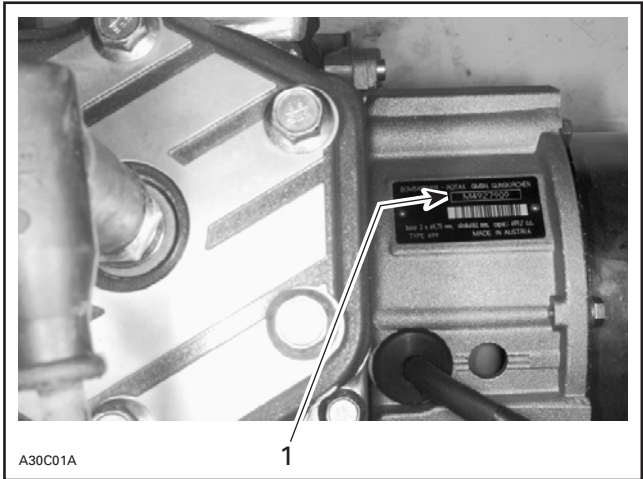
1. *Vehicle identification number*

Model Number

Model number is part of vehicle identification number.



Engine Serial Number Location

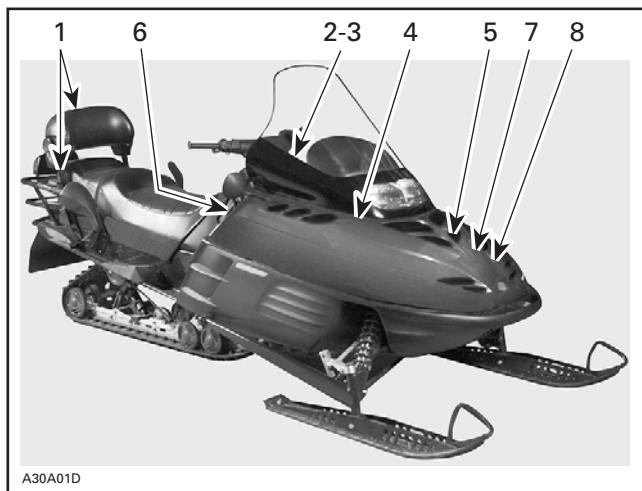


TYPICAL

1. Engine serial number

ON-VEHICLE IMPORTANT INSTRUCTIONS

Please read the following instructions carefully before operating snowmobile.



TYPICAL — LOCATION OF IMPORTANT INSTRUCTIONS

Instruction 1



SINGLE SEAT MODELS

SINGLE SEAT MODELS

◆ **WARNING.** Read & follow all Warning Labels & Operators Guide/Safety Handbook before operation. Severe injury or death can result from ignoring warnings or through improper use of snowmobile.

BEFORE STARTING ENGINE, CHECK: THROTTLE LEVER MOVES FREELY
 -ALL GUARDS ARE IN PLACE AND CAB IS CLOSED, START ENGINE AND CHECK:
 EMERGENCY CUT-OUT SWITCH AND ALL CONTROLS WORK NORMALLY, DRIVE CAREFULLY.
 Use of this vehicle by novice or inexperienced operator is not recommended.
 Seating on this vehicle is restricted to the operator only. Do not carry passenger(s).



BOMBARDIER

◆ **AVERTISSEMENT.** Lisez et respectez scrupuleusement tous les avertissements contenus dans le Manuel du conducteur, avant toute mise en route.

AVANT DE DÉMARRER LE MOTEUR, S'ASSURER QUE LA MANETTE D'ACCÉLÉRATEUR FONCTIONNE LIBREMENT - QUE TOUT GARDE SOIT EN PLACE ET QUE LE CAPOT SOIT FERMÉ. DÉMARRER LE MOTEUR ET S'ASSURER QUE L'INTERRUPTEUR D'URGENCE ET TOUS LES CONTRÔLES FONCTIONNENT NORMALEMENT. CONDUIREZ PRUDENNEMENT.

L'utilisation de ce véhicule n'est pas recommandée aux débutants ou autres personnes inexpérimentées. Ce véhicule n'est pas conçu pour le transport de passagers(s). Conducteur seulement.

DOUBLE SEAT MODELS

◇ **WARNING.** Read & follow all Warning Labels & Operators Guide/Safety Handbook before operation. Severe injury or death can result from ignoring warnings or through improper use of snowmobile.

BEFORE STARTING ENGINE, CHECK: THROTTLE LEVER MOVES FREELY
 - ALL GUARDS ARE IN PLACE AND CAB IS CLOSED, START ENGINE AND CHECK:
 EMERGENCY CUT-OUT SWITCH AND ALL CONTROLS WORK NORMALLY, DRIVE CAREFULLY.
 Use of this vehicle by novice or inexperienced operator is not recommended



BOMBARDIER

◇ **AVERTISSEMENT.** Lisez et respectez scrupuleusement tous les avertissements contenus dans le Manuel du conducteur, avant toute mise en route.

AVANT DE DÉMARRER LE MOTEUR, S'ASSURER QUE LA MANETTE D'ACCÉLÉRATEUR FONCTIONNE LIBREMENT - QUE TOUT GARDE SOIT EN PLACE ET QUE LE CAPOT SOIT FERMÉ. DÉMARRER LE MOTEUR ET S'ASSURER QUE L'INTERRUPTEUR D'URGENCE ET TOUS LES CONTRÔLES FONCTIONNENT NORMALEMENT. CONDUIREZ PRUDENNEMENT.

L'utilisation de ce véhicule n'est pas recommandée aux débutants ou autres personnes inexpérimentées.

Instruction 3

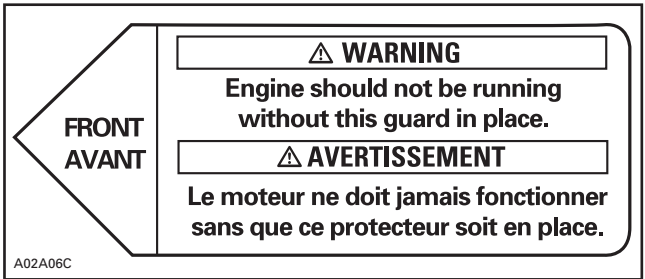
CAUTION: To comply with noise regulations, this engine is designed to operate air intake silencer. Operation without air intake silencer or not properly installed may cause engine damage.

ATTENTION: Le groupe moteur a été conçu pour fonctionner avec ce silencieux d'admission, afin de se conformer aux règlements relatifs au bruit. Son absence ou son montage défectueux peut endommager le moteur.

A02A07C

ALL MODELS

Instruction 4



The label features a large arrow pointing to the left, labeled "FRONT" and "AVANT". To the right of the arrow, there are two rectangular boxes. The top box contains a warning symbol (a triangle with an exclamation mark) followed by the word "WARNING". Below this, the text reads "Engine should not be running without this guard in place." The bottom box contains a warning symbol followed by the word "AVERTISSEMENT". Below this, the text reads "Le moteur ne doit jamais fonctionner sans que ce protecteur soit en place." The entire label is enclosed in a rounded rectangular border.

**FRONT
AVANT**

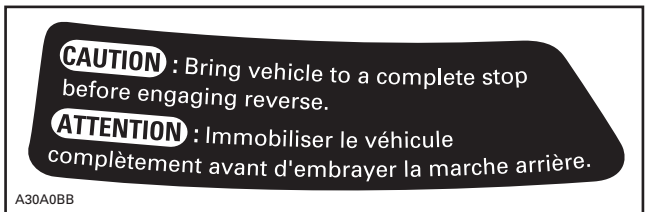
⚠ WARNING
Engine should not be running
without this guard in place.

⚠ AVERTISSEMENT
Le moteur ne doit jamais fonctionner
sans que ce protecteur soit en place.

A02A06C

ALL MODELS

Instruction 5



The label is a dark, rounded rectangular shape with white text. It contains two lines of text, each starting with a bolded word in a white oval. The first line reads "CAUTION : Bring vehicle to a complete stop before engaging reverse." The second line reads "ATTENTION : Immobiliser le véhicule complètement avant d'embrayer la marche arrière." The label is enclosed in a rectangular border.

CAUTION : Bring vehicle to a complete stop
before engaging reverse.

ATTENTION : Immobiliser le véhicule
complètement avant d'embrayer la marche arrière.

A30A0BB

ALL MODELS WITH A REVERSE

Instruction 6



A01A24D

TYPICAL — ALL MODELS

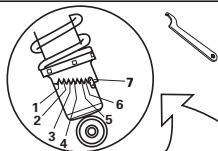
Instruction 7

SUSPENSION ADJUSTMENT CHART/TABLEAU DES RÉGLAGES DE LA SUSPENSION

FRONT SUSPENSION (SKI)/SUSPENSION AVANT (SKI)

NOT APPLICABLE

SANS OBJET



REAR SUSPENSION/SUSPENSION ARRIÈRE ADJUST ACCORDING TO LOAD/RÉGLER SELON LA CHARGE

(LB)	LOAD CHARGE	(kg)	REAR SPRING RESSORT ARRIÈRE		
up to 125		jusqu'à 57	1		NOT APPLICABLE SANS OBJET
125 to 150		57 à 68	2		
150 to 175		68 à 79	3		
175 to 200		79 à 91	4		

FOR LOADS EXCEEDING RANGE SHOWN ABOVE, CONSULT YOUR DEALER.

SI LES CHARGES EXCÈDENT LES PLAGES MONTREES CI-HAUT, CONSULTEZ VOTRE CONCESSIONNAIRE.

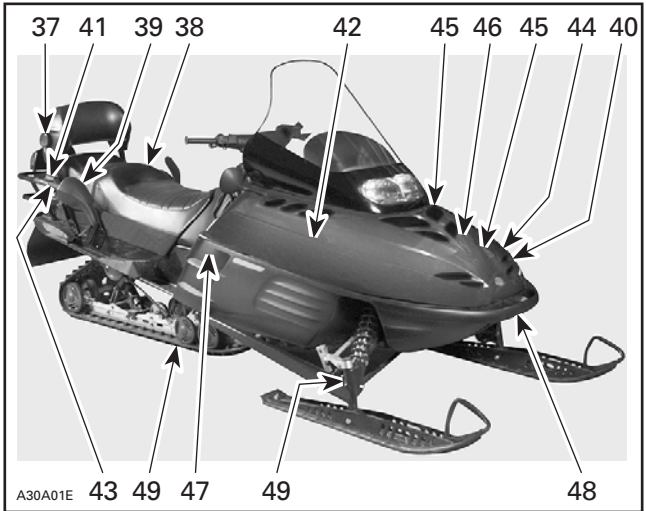
418 0017 01

A01A25D

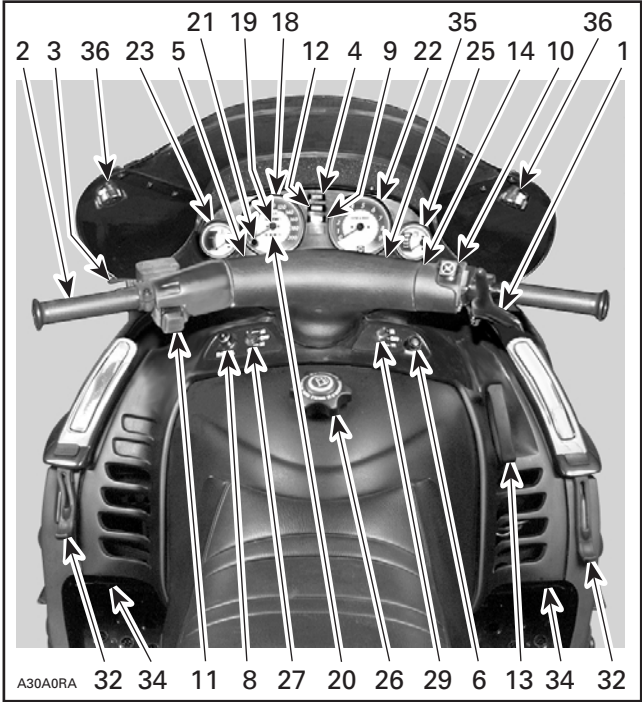
TYPICAL — ALL MODELS

CONTROLS/INSTRUMENTS/EQUIPMENT

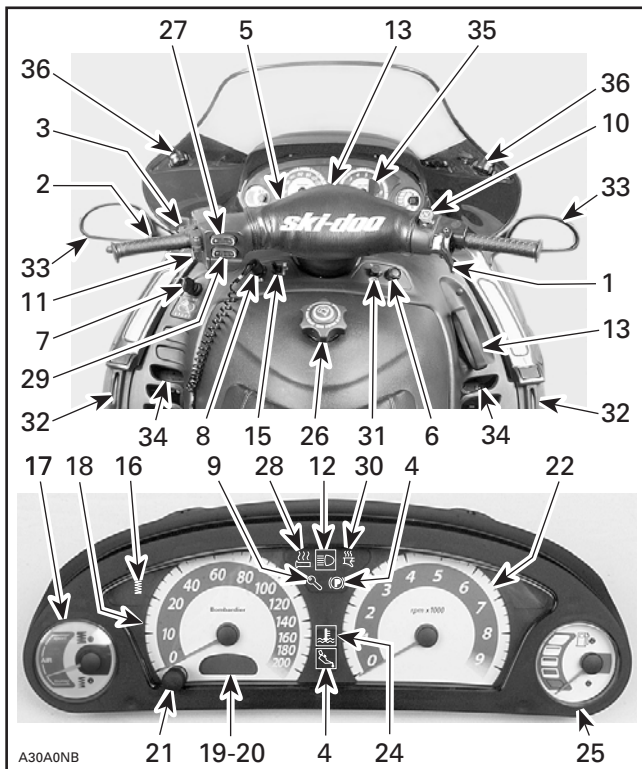
NOTE: Some controls/instruments/equipment do not apply to some models. In these cases their reference numbers are deliberately missing in the illustrations. Some controls/instruments/equipment are optional on some models.



TYPICAL



A30A0RA
 TYPICAL — MACH Z STD/TECH PLUS



TYPICAL — GRAND TOURING SE

1) 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.

WARNING

Throttle lever must operate easily and smoothly. It must return to idle position when released.

2) 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.

WARNING

Excessive or repetitive use of brakes for high speed stops will cause an overheated brake system. This overheated condition could cause sudden loss of braking power and/or fire.

3) Parking Brake Button

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

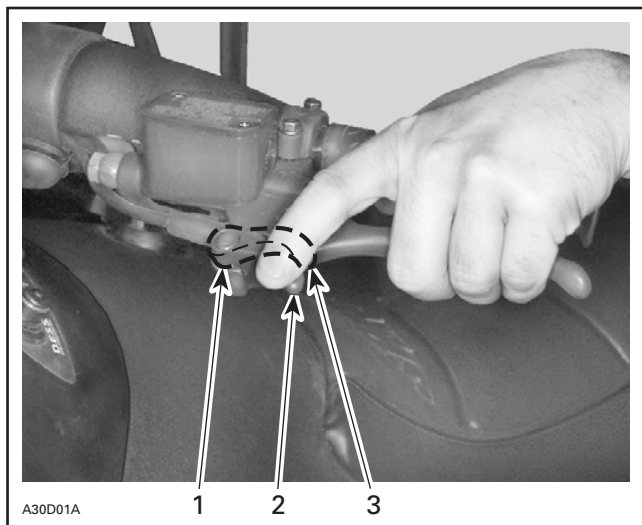
Whenever parking brake is applied and engine is running, injection oil level/parking brake pilot lamp lights up to remind you that it is engaged.

WARNING

Make sure parking brake is fully disengaged before operating the snowmobile. Otherwise, brake system may overheat leading to sudden loss of brakes and/or fire.

To engage mechanism, squeeze brake lever and maintain while pulling locking lever with a finger. When brake lever is compressed halfway the brake should be fully applied.

To release mechanism, squeeze brake lever. Locking lever will automatically return to its original position. Brake lever now returns to rest position. Always release parking brake before riding.



1. Locking lever
2. OFF
3. ON

4) Injection Oil Level/Parking Brake Pilot Lamp (Red)

Mach Z STD/Tech Plus

Lights when injection oil level is low or when parking brake is applied (with engine running). Check oil level and replenish as soon as possible. Also lights when parking brake is applied (with engine running).

Grand Touring SE

There are 2 pilot lamps. One for injection oil level and one for parking brake. See dashboard photo at beginning of this section.

5) Handlebar

The handlebar controls the direction of travel of the snowmobile. As the handlebar is rotated to right or left, the skis are turned in the direction of intended travel.

Handlebar height is adjustable. See an authorized SKI-DOO dealer.

6) Reverse Button

WARNING

These snowmobiles are capable of a fast reverse. Always remain seated and apply the brake before shifting. Come to a complete stop then change gear. Ensure the path behind is clear of obstacles or bystanders. Fast reverse while turning, could result in loss of stability.

Some models are equipped with a Rotax Electronic Reverse (RER) controlled by a reverse button.

Driving in reverse is achieved by changing the direction of engine rotation.

Shifting in reverse is an electronic operation consisting of a control module that modifies the ignition timing of the engine.

The DESS indicator lamp will blink and a warning buzzer will sound when the snowmobile is engaged in reverse.

Apply throttle slowly and evenly. Allow drive pulley to engage then accelerate carefully.

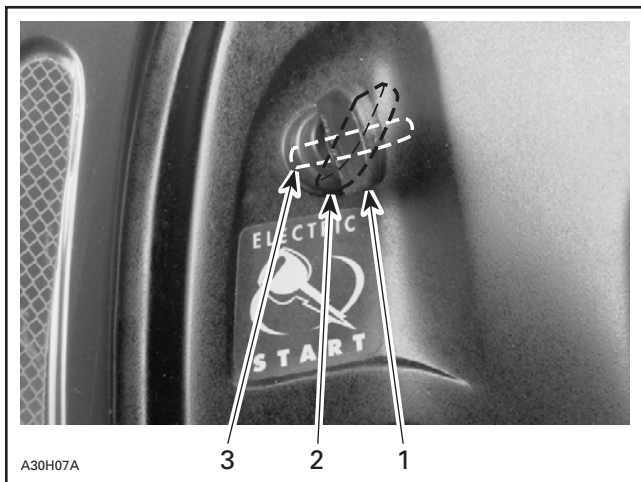
It is recommended to warm up the engine to its normal operating temperature before shifting.

Shifting procedure will take place only when the engine is running.

Engine will automatically shift into forward when starting after stopping or stalling.

7) Ignition Switch

The lights are automatically ON whenever the engine is running.



ELECTRIC START

1. OFF
2. ON
3. START

Electric Starting

Key operated, 3-position switch. To start engine, turn key to START position and hold. See illustration above.

CAUTION: Do not hold key at START position more than 15 seconds. A rest period should be observed between the cranking cycles to let starter cool down. Holding key in START position when engine has started could damage starter mechanism.

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

If engine does not start on first try, turn key back to OFF position before restarting. To stop engine, turn key to OFF position.

NOTE: Engine may be manually started with rewind starter if necessary. If starter does not operate, check starting system fuse condition. Refer to **Starting System Fuse** below.

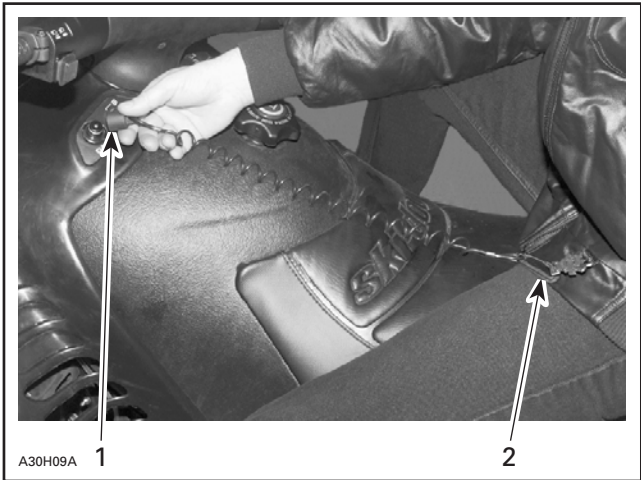
8) Tether Cut-Out Switch

General

The tether cut-out system shuts-off engine if the driver accidentally falls off the vehicle and the DESS (**D**igitally **E**ncoded **S**ecurity **S**ystem) performs the same function as a key.

Operation

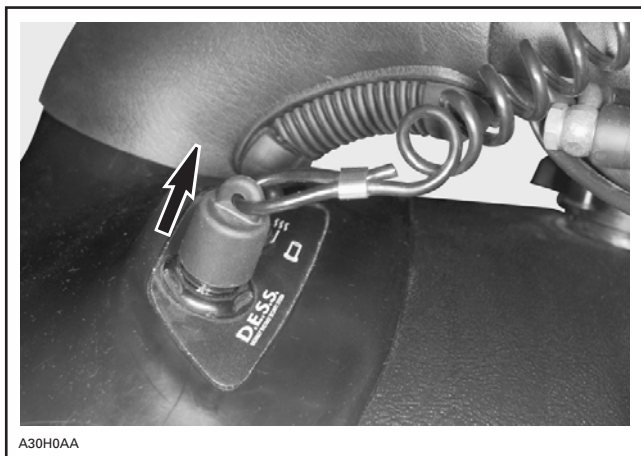
Attach tether cord to clothing then snap tether cut-out cap over receptacle before starting engine.



TYPICAL

1. Snap over receptacle
2. Attach to eyelet

To stop engine, completely pull cap from safety switch.



TYPICAL

DESS (Digitally Encoded Security System) Description

This system is a deterrent against theft. The tether cord provided with your snowmobile is SKI-DOO dealer programmed and is the only one that allows engine to turn more than 3000 RPM. If an incorrectly programmed tether cord is installed the engine can not reach engagement speed required to move vehicle.

Additional Tether Cords

We recommend the purchase of additional tether cord from your authorized SKI-DOO dealer.

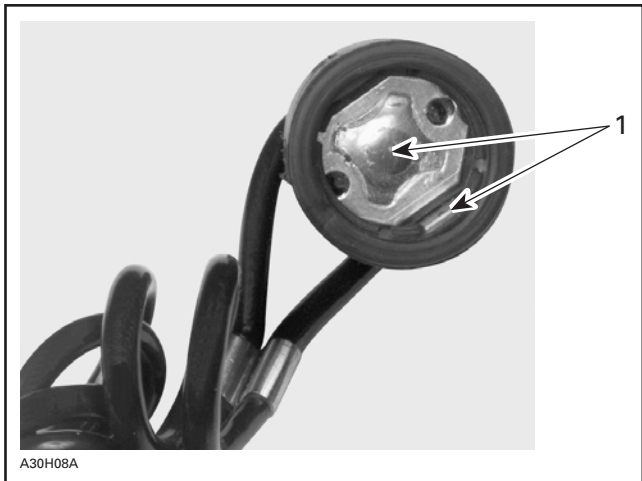
Beep and Pilot Lamp Codes

NOTE: Only models with RER have a beeper.

After engine is started 2 beeps and 2 DESS pilot lamp blinks confirm that the micro-processor has recognized the tether cord. The vehicle can be normally driven.

A beep per 3 seconds and DESS pilot lamp blinking as same rate mean that a bad connection has been detected. Vehicle can not be driven.

To check for bad connection, remove tether cord. Make sure it is free of dirt or snow. Reinstall tether cord and restart engine. If a beep per 3 seconds still occurs contact an authorized SKI-DOO dealer.



1. Free of dirt or snow

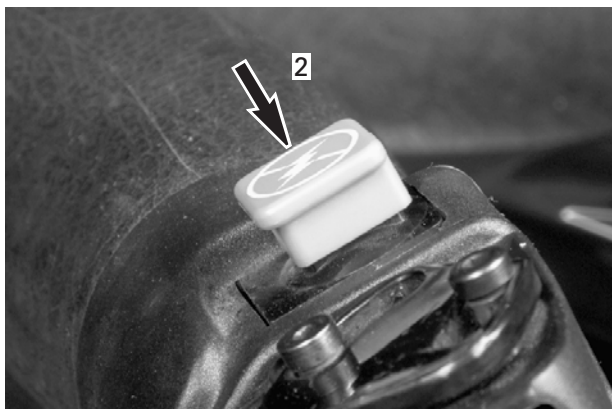
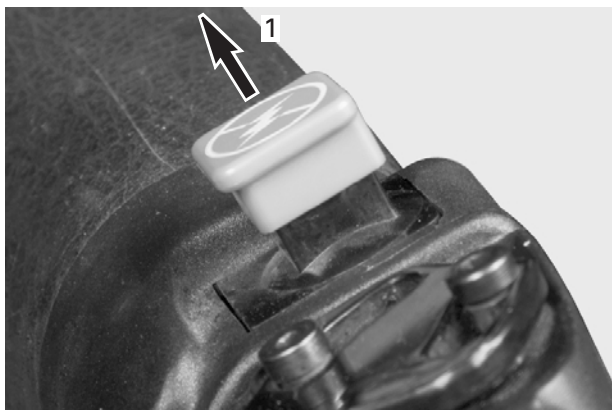
A rapid beeping and DESS pilot lamp blinking at same rate mean that an incorrectly programmed tether cord is being used. Vehicle can not be driven.

9) DESS Pilot Lamp

This lamp will light up to confirm DESS status. Refer to previous paragraphs for description.

10) Engine Cut-Out Switch

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



A30E03A

TYPICAL

1. ON
2. OFF

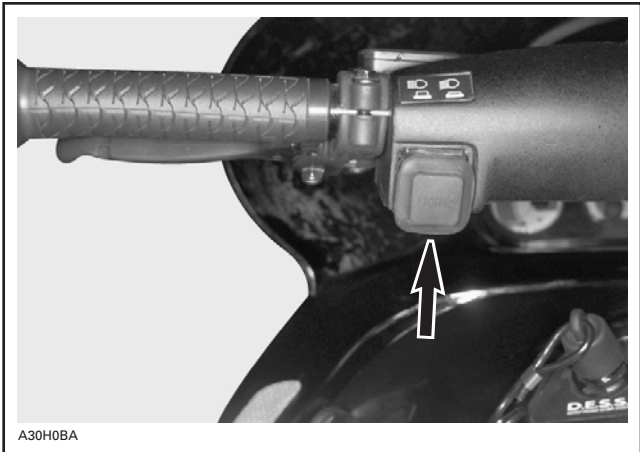
All drivers of the snowmobile should familiarize themselves with the function of this device by using it several times on first outing and to stop the engine there after. Thereby being mentally prepared for emergency situations requiring its use.

WARNING

If the switch has been used in a mechanical malfunction, the source of malfunction should be determined and corrected before restarting engine.

11) Headlamp Dimmer Switch

Located on left side of handlebar, allows selection of headlamp beam.



ALL MODELS EXCEPT GT SE

Grand Touring SE

NOTE: When holding switch for more than 1 second to dim light (from high to low beam), light will return to high beam position automatically after 10 seconds.



GT SE

12) High Beam Pilot Lamp (Blue)

Lights when headlamp is on HIGH beam.

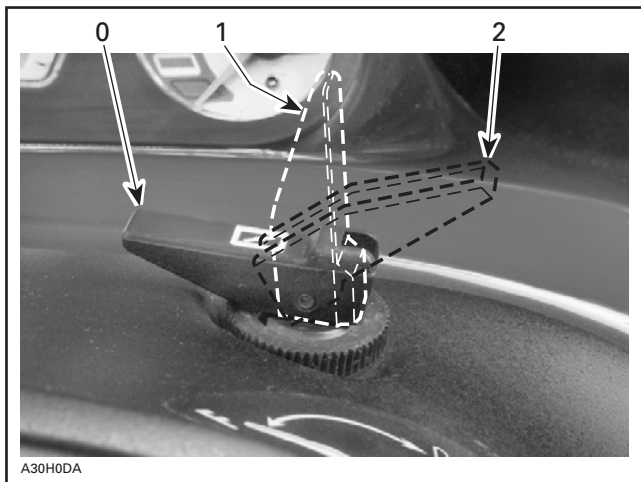
13) Rewind Starter Handle

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

14) Choke Lever

Mach Z STD/Tech Plus

This device features a 3-position lever to facilitate cold start.



- 0. OFF
- 1. Position 1
- 2. Position 2

Refer to OPERATING INSTRUCTIONS for more details.

15) Air Suspension Switch

Grand Touring SE Only

This switch controls pressure inside rear air shock absorber.

NOTE: Compressor can be activated only with the engine running. Holding switch upward (big spring on decal) increases air pressure. Holding switch downward (small spring on decal) decreases air pressure.



WARNING

Always completely stop vehicle in a safe place before attempting any suspension adjustments.

16) Air Suspension Pilot Lamp

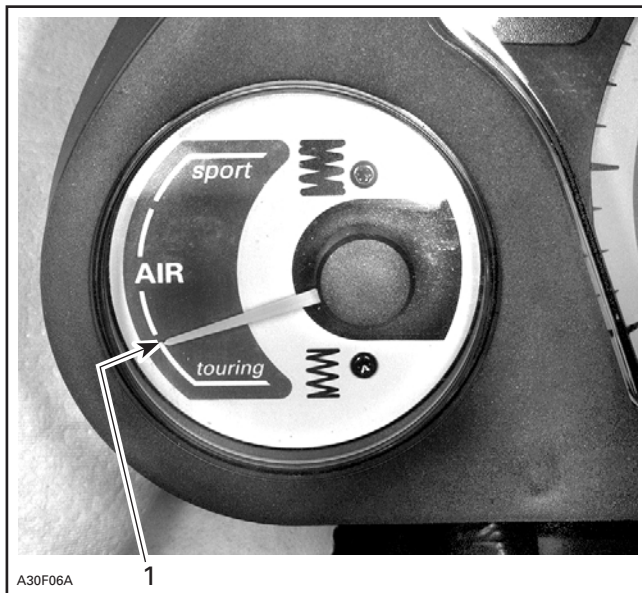
Grand Touring SE Only

This pilot lamp lights up each time the air suspension switch is used. This pilot lamp also lights up each time compressor runs because pressure has reached low level threshold.

17) Air Suspension Gauge

Grand Touring SE Only

This gauge indicates comfort level (pressure inside rear air shock absorber).



TYPICAL — AIR SUSPENSION GAUGE

1. Minimum required pressure before riding

18) Speedometer

Mach Z STD/Tech Plus

These vehicles are equipped with a speedometer graduated in kilometers per hour (miles per hour for the USA).

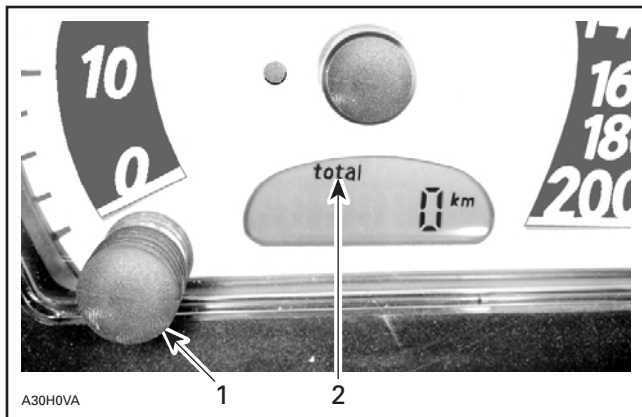
Direct-reading dial indicates the speed of the snowmobile in kilometers per hour (miles per hour for the USA).

GT SE

This model is equipped with an electronic speedometer. It may show speed in km/h or MPH.

Change from One Unit to the Other

With engine running but vehicle at rest, depress button for 1 second max. until **total** shows. Display will not change before the button is released.



1. Button
2. Total

From that point depress button again for about 4 seconds and release it.

19) Odometer

Mach Z STD/Tech Plus

Odometer records the total distance travelled in kilometers (miles for the USA).

GT SE

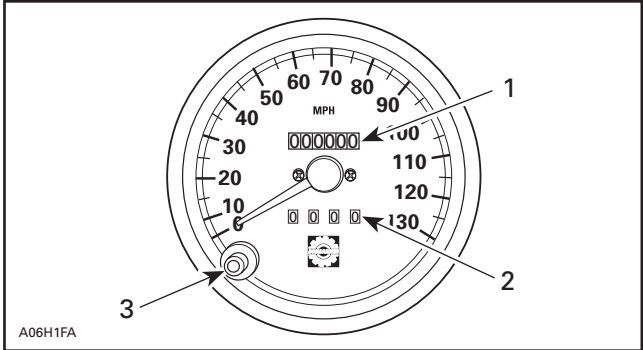
With engine running but vehicle at rest, depress button for 1 second max. until **total** shows. Display will not change before the button is released.

Odometer records the total distance travelled in kilometers or miles. See above for changing units.

When riding at 140 km/h (87 MPH) or faster, display will indicate speed instead of total distance.

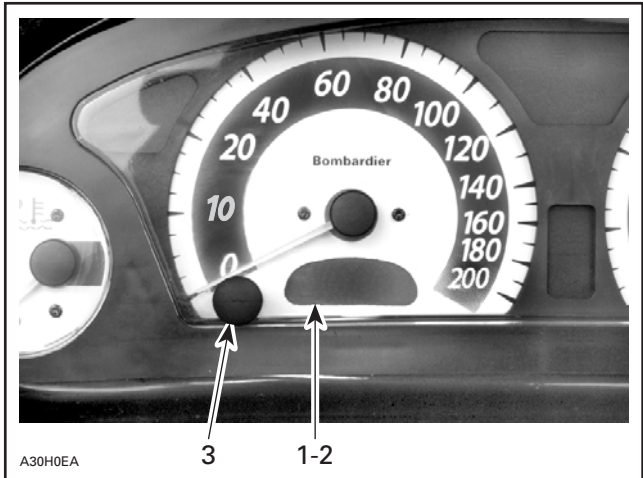
20) Trip Meter

Records distance travelled in kilometers (miles for the USA) until it is reset. It can be used to establish a fuel tank range or distance between 2 relays for instance.



MACH Z STD/TECH PLUS

1. Odometer
2. Trip meter
3. Reset button



GT SE

1. Odometer
2. Trip meter
3. Reset button

21) Trip Meter Reset Button

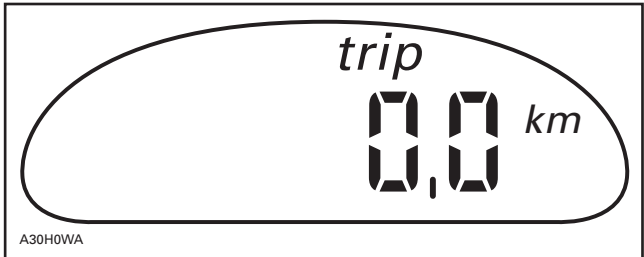
Mach Z STD/Tech Plus

To reset, push on button until all numbers read zero.

GT SE

With engine running but vehicle at rest, depress button for 1 second max. until **trip** shows. Display will not change before the button is released.

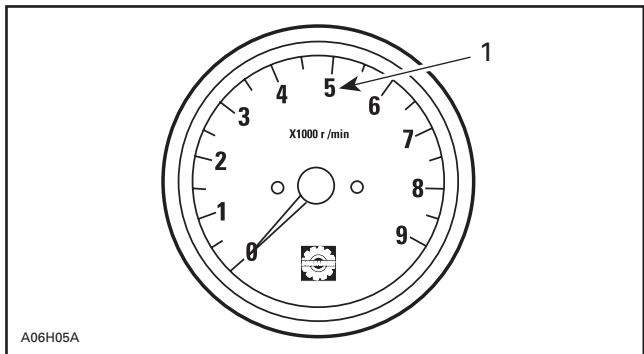
From that point depress button again for about 4 seconds and release it.



DISPLAY AFTER RESETTING TRIP METER

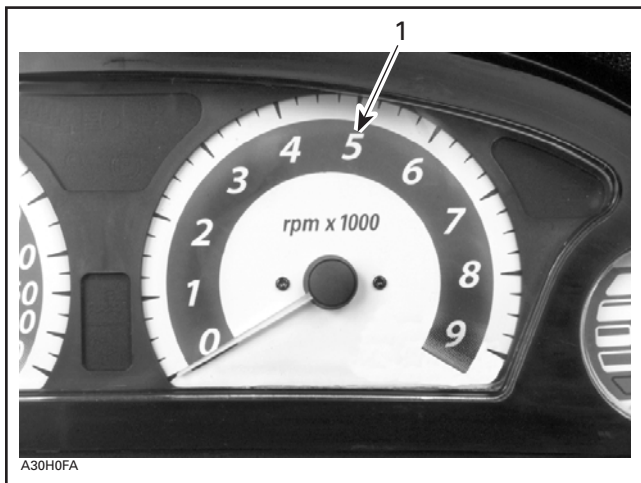
22) Tachometer

Direct-reading dial indicates the number of thousand of revolutions per minute (RPM) of the engine.



MACH Z STD/TECH PLUS

1. Multiply the reading by 1000



A30H0FA

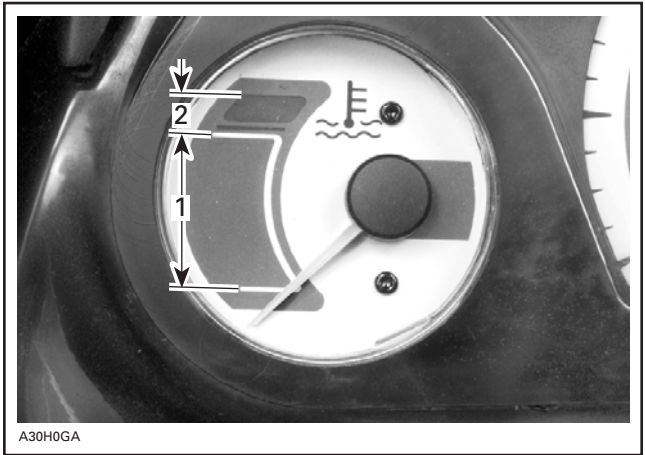
GRAND TOURING SE

1. *Multiply the reading by 1000*

23) Temperature Gauge

Mach Z STD/Tech Plus

The gauge indicates engine coolant temperature. The needle moves to the normal range as engine warms. Under all riding conditions, the needle should stay within this range. If needle moves into the overheat range, reduce snowmobile speed and run snowmobile in loose snow or stop engine immediately.



1. Normal
2. Overheat

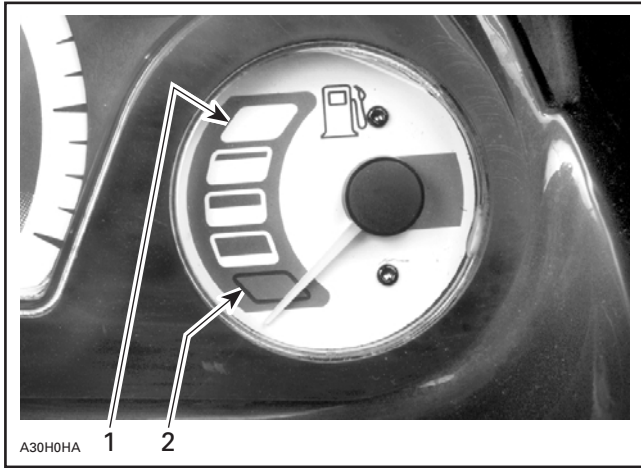
24) Engine Overheat Warning Lamp (Red)

Grand Touring SE Only

If this lamp glows, reduce snowmobile speed and run snowmobile in loose snow or stop engine immediately.

25) Electric Fuel Level Gauge

Dash-mounted gauge to facilitate fuel level reading. This gauge functions when engine is running.



1. Full
2. Empty

26) Fuel Tank Cap

Unscrew to fill up tank then fully tighten.

WARNING

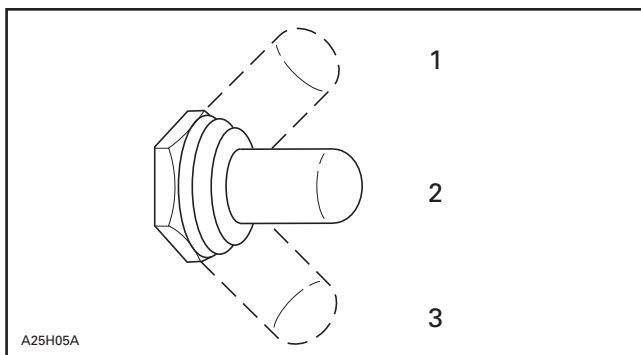
Fuel may be pressurized, open cap slowly. Fuel is flammable and explosive. Never use an open flame to check fuel level. Never smoke or allow flame or spark in vicinity. Never top up the fuel tank before placing the vehicle in a warm area. As temperature increases, fuel expands and may overflow. Always wipe off any fuel spillage from the vehicle.

CAUTION: Do not mismatch oil reservoir cap with fuel tank cap. Install cap that is identified OCTANE RATING OF 91 RECOMMENDED.

27) Heated Grip Switch

Mach Z STD/Tech Plus

Three-position toggle switch. Select the desired position to keep your hands at a comfortable temperature.



TYPICAL — MACH Z STD/TECH PLUS

1. *HOT*
2. *OFF*
3. *WARM*

GT SE

This toggle-type switch allows selecting 5 different intensity of handlebar grip heatings.

Each time engine is started low heating is selected.

Push switch according to desired intensity. Clicking + increases heating and clicking - decreases heating.

Holding switch for more than about 1 second will increase to maximum intensity or OFF position according selected position.



1. Holding + position for more than 1 second will increase heating to maximum

28) Heated Grip Pilot Lamp (Yellow)

GT SE

The pilot lamp in center of cluster lights up when heated grips are switched on.

Each time a different heating level is selected, the display changes to show heating elements settings for 2 seconds. See photo of **Heated Throttle Lever Pilot Lamp (yellow)** below.

Each time engine is started low heating is selected.

29) Heated Throttle Lever Switch

Mach Z STD/Tech Plus

Three-position toggle switch. Select the desired position to keep your right thumb at a comfortable temperature. See illustration above.

GT SE

This toggle-type switch allows selecting 5 different intensity of throttle lever heatings.

Each time engine is started low heating is selected.

Push switch according to desired intensity. Holding + increases heating and holding - decreases heating.

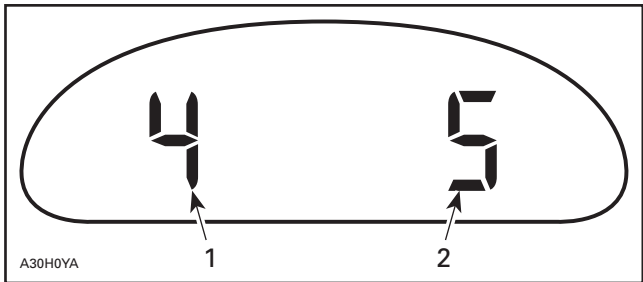
Holding switch for more than about 1 second will increase to maximum intensity or OFF position according selected position.

30) Heated Throttle Lever Pilot Lamp (Yellow)

GT SE

The pilot lamp in center of cluster lights up when heated grips are switched on.

Each time a different heating level is selected, the display changes to show heating elements settings for 2 seconds.



GT SE ONLY — HEATING ELEMENTS SETTINGS SHOWN FOR 2 SECONDS

1. Heated grips setting (1 to 5)
2. Heated throttle lever setting (1 to 5)

31) Electric Visor Jack Connector

An electric visor can be connected to the jack connector. Electric current is supplied whenever engine is running. An extension is supplied with the vehicle. It is included in the predelivery kit. Ask your SKI-DOO dealer for the extension.



TYPICAL

32) Hood Latches

Unhook the latches to unlock the hood from its anchors. Always lift hood gently until stopped by retaining device.

33) Adjustable Mirrors

Each mirror can be adjusted to suit driver's preference.

 **WARNING**

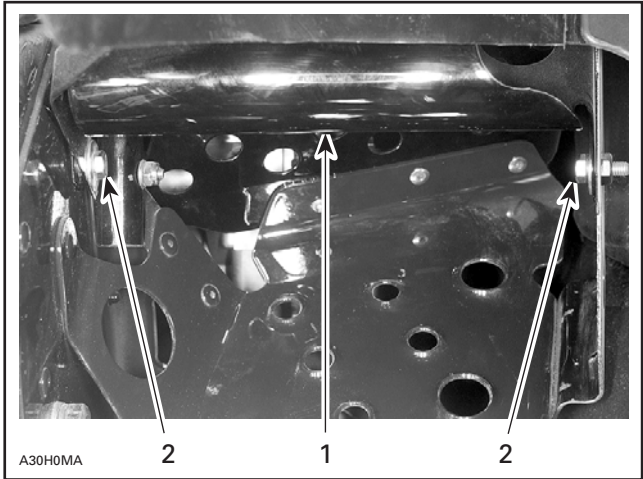
Adjust with vehicle at rest in a safe place.

34) Adjustable Toeholds

Each toehold can be adjusted to suit driver's preference. Loosen bolts, adjust then, retighten bolts to 10 N•m (89 lbf•in).

WARNING

Adjust with vehicle at rest in a safe place. Securely tighten all adjustments. Do not adjust too snugly.



RIGHT SIDE SHOWN

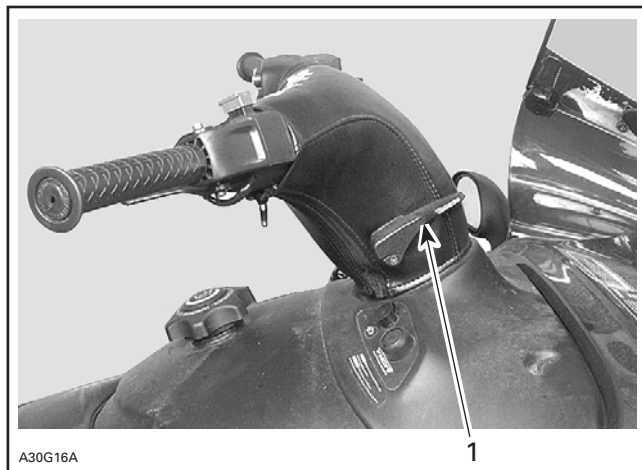
1. Toehold
2. After adjustment retighten bolts to 10 N•m (89 lbf•in)

35) Adjustable Handlebar

Handlebar angle can be adjusted to suit driver's preference. Lift lever, tilt handlebar to desired position then release lever.

WARNING

Adjust with vehicle at rest in a safe place. Securely tighten all adjustments.



1. Lever

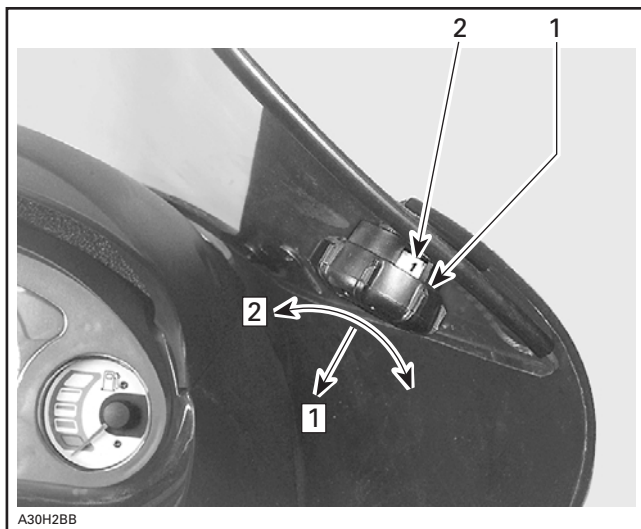
36) Adjustable Windshield

Windshield height can be adjusted to suit driver's preference. Position 1 corresponds to lower windshield height. Position 10 corresponds to higher windshield height.

Knobs are locked on each position. To unlock first pull knobs then, turn to adjust windshield height. Both knobs must be set to same position.

WARNING

Adjust with vehicle at rest in a safe place.



Step **1**: Pull knob by about 3 mm (1/8 in)

Step **2**: Turn to desired position, then release

1. Knob

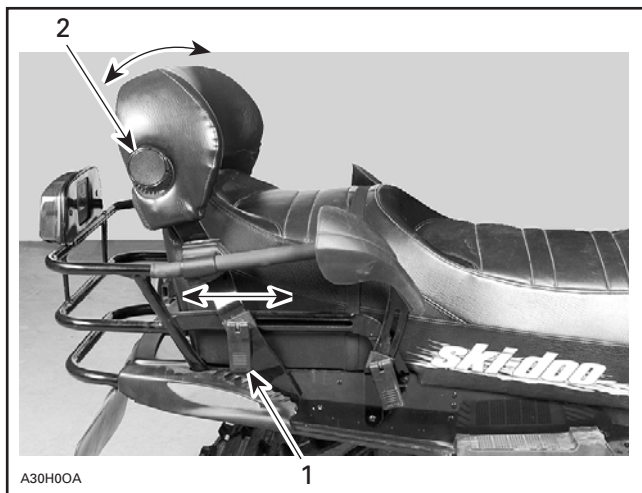
2. Position number

37) Adjustable Backrest

The backrest position and support angle may be adjusted to suit driver or passenger convenience.

WARNING

Adjust with vehicle at rest in a safe place. Securely tighten all adjustments.



1. Lift adjustment lock (both sides)
2. Turn adjustment knob

Secure adjustment locks after desired position is obtained.

38) Seat Strap

Seat strap provides a grip for the passenger.

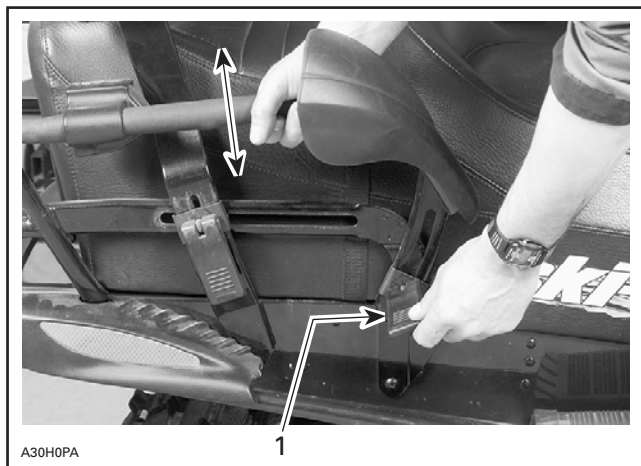
39) Adjustable Rear Grab Handles

Height of rear grab handles can be adjusted.

Lift adjustment lock, move grab handle to desired position. Secure adjustment lock. Proceed the same with the other side.

WARNING

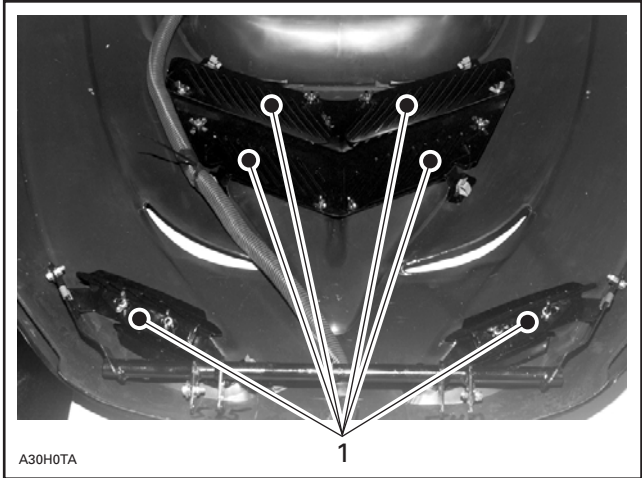
Adjust with vehicle at rest in a safe place. Securely tighten all adjustments.



1. Lift adjustment lock

40) Hood Grills

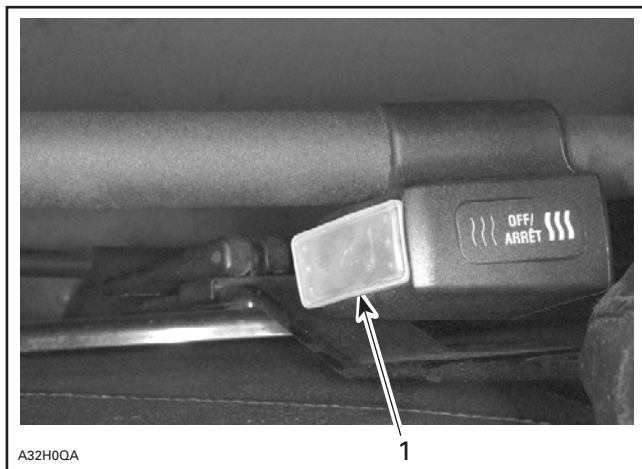
These hood grills must be closed at all times except when riding at high speeds and/or when outside temperature is above 5°C (40°F). Slightly unscrew wing nuts, slide close grills then, retighten wing nuts.



1. Grills

41) Rear Passenger Heated Grip Switch

Three-position switch. Select the desired position to keep rear passenger's hands at a comfortable temperature.

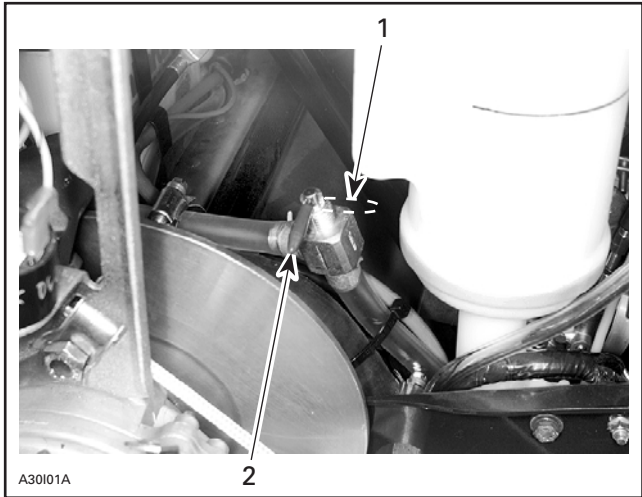


TYPICAL — RIGHT SIDE OF PASSENGER GRAB HANDLE

1. Rear passenger heated grip switch

42) Fuel Shut-Off Valve

Valve should be closed when transporting or storing snowmobile.



1. Opened
2. Closed

Fully open the valve in order to operate the snowmobile.

CAUTION: Always fully open the valve before riding. Never allow the valve to remain half opened.

43) Storage Compartment

A storage compartment is provided inside rear portion of seat.

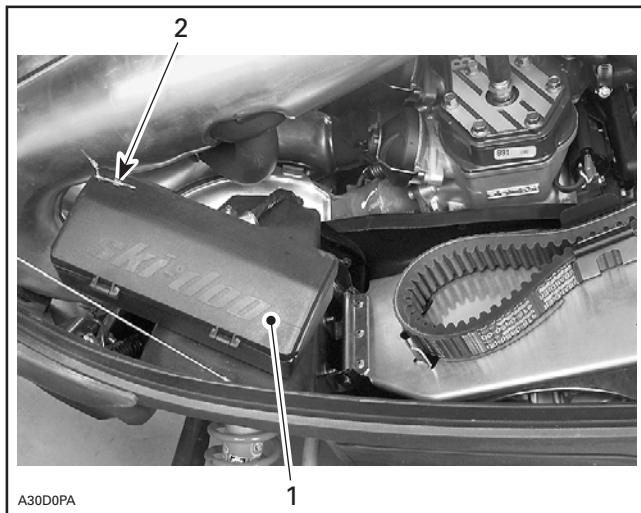
WARNING

All storage compartments must be properly latched and they must not contain any heavy or breakable objects.

44) Tool Box

A tool box containing tools for basic maintenance is supplied with the vehicle. Tool box is located in engine compartment in front of belt guard.

NOTE: The plastic bag containing tools may be discarded to ease storing tools.

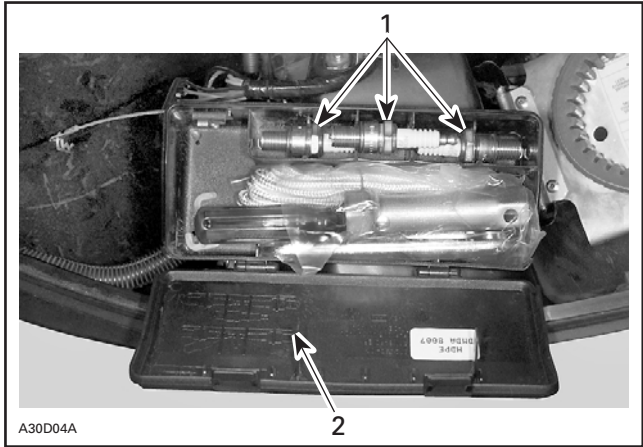


1. Tool box
2. Remove hair pin before opening

45) Spark Plug Holder

To keep spare spark plugs dry and prevent shocks that might affect the adjustment or break them, a compartment is provided in tool box.

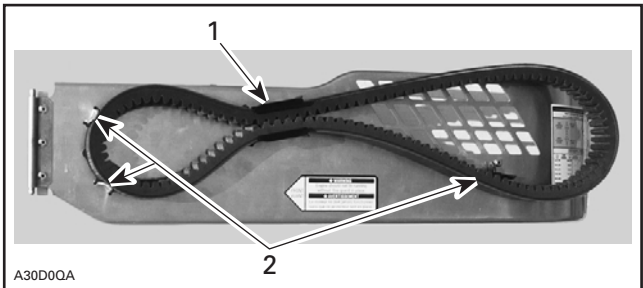
NOTE: Always adjust spark plug gap according to SPECIFICATIONS section in this guide.



1. Spare spark plugs stored in tool box
2. Instructions for spare spark plugs removal

46) Spare Drive Belt Holder

A spare drive belt can be installed in drive belt holder clip. Make sure to position spare drive belt as illustrated.



1. Spare drive belt installed in holder clip
2. Spare drive belt on this side of stopper

47) Fuses

Fuse Location

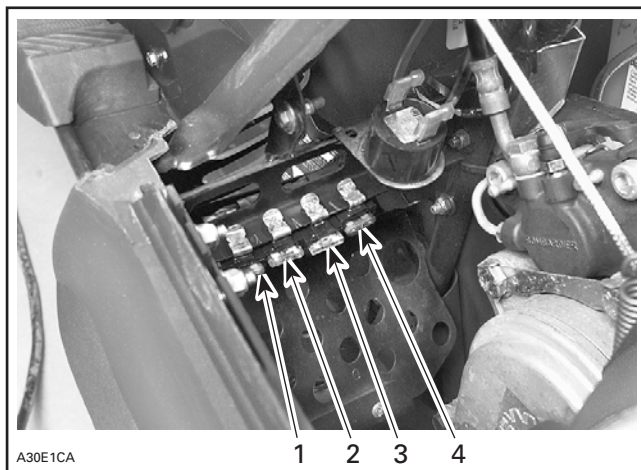
Some fuses are located on top of right side footrest. To gain access open hood.

CAUTION: Do not use a higher rated fuse as this can cause severe damage to electric components and/or fire.

WARNING

If fuse has burnt out source of malfunction should be determined and corrected before restarting. See an authorized SKI-DOO dealer for servicing.

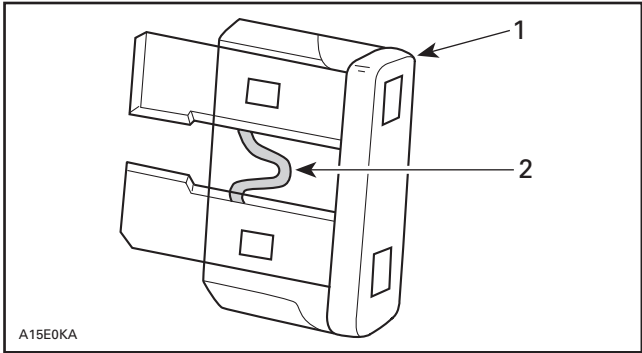
Grand Touring SE



1. Main including starter 30 A
2. Compressor 20 A
3. All others accessories 20 A
4. Digital performance management 1 A

If any electrical device does not operate, check its fuse condition and replace if necessary.

To remove fuse from holder, pull fuse out. Check if filament is melted.



A15E0KA

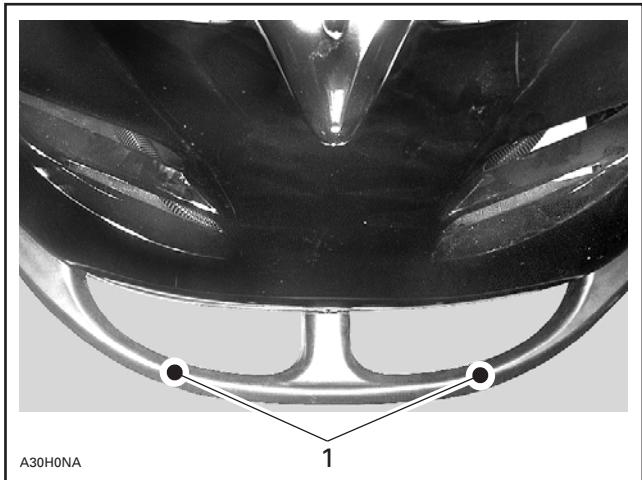
1. Fuse
2. Check if melted

Electric Fuel Level Gauge Fuse

See an authorized SKI-DOO dealer for fuse replacement.

48) Front Grab Handles/Front Bumper

To be used whenever front of snowmobile requires lifting.



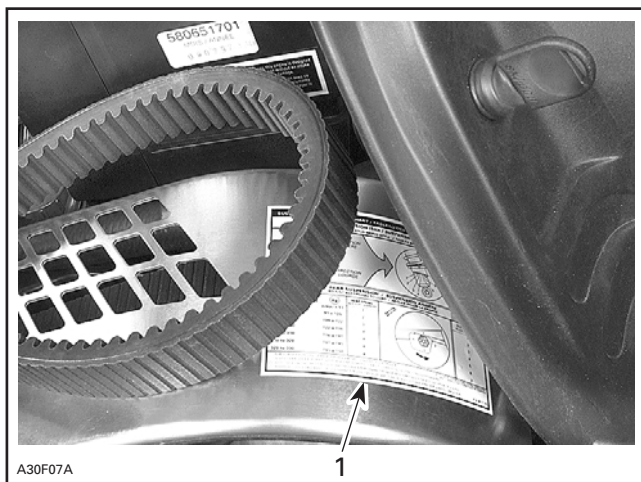
A30H0NA

1. Front grab handles

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

49) Adjustable Suspensions

For factory recommended adjustments refer to decal on belt guard. It describes settings for optimum comfort according to load for your SKI-DOO model.



TYPICAL

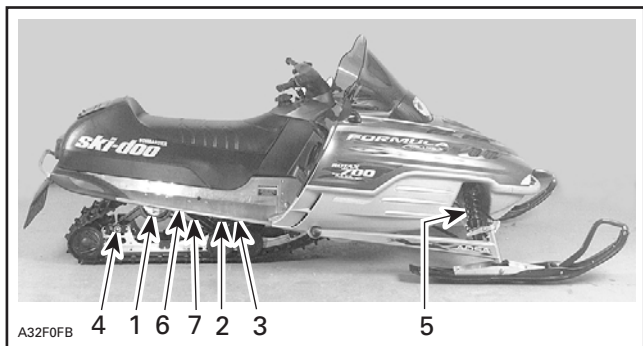
1. Decal

General

Snowmobile handling and comfort depend upon suspension adjustments.

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

NOTE: Some adjustments may not apply to your snowmobile. Use special keys in tool box.



TYPICAL

1. Rear springs for comfort and ride height
2. Center spring for steering behavior
3. Coupling blocks — Handling
4. Stopper strap for snowmobile weight transfer
5. Front springs for handling
6. Rear shock motion ratio — Damping strength
7. Air shock absorber — Comfort and ride height

Guidelines to Adjust Suspension

The best way to set up suspension, is to start from factory settings then customize each adjustment one at a time. Adjustments 2 through 6 are interrelated. It may be necessary to readjust center spring after adjusting front springs for instance. Test run the snowmobile under the same conditions; trail, speed, snow, driver riding position, etc. Change one adjustment and retest. Proceed methodically until you are satisfied.

WARNING

Always completely stop vehicle and engine before attempting any suspension adjustments.

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

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

1. Rear Springs — Comfort and Ride Height

When driver and passenger (if so applicable) take place rear of snowmobile should collapse by 50 to 75 mm (2 to 3 in).



TYPICAL — PROPER ADJUSTMENT

A. 50 to 75 mm (2 to 3 in)

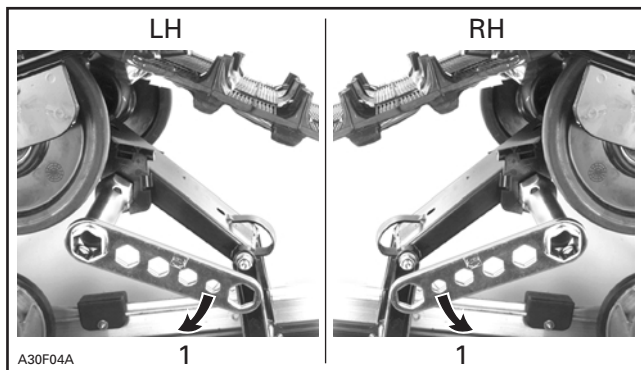


A32F0CA

TYPICAL — TOO SOFT OF ADJUSTMENT



Turn the left side adjustment cam in a clockwise direction, the right side cam in a counterclockwise direction. Left and right adjustment cams may be set at different position.



A30F04A

TYPICAL

1. Increase spring preload

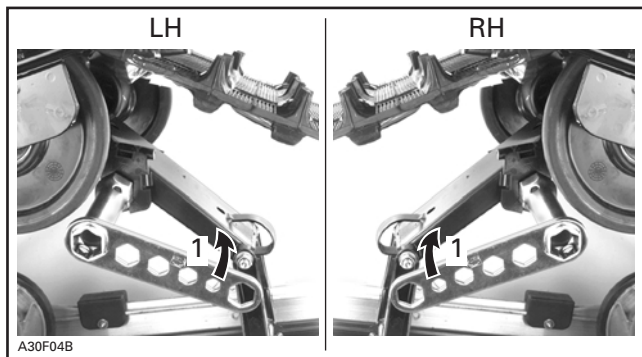


A32F0DA

TYPICAL — TOO HARD OF ADJUSTMENT



Turn the left side adjustment cam in a counterclockwise direction, the right side cam in a clockwise direction. Left and right adjustment cams may be at different position.



A30F04B

TYPICAL

1. *Decrease spring preload*

2. Center Spring — Steering Behavior

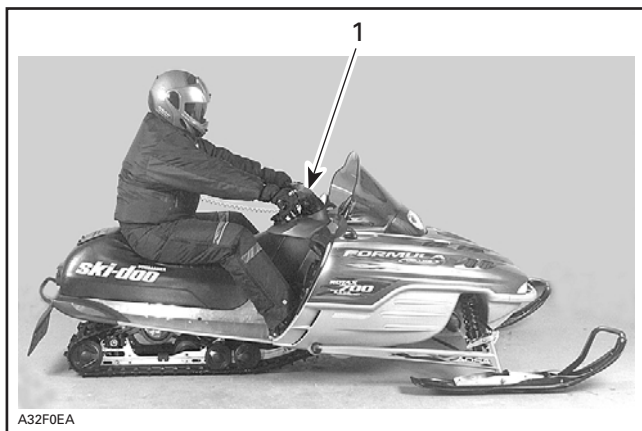
Ride at moderate speed on a trail.

If steering is too easy or too hard to turn, adjust center spring accordingly.



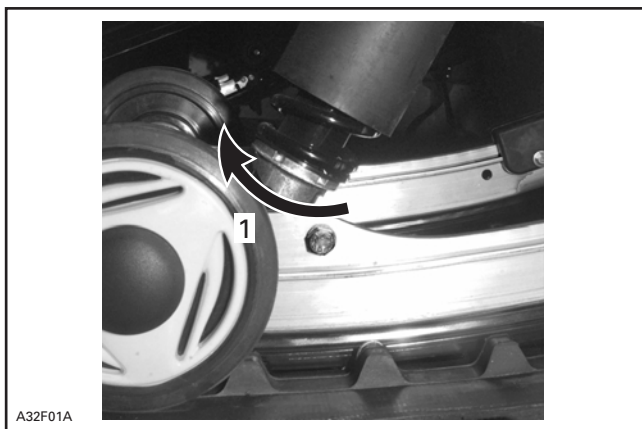
TYPICAL — GOOD ADJUSTMENT AT MODERATE SPEED

1. *Steering easy to turn*



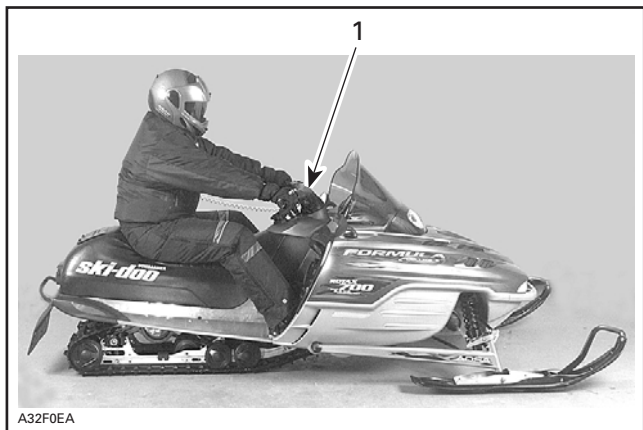
TYPICAL — TOO SOFT OF ADJUSTMENT

1. *Steering hard to turn*



TYPICAL

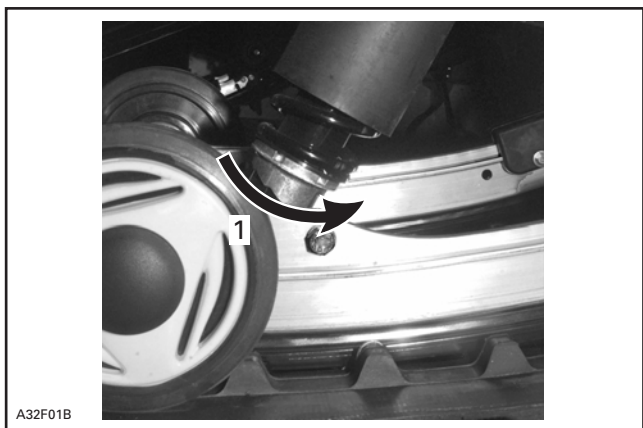
1. *Use adjuster wrench provided in tool box to increase preload*



A32F0EA

TYPICAL — TOO HARD OF ADJUSTMENT

1. *Steering less aggressive*



A32F01B

TYPICAL

1. *Use adjuster wrench provided in tool box to decrease preload*

3. Coupling Blocks — Handling

Ride at moderate speed and check for desired handling.

When driver and passenger (if applicable) take place the coupling blocks should be centered between rubber stoppers. This condition is achieved when a proper rear spring preload is done. See above rear spring adjustment.

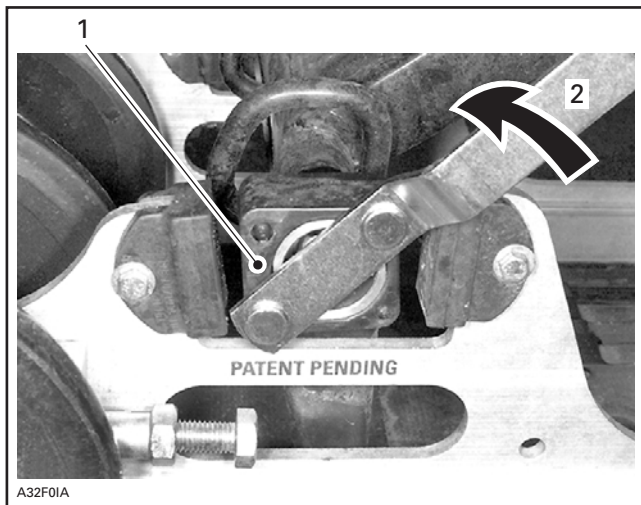
If handling requires adjustment, turn both left and right blocks by 90°.

There are only two adjustment positions. Thicker part of block must be facing rearward or downward.

WARNING

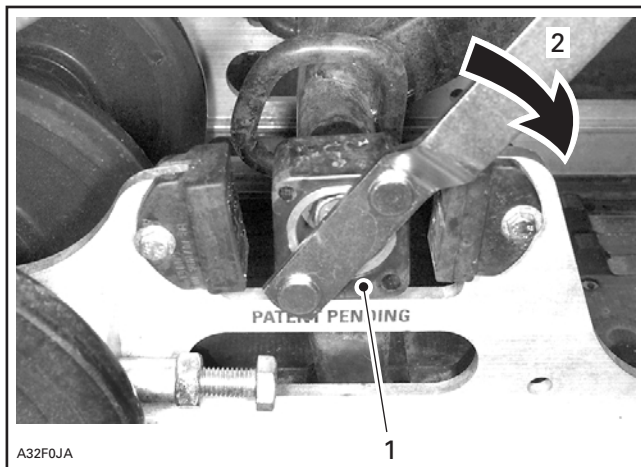
Both blocks must be set at the same position. Otherwise vehicle behavior may be unpredictable and suspension may become warped.

Use tool provided in tool box to adjust coupling blocks.



COUPLING BLOCK — RIGHT SIDE VIEW (“R” — RIGHT EMBOSSED ON BLOCK)

1. Thicker part of block facing rearward (fully coupled suspension) — less track grip and more skis steering
2. Turn block in this direction to adjust to the other position



COUPLING BLOCK — RIGHT SIDE VIEW
(“R” — RIGHT EMBOSSED ON BLOCK)

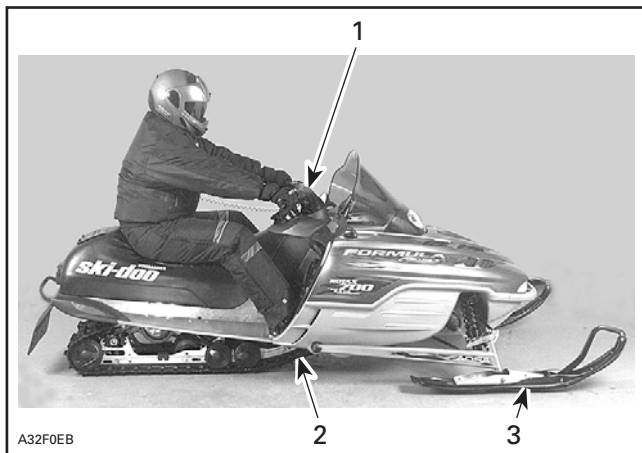
1. Thicker part of block facing downward (partly coupled suspension) — more track grip and less skis steering
2. Turn block in this direction to adjust to the other position

4. Stopper Strap — Weight Transfer

Ride at low speed then fully accelerate. Note steering behavior. Adjust stopper strap length accordingly.

At rest stopper strap should have a free play of 12 mm (1/2 in).

CAUTION: Whenever stopper strap length is changed, track tension must be readjusted.



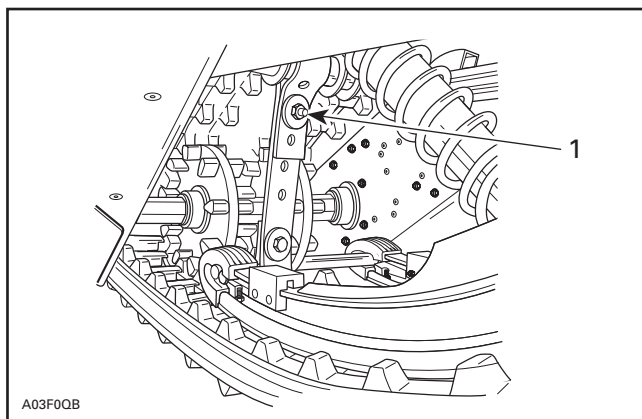
TYPICAL — GOOD ADJUSTMENT AT FULL ACCELERATION

1. *Comfortable steering*
2. *Good weight transfer to the track*
3. *Light pressure of skis on the ground*



TYPICAL — TOO LONG STRAP

1. Skis lift off the ground



TYPICAL

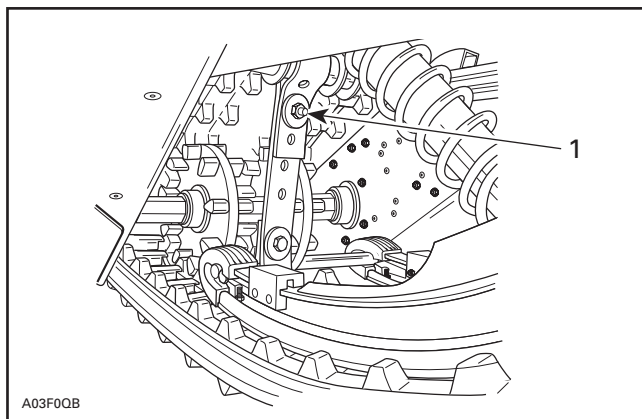
1. Reduce strap length by bolting to a different hole



A32F0EA

TYPICAL — TOO SHORT STRAP

1. Heavy steering



A03F0QB

TYPICAL

1. Increase strap length by bolting to a different hole

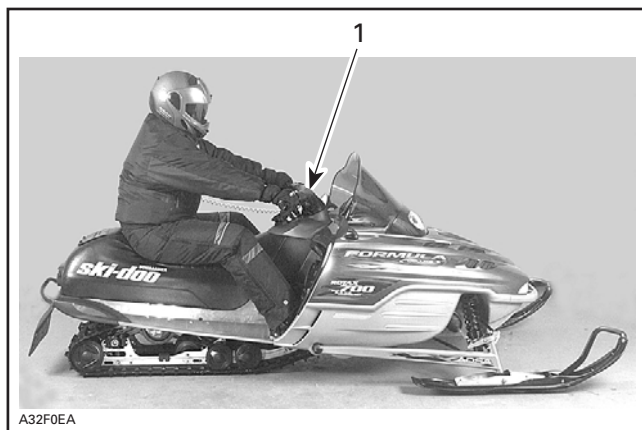
5. Front Springs — Handling

Ride at moderate speed and check for proper handling.

Adjust front springs accordingly.

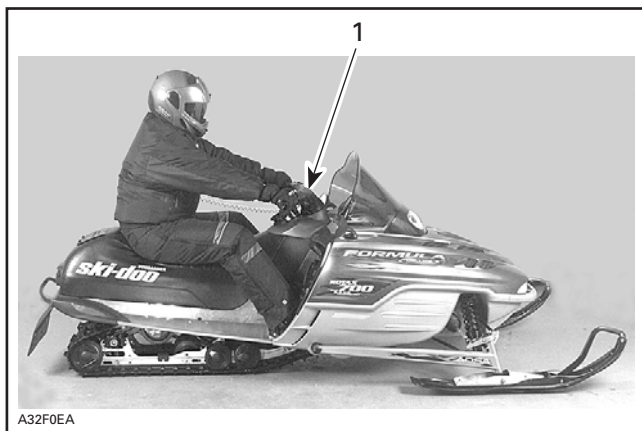
WARNING

Always adjust both front springs to same position.



TYPICAL — PROPER ADJUSTMENT

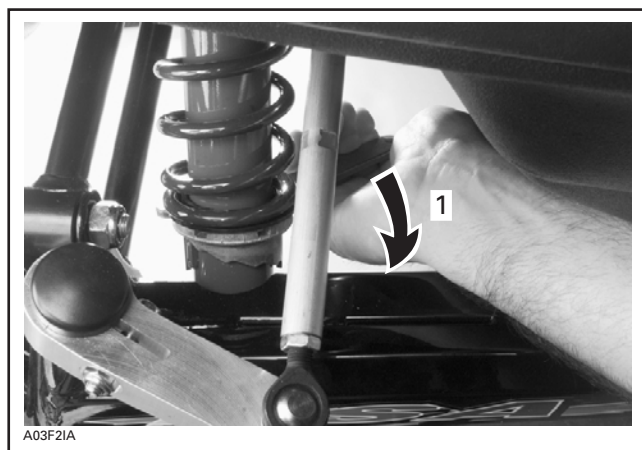
1. *Good handling and comfortable steering*



A32F0EA

TOO SOFT OF ADJUSTMENT

1. *Bad handling*



A03F21A

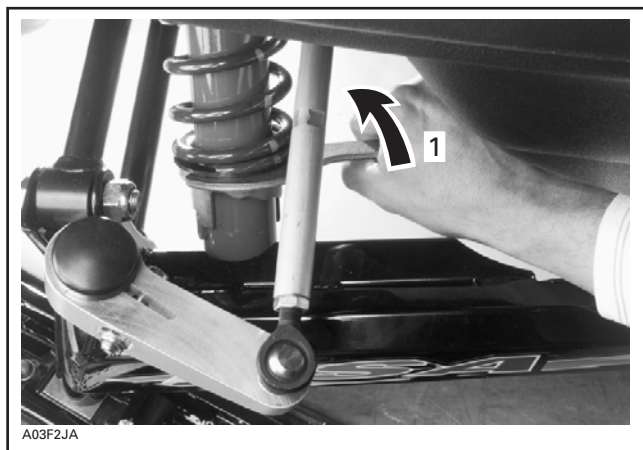
1. *Increase spring preload*



A32F0EA

TOO HARD OF ADJUSTMENT

1. Steering hard to turn



A03F2JA

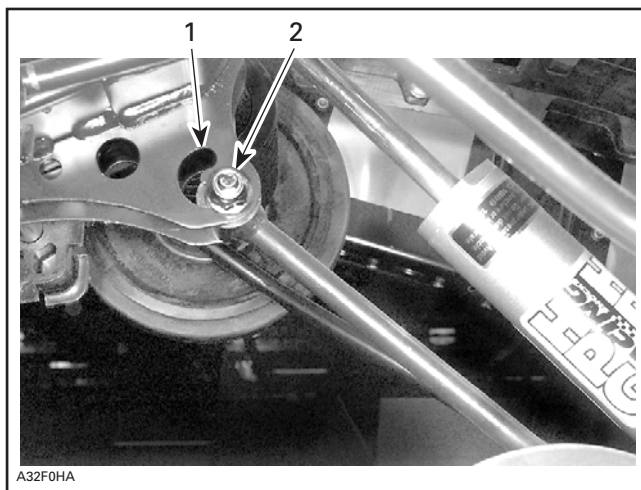
1. Decrease spring preload

6. Rear Shock Motion Ratio — Damping Strength

Some Models Only

Rear shock motion ratio can be adjusted according to driver and passenger weight and/or trail condition.

There are two adjustment positions.



1. *Soft position*
2. *Firm position*

To adjust, loosen nut, move bolt to desired position then torque nut to 24 N•m (18 lbf•ft).

7. Air Shock Absorber — Comfort and Ride Height

Grand Touring SE Only

After all adjustments are performed, rear air shock absorber can be adjusted as necessary. Use the console mounted switch.

TROUBLESHOOTING CHART

PROBLEM	CORRECTIVE MEASURES
Front suspension wandering	<ul style="list-style-type: none">– Check ski alignment and camber angle adjustment. See an authorized SKI-DOO dealer.– Reduce ski ground pressure.<ul style="list-style-type: none">• Reduce front suspension spring preload.• Increase center spring preload.• Reduce rear spring preload.
Snowmobile seems unstable and seems to pivot around its center	<ul style="list-style-type: none">– Reduce rear suspension front arm pressure.<ul style="list-style-type: none">• Reduce center spring preload.• Increase rear spring preload.• Increase front suspension spring preload.
Steering feels too heavy	<ul style="list-style-type: none">– Reduce ski ground pressure.<ul style="list-style-type: none">• Reduce front suspension spring preload.• Increase center spring preload.
Rear of snowmobile seems too stiff	<ul style="list-style-type: none">– Reduce rear spring preload.
Rear of snowmobile seems too soft	<ul style="list-style-type: none">– Increase rear spring preload.
Rear suspension front shock absorber is frequently bottoming	<ul style="list-style-type: none">– Lengthen stopper strap.– Increase center spring preload.
Track slides too much at start	<ul style="list-style-type: none">– Lengthen stopper strap.– Change driving position.– Turn coupling blocks.

In Deep Snow

When operating the snowmobile in deep snow, it may be necessary to vary the position of front spring, 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.

FUEL AND OIL

Recommended Fuel

Use super unleaded gasoline, available from most service stations or gasohol containing less than 10% of ethanol or methanol. The fuel used must have an octane number $(R + M)/2$ of 91 or higher.

NOTE: In most service station pump octane number corresponds to $(R + M)/2$ octane number.

When snowmobile is used in powder snow condition and/or at temperatures from and below -10°C (14°F), we highly recommend the use of gas line antifreeze in a proportion of 150 ml (5 U.S. oz) of gas line antifreeze added to 40 liters (10-1/2 U.S. gal) of gas.

This precaution is in order to reduce the risk of frozen carburetor(s) which may lead, in certain cases, to high fuel consumption or severe damage to engine.

NOTE: Use only **methyl hydrate free** gas line antifreeze, Kleen-Flo™ or equivalent.

CAUTION: Never experiment with other fuels. The use of unrecommended fuel can result in snowmobile performance deterioration and damage to critical parts in the fuel system and engine components. Do not mismatch oil reservoir cap with fuel tank cap. Install cap that is identified OCTANE RATING OF 91 RECOMMENDED.

WARNING

Fuel may be pressurized, open cap slowly. Fuel is flammable and explosive. Never use an open flame to check fuel level. Never smoke or allow flame or spark in vicinity. Never top up the fuel tank before placing the vehicle in a warm area. As temperature increases, fuel expands and may overflow. Always wipe off any fuel spillage from the vehicle.

Recommended Oil

CAUTION: Use only oil that flows at - 40°C (- 40°F). Do not mismatch oil reservoir cap with fuel tank cap. Oil reservoir cap is identified OIL.

Oil is contained in the oil injection reservoir.

Use only two-stroke engine injection oil sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE
All	BOMBARDIER Formula XP-S synthetic injection oil (or equivalent) OR BOMBARDIER injection oil (or equivalent) ①

① If BOMBARDIER injection oil is not available, API TC high-quality ashless two-stroke injection oil may be used.

BOMBARDIER injection oil is a special blend of basic oil and additives especially selected to ensure unequalled lubrication, engine cleanliness and minimum spark plug fouling. The BOMBARDIER Formula XP-S synthetic injection oil **provides superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. This synthetic injection oil meets the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard motor oil or other ashless type two-stroke oil. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

Always maintain a sufficient amount of recommended oil in the injection oil reservoir.

WARNING

Wipe off any oil spills. Oil is highly flammable.

CAUTION: Check level and refill every time you refuel. Do not mismatch oil reservoir cap with fuel tank cap. Install cap that is identified OIL.

COLD WEATHER CARBURETION MODIFICATIONS

All vehicles have been calibrated for - 20°C (- 4°F). They can be operated at higher winter temperatures without problems.

CAUTION: For colder temperatures than - 20°C (- 4°F), carburetor(s) must be recalibrated to avoid engine damage. Refer to an authorized SKI-DOO dealer.

Refer also to RIDING AT HIGH ALTITUDES in following pages.

BREAK-IN PERIOD

Engine

CAUTION: A break-in period of 10 operating hours — 500 km (300 miles) — is required before running the snowmobile at full throttle.

During break-in 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.

To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of recommended injection oil, should be added to fuel for the first full filling of fuel tank. Always remove and clean spark plugs after engine break-in.

Belt

A new drive belt requires a break-in period of 50 km (30 miles). Avoid strong acceleration/deceleration, pulling a load or high speed cruising.

10-Hour Inspection

As with any precision piece of mechanical equipment, we suggest that after the first 10 hours of operation — 500 km (300 miles) — or 30 days after the purchase, whichever comes first, your snowmobile be checked by an authorized SKI-DOO 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 snowmobile owner.

PRE-OPERATION CHECK

WARNING

The pre-operation check is very important prior to operating the vehicle. Always check the proper operation of critical controls, safety features and mechanical components before starting. If not done as specified here, severe injury or death might occur.

- Verify that track and idler wheels are unfrozen and free to turn.

WARNING

Always use a mechanical snowmobile stand to properly support vehicle during any track verification. Slowly accelerate engine in order to rotate track at very low speed when it is not on ground.

- Activate the brake control lever and make sure the brake fully applies before the brake control lever touches the handlebar grip. It must fully return when released.
- Check the parking device. Apply parking brake and check if it operates properly.
- Activate the throttle control lever several times to check that it operates easily and smoothly. It must return to idle position when released.

WARNING

Throttle lever must operate easily and smoothly. It must return to idle position when released.

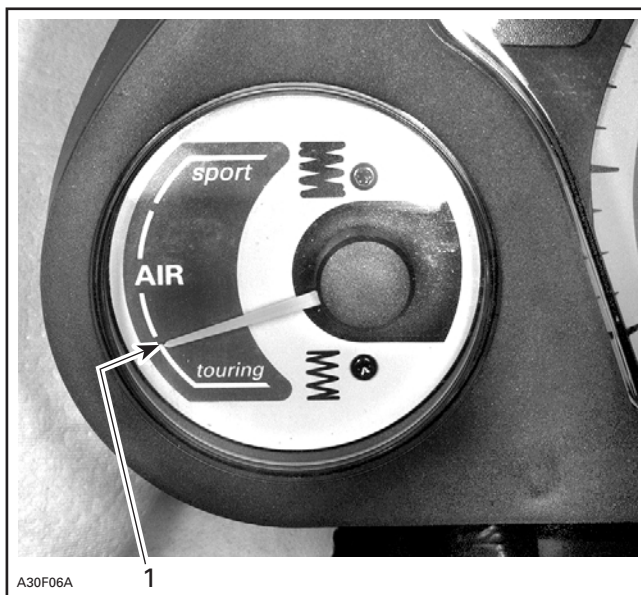
- Check operation of ignition switch, start button, headlight switch (HI-LO), taillight, brake light, indicator lights and tether and emergency cut-out switches engine stop switch.
- Verify that skis and steering operate freely. Check corresponding action skis versus handlebar.
- Check fuel and injection oil for levels and leaks. Replenish as necessary and see an authorized SKI-DOO dealer in case of any leaks.

- Verify that air filter(s) is free of snow and ice, if so equipped.

WARNING

All adjustable features should be positioned at optimal setting. Securely tighten all adjustment locks.

- All storage compartments must be properly latched and they must not contain any heavy or breakable objects.
- Make sure that air suspension gauge indicates first mark. See photo below. Activate air suspension switch to obtain the minimum required pressure before operating the snowmobile.



TYPICAL — AIR SUSPENSION GAUGE

1. Minimum required pressure before riding

CAUTION: Operating the snowmobile without minimum required pressure in the air shock will cause premature wear of the rubber boot and failure of the component.

PRE-OPERATION CHECK LIST

ITEM	OPERATION	✓
Track and idler wheels	Check for free movement.	
Brake lever	Check proper action.	
Parking device	Check proper action.	
Throttle lever	Check proper action.	
Switches and lights	Check proper action.	
Skis and steering	Check proper action.	
Fuel and oil	Check for proper level and leaks.	
Air filter	Check for free of snow and ice.	
Adjustable features	Check for optimal adjustment and securely tightened adjustment locks.	
Storage compartment	Check for proper latching and no heavy or breakable objects.	

OPERATING INSTRUCTIONS

WARNING

Proceed with pre-operation check list before riding.

Principle of Operation

Propulsion

Depressing throttle lever increases engine RPM causing the drive pulley to engage. For most models engine RPM must be between 2500 and 4200 before drive pulley engagement will occur.

Outer sheave of drive pulley moves toward inner sheave, forcing drive belt to move upward on the drive pulley and simultaneously forcing the sheaves apart on the driven pulley.

The driven pulley senses the load on the track and limits the belt movement. The result is a continuous change in the ratio of the two pulleys which maximizes acceleration and forward movement of the vehicle.

WARNING

Do not operate engine with hood open or belt guard removed.

Power is transferred to the track through the chaincase or gearbox and drive axle.

WARNING

Always use a mechanical snowmobile stand to properly support vehicle during any track verification. Slowly accelerate engine in order to rotate track at very low speed when it is not on ground.

Turning

Handlebar controls the direction of travel of the vehicle. As the handlebar is rotated to right or left, the skis are turned in the direction of intended travel.

WARNING

Fast reverse could result in loss of stability.

Starting the Engine

WARNING

Operator and passenger (if applicable) must be properly seated before starting engine.

- Re-check throttle control lever operation.
- Ensure that emergency cut-out switch is in the ON position.
- Ensure that tether cut-out cap is set in place and that cord is attached to your clothing.

Initial Cold Starting

NOTE: Do not operate the throttle lever during starting.

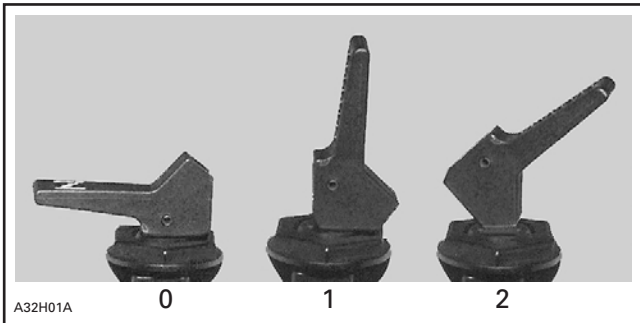
When Temperature is Below - 10°C (+ 15°F)

Mach Z STD/Tech Plus

Set the choke lever to the second position.

Grasp starter handle firmly and crank engine or use electric starter on so equipped models.

After the engine is started, close off choke to ensure proper air-fuel mix when speed drops below 2000 RPM.



0. OFF

1. Position 1

2. Position 2

When Temperature is Above - 10°C (above + 15°F)

Set the choke lever to the first position.

Grasp starter handle firmly and crank engine.

After the engine is started, close off choke to ensure proper air-fuel mix.

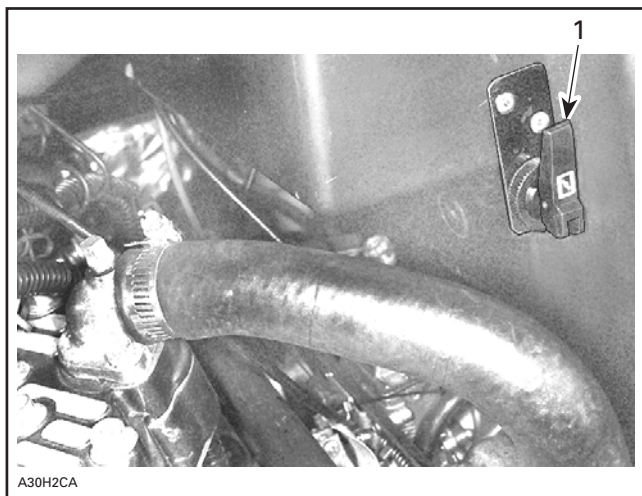
Warm Engine Starting

Start the engine without any choke. If the engine will not start after two pulls of the rope or two 5 second attempts with the electric starter move choke lever to position 1. Start the engine without activating the throttle lever. As soon as the engine starts move the choke lever to OFF.

Grand Touring SE

This vehicle is equipped with a DPM (Digital Performance Management) system that takes care of carburetor calibration according to altitude and temperature. The only operation to be done is starting the engine.

However, in very cold temperature, it may be necessary to use the emergency choke. Operation of this choke is the same as described above.



GRAND TOURING SE ONLY

1. *Emergency choke*

Manual Starting

All Models

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

Grasp manual starter handle firmly and crank engine.

WARNING

Do not apply throttle while starting.

Electric Starting (some models only)

Insert key in ignition switch.

Turn key clockwise until starter engages.

Release key immediately when engine has started.

CAUTION: Do not hold key at START position more than 15 seconds. A rest period should be observed between the cranking cycles to let starter cool down. Holding key in START position when engine has started could damage starter mechanism.

Emergency Starting

The engine can be started with the emergency starter rope supplied with the tool kit. Do not start the snowmobile by the drive pulley unless it is a true emergency situation. Have the snowmobile repaired as soon as possible.

Remove belt guard.



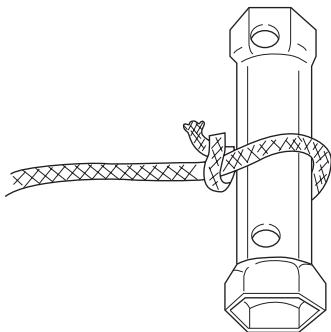
A07D0UA

Attach emergency rope to rewind handle and to the starter clip supplied in the tool box.

Use the spark plug socket as an emergency handle.

WARNING

Do not wind starting rope around your hand. Hold rope by the handle only.



A17B01A

Wind the rope tightly around drive pulley. When pulled, pulley must rotate counterclockwise.

Tie a knot near clip. Hook up clip on drive pulley and wind counterclockwise up to 3 turns.



A30D06A

1

1. Clip

Start engine as described in COLD ENGINE STARTING or WARM ENGINE STARTING according to engine temperature.

Pull the rope using a sharp, crisp pull so the rope comes free of the drive pulley.

WARNING

When starting the snowmobile in an emergency situation using drive pulley, do not reinstall the belt guard and return slowly to have snowmobile repaired.

Shutting Off the Engine

Release throttle lever and wait until engine has returned to idle speed.

Shut off the engine using either ignition switch, emergency cut-out switch or tether cut-out switch.

WARNING

Never leave key and tether cord on vehicle when not in operation.

POST-OPERATION CARE

Shut off the engine. Install rear of vehicle on a snowmobile mechanical stand.

Remove snow and ice from rear suspension, track, front suspension, steering mechanism and skis.

Protect vehicle with a snowmobile cover.

SPECIAL OPERATIONS

Riding at High Altitudes

If you ride at altitudes above 600 m (2000 ft), your snowmobile should have modifications. Refer to an authorized SKI-DOO dealer.

CAUTION: Do not change original factory calibration if snowmobile is used below 600 m (2000 ft).

Engine Overheating

Reduce snowmobile speed and run snowmobile in loose snow or stop engine immediately.

Check for adequate coolant level. See an authorized SKI-DOO dealer.

Fuel Flooded Engine

All Models

WARNING

Do not hold throttle partially or fully open when starting a fuel flooded engine.

Install new spark plugs and restart engine.

Rear Suspension Slider Shoe Starts Sticking

All Models

Slider shoes are cooled and lubricated by snow. When riding at moderate or high speed on a thin-snow-covered surface, slider shoes may stick on track metallic guides.

Run snowmobile on a surface covered by snow or drive snowmobile at very slow speed.

Have slider shoes inspected by an authorized SKI-DOO dealer.


PERIODIC MAINTENANCE CHART

WARNING

Observe WARNINGS and CAUTIONS mentioned throughout this guide which are pertinent to the item being checked. When component conditions seem less than satisfactory, replace with genuine BOMBARDIER parts or approved equivalents.

Some items may not apply to your particular model. Refer to LUBRICATION and MAINTENANCE section of *Shop Manual* for more details.

- ① 10-HOUR OR 500 km (300 miles) INSPECTION
(To be performed by SKI-DOO dealer)
- ② WEEKLY OR EVERY 240 km (150 miles)
- ③ MONTHLY OR EVERY 800 km (500 miles)
- ④ ONCE A YEAR OR EVERY 3200 km (2000 miles)
- ⑤ STORAGE (To be performed by SKI-DOO dealer)
- ⑥ PRE-SEASON PREPARATION (To be performed by SKI-DOO dealer)

PERIODIC MAINTENANCE CHART		①	②	③	④	⑤	⑥
	Starting Rope Condition					✓	✓
	Engine Head Screws	✓			✓	✓	
	Engine Mount Nuts or Screws	✓			✓	✓	
	Exhaust System	✓		✓		✓	
	Engine Lubrication					✓	
	Cooling System Condition	✓			✓		✓
	Coolant Replacement					✓	✓
	Condition of Seals					✓	✓
	Injection Oil Filter Condition			✓			
	Injection Oil Filter Replacement					✓	
	Oil Injection Pump Adjustment	✓			✓		
	Fuel Stabilizer					✓	
	Fuel Filter Replacement						✓
	Fuel Lines and Connections	✓				✓	✓
	Carburetor Adjustment	✓			✓		✓
	Throttle Cable Inspection	✓			✓	✓	✓
	Air Filter Cleaning			✓			✓
	Drive Belt Condition	✓	✓				✓
	Condition of Drive and Driven Pulleys	✓		✓		✓	
	Cleaning of Drive and Driven Pulleys						✓
	Retorquing of Drive Pulley Screw	✓					
	Driven Pulley Preload	✓			✓	✓	

PERIODIC MAINTENANCE CHART		①	②	③	④	⑤	⑥
	Brake Fluid Level	✓	✓				✓
	Brake Fluid (change once a year)					✓	
	Brake Condition	✓	✓			✓	✓
	Drive Chain Tension	✓		✓		✓	
	Countershaft Lubrication**	✓		✓		✓	
	Chaincase Oil Level	✓		✓			✓
	Chaincase Oil Change	✓				✓	
	Lubrication of Drive Axle End Bearing**	✓		✓		✓	
	Handlebar Bolts, Retorque to 26 N•m (19 lbf•ft)	✓					✓
	Steering and Front Suspension Mechanism Lubrication**	✓			✓	✓	
	Steering and Front Suspension Mechanism Condition	✓		✓		✓	
	Wear and Condition of Skis and Runners	✓	✓			✓	
	Steering and Ski Leg Camber Adjustment	✓		✓		✓	
	Suspension Adjustments	AS REQUIRED					
	Suspension Lubrication**				✓	✓	
	Suspension Condition	✓		✓	✓	✓	
	Suspension Stopper Strap Condition				✓	✓	
	Track Condition	✓		✓		✓	
	Track Tension and Alignment	✓	AS REQUIRED				
	Spark Plugs*	✓		✓			✓
	Engine Timing	✓					✓
	Battery Condition	✓		✓		✓	✓
	Headlight Beam Aiming				✓		✓
	Wiring Harnesses, Cables and Lines	✓		✓		✓	
	Operation of Lighting System (HI/LO Beam, Brake Light, etc.) Test Operation of Emergency Cut-Out Switch and Tether Cut-Out Switch	✓	✓				✓
	Rags in Air Intake and Exhaust System					✓	✓
	Engine Compartment	✓		✓		✓	
	Vehicle Cleaning and Protection	✓		✓		✓	

* Before installing new spark plugs at pre-season preparation, 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.

** Lubricate whenever the vehicle is used in wet conditions (wet snow, rain, puddles).

FLUID LEVELS

WARNING

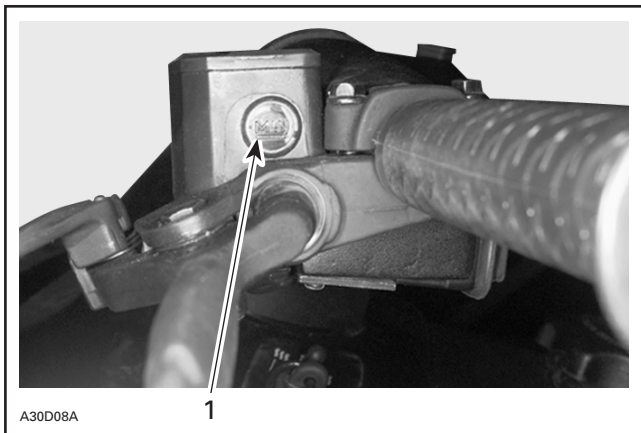
It is recommended that the assistance of an authorized SKI-DOO dealer be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine must be cold and not running. The tether cord cap must be removed for all maintenance procedures.

CAUTION: Vehicle must be on a level surface before checking any fluid levels.

Brake System

Check brake fluid (DOT 4) in reservoir for minimum level. Add fluid (DOT 4) as required.

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Never use any other types of fluid.



TYPICAL — BRAKE FLUID RESERVOIR

1. *Minimum*

Chaincase Oil Level

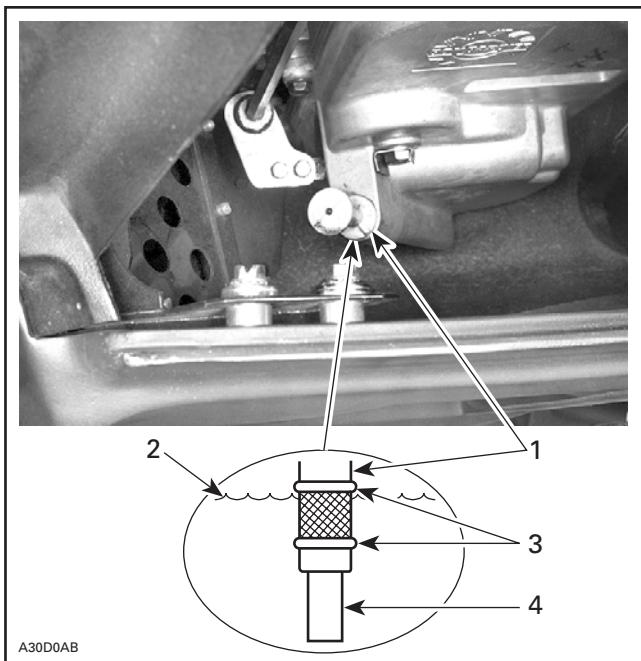
With snowmobile on a level surface, check the oil level by removing dipstick. Oil level must be between lower and upper marks.

NOTE: It is normal to find metallic particles stuck to dipstick magnet. If bigger pieces of metal are found, see an authorized SKI-DOO dealer.

Remove metal particles from magnet.

Refill up to upper mark using BOMBARDIER synthetic chaincase oil (P/N 413 803 300 — 12 x 355 mL).

CAUTION: Use BOMBARDIER synthetic chaincase oil or suitable equivalent when servicing. Do not mix synthetic oil with other oils.



TYPICAL

1. Dipstick
2. Oil level
3. Level between marks
4. Magnet

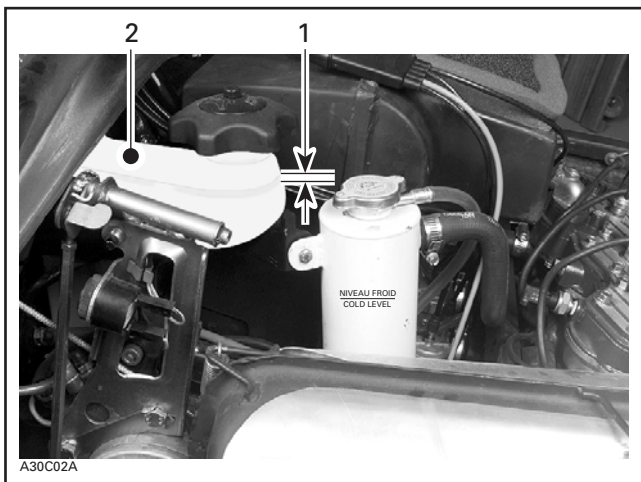
Oil Injection System

Always maintain a sufficient amount of recommended BOMBARDIER injection oil in the injection oil reservoir.

CAUTION: Never allow oil reservoir to be almost empty. Do not mismatch oil reservoir cap with fuel tank cap. Install cap that is identified OIL.

WARNING

Check level and refill every time you refuel. Do not overfill. Wipe off any spillage. Oil is highly flammable when heated.



TYPICAL

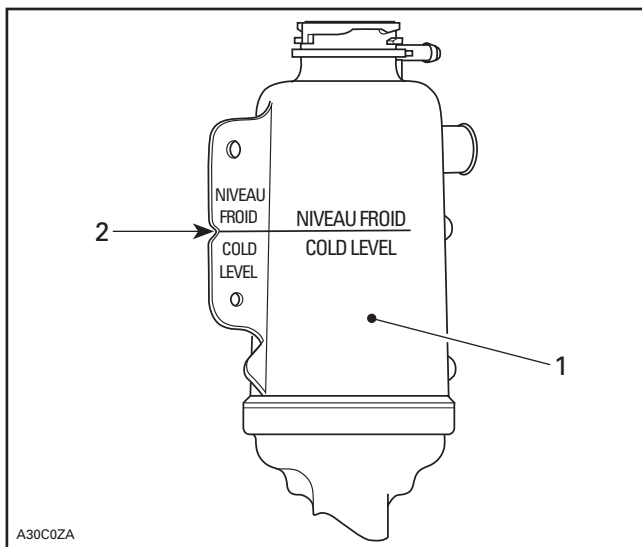
1. Maximum level: 13 mm (1/2 in) from top
2. Injection oil reservoir

Cooling System

Check coolant level at room temperature. Liquid should be at level mark (engine cold) of coolant tank.

NOTE: When checking level at low temperature it may be slightly lower than mark.

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



1. Coolant tank
2. COLD LEVEL line

Battery Electrolyte

Grand Touring SE Only

See your SKI-DOO dealer.

MAINTENANCE

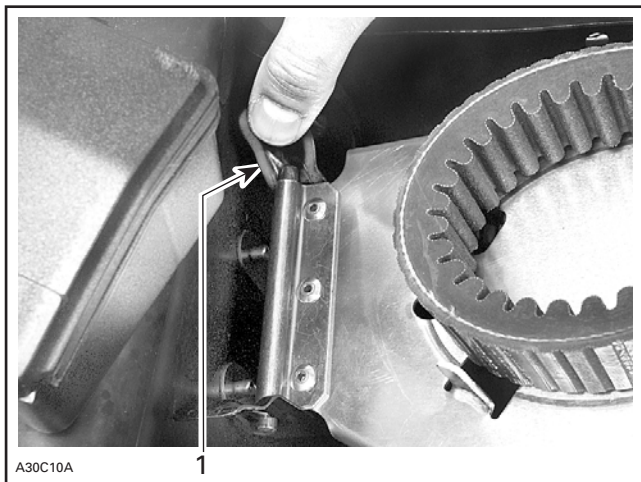
WARNING

It is recommended that the assistance of an authorized SKI-DOO dealer be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine must be cold and not running. The tether cord cap must be removed for all maintenance procedures.

Belt Guard Removal and Installation

Remove tether cord cap. Open hood.

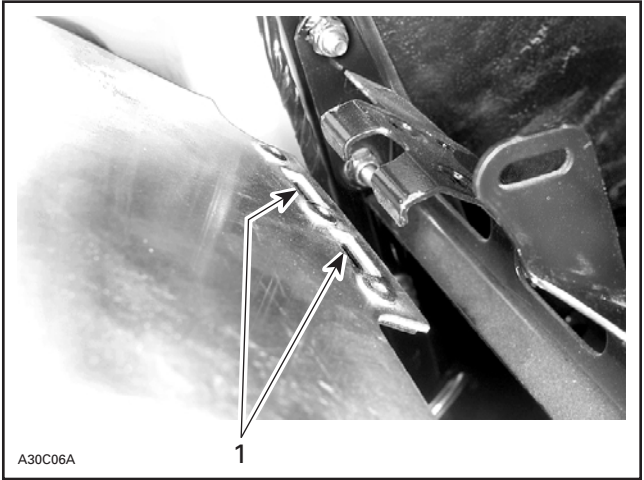
Open retainer to release pin then pull belt guard toward center of vehicle then toward front.



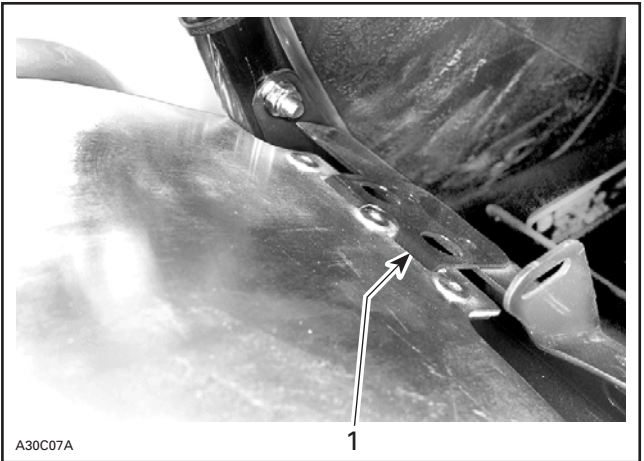
1. Pin retainer

When reinstalling belt guard, position its cut-away toward front of snowmobile. Refer to decal on belt guard.

Insert belt guard slots at rear first.



1. Slots



1. Rear of belt guard properly installed

Push down front portion of belt guard in retainer.

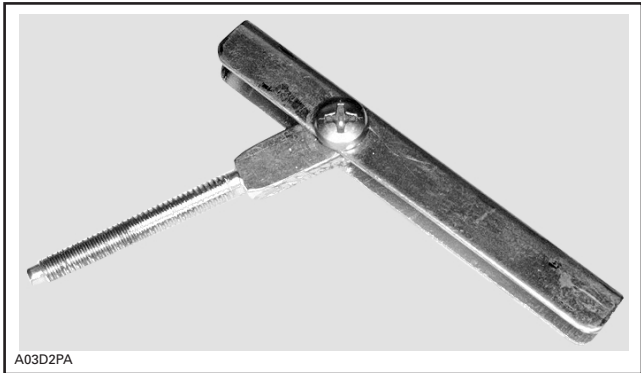
NOTE: Belt guard is purposely made slightly oversize to maintain tension on its pins and retainers preventing undue noise and vibration. It is important that this tension be maintained when reinstalling.

Drive Belt Removal/Installation

Remove tether cord cap.

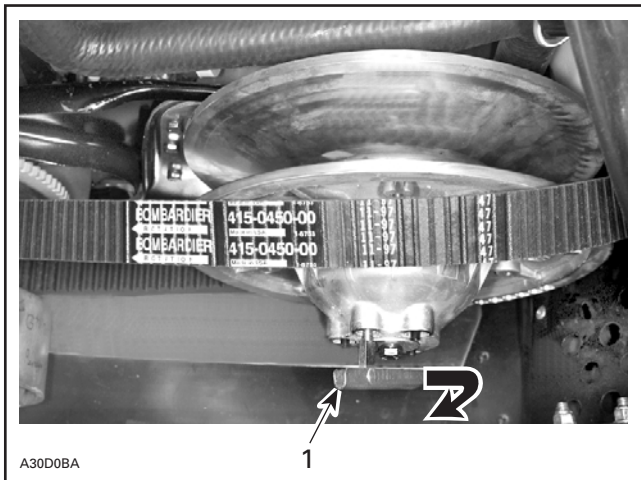
Open hood and remove belt guard.

Open the driven pulley with the drive belt installer/remover provided in tool box.



DRIVE BELT INSTALLER/REMOVER

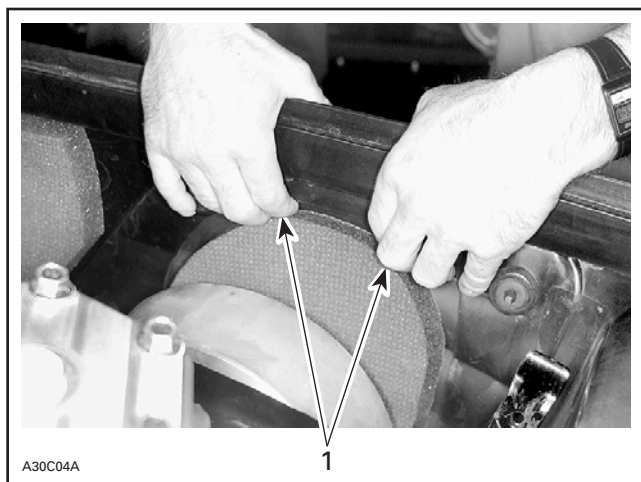
Screw drive belt installer/remover in the free threaded hole and tighten to open the pulley. Remove belt.



1. Tighten to open pulley

Slip the belt over the top edge of the sliding half, as shown in previous photo.

Remove access panel from bottom pan.

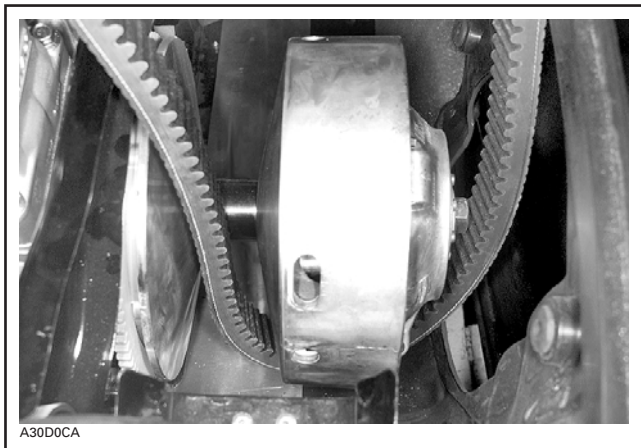


1. Push top of panel out of bottom pan



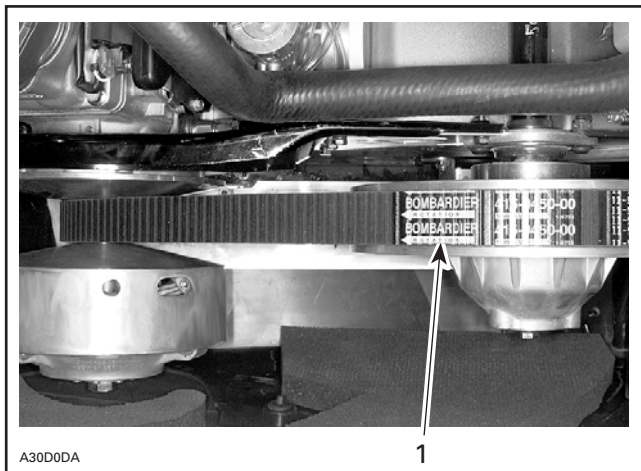
1. Pull panel tab out of bottom pan

Slip belt under drive pulley then, remove it from vehicle.



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

The maximum drive belt life span is obtained when the belt has the proper rotation direction. See arrow on belt.



1. Arrow pointing front of vehicle

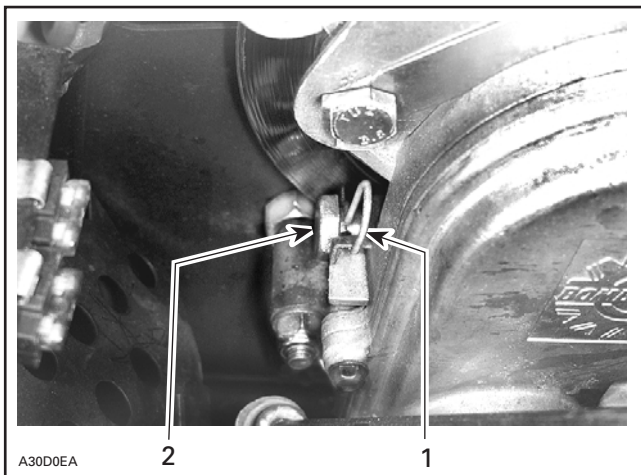
CAUTION: Do not force or use tools to pry the belt into place, as this could cut or break the cords in the belt.

Remove drive belt installer/remover. Reinstall access panel and belt guard.

Drive Chain Tension

Remove hair pin.

Fully tighten tensioner adjustment screw by hand, then back off only far enough for hair pin to engage in locking hole.



1. Hair pin
2. Adjustment screw

TRA Drive Pulley Adjustment

The drive pulley is factory calibrated to transmit maximum engine power at a predefined RPM. Refer to SPECIFICATIONS at the end of this guide. Factors such as ambient temperature, altitude or surface condition may vary this critical engine RPM thus affecting snowmobile efficiency.

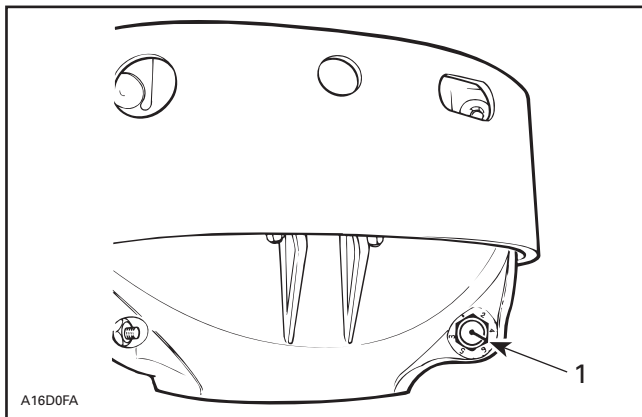
This adjustable drive pulley allows setting maximum engine RPM in the vehicle to maintain maximum power.

Calibration screws should be adjusted so that actual maximum engine RPM in vehicle matches with the maximum horsepower RPM.

NOTE: Use precision digital tachometer for engine RPM adjustment.

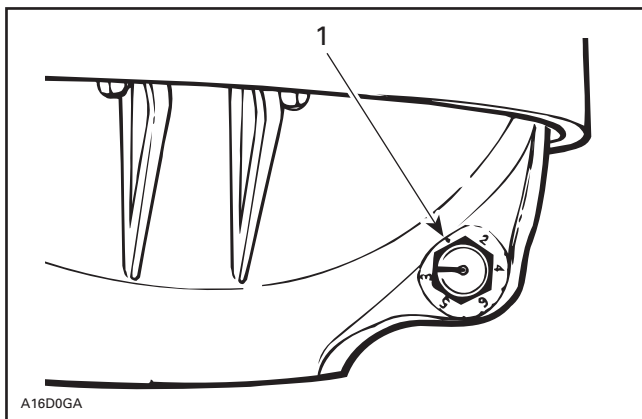
NOTE: The adjustment has an effect on high RPM only.

To adjust, modify ramp end position by turning calibration screws. Calibration screw has a notch on top of its head.



1. Notch

Governor cup has 6 positions numbered 2 to 6. Note that in position 1 the number is substituted by a dot (due to its location on casting).



1. Position 1 (not numbered)

Each number modifies maximum engine RPM by about 200 RPM.

Lower numbers decrease engine RPM in steps of 200 RPM and higher numbers increase it in steps of 200 RPM.

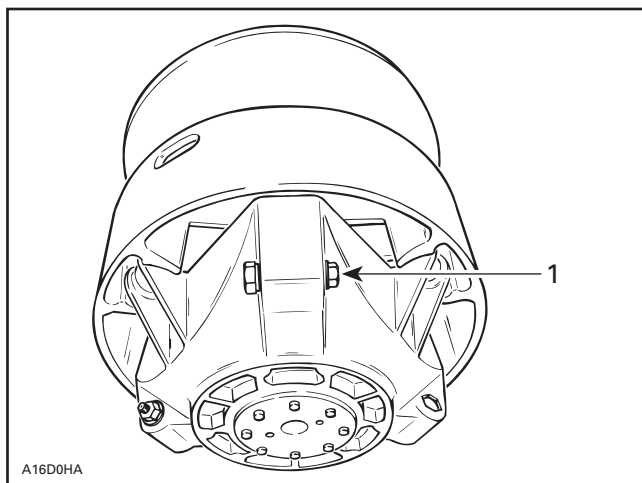
Example:

Calibration screw is set at position 4 and is changed to position 6. So maximum engine RPM is increased by 400 RPM.

To adjust:

Just loosen locking nut enough to pull calibration screw **partially** out and adjust to desired position. Do not completely remove the locking nut. Torque locking nuts to 10 N•m (89 lbf•in).

CAUTION: Do not completely remove calibration screw or its inside washer will fall off. Always adjust all 3 calibration screws and make sure they are all set at the same number.



A16D0HA

1. Loosen just enough to permit rotating of calibrate screw

WARNING

Always reinstall belt guard. Do not operate engine with hood open or belt guard removed. Improper servicing, modification or poor adjustment may affect drive pulley performance and belt life. Always refer to the Shop Manual or obtain SKI-DOO dealer advice before servicing or modifying the drive or driven pulleys. Always respect maintenance schedules.

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 SKI-DOO dealer.

Check the drive belt width. Replace the drive belt if width is less than the minimum width recommended in SPECIFICATIONS section.

Brake Condition

WARNING

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. Periodically verify the condition/wear of the brake pads.

Brake Adjustment

A hydraulic brake is not adjustable. See an authorized SKI-DOO dealer if any problems.

Rear Suspension Condition

Visually inspect all suspension components including slider shoes, springs, wheels, etc.

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

Suspension Stopper Strap Condition

Inspect stopper strap for wear and cracks, bolt and nut for tightness. If loose inspect holes for deformation. Replace as required. Torque nut to 9 N•m (80 lbf•in).

Track Condition

Lift the rear of the snowmobile 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 SKI-DOO dealer.

WARNING

Do not operate or rotate a track if torn, damaged or excessively worn.

Track Tension and Alignment

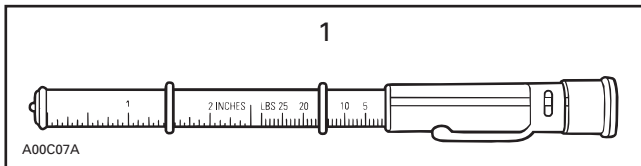
Tension

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

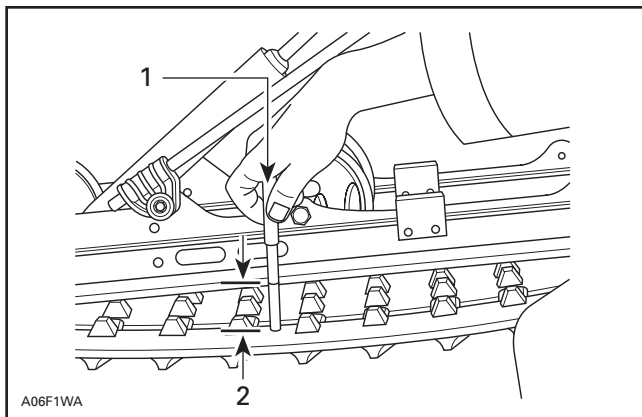
Lift rear of snowmobile and support it with a **snowmobile mechanical stand**.

Allow the suspension to extend normally and check gap half-way along slider shoe. The gap should be as given in the specification section of this guide. If the track tension is too loose, track will have a tendency to thump.

NOTE: A belt tension tester (P/N 414 348 200) may be used to measure deflection as well as force applied.



1. Belt tension tester



TYPICAL

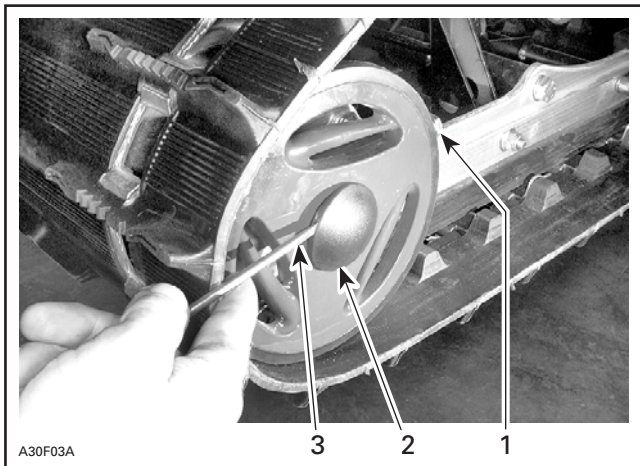
1. 7.3 kg (16 lb)
2. Deflection

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

To adjust tension:

- On some models, remove wheel cap.
- Loosen the rear idler wheel retaining screws.
- Turn adjustment screws to adjust.

If correct tension is unattainable, contact an authorized SKI-DOO dealer.



TYPICAL

1. Adjustment screw
2. Loosen screw
3. Wheel cap removing

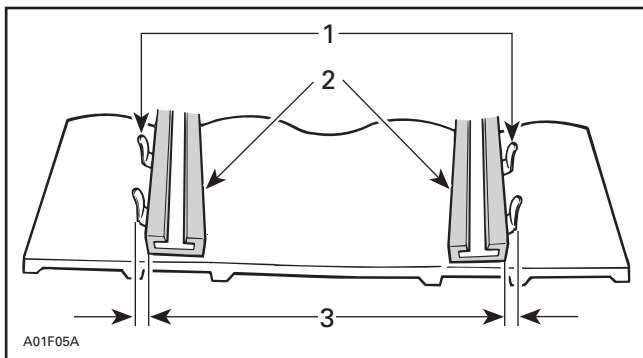
Alignment

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

⚠ WARNING

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

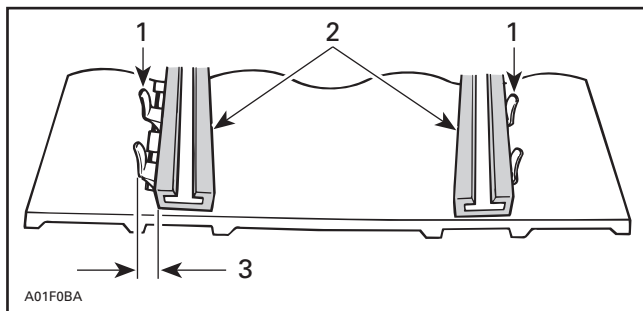
Start the engine and accelerate slightly so that track barely turns. This must be done in a short period of time (1 to 2 minutes). Check that the track is well centered; equal distance on both sides between edges of track guides and slider shoes.



TYPICAL

1. Guides
2. Slider shoes
3. Equal distance

To correct, **stop the engine**: Loosen rear wheel screws tighten the adjustment screw on side where the slider shoe is the farthest from the track insert guides.



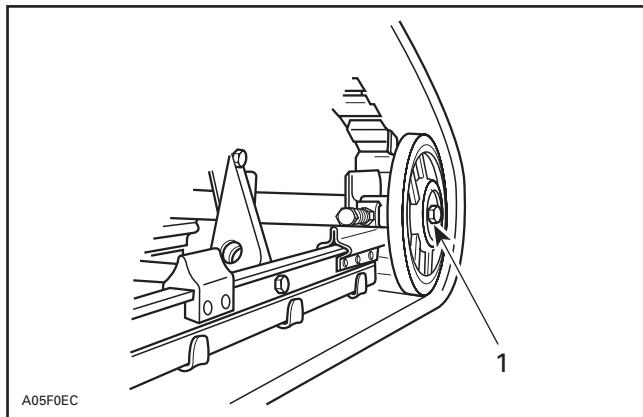
TYPICAL

1. Guides
2. Slider shoes
3. Tighten on this side

Retighten wheel screws to 48 N•m (35 lbf•ft).

WARNING

Properly tighten wheel screws.



TYPICAL

1. Retighten to 48 N•m (35 lbf•ft)

Restart engine and rotate track slowly to recheck alignment.

Reposition snowmobile on ground.

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, contact your SKI-DOO dealer.

Wear and Condition of Skis and Runners

Check the condition of the skis, ski runners and ski runner carbides. If worn, contact your authorized SKI-DOO dealer for replacement.

WARNING

Excessively worn skis and/or ski runners will affect snowmobile control.

Exhaust System

The tail pipes of the muffler should be centered with the exit holes in the bottom pan. Exhaust system must be free of rust or leaks.

The exhaust system is designed to reduce noise and to improve the total performance of the engine. Modification may be in violation of local laws.

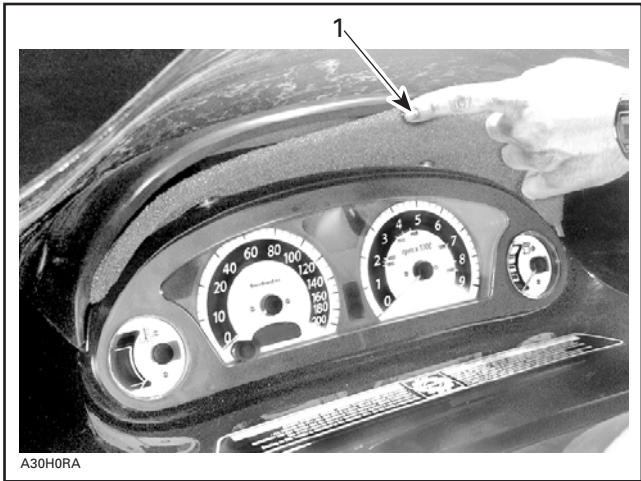
CAUTION: If any exhaust system component is removed, modified or damaged, severe engine damage may result.

Air Filter Cleaning

Leaving the snowmobile uncovered during a snowfall or riding in deep powder snow may block air filter and choke the engine.

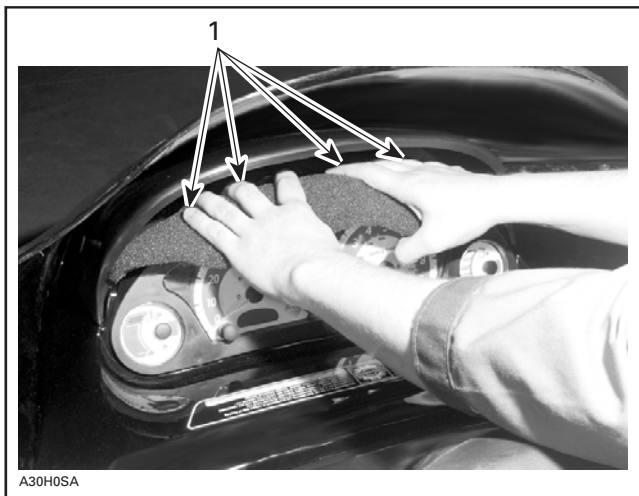
While riding in deep powder snow, periodically stop then shake the snow from the filter and reinstall filter.

Insert air filter so its top edge is flush with air deflector.



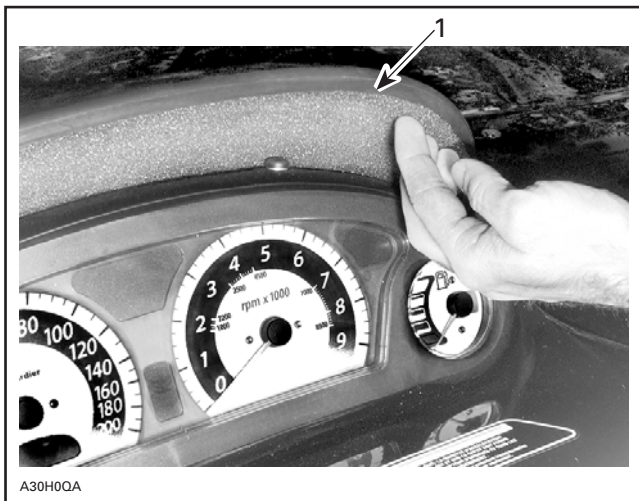
1. Top edge of filter flush with air deflector

Reinstall filter over dashboard sticking bottom edge first.



1. Stick bottom edge first

Finalize filter top edge installation.



1. Push top edge of filter under air deflector lip

Check air silencer filter for snow. Remove filter and shake it as required.



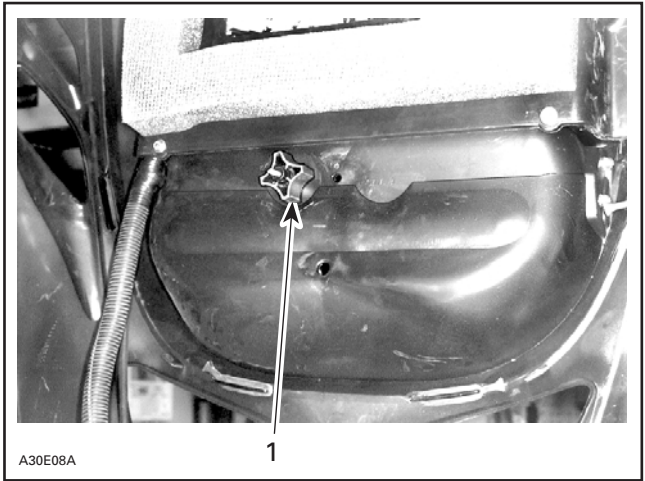
AIR SILENCER FILTER INSTALLED

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

CAUTION: Snowmobile engines have been calibrated with the filter installed. Operating the snowmobile without it may cause engine damage.

Headlight Beam Aiming

Turn knob to adjust beam height.



1. Knob

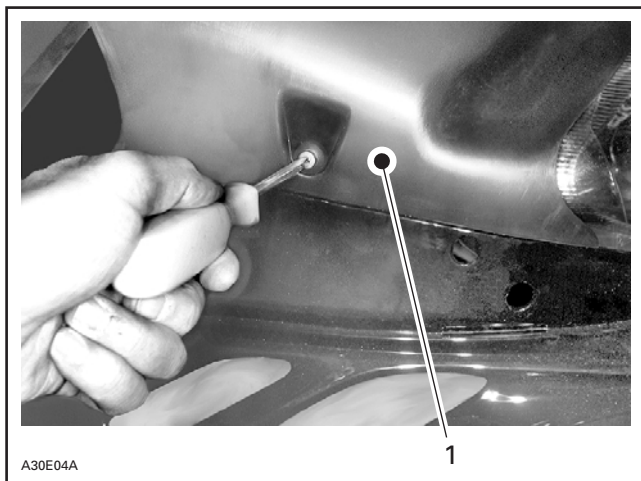
Bulb Replacement

Always check light operation after bulb replacement.

Headlight

CAUTION: Never touch glass portion of an halogen bulb with bare fingers, it shortens its operating life. If glass is touched, clean it with isopropyl alcohol which will not leave a film on the bulb.

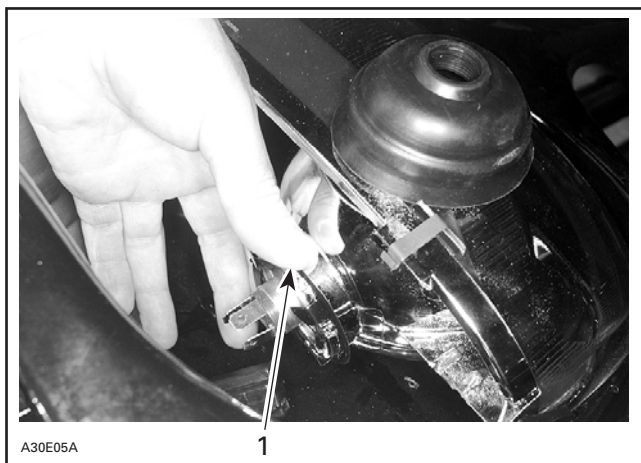
If any headlight bulb is burnt, remove windshield, air filter then, air deflector.



1. Air deflector

Unplug burnt bulb connector. Remove the rubber boot.

Turn bulb locking ring counterclockwise to remove it. Detach the bulb and replace. Properly reinstall parts including air filter.

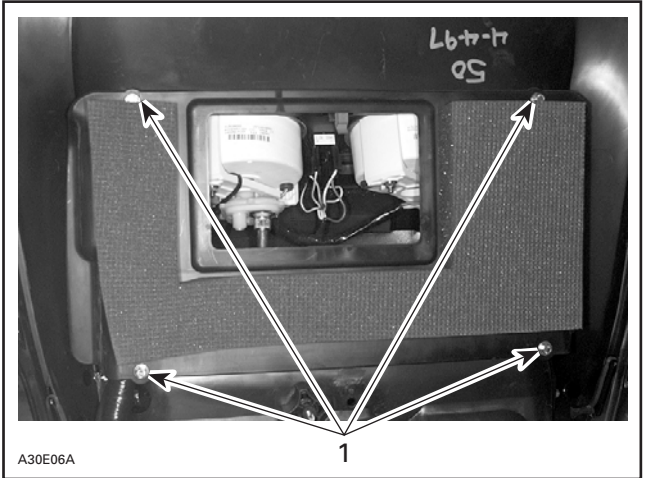


1. Locking ring

Instrument(s)

All Models

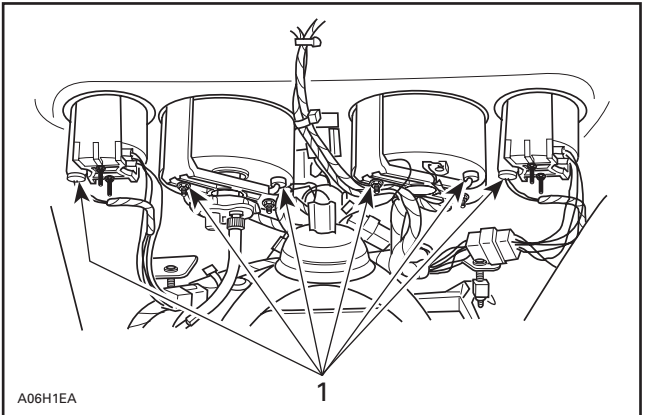
Remove air duct from underneath hood.



1. Remove these screws

Mach Z STD/Tech Plus

Bulb socket is always behind the instrument under a black rubber boot. Pull rubber boot and socket to expose bulb. Pull bulb out of socket.

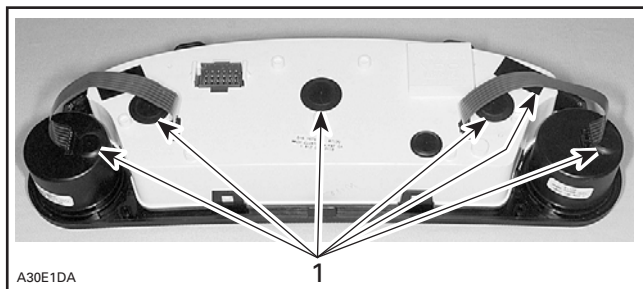


TYPICAL — MACH Z STD/TECH PLUS

1. Instruments sockets

GT SE

Pry out plastic plug to reach burnt bulb.



GT SE

1. Plastic plugs

Taillight

If taillight bulb is burnt, expose the bulb by removing the red plastic lens. To remove, unscrew the 2 lens screws.

STORAGE AND PRE-SEASON PREPARATION

WARNING

Have an authorized SKI-DOO dealer inspect fuel and oil systems integrity as specified in Periodic Maintenance Chart.

Storage

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

To prepare your snowmobile, follow the Periodic Maintenance Chart in MAINTENANCE section.

CAUTION: Do not run engine during storage period.

Pre-season Preparation

Refer to an authorized SKI-DOO dealer.

TROUBLESHOOTING

SYMPTOM: <i>Engine turns over but fails to start.</i>	
POSSIBLE CAUSES	WHAT TO DO
1. Ignition switch, emergency cut-out switch or tether switch is in the OFF position.	Place all switches in the ON position.
2. Mixture not rich enough to start cold engine.	Check fuel tank level and check starting procedure, particularly use of the choke.
3. Flooded engine (spark plug wet when removed).	Do not choke. 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 SKI-DOO 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 SKI-DOO dealer.
5. Spark plug/ignition (no spark).	Remove spark plug(s) then reconnect to spark cap. Check that emergency cut-out switch is at the ON position and the tether cut-out switch cap is snapped over the receptacle. Start engine with spark plug(s) grounded to engine away from spark plug hole. If no spark appears, replace spark plug. If trouble persists, contact an authorized SKI-DOO 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 SKI-DOO dealer.

SYMPTOM: Engine lacks acceleration or power.

POSSIBLE CAUSES	WHAT TO DO
1. DESS has not read tether cord. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. DESS is activated. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks rapidly and beeps are heard. Install appropriate tether cord.
3. Fouled or defective spark plug.	Check item 5 of "Engine turns over but fails to start".
4. Lack of fuel to engine.	Check item 4 of "Engine turns over but fails to start".
5. Carburetor adjustments.	Contact an authorized SKI-DOO dealer.
6. 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.
7. Drive and driven pulleys require servicing.	Contact an authorized SKI-DOO dealer.
8. Engine is overheating.	On liquid cooled engines, check coolant level, pressure cap and for air locks in cooling system. On fan cooled engines, check fan belt and its tension; clean cooling fins of engine; if overheating persists, contact an authorized SKI-DOO dealer.

SYMPTOM: <i>Engine backfires.</i>	
POSSIBLE CAUSES	WHAT TO DO
1. DESS has not read tether cord. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. DESS is activated. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks rapidly and beeps are heard. Install appropriate tether cord.
3. Faulty spark plug (carbon accumulation).	See item 5 of "Engine turns over but fails to start".
4. Engine is running too hot.	See item 8 of "Engine lacks acceleration or power".
5. Ignition timing is incorrect or there is an ignition system failure.	Contact an authorized SKI-DOO dealer.

SYMPTOM: <i>Engine misfires.</i>	
POSSIBLE CAUSES	WHAT TO DO
1. DESS has not read tether cord. Engine can not exceed 2500 RPM.	DESS pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. DESS is activated. Engine can not exceed 2500 RPM.	DESS pilot lamp blinks rapidly and a continuous beep is heard. Install appropriate tether cord.
3. Fouled/defective/ worn spark plugs.	Clean/verify spark plug and heat range. Replace as required.
4. Too much oil supplied to engine.	Improper oil pump adjustment, refer to an authorized SKI-DOO dealer.
5. Water in fuel.	Drain fuel system and refill with fresh fuel.

SYMPTOM: Snowmobile cannot reach full speed.

POSSIBLE CAUSE	WHAT TO DO
1. DESS has not read tether cord. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. DESS is activated. Engine can not exceed 3000 RPM.	DESS pilot lamp blinks rapidly and beeps are heard. Install appropriate tether cord.
3. Drive belt.	Check item 6 of "Engine lacks acceleration or power".
4. Incorrect track adjustment.	See MAINTENANCE section and/or SKI-DOO dealer for proper alignment and tension adjustments.
5. Pulleys misaligned.	Contact an authorized SKI-DOO dealer.
6. Engine.	See items 3 to 8 of "Engine lacks acceleration or power".

SPECIFICATIONS

GENERAL		GRAND TOURING SE	MACH Z STD MACH Z TECH PLUS
Engine			
– Maximum Power Engine Speed	RPM	8000	8300
Drive belt			
– Number		417 300 066	
– Width of a New Belt	mm (in)	35.1 (1.382)	
– Wear Limit Width	mm (in)	32.7 (1.287)	
Spark plug			
– Type		NGK BR 8 ES	NGK BR 9 ES
– Gap	mm (in)	0.45 (.018)	
Track			
– Tension	mm (in)	30 - 35 (1-3/16 - 1-3/8) ①	
– Alignment		②	
FLUIDS			
Fuel			
– Type		Super Unleaded ③	
– Tank Capacity	L (U.S. gal)	42.0 (11.1)	
Oil (engine)			
– Type		④	
– Tank Capacity	L (U.S. oz)	4.1 (139)	
Chaincase/Transmission Oil			
– Type		⑤	
– Capacity	mL (U.S. oz)	250 (8.5)	
Cooling System			
– Type		⑥	
– Capacity	L (U.S. oz)	5.1 (172)	5.0 (169)
Brake System Fluid			
– Type		DOT 4	

① to ⑥ and N.A.: see at end of specifications.

Because of our ongoing commitment to product quality and innovation, Bombardier reserves the right, at any time, to make changes in design and specifications and/or to make additions to, or improvements in its products without imposing any obligation upon itself to install them on its products previously manufactured.

- ① Measure gap between slider shoe and bottom inside of track when exerting a downward pull of 7.3 kg (16 lbf) to the track.
- ② Equal distance between edges of track guides and slider shoes.
- ③ Super unleaded gasoline with a minimum octane number of 91 (R + M)/2.
- ④ BOMBARDIER FORMULA XP-S synthetic injection oil (or equivalent) OR BOMBARDIER injection oil (or equivalent).
- ⑤ BOMBARDIER synthetic chaincase oil (P/N 413 803 300 — 12 x 355 mL).
- ⑥ Ethylene-glycol antifreeze for aluminum engines mixed with water (3 parts of antifreeze for 2 parts of water).

N.A.: Not applicable

CHANGE OF ADDRESS OR OWNERSHIP

If your address or owner has changed, be sure to fill out and mail the card provided on next page.

Such notification is likewise necessary for your own safety even after expiration of the original warranty, since Bombardier will be in a position to contact you if correction to your snowmobile becomes necessary.

NOTICE TO ALL NEW OWNERS

Make sure to mail the *Change of Ownership Card* as you are entitled to the unexpired portion of the warranty.

STOLEN UNITS

If the event that your snowmobile is stolen, you should notify your area distributor's warranty department of such.

Please provide your name, address, phone number, vehicle serial number and date it was stolen.

Bombardier will provide a list of stolen units to all SKI-DOO dealers on a monthly basis to aid in recovery of such units to their owners.

AFFIX
PROPER
POSTAGE

BOMBARDIER
RECREATIONAL PRODUCTS

WARRANTY DEPARTMENT
75 J.A. BOMBARDIER ST.
SHERBROOKE (QUEBEC)
CANADA J1L 1W3



BOMBARDIER
RECREATIONAL PRODUCTS

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