



***ski-doo***®

**OPERATOR'S  
GUIDE  
1999**

520 000 080

**TUNDRA /R  
SKANDIC WT/SWT/WT LC  
S SERIES**

## **SAFETY WARNING**

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

This *Operator's Guide* handbook should remain with the snowmobile at all time.



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

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FORMULA\* SKI-DOO®

Litho'd in Canada

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# 1999 SKI-DOO OPERATOR'S GUIDE

This guide is applicable to:

***Tundra/R***

***Skandic WT/SWT/WT LC***

and to the following ***S-Series models:***

***Touring E/LE/SLE***

***Grand Touring 500/583***

***Skandic 380/500***

***Formula S/SL/Z 500/Z 583/Z 670***

***Formula Deluxe 377/500/503/583/670***

***MX Z 440/500/583/670***

***Summit 500/583/x 670***

## 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.

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. In the near future you should be receiving a warranty card which will confirm our receipt of the registration as well as be used for warranty or recall purposes.

The diagram shows a Ski-Doo Warranty Card with the following fields and labels:

- Dealer Number:** 000000000, 00-000000
- Vehicle Model Number:** 00000
- Vehicle Serial Number:** 0000/00/00
- Owner:** FIRST NAME LAST NAME, STREET, CITY PROV./STATE POSTAL/ZIP CODE, COUNTRY
- Expiration Date (Year/Month/Day):** 0000/00/00

Additional text on the card includes the Ski-Doo logo, the slogan "Service par excellence / Excellence in Service", and "ENREGISTREMENT DE LA GARANTIE • WARRANTY REGISTRATION". The code "A00K03A" is located at the bottom left.

### WARRANTY CARD

You are invited to contact our customer relation staff should you experience problems which cannot be resolved by your dealer.

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## NOTICE

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.

These guides use the following symbols.



### **WARNING**

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



### **CAUTION**

Denotes an instruction which, if not followed, could severely damage snowmobile components.

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

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.

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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.
- ◆ The snowmobile engine can be stopped by activating the emergency cut-out button, pulling the tether cord or turning off the key.
- ◆ Engine should be running only when belt guard and/or pulley guard is secured in place. Never run the engine without drive belt installed. Running an unloaded engine can prove to be dangerous.
- ◆ Never run the engine when the track is raised off the ground or 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 and maintenance procedures.
- ◆ Some snowmobiles are designed for the driver only and no provisions have been made for a passenger.
- ◆ The performance of some snowmobiles 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.
- ◆ 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.

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# **BOMBARDIER LIMITED WARRANTY**

## **1999 SKI-DOO® SNOWMOBILE**

### **1. WARRANTY COVERAGE PERIOD**

BOMBARDIER INC. ("Bombardier"), as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 1999 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.

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.

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 1999 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 "1999 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 INC.  
RECREATIONAL PRODUCTS  
SNOWMOBILES  
CUSTOMER ASSISTANCE CENTER  
VALCOURT QC J0E 2L0  
Tel: (514) 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 INC.  
RECREATIONAL PRODUCTS  
SNOWMOBILES

January 1998

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# **BOMBARDIER INTERNATIONAL LIMITED WARRANTY 1999 SKI-DOO® SNOWMOBILE**

## **1. WARRANTY COVERAGE PERIOD**

BOMBARDIER INC. ("Bombardier"), as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 1999 SKI-DOO snowmobile sold anywhere in the world except the United States and Canada, as NEW and UNUSED and PREDELIVERED by an authorized SKI-DOO snowmobile dealer, duly appointed by an authorized SKI-DOO International Distributor, will be free from any defects in material and/or workmanship for a PERIOD of TWELVE (12) CONSECUTIVE MONTHS.

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

## **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 1999 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 "1999 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 INC.  
RECREATIONAL PRODUCTS  
SNOWMOBILES  
INTERNATIONAL SERVICE DEPARTMENT  
VALCOURT QUEBEC JOE 2L0  
CANADA

BOMBARDIER INC.  
RECREATIONAL PRODUCTS  
SNOWMOBILES

January 1998

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## OFTEN ASKED QUESTIONS

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

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

- a) *have warranty work performed at any authorized Bombardier dealer in North America. Your registration card will provide the dealer with all the necessary data to complete warranty claim forms.*
- b) *be advised by Bombardier should there be a safety recall or particular warranty campaign.*
- c) *be contacted much faster by the police, the minute they find your stolen 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 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 dealer for advice.*

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

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

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

A: *Yes. When installed by an authorized dealer, any "Genuine" Bombardier part used in warranty repairs assumes the remaining warranty that exists on the 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 dealer and Bombardier Inc. Normally, any problems that arise in connection with the sales transaction or the operation of your snowmobile will be handled by your Dealers Sales or Service Departments. It is recognized, however, that despite the best intentions of everyone concerned, misunderstandings will sometimes occur. Frequently, complaints are the result of a breakdown in communications and can quickly be resolved by a member of the dealership management. If the problem already has been reviewed with the Sales Manager or Service Manager, contact the Dealer himself or the General Manager.*

**We are always pleased to receive your comments on the Ski-Doo snowmobile.**

---

## LIST OF CUSTOMER RELATIONS OFFICES



### CANADA

#### **BOMBARDIER INC.**

726 St-Joseph Street  
Valcourt, Quebec, Canada  
J0E 2L0  
Telephone: (514) 532-5000  
Fax: (514) 532-5077



### USA

#### **BOMBARDIER MOTOR CORPORATION OF AMERICA**

7575 Bombardier Court  
P.O. Box 8035, Wausau, WI  
54402-8035. USA  
Telephone: (715) 848-4957  
Fax: (715) 848-4978

### OTHER COUNTRIES

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

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## AUTHORIZED SKI-DOO DEALERS

### **For North-America Only**

To find the nearest authorized ski-doo dealer, dial: 1-800-375-4366.

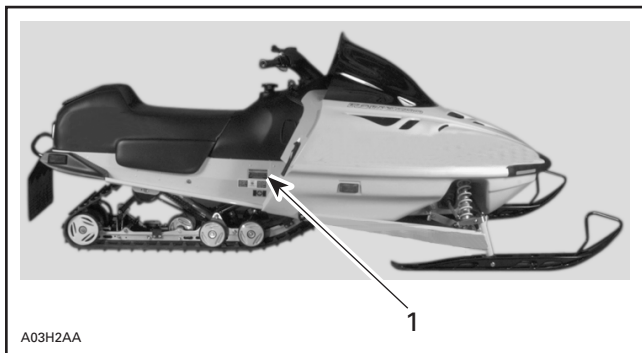


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## HOW TO IDENTIFY YOUR SNOWMOBILE

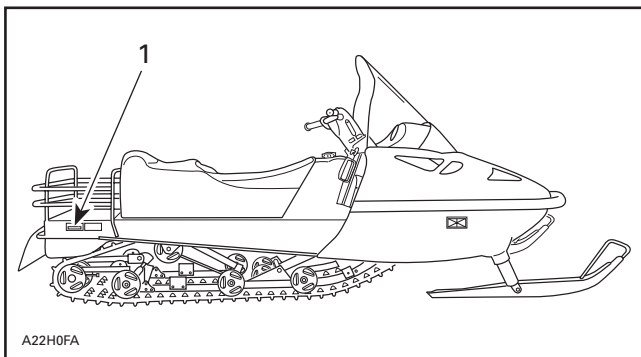
The main components of your snowmobile (engine and frame) are identified by different serial numbers. It may sometimes become necessary to locate these numbers for warranty purposes or to trace your snowmobile in the event of loss. These numbers are required by the dealer to complete warranty claims properly. No warranty will be allowed by Bombardier Inc. if the engine serial number or VIN is removed or mutilated in any way. We strongly recommend that you take note of all the serial numbers on your snowmobile and supply them to your insurance company.

### Vehicle Serial Number Location



*TYPICAL — MOST MODELS*

1. *Serial number*

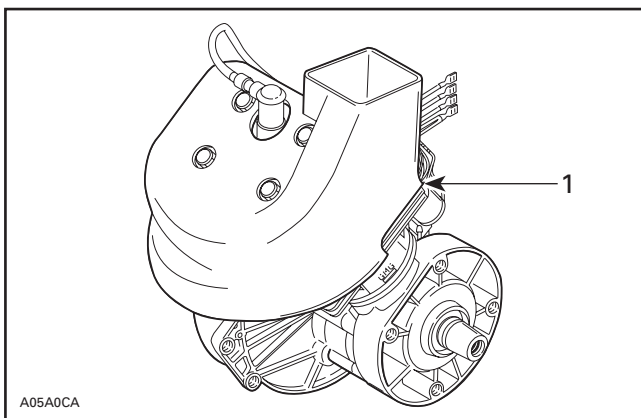


A22H0FA

*TYPICAL — SKANDIC WT/SWT/WT LC*

1. Serial number

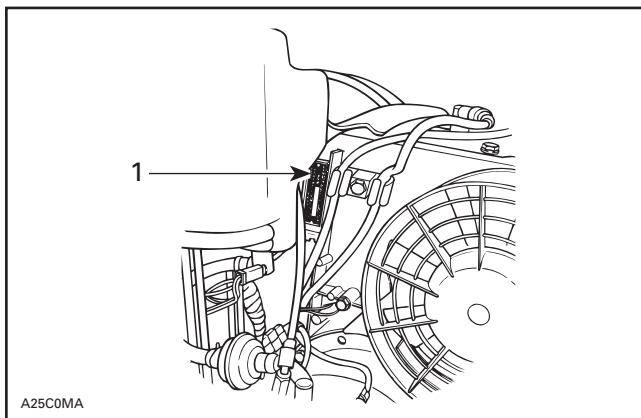
## Engine Serial Number Location



A05A0CA

*TUNDRA/R*

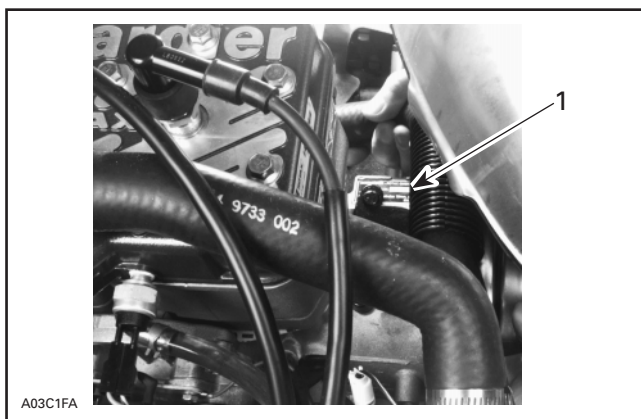
1. Serial number



A25C0MA

**FAN COOLED S-SERIES MODELS AND SKANDIC WT/SWT**

1. Serial number



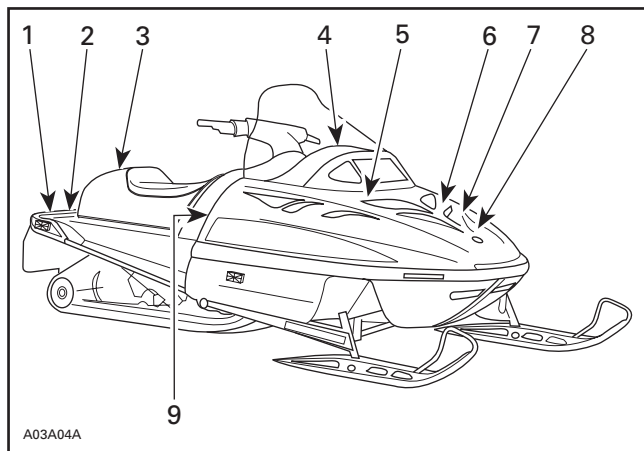
A03C1FA

**LIQUID COOLED S-SERIES MODELS AND SKANDIC WT LC**

1. Serial number

## ON-VEHICLE IMPORTANT INSTRUCTIONS

Please read the following instructions carefully before operating snowmobile.



TYPICAL — LOCATION OF IMPORTANT INSTRUCTIONS

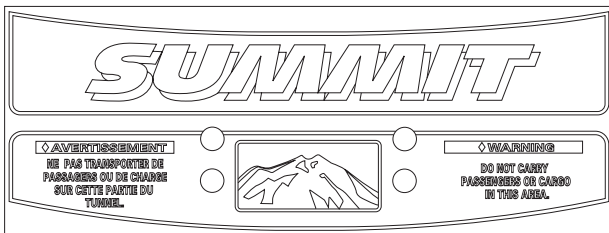
1

**Verify attachments frequently.  
Use rigid tow bar.  
Reduce speed when towing.  
Vérifier souvent les accouplements.  
Utiliser une barre rigide.  
Remorquer à vitesse réduite.**

A01A1WA

TUNDRA/R, SKANDIC 380/500 AND SKANDIC WT/SWT/WT LC

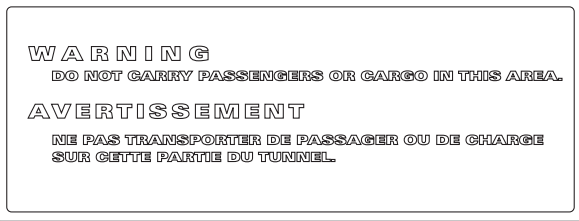
2



A01A1XA

*SUMMIT 500/583/x 670*

2



A01A1YA

*TOURING E/LE/SLE*

3



A01A1ZA

*SINGLE SEAT MODELS*

◆ **WARNING.** Read and 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. SEATING ON THIS VEHICLE IS RESTRICTED TO THE OPERATOR ONLY. DO NOT CARRY PASSENGER(S).**

◆ **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. CONDUISEZ PRUDEMMENT. Ce véhicule n'est pas conçu pour le transport de passager(s) Conducteur seulement.**

A01A20A

*SINGLE SEAT MODELS*

4

◆ **WARNING:** Read and 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.**

◆ **AVERTISSEMENT:** Lisez et respecter 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'ACCÉLÉRATION 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. CONDUISEZ PRUDEMMENT.**

A01A21A

*DOUBLE SEAT MODELS*

5

**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.

A02A07A

*ALL MODELS*



6

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.

A02A06A

ALL MODELS

7



A01A24A

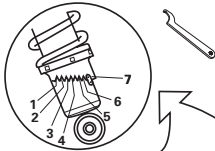
TYPICAL — ALL MODELS

8

**SUSPENSION ADJUSTMENT CHART/TABLEAU DES RÉGLAGES DE LA SUSPENSION**
**FRONT SUSPENSION (SKI)/SUSPENSION AVANT (SKI)**  
 ADJUST ACCORDING TO YOUR RIDING STYLE/RÉGLER SELON VOTRE CONDUITE

NOT APPLICABLE

SANS OBJET


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

(LB)	LOAD CHARGE	(kg)	REAR SPRING RESSORT ARRIÈRE		CENTER SPRING RESSORT CENTRAL
up to 125		jusqu'à 57	1		NOT APPLICABLE
125 to 150		57 à 68	2		SANS OBJET
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

A01A25A

TYPICAL — ALL S-SERIES MODELS

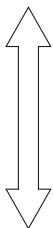
9

**▽ CAUTION**

Bring the vehicle to a complete stop before changing gear

**▽ ATTENTION**

Immobiliser le véhicule complètement avant de changer de vitesse


**F/AV**  
 PUSH  
 POUSSER

**R/AR**  
 PULL  
 TIRER

A01A26A

ALL MODELS WITH A MECHANICAL REVERSE

9

**← R E R**  
**ROTAX  
ELECTRONIC  
REVERSE**



**(CAUTION)**: Bring vehicle to a complete stop before changing direction.

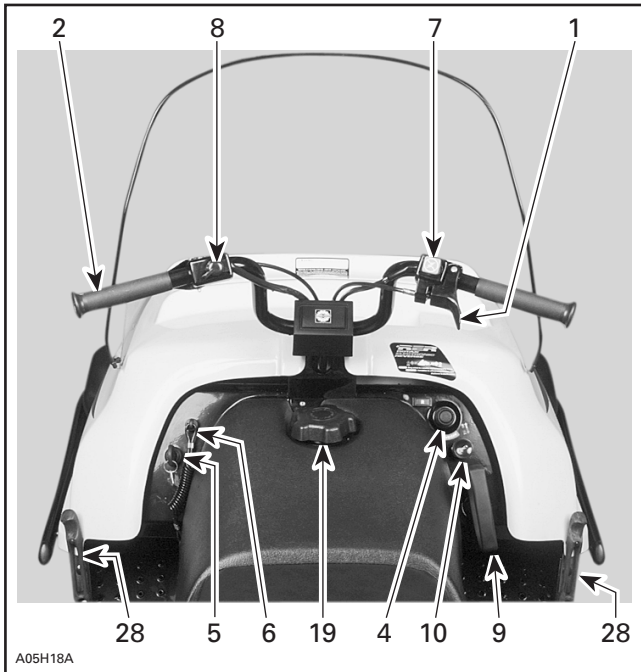
**(ATTENTION)**: Immobiliser le véhicule complètement avant de changer de direction.

A02A08A

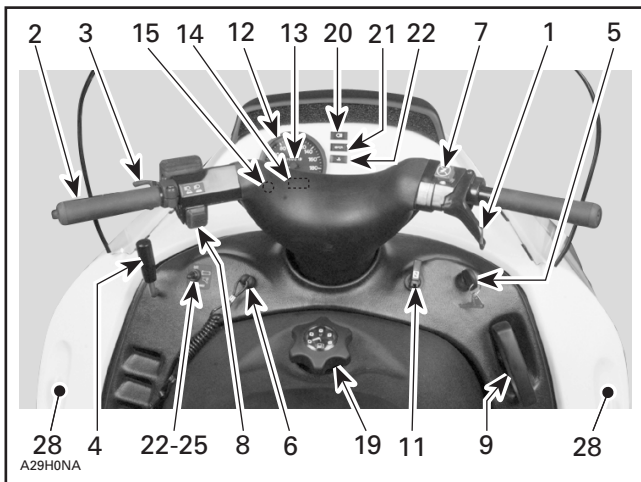
*ALL MODELS WITH AN ELECTRONIC REVERSE*

## CONTROLS/INSTRUMENTS

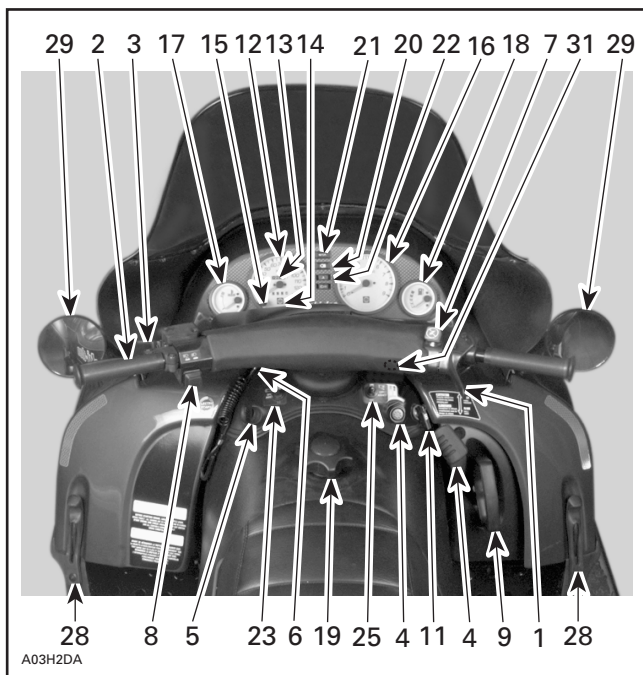
NOTE: Some controls/instruments do not apply to some models. In these cases their reference numbers are deliberately missing in the illustrations. Some controls/instruments are optional on some models.



TUNDRA/R



SKANDIC WT/SWT/WT LC



TYPICAL — S-SERIES

## 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.

## 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 brakes 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 pilot lamp lights up to remind you that it is engaged.



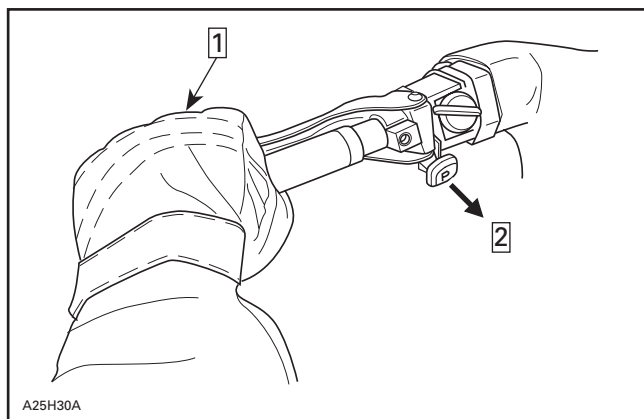
## CAUTION

Make sure parking brake is fully disengaged before operating the snowmobile.

### MECHANICAL BRAKE

**To engage** mechanism, squeeze brake lever and maintain while pulling button with the other hand. There are 2 retaining notches on button lever; pull button until it locks on a notch then release brake lever.

**To release** mechanism, squeeze brake lever then fully push parking brake button. Always release parking brake before riding.



#### TYPICAL

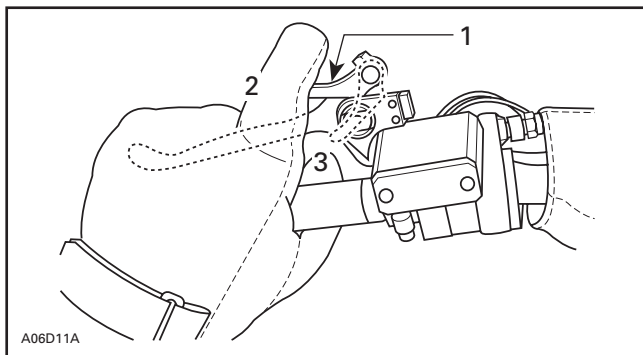
Step **1** : Squeeze and hold

Step **2** : Fully pull

## HYDRAULIC BRAKE

To **engage** mechanism, squeeze brake lever and maintain while pulling locking lever with a finger. Brake lever is now compressed half-way applying brakes.

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) Gear Shift Lever or Reverse Button

### MECHANICAL REVERSE

#### ***G.T. 500/583 and Formula DELUXE 500/583/670***

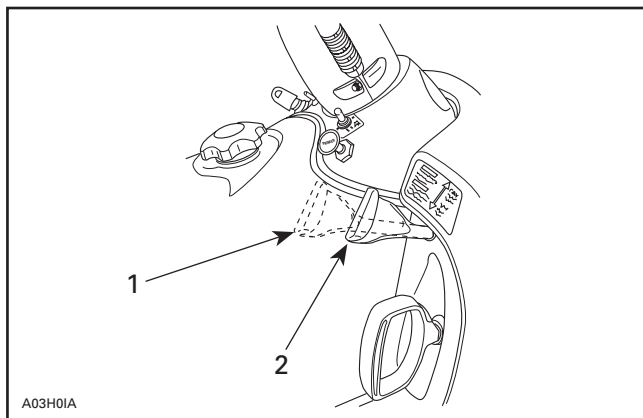
These models are equipped with a mechanical reverse controlled by a 2-position gear shift lever:

Push: Forward gear.

Pull: Reverse gear.

**NOTE:** A warning buzzer will sound when the shift lever is in reverse gear position.





A03H01A

1. Reverse
2. Forward

### Shifting Procedure

With snowmobile completely stopped and engine at idle, move lever to engage in desired gear.

Do not force lever. If unable to shift, apply throttle to move snowmobile and try again.

## ◆ 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.



## ELECTRONIC REVERSE

### ***Tundra R, Skandic 380/500, Touring E/LE/SLE and Formula Deluxe 377/503***

These models are equipped with an electronic reverse 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.

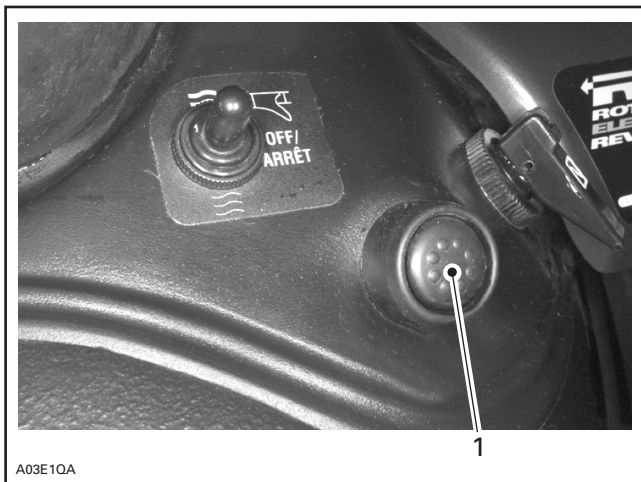
When depressing the reverse button, a signal will slow down the engine RPM enough to modify the ignition timing advance. This reverses crankshaft rotation.

No mechanical action and gear change is involved.

No adjustment is needed.

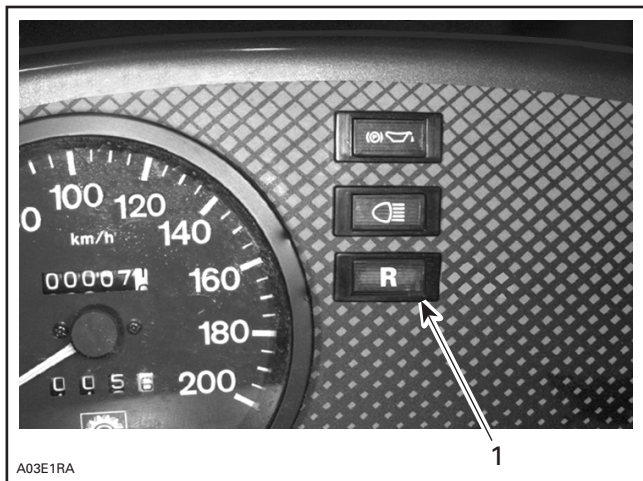
### **Shifting Procedure**

With the snowmobile completely stopped and engine running at idle, press and release the electronic reverse button.



***SKANDIC 380/500, TOURING E/LE/SLE AND FORMULA DELUXE 377/503***

1. Reverse button



A03E1RA

*SKANDIC 380/500, TOURING E/LE/SLE AND FORMULA DELUXE 377/503*

*1. Reverse indicator lamp*

The engine RPM will decrease for a few seconds then the engine will start rotating in the opposite direction and will return to its normal idle speed.

**NOTE:** A reverse indicator lamp will illuminate and a warning buzzer will sound when the snowmobile is engaged in reverse.



#### **TUNDRA R**

1. Reverse button
2. Reverse indicator lamp

### **◆ WARNING**

Always remain seated and apply the brake before shifting. Come to a complete stop before pressing the reverse button. Ensure the path behind is clear of obstacles or bystanders. Fast reverse while turning could result in loss of stability.

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

### **▼ CAUTION**

Do not rev the engine when driving in reverse. This may cause the clutch system to operate erratically.

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

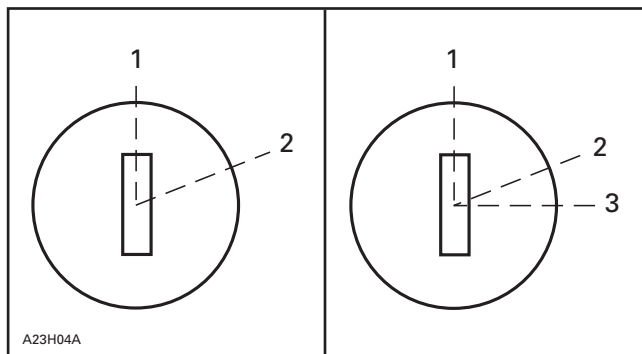
Shifting procedure will take place only when the engine is running.

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

## 5) Ignition Switch

### *All Models Except Summit x 670 and MX Z 670*

The lights are automatically ON whenever the engine is running.



#### **MANUAL START**

1. OFF
2. ON

#### **ELECTRIC START**

1. OFF
2. ON
3. START

### **Manual Starting**

Key operated, 2-position switch. To start the engine, first turn the key to ON position. To stop the engine, turn the key to OFF position.

### **Electric Starting**

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 30 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.

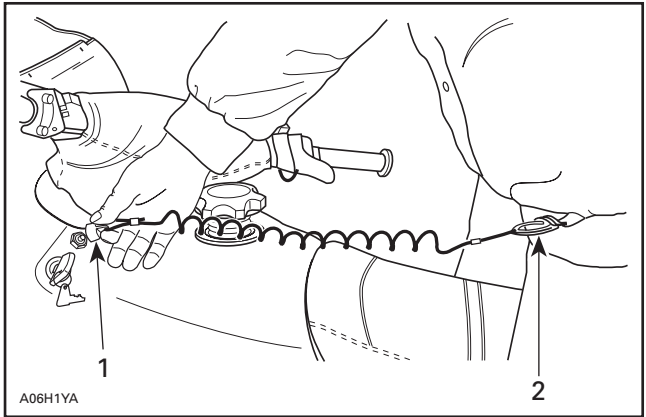
**NOTE:** Engine may be manually started with rewind starter if necessary.

If starter does not operate, check starting system fuse condition. Refer to starting system fuse below.

## 6) Tether Cut-out Switch

**All Models Except MX Z 670 and Summit x 670**

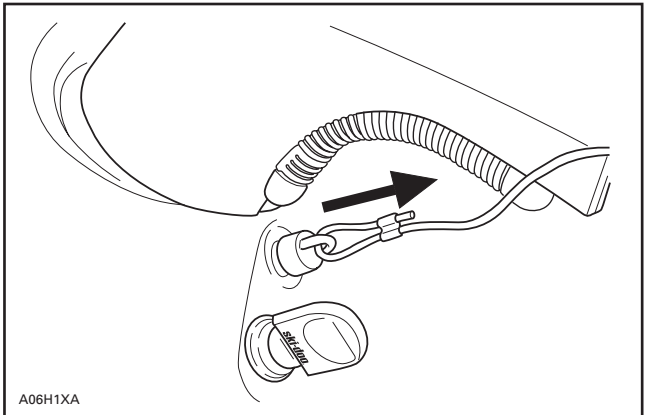
Attach tether cord to wrist or clothing then snap tether cut-out cap over receptacle before starting engine.



**TYPICAL**

1. Snap over receptacle
2. Attach to eyelet

If emergency engine shut off is required, completely pull cap from safety switch.



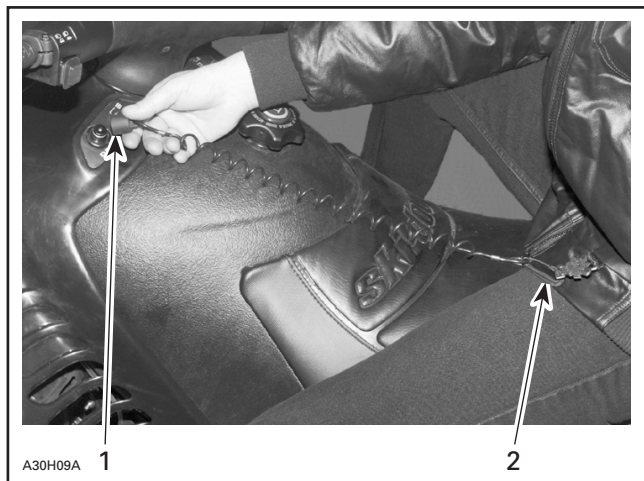
## **MX Z 670 and Summit x 670**

### **General**

Tether cut-out switch features a double function. First it is a safety device to shut-off engine if the driver accidentally falls off the vehicle. Second it is the DESS (Digitally Encoded Security System) key.

### **Operation**

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

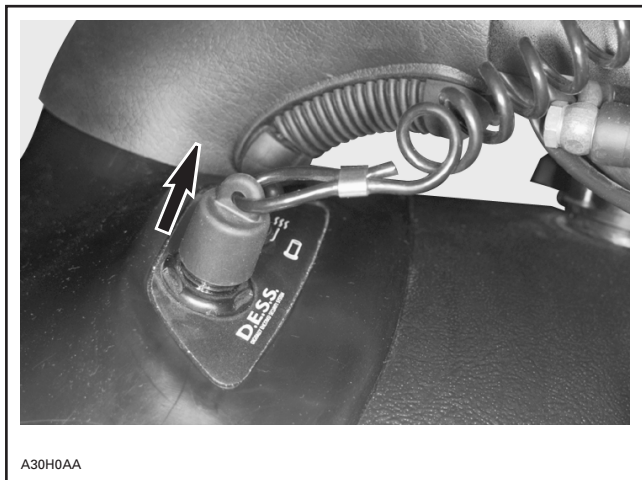


### **TYPICAL**

1. Snap over receptacle
2. Attach to eyelet



If emergency engine **shut off** is required, completely pull cap from safety switch.



*TYPICAL*

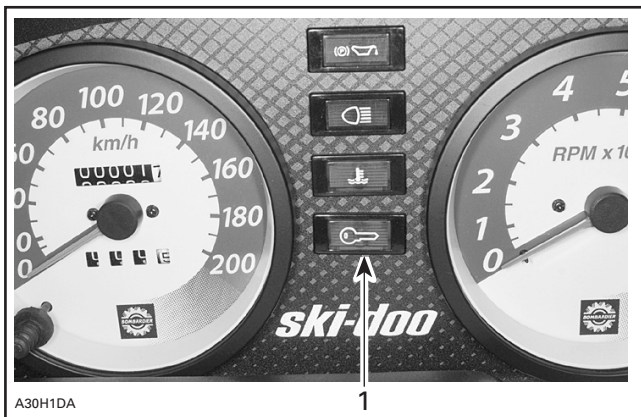
### **DESS (Digitally Encoded Security System) Description**

This system is a deterrent against theft. Dealer programmed, the tether cord provided with your snowmobile is the only one that allows engine to turn more than 2500 RPM. If a wrong tether cord is installed the engine can not reach engagement speed required to move vehicle.

### **Additional Tether Cords**

The snowmobile micro-processor can be programmed to allow the use up to 8 tether cords. For your convenience, we recommend the purchase of additional safety lanyards from your authorized dealer. It will prove to be useful in case of loss as well as for additional operators.

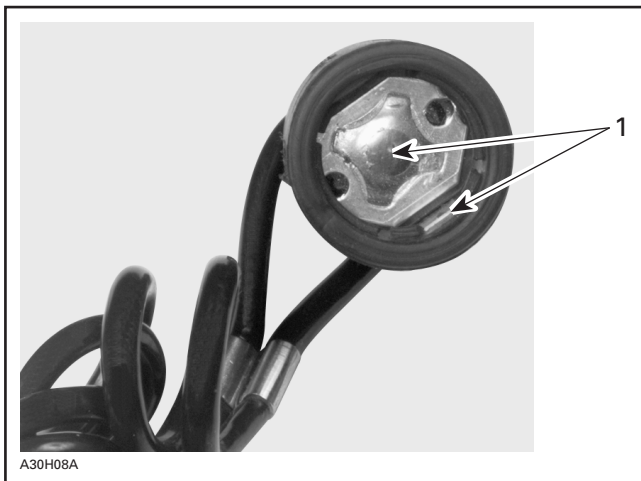
## Pilot Lamp Codes



1. DESS pilot lamp

DESS pilot lamp blinking one time per 3 seconds means 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 blink per 3 seconds still occurs contact an authorized dealer.



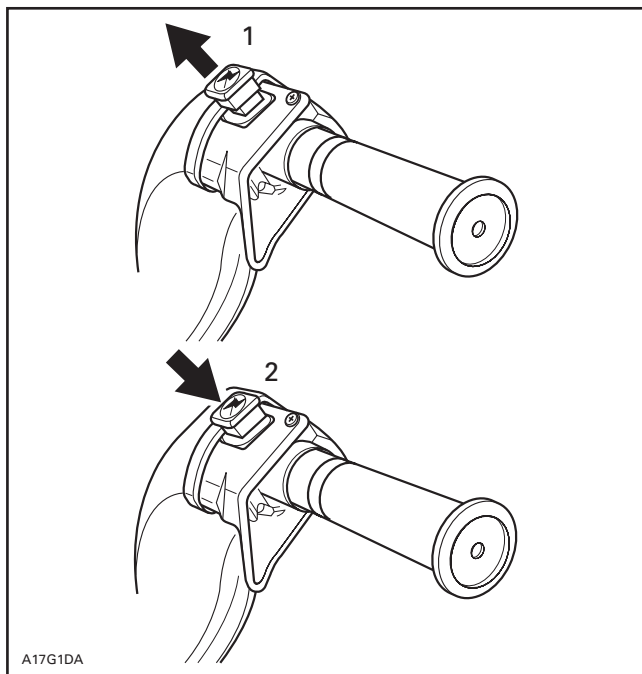
1. Free of dirt or snow

DESS pilot lamp blinking rapidly mean that a wrong tether cord is installed. Vehicle can not be driven.

Check that you have both good vehicle and tether cord.

## 7) Emergency Cut-out Switch

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



*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.

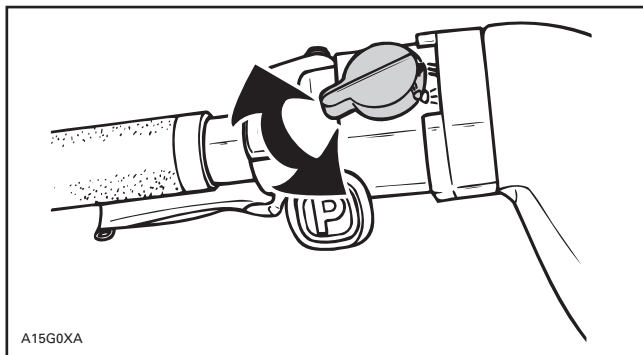


## WARNING

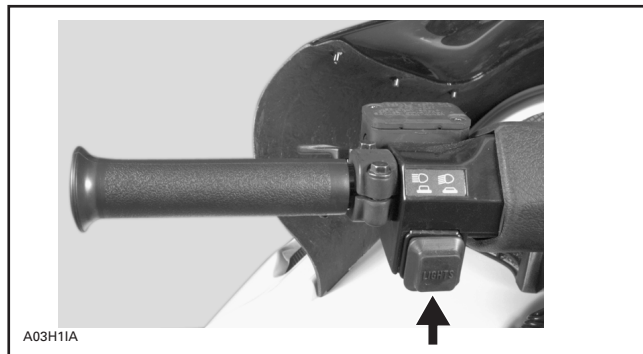
If the switch has been used in a mechanical malfunction, the source of malfunction should be determined and corrected before restarting engine.

### 8) Headlamp Dimmer Switch

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



TYPICAL



### 9) 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.

## 10) Primer Button

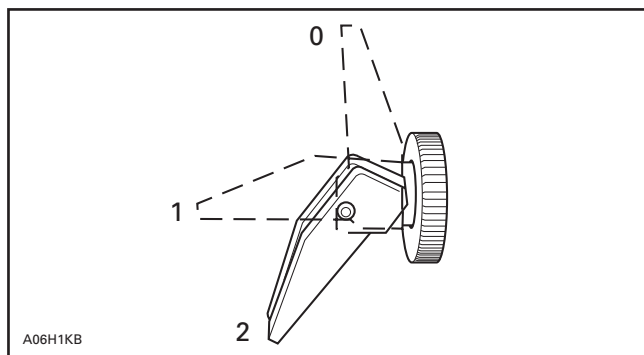
Pull and push button. It is not necessary when engine is warm.

To prime, activate button until a pumping resistance is felt. From this point, pump 2 or 3 times to inject fuel in intake manifold. After priming, ensure that primer button is pushed back.

**NOTE:** In very cold temperature, it is recommended to rotate primer button 3-4 turns prior to pull it. This will eliminate the possibility of sticking.

## 11) Choke Lever

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



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

### Initial Cold Starting

**NOTE:** Do not operate the throttle lever with the choke lever on.

Move the choke lever to position 2 and start the engine. As soon as the engine starts move the lever to position 1. After a few seconds (10 seconds maximum) move the choke lever to OFF.

**NOTE:** In severe cold weather, colder than  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) you may need to flip choke lever from OFF to position 1 a couple of times once engine is started.

### 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.

## 12) Speedometer

These vehicles are equipped with a speedometer graduated in km or miles according to country of use.

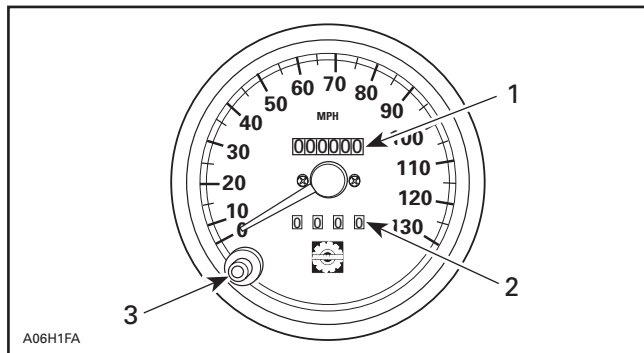
Direct-reading dial indicates the speed of the snowmobile in kilometers or miles per hour. Odometer records the total distance travelled in kilometers or miles.

## 13) Odometer

Odometer records the total distance travelled in kilometers or miles.

## 14) Trip Meter

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



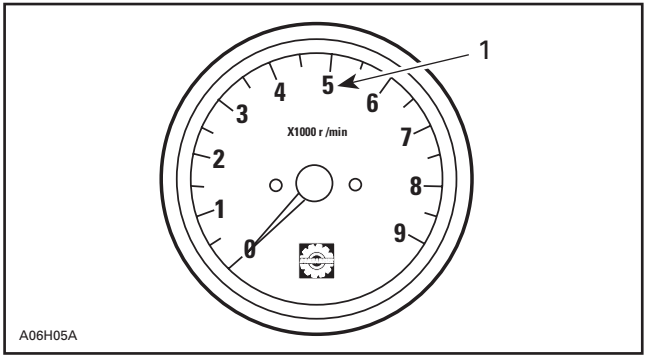
1. Odometer
2. Trip meter
3. Reset button

## 15) Trip Meter Reset Button

To reset, push on button until all numbers read (0) zero.

## 16) Tachometer

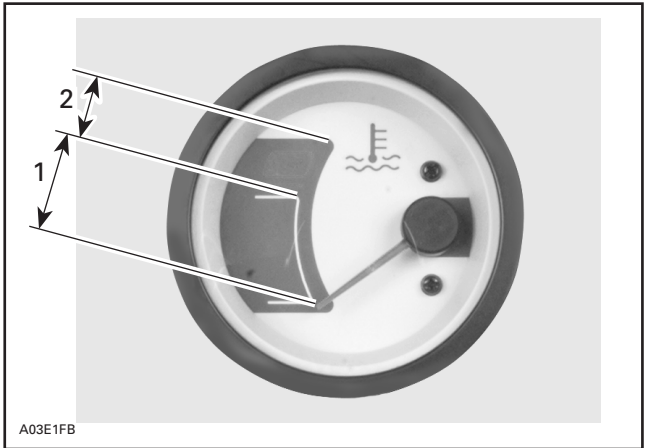
Direct-reading dial indicates the number of thousand of revolutions per minute (RPM) of the engine.



1. Multiply the reading by 1000

## 17) Temperature Gauge

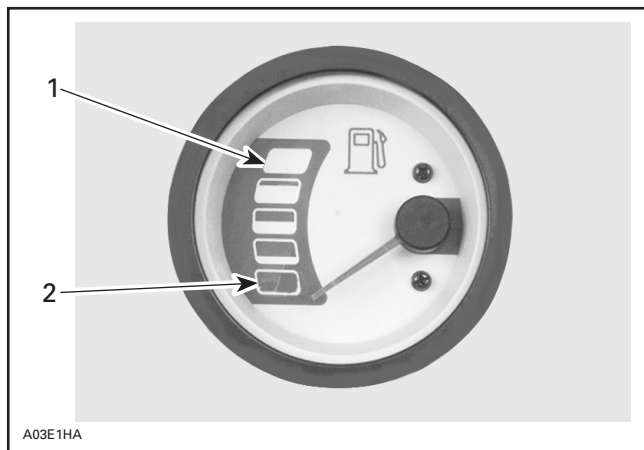
The gauge indicates engine coolant temperature. The needle moves to the normal range as engine warms. Under all riding conditions, the needle should stay within this range. If needle moves into the over-heat range, reduce snowmobile speed and run snowmobile in loose snow or stop engine immediately.



1. Normal
2. Overheat

## 18) Electric Fuel Level Gauge

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



1. Full
2. Empty

## 19) Fuel Tank Cap/Gauge

Unscrew to fill up tank then fully tighten.

Some caps feature a dipstick or a mechanical gauge.



### WARNING

Never use an open flame to check fuel level.

## 20) High Beam Pilot Lamp (Blue)

Lights when headlamp is on HIGH beam.

## 21) Injection Oil Level Pilot Lamp (Red)

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

## 22) Engine Overheat Warning Lamp (Red)

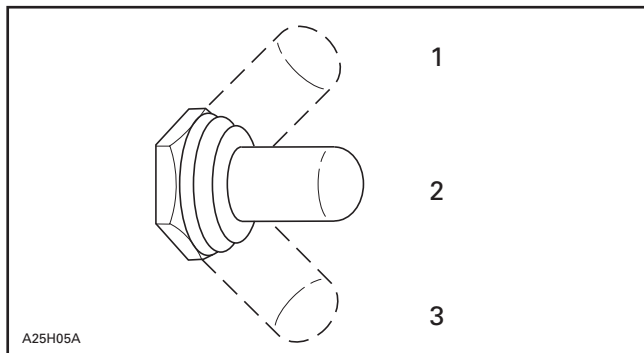
If this lamp glows, reduce snowmobile speed and run snowmobile in loose snow or stop engine immediately.



## 23) Heated Grip Switch

### **All Models Except Skandic WT/SWT/WT LC**

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



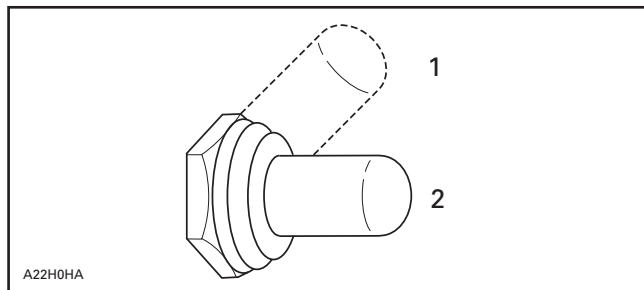
**TYPICAL**

1. HOT
2. OFF
3. WARM

## 23) and 25) Heated Grip and Throttle Lever

### **Skandic WT/SWT/WT LC Only**

Two-position toggle switch. Select the desired position to keep your hands and right thumb at a comfortable temperature.



**TYPICAL**

1. HOT
2. OFF

## 24) Heated Grip Pilot Lamp (Amber)

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

## 25) Heated Throttle Lever Switch

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

## 26) Heated Throttle Lever Pilot Lamp (Amber)

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

## 27) Rear Passenger Heated Grip Switch

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



A16H18A

*GRAND TOURING*

## 28) Hood Latches

Unhook the latches to unlock the hood from its anchors. Always lift hood gently until stopped by retaining device. Close hood slowly then hook up latches.

## 29) Adjustable Mirrors

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

## 30) Electric Visor Jack Connector

An electric visor may be connected to that jack connector. Electric current is supplied when ever engine is running.



*TYPICAL*

## **Summit x 670**

### **Holding Strap**

This strap can be used when traversing side hills.

#### **◆ WARNING**

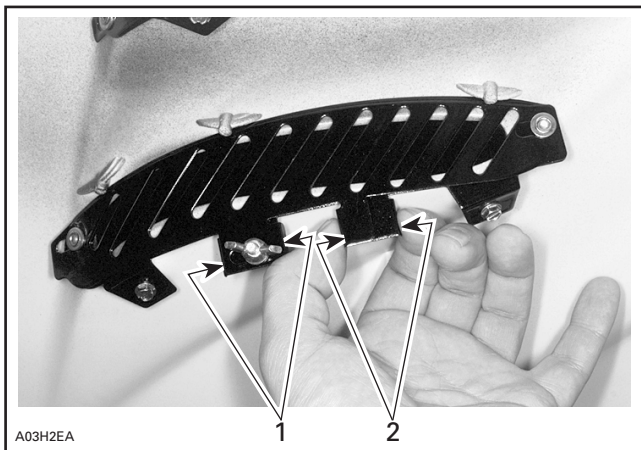
Do not use strap to lift snowmobile. To be used only by experienced riders familiar with the actual conditions and riding terrain. This strap is not a substitute for a handlebar. Full throttle and brake control should be readily available at all times.



1. Holding strap

## Hood Grills

When riding on powdered snow, close hood grills. Slightly unscrew wing nuts, squeeze tabs then, retighten wing nuts.



1. Squeeze these tabs to open grill
2. Squeeze these tabs to close grill

## Fuses

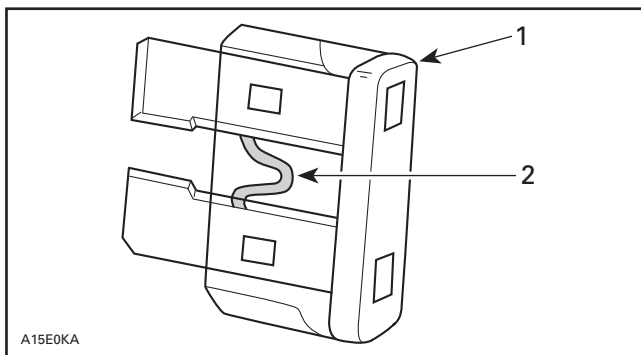
### Starting System Fuse

Starting system is protected with a 30 ampere (20 ampere on Skandic WT/SWT/WT LC) rated fuse. See following illustration for fuse holder location. If starter does not operate, check fuse condition and replace if necessary.

### ▼ CAUTION

Do not use a higher rated fuse as this can cause severe damage to electric components.

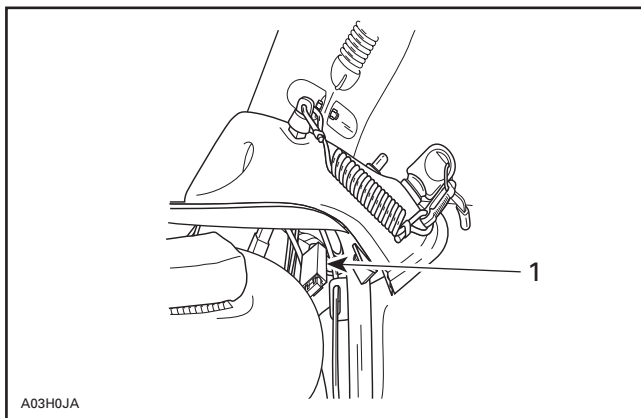
To remove fuse from holder, pull fuse out. Check if filament is melted.



A15E0KA

1. Fuse
2. Check if melted

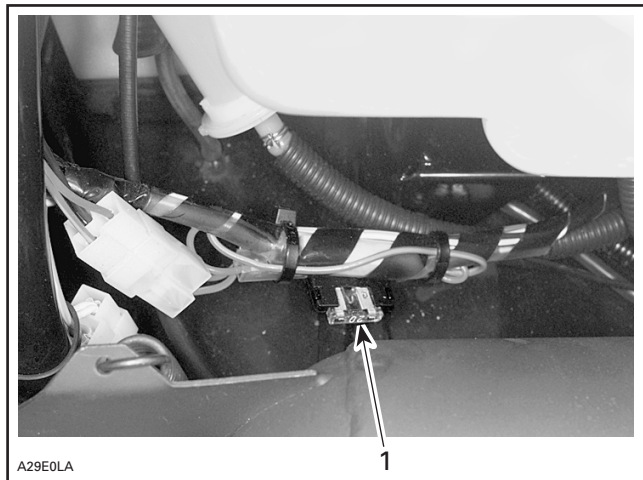
**Touring E/LE/SLE, Formula Deluxe 577/500/503/583/670 and G.T. 500/583**



A03H0JA

1. Fuse holder

## Skandic WT/SWT



1. Fuse holder

## Skandic WT LC



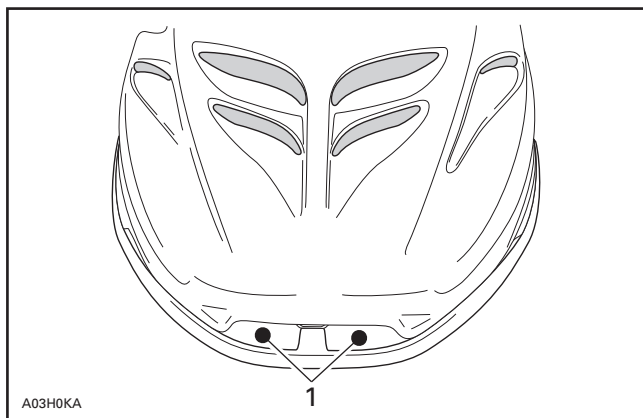
1. Fuse holder

## Electric Fuel Level Gauge Fuse

See your dealer for fuse replacement.

## Front Grab Handles/Front Bumper

To be used whenever front of snowmobile requires lifting.



*TYPICAL*

1. Front grab handles



**CAUTION**

Do not use skis to pull or lift snowmobile.

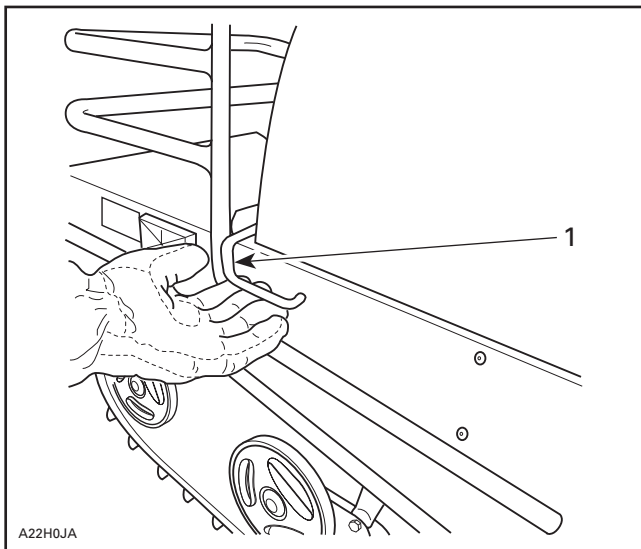
## Storage Compartment

Depending on model, a storage compartment is provided in engine compartment, under seat or inside seat.

### ***Skandic WT/SWT/WT LC Only***

A storage compartment is provided under seat. To open storage compartment, lift seat latch then tip seat over.





A22H0JA

### SKANDIC WT/WT LC

1. Lift seat latch

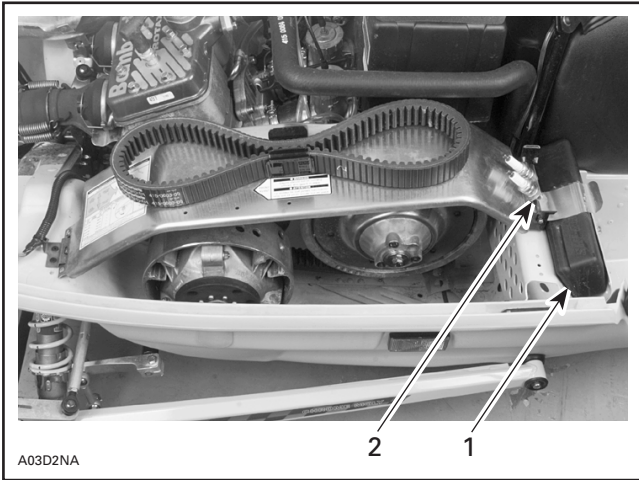


A29H01A

### SKANDIC SWT

## Tool Kit

A tool kit containing tools for basic maintenance is supplied with the vehicle. On Tundra/R tool kit is located in storage compartment (in front of engine). On Skandic WT/SWT/WT LC look under seat to find tool kit. For all other models tool kit is above left footrest just behind pulley guard.



1. Tool kit
2. Spark plug holder

## Spark Plug Holder

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

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

**NOTE:** Spare spark plugs are not supplied with snowmobile.

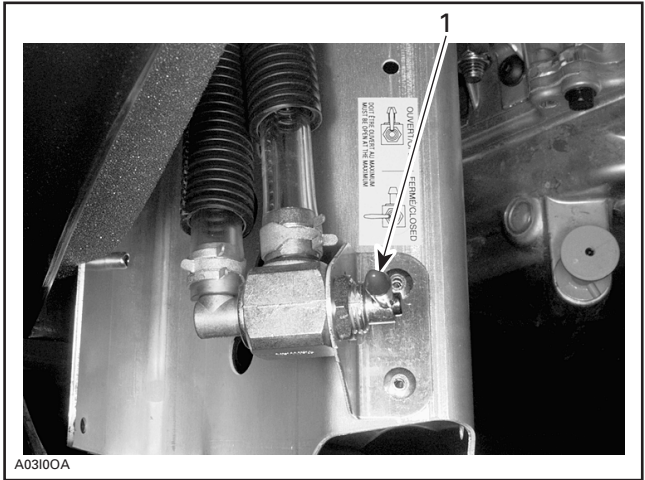
## Spare Drive Belt Holder

On some models, a spare drive belt can be installed in drive belt holder clip.

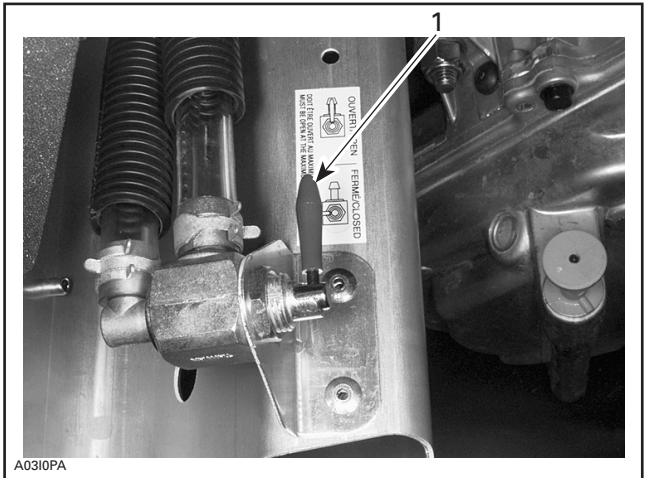
**NOTE:** Spare drive belt is not supplied with snowmobile.

# Fuel Shut-off Valve

Valve should be closed when transporting or storing snowmobile.



1. Valve closed



1. Valve opened

## Adjustable Backrest

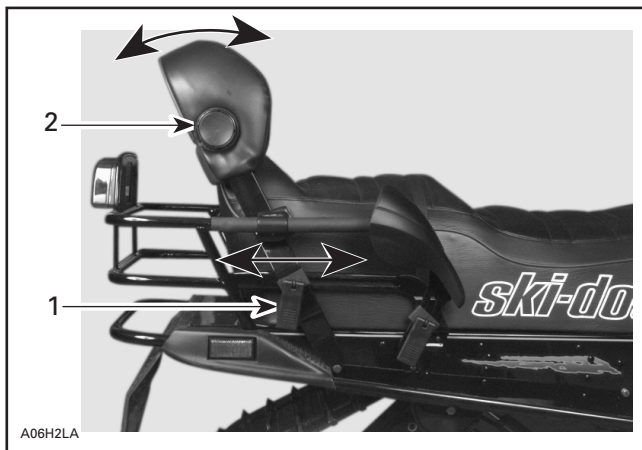
The backrest position and support angle may be adjusted to suit driver or passenger convenience.



### WARNING

Backrest should only be repositioned while the snowmobile is stopped. Adjust to provide maximum lower back support. Always consider your passengers' comfort and safety. Securely tighten all adjustment locks and knobs.

### *Grand Touring 500/583*

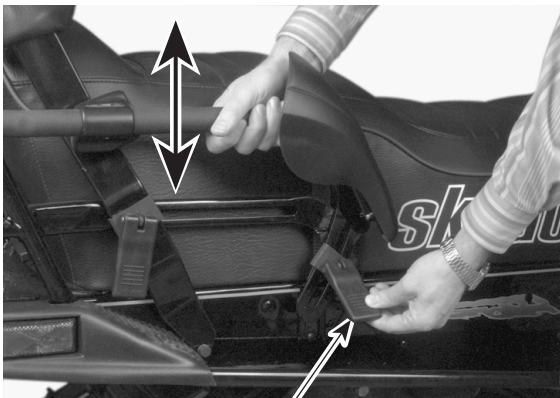


1. Lift adjustment lock (both sides)
2. Turn adjustment knob

Secure adjustment locks after desired position is obtained.

Height of rear grab handles can be adjusted.

Lift adjustment lock (both sides), move grab handles to desired position. Secure adjustment locks.



A06H2MA

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1. Lift adjustment lock (both sides)

### **Touring SLE**



A03A0KA

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### **BACKREST POSITION**

1. Loosen bottom knobs (both sides) to adjust

Secure adjustment knobs after desired position is obtained.



**BACKREST SUPPORT ANGLE**

1. Loosen top knob to adjust

Secure adjustment knob after desired position is obtained.



A03A0KB

1

### **BACKREST HEIGHT**

1. Loosen center knobs (both sides) to adjust

Secure adjustment knobs after desired position is obtained.

### **Hitch**

The hook-type hitch can be used to pull most equipment.

---

## FUEL AND OIL

### Recommended Fuel

#### **All Models Except MX Z 670 and Summit x 670**

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

#### **MX Z 670 and Summit x 670**

Use super unleaded gasoline, available from most service stations or gasohol containing less than 10% of ethanol or methanol. The gasoline 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.



### CAUTION

Never experiment with other fuels or fuel ratios. The use of unrecommended fuel can result in snowmobile performance deterioration and damage to critical parts in the fuel system and engine components.



### WARNING

Never top up the fuel tank before placing the snowmobile in a warm area. As temperature increases, fuel expands and might overflow. Fuel is flammable and explosive under certain conditions. Always wipe off any fuel or oil spillage from the snowmobile.



## Recommended Oil



### CAUTION

Never mix brands of 2-cycle oil as chemical reaction can cause engine damage. Never use outboard or straight mineral oils.

Oil is contained in the oil injection reservoir.

Use BOMBARDIER SNOWMOBILE injection oil (P/N 413 8029 00 — 12 x 1 liter) available from authorized dealer. This type of oil will flow at temperatures as low as minus 40°C (-40°F). If unavailable, substitute with Blizzard Oil (P/N 413 8031 00 — 12 x 1 liter).

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



### CAUTION

Check level and refill every time you refuel. Wipe off any oil spills. Oil is highly flammable.

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## COLD WEATHER CARBURETION MODIFICATIONS

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



### CAUTION

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

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## BREAK-IN PERIOD

### Engine

A break-in period of 10 to 15 operating hours — 500 km (300 mi) — is required before running the snowmobile at full throttle.

During this period, maximum throttle should not exceed 3/4. **However, brief full acceleration and speed variations contribute to a good break-in.** Continued wide open throttle accelerations, prolonged cruising speeds and engine overheating are detrimental during the break-in period.

To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of BOMBARDIER injection oil (P/N 413 8029 00 — 12 x 1 liter), 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 25 km (15 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 mi) — or 30 days after the purchase, whichever comes first, your snowmobile be checked by an authorized dealer. This inspection will give you the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation.

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

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## PRE-START CHECK

### Check Points

- Activate the throttle control lever several times to check that it operates easily and smoothly. It must return to idle position when released.
- Activate the brake control lever and make sure the brake fully applies before the brake control lever touches the handlebar grip. It must fully return when released.
- Verify skis and steering operate freely.
- Verify track and idler wheels are unfrozen and free to turn.
- Check fuel and injection oil levels.
- Ensure fuel shut-off valve is in fully open position, if so equipped.
- Verify air filter(s) is free of snow, if so equipped.
- Check gear shift lever position (models with reverse gear only).
- Clean and check operation of the headlight, taillight and brake light.



### **WARNING**

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

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## STARTING PROCEDURE

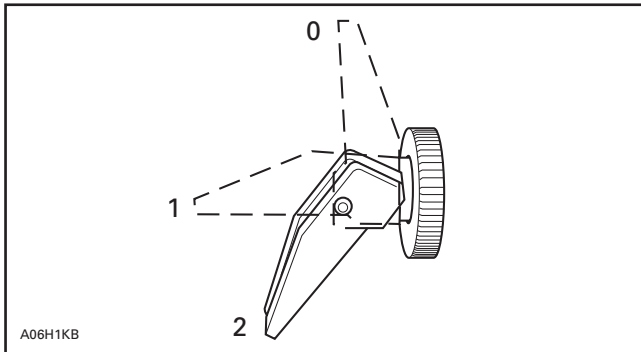
- Re-check throttle control lever operation.
- Ensure that the emergency cut-out switch is in the ON position.
- Ensure the tether cut-out cap is in position and that the cord is attached to your clothing.

### **Primer Equipped Vehicles**

- Activate the primer 2 or 3 times.

NOTE: Priming is not necessary when engine is warm.

### **Choke Equipped Vehicles**



0. OFF  
1. Position 1  
2. Position 2

### **Initial Cold Starting**

NOTE: Do not operate the throttle lever with the choke lever on.

Move the choke lever to position 2 and start the engine. As soon as the engine starts move the lever to position 1. After a few seconds (10 seconds maximum) move the choke lever to OFF.

NOTE: In severe cold weather, colder than  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) you may need to turn the choke on and off a couple of times to position 1 once engine is started.

## 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.

### ***MX Z 670 and Summit x 670***

These models are equipped with a DPM (Digital Performance Management). This system takes care of the fuel enrichment needed during engine starting and warm-up. No throttle action is required. If engine seems to be flooded, apply full throttle. The DPM will stop fuel enrichment.

## Manual Starting

Insert the key 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.

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

## Emergency Starting

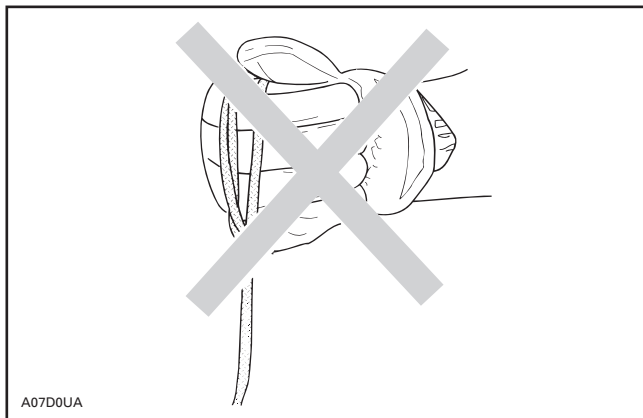
The engine can be started with the emergency starter rope supplied with the tool kit.

Remove belt guard.



## WARNING

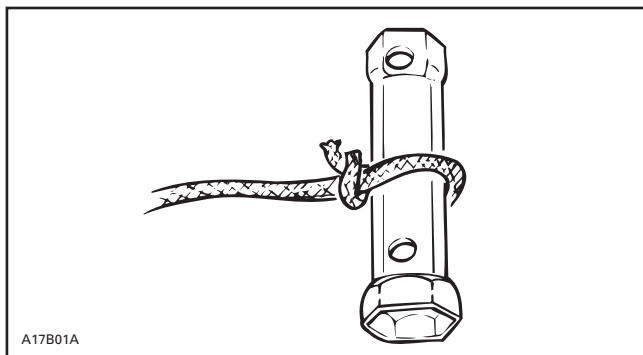
Do not wind starting rope around your hand. Hold rope by the handle only. Do not start the snowmobile by the drive pulley unless it is a true emergency situation. Have the snowmobile repaired as soon as possible.



A07D0UA

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

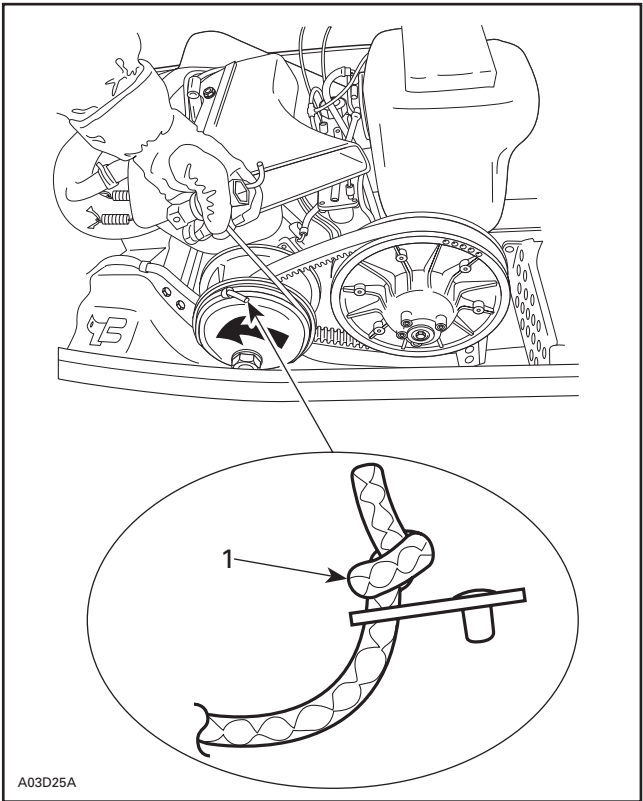
**NOTE:** The spark plug socket can be used as an emergency handle.



A17B01A

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

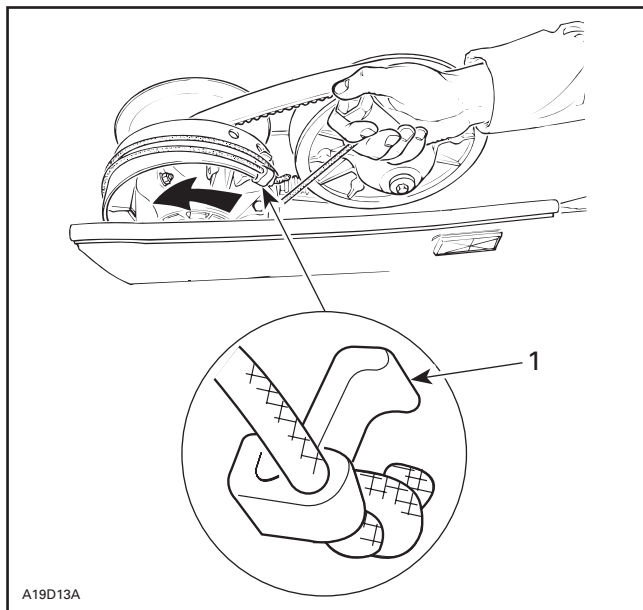
Tie a knot on rivet head side of clip. Hook up clip on drive pulley and wind counterclockwise up to 3 turns.



A03D25A

**TYPICAL — BOMBARDIER LITE DRIVE PULLEY TYPE**

1. Knot on this side



TYPICAL — TRA DRIVE PULLEY TYPE

1. Clip

Start engine as per usual manual starting.



## 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.



# SUSPENSION ADJUSTMENTS

## **All Models Except Tundra/R and Skandic WT/SWT/WT LC**

For factory recommended adjustments refer to decal on pulley guard.



### 1. Decal

This decal describes settings for optimum comfort according to load for your Ski-Doo model.

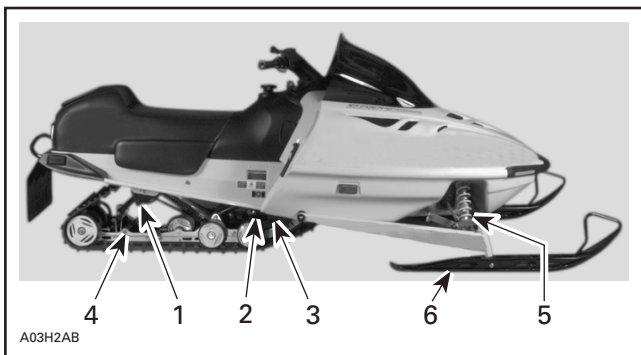
## **General**

### **All Models**

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 kit.



#### **TYPICAL**

1. *Rear springs for comfort*
2. *Center spring for steering behavior*
3. *Stopper strap for snowmobile weight transfer*
4. *Acceleration and control modulator (ACM) — Handling*
5. *Front spring for handling*
6. *Ski stopper for stability*

## **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 in the right order (steps 1 to 6). Then, test run the snowmobile always with the same conditions; trail, speed, snow, driver riding position etc. Change adjustment and retest. Proceed methodically until you get satisfied.



## **CAUTION**

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

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

## 1. Rear Springs — Comfort

When driver and passenger (if so applicable) take place rear of snowmobile should collapse by 50 to 70 mm (2 to 3 in).

### ▼ CAUTION

Always adjust both rear springs to same position.



#### *PROPER ADJUSTMENT*

1. 50 to 75 mm (2 to 3 in)



A03F2MA

TOO SOFT OF ADJUSTMENT



## CAUTION

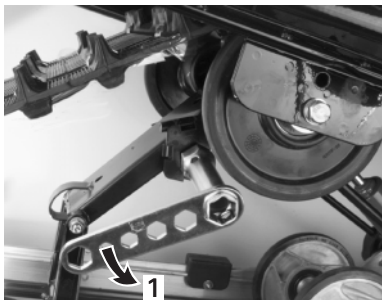
Always turn the left side adjustment cam in a clockwise direction, the right side cam in a counterclockwise direction. Left and right adjustment cams must always be set at the same position.

LH



1

RH



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A30F04A

### SC-10 SUSPENSION

1. Increase spring preload



### ***ARM SUSPENSION***

- 1. Increase spring preload to same position for both springs*



A03F20A

*TOO HARD OF ADJUSTMENT*



## CAUTION

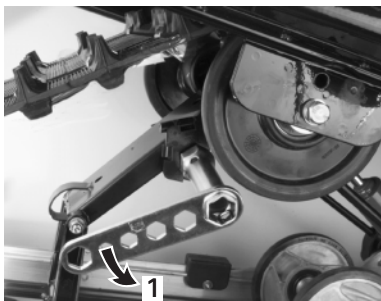
Always turn the left side adjustment cam in a clockwise direction, the right side cam in a counterclockwise direction. Left and right adjustment cams must always be set at the same position.

LH



1

RH

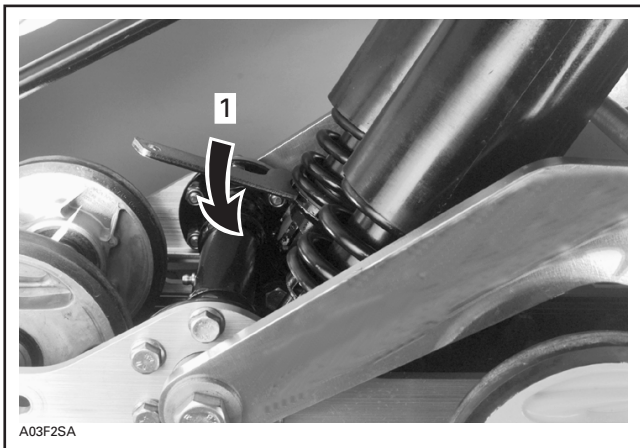


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A30F04A

**SC-10 SUSPENSION**

1. From highest position turn cam to desired position



### **ARM SUSPENSION**

1. Decrease spring preload to same position for both springs

### **2. Center Spring — Steering Behavior**

Ride at moderate speed on a trail with bumpy conditions.

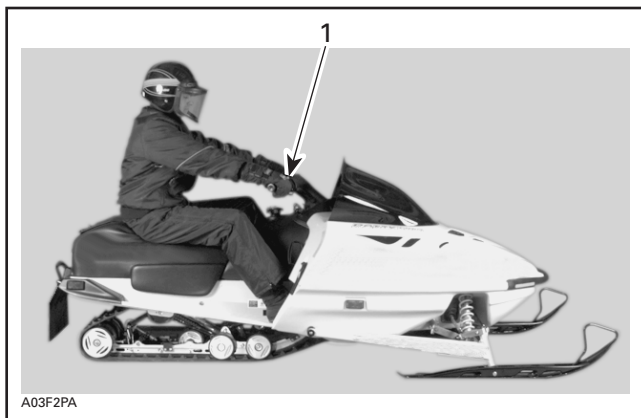
Note if steering is easy to turn.

Adjust center spring accordingly.



### **GOOD ADJUSTMENT AT MODERATE SPEED**

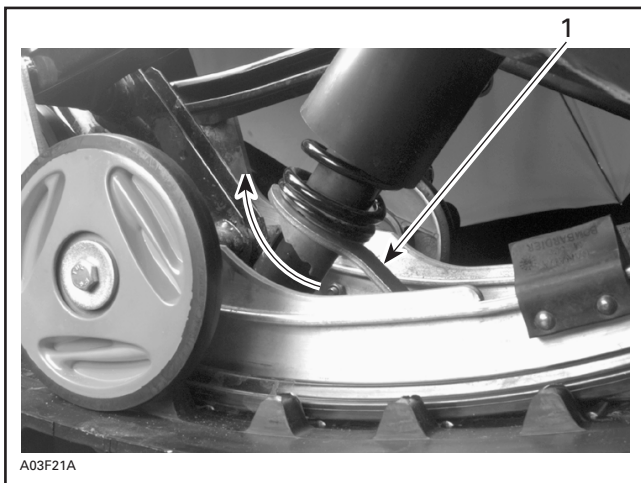
1. Steering easy to turn



A03F2PA

**TOO SOFT OF ADJUSTMENT**

1. *Steering hard to turn*



A03F21A

1. *Adjuster wrench*





A03F2PA

**TOO HARD OF ADJUSTMENT**

1. *Steering less aggressive*



A03F21B

1. *Adjuster wrench*

### 3. Stopper Strap — Weight Transfer

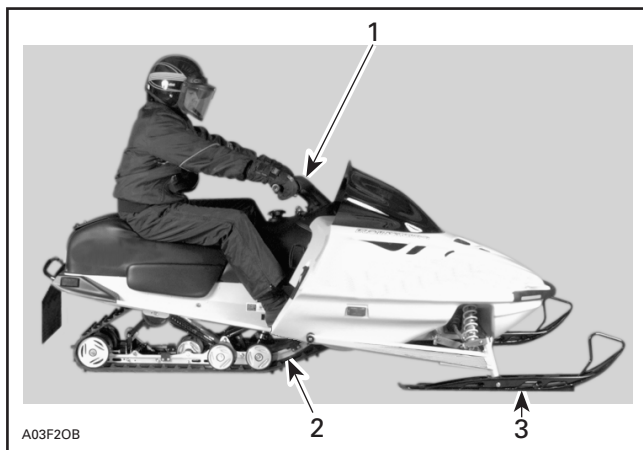
Ride at low speed then fully accelerate. Note steering behavior. Adjust stopper strap length accordingly.

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.



#### GOOD ADJUSTMENT AT FULL ACCELERATION

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

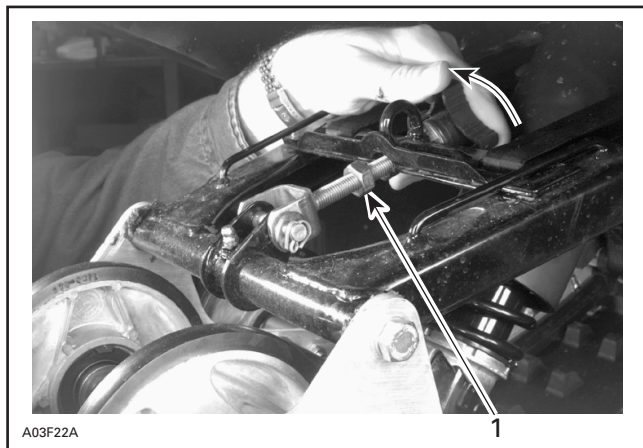


**TOO LONG STRAP**

1. Skis lift off the ground



**Some Models**



1. Loosen lock nut, turn knob accordingly then retighten lock nut



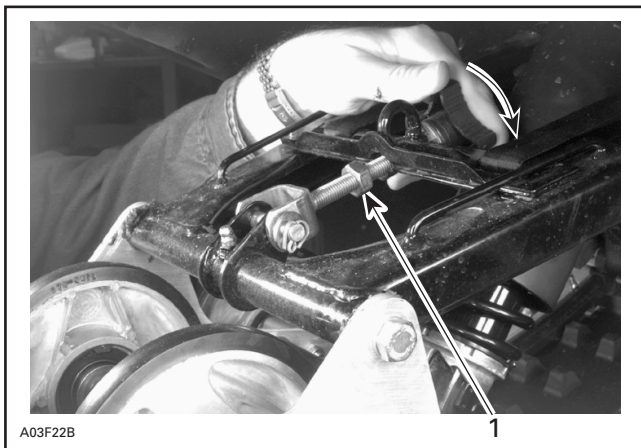
A03F2PA

### **TOO SHORT STRAP**

1. Heavy steering



### **Some Models**



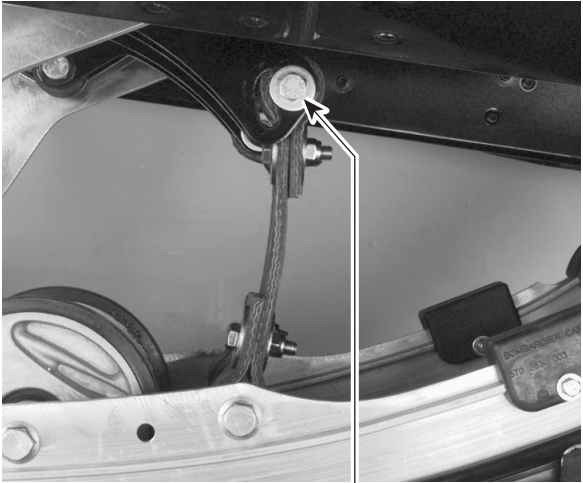
A03F22B

1. Loosen lock nut, turn knob accordingly then retighten lock nut

## ARM Suspension Equipped Models

### ▼ CAUTION

If applicable, adjust both stopper strap to same position.

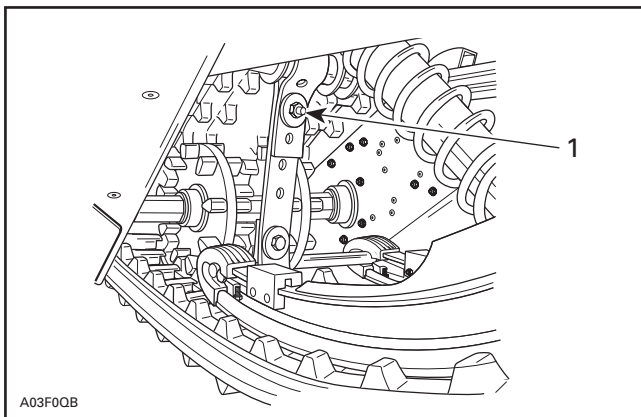


A03F2RA

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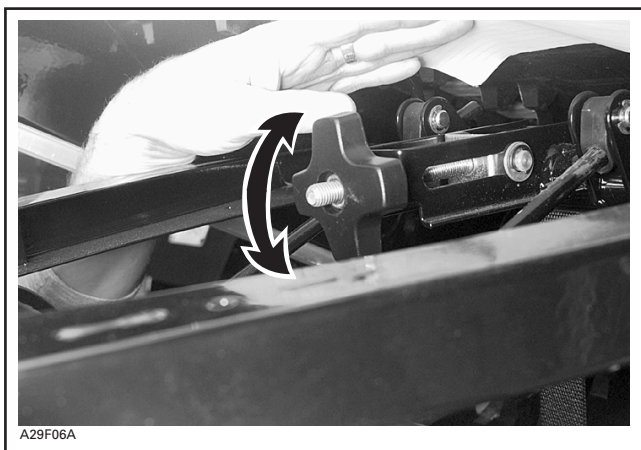
1. Loosen nut then move bolt to lower position then retighten nut

## Some Models



1. Vary strap length by bolting to a different hole

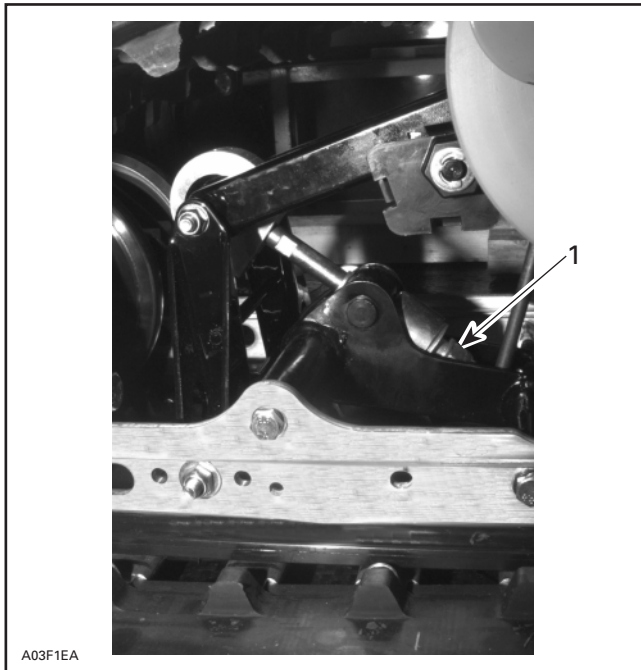
## Skandic WT/SWT/WT LC



#### 4. ACM — Handling

Ride at moderate speed and check for desired handling.

If handling is not satisfactory, turn the nut clockwise. Factory setting is fully tighten.



1. Nut

If handling is too aggressive, turn the nut counterclockwise.



### WARNING

Nut must be in good condition to avoid unexpected loosening. On the threaded rod there must be at least 2 threads exposed beyond the nut. Vehicle may be operated without the nut. However acceleration response will increase whereas steering response will decrease.

## **Skandic WT/SWT/WT LC Only**

### **Suspended Extension Adjustment**

Suspended extension can be adjusted according to the load and snow conditions.

For better deep snow performance, first loosen lock nut then tighten nut 3/4 turn after contacting washers. Retighten lock nut. Adjust the same on both sides.

For trail riding with or without a load and for pulling a load, first loosen lock nut. Turn to a maximum preload of 3 turns after nut touching washers. Retighten lock nut. Adjust the same on both sides.

### **Shackle Movement Limiter**

For deep snow riding, do not install horse shoe washer nor rubber stoppers.

For trail riding with passenger and/or weight, install 1 horse shoe washer under each rubber stoppers.

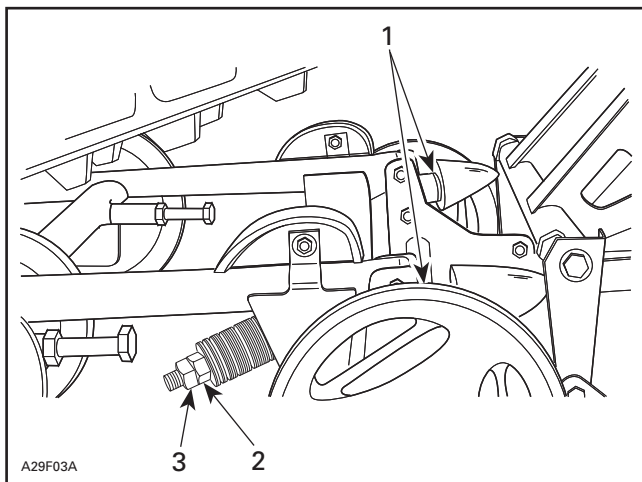
For trail riding with heavy load and/or pulling a load, use 2 horse shoe washers under each rubber stoppers.



## **CAUTION**

Always install same amount of washers on both sides.





- 1. Horse shoe washer(s)
- 2. Lock nut
- 3. Nut

## 5. Front Springs — Handling

Ride at moderate speed and check for proper handling.

Adjust front springs accordingly.



### CAUTION

Always adjust both front springs to same position.



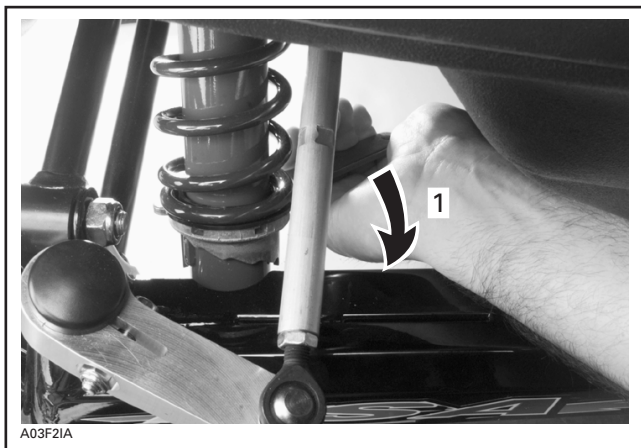
#### PROPER ADJUSTMENT

1. *Good handling and comfortable steering*



**TOO SOFT OF ADJUSTMENT**

1. *Bad handling*

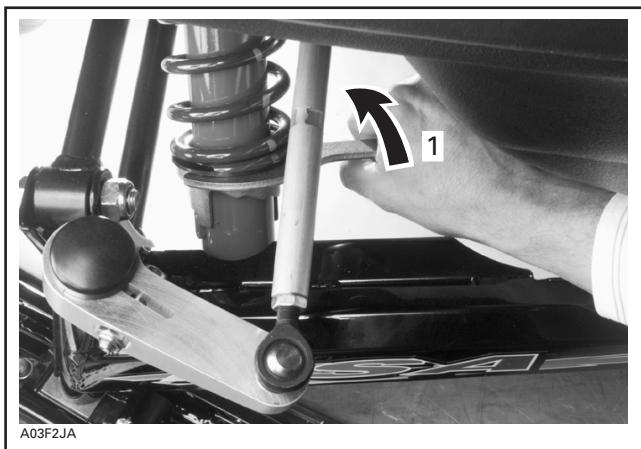


1. *Increase spring preload*



**TOO HARD OF ADJUSTMENT**

1. Steering hard to turn



1. Decrease spring preload

## 6. Ski Stopper Stability

When riding check for darting (unwanted side to side ski movement).



*PROPER ADJUSTMENT*

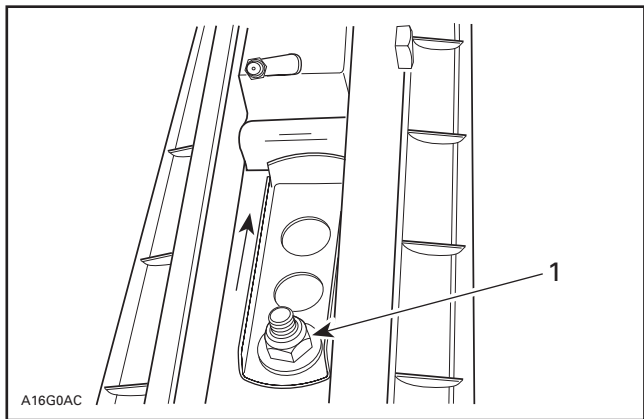
1. No darting



A03A08A

**NOT ENOUGH PRELOAD**

1. Darting



A16G0AC

1. Loosen nut, adjust against ski stopper then retighten nut to 14 N•m  
(124 lbf•in)

# TROUBLESHOOTING CHART

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

## In Deep Snow

When operating the snowmobile in deep snow, it may be necessary to vary the position of front spring adjustment cam (rear suspension) stopper strap and/or riding position, to change the angle at which the track rides on the snow. Operator's familiarity with the various adjustments as well as snow conditions will dictate the most efficient combination.






# LUBRICATION AND MAINTENANCE CHART

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

LUBRICATION AND MAINTENANCE CHART		①	②	③	④	⑤	⑥
	Starting Rope Condition						✓
	Engine Head Nuts	✓			✓		
	Engine Mount Nuts	✓			✓		
	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 Drive Pulleys	✓		✓		✓	
	Cleaning of Drive and Drive Pulleys						✓
	Retorquing of Drive Pulleys Screw	✓					
	Driven Pulley Preload	✓			✓		
	Brake Fluid (change once a year)	✓	✓				✓
	Brake Condition	✓	✓				
	Brake Adjustment			✓			
	Lubrication of Ratchet Wheel						✓



<b>LUBRICATION AND MAINTENANCE CHART</b>		①	②	③	④	⑤	⑥
	Drive Chain Tension	✓		✓			
	Countershaft Lubrication	✓		✓		✓	
	Chaincase/Gearbox Oil Level	✓		✓			
	Chaincase/Gearbox Oil Change					✓	
	Gearbox Oil Change (Skandic WT/SWT/WT LC only)	✓					
	Lubrication of Drive Axle and Bearing			✓		✓	
	Handlebar Bolts, Retorque to 26 N•m (19 lbf•ft)	✓					
	Steering and Front Suspension Mechanism	✓		✓		✓	
	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	✓		✓			
	General Inspection	✓		✓		✓	

\*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.

## FLUID LEVELS

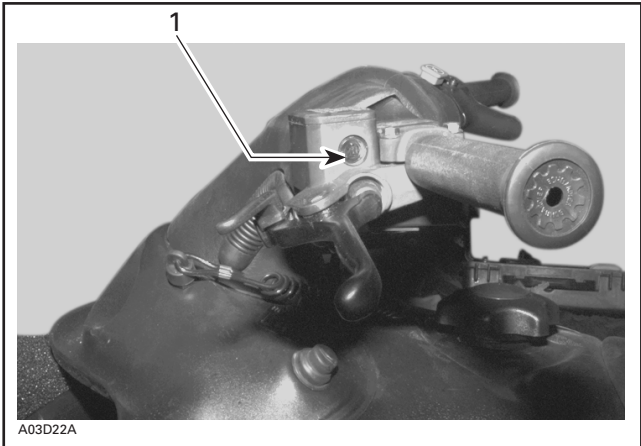
### Brake System

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



## CAUTION

Use only (DOT 4) brake fluid from a sealed container.



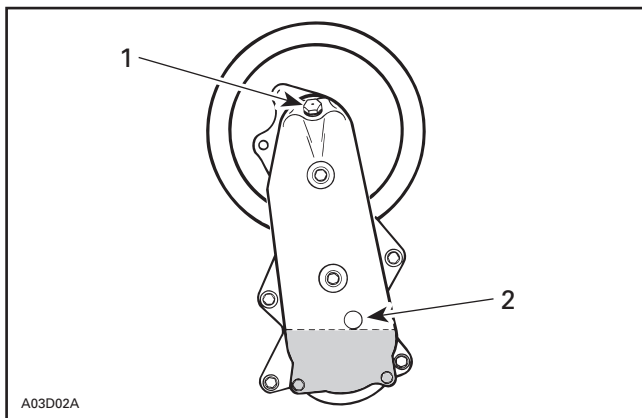
*TYPICAL*

1. *Min.*

## Chaincase/Gearbox Oil Level

### Tundra/R

Check the oil level by removing the chaincase oil level plug.



1. Filler plug
2. Oil level plug

The oil should be level with the bottom of the oil level hole. Refill as required using Bombardier chaincase oil (P/N 413 8019 00) until it flows through oil level hole.

### **All Models Except Tundra/R and Skandic WT/SWT/WT LC**

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

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

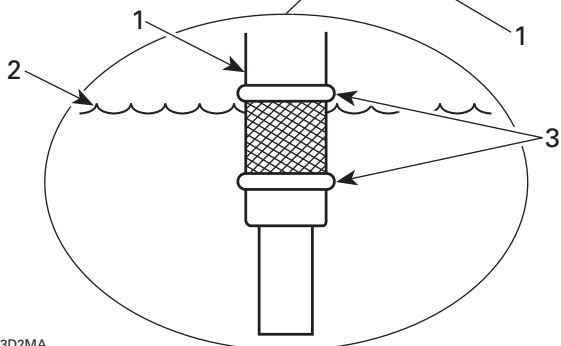
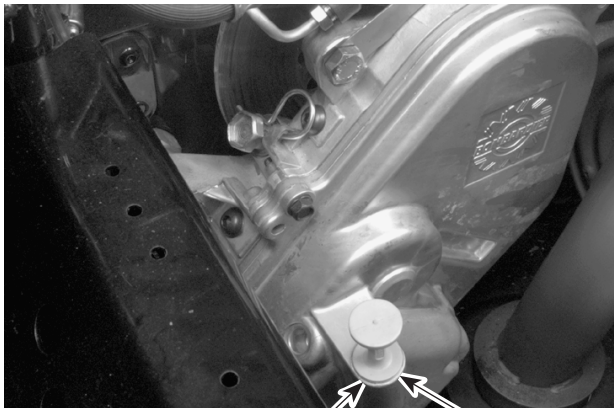
Remove metal particles from magnet.

Refill up to upper mark using BOMBARDIER synthetic chaincase oil (P/N 413 8033 00 — 12 x 355 mL) for liquid cooled models and BOMBARDIER chaincase oil (P/N 413 8019 00 — 12 x 250 mL) for fan cooled models.



## CAUTION

Do not use unrecommended other types of oil when servicing. Do not mix synthetic oil with other types of oil.



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**TYPICAL**

- 1. Dipstick
- 2. Oil level
- 3. Level between marks

### **Skandic WT/SWT/WT LC**

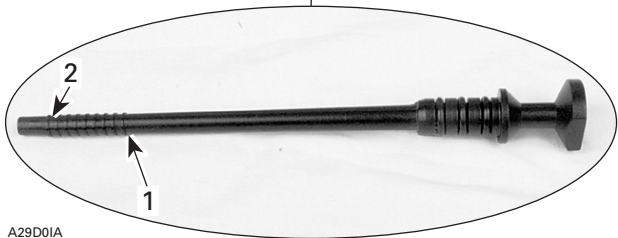
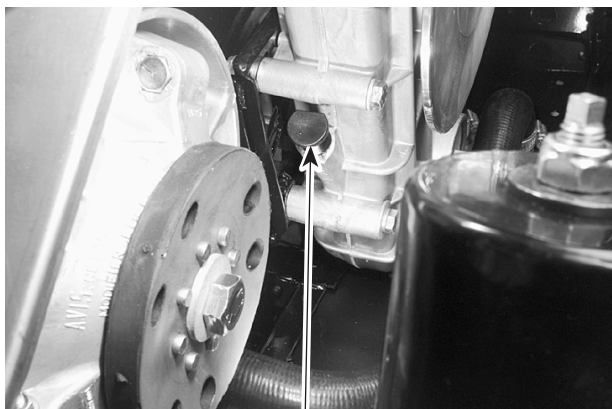
To check, pull dipstick. Oil should reach level mark.

**NOTE:** Before initial start-up, the oil level may be higher than the full mark. After first outing, oil level will decrease as the upper oil cavity fills with oil.

To fill, remove filler plug from top of transmission. Refill as required using Bombardier synthetic chaincase oil (P/N 413 8033 00 — 12 x 355 mL).

## **▼ CAUTION**

Do not use unrecommended other types of oil when servicing. Do not mix this synthetic oil with other types of oil.



A29D01A

**TYPICAL — SKANDIC WT/SWT/WT LC**

1. Full level mark
2. Lower level mark

## Oil Injection System

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



### CAUTION

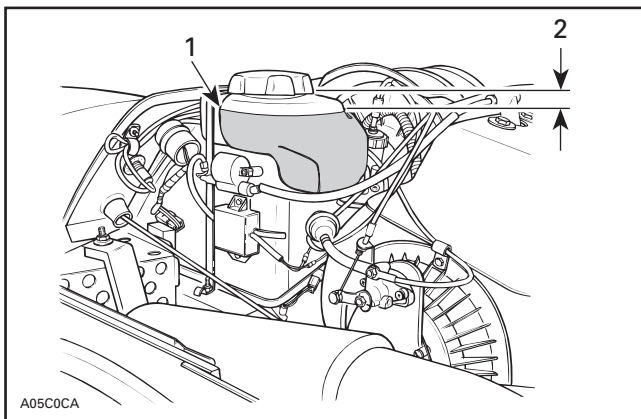
Never allow oil level to drop more than 2/3.



### WARNING

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

### *Tundra/R, Fan Cooled S-Series*

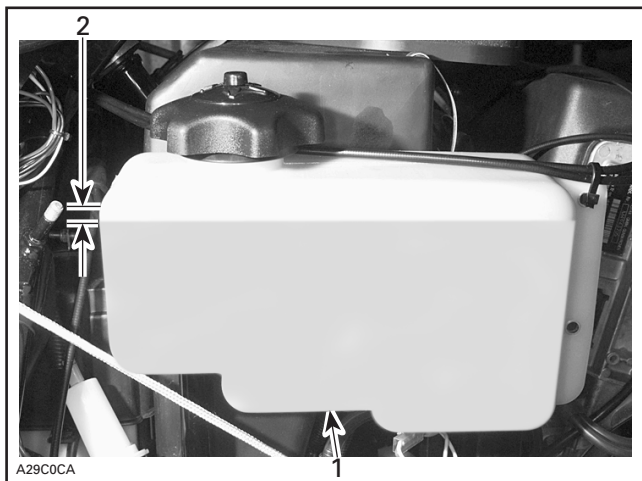


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#### **TYPICAL**

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

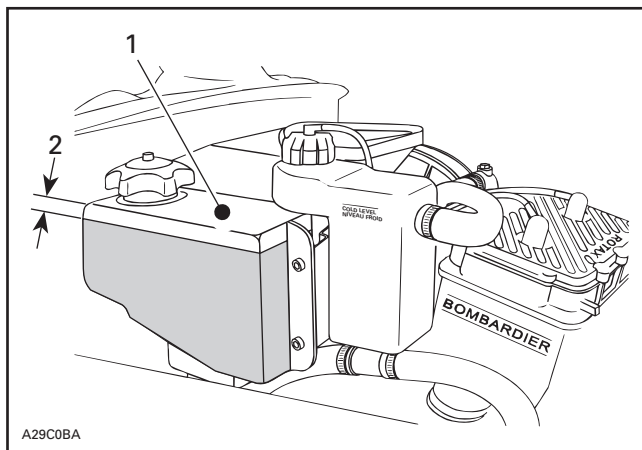
## Skandic WT/SWT



### TYPICAL

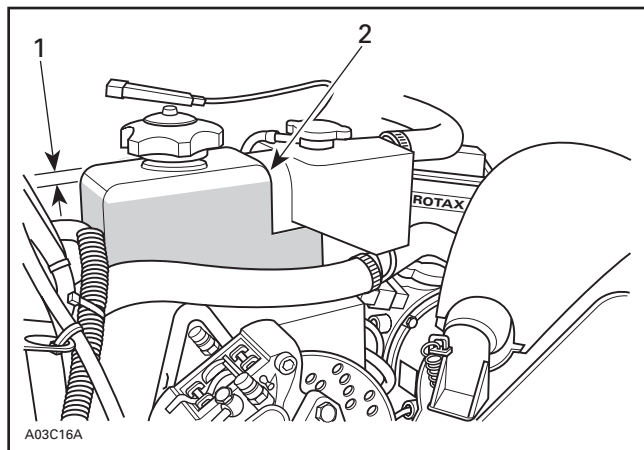
1. Injection oil reservoir
2. Maximum level: 13 mm (1/2 in) from top

## Skandic WT LC



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

## Liquid Cooled S-Series



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

## Cooling System

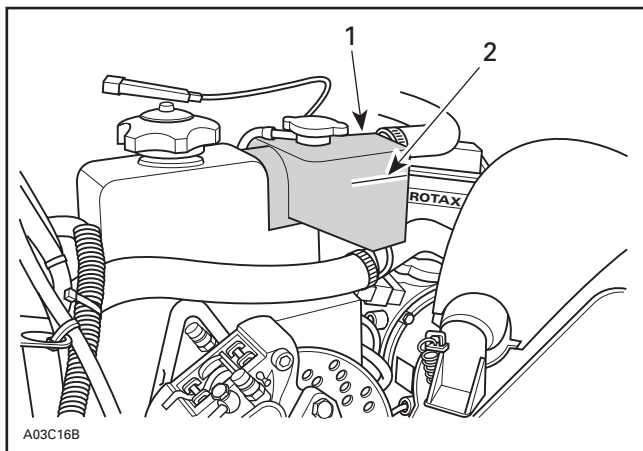
### **Liquid Cooled Models Only**

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 slight lower then mark.

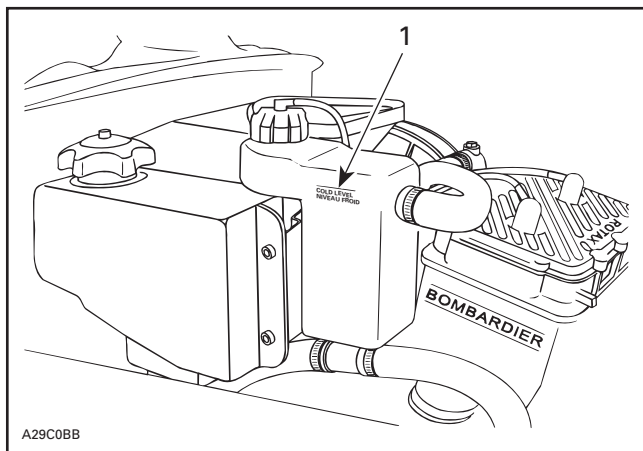
If additional coolant is necessary or if entire system has to be refilled, refer to an authorized dealer.





ALL MODELS EXCEPT SKANDIC WT LC

1. Coolant tank
2. COLD LEVEL line



SKANDIC WT LC

1. COLD LEVEL line

## Battery Electrolyte

**Some Models**

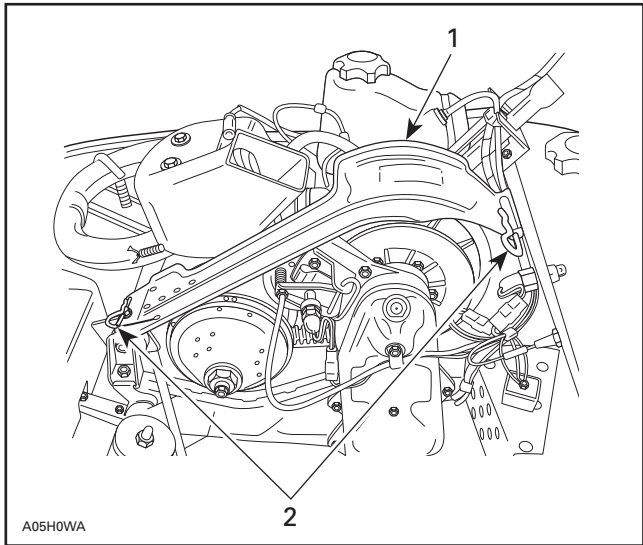
See your dealer.

# MAINTENANCE

## Belt Guard Removal and Installation

### *Tundra/R*

Open hood. Remove belt guard retaining pins and lift off the guard.

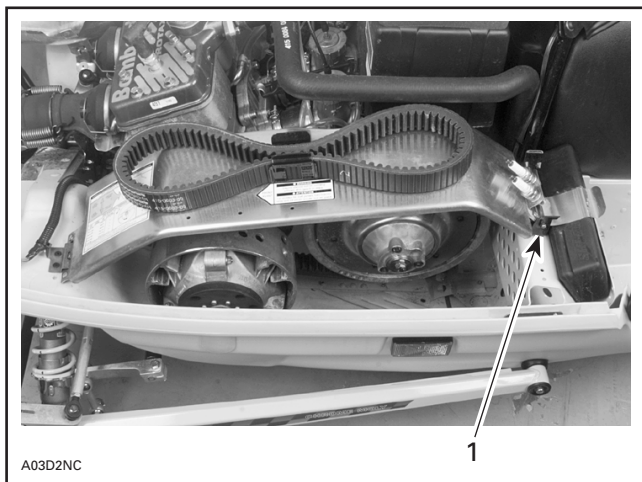


*TYPICAL*

1. Belt guard
2. Retaining pins

**All Models Except Tundra/R and Skandic WT/SWT/WT LC**

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

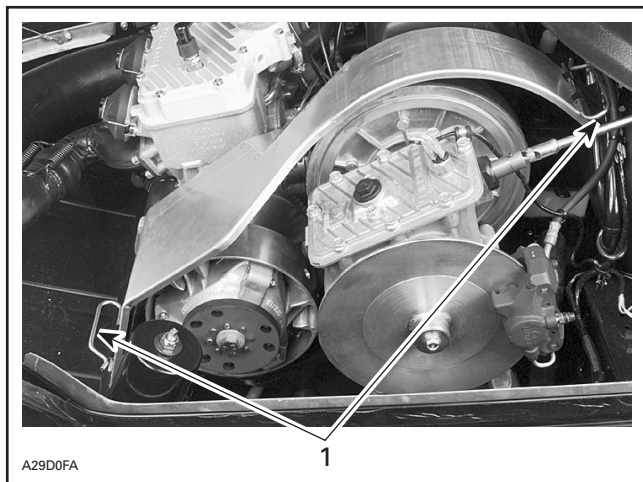


1. *Pin retainer*

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

## **Skandic WT/SWT/WT LC**

Remove both retaining pins then belt guard.



*TYPICAL*

1. Retaining pins

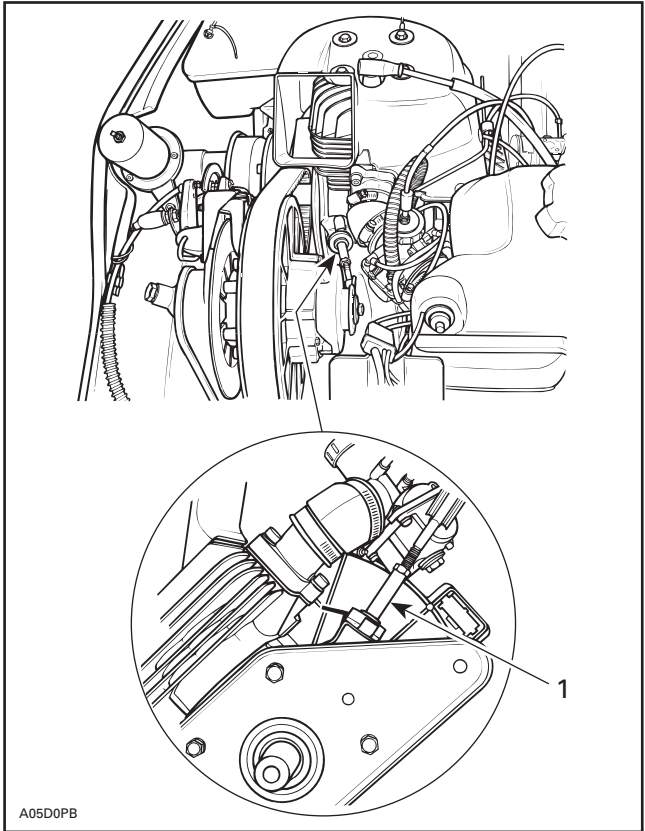
### **All Models**

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

## Drive Belt Removal/Installation

1. Open hood and remove belt guard.

Some models may also require the disconnection of driven pulley support.

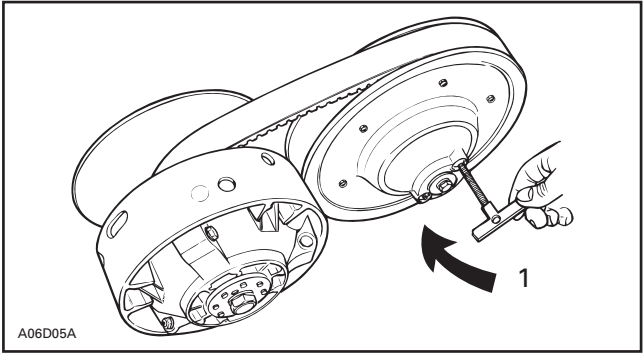


**TUNDRA/R**

1. *Raise*

**NOTE:** Removal and installation of drive belt is easier when driven pulley is held with brake so that it can not rotate. Apply parking brake, on models so equipped, for this purpose.

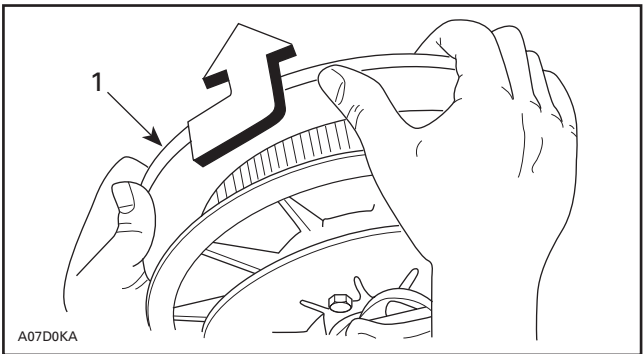
2. On some models, open the driven pulley with the drive belt installer/remover provided in tool box.
  - Screw tool in the threaded hole and tighten to open the pulley. Remove belt.



**SOME MODELS**

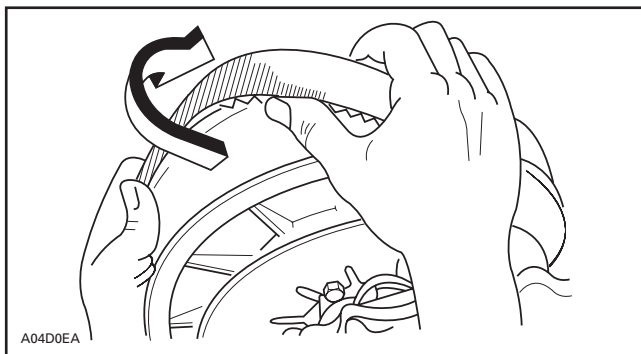
1. Tighten to open pulley

On models not equipped with above driven pulley, open the driven pulley by twisting and pushing the sliding half. Hold in fully open position.



1. Sliding half

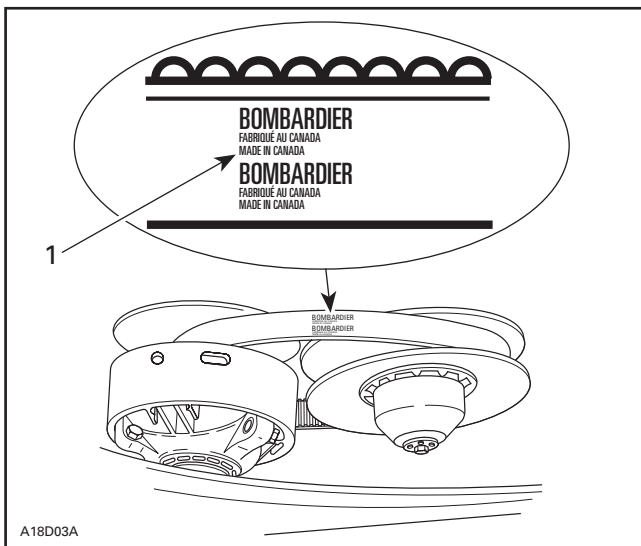
Slip the belt over the top edge of the sliding half, as shown.



### **All Models**

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. Install it so the Bombardier name on the belt can be read when facing pulleys.



1. *Bombardier name*



## CAUTION

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

Reposition and lock driven pulley support, on models so equipped. On models so equipped, remove belt installer. Reinstall belt guard.

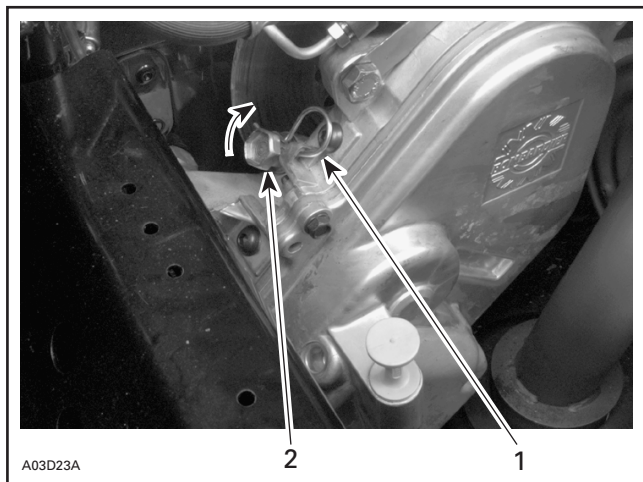
### Drive Chain Tension

**All Models Except Tundra/R and Skandic WT/SWT/WT LC**

**NOTE:** Tundra/R are equipped with an automatic tensioner. Skandic WT/SWT/WT LC are equipped with gearbox without chain.

Remove hair pin.

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



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2

1

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.

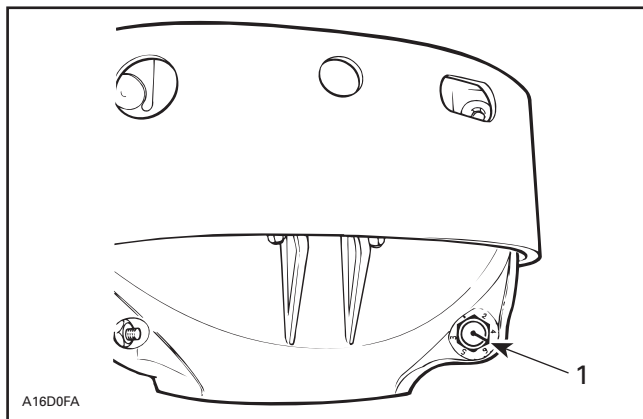
Calibration screws should be adjusted so that actual maximum engine RPM in vehicle matches with the maximum horsepower RPM.

**NOTE:** Use precision digital tachometer for engine RPM adjustment.

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

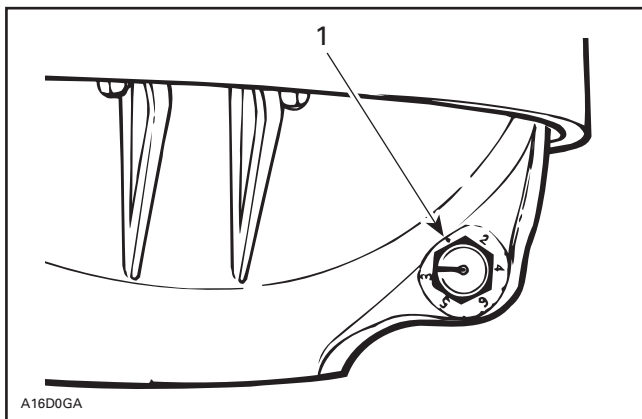
To adjust, modify ramp end position by turning calibration screws.

Calibration screw has a notch on top of its head.



1. Notch

Governor cup has 6 positions numbered 2 to 6. Not 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.

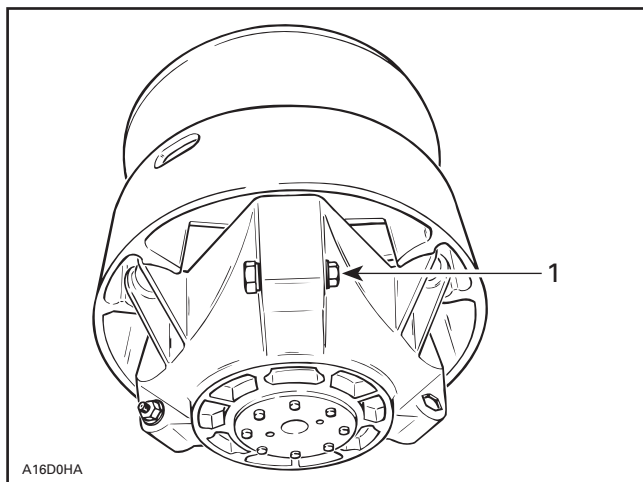
**To adjust:**

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.



1. Loosen just enough to permit rotating of calibrate screw

## ◆ WARNING

Always reinstall drive belt guard. Do not operate engine with hood open or drive 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 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 spare belt. Contact an authorized dealer.

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

### Brake Condition

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

## Brake Adjustment

### ***Mechanical Brake Only***

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

### ***Hydraulic Brake Only***

No adjustment is provided for hydraulic brake. See an authorized 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 dealer.



## **WARNING**

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

## Track Tension and Alignment

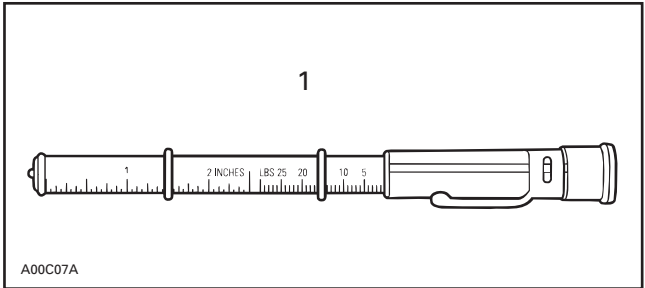
### **Tension**

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

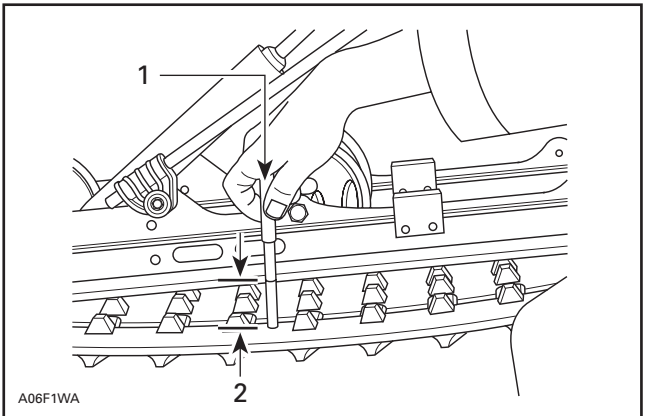
Lift rear of snowmobile and support it with a **snowmobile mechanical stand**.

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 3482 00) may be used to measure deflection as well as force applied.



1. Belt tension tester



**TYPICAL**

1. 7.3 kg (16 lb)
2. Deflection



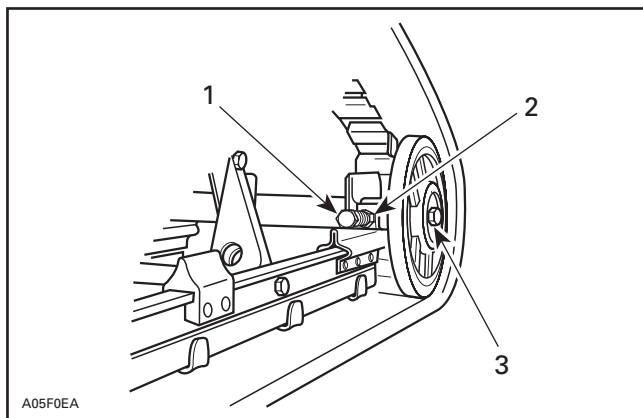
## CAUTION

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

### To adjust tension:

- Loosen the rear idler wheel retaining screws.
- Loosen the lock nuts (on some models only) then turn adjustment screws to adjust.

If correct tension is unattainable, contact an authorized dealer.



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### TYPICAL

1. Adjustment screw
2. Loosen lock nut (some models only)
3. Loosen screw

### Alignment

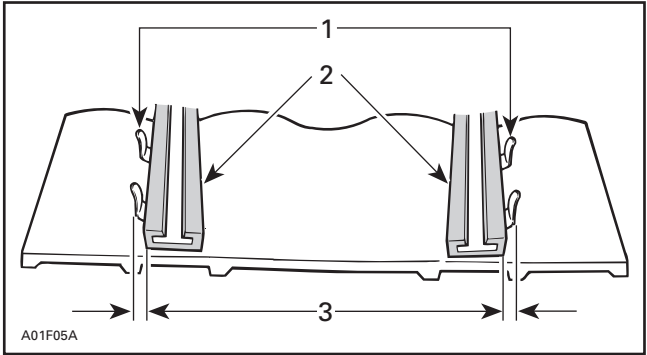
**NOTE:** Track tension and alignment are inter-related. Do not adjust one without the other.



## WARNING

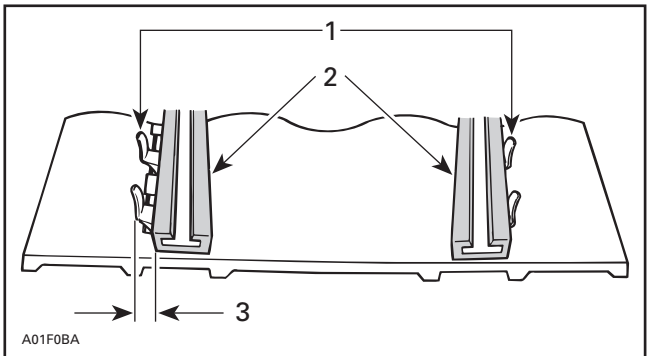
Before checking track alignment, ensure that the track is free of all particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track. Ensure no one is standing in close proximity to the snowmobile.

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.



1. Guides
2. Slider shoes
3. Equal distance

To correct, **stop the engine**: Loosen the lock nuts (some models only) and tighten the adjustment screw on side where the slider shoe is the farthest from the track insert guides.



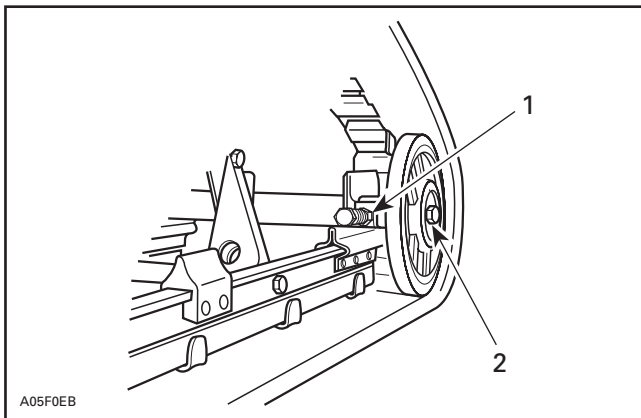
1. Guides
2. Slider shoes
3. Tighten on this side

Tighten lock nuts (some models only) and adjustment screws.



## WARNING

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



### TYPICAL

1. Retighten (some models only)
2. Retighten

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 dealer.



## **Wear and Condition of Skis and Runners**

Check the condition of the skis, ski runners and ski runner carbides (if so equipped). If worn, contact your authorized dealer.



### **WARNING**

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

## **Exhaust System**

The tail pipe of the muffler should be centered with the exit hole in the bottom pan. It must be free of rust or leaks.

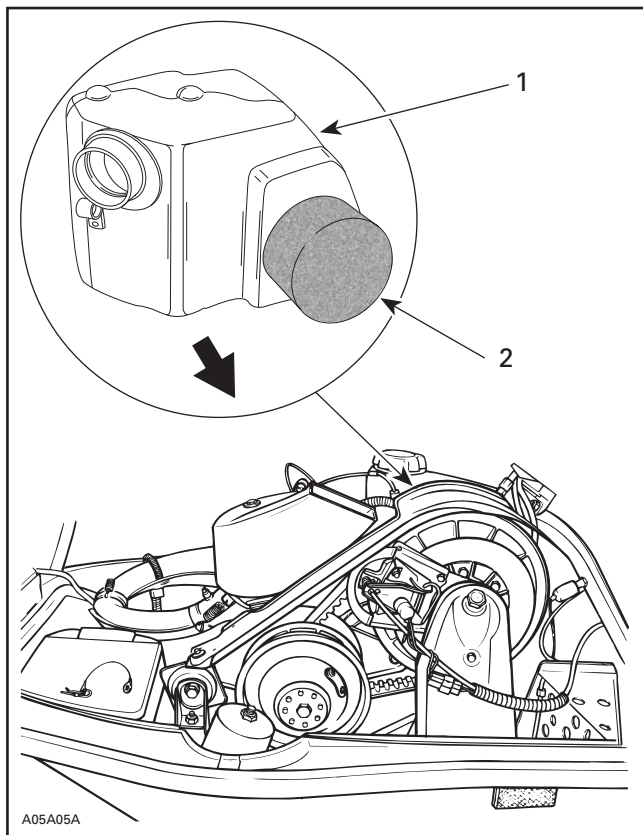
The exhaust system is designed to reduce noise and to improve the total performance of the engine. If any exhaust system component is removed from the engine, severe engine damage will result.

## **Air Filter Cleaning**

### ***Tundra/R***

Air filter is located on lower side portion of air intake silencer. Lift hood and remove belt guard. Gently pull air filter sideward.

Ensure it is clean and dry. Shake snow out. Clean with a solvent and dry as necessary.



1. Intake silencer
2. Air filter

### **S-Series Models**

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.



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***FILTER INSTALLED***



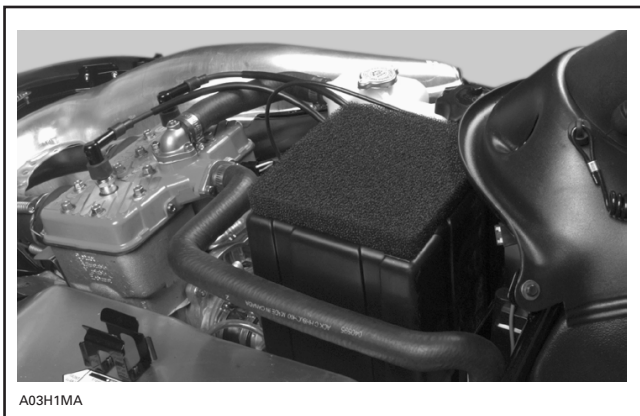
A03H1KA

***REMOVING FILTER***



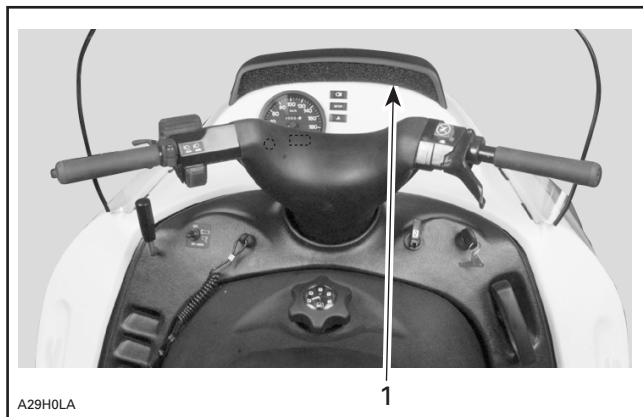
*SHAKING SNOW FROM FILTER*

Remove snow from filter on air intake silencer.



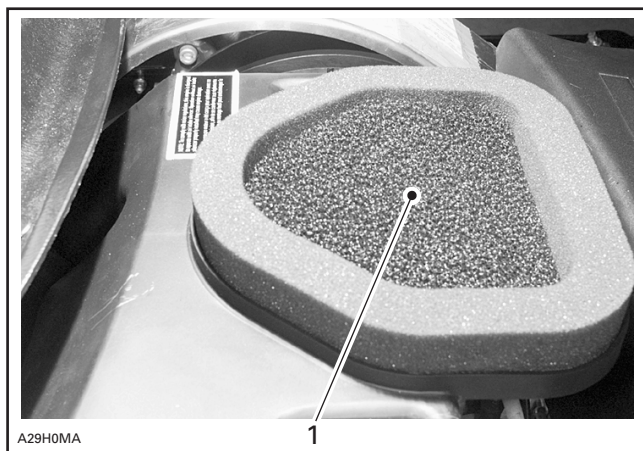
## **Skandic WT/SWT/WT LC**

Remove filter from air inlet duct. Shake the snow out of filter then, dry it out.



1. Air filter installed in air inlet duct

Open hood and check that filter on air silencer is free of snow.



1. Air filter installed on top of air silencer

### **All Models**

Check that the air box 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.

### **High Altitude Kit**

If you reside or ride at altitudes above 1200 m (4000 ft), your snowmobile should have a high altitude kit installed. Refer to your authorized BOMBARDIER dealer. Summit models are factory calibrated for high altitude. These models can be converted for sea level utilization.



## **CAUTION**

Do not change original factory calibration if snowmobile is used below 1200 m (4000 ft) (except Summit models).

### **Bulb Replacement**

Always check light operation after bulb replacement.

#### **Headlight**

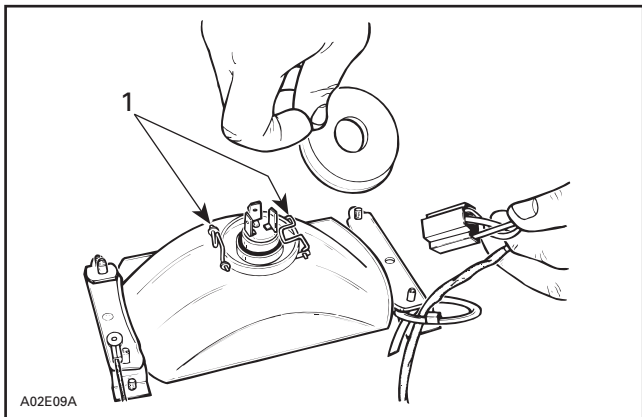


## **CAUTION**

On applicable models, 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.

#### **Tundra/R**

If headlamp is burnt, tilt hood. Unplug connector from headlamp. Remove protector cap and unfasten bulb retainer clips. Detach bulb and replace.

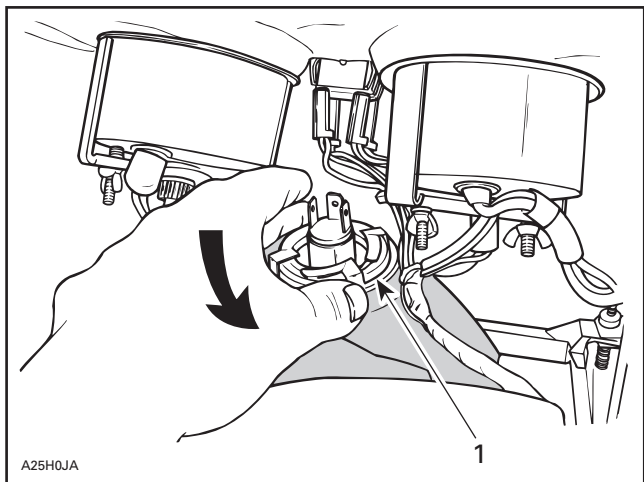


*TYPICAL*

1. Retainers clips

### **All Other Models**

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

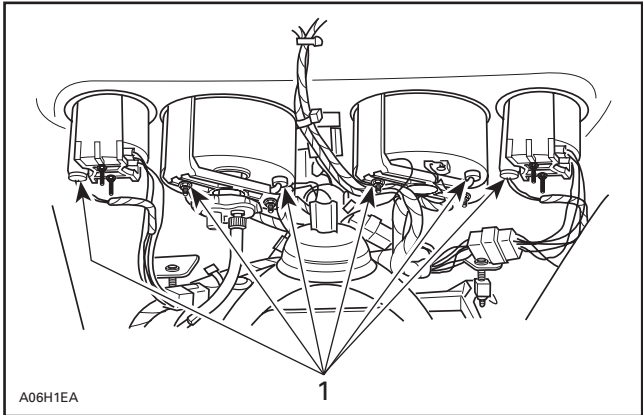


*TYPICAL*

1. Locking ring

## Instrument(s)

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.



1. Instruments sockets

## Taillight

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

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## 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 maintenance chart in MAINTENANCE section.



## TROUBLESHOOTING

<b>SYMPTOM: <i>Engine turns over but fails to start</i></b>	
<b>Possible causes</b>	<b>What to do</b>
1. Ignition switch, emergency cut-out switch or tether switch is in the OFF position.	Place all switches in the RUN or ON position.
2. Mixture not rich enough to start cold engine.	Check fuel tank level and check starting procedure, particularly use of the primer or the choke.
3. Flooded engine (spark plug wet when removed).	Do not prime or 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 dealer.
4. No fuel to the engine (spark plug dry when removed).	Check fuel tank level; turn fuel valve on if applicable; check fuel filter; replace if clogged; check condition of fuel and impulse lines and their connections. A failure of the fuel pump or carburetor has occurred. Contact an authorized dealer.
5. Spark plug/ignition (no spark).	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 dealer.

**SYMPTOM: Engine turns over but fails to start**

<b>Possible causes</b>	<b>What to do</b>
6. Engine compression.	As the engine is pulled over with the rewind starter, "cycles" of resistance should be felt as piston goes past top dead center (each piston on twin-cylinder engines). If no pulsating resistance is felt, it suggests a major loss of compression. Contact an authorized dealer.

**SYMPTOM: Engine lacks acceleration or power**

<b>Possible causes</b>	<b>What to do</b>
1. Fouled or defective spark plug.	Check item 5 of "Engine turns over but fails to start".
2. Lack of fuel to engine.	Check item 4 of "Engine turns over but fails to start".
3. Carburetor adjustments.	Contact an authorized dealer.
4. Drive belt worn too thin.	If the drive belt has lost more than 3 mm (1/8 in) of its original width, it will affect vehicle performance.
5. Drive and driven pulleys require servicing.	Contact an authorized dealer.
6. Engine is overheating.	On liquid cooled engines, check coolant level, pressure cap, thermostat and for air locks in cooling system. On fan cooled engines, check fan belt and its tension; clean cooling fins of engine; if overheating persists, contact an authorized dealer.

<b>SYMPTOM: <i>Engine backfire</i></b>	
<b>Possible causes</b>	<b>What to do</b>
1. Faulty spark plug (carbon accumulation).	See item 5 of "Engine turns over but fails to start".
2. Engine is running too hot.	See item 6 of "Engine lacks acceleration or power".
3. Ignition timing is incorrect or there is an ignition system failure.	Contact an authorized dealer.
<b>SYMPTOM: <i>Engine misfire</i></b>	
<b>Possible causes</b>	<b>What to do</b>
1. Fouled/defective/worn spark plugs.	Clean/verify spark plug and heat range. Replace as required.
2. Too much oil supplied to engine.	Improper oil pump adjustment, refer to an authorized dealer. Improper fuel/oil mixture. Drain fuel tank and refill with appropriate mixture ratio.
3. Water in fuel.	Drain fuel system and refill with fresh fuel.
<b>SYMPTOM: <i>Snowmobile cannot reach full speed</i></b>	
<b>Possible causes</b>	<b>What to do</b>
1. Drive belt.	Check item 4 of "Engine lacks acceleration or power".
2. Incorrect track adjustment.	See maintenance section and/or dealer for proper alignment and tension adjustments.
3. Pulleys misaligned.	Contact an authorized dealer.
4. Engine.	See items 1, 2, 6 and 7 of "Engine lacks acceleration or power".

# SPECIFICATIONS

MODEL		TUNDRA/R	FAN COOLED S-SERIES MODELS
<b>Engine</b>			
– Maximum power engine speed	RPM	6900	377: 6900, 443: 7000 503: 7000
<b>Drive belt</b>			
– Number		414 8276 00	415 0606 00
– New belt width	mm (in)	36.5 (1-7/16)	34.3 (1-23/64)
– Wear limit width	mm (in)	30.0 (1-3/16)	32.0 (1-1/4)
<b>Spark plug</b>			
– Type		NGK BR 9 ES	NGK BR 9 ES
– Gap	mm (in)	0.45 (.018)	0.45 (.018)
<b>Track</b>			
– Tension	mm (in)	35 - 40 (1-3/8 - 1-9/16) ①	35 - 40 (1-3/8 - 1-9/16) ①
– Alignment		②	②
<b>Fuel</b>			
– Type		③	③
– Tank capacity	L (US gal)	26.0 (6.9)	40.0 (10.6) 37 (9.8) for MX Z 440
<b>Oil (engine)</b>			
– Type		④	④
– Tank capacity	L (US oz)	1.9 (64)	2.6 (86.2)
<b>Chaincase/Transmission Oil</b>			
– Type		⑤	⑤
– Capacity	mL (US oz)	200 (7)	250 (8.5)
<b>Cooling System</b>			
– Type		N.A.	N.A.
– Capacity	L (US oz)	N.A.	N.A.
<b>Brake System Fluid</b>			
– Type		DOT 4	DOT 4

① to ⑤ and N.A.: see at end of specifications.

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

<b>MODEL</b>		<b>G.T. 500/583 FORMULA Z 500/ Z 583/DL 500/DL 583 MX Z 500/583 SUMMIT 500/583</b>	<b>FORMULA Z 670 FORMULA DL 670</b>
<b>Engine</b>			
- Maximum power engine speed	RPM	494: 7800 583: 7900	7700
<b>Drive belt</b>			
- Number		414 8607 00	415 1063 00
- New belt width	mm (in)	34.9 (1-3/8)	34.9 (1-3/8)
- Wear limit width	mm (in)	32.0 (1-1/4)	32.0 (1-1/4)
<b>Spark plug</b>			
- Type		NGK BR 9 ES	NGK BR 9 ES
- Gap	mm (in)	0.45 (.018)	0.45 (.018)
<b>Track</b>			
- Tension	mm (in)	35 - 40 (1-3/8 - 1-9/16) ①	35 - 40 (1-3/8 - 1-9/16) ①
- Alignment		②	②
<b>Fuel</b>			
- Type		③	③
- Tank capacity	L (US gal)	40.0 (10.6)	40.0 (10.6)
<b>Oil (engine)</b>			
- Type		④	④
- Tank capacity	L (US oz)	2.6 (86.2)	2.6 (86.2)
<b>Chaincase/Transmission Oil</b>			
- Type		⑥	⑥
- Capacity	mL (US oz)	250 (8.5)	250 (8.5)
<b>Cooling System</b>			
- Type		⑦	⑦
- Capacity	L (US oz)	4.7 (160) Summit: 5.0 (169)	4.7 (160)
<b>Brake System Fluid</b>			
- Type		DOT 4	DOT 4

① to ⑧ and N.A.: see at end of specifications

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<b>MODEL</b>	<b>MX Z 670 SUMMIT x 670</b>	<b>SKANDIC WT/SWT/WT LC</b>
<b>Engine</b>		
– Maximum power engine speed	RPM	8000
		WT: 6800 SWT: 6500 WT LC: 7000
<b>Drive belt</b>		
– Number		415 1063 00
– New belt width	mm (in)	34.9 (1-3/8)
– Wear limit width	mm (in)	32.0 (1-1/4)
<b>Spark plug</b>		
– Type		NGK BR 9 ES
– Gap	mm (in)	0.45 (.018)
<b>Track</b>		
– Tension	mm (in)	35 - 40 (1-3/8 - 1-9/16) ①
		50 (1-31/32) ①
– Alignment		②
		②
<b>Fuel</b>		
– Type		⑧
		③
– Tank capacity	L (US gal)	40.0 (10.6)
		40 (10.6)
<b>Oil (engine)</b>		
– Type		④
		④
– Tank capacity	L (US oz)	2.6 (86.2)
		2.55 (86)
<b>Chaincase/Transmission Oil</b>		
– Type		⑥
		⑥
– Capacity	mL (US oz)	250 (8.5)
		500 (17)
<b>Cooling System</b>		
– Type		⑦
		WT LC: ⑦
– Capacity	L (US oz)	MX Z 670: 4.7 (160) SUMMIT x 670: 5.0 (169)
		WT LC: 4.0 (139)
<b>Brake System Fluid</b>		
– Type		DOT 4
		DOT 4

① to ⑧ and N.A.: see at end of specifications

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

- ① Measure gap between slider shoe and bottom inside of track when exerting a downward pull of 7.3 kg (16 lb) to the track.
- ② Equal distance between edges of track guides and slider shoes.
- ③ Regular unleaded gasoline with a minimum octane number of 87 (R + M)/2.
- ④ Bombardier injection oil (P/N 413 8029 00 — 1 L).
- ⑤ Bombardier chaincase oil (P/N 413 8019 00 — 12 x 250 mL).
- ⑥ Bombardier synthetic chaincase oil (P/N 413 8033 00 — 12 x 355 mL).
- ⑦ Ethylene-glycol antifreeze for aluminum engines mixed with water (3 parts of antifreeze for 2 parts of water).
- ⑧ Super unleaded gasoline with a minimum octane number of 91 (R + M)/2.

N.A.: Not applicable

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## OTHER PUBLICATIONS AVAILABLE

PUBLICATIONS		P/N
1999	Shop Manual (english) ①	
	Volume 1	484 2000 01
	Volume 2	484 2000 03
	Volume 3	484 2000 05
1999	High Altitude Technical Data (loose sheets)	484 3000 03
	Binder	484 0545 00
1995 - 1999	Specification Booklet	484 3000 02
1999	Racing Handbook	484 3000 04

Order from your SKI-DOO dealer.

① Ask your dealer for the appropriate volume you need.

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## **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 receive the warranty registration card from the previous owner, when the ownership is transferred, 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.





**CHANGE OF ADDRESS**

**CHANGE OF OWNERSHIP**

VEHICLE IDENTIFICATION NUMBER

OLD ADDRESS  
OR PREVIOUS OWNER:

NAME

NO

STREET

APT.

CITY

STATE/PROVINCE

ZIP/POSTAL CODE

NEW ADDRESS  
OR NEW OWNER:

NAME

NO

STREET

APT.

CITY

STATE/PROVINCE

ZIP/POSTAL CODE

**BOMBARDIER INC.**  
SKI-DOO WARRANTY  
VALCOURT (QUEBEC)  
CANADA J0E 2L0

STAMP



**BOMBARDIER**  
*RECREATIONAL PRODUCTS*

