

# ***ski-doo***®

## 1997

# OPERATOR'S GUIDE



## GRAND TOURING SE

**SUPPLEMENT** THIS SUPPLEMENT MUST BE USED IN CONJUNCTION WITH 1997 OPERATOR'S GUIDE (P/N 415 0326 00)

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## **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.



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## FOREWORD

Congratulations on your purchase of a new SKI-DOO snowmobile. Your Grand Touring SE 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.

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

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



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## NOTICE

The *Operator's Guide* and the *Snowmobiler's Safety Handbook* have been prepared to acquaint the owner/operator or passenger of a new snowmobile with the various 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.

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

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

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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\* Refer to 1997 Operator's Guide (P/N 415 0326 00)



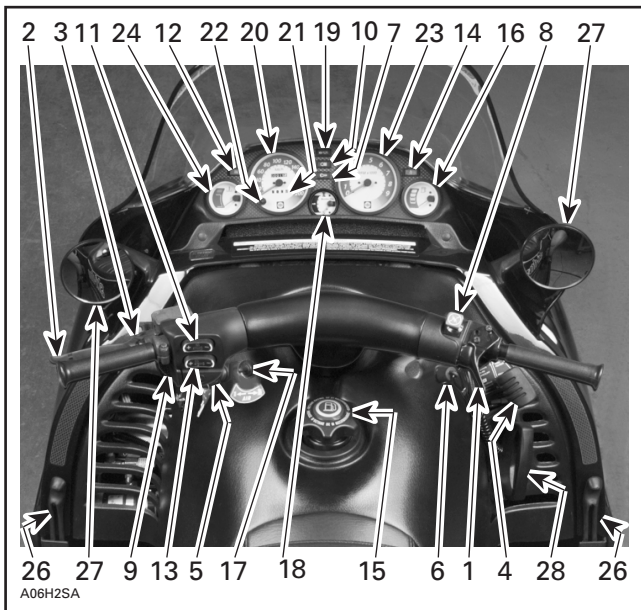
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## SAFETY MEASURES

### Observe the Following Warnings:

- ◆ 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.
- ◆ 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.
- ◆ 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.

## CONTROLS/INSTRUMENTS



### 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.

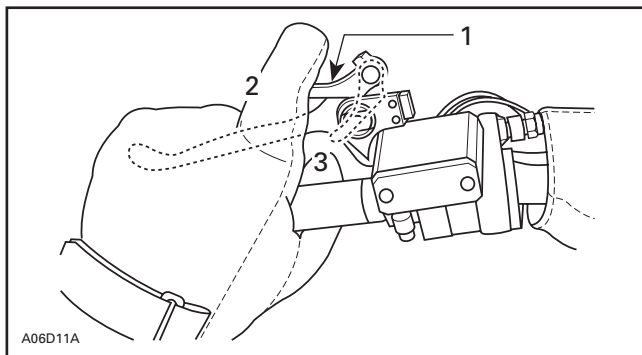
Whenever parking brake is applied and engine is running, injection oil level pilot lamp lights up to remind you that it is engaged.

## ▼ CAUTION

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

**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

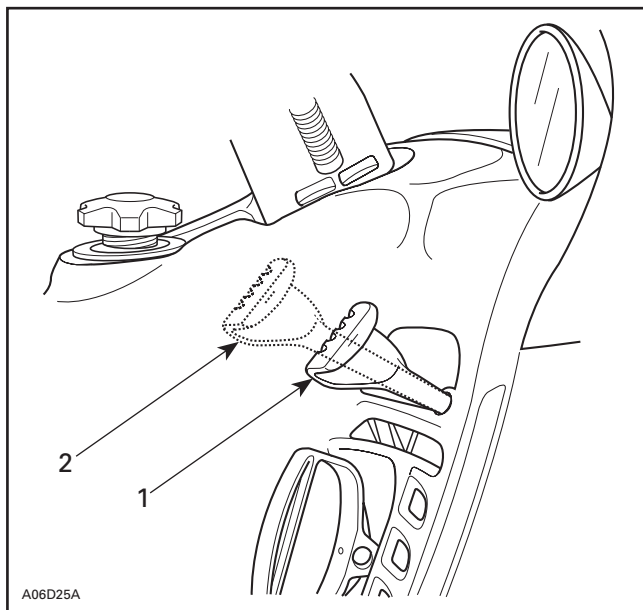
### 4) Gear Shift Lever

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

**A 2-position lever:**

Push: Forward gear.

Pull: Reverse gear.



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1. Forward
2. Reverse

### Shifting Procedure



## CAUTION

Bring snowmobile to a complete stop before changing from forward to reverse or vice-versa.

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

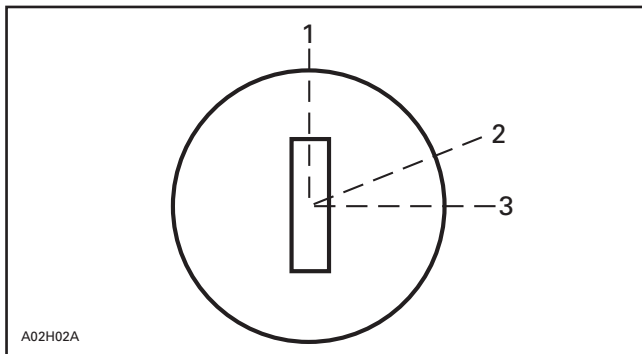
Do not force lever. If unable to shift, apply throttle to move snowmobile and try again.

## ◆ 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. Turning while going fast in reverse could result in loss of stability.

### 5) Ignition Switch

The lights are automatically ON whenever the engine is running.



1. OFF
2. ON
3. START

### Electric Starting

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

## ▼ CAUTION

Do not hold key at START position more than 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 each time. 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.

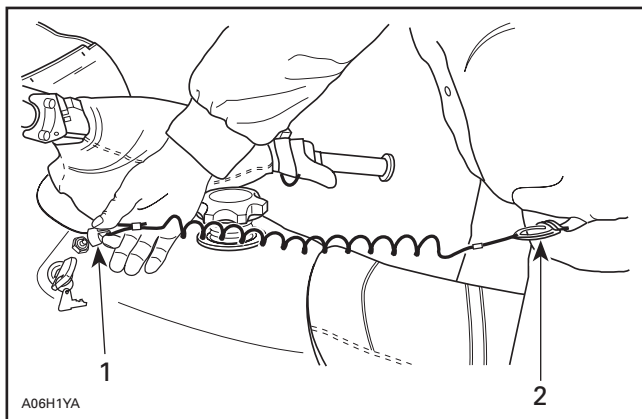
## 6) Tether Cut-Out Switch

### 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 D.E.S.S. (Digitally Encoded Security System) key.

### Operation

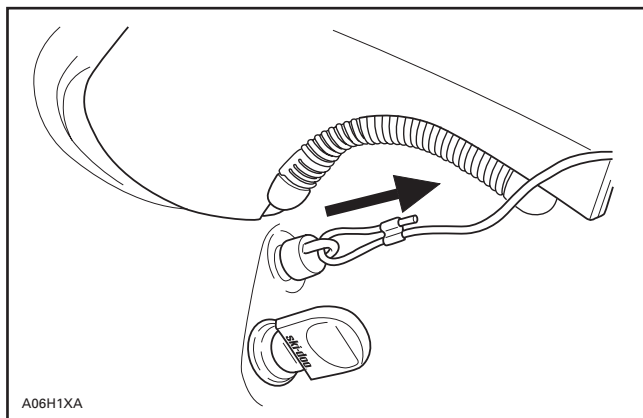
Attach tether cord to clothing then snap tether cut-out cap over receptacle before starting engine.



### TYPICAL

1. Snap over receptacle
2. Attach to eyelet

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



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### *TYPICAL*

### **D.E.S.S. (Digitally Encoded Security System)**

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.

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.

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

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

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

A continuous beep and D.E.S.S. pilot lamp blinking rapidly mean that a wrong tether cord is installed. Vehicle can not be driven.

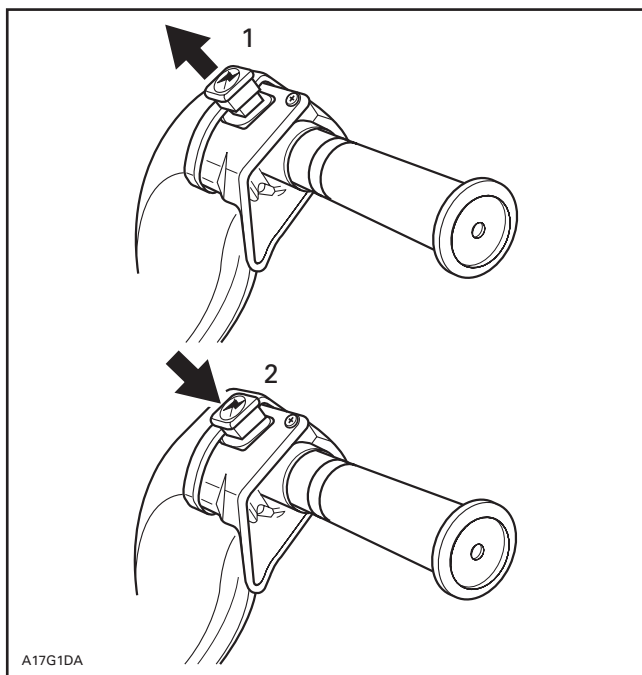
Check that you have both good vehicle and tether cord.

## 7) D.E.S.S. Pilot Lamp

This lamp will light up to confirm D.E.S.S. status. Refer to previous paragraphs for description.

## 8) 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.

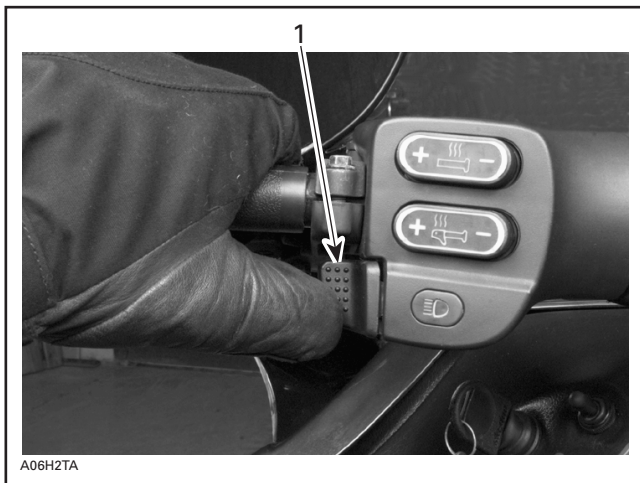
## ◆ **WARNING**

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

### **9) Headlamp Dimmer Switch**

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

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



1. Dimmer switch

### **10) High Beam Pilot Lamp (Blue)**

Lights when headlamp is on HIGH beam.

## 11) Heated Grip Switch

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

Each time engine is started low heating is selected.

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

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



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

## 12) Heated Grip Pilot Lamp (Amber)

Pilot lamp glow varies with grip heating intensity.

## 13) Heating Throttle Lever Switch

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

Each time engine is started low heating is selected.

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

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

## 14) Heating Throttle Lever Pilot Lamp (Amber)

Pilot lamp glow varies with throttle lever heating intensity.

## 15) Fuel Tank Cap

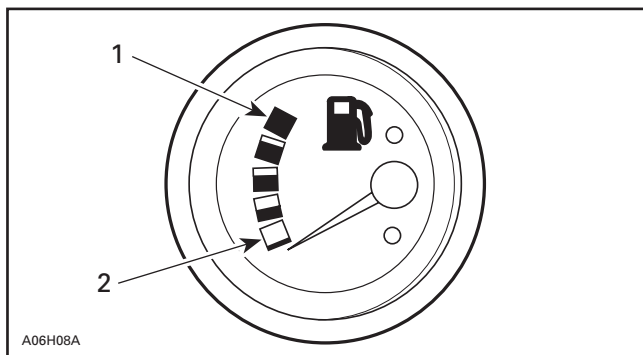
Unscrew to fill up tank then fully tighten.



Never use an open flame to check fuel level.

## 16) Electric Fuel Level Gauge

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



*TYPICAL*

1. Full

2. Empty

## 17) Air Suspension Switch

This switch controls pressure inside rear air shock absorber.

Holding switch to the right (big spring on decal) increases air pressure.

Holding switch to the left (small spring on decal) decreases air pressure.



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## WARNING

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

**NOTE:** Compressor can be activated with the engine shut-off and ignition key at run position.

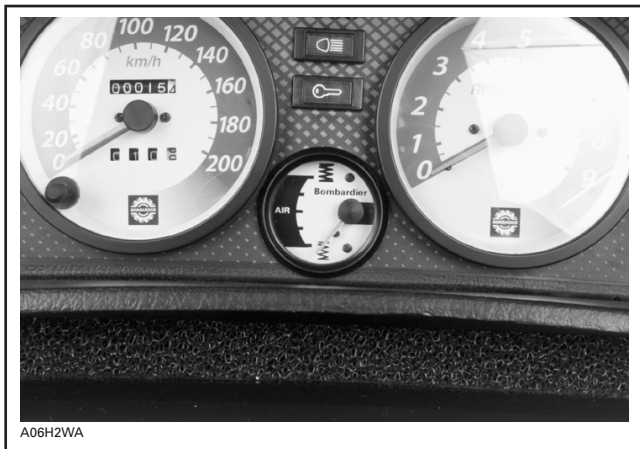


## CAUTION

Do not use compressor needlessly when engine is not running. It will discharge the battery.

### 18) Air Suspension Gauge

Located in center of dash this gauge indicates pressure inside rear air shock absorber.



## 19) 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).



## CAUTION

Do not run engine out of oil. Serious engine damage will occur.

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

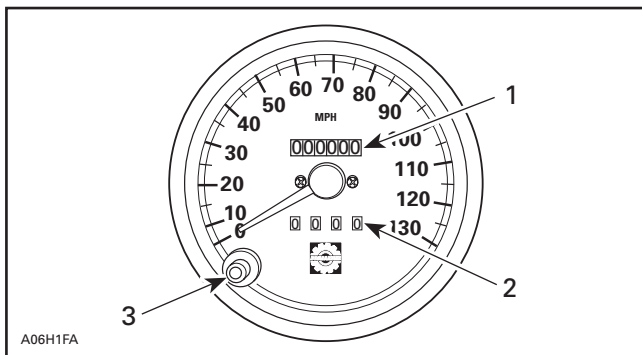
## 20) Speedometer/Odometer

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.

## 21) 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.



*TYPICAL*

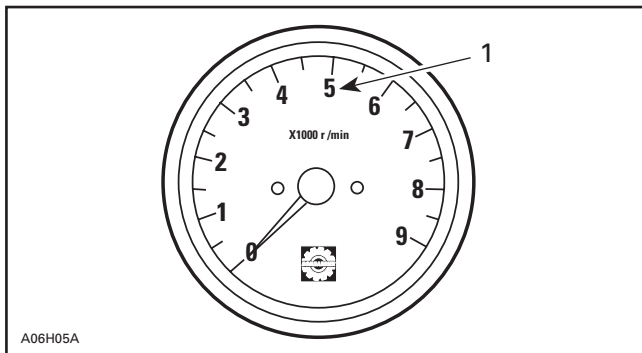
1. Odometer
2. Trip meter
3. Reset button

## 22) Trip Meter Reset Button

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

## 23) Tachometer

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

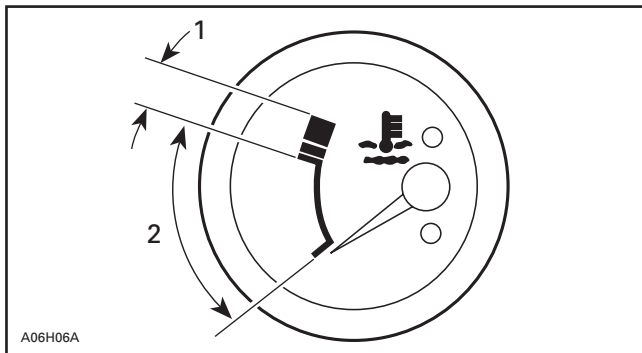


*TYPICAL*

1. Multiply the reading by 1000

## 24) 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.



*TYPICAL*

1. *Overheat*
2. *Normal*



## WARNING

Never use an open flame to check fuel level.

## 25) Rear Passenger Heated Grip Switch

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



A16H18A

## 26) Hood Latches

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



### **WARNING**

It is dangerous to run an engine with the hood opened, unfastened or removed.

## 27) Adjustable Mirrors

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

## 28) 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.



### **CAUTION**

Do not run engine out of oil. Serious engine damage will occur.



## ◆ WARNING

It is dangerous to run an engine with the hood opened, unfastened or removed.

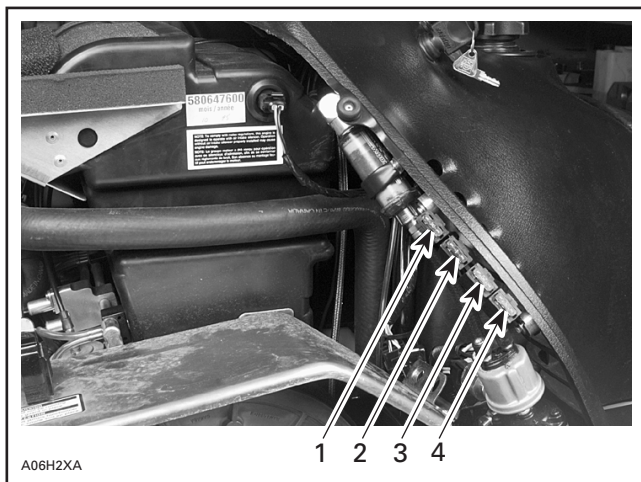
### Fuses

## ▼ CAUTION

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

### Fuse Location

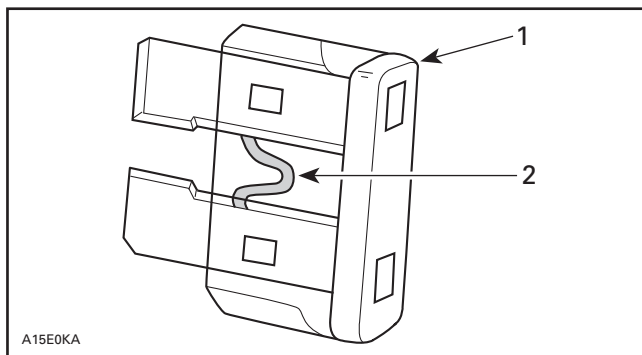
All fuses are located on left inner side of console. To gain access open hood.



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

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

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



1. Fuse
2. Check if melted

## Front Bumper

To be used whenever front of snowmobile requires lifting.



## CAUTION

Do not use skis to pull or lift snowmobile. Do not tow vehicle using front bumper.

## Storage Compartment/Tool Kit

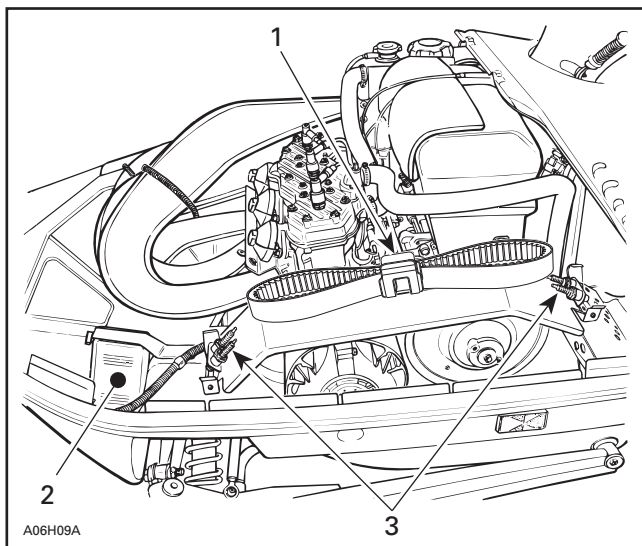
A storage compartment is provided in seat at rear.

## 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.



**TYPICAL**

1. Spare drive belt holder
2. Tool kit
3. Spark plug holders

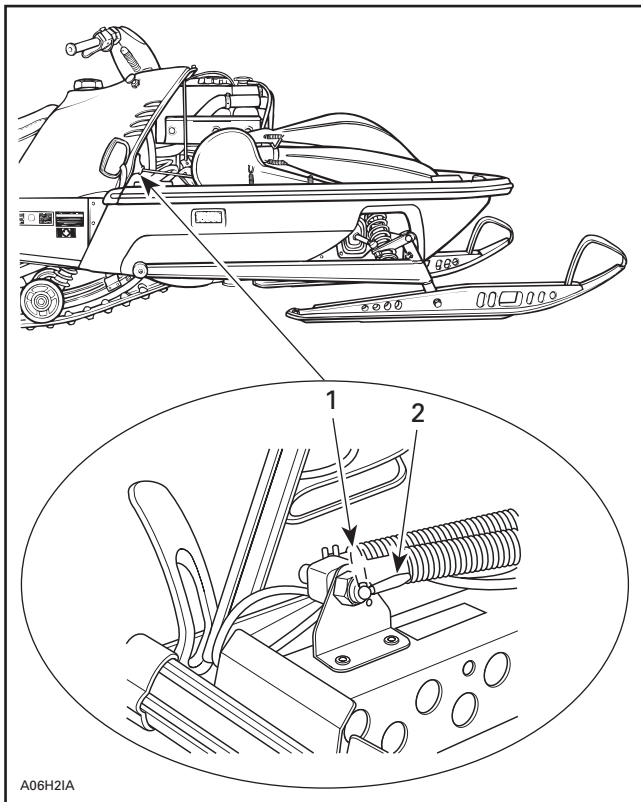
## **Spare Drive Belt Holder**

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.



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**TYPICAL**

1. Closed
2. Opened

Fully open the valve in order to operate the snowmobile.

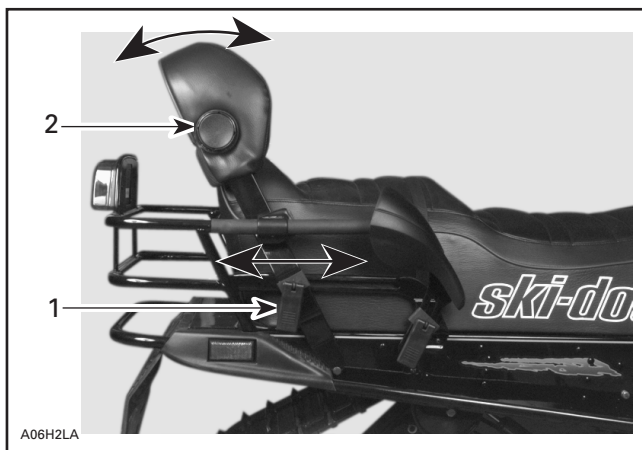


## **CAUTION**

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

## Adjustable Backrest

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

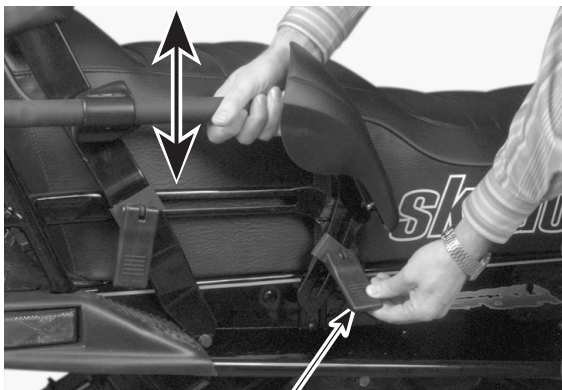


1. Lift adjustment lock (both sides)
2. Turn adjustment knob

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

1

1. Lift adjustment lock (both sides)



## 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 knobs.

### Hitch

Hitch can be used to pull most equipment.

---

## FUEL AND OIL

### Recommended Fuel

#### *Grand Touring SE*

Use super unleaded gasoline, available from most service stations. The gasoline used must have an octane number  $(R + M)/2$  of 91 or higher.

#### *All Models*

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 1L) 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 500 mL).

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.



---

## STARTING PROCEDURE

- Re-check throttle control lever operation. Apply brake.
- 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.

### Initial Cold Starting

NOTE: Do not operate the throttle lever.

- The Digital Performance Management (DPM) system controls the carburetion at all temperatures. There is no need to operate throttle when starting with engine warm, cool or cold.

### Manual Starting

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

Grasp manual starter handle firmly and crank engine.

Disengage brake before moving vehicle.



## WARNING

Do not apply throttle while starting.

### Electric Starting

Insert key in ignition switch.

Turn key clockwise until starter engages.

Release key immediately when engine has started.

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

### Emergency Starting

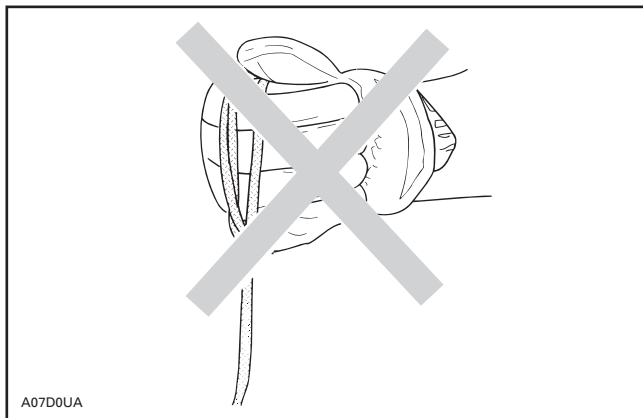
The engine can be started with the emergency starter rope supplied with the tool kit.

Remove belt guard.



## WARNING

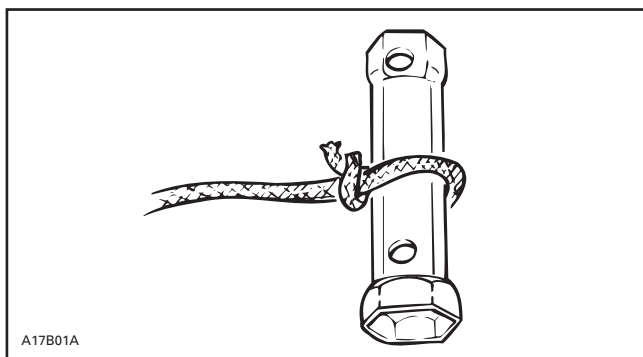
Do not wind starting rope around your hand. Hold rope by the handle only. Do not start the snowmobile by the drive pulley unless it is a true emergency situation. Have the snowmobile repaired as soon as possible.



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

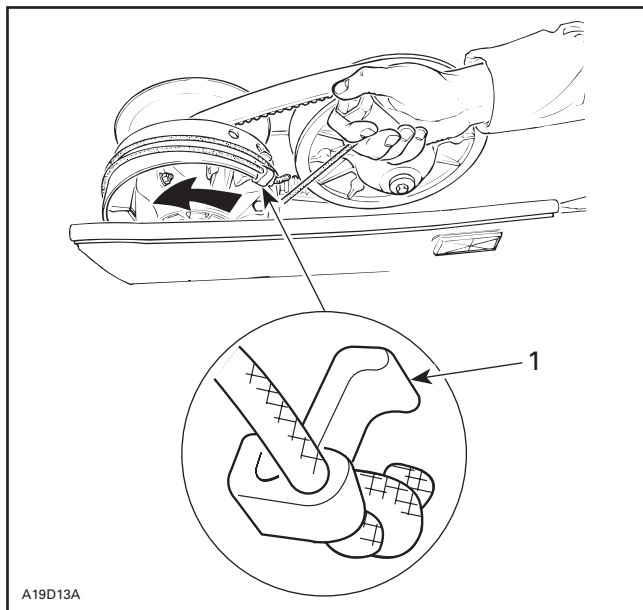
**NOTE:** The spark plug socket can be used as an emergency handle.



A17B01A

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

Hook up clip on drive pulley and wind counterclockwise up to 3 turns.



A19D13A

**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.

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## SUSPENSION ADJUSTMENTS

### ***Grand Touring SE***

For factory recommended adjustments refer to decal on pulley guard.

This decal describes settings for optimum comfort according to load.

### **Adjustments**

Follow instructions as described in the *1997 Ski-doo Operator's Guide* (P/N 415 0326 00).

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



### **WARNING**

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

**NOTE:** Compressor can be activated with the engine shut-off and ignition key at run position.



### **CAUTION**






Do not use compressor needlessly when engine is not running. It will discharge the battery.

# LUBRICATION AND MAINTENANCE CHART

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)

<b>LUBRIFICATION AND MAINTENANCE CHART</b>		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 Driven Pulleys	✓		✓		✓	
	Cleaning of Drive and Driven Pulleys						✓
	Retorquing of Drive Pulleys Screw	✓					
	Driven Pulley Preload	✓			✓		
	Brake condition	✓	✓				
	Brake Adjustment			✓			
	Brake Fluid (change once a year)	✓	✓				✓

<b>LUBRICATION AND MAINTENANCE CHART</b>		①	②	③	④	⑤	⑥
	Gearbox Oil Change	✓			✓		
	Chaincase/Gearbox Oil Level	✓		✓		✓	
	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 Adjustment	✓		✓			
	Suspension Adjustments	AS REQUIRED					
	Suspension Lubrication			✓		✓	
	Suspension and Desiccator 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	✓		✓		✓	

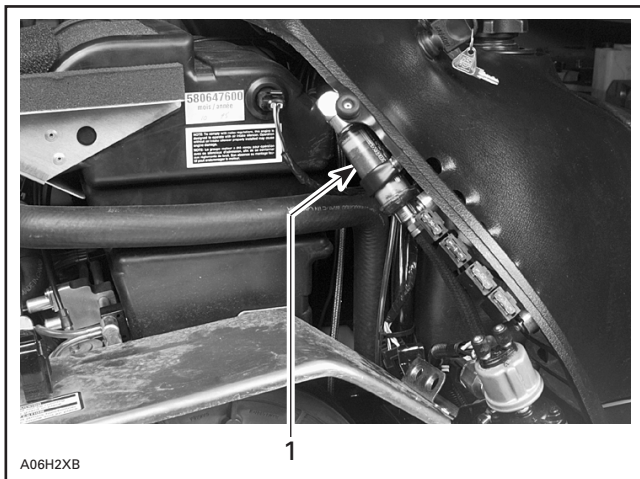
\* Before installing new spark plugs at pre-season preparation, it is suggested to burn excess storage oil by starting the engine with the old spark plugs. Only perform this operation in a well ventilated area.

# MAINTENANCE

## Compressor Desiccator

Once a year check color of element. When new it is green then it turns light gray when full of moisture.

Consult an authorized dealer.



1. Desiccator

## 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.
3. Flooded engine (spark plug wet when removed).	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; check fuel filter; replace if clogged; check condition of fuel and impulse lines and their connections. A failure of the fuel pump or carburetor has occurred. Contact an authorized dealer.
5. Spark plug/ignition (no spark).	Check that emergency cut-out switch is at the ON position and the tether cut-out switch cap is snapped over the receptacle. If no spark appears, replace spark plug. If trouble persists, contact an authorized dealer.
6. Engine compression.	As the engine is pulled over with the rewind starter, "cycles" of resistance should be felt as piston goes past top dead center (each piston on three-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. D.E.S.S. has not read tether cord. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. D.E.S.S. is activated. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks rapidly and a continuous beep is heard. Install appropriate tether cord.
3. Fouled or defective spark plug.	Check item 5 of "Engine turns over but fails to start".
4. Lack of fuel to engine.	Check item 4 of "Engine turns over but fails to start".
5. Carburetor adjustments.	Contact an authorized dealer.
6. Drive belt worn too thin.	If the drive belt has lost more than 3 mm (1/8 in) of its original width, it will affect vehicle performance.
7. Drive and driven pulleys require servicing.	Contact an authorized dealer.
8. 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. D.E.S.S. has not read tether cord. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. D.E.S.S. is activated. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks rapidly and a continuous beep is heard. Install appropriate tether cord.
3. Faulty spark plug (carbon accumulation).	See item 5 of "Engine turns over but fails to start".
4. Engine is running too hot.	See item 6 of "Engine lacks acceleration or power".
5. 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. D.E.S.S. has not read tether cord. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. D.E.S.S. is activated. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks rapidly and a continuous beep is heard. Install appropriate tether cord.
3. Fouled/defective/ worn spark plugs.	Clean/verify spark plug and heat range. Replace as required.
4. Too much oil supplied to engine.	Improper oil pump adjustment, refer to an authorized dealer. Improper fuel/oil mixture. Drain fuel tank and refill with appropriate mixture ratio.
5. Water in fuel.	Drain fuel system and refill with fresh fuel.
<b>SYMPTOM: <i>Snowmobile cannot reach full speed</i></b>	
<b>Possible cause</b>	<b>What to do</b>
1. D.E.S.S. has not read tether cord. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks once every 3 seconds, beeper sounds every 3 seconds as well. Properly install tether cord.
2. D.E.S.S. is activated. Engine can not exceed 2500 RPM.	D.E.S.S. pilot lamp blinks rapidly and a continuous beep is heard. Install appropriate tether cord.
3. Drive belt.	Check item 5 of "Engine lacks acceleration or power".
4. Incorrect track adjustment.	See maintenance section and/or dealer for proper alignment and tension adjustments.
5. Pulleys misaligned.	Contact an authorized dealer.
6. Engine.	See items 2, 3, 6 and 7 of "Engine lacks acceleration or power".

# SPECIFICATIONS

GENERAL	GRAND TOURING SE	
<b>Engine</b>		
– Maximum power engine speed	RPM	8500
<b>Drive belt</b>		
– Number		415 0603 00
– New belt width	mm (in)	35 (1-3/8)
– Wear limit width	mm (in)	33.0 (1-19/64)
<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
– Alignment		②
<b>FLUIDS</b>		
<b>Fuel</b>		
– Type		③
– Tank capacity	L (US gal)	42 (11.1)
<b>Oil (engine)</b>		
– Type		④
– Tank capacity	L (US oz)	4.1 (139)
<b>Chaincase/Transmission Oil</b>		
– Type		⑤
– Capacity	mL (US oz)	250 (8.5)
<b>Cooling System</b>		
– Type		⑥
– Capacity	L (US oz)	5.1 (173)
<b>Brake System Fluid</b>		
– Type		DOT 4

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 Super unleaded gasoline with a minimum octane number of  $91(R + M)/2$ .

④ Bombardier Injection Oil (P/N 413 8029 00 - 12 x – 1 L).

⑤ Bombardier Synthetic Chaincase Oil (P/N 413 8033 00).

⑥ Ethylene-glycol antifreeze for aluminum engines mixed with water (3 parts of antifreeze for 2 parts of water).



# *ski-doo*<sup>®</sup> Snowmobiles

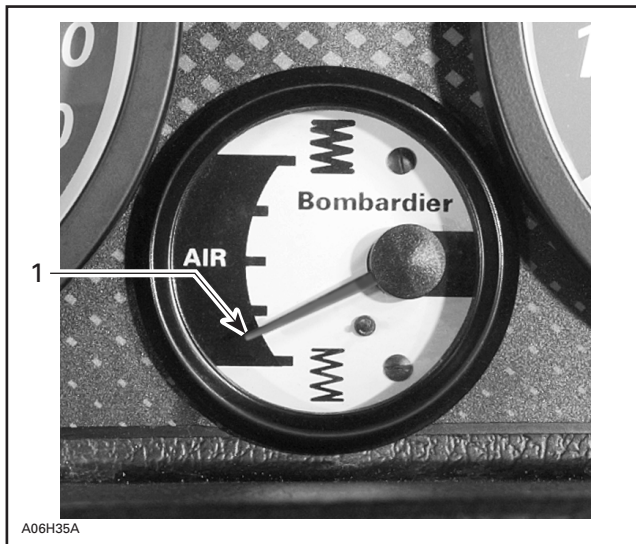
1997 GRAND TOURING SE  
OPERATOR'S GUIDE  
UPDATE

## ▼ CAUTION

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

Before riding, make sure that air suspension gauge indicates half-way between first mark and bottom. See photo below.

Activate air suspension switch to obtain the minimum required pressure before operating the snowmobile.



AIR SUSPENSION GAUGE

1. Minimum required pressure before riding