



**POLARIS®**

**2002 SNOWMOBILE**

**Universal**

**Owner's Safety and  
Maintenance**

**Manual**



## **WARNING**

Read, understand, and follow all of the instructions and safety precautions in this manual and on all product labels.

Failure to follow the safety precautions could result in serious injury or death.

## **PROPOSITION 65 WARNING**

Snowmobile engines discharge fuel and exhaust, which contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm, onto the snow on which they operate. Keep this engine properly tuned and avoid unnecessary idling and spillage during fueling.

## **WARNING**

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

# What's the hottest thing on snow?

Our new web site. It's designed just for YOU!

- Technical tips
- New product introductions
- Event schedules
- Parts and Service Manual information
- Exciting details about The Way Out

**Check it out...**

**[www.polarisindustries.com/owner](http://www.polarisindustries.com/owner)**



**POLARIS<sup>®</sup>**  
**The Way Out.**

# - NOTES -

# WELCOME

Thank you for purchasing a Polaris snowmobile, and welcome to our world-wide family of Polaris enthusiasts. Polaris proudly produces an exciting line of recreational products, including snowmobiles, all-terrain vehicles, personal watercraft, utility vehicles, and Victory motorcycles.

We believe Polaris sets the standard of excellence for all snowmobiles manufactured in the world today. Many years of experience in engineering, design, and development have gone into making your Polaris snowmobile the finest machine we've ever produced.

Follow the instructions and recommendations in this Owner's Manual for safe and enjoyable operation of your vehicle. Your Owner's Manual contains instructions for minor maintenance, but major repairs are covered in the Polaris Service Manual and should be performed by a Factory Certified MSD (Master Service Dealer) Technician.

Your Polaris snowmobile dealer knows your vehicle best and is interested in your complete satisfaction. Return to your dealership for all of your service needs during, and after, the warranty period.

Polaris also takes great pride in our PAA (Parts Apparel and Accessories) which are available on our online store [www.purepolaris.com](http://www.purepolaris.com). Have your accessories and clothing delivered right to your door!

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# **SECTION 1 - HOW TO USE THIS MANUAL**

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Section 1 contains helpful information for owners and drivers and illustrates the location of important identification numbers that should be recorded in your Owner's Manual. It also defines your role in protecting and respecting your environment while experiencing The Way Out.

# HOW TO USE THIS MANUAL

## Important Notes For Owners And Drivers

- ✔ After reading this manual, store it in the snowmobile for convenient reference. It should remain with the snowmobile when sold.
- ✔ This manual contains the latest information at the time of printing. We reserve the right to make product changes and improvements without notice.
- ✔ The illustrations and photos used in this manual are general representations. Your model may differ.
- ✔ Follow the maintenance program outlined in this manual. Preventive maintenance ensures that critical components of the snowmobile are inspected by your dealer at specific mileage intervals.
- ✔ You and your dealer must complete the registration form included with your snowmobile and forward it to us. This completed form is necessary to ensure warranty coverage.
- ✔ Protect and preserve your right to ride by joining your local trail riding clubs.



# HOW TO USE THIS MANUAL

## Preservation Of The Environment

Please operate your snowmobile with consideration for the protection and preservation of our environment.

### Noise Level

One of the most publicized issues about snowmobiles is noise. The Society of Automotive Engineers (SAE), the standard-setting body for snowmobile development, recommends that snowmobiles conform to prescribed sound levels.

Polaris snowmobiles are engineered to conform to these SAE standards. Our muffler systems are designed to reduce noise levels and must not be altered or removed. The sound of your snowmobile may not be welcome to non-snowmobilers, so you have a responsibility to operate your snowmobile with concern for others. We do our part by manufacturing quieter machines; we ask your help to further reduce the impact of noise by operating your snowmobile safely and responsibly.

### Air Pollution

Polaris engineers continuously investigate ways to reduce emission levels of two-stroke engines. We expect our efforts to lead to the reduction of potential air pollution.

In addition to our technological research, we encourage government agencies, manufacturers, distributors, dealers, ecologists, and other interested parties to work together to develop data on environmental topics.

# HOW TO USE THIS MANUAL

## Preservation Of The Environment

Polaris is committed to supporting an environmental education campaign. We encourage state and provincial governments across the snowbelt to adopt rigorous safety training programs that encourage protection of our environment, including wildlife and vegetation.

Snowmobile clubs and other organizations are working together to protect our environment. Please support their efforts and do your part to preserve and protect our environment.

Respect your snowmobile;  
respect your environment;  
and you will earn  
the respect of everyone.

# HOW TO USE THIS MANUAL

## Vehicle Identification Numbers

Please record your snowmobile identification numbers below for future reference:

Tunnel VIN (lower right side of the tunnel)

Engine Serial Number (right front side of engine crankcase)

**Remove the spare key and store it in a safe place.** Your key can be duplicated only by obtaining a key blank from Polaris and mating it with your existing key.

The VIN and engine serial numbers are necessary for model identification when registering your vehicle and obtaining insurance, or when replacement parts are required. If your snowmobile is stolen, these numbers are essential to its recovery and identification.

Dealer Imprint

# - NOTES -

## SECTION 2 - SAFETY

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Section 2 describes safe vehicle operation and identifies warning decals and their locations.

# SAFETY

## Operator Safety

The following two pages identify signal words and symbols that appear in this manual. Your safety is involved when these words and symbols are used. Become familiar with their meanings before reading the manual.



The safety alert symbol, on your snowmobile or in this manual, alerts you to the potential for personal injury.

### **WARNING**

Indicates a potential hazard that could result in serious injury or death.

### **CAUTION**

Indicates a potential hazard that may result in minor personal injury or damage to the machine.

### **CAUTION**

Indicates a situation that may result in damage to the machine.

### **NOTE**

“NOTE:” will alert you to important information or instructions.

### **IMPORTANT**

“IMPORTANT:” will alert you to important information or instructions.

## Operator Safety

### **WARNING**

Driving a snowmobile requires your full attention. **DO NOT** drink alcohol or use drugs or medications before or while driving. They will reduce your alertness and slow your reaction time. In most states and provinces, it's prohibited by law to drive while intoxicated or under the influence of drugs.

Polaris produces high performance snowmobiles capable of traveling at high speeds. Extra caution must be observed to ensure operator safety. Make sure your snowmobile is in excellent operating condition at all times. We strongly recommend that the operator check major and vital safety components before every ride.

All Polaris snowmobiles are designed and tested to provide safe operation when used as directed. Failure of critical machine components may result from operation with any modifications, especially those that increase speed or power. **DO NOT MODIFY YOUR MACHINE.** The snowmobile may become aerodynamically unstable at speeds higher than those for which it is designed. Loss of control may occur at higher speeds. Modifications may also create a safety hazard and lead to bodily injury.

**The warranty on your entire machine is terminated** if any equipment has been added, or any modifications have been made, to increase the speed or power of the snowmobile.

# SAFETY

## Operator Safety

### Stay Away From Moving Parts



#### **⚠️ WARNING**

Never hold the snowmobile up or stand behind it while warming up the track. A loose track or flying debris could cause serious personal injury or death.

We recommend having your dealer perform track service and alignment procedures.

Be alert when riding, and remain properly seated to stay clear of the track. Your snowmobile is propelled by a revolving track that must be partially exposed for proper operation. Serious injuries may result if hands, feet, or clothing become entangled in the track.

#### **⚠️ WARNING**

Stop the engine before attempting adjustments. If contact is made with fingers or clothing, the moving parts of an engine can cause serious injury.

*Never* attempt adjustments with the engine running. Turn off the ignition, raise the hood, make the adjustment, secure shields and guards, secure the hood, and then restart the engine to check its operation.



## Operator Safety

### Be Seated and in Position to Control the Vehicle

#### **WARNING**

Improper riding position may seriously reduce your ability to control the machine and may result in serious injury or death. Always be properly seated and in position to control your vehicle.

Operating a snowmobile requires skill and balance for proper control. Rider positions may vary from person to person as each becomes more skilled; but under most conditions, the proper position is to be seated with feet on the running boards, and comfortably positioned for proper throttle, brake, and steering control.

#### **WARNING**

Use of a backrest may hinder your weight shifting ability. This could affect your ability to control this rider-active vehicle in certain extreme driving situations.

### Be Prepared for the Unexpected

For your safety, always ride in a group of other snowmobilers. Always tell someone where you're going and how long you expect to be gone. If it isn't possible to ride with others, and you must travel into remote areas, always carry survival equipment that's appropriate to the conditions you may encounter. Such equipment may include, but is not limited to: extra clothing, a sleeping bag, a flashlight, food and water, a signaling mirror, a means of building a fire, and a two-way radio or cellular telephone.

# SAFETY

## Operator Safety

### Do Not Overload Cargo Carrier

Too much weight on the rear of the machine may reduce your ability to steer. Do not exceed carrier and rack weight limits, and do not allow a passenger to sit on the seat back or the cargo carrier.

#### **⚠️WARNING**

Control becomes more difficult with two people on board. More space is required to make turns, and longer distances are needed for stopping. Make sure the passenger remains seated behind the driver, facing forward, with both feet placed firmly on the running boards. Slow down and avoid “jumping” your snowmobile.

### Always Wear Clothing Designed for Snowmobiling



#### **⚠️WARNING**

Loose clothing or long scarves may easily become entangled in moving parts and cause serious personal injury. Always wear an approved helmet and eye protection.

Be aware of the weather forecast and especially the wind chill. A table is provided on page 26 for your reference. To better enjoy your ride, be prepared, warm, and comfortable.

## Operator Safety

### Disabled Operators

Safe operation of this rider-active vehicle requires good judgement and physical skills. Operators with cognitive or physical disabilities have an increased risk of loss of control, which could result in serious injury or death.

### Know the Limitations of the Machine and Your Skills as a Driver

#### **WARNING**

High speed driving, especially at night, is dangerous and unwise and could result in serious personal injury or death.

Observe all state and local laws governing snowmobile operation. They've been established for your protection.

Always be alert and pay attention to the trail ahead of you. Multiplying speed (MPH) by 1.5 will equal the approximate number of feet per second your machine travels. If your speed is 40 MPH, your machine is traveling about 60 feet per second. If you look back for only two seconds, your machine will travel about 120 feet. If your speed is 60 MPH, your machine will travel about 180 feet in two seconds.

Traveling at night requires extra caution. Check headlight and taillight to ensure proper operation, and don't "over drive" your headlight beam. Always be able to bring your machine to a stop in the distance illuminated by the headlight.

# SAFETY

## Operator Safety

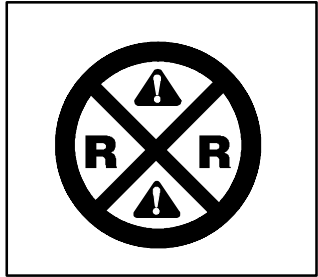
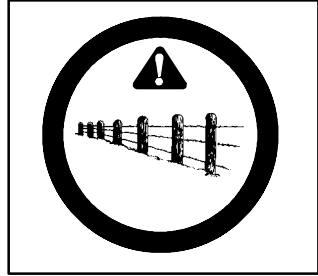
### Know the Limitations of the Machine and Your Skills as a Driver

Slow down when traveling near poles, posts, or other obstacles. Be especially alert if you're snowmobiling after dark. Always be on the alert for wire fences. Single strands are especially dangerous, since there may be a great distance between posts. Guy wires on utility poles are also difficult to distinguish.

Make sure the way is clear before crossing railroads and other roads and highways. The noise of your machine will drown out the sound of approaching vehicles. Look ahead, behind, and to both sides before turning or crossing railroad tracks or highways. Steep embankments may also hide your view. Always leave yourself a way out.

Variances in snow depth and/or water currents may result in uneven ice thickness. Always check with local residents or authorities for general information on conditions when traveling on lakes and streams that are strange to you. Before riding your machine on a frozen body of water, be sure the ice is thick enough to support the machine and its operator, as well as the force created by a moving vehicle. You may drown if you and the snowmobile break through the ice.

When teaching inexperienced operators to ride, set up a predetermined course for practice. Make sure they know how to drive and control the snowmobile before allowing them to make longer trips. Teach them proper snowmobile courtesy, and enroll them in driver's training and safety courses sponsored by local or state organizations.



## Operator Safety

### Ice and Snow Build-up

#### **WARNING**

Ice and snow build-up may interfere with the steering of your machine, resulting in serious injury or death. Keep the underhood area free of snow and ice.

Before driving, manually turn the skis to the left and right to be sure ice and snow are not interfering with full left and right steering. If difficulty is encountered, check for ice and snow build-up that may be obstructing the steering linkage. Snow screens and bib kits are available through your dealer to help reduce snow and ice build-up.

### Operation on Hard-Packed Snow or Slippery Surfaces

#### **WARNING**

Driving on ice or hard-packed snow reduces steering and braking control, which may result in serious injury or death. Slow down and use caution.

Excessive shifting of operator body weight when turning on hard-packed snow or ice may lead to loss of vehicle control and result in serious injury or death. Slow down to maintain control under these conditions.

It's dangerous to drive on ice or other slippery surfaces. If it's unavoidable, use extreme caution and operate at speeds no faster than a walk. Never attempt an abrupt change of direction. The chance of "spin-out" increases under these conditions.

# SAFETY

## Operator Safety

### Driving in Hilly Terrain

#### **WARNING**

Climbing a hill or crossing the face of a slope may result in loss of balance and machine roll-over, causing serious injury or death. Use caution and good judgement when driving in hilly terrain.

Operating in hilly terrain requires extreme caution to maintain balance and avoid roll-over. If climbing a hill is unavoidable, keep all your weight low and forward.

If you must cross the face of a slope, keep your weight on the uphill side of the machine to maintain proper balance and avoid possible roll-over.

Slow down when reaching the crest of a hill. Be prepared to react to obstacles, sharp drops, or other people or vehicles that may be on the other side of the hill.

If you're unable to continue up a hill, turn the machine downhill before it loses momentum. If this isn't possible, spin the track just enough to dig in to prevent it from rolling back down the hill. Stop the engine and set the parking brake (if equipped). Keeping away from the downhill side of the machine, pull the rear of the snowmobile around and point the front end and skis downhill. Remount the machine, restart the engine, release the parking brake, and descend the hill carefully.

## Operator Safety

### Riding Downhill

When riding downhill, shift your weight to the rear of the machine and reduce your speed to a minimum. Apply just enough throttle to keep the clutch engaged, allowing the engine's compression to help slow the machine and keep it from rolling freely downhill.

#### **WARNING**

When driving on long downhill stretches, pump the brakes. Riding the brakes may cause the brake system to overheat, which may result in brake failure.

Excessive or repetitive use of the brakes for high speed stops will also cause an overheated brake system. This condition may lead to a sudden loss of brakes and/or fire and may result in serious injury or death.

### Do Not Operate Engine With Clutch Guard Removed

The clutch guard is designed to protect the operator from metal parts if the clutch should fail. Although the chance of failure is extremely remote, don't defeat the purpose of the guard by removing it. It's provided for your safety.

### Do Not Operate Engine With Drive Belt Removed

Any servicing that requires operation without a belt must be performed by your dealer. Operation of the engine with the belt removed may result in personal injury or damage to the engine.

# **SAFETY**

## **Operator Safety**

### **Do Not Operate Engine With Intake Silencer or Filter Removed**

Damage to the engine may occur if the intake silencer or filter are removed.

### **Do Not Service Clutches Yourself**

All clutch service must be performed by your dealer. The clutch is a complex mechanism that rotates at high speeds. Each clutch is dynamically balanced before installation. Any tampering may disrupt this precision balancing and create an unstable condition.

### **Cold Weather Drive-Away**

Whenever your snowmobile has been parked for a length of time, especially overnight, always make sure the skis and track are loosened from ice and snow before attempting to drive. Apply the throttle with enough authority to put the machine into motion, but always operate within safety limits and, on 2-Up machines, with respect for a passenger. See page 74 for more detailed instructions on cold weather drive-away.

### **Machine Maneuverability**

Control and maneuverability comes not only through the steering and skis, maximum control is achieved by shifting of body weight. Maneuverability will change for lighter operators or machines designed to carry a load or a passenger.



## Operator Safety

### Powder Snow Operation

Moveable hood closures are included on some Polaris snowmobiles. They are normally left open and are located on the front upper and lower hood openings. If operating in deep snow or in extreme cold conditions (below  $-20^{\circ}\text{F}$ ), Polaris recommends closing the upper hood closure.

#### **WARNING**

Do not drive for prolonged periods on blacktop, gravel, or ice. Doing so could cause irreversible track damage and lead to serious personal injury.

Since snow provides the only lubrication for the power slide suspension and, on liquid cooled models, cooling for the engine, adequate snow cover is a requirement for operation of your machine. Driving in too little snow will result in excessive wear and damage to the slide rail, track and/or engine.

If the machine becomes stuck in snow, clear the running board area of snow, then step down the snow in front of the machine so that when the throttle is opened, the snowmobile will be able to climb up and over. You may then mount the machine and continue riding.

#### **CAUTION**

When operating on icy surfaces or hard-packed snow, avoid overheating the slide rail and track. Lack of lubrication and cooling will cause overheating of the slide rail and track, resulting in premature wear and failure. If frequently operating in low cooling conditions, see your dealer for an optional wheel kit that will reduce the wear from overheating.

# SAFETY

## Operator Safety

Your Polaris snowmobile is a well-engineered and well-constructed recreational vehicle. Follow the recommended maintenance program outlined beginning on page 96 of this manual to ensure that all critical components on the snowmobile are thoroughly inspected by your dealer at specific mileage intervals.

**Driving 1-Up** - Some Polaris snowmobiles are designed for a single rider only. A decal on the *console* of these models indicates single rider operation. See page 30 for decal location.

**Driving 2-Up** - Some Polaris snowmobiles are designed for two riders. A decal on the *hood* of these models indicates that the vehicle is designed for one operator and one passenger only. See page 30 for decal location.

Machines designed for two riders should never be operated with more than two people on board. When traveling with a passenger, it's the driver's responsibility to operate the machine safely.

**Slow down!** Control becomes more difficult with two people on board. More space is required to make turns, and longer distances are necessary for stopping.

## Operator Safety

### Responsible Driving

Every snowmobile handles differently, and even the most docile conditions may become dangerous if operators drive improperly. If you're new to snowmobiling, acquaint yourself with the machine and with what it will and won't do under various conditions. Even seasoned drivers should spend some time getting the feel for a machine before attempting ambitious maneuvers.

- ✔ A snowmobile depends on the rider's body position for proper balance in executing turns, traversing hills, etc. Always start on a smooth, level area to begin building your operating experience.
- ✔ Before allowing someone else use your snowmobile, know the extent of their operating skills. Check to see if they've taken a snowmobile safety course and have an operator's certificate. For their protection, as well as yours, make sure they take a snowmobile safety course. Everyone can benefit from the course.
- ✔ Don't "jump" your snowmobile. Jumping may injure your back because of spinal compression. The seat and suspension of your snowmobile have been designed to provide protection under normal riding conditions. Your snowmobile is not intended for this kind of use.
- ✔ Be courteous to oncoming traffic by dimming your headlights and reducing your speed. Your snowmobile is equipped with a high output headlamp system that may cause discomfort to operators of oncoming vehicles when on high beam.
- ✔ When traveling in a group of snowmobiles, don't tailgate (follow too closely). Allow ample stopping distances, and keep track of those following you. Drive defensively to avoid accidents.
- ✔ Don't tempt anyone to steal your snowmobile or ride it without permission. Remove the key from the ignition.

# SAFETY

## Operator Safety

### Windchill/Temperature Charts

The following information is provided to help you determine when temperatures become dangerous for riding.

#### WIND CHILL CHART (°F)

Estimated Wind Speed in MPH	Actual Thermometer Reading (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Temperature (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Wind Speeds Greater Than 40 MPH Have Little Added Effect	Little Danger (For Properly Clothed Person)				Increasing Danger				Great Danger			
	Danger From Freezing of Exposed Flesh											

## Operator Safety

### WIND CHILL CHART (°C)

Estimated Wind Speed in KPH	Actual Thermometer Reading (°C)									
	5	0	-5	-10	-15	-20	-25	-30	-35	-40
	Equivalent Temperature (°C)									
0	5	0	-5	-10	-15	-20	-25	-30	-35	-40
10	1	-4	-11	-16	-22	-27	-33	-38	-45	-50
20	-4	-9	-17	-23	-29	-36	-42	-48	-54	-61
30	-7	-13	-21	-28	-35	-42	-48	-55	-63	-69
40	-9	-16	-24	-32	-39	-47	-53	-61	-69	-76
50	-11	-18	-26	-34	-41	-49	-57	-64	-73	-80
60	-12	-19	-27	-35	-43	-51	-59	-66	-75	-82
70	-13	-20	-28	-36	-44	-52	-60	-68	-76	-84
Wind Speeds Greater Than 70 KPH Have Little Added Effect	Little Danger (For Properly Clothed Person)			Increasing Danger			Great Danger			
				Danger From Freezing of Exposed Flesh						

# SAFETY

## Safety Decals And Locations

**NOTE:** Warning decals have been placed on the vehicle for your protection. Read and follow the instructions on each decal carefully. If any safety decal becomes illegible or comes off, contact your Polaris dealer for a free replacement. The part number is printed on the decal.

### Clutch Cover Warning Decal - 1

This warning decal is found *under the hood* on the clutch cover:

- Do not operate engine with hood open.
- Do not attempt adjustment with engine running.
- Do not operate engine with this guard open.
- Never run engine with drive belt removed.
- Never service clutches yourself - see your dealer.

### Airbox Warning Decal - 2

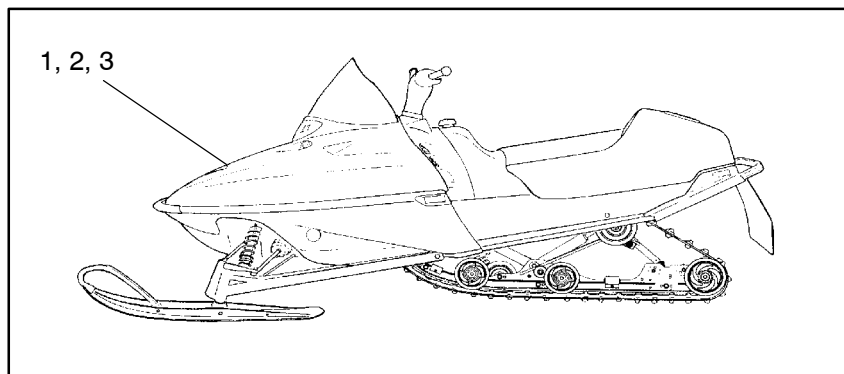
This warning decal is found *under the hood* on specific models:

- Do not operate above 40 mph with hood-to-airbox foam removed or engine failure will result.

### Pressure Cap Warning Decal - 3

This warning decal is found *under the hood* near the pressure cap of specific liquid cooled models:

- Release pressure before removing cap. Cooling fluid must be up to the base of the pressure cap in hot or cold conditions.
- Refer to the Owner's Manual for fluid level in overflow bottle.



## Safety Decals And Locations

### Track Warning Decal - 4

The track warning decal is on the rear of the tunnel (4):

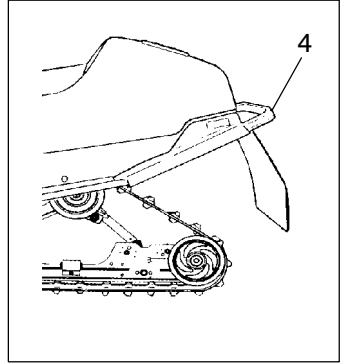
Stay clear of track.

Do not sit on seat back or cargo area.

Combined cargo and tongue weight should not exceed 40 lbs. (18 kg).  
Cargo load affects machine steering response.

**OR**

Stay clear of track. Do not sit on seat back. Entanglement with the track or a fall from seat back may result in severe injury or death.



### Cargo Carrier Warning Decal - 5

Machines with a cargo carrier will have this warning decal on the rear rack or on the taillight:

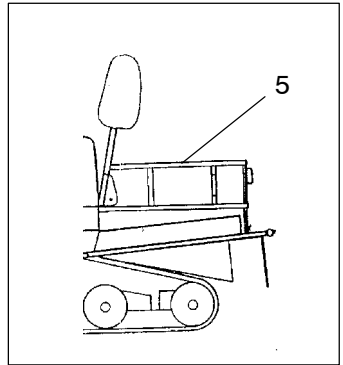
Do not sit in or on cargo area.

Cargo load should not exceed 40 lbs. (18 kg).

Cargo load affects machine steering and response.

Never allow person(s) to use carrier as a means of hand support, (skiing, skidding or dragging).

Severe injury may result due to track entanglement, falling off, or loss of steering control if warnings are not followed.

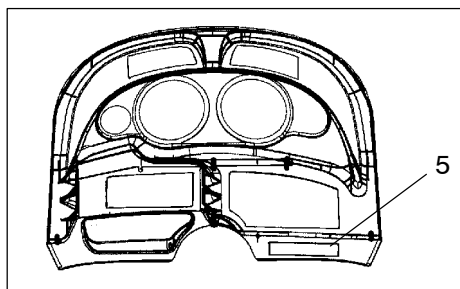


# SAFETY

## Safety Decals And Locations

### Passenger Warning - 5

Some snowmobiles are designed for the operator only, while others are designed for the operator and one passenger. A warning decal on either the console or the hood of your machine indicates whether it's designed for the operator only (1-Up) or the operator and a passenger (2-Up). For more information on operating capacities, see page 24.



Decal text found on 1-Up Models:

This vehicle is designed for operator only. "NO PASSENGER"

Decal text found on 2-Up Models:

This vehicle is designed for operator and "ONE" passenger only.



## Safety Decals And Locations

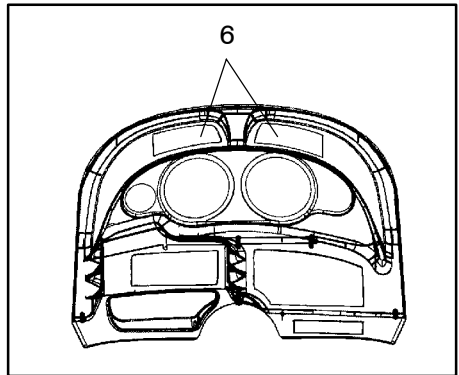
### Standard Reverse Warning Decal - 6

Some Polaris snowmobiles are equipped with reverse. These models will have a reverse warning decal(s) above the instrument housing. The decals shown here are provided for identification and location purposes only. The text found on the decals is:

#### **VEHICLE CAPABLE OF EXCESSIVE REVERSE SPEED!**

Reverse operation may be dangerous even at low speeds. Steering control becomes difficult in reverse. Misuse of reverse may result in injury. Avoid turning at sharp angles in reverse.

Transmission may not always be in the gear indicated by the shift lever. Always apply throttle slowly.



On machines with reverse it is especially important to maintain track tension as specified in the Owner's Manual. If specified track tension is not maintained severe damage to the machine may occur, which may result in loss of vehicle control. Loss of vehicle control may result in severe personal injury or death.

For more information: See Operator's Safety and Maintenance Manual supplied with reverse kit.

#### **SHIFT PATTERN**

Make sure lever is shifted completely to forward or reverse position. Do not force into reverse. If not able to shift to reverse, apply throttle gently to move vehicle. **CAUTION:** Do not attempt to shift until machine has come to a complete stop or chaincase damage may occur.

# SAFETY

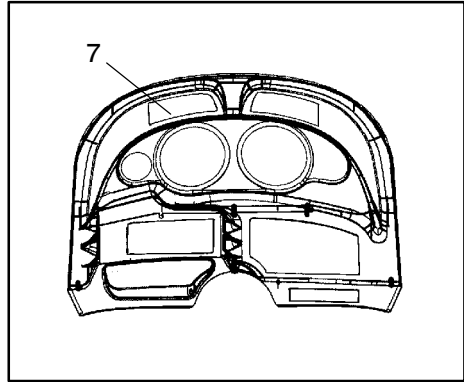
## Safety Decals And Locations

### Electronic Reverse Warning Decal - 7

Some Polaris snowmobiles are equipped with electronic reverse and will have this electronic reverse decal:

Reverse operation, even at low speeds, may cause loss of control resulting in serious injury or death. To avoid loss of control, always:

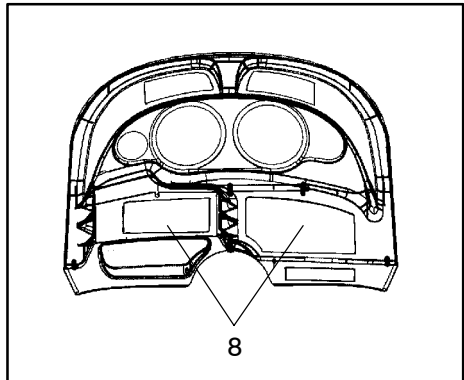
- Look behind before and while backing
- Avoid sharp turns.
- Shift to or from reverse only when stopped.
- Apply throttle slowly.
- For more information, see your Owner's Manual.



### Operation Warning Decal - 8

The console of your machine has a **WARNING** decal. The location of this decal will depend on the model you own.

The decals shown here are offered for identification purposes only. The text of the decal is printed on the next page.



## Safety Decals And Locations

### Operation Warning Decal Text:

- Read and understand warnings and the Owner's Manual before operation. Severe injury or death can result from not heeding the warnings.
- Never consume alcohol or drugs before or while operating this vehicle.
- Night riding, limited visibility, or excessive speeds may cause over-driving of headlights resulting in insufficient time to react to terrain changes or avoid unexpected obstacles.
- This vehicle is capable of high speeds. Buried objects or uneven terrain can cause loss of control. Exercise extreme caution when operating in unfamiliar terrain.
- This vehicle is designed for adult use only. The vehicle size, speed capabilities and control requirement prohibit operation by children.
- Operating this vehicle with a passenger (On approved models only) reduces your ability to control the vehicle due to the added weight and change in weight distribution. Reduce vehicle speeds and allow added space for maneuvering, since steering control may be reduced.
- Always wear an approved helmet, eye protection and adequate clothing while operating this vehicle.
- The Auxiliary Shut Off Switch is the primary means of stopping this vehicle in case of an emergency and is located on the top of the throttle control assembly. Depress the switch to stop the engine and vehicle. Routinely check this switch for proper function with the engine idling.
- The steering and braking ability are greatly reduced when operating on hard-packed snow, ice or when crossing roads. Reduced speed and extra care are required to maintain vehicle control.
- Carbide skags and studs enhance vehicle control on ice or hard-packed surfaces. Care must be taken to maintain a proper balance of ski carbides to track studs to maintain proper vehicle control. (See the Owner's Manual for proper use of traction accessories.)
- Never permit a guest to operate this vehicle unless the guest has read the Owner's Manual and warnings.

# SAFETY

## Safety Decals And Locations

### Caution Decal - 9

The hood of your snowmobile contains a CAUTION decal. The location of this decal will depend on which model you own:

#### **BEFORE STARTING ENGINE:**

Check throttle and brake for proper operation. Check to see that hood is securely latched. Check surroundings to verify clear operation area.

Determine that steering is free and functional.

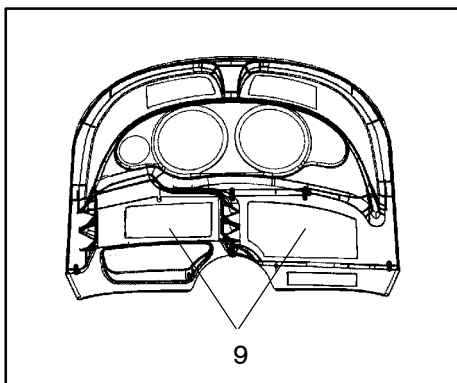
**BRAKE LEVER LOCK:** May relax when used for long periods. Do not leave brake engaged for more than five minutes.

**ALWAYS:** Be seated and in position to control vehicle. Stop engine before attempting adjustments. Know the limitations of the vehicle and your skills as a driver. Understand your Owner's Manual. Wear clothing designed for snowmobiling.

Stops from high speed may cause fading or unexpected loss of braking ability.

Oil injection system: Unmixed fuel only. Check oil level when refueling.

If you do not have the Owner's Manual for this vehicle, call 1-800-324-3764 to have one provided at no charge.



# **SECTION 3 - FEATURES AND CONTROLS**

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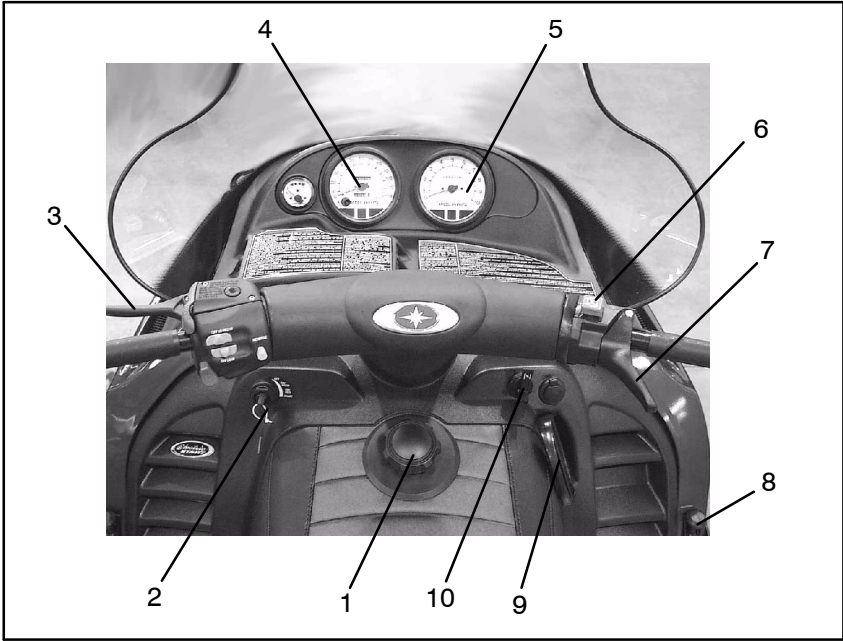
**Location of Controls** ..... **36 - 38**  
**Features** ..... **39 - 41**

Section 3 illustrates the locations of your snowmobile’s controls and features.

# FEATURES AND CONTROLS

## Location of Controls

**NOTE:** Your machine may not look exactly like the illustration, but these controls are found in the same general area on all machines.



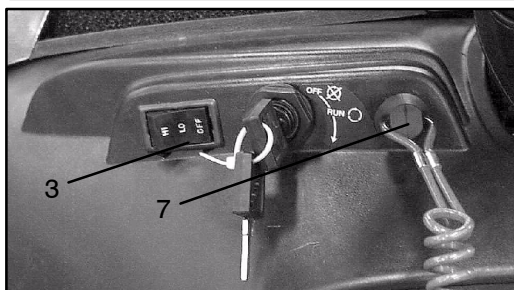
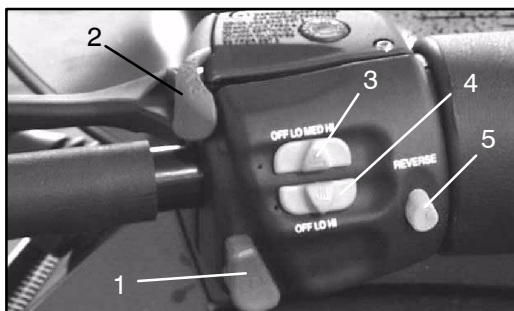
1. Fuel Filler Cap (some models have a fuel gauge in the cap)
2. Ignition Switch
3. Brake Lever
4. Speedometer (may include indicator/warning lights)
5. Tachometer (may include indicator/warning lights)
6. Engine Stop Switch (Push/Pull) Operation found on page 86.
7. Throttle Control
8. Hood Hold Down Straps
9. Recoil Starter Handle
10. Choke Control

# FEATURES AND CONTROLS

## Location of Controls

**NOTE:** Some Polaris snowmobiles are equipped with special features. Controls for these features are illustrated on this page. **Not all models come with these features.** Refer to your Owner's Manual Supplement for a list of features on your machine. Accessories are available from your Polaris dealer.

1. Headlight Dimmer Switch (2 Position)
2. Park Brake
3. Handlebar Grip Warmer Switch
4. Thumbwarmer Switch
5. Electronic Reverse Button
6. Electronic Shock Control Button
7. Tether Switch

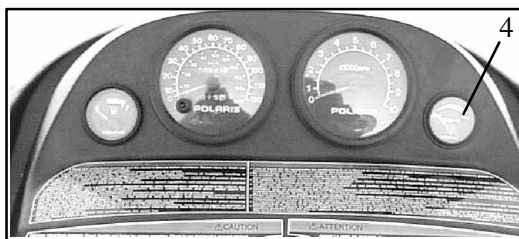
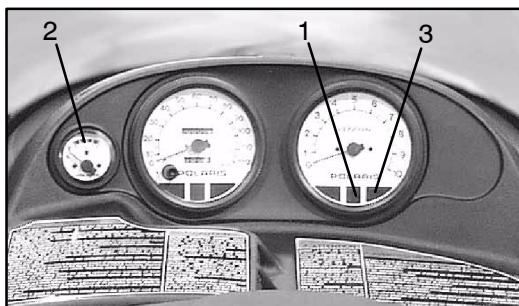


# FEATURES AND CONTROLS

## Location of Controls

**NOTE:** Some Polaris snowmobiles are equipped with special features. Controls for these features are illustrated on this page. **Not all models come with these features.** Refer to your Owner's Manual Supplement for a list of features on your machine. Accessories are available from your Polaris dealer.

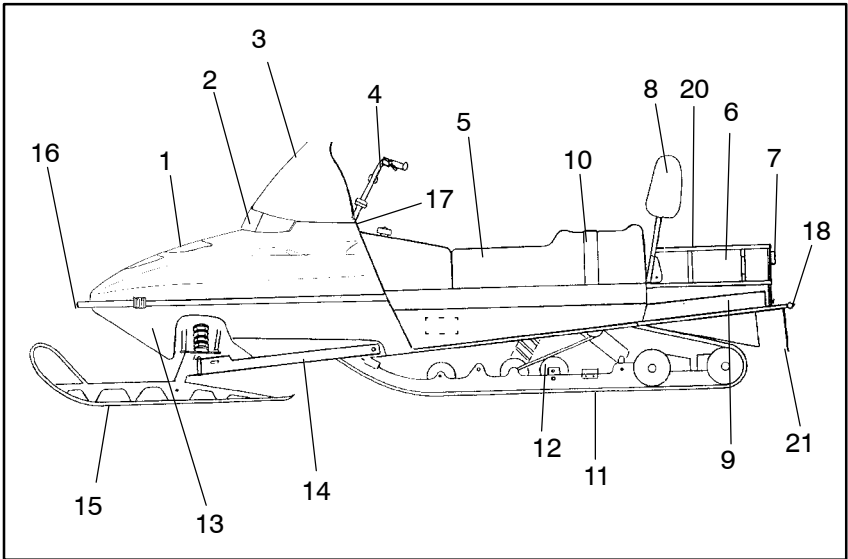
1. Reverse Indicator Light
2. Electronic Fuel Gauge
3. Temperature Light
4. Electric Shock Absorber Gauge





# FEATURES AND CONTROLS

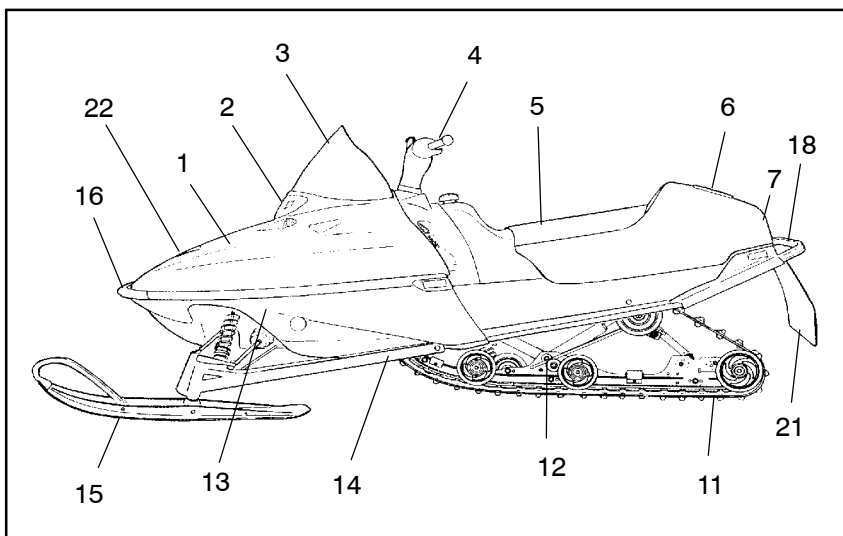
## Features



- |                               |                         |
|-------------------------------|-------------------------|
| 1. Hood                       | 12. Suspension          |
| 2. Headlight                  | 13. Nosepan             |
| 3. Windshield                 | 14. Trailing Arm        |
| 4. Handlebar                  | 15. Skis                |
| 5. Seat                       | 16. Front Bumper        |
| 6. Storage/Rear               | 17. Console             |
| 7. Taillights                 | 18. Rear Bumper         |
| 8. Backrest                   | 19. Passenger Hand Hold |
| 9. Tunnel Extension           | 20. Lifting Hand Hold   |
| 10. Passenger Hand Hold Strap | 21. Snow Flap           |
| 11. Track                     |                         |

# FEATURES AND CONTROLS

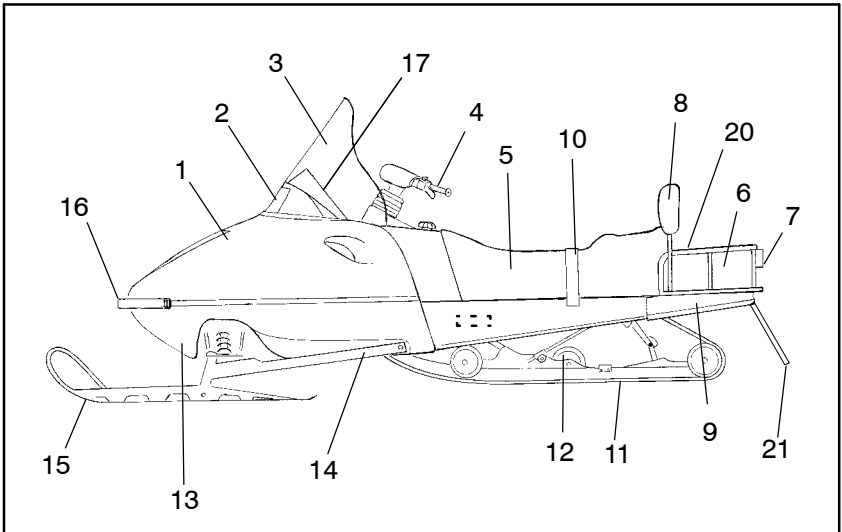
## Features



- |                               |                                      |
|-------------------------------|--------------------------------------|
| 1. Hood                       | 12. Suspension                       |
| 2. Headlight                  | 13. Nosepan                          |
| 3. Windshield                 | 14. Trailing Arm                     |
| 4. Handlebar                  | 15. Skis                             |
| 5. Seat                       | 16. Front Bumper                     |
| 6. Storage/Rear               | 17. Console                          |
| 7. Taillights                 | 18. Rear Bumper                      |
| 8. Backrest                   | 19. Passenger Hand Hold              |
| 9. Tunnel Extension           | 20. Lifting Hand Hold                |
| 10. Passenger Hand Hold Strap | 21. Snow Flap                        |
| 11. Track                     | 22. Hood Closures (Edge Models Only) |

# FEATURES AND CONTROLS

## Features



- |                               |                         |
|-------------------------------|-------------------------|
| 1. Hood                       | 12. Suspension          |
| 2. Headlight                  | 13. Nosepan             |
| 3. Windshield                 | 14. Trailing Arm        |
| 4. Handlebar                  | 15. Skis                |
| 5. Seat                       | 16. Front Bumper        |
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| 7. Taillights                 | 18. Rear Bumper         |
| 8. Backrest                   | 19. Passenger Hand Hold |
| 9. Tunnel Extension           | 20. Lifting Hand Hold   |
| 10. Passenger Hand Hold Strap | 21. Snow Flap           |

# - NOTES -

## SECTION 4 - THE PERFECT FIT

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<b>Front Suspension Adjustments</b> .....	<b>44 - 48</b>
<b>Rear Suspension Adjustments</b> .....	<b>49 - 58</b>
<b>Handlebar Adjustment</b> .....	<b>59</b>
<b>Backrest Adjustment</b> .....	<b>59</b>
<b>Accessories</b> .....	<b>60 - 63</b>

Polaris offers a wide range of adjustments so that every machine may be set up to suit individual needs. This section explains how to tailor the suspension and other features for an optimum riding experience.

# THE PERFECT FIT

## Front Suspension Adjustments

Break in the suspension for approximately 150 miles (240 km) and re-grease all suspension parts before fine-tuning adjustments are made.

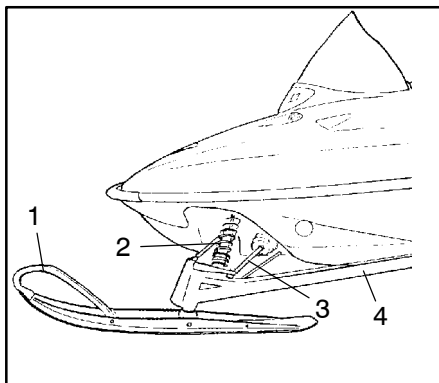
Settings will vary from rider to rider, depending on rider weight, vehicle speed, riding style, and trail conditions. We recommend starting with factory settings and then customizing each adjustment individually to suit rider preference. The machine should be methodically tested under the same conditions after each adjustment (trail and snow conditions, vehicle speed, riding position, etc.) until the best ride is achieved. Adjustments should be made to one area at a time in order to properly evaluate the change.

All snowmobile suspensions have a front and a rear suspension, each of which has adjustment options.

### Independent Front Suspension (IFS)

The IFS is made up of the skis (1), front shocks and springs (2), and the components that connect these parts to both the steering, such as the radius rods (3), and to the machine itself, such as the trailing arms (4). Front suspension adjustment options are limited to the front shocks and springs.

**NOTE:** Although the front suspension on your machine may not look exactly like the illustration, it will have the same parts and functions as those illustrated.



### IFS Adjustment Options

- Front shock spring preload
- Optional springs
- Optional valving (if equipped with RYDE FX™ or Fox™ Shocks)
- Indy Select (if equipped)

# THE PERFECT FIT

## Front Suspension Adjustments

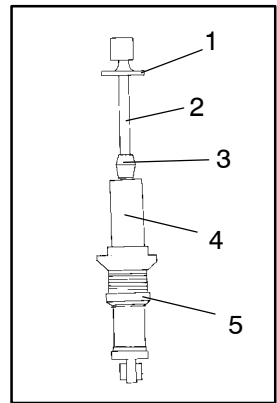
### **⚠️ WARNING**

Always verify ski alignment before making adjustments to the IFS. See page 145 to check alignment. If the skis are misaligned, see your dealer, as the camber adjustment may also be affected.

The tension at which the shock coil spring is set is called spring preload. For the best ride, the spring preload should be set as low as possible to use the full travel of the ski shock, with occasional light bottoming. To determine if your machine is using full travel of the ski shock, push the jounce bumper down as far as it will go on the shock rod and test ride the machine. The bumper will move up on the rod in direct relation to the amount of travel. If the shock travel is full, the bumper will be seated at the top of the shock.

### **Shock Absorber Components**

1. Retainer
2. Shock Rod
3. Jounce Bumper
4. Body
5. Threaded Spring Preload Adjuster Nut



# THE PERFECT FIT

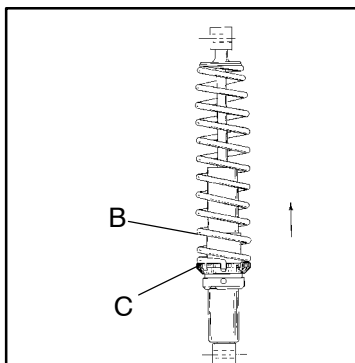
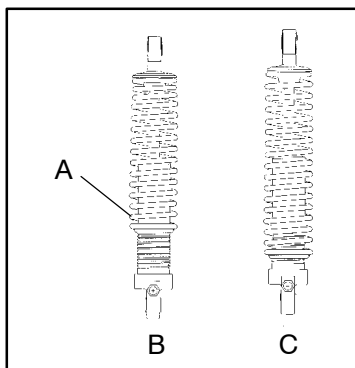
## Front Suspension Adjustments

### Adjusting Front ShockSpring Preload

Increasing spring preload will increase ski-to-ground pressure. Decreasing spring preload will decrease ski-to-ground pressure. When adjusting, be sure springs on both the left and right sides of the machine are at the same adjustment.

To increase front shock spring preload, grasp the spring and turn it to the right. Turn it to the left to decrease preload. In the illustrations at right, B indicates high preload and C indicates low preload.

Increasing the spring preload too much may adversely affect the handling of the snowmobile and the performance of the rear suspension. Decreasing the spring preload too much may allow the upper spring retainer to fall off. Always leave at least one thread showing above the nut (A).



### **⚠ CAUTION**

Always leave one thread showing above the adjuster nut. On models equipped with a plastic adjuster nut, if the nut is unscrewed from the threaded body, the nut will break.



# THE PERFECT FIT

## Front Suspension Adjustments

If the spring preload is at its maximum and you want more adjustment:

- Remove the existing spring and install the next highest rate spring, or
- Change the shock valving on Fox™ and RYDE FX™ shocks, or
- Increase compression damping on Indy Select shocks (PE 52)

See your dealer for details.

**NOTE:** Some models do not have shocks with thread adjustable spring preload.

## Changing Shock Valving

If you find that spring preload adjustment alone is not sufficient, changing the valving of your Fox™ or RYDE FX™ shocks may give you the ride adjustment you want. The purpose of shock valving is to control the stiffness of the shock's compression.

### **WARNING**

Changing shock valving on Fox™ and RYDE FX™ shocks requires special tools and a sound knowledge of mechanical theory, tool use, and shop procedures to perform the work safely and correctly. Shocks contain high-pressure nitrogen gas. Use extreme caution when handling high-pressure service equipment. This work should be performed by a Polaris dealer.

# THE PERFECT FIT

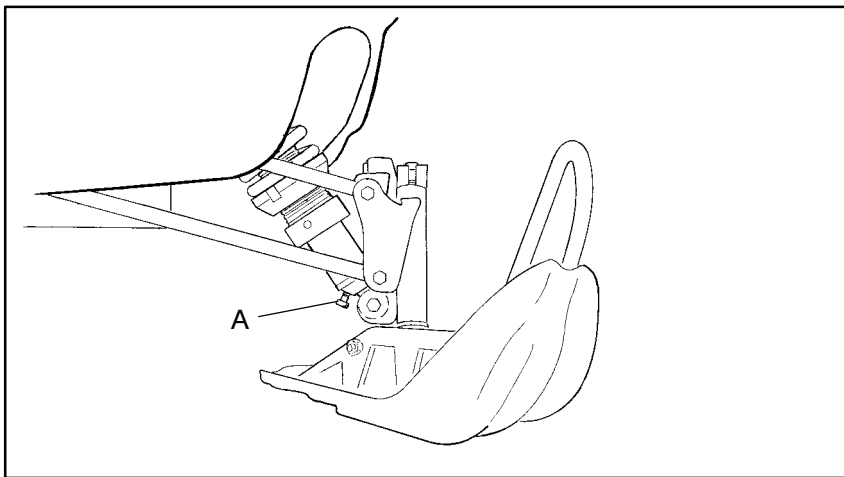
## Front Suspension Adjustments

### Indy Select IFS Shock

Some snowmobiles are equipped with Indy Select IFS shocks, which allow you to make adjustments to the compression valving of the front shocks by turning adjustment screws (A) located near the base of the shocks.

By turning the screw clockwise, the compression of the shock increases, stiffening the ride. By turning counterclockwise, the compression decreases, softening the ride.

The factory setting is in the softest position (screw all the way out - counterclockwise). If bottoming occurs, the Indy Select feature should be used to achieve the desired ride effect. One-half turn will affect the ride considerably. There are about three turns of adjustment available. If experimenting with this adjustment feature, turn the screw only 1/4 turn at a time. And always adjust both shocks equally.



## Rear Suspension Adjustments

### Rear Suspensions

Polaris has six different rear suspension packages, each designed and set up to deliver a soft ride under average riding conditions. Rider weight, riding style, trail conditions, and vehicle speed all affect suspension action.

Each rear suspension can be adjusted to suit rider preference and deliver excellent performance for a given set of conditions. However, all suspension designs and adjustments involve a compromise, or trade-off. For example, a suspension set up for snow-cross racing would provide a very stiff ride on the trail. A suspension set up for trail riding would bottom out harshly on a snow-cross course.

A decal outlining rear suspension set-up options is located either under the hood or on the clutch cover. It provides a guideline for initial suspension set-up. Additional adjustments can be made from this point. Make adjustments to one area at a time so you can evaluate the change. For further assistance, see your dealer.

### Suspension Performance Tips

- Rider weight usually determines the position at which the spring pre-load should be set. However, this may vary with riding style. With a little experimentation, each rider can find a preferred set-up. These adjustments are easy to make, involve very little time or effort, and greatly affect the ride.
- In deep snow, a new Hi-fax will offer improved performance over worn Hi-fax. It can also improve top speed.
- When riding on ice or hard-packed snow, adding a set of bogie wheels to the rail may enhance the machine's performance. Bogie wheel kits are available from your dealer.
- Polaris offers track kits for improved flotation in deep snow. See your dealer for assistance.

**IMPORTANT:** Keep the suspension pivot points lubricated. This will reduce moisture and rust build-up and ensure proper function of the suspension components.. Grease rear suspension pivots before adjusting the rear suspension. Refer to Suspension Maintenance on pages 148-149.

# THE PERFECT FIT

## Rear Suspension Adjustments

### Rear Suspension Initial Spring Preload Setting EDGE RMK (Sag Method)

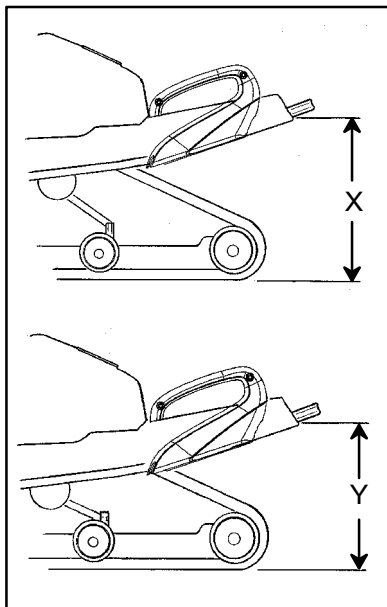
To set up the EDGE RMK rear suspension torsion spring preload, measure the distance between the ground and rear bumper. This is measurement X.

Take this measurement with no rider and with the rear suspension at full extension. **NOTE:** The rear bumper may need to be lifted upward slightly to fully extend the suspension.

Next, have the rider drop down hard on the seat and bounce up and down several times, collapsing the rear suspension. With the rider seated, measure the distance between the ground and the rear bumper at the exact location used for measurement X. This is measurement Y.

To determine sag, commonly referred to as ride-in, subtract measurement Y from X ( $Sag=X-Y$ ). Adjust sag by rotating the torsion spring preload cams located on the rear torque arm. Use the illustration or the decal found under the hood for reference. The ideal amount of sag for the EDGE RMK rear suspension is four inches ( $X-Y=4$ ).

If the rear suspension rides in less than three inches or more than five inches with the torsion spring preload cams at their maximum range of adjustment, optional torsion springs (softer or stiffer, respectively) may be required. This is only an initial setup, and final spring preload may vary based on rider preference and riding conditions.



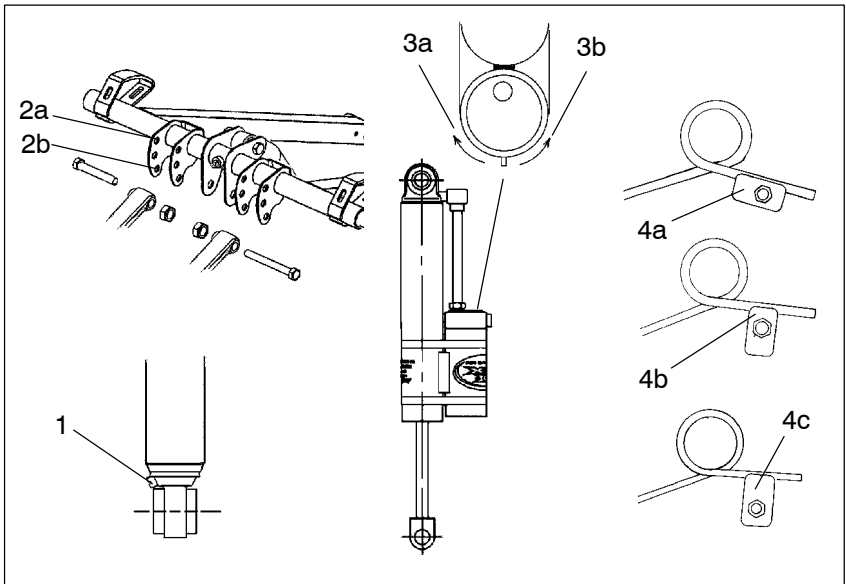
## Rear Suspension Adjustments

### Rear Spring Tension

To adjust rear torsion spring tension, rotate the three-position cam using the engine spark plug tool.

Different rate torsion springs are available if a firmer ride is desired. Contact your dealer for more information.

The following information is provided only as a guideline to be used for initial suspension set-up. Your set-up may vary based on your desired riding style.



1 - Turn screw clockwise to stiffen compression

2a - Limiter strap in high position increases ski pressure

2b - Limiter strap in low position decreases ski pressure

3a - Turn the knob to the left for a softer ride

3b - Turn the knob to the right for a stiffer ride

4a - **Soft Tension** - long end of cam to front

4b - **Medium tension** - short end of cam up

4c - **Firm tension** - long end of cam up

# THE PERFECT FIT

## Rear Suspension Adjustments

### Rear Suspension Initial Spring Preload Setting Xtra-10, EDGE and Xtra Lite (Sag Method)

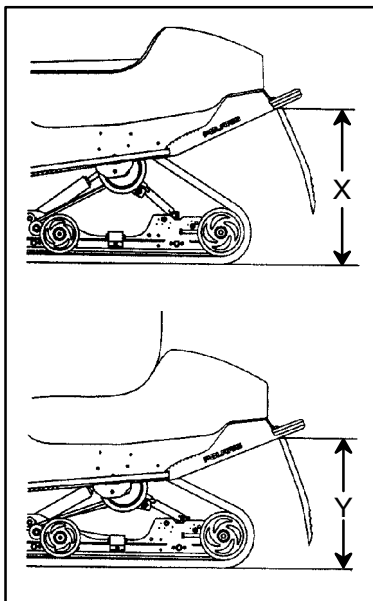
To set up the EDGE rear suspension torsion spring preload, measure the distance between the ground and rear bumper. This is measurement X.

Take the first measurement with no rider and with the rear suspension at full extension. **NOTE:** The rear bumper may need to be lifted upward slightly to fully extend the rear suspension.

Next, have the rider drop down **hard** on the seat and bounce up and down several times, collapsing the rear suspension. With the rider seated, measure the distance between the ground and the rear bumper at the exact location used for measurement X. This is measurement Y.

To determine sag, commonly referred to as ride-in, subtract measurement Y from X ( $Sag=X-Y$ ). Adjust sag by rotating the torsion spring preload cams located on the rear torque arm. Use the illustration or the decal found under the hood for reference. The ideal amount of Sag for the EDGE rear suspension is four inches ( $X-Y=4$ ).

If the rear suspension rides in less than three inches or more than five inches with the torsion spring preload cams at their maximum range of adjustment, optional torsion springs (softer or stiffer, respectively) may be required. This is only an initial set-up, and final spring preload may vary based on rider preference and riding conditions.



# THE PERFECT FIT

## Rear Suspension Adjustments

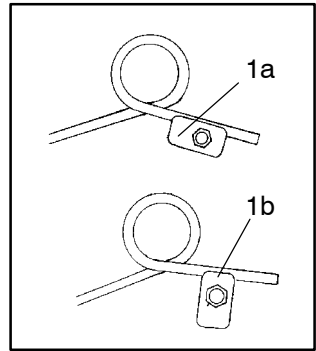
### Rear Torsion Spring Adjustment - Xtra-12

To adjust rear torsion spring tension, rotate the two-position cam using the engine spark plug tool.

**1a - Soft Tension** - long end of cam to front

**1b - Medium Tension** - short end of cam up

Different rate torsion springs are available if greater tension is desired. Contact your dealer for more information.

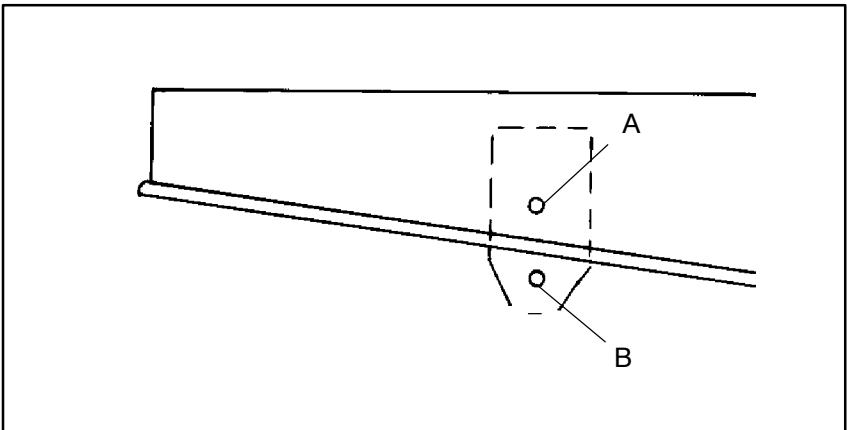


### Rear Torque Arm Adjustment - SKS Models

On *SKS models only*, the rear torque arm may be lowered from the stock mounting position (A) to an optional position beneath the tunnel bend line (B).

Install a replacement bolt into the stock mounting position to secure the rear suspension mounting pad to the tunnel. See your dealer for more information.

Moving the rear torque arm below the tunnel will improve deep snow mobility.



# THE PERFECT FIT

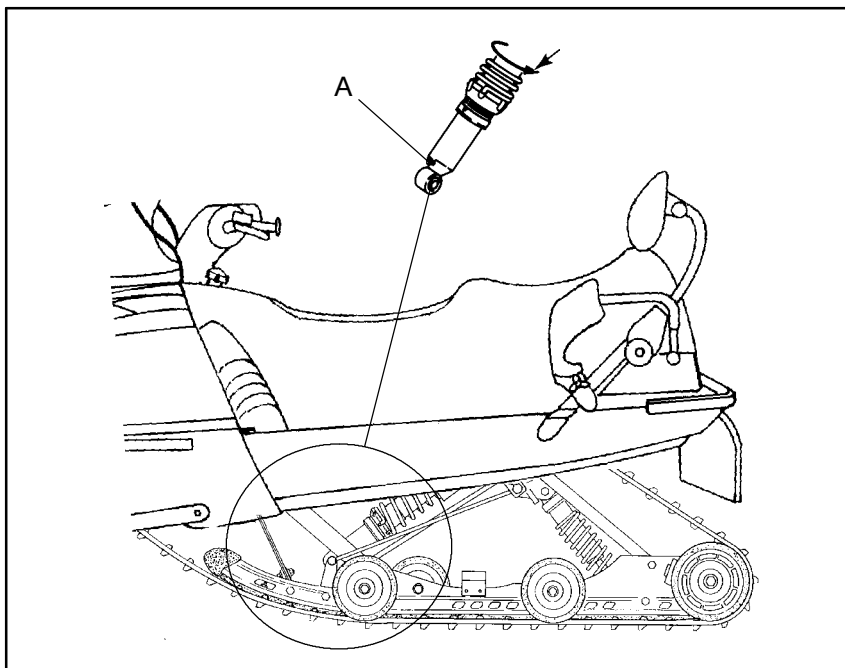
## Rear Suspension Adjustments

### Indy Select Front Track Shock

Some snowmobiles are equipped with the Indy Select front track shock, which allows the driver to make adjustments to the compression valving by turning the screw located near the base of the shock.

### Adjustment

Locate the adjustment screw (A) near the base of the shock. In half-turn increments, turn the screw clockwise to increase compression valving and stiffen the ride, or counterclockwise to reduce compression and soften the ride. There are approximately three full turns of adjustment available.





# THE PERFECT FIT

## Rear Suspension Adjustments

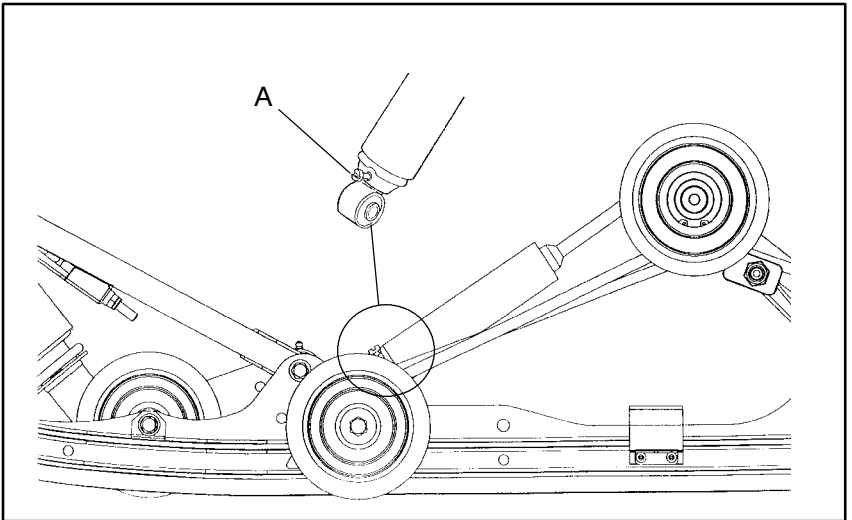
### Indy Select Rear Shock

Some snowmobiles are equipped with the Indy Select rear shock, which allows for adjustments to the compression valving by turning the adjustment screw located near the base of the shock.

### Adjustment

Locate the adjustment screw (A) near the base of the shock. In half-turn increments, turn the screw clockwise to increase compression valving and stiffen the ride, or counterclockwise to reduce compression and soften the ride. There are approximately three full turns of adjustment available.

If bottoming continues after the screw has been turned fully clockwise, the torsion spring should be adjusted (see page 53). Return the screw to its original starting position after the torsion spring has been tightened.



# THE PERFECT FIT

## Rear Suspension Adjustments

### Optional Coil Springs

Different rate coil springs are available for some shocks if a firmer ride is desired. Contact your dealer for more information.

### Position Sensitive Shock (PPS)

There are no external adjustments on the position sensitive shock. There is a performance PPS kit available for increasing damping. If you desire to have the internal valving changed, consult your dealer, or refer to the suspension troubleshooting decal located under your hood or on the clutch guard.

### Suspension Coupling

On all Polaris snowmobile rear suspensions, there are two torque arms that control the movement of the rail beam. Prior to the advent of suspension coupling, these torque arms could move independently of each other. Rear suspension coupling links the movement of the front and rear torque arms to each other. There are two types of rear suspension coupling.

### Front To Rear Coupling and the Front Rear Scissor Stop (FRSS)

The front rear scissor stop (FRSS) couples the movement of the front torque arm with the rear torque arm and limits the amount of independence between the movement of the front torque arm and the rear torque arm.

When hitting a bump, the front torque arm starts to compress. The FRSS links that movement to the rear torque arm, causing it to compress and raise the rear suspension up as one, allowing the suspension to hit the bump only once and eliminating kickback. Your FRSS is preset at the factory. Do not make any adjustments to the position of the FRSS or your ride will be compromised.

## Rear Suspension Adjustments

### Rear To Front Coupling and the Rear Rear Scissor Stop (RRSS)

The rear rear scissor stop (RRSS) couples the movement of the rear torque arm with the front torque arm and limits the amount of independent movement between the rear torque and the front torque arm.

Adjusting the RRSS either allows more weight to transfer to the rear for more traction, or allows less weight to transfer to the rear, resulting in improved cornering performance. An adjustment dot is located on the RRSS. This dot is on the longest end of the scissor stop.

### Rear Rear Scissor Stop (RRSS) - Attributes

Moving the RRSS to a higher position, or forward hole, will have the following effects on the suspension:

- Reduced weight transfer.
- Improved chatter bump ride.
- Improved cornering performance.

# THE PERFECT FIT

## Rear Suspension Adjustments

### Weight Transfer During Acceleration

#### Xtra-10 and EDGE Rear Rear Scissor Stop (RRSS)

The preferred method for controlling weight transfer during acceleration of the EDGE rear suspension is by adjusting the rear rear scissor stop (RRSS). The RRSS is located in the best overall trail riding position when delivered from the factory.

To decrease weight transfer under acceleration (for improved cornering), rotate the RRSS to a higher position with the scissor stop tool (1) located in your tool kit.

To increase weight transfer or ski lift during acceleration, move the RRSS to the rearward hole on high position. The RRSS may also be rotated to a lower position for even more weight transfer if desired.

A - Stock Position - This setting is most desirable for trail riding.

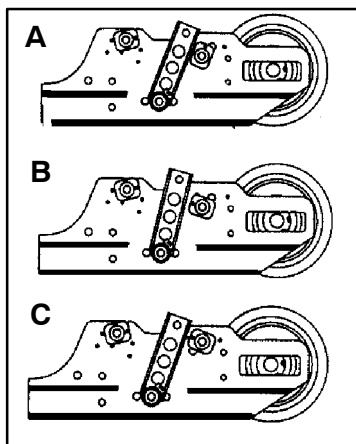
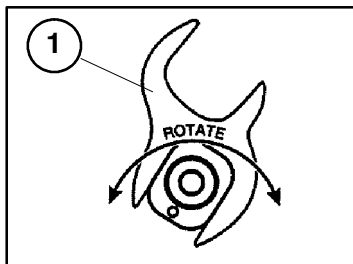
B - Medium or High Position (standard hole location) - This setting will decrease weight transfer.

C - Rearward Upper Position (optional hole location) - This setting will increase weight transfer.

**NOTE:** Your dealer can help you with initial set-up and additional set-up instructions to help you achieve your optimum ride.

#### Xtra-12 Rear Rear Scissor Stop (RRSS)

The RRSS on Xtra-12 suspensions is not adjustable.

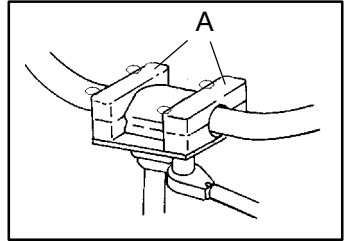


# THE PERFECT FIT

## Handlebar Adjustment

Follow these steps to adjust the handlebars for a personal fit.

- 1 Remove the handlebar cover to expose the handlebar and the four adjuster block bolts (A).
- 2 Using a 7/16" (11 mm) wrench, loosen the four nuts on the bottom of the adjuster block (turn handlebar to left or right for access to back nuts).



**NOTE:** It may be necessary to pry the adjuster blocks apart with a screw driver.

- 3 Adjust the handlebar to the desired height. Be sure handlebars, brake lever and throttle lever operate smoothly and do not hit the gas tank, windshield or any other part of the machine when turned fully to the left or right.
- 4 Torque the handlebar adjuster block bolts to 11-13 ft. lbs. (1.5-1.8 kg/m).
- 5 Replace handlebar cover.

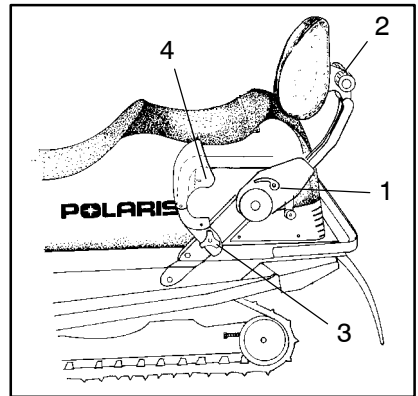
## Backrest Adjustment

The passenger backrest on some models is adjustable.

To move the backrest forward or backward, lift the adjustment lever on the left side (1).

When adjusting the backrest from a passenger position to a single rider position, rotate the backrest cushion adjustment knobs (2) until the proper angle is reached.

The grab bars have five height adjustments. To raise or lower the grab bar, remove the grab bar adjuster knob (3), position the grab bar at the desired height, and reinstall the knob.



Some models are also equipped with passenger handwarmers. The switch (4), located under the left-hand wind deflector, has three settings: High, Off, and Low.

To lengthen or shorten the backrest cable, lift the cable until spring tension is felt and lock the jam nut.

# THE PERFECT FIT

## Accessories

Polaris offers a wide range of accessories for your snowmobile. From map light to electric start, Polaris has the accessories that will help make each ride more enjoyable. See your dealer for a list of accessories.

**NOTE:** The accessory tether switch is available for all models. Order PN 2870668.

Use only Polaris parts and accessories on your Polaris snowmobile. Use of unapproved parts and accessories may result in:

- Non-compliance with government/industry requirements
- Voiding of warranty
- Personal injury to self or others

This applies to, but is not limited to the following areas: brakes, clutches, fuel systems, and exhaust systems.

**NOTE:** Exhaust systems are critical safety areas that *must* use approved Polaris parts. Please see your Polaris dealer for service.

# THE PERFECT FIT

## Accessories

### Traction Products

Another way to tailor your machine is to install traction products. See your dealer if you about installing studs and/or carbides. Many tracks with deep lug designs cannot be studded, but your dealer will be able to offer advice and assistance.

**NOTE:** Polaris does *not* recommend the use of traction products on WideTrak snowmobiles.

### CAUTION

If traction products are added to the track, wear strips must be installed in the tunnel to avoid excessive wear.

Never add shims to the wear strip. Track damage will result because of lack of clearance between upper carrier wheels and track.

Use of studs longer than 1" (2.5 cm) on machines equipped with center coolers will result in center cooler damage or damage to the tunnel.

Use only Polaris traction products on your snowmobile. Track warranties are void if track damage or failure results from improper or excessive stud installation or the use of non-Polaris traction products.

### WARNING

Loss of control can result in serious personal injury or death. Proper balance of traction products on the skis and track must be maintained to obtain proper vehicle control on hard-packed snow or ice. See your dealer for assistance.

# THE PERFECT FIT

## Accessories

### Traction Products

**IMPORTANT:** Before equipping your machine with traction products, be aware of the laws in your area pertaining to the use of traction products.

Track studding will enhance braking control on hard-packed snow or ice, but extreme caution is still required on such surfaces. Steering ability may be reduced on hard-packed snow or ice.

A skag is a replaceable bar attached to the underside of the ski to assist in turning the snowmobile and to prevent ski wear caused by contact with roads and other bare terrain. The addition of carbide skags is recommended with studded tracks to help maintain proper vehicle steering and control. Similarly, if your machine is equipped with carbide skags or you're adding them, it may be necessary to add track studs to maintain proper vehicle control. Proper balance must be maintained between the number of studs and the length of carbide on skags. The more studs used, the longer the carbide on the skags should be. See your dealer's track studding chart for recommended studding and skags.

Inspect skags and studs frequently. Worn studs or skags may reduce steering and braking control on hard-packed snow and ice. Replace worn studs and skags to maintain proper balance and vehicle control.

When studded tracks are used, increased wear to the brake pads will result from increased braking. Extended-wear brake pad kits are available. See your dealer for more information.

## CAUTION

Aggressive studding patterns may require grinding protruding stud bolts flush to prevent idler wheel damage. Maintain track tension on studded tracks on the tight side of the spec to prevent heat exchanger damage. Center of stud must be at least 1 1/8" (2.86 cm) from the edge of the outer belt.



## Accessories

### Wear Strips

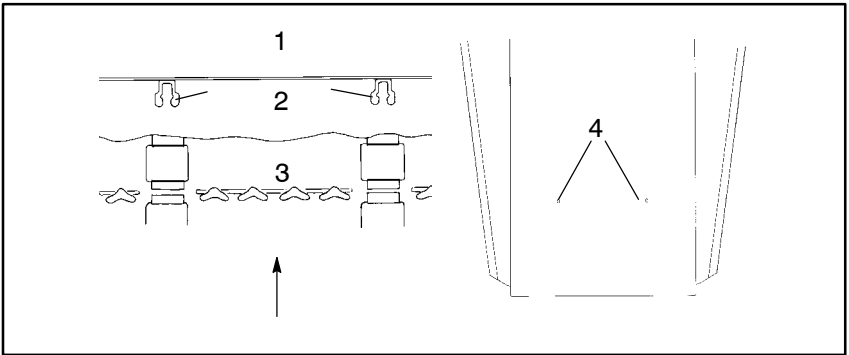
To avoid excessive tunnel wear, tunnel wear strips *must* be installed whenever track studding is used. Several wear strips are available. See your dealer for more information.

Some models are manufactured with tunnel wear strips or wear strip coolers installed. Refer to your Owner's Manual Supplement to determine if your model has wear strips.

Wear strips are designed for a specific stud length. See your dealer's studding chart for recommended traction accessories.

Components as viewed from the rear of the track:

- 1 Top of tunnel
- 2 Wear strip
- 3 Track
- 4 Wearstrip mounting holes



## CAUTION

Studs longer than 1" (2.5 cm) on machines equipped with center coolers will cause center cooler damage.

Whenever wear strips are relocated, be sure there's adequate stud clearance to the heat exchangers. Lack of clearance may result in damage to heat exchangers.

# - NOTES -

## SECTION 5 - GETTING READY TO RIDE

---

### **Check Before Starting Engine . . . . . 66 - 70**

- Throttle Freeplay
- Brake
- Fluid Levels
- Steering
- Mirrors
- Gear

### **Start the Engine and Check . . . . . 71**

- Lights
- Stop Switch
- Skis and Track (cold/warm)
- Pre-ride warm-up

Certain items must be checked before each ride. This section explains procedures that must be performed before riding.

# GETTING READY TO RIDE

## Check Before Starting Engine

### **WARNING**

Worn, damaged, or malfunctioning components may cause serious injury or death. Before starting the engine, check all components to be sure of proper operation.

## Read and Understand Your Owner's Manual

Read the Owner's Manual completely and refer to it often. We've attempted to provide as much information as possible to alert you to the safety requirements of snowmobiling.

## Check Throttle and Brake for Proper Operation

The throttle and brake are the primary controls of your snowmobile. If either should malfunction, loss of control could result.

Make sure the throttle lever compresses evenly and smoothly. The lever should immediately return to the idle position without binding or hesitation. If the throttle does not function smoothly, **DO NOT** start the engine. Have the throttle serviced immediately.

The need for a properly functioning brake is critical. Your snowmobile is equipped with the highest quality brake system available. Check the brakes for correct operation before starting the engine.

## Throttle Safety Switch

Test the throttle safety switch system daily, before the machine is operated.

# GETTING READY TO RIDE

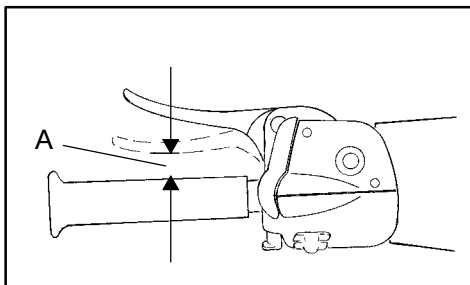
## Check Before Starting Engine

### Hydraulic Brakes

Properly functioning brakes are critical to your safety. Always check the following items to assure proper operation before starting the engine.

#### Brake Lever Travel

When the brake lever is squeezed, it should move no closer to the handgrip than 1/2" (1.3 cm) (A). A distance less than this indicates low brake fluid level or air in the hydraulic system. Refer to the brake bleeding information on page 127.



#### Lever Feel

A hydraulic system multiplies the force of your hand squeezing the brake lever. Proper operation depends on an adequate supply of air and moisture-free hydraulic brake fluid in the system. If the brake lever feels “spongy” when squeezed, check the level and condition of the fluid. Also check for the presence of air in the fluid system. Refer to page 127 for more information, or see your dealer for service.

Replace brake fluid at least every two years with Polaris DOT 3 high temperature brake fluid. All DOT 3 brake fluid is not alike. Use only Polaris brake fluid (PN 2870990).

### **⚠ WARNING**

Continued use of “spongy” brakes may cause a complete loss of brakes, which could result in serious injury or death.

# GETTING READY TO RIDE

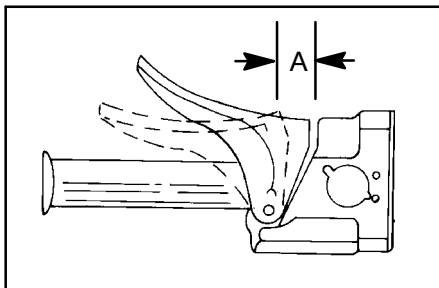
## Check Before Starting Engine

### Mechanical Brakes

#### Brake Lever Travel

Firmly depress the brake lever. Measure the distance (A) between the lever and brake block. The distance should be no more than  $3/4$ " (1.9 cm).

If the distance is greater than this recommendation, the brake cable must be adjusted. Refer to mechanical brake adjustment information on page 128.



# GETTING READY TO RIDE

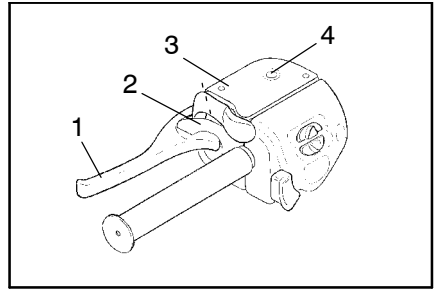
## Check Before Starting Engine

### Park Brake Lever Lock

Your snowmobile may have a park brake lever lock located over the brake lever. Use the brake lever lock only when you want the machine to remain stationary; for example, when parked on an incline for a period of five minutes or less. To apply the lock, squeeze the brake handle and push forward on the brake lever lock. Hold the lock forward and release the brake handle.

If the brake handle is squeezed tightly enough, the lock will move freely into place. Do not force the lock or it may break. To release the lock, squeeze the brake handle until the lever returns to the unlock position. The park brake light on the console will light up when the park brake lever lock is set and the engine is running. It will also be lit when the service brake is in use. If the park brake light does not come on when the park brake or service brake is in use, have it serviced by your dealer.

1. Brake Handle
2. Park Brake Lever Lock (not all models have a park brake)
3. Master Cylinder Reservoir / Cover
4. Fluid Level Indicator



## **⚠️ WARNING**

If the park brake lever lock is partially or entirely engaged while riding, overheating of the brakes could occur, resulting in brake damage. In extreme cases it could cause a fire, which could result in serious injury or death.

# GETTING READY TO RIDE

## Check Before Starting Engine

### Check for Proper Operation of Steering System

Manually turn the skis completely to the right and to the left. If any difficulty is encountered, check for ice and snow build-up that may be obstructing the steering linkage. Make sure all greasable components are properly lubricated.

### Track Inspection

#### **WARNING**

Always inspect the track for damage before using the vehicle. Operating the snowmobile with a damaged track increases the possibility of track failure, which could cause loss of control resulting in serious injury or death.

Use of traction products such as studs increases the possibility of track damage and/or failure. Driving at high speeds for extended periods of time in marginal lubrication could severely damage track rods, break track edges, and cause other track damage. Examples of marginal lubrication would include frozen bodies of water without snow cover, icy trails, and no-snow conditions.

**NOTE:** Track damage or failure caused by operation on ice or poor lubrication conditions voids the track warranty.

### Check for Securely Latched Hood

The hood of the snowmobile protects the operator from moving parts as well as aiding in sound emission control and other functions. *Under no circumstances* should your snowmobile be operated with the hood open or removed.



# GETTING READY TO RIDE

## Start The Engine And Check

- ✔ **Transmission:** Make sure the reverse is not engaged before starting your machine.
- ✔ **Engine Stop Switch:** Check the auxiliary shut-off switch for proper operation. Push down to stop the engine. Pull up to release and start the engine.
- ✔ **Tether Switch:** If equipped, check the tether switch for proper operation.
- ✔ **Lighting Check:** Check the headlight (high and low beam), taillight, and brake light for normal operation.
- ✔ **Mirror Adjustment:** Adjust your mirrors so they can be used to their full advantage.
- ✔ **Check Surroundings to Verify Clear Operating Area**

Make sure you have a clear area all around your snowmobile, including an area clear of bystanders. There's always the possibility of some sideways vehicle movement, of applying a little more throttle than intended, or of debris being thrown by the track. If the surrounding area is clear you before you start, you can devote your full attention to operating the snowmobile.

# - NOTES -

## SECTION 6 - OPERATION

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<b>Starting Your Engine</b> .....	<b>74 - 75</b>
<b>Engine Break-In</b> .....	<b>76 - 77</b>
<b>Track Warm-Up</b> .....	<b>78 - 79</b>
<b>Fuel</b> .....	<b>80 - 82</b>
<b>Oil</b> .....	<b>83 - 84</b>
<b>Carburetion</b> .....	<b>85</b>
<b>Engine Stop Switch</b> .....	<b>86</b>
<b>Throttle Safety Switch</b> .....	<b>86</b>
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Section 6 explains proper engine break-in, operation of features, and operating procedures.

# OPERATION

## Starting Your Engine

### **WARNING**

Before starting the engine, always refer to all safety warnings pertaining to snowmobile operation. Never start your snowmobile without checking all components to be sure of proper operation. See *Check Before Starting the Engine* beginning on page 66.

### Starting a Cold Engine (Manual Start)

Do not depress the throttle until the engine starts.

- 1 Turn key to “ON.”
- 2 Pull kill switch (shut-off switch) up to “RUN.”
- 3 Flip choke toggle to “FULL ON.”
- 4 Grasp starter handle and pull slowly until recoil engages; then pull to start.

### **CAUTION**

Don't pull the starter rope to full extended position or allow it to snap back into the housing. Damage may result.

- 5 After the engine starts, flip the choke toggle to the “OFF” position. If the engine slows or wants to stop, use intermittent choking to the “HALF ON” position.

### **CAUTION**



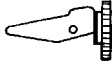



To avoid personal injury and/or engine damage, do not operate the electric starter or pull-rope starter while the engine is running.

## Starting Your Engine

### Starting a Cold Engine (Electric Start)

Do not depress the throttle until the engine starts.

- 1 Flip choke toggle to “FULL ON.”
- 2 Pull kill switch (shut-off switch) up to “RUN.”
- 3 Turn key to “START” and crank engine.
- 4 After the engine starts, release the key to “ON” and flip the choke toggle to “OFF.” If the engine slows or wants to stop, use intermittent choking to “HALF ON.”

CHOKE TOGGLE POSITIONS	
Off	 or 
Half On	 or 
On	 or 

- 5 WideTrak models can also be warmed up with the transmission in neutral and the brake engaged. This will allow the engine to warm without engaging the drive system.

**NOTE:** Don't leave the machine in this position for more than five minutes. Engine RPM should be at idle before shifting the transmission.

### Starting a Warm Engine

- 1 Turn key to “ON.”
- 2 Pull kill switch (shut-off switch) up to “RUN.”
- 3 Grasp starter handle and pull slowly until recoil engages; then pull to start.

If the engine does not start on the first pull, slightly depress the throttle with your left hand (no more than 1/4" open), and pull the rope with your right hand. When the engine starts, immediately release the throttle.

# OPERATION

## Engine Break-In

No single action on your part is as important to long, trouble-free machine life as proper break-in of a new or rebuilt engine. Premix the first tank of gasoline with one pint of Polaris injection oil for each five gallons of fuel. This, in addition to the lubrication supplied by the injection system, will assure proper engine break-in.

### CAUTION

Never mix brands of two cycle oil. Serious chemical reactions can cause injection system blockage, resulting in serious engine damage and the voiding of engine warranty. The only oil recommended for this system is Polaris injection oil. This oil has been specially formulated for all temperatures and has extreme cold flow characteristics.

Do not operate at prolonged full throttle for the first three hours of operation. Vary the throttle openings and machine speeds to reduce friction on all close fitting machined parts and allow them to break in slowly without damage.

Adequate snow coverage is necessary to properly break in your machine. Avoid operating on ice, hard-packed surfaces, or roads. Snow will provide the lubrication and cooling your snowmobile needs for proper break-in. Inadequate cooling and lubrication will lead to overheating of the slide rail and track, resulting in premature wear and failure. Reduce speeds and frequently drive into fresh snow to allow adequate cooling and polishing of the slide rail and track surfaces.

Drive with extra caution during the break-in period. Perform regular checks on fluid levels, lines, and all other important areas of the machine.

## Engine Break-In Oil Injection System

### CAUTION

Check the oil tank level often during the first tankful of fuel. If the oil level doesn't go down, contact your dealer immediately.

Always fill the oil reservoir when refueling. Fuel-to-oil mix ratios are controlled by the oil pump and correspond to the engine's RPM and throttle valve opening.

### Variable Exhaust System

All snowmobile engines equipped with variable exhaust valves should use VES 2 Cycle Oil (see chart on page 77).

### Lubrication

The only source of engine lubrication for your engine comes from lubrication added to the fuel and oil injection systems. Use only Polaris products. We are continuously testing lubricants and provide the highest performance products available for your engine. Please refer to the table below to determine the preferred and acceptable oils for use in your engine.

Never mix other brands of oil. They may be incompatible and the result could be sludge formation, filter blockage, and reduced cold weather flow rates. All Polaris oils are compatible with each other.

	<b>Premium 2 Cycle</b>	<b>Premium Gold</b>	<b>VES 2 Cycle</b>
<b>Fan Cooled</b>	Good	Better	N/A
<b>Liquid Cooled</b>	Good	Better	N/A
<b>Liquid VES</b>	Good	Better	Best

# OPERATION

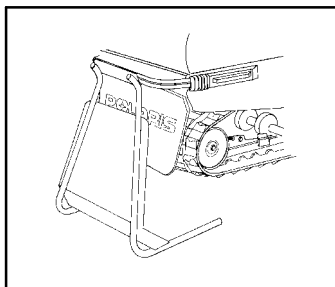
## Track Warm-Up

### **⚠️ WARNING**

A loose track or flying debris could cause serious personal injury or death. Stand clear of the front of the machine and the moving track. Never hold the snowmobile up or stand behind it while performing this procedure. Do not use too much throttle during warm up or when track is free-hanging. Be sure the rear support is stable.

**NOTE:** The outside temperature will determine the amount of track warm-up required.

With the snowmobile securely supported by the rear bumper, and the track approximately 4" (10 cm) off the ground, follow these steps to ensure proper warm-up of the engine, drive train, and track.



- 1 Start the engine and allow it to warm up two to three minutes.
- 2 Depress the throttle abruptly and allow the track to rotate several revolutions.
- 3 Release the throttle, apply the brakes, shut off the engine and lower the machine to the ground.
- 4 Grasp the skis by their front loops and move them from side to side. This will loosen frozen snow from the ski bottoms, allowing the machine to move forward more easily.



## Track Warm-Up

- 5 The engine, drive system and track are now properly warmed up and the machine may be driven following normal safety practices.







### **WARNING**

Always inspect for track damage before operating the snowmobile. Use of traction products such as studs, ice growers, etc. will increase the possibility of track damage and/or failure. This could cause loss of control, resulting in serious injury or death.

# OPERATION

## Fuel

*Gasoline is extremely flammable and explosive under certain conditions.*

-  Always stop the engine and refuel outdoors or in a well ventilated area.
-  Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
-  Do not overfill the tank. Do not fill the tank neck.
-  If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.
-  If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
-  Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

### **WARNING**

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

## Fuel

The fuel used in your Polaris engine is as important to engine life and performance as the lubricant used.

Most Polaris engines are designed to run on 87 octane non-oxygenated or 89 octane oxygenated pump gasoline. There's a great deal of variability in the quality of the 87 octane gasoline available across the country, so we encourage the use of premium fuel when possible.

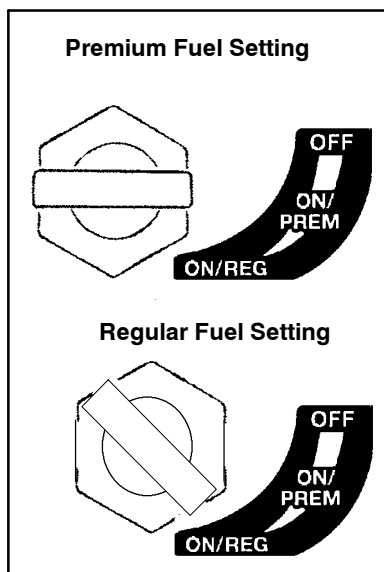
**NOTE:** Some Polaris snowmobiles *require* premium gasoline. Check your Owner's Manual Supplement to determine what type of fuel your machine requires.

## Premium Fuel Switch

Some Polaris snowmobiles are equipped with a key function to adjust the timing on the machine as you change fuels. It's very important to the life of your engine that you use this feature.

When using fuels with a pump-posted octane rating of 91 or higher, turn the key switch to "ON/PREM." When the engine is started, a yellow "Premium Fuel" light illuminates on the instrument panel. When the key is in this position, the fuel *must* be a minimum of 91 octane.

Most high performance machines require the use of premium fuels. Substituting other fuels may cause engine damage.



## CAUTION

Using lower than the recommended octane fuels or operating with obstructed fuel systems will lead to costly engine damage.

# OPERATION

## Fuel

### Premium Fuel Switch

If you're uncertain about the quality or octane rating of the fuel you use, turn your key switch to "ON/REG." The "Premium fuel" light will go out. This setting will adjust the timing of your engine to run on fuels with 87 octane or higher. Polaris does not recommend using fuel with lower than 87 octane. Running your machine on "ON/REG" will help protect your engine from damage caused by low octane fuels.

### Fuel Reserve Capacity

On models equipped with fuel reserve, there are approximately two gallons of fuel left in the tank when the fuel gauge reads "RES."

### Fuel System Deicers

If you use non-oxygenated fuel, Polaris recommends the regular use of isopropyl-based fuel system deicer (Polaris PN 2870505). Add one to two ounces per gallon (8-16 milliliters per liter) of gasoline to prevent engine damage resulting from fuel system icing and lean fuel mixtures. *Never use deicers or additives containing methanol.*

If you use oxygenated fuel containing ethanol, additional alcohol deicers or water absorbing additives are not required and should not be used.

## CAUTION

Prolonged exposure to petroleum based products may damage paint. Always protect painted surfaces when handling fuel.

## Oil

### Low Oil Indicator Light

The low oil indicator light (standard on most models) will indicate when to add oil. However, always check the oil level when refueling.

### CAUTION

When the low oil indicator light is on, oil should be added before further operation of the snowmobile. Visually check the oil level in the bottle. The engine may be operated as long as oil is visible in the oil tank. If oil is not visible, continued operation may cause serious engine damage.

Never mix brands of two cycle oil. Serious chemical reactions may occur, causing injection system blockage. This may result in serious engine damage and the voiding of engine warranty.

Always maintain the oil level above the tank's low level line. This is especially important when the machine is operated in mountainous terrain. Maintaining the proper oil level will prevent system aeration and possible loss of pumping action, which could result in engine damage.

# OPERATION

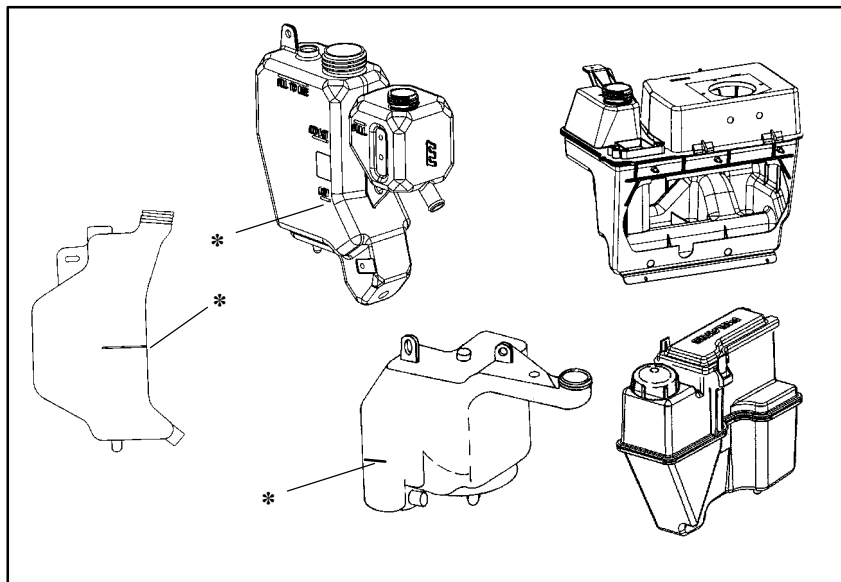
## Oil

### Low Oil Level

Always do a visual check of the oil level when refueling. In the illustration, \* indicates a low oil level. When the oil reaches the low level mark, add one U.S. quart of oil to the tank.

Always use a Polaris oil cap, never substitute. Your Polaris oil cap may be vented to allow proper oil flow.

**NOTE:** Not all models have a coolant bottle attached to the oil tank.



## Carburetion

Proper carburetor adjustment is critical. A lean mixture (too much air, too little fuel) may result in piston burning, bearing failure, or complete engine failure. A rich mixture (too much fuel, too little air) may foul plugs and cause generally poor engine performance.

A lean mixture may be caused by things like fuel line restrictions, foreign matter in the carburetor, or clogged fuel filters. A rich mixture may be caused by snow build-up on the pre-filter in the air intake system. Either condition may be caused by improper carburetor adjustment.

All carburetors have been preset at the factory for adequate fuel supply. Higher altitude operation may require different adjustments and settings. **NOTE:** RMK models are preset to operate at altitudes of 6000-9000 feet above sea level. See page 118 for more information. Your dealer has the training and tools required to perform any adjustments for you.

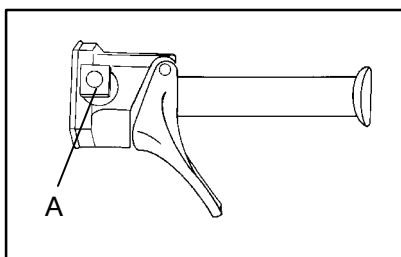
### **WARNING**

Carburetor adjustments must be performed by your dealer, since mistakes may result in possible operator safety hazards as well as serious engine damage.

# OPERATION

## Engine Stop Switch

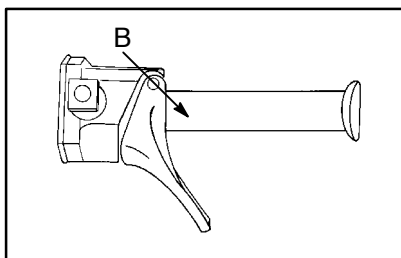
Push down on the engine stop switch (A) to stop the engine in an emergency. This will ground out the ignition and bring the engine to a quick stop. To restart the engine, the switch must be pulled up to "ON."



## Throttle Safety Switch

Test the throttle safety switch system daily before operation.

While seated in a normal riding position, and with the engine idling, hold the throttle lever pin stationary by exerting pressure on the pivot pin in the direction shown in the illustration (B). Apply a slight amount of throttle. A properly functioning switch *must* shut down the engine.



The throttle safety switch is designed to stop the engine whenever all pressure is removed from the throttle lever and the throttle cable or valves do not return to the normal closed position.

## **⚠️WARNING**

If the throttle safety switch does not shut off the engine during a carburetor/throttle system malfunction, immediately push down the engine stop switch. Do not start the engine until the malfunction has been corrected by your dealer.



## Throttle Lever

### **WARNING**

An improperly functioning throttle lever may cause erratic machine behavior and loss of control, which could result in serious injury or death. If the throttle lever does not work properly, **DO NOT** start the engine.

If the engine stops abruptly when the throttle lever is released:

- 1 Turn the ignition switch to “OFF.”
- 2 Visually inspect the throttle cable and carburetor(s) to determine what caused the safety switch to activate.
- 3 Test the throttle lever by compressing and releasing it several times. The lever and cable must return to the idle position quickly and completely.
- 4 If the throttle lever operates properly, turn the ignition switch on and go through normal starting procedures.
- 5 If the engine doesn’t start, take the snowmobile to an authorized Polaris dealer for service.

Excessive free play in the throttle cable may cause the safety switch to activate, preventing the engine from starting. If this occurs, return the machine to an authorized Polaris dealer for service.

If an emergency exists and it’s necessary to start the engine, the throttle safety switch and engine stop switch may be disconnected from the wire harness. When these switches are disconnected, the ignition key switch must be used to shut off the engine. **DO NOT** continue to operate the machine with the throttle safety switch disconnected. Return the machine to an authorized Polaris dealer for service as soon as possible.

# OPERATION

## Emergency Stopping And Starting

### Stopping

The following chart lists methods for stopping the snowmobile in the event of an emergency. Refer to page 86 for more information about the engine stop switch and throttle safety switch.

SYSTEM	WHAT IT DOES	THROTTLE CONDITION
Ignition Switch	Interrupts ignition circuit	All
Brake	Slows jack shaft	All
Choke	Floods engine	Half throttle or less
Engine Stop Switch	Interrupts ignition circuit	All
Throttle Safety Switch	Interrupts ignition circuit	All
Tether Switch (Option)	Interrupts ignition circuit	All

### **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, resulting in serious injury or death.

When traveling on long downhill stretches, pump the brakes. Riding the brakes may cause the brake system to overheat, resulting in brake failure.

## Emergency Stopping And Starting

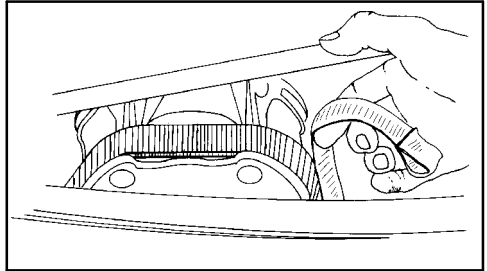
### Starting

#### **WARNING**

To prevent serious injury, DO NOT wind the start strap around your hand. Keep all bystanders away from the snowmobile when using the emergency starting procedure.

Your machine is equipped with a tool kit containing essential tools for emergency use. If the recoil starter system fails, an emergency start strap is provided in the kit. To use the emergency start strap:

- 1 Open the clutch guard.
- 2 Push on the inner sheave of the clutch and rotate clockwise slightly to relieve belt tension.
- 3 Starting at one of the tower struts, wind the strap counterclockwise around the clutch as shown.
- 4 Pull the strap using a sharp, crisp pull so the strap comes free of the clutch.



# OPERATION

## Reverse Operation (Mechanical)

### **WARNING**

Misuse of reverse can result in serious injury or death. This snowmobile is capable of high speeds in reverse. Reverse operation may be dangerous even at moderate speeds. Steering control becomes difficult in reverse.

Make sure the shift lever is shifted completely into forward or reverse position. Some models are equipped with a reverse indicator light that will help you make that determination.

Do not force the shift lever into reverse if resistance is felt. The gears may not always be aligned for shifting into reverse, and forcing the lever may cause damage. If resistance is felt, gently apply the throttle to move the gears to a different position and try to shift again.

The transmission may not always be in the gear indicated by the shift lever. Apply the throttle slowly until you're sure which gear is engaged.

Sometimes the drive belt will drag in the drive clutch, causing slight tension in the transmission and making it hard to shift. Shutting the engine off will remove this tension and ease shifting. This should only happen during the break-in of a new belt or when the drive/driven clutch center distance is too long. If this is the case, belt tension adjustments should be made by your dealer.

## Reverse Operation (Electronic)

### **WARNING**

Reverse operation, even at low speeds, may cause loss of control, resulting in serious injury or death. To avoid loss of control, always:

- Look behind before and while backing.
- Avoid sharp turns.
- Shift to or from reverse only when stopped.
- Apply throttle slowly.

This reverse will only activate if the engine is below 4000 RPM. Make sure the vehicle is stopped and the engine is running at idle.

- 1 Make sure the area behind you is clear.
- 2 Push the yellow reverse button on the left hand control for one second and release. The engine will automatically reduce RPM and start a reverse rotation. A flashing reverse light on the instrument panel will indicate the machine is in reverse.
- 3 Slowly apply the throttle until movement starts and until you are certain you are in reverse.

**NOTE:** The maximum engine RPM will be 6000 when in reverse.

**NOTE:** If the engine has stopped running, the snowmobile will run forward the next time it's started.

### **CAUTION**

To avoid personal injury and/or engine damage, do not operate the electric starter or pull-rope starter while the engine is running.

# OPERATION

## Reverse Operation (Electronic)

### Forward

When running in reverse, again push the yellow reverse button on the left-hand control for one second and release. The engine will slow and begin to rotate forward. The light on the instrument panel will shut off. Make sure the area around you is clear and apply throttle slowly until you're certain you're going forward.

**NOTE:** If the engine has stopped running, the snowmobile will run forward the next time it's started.

### Altitude Setting

At higher altitudes (above 6000 feet), the engine will require a different ignition setting to improve the success of this reverse system.

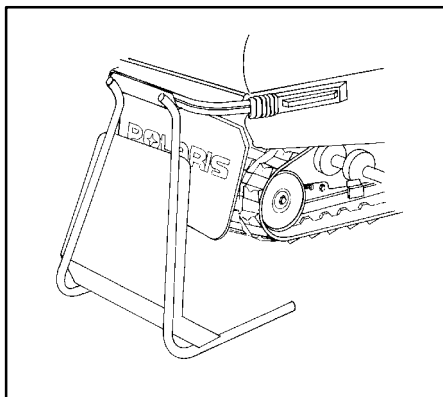
To set for higher altitude: start the engine and hold the button down until the light on the instrument panel flashes rapidly, then release the button. This is the setting for higher elevations. To set the reverse for lower elevations, remain holding the button down until the reverse indicator light blinks slowly. Once set, it's held in memory until changed, whether the machine is running or not.

## Daily Storage

At the end of your ride, park the snowmobile on a level surface and support it at the rear with the appropriate track stand. The track should be suspended approximately 4" (20 cm) off the ground.

Remove the key and cover the machine.

**NOTE:** Polaris has accessory covers and track stands available to fit all models. See your dealer for more information.



## Towing

For your safety, the proper function of a tow hitch must be understood before attempting its use.

### **WARNING**

DO NOT tow toboggans, sleds, saucers, or any type of vehicle with a rope. No braking power can be applied to an object being towed with a rope.

Only a stiff metal pole connecting the towed object and tow hitch on the snowmobile should be used. If passengers are to be towed on a toboggan or sled, make sure the pole is at least four feet (1.2 meters) long to prevent any possibility of contact between the vehicle track and a person riding in the towed object.

Braking distances increase when towing loads. Slow down to maintain control. Tip-over can result in serious injury or death.

If the snowmobile is inoperable and must be towed, and if it isn't possible to use a rigid tow bar, attach the tow rope to the ski spindles (not the ski loops) to prevent damage to the steering components. Have a rider on the snowmobile to operate the brake and steering when necessary.

### **CAUTION**

To prevent serious damage to the engine and drive system, always remove the drive belt from a disabled snowmobile before towing.

# - NOTES -



## SECTION 7 - MAINTENANCE

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<b>Polaris Recommended Maintenance Program</b> .....	<b>96</b>
<b>Maintenance Charts</b> .....	<b>97 - 98</b>
<b>Maintenance Log</b> .....	<b>99 - 100</b>
<b>Lubrication</b> .....	<b>101 - 110</b>
<b>General Maintenance</b> .....	<b>111 - 139</b>
<b>Track Maintenance</b> .....	<b>140 - 143</b>
<b>Steering System</b> .....	<b>144 - 147</b>
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This section defines your role, and your dealer's role, in your snowmobile's regular maintenance.

If you're interested in more information about servicing your own machine, contact your dealer for a Polaris Snowmobile Service Manual.

# MAINTENANCE

## Polaris Recommended Maintenance Program

To ensure many trouble-free miles of snowmobiling enjoyment, follow recommended regular maintenance and service checks outlined in this manual.

The recommended maintenance schedule on your snowmobile calls for service and maintenance inspections at 150 miles (240 km), 1000 miles (1600 km), and 2000 miles (3200 km). These inspections should be performed by a qualified service technician. For continued optimum performance and component life, continue maintenance checks at 1000 mile (1600 km) intervals.

*All necessary replacement parts and labor incurred, with the exception of authorized warranty repairs, become the responsibility of the registered owner.* If, during the course of the warranty period, part failures occur as a result of owner neglect in performing recommended regular maintenance, the cost of repairs are the responsibility of the owner.

Personal safety is critical when attempting to service or adjust your snowmobile. If you're not familiar with safe service or adjustment procedures and the use of tools, or if you don't feel comfortable performing these tasks yourself, contact an authorized Polaris dealer for service.

# MAINTENANCE

## Maintenance Chart

The following chart is a guide based on average riding conditions. You may need to increase frequency based on riding conditions. When inspection reveals the need for replacement parts, always use genuine Polaris parts, available from your Polaris dealer.

Item	Weekly or before long trip	150 M. (240 km)	1000 M. (1600 km)	2000 M. (3200 km)	See Page
Check brake operation and adjustment	Daily				66,124
Test engine stop switch	Daily				71, 86
Test tether strap	Daily				71
Test throttle safety switch	Daily				66, 86
Throttle lever operation	Daily				66, 86
Check operation of headlights, taillight, brakelight	Daily				71,129
Check park brake function	Daily				69
Secure hood	Daily				70
Check track alignment	X				142
Steering arm and tie rod ends	X				
Throttle cable condition	X				
Coolant level	X				
Battery fluid level	X				
Check track tension	X				141
Check chaincase oil level	X				109
Check gearcase oil level	X				109
Check drive chain tension	X				123
Check drive belt condition	X				132
Check and tighten loose suspension mounting bolts	X				149
Tighten ski saddle and spindle bolts	X				149
Check front limiter strap condition, tighten bolts	X				149
Check ski skags- replace when worn to half original diameter	X				62
Check Hi-fax thickness, replace when worn (Dealer)	X				149
Tighten rear idler wheel bolts	X				142

# MAINTENANCE

## Maintenance Chart

Item	Weekly or before long trip	150 M. (240 km)	1000 M. (1600 km)	2000 M. (3200 km)	See Page
Tighten idler adjusting bolt jam nuts	X				142
Check spark plug condition	X				113
Inspect coolant filter, replace if necessary		X	X	X	108
Grease ski pivots		X	X	X	101
Grease ski spindles		X	X	X	101
Grease center steering arm(s)		X	X	X	101
Lubricate steering post support bracket and pivot (aerosol)		X	X	X	101
Check cylinder base stud torque on all Polaris engines. (Specification: 32 ft. lbs $\pm$ 2 ft. lbs.) (Dealer)		X	X	X	-
Grease lower steering post pivot		X	X	X	101
Grease driveshaft bearing (always perform before storage)			X	X	107
Check and drain water trap			X	X	116
Grease rear suspension pivot shafts			X	X	107
Grease jackshaft bearing (always perform before storage)			X	X	107
Lubricate throttle cable			X	X	108
Lubricate choke slide and cable			X	X	108
Check clutch alignment and offset			X	X	134
Check cooling system level, specific gravity			X	X	119
Inspect oil filter and replace			X	X	117
Inspect oil line condition				X	117
Inspect fuel filter and replace			X	X	117
Check brake fluid level			X	X	126
Inspect fuel lines and replace				X	117
Inspect exhaust system for weak or missing retaining springs				X	119
Inspect exhaust pipe for cracks or damage				X	119
Inspect clutch sheaves for damage, wear, belt residue				X	134

# MAINTENANCE

## Maintenance Log

Present this section of your manual to your dealer each time your snowmobile is serviced. This will provide you and future owners with an accurate log of maintenance and services performed on the snowmobile.

### 150 Mile (240 km) Initial Maintenance Inspection

Authorized Polaris Servicing Dealer \_\_\_\_\_

Servicing Technician \_\_\_\_\_

Date \_\_\_\_\_ Mileage \_\_\_\_\_

### 1000 Mile (1600 km) Maintenance Inspection

Authorized Polaris Servicing Dealer \_\_\_\_\_

Servicing Technician \_\_\_\_\_

Date \_\_\_\_\_ Mileage \_\_\_\_\_

### 2000 Mile (3200 km) Maintenance Inspection

Authorized Polaris Servicing Dealer \_\_\_\_\_

Servicing Technician \_\_\_\_\_

Date \_\_\_\_\_ Mileage \_\_\_\_\_

# MAINTENANCE

## Maintenance Log

### Additional Services Performed

Authorized Polaris Servicing Dealer \_\_\_\_\_

Servicing Technician \_\_\_\_\_

Date \_\_\_\_\_ Mileage \_\_\_\_\_

Type of Service \_\_\_\_\_

### Additional Services Performed

Authorized Polaris Servicing Dealer \_\_\_\_\_

Servicing Technician \_\_\_\_\_

Date \_\_\_\_\_ Mileage \_\_\_\_\_

Type of Service \_\_\_\_\_

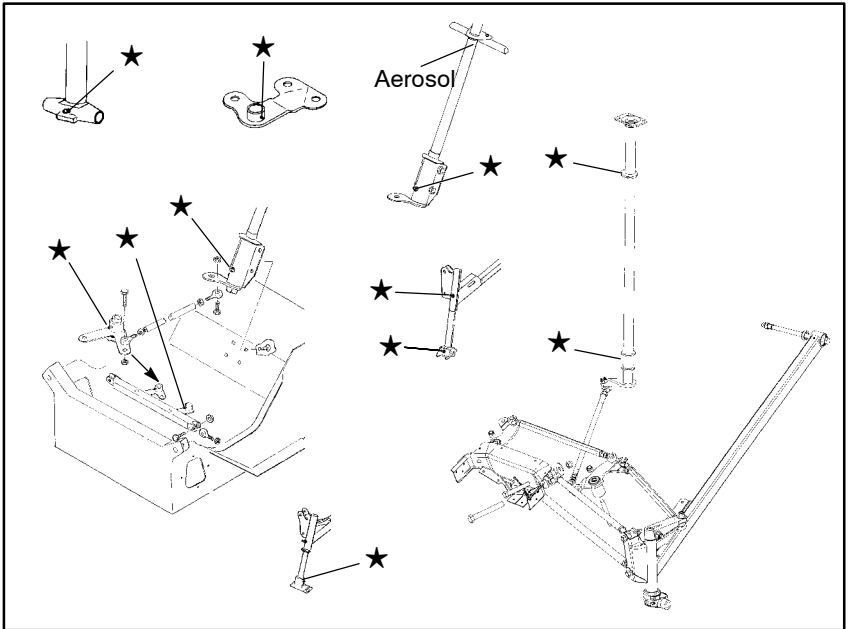
# MAINTENANCE

## Lubrication

Lubricate the suspension and steering components with Polaris Premium grease (PN 2871066) annually or about every 1000 miles (1600 km). The illustration shows the location of suspension and steering components. The ★ in the illustration indicates a grease point or fitting.

- Grease left and right spindles. Raise the front end of the machine to permit better grease entry into the spindle area.
- Lubricate both front ski pivots at fitting as shown.
- Grease jackshaft and driveshaft clutch side bearings.
- Use an aerosol lubricant on the steering post support bracket.
- Grease center steering arms.
- Grease steering post lower pivot.
- Rear suspension pivot shafts. Raise the rear of unit.

A grease gun kit, complete with grease and adaptors (PN 2871312), is available to lubricate all fittings on Polaris snowmobiles.



# MAINTENANCE

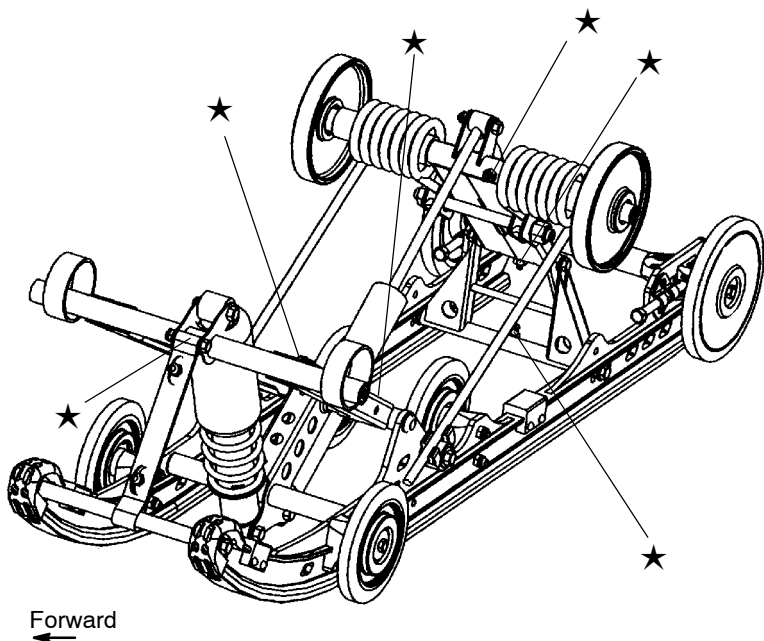
## Lubrication

The suspension pivot shafts should be lubricated with Polaris Premium All Season Grease (PN 2871066) at 500 miles (800 km) initially, every 1000 miles (1600 km) after that, and before off-season storage each year. Lack of lubrication affects your ride and the life of your suspension.

For detailed information about suspension lubrication and adjustments, see your Polaris dealer.

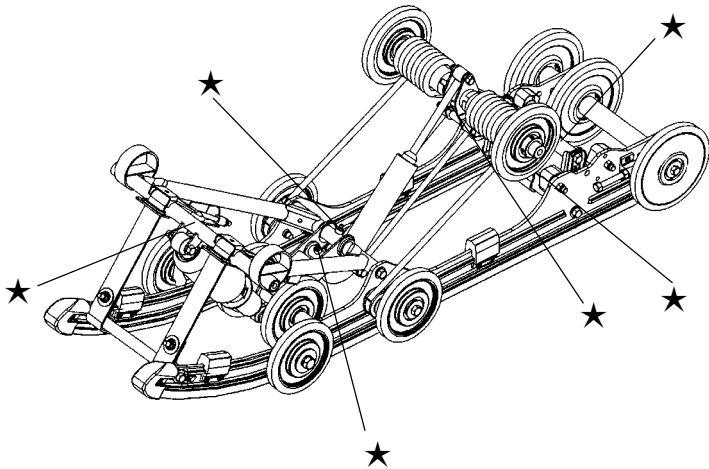
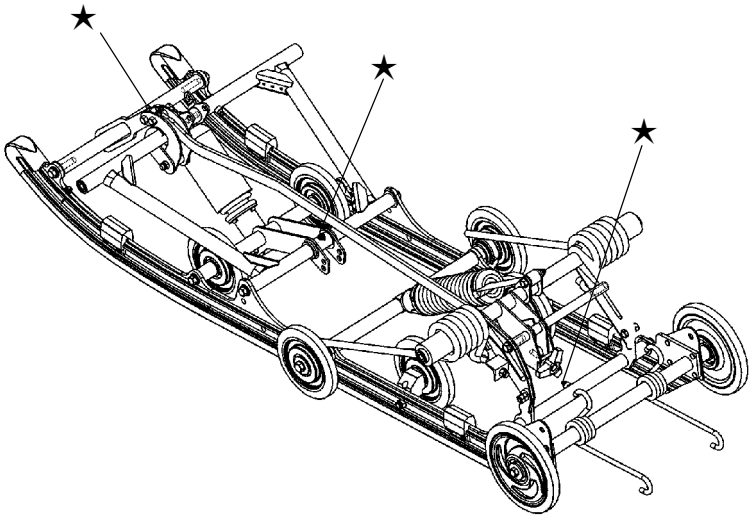
**NOTE:** The following illustrations are general representations. Your model may differ. Lubrication points are indicated by a ★, and forward is to the left.

**NOTE:** Models with M-10 suspension will be shipped with a supplement that contains information specific only to that suspension.



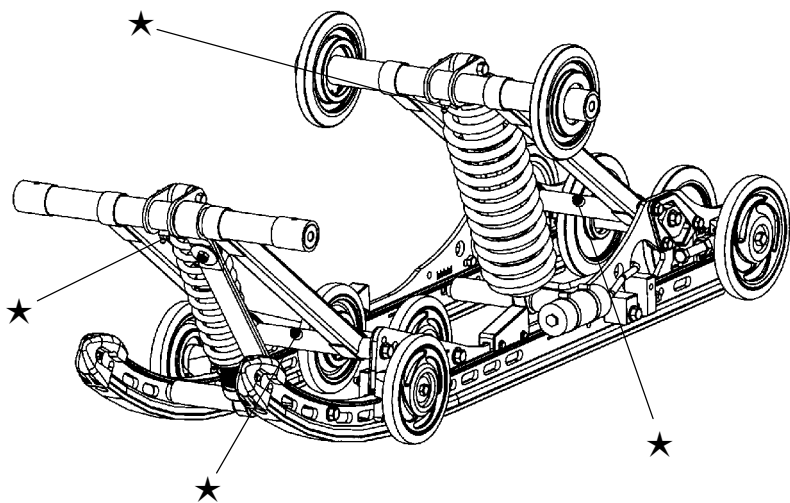
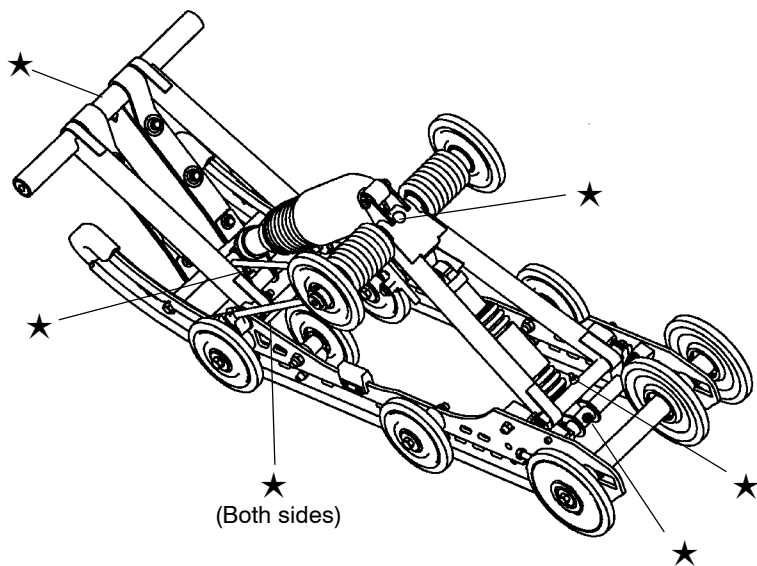


## Lubrication

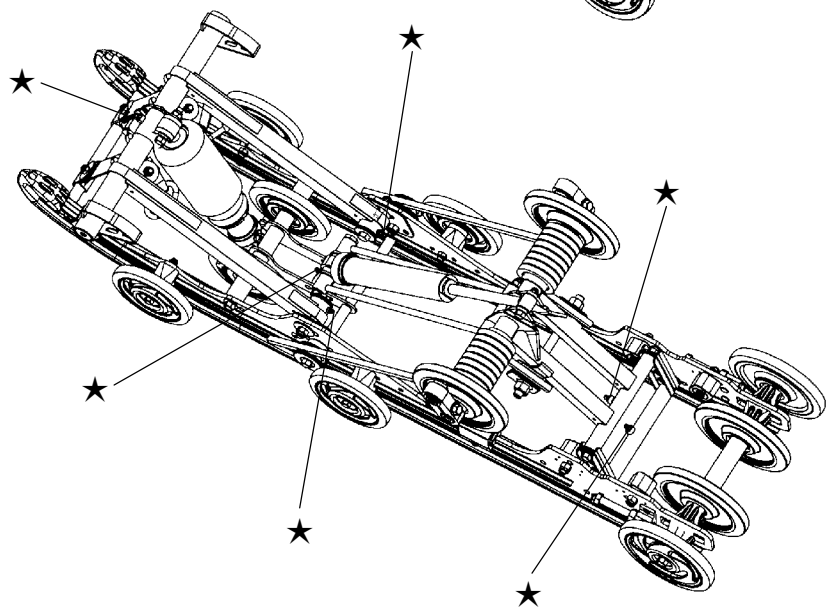
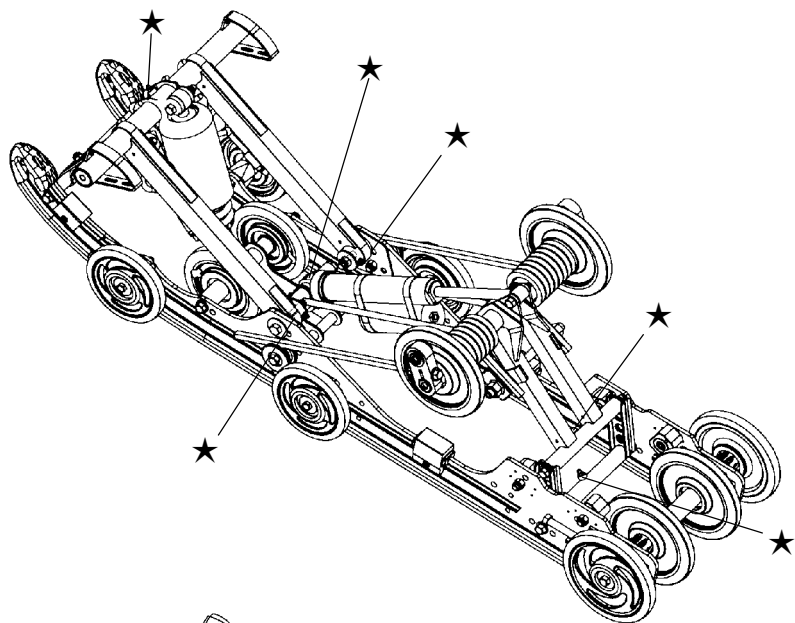


# MAINTENANCE

## Lubrication



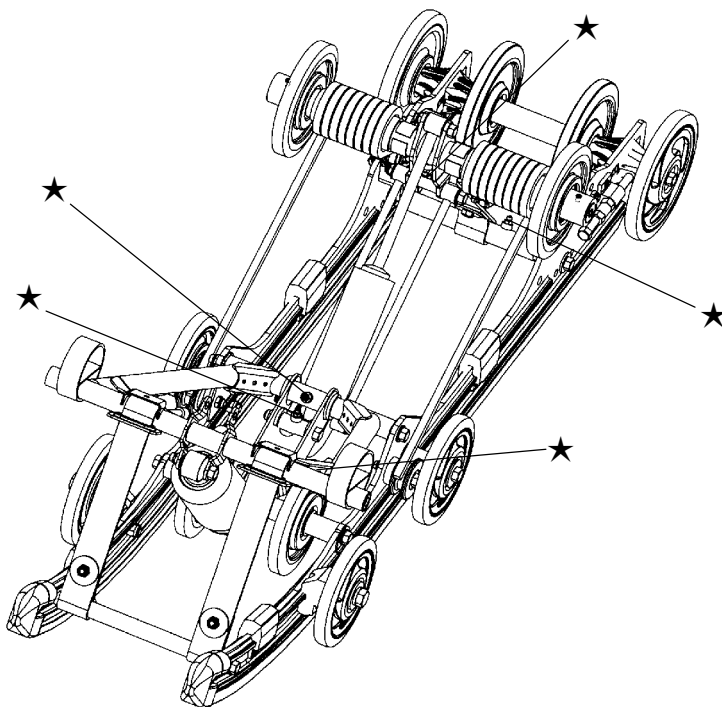
## Lubrication



# MAINTENANCE

## Lubrication

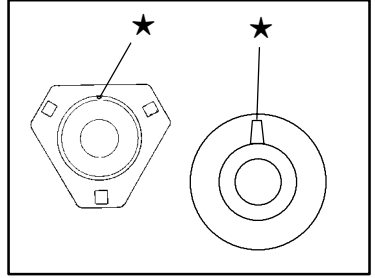
### Suspension Lubrication - X-10, EDGE



## Lubrication

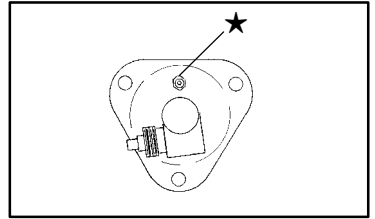
### Jackshaft Bearing Greasing

Loosen the driven clutch retaining bolt and pull the clutch outward to expose the bearing and grease fitting. Inject grease into the grease fitting in the flangette until grease purges from inside or outside the bearing seal (may take only two pumps). Push the clutch back onto the shaft and replace the clutch retaining bolt. Torque to 18 ft. lbs. (2.48 kg/m).



### Driveshaft Bearing Greasing

Inject grease into the fitting on the speedometer drive adaptor until grease purges from inside or outside the bearing seal (approximately two pumps).

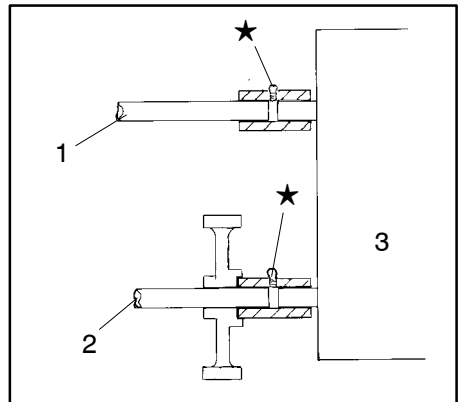


### Coupler Greasing - WideTrak

Grease the couplers on the driveshaft and jackshaft.

Grease points are indicated by a ★.

1. Jackshaft
2. Driveshaft
3. Transmission

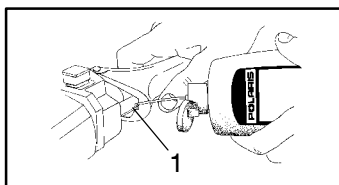


# MAINTENANCE

## Lubrication

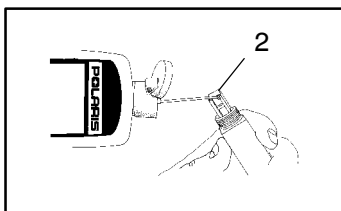
### Throttle Cable Lubrication

Lubricate the throttle cable (1) with Polaris Cable Lubricant (PN 2870510). With the engine off, turn the handlebars to the left and lubricate liberally as shown.



### Choke and Cable Lubrication

Lubricate the choke slide (2) and cables with Polaris Cable Lubricant (PN 2870510). Before turning the engine off, operate the choke intermittently to draw moisture out of the choke plunger area and reduce the possibility of the choke becoming frozen.



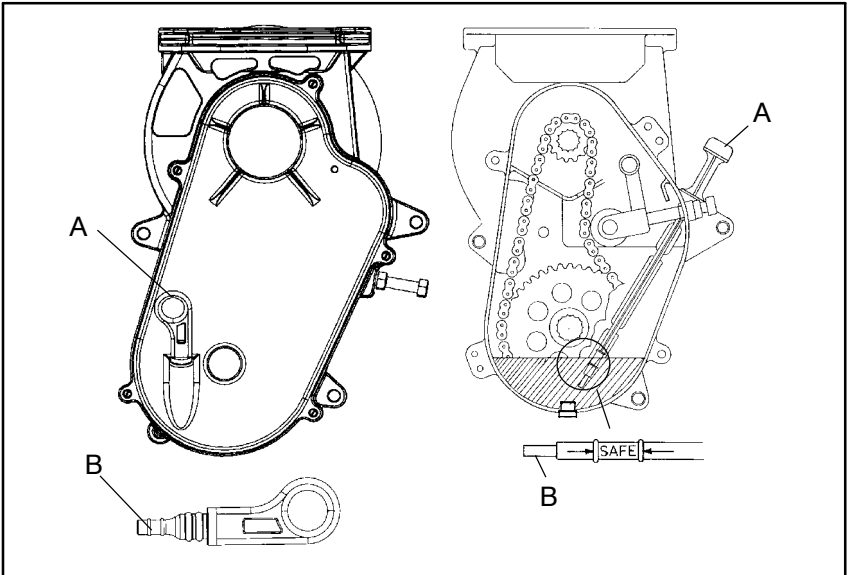
## Lubrication

### Chaincase Oil Level

It's the operator's responsibility to check and maintain the proper chaincase oil level.

To check the oil level, place the machine on a level surface. The oil level should be between the "safe" marks on the dipstick (A). Add Polaris chaincase oil (PN 2871280) through the dipstick opening. *Do not overfill.*

Flush the chaincase after the first 500 miles, then every 1000 miles or seasonally. Clean the magnetic plug (B) whenever checking or changing lubricant.



# MAINTENANCE

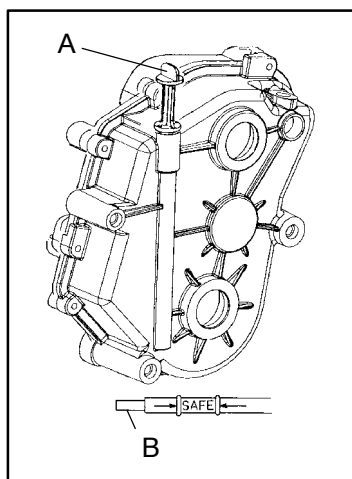
## Lubrication

### Gearcase Oil Level (WideTrak Models)

It's the operator's responsibility to maintain proper gearcase oil level.

To check the oil level, place the machine on a level surface. The oil level should be between the "safe" marks on the dipstick (A). See your Polaris dealer for the recommended oil for your machine. *Do not overfill.*

**NOTE:** Clean the magnetic plug (B) every 500 miles (800 km) and whenever checking or changing lubricant.



## CAUTION

Do not mix lubricants or use other types of lubricant. This could result in excessive wear to chain, sprockets and bearings.



## General Maintenance

### Intake Filter

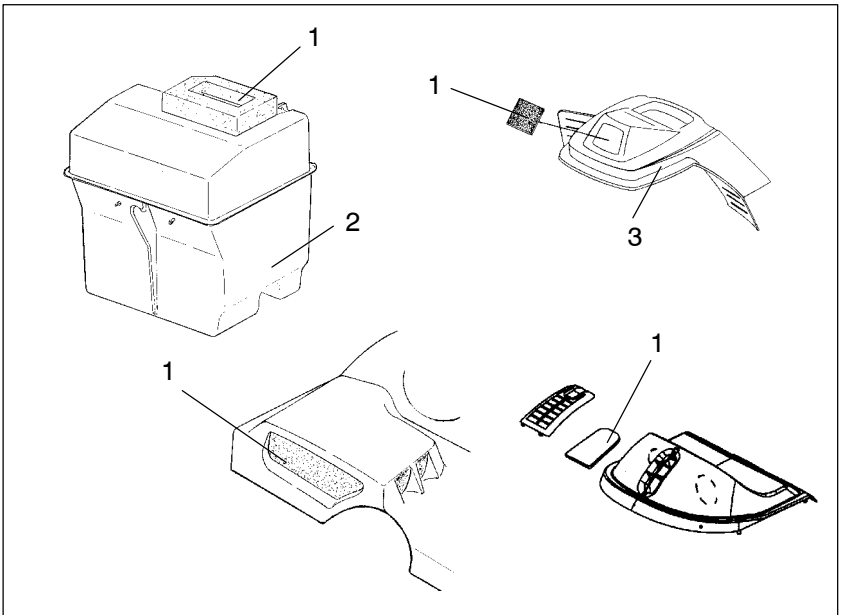
The intake foam filter limits snow ingestion into the intake system. When operating in loose powder snow, check the top of the foam filter periodically to remove any accumulation of snow.

## CAUTION

Operating the snowmobile with the intake filters removed may cause carburetor icing. The result will be poor fuel economy or carburetor malfunction.

**NOTE:** These illustrations are general representations. Your model may differ.

1. Intake Foam Filter
2. Air Intake box
3. Dash Cowl

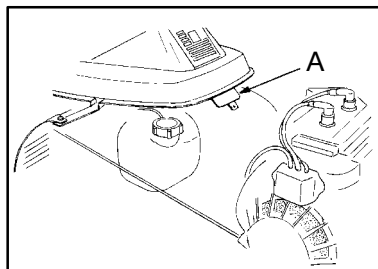


# MAINTENANCE

## General Maintenance

### Under Hood Air Intake System

The under-hood air intake system on Indy 340's should normally be left open. However, for maximum performance in temperatures above 35° F (2° C) and in loose snow, the door should be closed and latched (A). Pull the strap out and up to latch the door and reverse the procedure to open it.



### Spark Plug Selection

It's very important to use the correct spark plug for your machine. A spark plug with a heat range too high will cause engine damage. A spark plug with a heat range too low will cause excessive fouling and engine malfunctioning.

In selecting a spark plug heat range for production, a manufacturer assumes that the engine will be operated under extreme heavy duty conditions and selects a spark plug that will protect the engine from internal damage if the purchaser actually does operate the engine in this manner. This selection could cause the customer who normally operates the engine under medium or light duty to have spark plug failure. Refer to your Owner's Manual Supplement for the specific spark plug to be used in your machine.

## CAUTION

A plug with a heat range too high will *always* cause engine damage if the engine is operated in conditions more severe than that for which the spark plug was intended.

## General Maintenance

A new engine can cause temporary spark plug fouling due to the preservative added during the assembly process. Avoid prolonged idle speeds, which cause plug fouling and carbonization.

- Use recommended spark plugs with the proper gap. Refer to your Owner's Manual Supplement for specific information on your machine.
- Spark plug torque is 18-22 ft. lbs. (2.5-3 kg/m).
- Always carry spare spark plugs in case of an emergency.

The spark plug condition indicates how well the engine is operating. Check the color of the spark plug immediately after the engine has been warmed up and after the snowmobile has been driven at higher speeds.

**NOTE:** Incorrect fuel mixture can often cause a spark plug to appear too dark or too light in color. Before changing spark plug heat ranges, be sure the correct main jet is installed in the carburetor(s). Refer to the Owner's Manual Supplement or see your dealer.

### **Normal:**

The insulator tip is gray, tan, or light brown. There will be a few combustion deposits, but the electrodes are not burned or eroded. This indicates the spark plug is the proper type and heat range for the engine and the service.

### **Overheating:**

The insulator tip is white. General causes are use of an improper spark plug or incorrect carburetion adjustments.

### **Wet Fouled:**

The insulator tip is black. A damp, oily film covers the firing end, and there may be a carbon layer over the entire nose. Generally, the electrodes are not worn. General causes are excessive oil, use of non-recommended injection oil, excessive idling, idle set too low or too rich, or weak ignition output.

# MAINTENANCE

## General Maintenance

### CAUTION

If spark plug color indicates overheating, the cause of this condition must be identified and corrected to prevent damage to the engine.

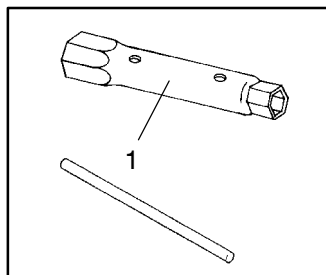
## Spark Plug Removal and Replacement

### ⚠ WARNING

Hot parts on the exhaust system or engine can cause burns and result in serious injury. Never attempt to remove the spark plug while the engine is warm.

Remove the spark plug with the special wrench (1) provided in the tool kit.

- 1 Remove the spark plug cap.
- 2 Rotate the plug counterclockwise and remove it.
- 3 Install the new spark plug, rotating clockwise.
- 4 Torque to 18-22 ft. lbs. (2.5-3 kg/m).
- 5 Check spark plug gap (refer to your Owner's Manual Supplement).
- 6 Install spark plug cap.



## General Maintenance

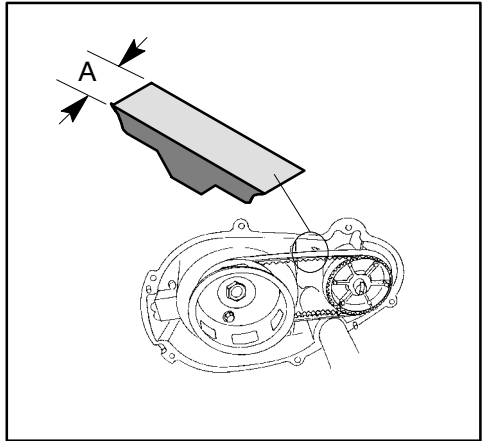
### Variable Exhaust System (V.E.S.)

Maintenance of the V.E.S. is limited to a periodic inspection and cleaning of system components. Every 1000 to 2000 miles, bring the machine to an authorized Polaris dealer to have the V.E.S. disassembled, inspected, and cleaned.

**NOTE:** To ensure maximum performance and minimize required maintenance, follow the oil recommendation chart on page 77. The use of other lubricants may cause improper function of the valve mechanism and increase the frequency of required cleaning due to excessive build-up of carbon deposits.

### Water Pump Belt Inspection

Some liquid cooled models require inspection of the water pump belt at 1500 miles (2400 km). Inspect belt width (A) and condition, and replace if cracked or worn past the width service limit (.250" / 6.35mm). New belt width is approximately .345" (8.75 mm). See your Polaris dealer if the belt needs to be replaced.



# MAINTENANCE

## General Maintenance

### Water/Sediment Trap Service

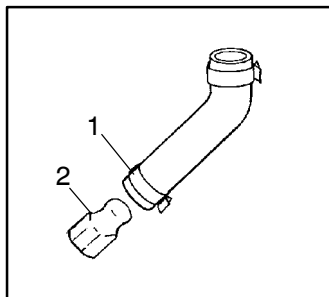
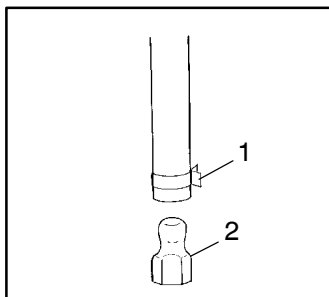
Most Polaris snowmobiles contain patented carburetor bowl water/sediment traps located at the bottom of each carburetor. The trap, consisting of a hose with a plug, should be drained at least every 2000 miles (3200 km) and inspected for contamination.

#### **⚠WARNING**

When draining the traps, fuel spillage will occur. Always work in a well ventilated area away from anything that may cause the fuel to ignite, such as open flames, sparks, heaters, trouble lights, cigarettes, etc. Review the gasoline warnings found on page 80.

### Plug Cleaning Procedure

- 1 Turn the fuel tank supply valve off.
- 2 Position a container or shop towels to catch the contaminated gasoline.
- 3 Slide the clamp (1) away from the drain plug (2) and remove the drain plug from the sediment tube.
- 4 Wipe residue from the plug and reinstall it. Reposition and tighten the clamps. Continue until all the traps have been emptied.



## General Maintenance

### Fuel Filter/Fuel Lines

#### CAUTION

The in-tank fuel filter (1) and fuel lines should be inspected regularly. Give special attention to the system's fuel line condition after periods of storage. Normal deterioration from weather and fuel compounds may occur.

Do not use pliers or a similar tool to remove fuel lines as damage may occur.

Do not kink the fuel line as damage may occur. If a fuel line has been damaged or kinked, replace it promptly.

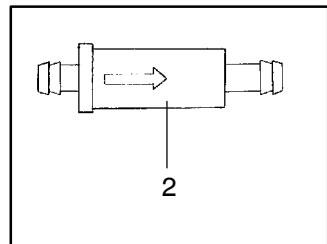
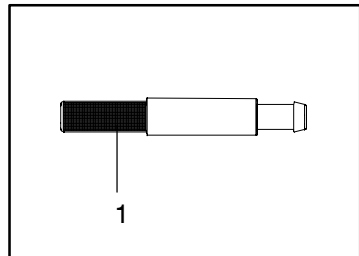
### Oil Filter

The oil filter should be changed annually or every 1200 miles (1920 km). Inspect oil line condition at 2000 miles (3200 km). Polaris oil filters are specially designed for use on Polaris products. Use only Polaris replacement parts.

Edge models use an oil filter (3) that's built into the oil sending unit located in the bottom of the oil tank. After changing the oil filter, bleed the oil injection system of all trapped air. See your dealer for instructions, or have your dealer perform the filter change and bleeding operation for you.

**NOTE:** The direction of the arrows indicates the direction of flow through the filters.

See page 77 for oil recommendations.



# MAINTENANCE

## General Maintenance

### General Carburetor Information

The number stamped in the end of the main jet indicates the jet size. The jet installed at the time of manufacture is not necessarily correct for your elevation. It's your dealer's responsibility to make sure the correct main jet is installed.

## CAUTION

Carburetor adjustments should be performed only by a knowledgeable service technician at an authorized Polaris dealer, using the proper tools, procedures and specifications.

### Carburetor Adjustments

The frequency at which the carburetors are synchronized or balanced is important. Properly adjusted carburetors can greatly improve engine performance, fuel economy, engine life, and reliability.

*If you notice any of the following, the carburetor may need adjustment:*

- Hard starting
- Poor idle
- Overheated pistons and cylinder walls
- Plug fouling
- Poor engine response to various throttle valve openings



## General Maintenance

### Exhaust System

Check the exhaust system for wear or damage at approximately 2000 miles (3200 km). To inspect, allow the engine and exhaust system to cool completely. Open the hood and inspect the muffler and pipes for cracks or damage. Check for weak or missing retaining springs or damper/support grommets.

### **WARNING**

Hot exhaust system parts can cause serious burns. Allow adequate time for the exhaust system to cool. Never perform this procedure with the engine running.

### Engine Cooling - Liquid Cooled Models

The cooling system on liquid cooled models consists of the following major components:

- Recovery tank
- Water pump
- Cylinders
- Heads
- Inlet and outlet manifolds
- Pressure cap
- Heat exchangers

# MAINTENANCE

## General Maintenance

### Coolant Mixture

The coolant supplied in the system is a 50/50 mixture of ethylene-glycol and distilled water. This mixture provides protection against freezing at temperatures to  $-34^{\circ}\text{F}$  ( $-37^{\circ}\text{C}$ ). If greater protection is required, the percentage of antifreeze to water may be increased. Use Premium 60/40 anti-freeze coolant. Never exceed a 60% antifreeze/40% water mixture. Contact your dealer if greater protection is required.

**NOTE:** Never add tap water to the cooling system. Minerals cause deposits and may react adversely with the metals in the engine and cooling system.

### Coolant High Temperature Indicator Light

The high temperature indicator light is controlled by a switch in the engine cooling system. If the engine coolant reaches a certain temperature, the switch completes a circuit that turns the light on. If you must drive your machine after the high temperature indicator light has come on, drive slowly and stop frequently to allow the engine to cool down. See your dealer.

### Coolant Level

The engine coolant level is controlled by the recovery system. The recovery system components are:

- Coolant tank or overflow tank
- Engine filler neck
- Pressure cap (on some models)
- Connecting hoses

## CAUTION

The coolant level in the reservoir or surge tank must be maintained between the minimum and maximum levels to prevent overheating and serious engine damage. Some models require the coolant level be maintained at the "full cold" line on the coolant tank when the engine is cold.

## General Maintenance

### Flushing the Cooling System

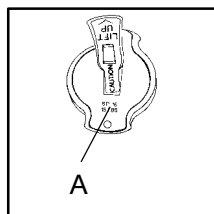
To ensure that the coolant maintains its ability to protect the engine, the system should be completely drained every two years and a fresh 50/50 or 60/40 mixture of antifreeze and distilled water should be added. This service must be done when the engine is cold. Ask your Polaris dealer to check the coolant when he performs the fall tune-up on your snowmobile.

### Bleeding the Cooling System

#### **WARNING**

Steam and hot liquids burn. Never bleed the cooling system or remove the pressure cap when the engine is warm or hot. Serious personal injury could result.

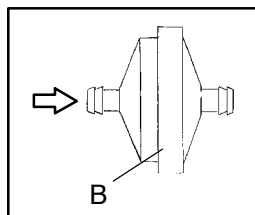
If the pressure cap (A) needs replacement, contact your dealer for the correct part. Use of a non-standard pressure cap will not allow the recovery system to function properly.



#### **Recovery System Models**

If the coolant level becomes low in the recovery tank, bleed the system of any trapped air. Visually inspect the coolant filter (B) and replace it if it's dirty.

- 1 Fill the recovery tank with coolant to the maximum indicated mark.
- 2 Elevate the front end of the machine slightly to aid bleeding of the heat exchangers.
- 3 With pressure cap removed, add coolant and fill to the top of the filler neck.
- 4 Install the pressure cap with the lever lock up, in its release position.
- 5 Run the engine at various RPMs for two to three minutes to purge the system of trapped air.
- 6 Close the lever lock and check the recovery tank fluid level.



# MAINTENANCE

## General Maintenance

### CAUTION

Most cooling systems are equipped with a filter that should be periodically inspected or replaced. If coolant flow becomes restricted or plugged, coolant loss, air lock or engine damage may result.

### Surge Tank Models

- 1 Remove the pressure cap and fill the recovery tank with properly mixed coolant to the maximum indicated mark.
- 2 Elevate the front end of the machine slightly to aid in bleeding of the heat exchangers.
- 3 Remove the bleed screw from the water outlet manifold and/or the thermostat housing. Allow the coolant to bleed through the system until it runs out the bleed holes. Reinstall the bleed screw into the manifold.
- 4 Fill the recovery tank to the maximum indicated mark.
- 5 Start the engine and run at a fast idle for two to three minutes. Occasionally loosen the bleed screw to purge any trapped air in the system.
- 6 Shut off the engine and check the recovery tank level. Fill as required.
- 7 Feel the heat exchangers under the running boards. If the system is bled properly, they'll be warm to the touch. If they're not, repeat step 5 Lift the front of the machine slightly to assist in the bleeding.
- 8 Replace the pressure cap and carefully lower the front end of the machine.

## General Maintenance

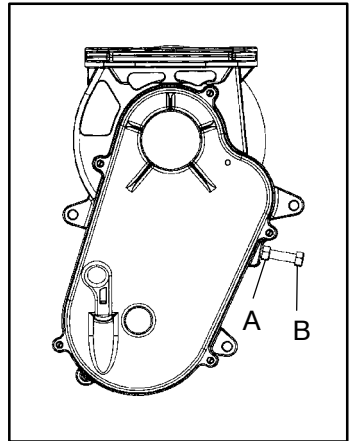
### EDGE RMKs

- 1 Remove pressure cap and fill tank to maximum recommended mark.
- 2 Elevate the front of the machine.
- 3 Start the engine and run at a fast idle for two to three minutes. Air bubbles should come to the surface of the coolant tank. Run the machine until air bubbles no longer appear.
- 4 Shut off the engine and feel for warmth along the tunnel. If the machine is bled properly, the deicer gripper coolant extrusions will be warm.
- 5 If needed, fill coolant to maximum recommended mark.
- 6 Replace the pressure cap and carefully lower the front end of the machine.

### Drive Chain Tension

To obtain correct chain tension:

- 1 Rotate the driven clutch counterclockwise to move all chain slack to the tensioner side. Lock the brake lever lock, or have an assistant hold the brake lever firmly.
- 2 Loosen the adjuster bolt jam nut (A).
- 3 Finger tighten the adjuster bolt (B) until it can no longer be adjusted by hand, then back off 1/4 turn.
- 4 Tighten the jam nut while holding the adjuster bolt.
- 5 The chain is now tensioned. Release the brake lever lock.

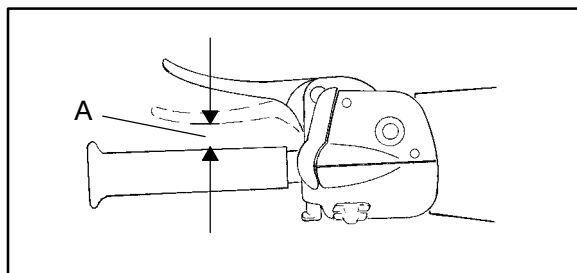


# MAINTENANCE

## General Maintenance

### Hydraulic Brake Inspection

Frequently inspect the brake lever reserve. Firmly depress the brake lever and measure the clearance between the lever and handlebar grip. This distance, called brake lever reserve (A), should be no less than 1/2" (1.3 cm).



Brake pads must be replaced when the brake pad material becomes thinner than the backing plate (approximately 1/16"). A kit is available for replacing brake pads. See your dealer.

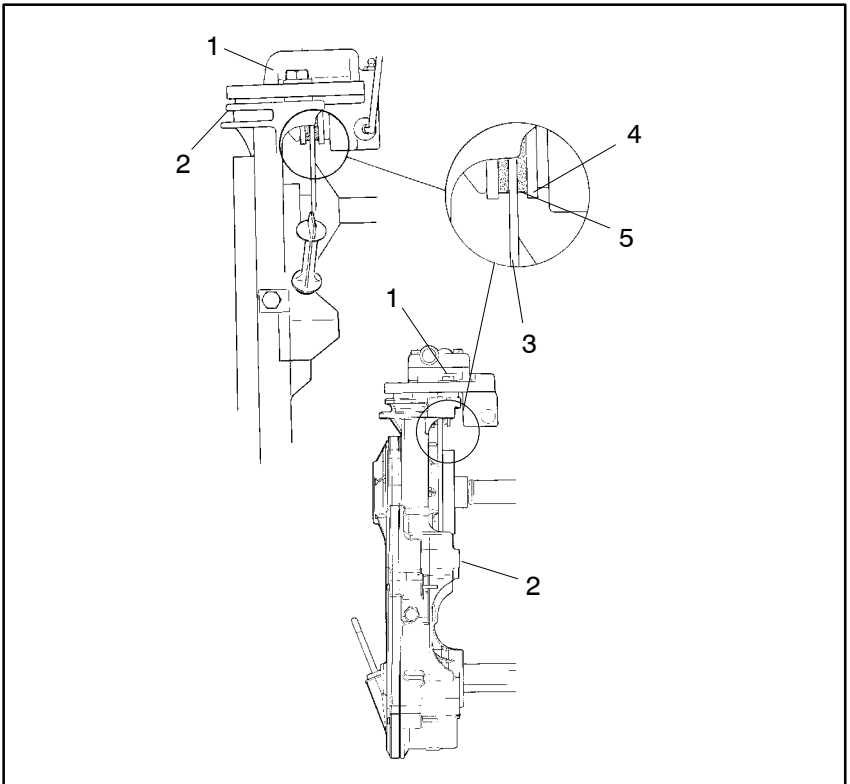
### **⚠️ WARNING**

Properly functioning brakes are vital to your safety. Be sure the brake pads do not drag on disc and that brake lever travel is not excessive.

Brake pads must be replaced when the brake pad material becomes thinner than the backing plate (approximately 1/16").

## General Maintenance

### Brake Components



1. Brake Caliper
2. Chaincase
3. Brake Disc
4. Backing Plate
5. Brake Pad Material (Replace when thickness is less than 1/16").

### Excessive Lever Travel

Hydraulic brakes are self-adjusting, but if excessive brake pad clearance develops, as described on page 124, the machine should be returned to an authorized Polaris dealer for inspection and adjustment.

# MAINTENANCE

## General Maintenance

### Replenishing Brake Fluid

#### **WARNING**

After opening a bottle of brake fluid, discard any unused fluid. Do not store or use a partial bottle of brake fluid. The fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. The boiling temperature of the brake fluid will drop, leading to early brake fade and the possibility of serious injury.

Keep the master cylinder cover free of dirt and debris. The vent slits allow for diaphragm movement, and if they become plugged, movement of brake fluid below the diaphragm may be restricted, altering brake function.

#### **CAUTION**

Brake fluid will damage decals, paint, and some plastics. Wipe up spills immediately.

Frequently check the reservoir to be sure it contains the correct amount of fluid.

Remove the brake master cylinder reservoir cover. Add Polaris brake fluid (PN 2870990) as required to bring the level up to the top of the fluid level mark on the inside of the reservoir. The proper fluid level is 1/4-5/16" (.6-.8 cm) below the lip of the reservoir opening on most models.

**NOTE:** On some models, the brake fluid level can be seen through a plastic sight glass in the brake reservoir. If the fluid is sufficient, the sight glass will be black. If the sight glass is any color other than black, add brake fluid. Use only Polaris DOT 3 high temperature brake fluid (PN 2870990). Polaris brake fluid is sold in 12 oz. bottles.



## General Maintenance

### Bleeding the Hydraulic Brake System

Air in the hydraulic brake system will cause a springy or spongy brake lever action. Bleeding is necessary to remove air from the system.

#### CAUTION

Brake fluid will damage decals, paint, and some plastics. Wipe up spills immediately.

- 1 Remove brake master cylinder reservoir cover and gasket.
- 2 Fill the master cylinder reservoir to between the MIN and MAX marks or 1/4-5/16" (.6-.8 cm) below the lip of the reservoir opening. Reinstall the gasket and cover.
- 3 Slip a rubber tube over the ball of the bleeder valve and direct the flow of fluid into an approved container.
- 4 Squeeze brake lever a full stroke. Then unscrew bleeder valve 3/4 of a turn to release air.
- 5 Close bleeder valve and release brake lever.
- 6 Repeat steps 4 and 5 until fluid flows from the bleeder valve in a solid stream free of air bubbles.

#### WARNING

Do not overfill the master cylinder. Fluid expansion may cause brakes to lock, resulting in serious injury or death.

- 7 After bleeding is complete, refill the reservoir to the proper level. See Replenishing Brake Fluid on page 126.
- 8 Reinstall the gasket and cover.

During the bleeding procedure, keep the brake handle in as level a position as possible. The reservoir must be in this position to minimize the possibility of air entering the system through the reservoir vent.

# MAINTENANCE

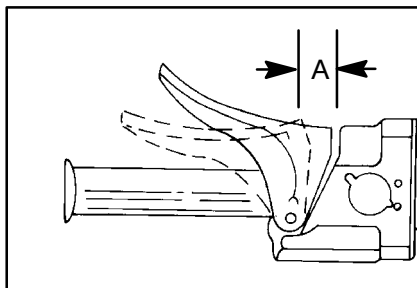
## General Maintenance

### Mechanical Brake Lever Travel

#### **⚠ WARNING**

Improper brake adjustment could result in brake failure and lead to serious injury or death. See your dealer for brake service.

Frequently inspect the brake lever reserve. Firmly depress the brake lever and measure the clearance between the lever and the brake block. This distance, brake lever reserve (A), should be no more than  $3/4''$  (1.9 cm). If brake lever reserve exceeds this amount, see your dealer for service.

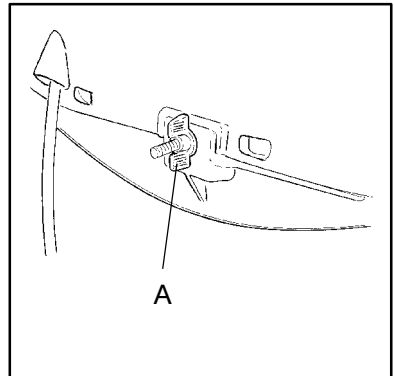
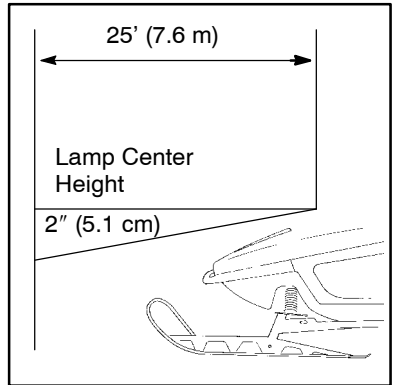


## General Maintenance

### Headlight Adjustment

The headlight may be adjusted for vertical aim using the following procedure:

- 1 Place the snowmobile on a level surface with the headlight approximately 25 feet (7.6m) from a wall.
- 2 Measure the distance from the floor to the center of the headlight and make a mark on the wall.
- 3 Start the engine and turn the headlight switch to high beam.
- 4 Observe the headlight aim. The most intense part of the headlight beam should be aimed 2" (5.1 cm) below the mark placed on the wall in Step 2. **NOTE:** Rider weight must be included on the seat.
- 5 Turn the adjustment nut (A), located inside the hood, just below the headlamp opening. Turn the knob in or out as needed for proper aim.



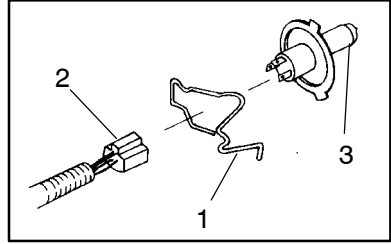
# MAINTENANCE

## General Maintenance

**NOTE:** Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue, causing a hot spot that will shorten the life of the lamp.

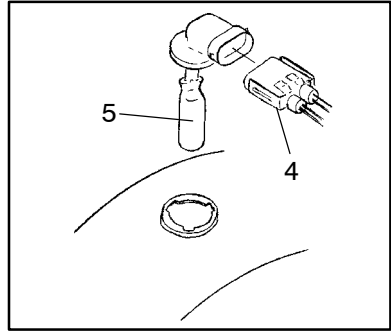
### Removing Halogen Bulbs - High/Low Beam

- 1 Pinch the ends of the spring (1) together and lift until it releases from the spring retainer.
- 2 Lift spring carefully around wire harness (2) and flip to outside of housing.
- 3 With the wire harness attached to the bulb (3), withdraw bulb from housing.
- 4 Grasp bulb by metal base and carefully separate bulb from harness.



### Installing the Bulb

- 1 Hold bulb by metal base and install into wire harness.
- 2 Insert bulb into housing.
- 3 Carefully flip spring back into housing placing it around wire harness.
- 4 Squeeze spring together until it is over the spring retainer and release.
- 5 Verify headlight aim.



### Removing Halogen Bulbs - High Beam

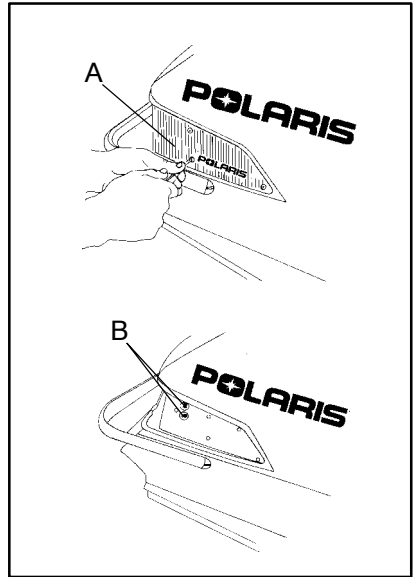
- 1 Remove the wire harness (4).
- 2 Gasp the bulb (5) firmly and twist it 1/2 turn counterclockwise.
- 3 Remove the bulb from housing and replace with new bulb.
- 4 Place the bulb and housing back inside the hole and turn the housing 1/2 turn clockwise to lock into place.
- 5 Reinstall the wire harness to the housing.

## General Maintenance

**NOTE:** Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue, causing a hot spot which will shorten the life of the lamp.

### Removing the Side Bulbs

- 1 Disconnect terminal from back of bulb.
- 2 Turn bulb assembly 1/4 turn to right and withdraw from housing.



### Installing the Side Bulbs

- 1 Hold bulb assembly by plastic base and plug into wire terminal.
- 2 Insert bulb assembly into housing.
- 3 Turn bulb assembly 1/4 turn to left to secure in housing.
- 4 Verify headlight operation.

### Wrap Around Taillight Bulb Replacement

- 1 Remove phillips screws from the taillight lens (A).
- 2 Working from front to back, carefully pry lens away from seal and remove lens.
- 3 Pull bulb(s) (B) straight out from socket and insert new bulb(s).
- 4 Reinstall lens.

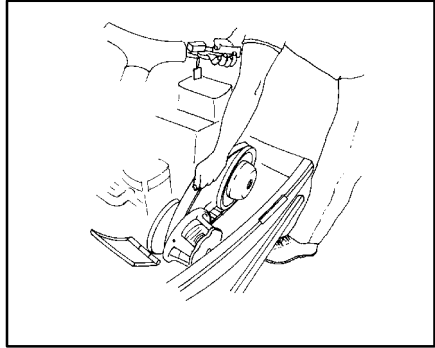
# MAINTENANCE

## General Maintenance

Periodically check the condition and tension of the drive belt, and always carry a spare belt. For improved drive-away during extremely cold temperatures, remove the belt and warm it to room temperature. Reinstall it before starting the snowmobile.

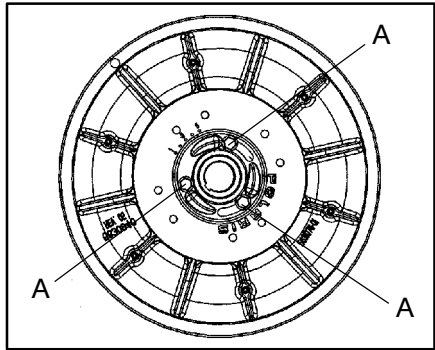
### Standard Belt Removal

- 1 Be sure the key switch is off and the engine has come to a complete stop. Remove the retaining pin and open the clutch guard.
- 2 Apply brake (or lock parking brake if equipped).
- 3 Grasp the belt firmly midway between the clutches and pull upward and rearward. Remove the belt.



### Electronic Reverse Belt Removal

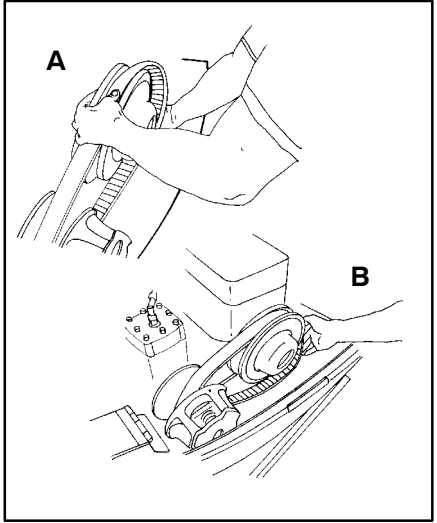
- 1 Remove ONE of the three belt tension adjuster bolts (A) and store it in a safe place.
- 2 Locate the 1 1/2" bolt from the tool kit and install it in the empty tensioner hole. As this bolt is tightened, it will open the sheaves, loosening the belt to the point where it can be easily removed.
- 3 Grasp the belt firmly midway between the clutches and pull upward and rearward. Remove the belt.
- 4 If a belt is not going to be immediately reinstalled, reinstall the tensioner bolt and store the 1 1/2" bolt in the tool kit of the machine.



## General Maintenance

### Standard Belt Installation

- 1 Drop the drive belt over the drive clutch and pull back the slack (A). **NOTE:** To ensure satisfactory belt life, install belts so they operate in the same direction of rotation by positioning the identification numbers so that you can read them.
- 2 Turn the driven clutch moveable sheave clockwise while pushing inward and forcing the belt down between the sheaves.
- 3 Hold the belt down between the sheaves and roll the bottom portion over the outer clutch sheave (B). Work the belt to the outer edge of the sheave. Release parking brake if it's locked.
- 4 Close the clutch guard and reinstall the retaining knob or pin.



### Electronic Reverse Belt Installation

- 1 If the 1 1/2" bolt is not in place, install it to separate the sheaves.
- 2 Drop the drive belt over the drive clutch and pull back the slack. **NOTE:** To ensure satisfactory belt life, install belts so they operate in the same direction of rotation by positioning the identification numbers so that you can read them.
- 3 Remove the bolt to tighten the sheaves. Store the bolt in the tool kit for future use.
- 4 Install the belt tensioner bolt and torque to 4-6 ft. lbs.

# MAINTENANCE

## General Maintenance

### Clutch System

#### **WARNING**

All clutch maintenance and repairs must be performed by an authorized Polaris dealer. Any unauthorized modifications to clutches, such as adding or removing weights, will void the warranty.

If you become aware of higher than normal clutch engagement, an unusual vibration, or an unusual shift pattern, contact your dealer immediately. Do not operate the machine until corrections have been made.

#### **CAUTION**

Do not lubricate clutch bushings. The bushings in the weights and rollers of Polaris clutches are made of a material that may be damaged if lubricated. Clean clutch sheaves periodically to maintain optimum performance.

Inspect clutch sheaves for damage, wear, or belt residue. Clean with non-oil based cleaners such as isopropyl alcohol.

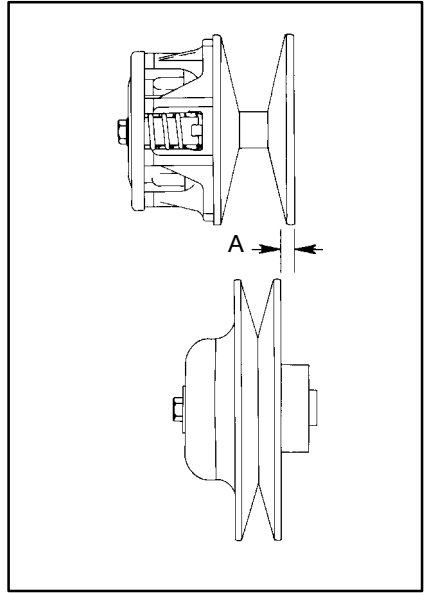


## General Maintenance

### Clutch Alignment and Offset

Clutch center distance and alignment (A) are crucial to maintaining optimum performance. See your Owner's Manual Supplement for the recommended offset between the drive and driven clutches with the belt removed.

The drive belt is a very important part of the drive system. Belt width and length must match the center distance of the clutches and sheave width of the drive clutch. For this reason, Polaris recommends that only O.E.M. belts be used. Other belts may match the dimensions, but can drastically change the shift pattern, resulting in poor performance. See your dealer for service and adjustments.

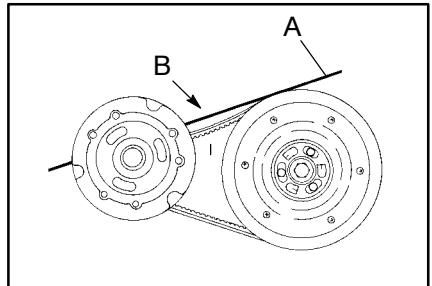


**NOTE:** A worn belt will continue to function, but will not deliver maximum performance. Always carry a spare belt in case of an emergency. See page 132 for belt removal and installation.

### Drive Belt Deflection

Measure belt deflection with both clutches at rest and in their full neutral position.

Place a straight edge on the belt (A) and apply downward pressure while measuring at point B. This measurement should be 1 1/4".



# MAINTENANCE

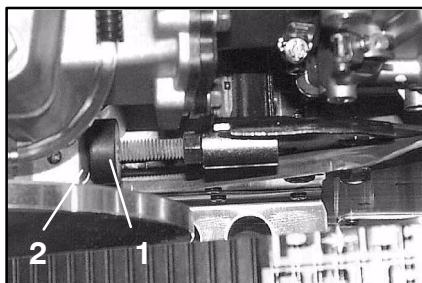
## General Maintenance

### Clutch Center Distance

See your Owner's Manual Specification Supplement for recommended center distance for your machine. If adjustment is necessary, see your dealer. Due to tolerances in belt length, it may be necessary for your dealer to make minor adjustments in the driven clutch to achieve correct belt tension.

### Torque Stop

If your snowmobile is equipped with an engine torque stop (1), periodically check torque stop clearance. With clutches in proper alignment, the torque stop clearance should be a minimum of .010" to a maximum of .030" from the engine case (2). Adjust if necessary, and lock the jam nut.



### Reverse Kit Maintenance

If your snowmobile is equipped with reverse, or if you have a reverse kit installed, it's especially important to maintain track tension as specified on page 140.

## **⚠️ WARNING**

If specified track tension is not maintained, serious damage to the snowmobile may occur, which can result in loss of vehicle control. Loss of control can result in serious personal injury or death.

Allow the engine to reach idle speed before attempting to shift into or out of reverse.

## **CAUTION**

If machine has not come to a complete stop before shifting, damage will occur to chaincase or transmission.

## General Maintenance

### Accessory Reverse Kit

If you've had a reverse kit installed on your snowmobile, some maintenance will be required. Follow these recommendations:

### Chain Tension

Maintain the proper chain tension as outlined on page 123.

### Oil Level

Maintain the oil level between the safe marks as indicated on the oil bottle (see page 84).

### Oil Change

Have the oil changed annually by your dealer.

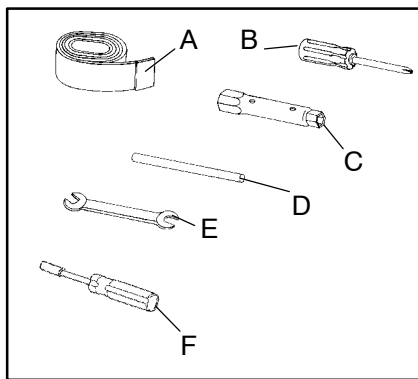
# MAINTENANCE

## General Maintenance

### Tool Kit

A tool kit is included with your machine for emergency and routine maintenance. Included in the kit are:

- A. Emergency Start Strap
- B. Phillips Screwdriver
- C. Tubular Socket
- D. Tubular Socket Handle
- E. Wrench
- F. Shielded screwdriver (only models with Indy Select or AFX shocks)

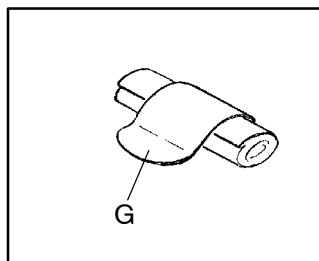


**Always keep the tool kit with the snowmobile.**

If necessary, a replacement tool kit may be purchased from your Polaris dealer.

### Tool Pouch Clip

Some Polaris snowmobiles are equipped with a tool pouch clip (G) located inside the flap on the back of the seat. Use this clip to secure the tools and keep them from bouncing around during snowmobile use.



## General Maintenance

### For Your Protection

For added protection, carry the following items on your snowmobile at all times:

- Spare Drive Belt
- Tow Rope
- Fuel Deicer
- Trail Map
- First Aid Kit
- Extra Set of Spark Plugs
- Extra Oil
- Winter Survival Kit
- Owner's Manual

### Fall Tune-Up

For maximum performance, arrange for a fall service tune-up with your Polaris dealer. His experienced and trained service technician will keep your machine in peak operating condition.

### Maintenance Items

The tools and maintenance items mentioned in this book, as well as a long line of other Polaris accessories, are available at your Polaris dealer.

# MAINTENANCE

## Track Maintenance

### Track Tension Data

Suspension (See Owner's Manual Supplement for type)	Weight	Measurement Location	Measurement
XTRA 12 121"	none	2" behind rail bumper	1/2" (1.27 cm) free hanging
XTRA 12 133"	none	16" ahead of rear idler shaft	1-1 1/8" (2.54 - 2.86 cm) free hanging
XTRA 10 121", 133", 136"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	3/8 - 1/2" (1 - 1.3 cm)
WideTrak Type	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	3/4 - 1" (1.9 - 2.5 cm)
XTRA Lite 121", 133", 136"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	3/8 - 1/2" (1 - 1.3 cm)
Edge RMK 136"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	3/8 - 1/2" (1 - 1.3 cm)
Edge RMK 144"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	1/2" - 3/4" (1.9)
Edge RMK 151"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	1/2" - 3/4" (1.9)
Edge RMK 156"	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	1/2" - 3/4" (1.9)
Edge	10 lbs. (4.54 kg)	16" ahead of rear idler shaft	3/8 - 1/2" (1 - 1.3 cm)
M-10	Refer to your M-10 Owner's Manual Supplement		

## Track Maintenance

### **WARNING**

Moving parts can cut and crush. When performing the checks and adjustments recommended on the following pages, stay clear of all moving parts. Never perform track measurement or adjustments with engine running.

## Track Tension

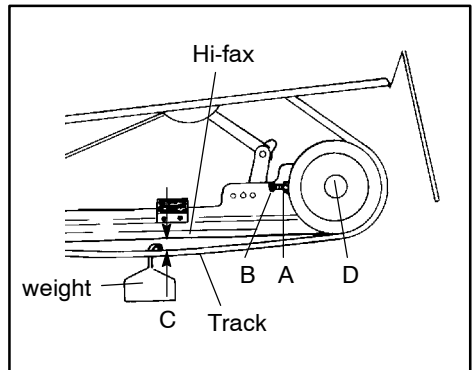
Track adjustment is critical for proper handling. Always maintain correct tension and alignment.

Tension adjustments should be made only after the track is warmed up and limber.

- 1 Turn the machine off.
- 2 Lift the rear of the machine and safely support it off the ground.
- 3 Place the recommended weight or downward pressure on the track at the specified distance (see chart on page 140) ahead of the center of the rear idler wheel. **NOTE:** Measure at the point where the weight is hanging.
- 4 Check for specified slack between the wear surface of the track clip and the plastic Hi-fax (C).

### **If the track needs adjustment:**

- 5 Loosen rear idler shaft bolt (D).
- 6 Loosen locknuts (A) (except on models with Xtra Lite suspension).
- 7 Tighten or loosen the track adjusting screws (B) as necessary to provide equal adjustment on both sides of the track.



# MAINTENANCE

## Track Maintenance

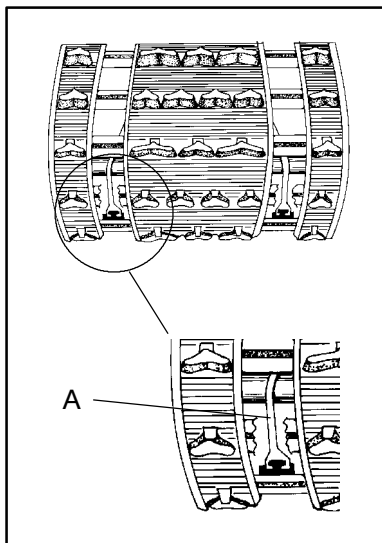
### If the track needs adjustment (continued):

- 8 Repeat measurement on the other side of the track. **NOTE:** Check more frequently when machine is new.
- 9 Start machine and slowly rotate the track at least five revolutions. Let the track come to a stop (do not apply brakes).
- 10 Check track alignment (see page 142) and adjust as necessary.
- 11 Tighten locknuts (A) (except on models with Xtra Lite suspension).
- 12 Tighten idler shaft bolts (D) and torque to 35 ft. lbs.

## Track Alignment

Periodically check that the track is centered and running evenly on the slide rails. Misalignment will cause excessive wear to the track and slide rail.

- 1 Safely support the rear of the machine with the track off the ground.
- 2 Start the engine and apply a small amount of throttle until the track turns *slowly* at least five complete revolutions. Stop the engine and let the track come to a stop (do not apply brakes).
- 3 Inspect track alignment by looking through the track window to make sure the rails (A) are evenly spaced on each side. If the track runs to the left, loosen left locknut and tighten the left adjusting bolt. If the track runs to the right, loosen right locknut and tighten the right adjusting bolt.
- 4 After adjustments are complete, tighten locknuts and torque idler shaft bolts to 35 ft. lbs. (4.8 kg/m).
- 5 Repeat steps 2 and 3 to verify proper alignment.





## Track Maintenance

### Track Inspection

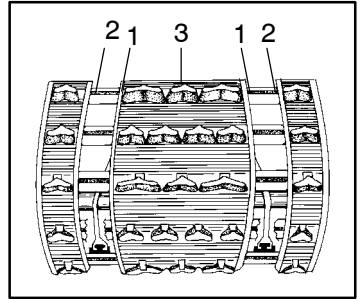
#### **⚠️ WARNING**

Broken track rods are a serious hazard; they can cause a rotating track to come off the machine. Never operate or rotate a damaged track under power. Serious personal injury or death may occur.

Using a hoist, safely lift and support the rear of the snowmobile off the ground. Rotate the track by hand to check for possible damage.

Carefully examine the track along the entire length of each rod, bending the track and inspecting for breakage. The three most common damage areas are shown in the illustration.

Replace the track if any rod damage is found.



### Track Lubrication

#### **⚠️ WARNING**

Track failure, loss of vehicle control, and loss of braking ability can result from extended operation on surfaces providing marginal lubrication between Hi-fax and track guide clips. Examples of marginal lubrication include ice without snow cover, icy trails, hard-packed snow, and no-snow conditions.

The slide rail requires adequate snow cover for sufficient lubrication. Excessive wear indicates insufficient lubrication. New Hi-fax can cause faster heat build-up in limited lubrication, resulting in excessive wear. **NOTE:** If excessive Hi-fax wear occurs due to poor snow conditions, additional wheel kits are available. See your dealer for more information.

**IMPORTANT:** Track damage or failure caused by operation on ice, or under other poor lubrication conditions, will void the track warranty.



## Steering System

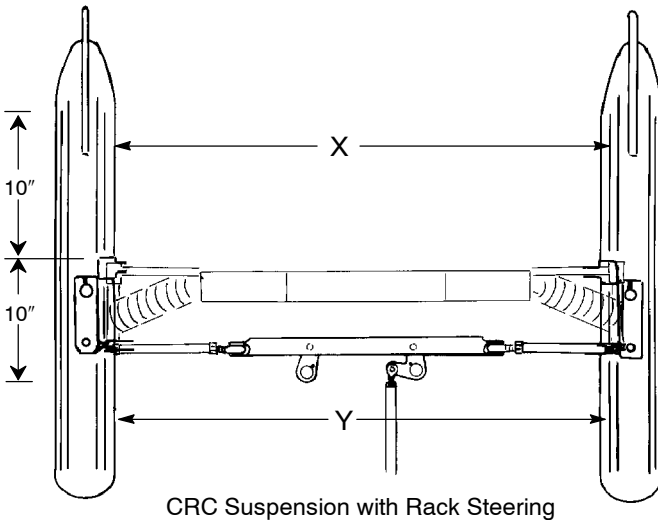
### Ski Alignment

#### **⚠ WARNING**

Improper ski alignment or adjustment may cause loss of steering control, resulting in serious injury or death. Do not attempt to change the ski alignment or camber adjustment. See your Polaris dealer.

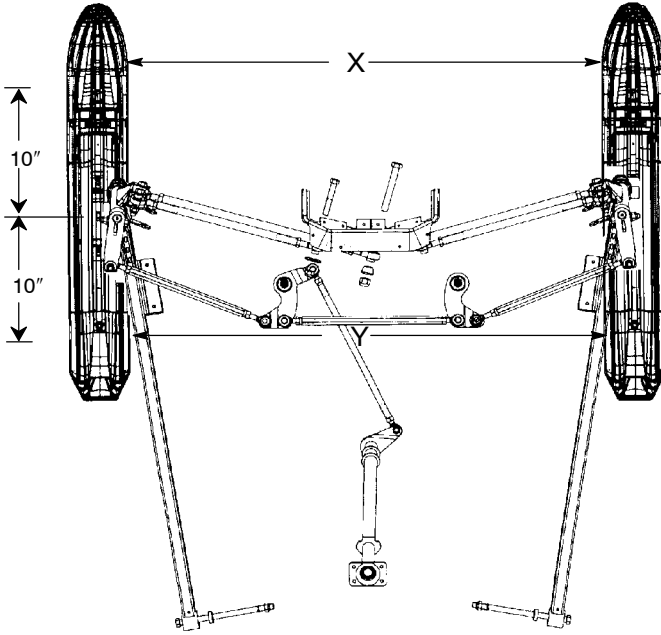
With handlebars in straight ahead position, and with vehicle weight compressing the suspension, measure from the straight edge of the skis at the center of the ski mounting bolt. The measurement between the skis at point X should be  $1/8''$  to  $1/4''$  greater than at point Y.

**NOTE:** If the skis are misaligned, we recommend that your dealer correct the alignment, since camber adjustment may also be affected.

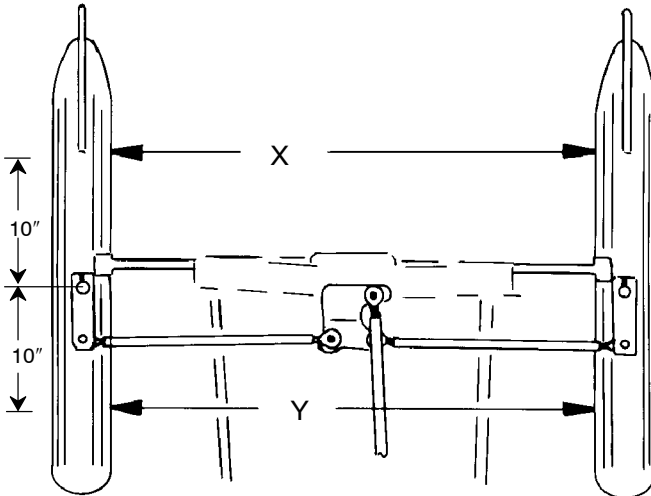


# MAINTENANCE

## Steering System



Edge IFS Steering System



All other steering systems

## Steering System

### Ski Skags

#### **WARNING**

Worn skis and/or skags will adversely affect handling. Loss of vehicle control may result, causing serious injury or death.

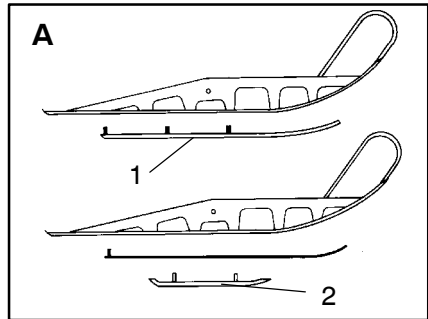
See your dealer's studding chart for recommended skags. If you install longer or more aggressive carbide skags than the original equipment, it may also be necessary to add track studs to maintain proper vehicle control while turning on hard-packed snow or ice.

Check skags weekly to maintain positive steering characteristics. Skags must be replaced when worn to half their original diameter.

**IMPORTANT:** Carbide skags must be replaced if *any* abnormal wear or chipping is found.

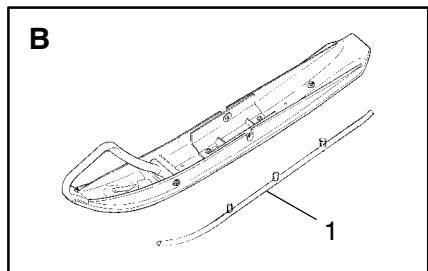
### Skag Identification

- A. Steel ski
  - 1. Standard skag
  - 2. E-Z Steer™ skag
- B. Composite ski
  - 1. Skag



### Skag Replacement

- 1 Raise and support the front of the machine so the skis are approximately 6" (15.2 cm) from the ground.
- 2 Remove the attaching nuts and pry the skag downward.
- 3 Remove the forward portion of the skag.



Reverse this procedure for new skag installation.

# MAINTENANCE

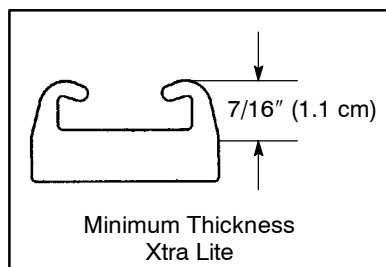
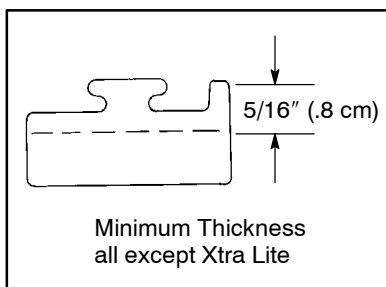
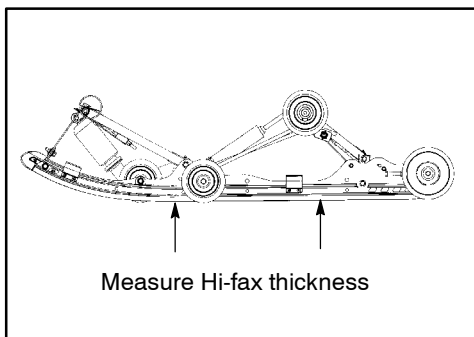
## Suspension Maintenance

### Hi-Fax Wear

Check Hi-fax wear by measuring thickness at several points along the rail. Replace Hi-fax when a thickness of  $5/16''$  (.8 cm) is reached ( $7/16''$  on Xtra Lite models). Take the machine to your dealer for Hi-fax replacement.

**NOTE:** Hi-fax wear patterns are somewhat different on XTRA-12 suspensions. The rear portion will wear rapidly at first. After this initial break-in period, the rapid wear will cease.

If excessive Hi-fax wear occurs due to poor snow conditions, additional wheel kits are available from your dealer.



## Suspension Maintenance

Loose nuts and bolts can reduce your snowmobile's reliability and cause needless repairs and down time. Before beginning any snowmobile trip, a visual inspection will uncover potential problems. Check the following items on a weekly basis or before any long trip:

- ✔ Check rear idler wheel bolts for tightness.
- ✔ Check rear idler adjusting bolt locknuts for tightness.
- ✔ Check front torque arm limiter strap condition.
- ✔ Check slide rail Hi-fax condition greatly affects performance - have your dealer replace when worn to minimum thickness.
- ✔ Check track tension (beginning on page 140).
- ✔ Lubricate/grease all suspension components (see pages 101-106).
- ✔ Check ski runner/skag condition.

## Extended Storage

Off-season or extended storage of your snowmobile requires preventive measures to aid against deterioration and to prolong the useful life of many components.

## Cleaning and Preservation of Hood, Chassis, and Trim

Proper storage starts with cleaning, washing, and waxing the hood, chassis, and plastic parts. Wipe down remaining surfaces with a damp cloth. Clean and touch up with paint any rusted or previously painted surfaces. Be sure that corrosive salt and acids are removed from surfaces before beginning preservation with waxes and rust inhibitors (grease, oil or paint).

The machine should be stored in a dry garage or shed, out of direct sunlight, and covered with a fabric snowmobile cover. Plastic tarp may cause condensation to form and damage snowmobile components.

## Controls and Linkage

All bushings, spindle shafts, and tie rod ends should receive a light coat of oil or grease. Throttle controls and cables should be lubricated with Polaris cable lubricant (PN 2870510). Force a small amount of lubricant down the cable.

# MAINTENANCE

## Extended Storage

### Bearings

Grease jackshaft and drive shaft clutch side bearings with a high quality bearing grease to prevent corrosion.

### Clutch and Drive System

Remove drive belt and store in cool dry location. Lubricate sheave faces of drive and driven clutches with a light coat of oil or Polaris Cable Lubricant (PN 2870510). Do not lubricate clutch components except driven clutch shaft bushing as outlined in Master Repair Manual. See your dealer.

### Engine and Carburetor Protection

Proper preparation of the engine and fuel system is vital to the prevention of rust and corrosion on precision engine parts during storage. Whenever the machine is stored for a period of more than 60 days, the engine must be fogged (Polaris PN 2870791). Follow the engine fogging instructions provided on the can.

Always add a fuel conditioner/stabilizer or Premium Carbon Clean (PN 2871326) to the fuel tank. Follow the instructions on the can, running the engine for five minutes to get additives through the entire fuel system. Top off with fresh fuel.

**HINT:** For easier starting after extended storage, add lubricant to the fuel in the tank at a 40:1 ratio and run the engine for three to five minutes before storage. This will lubricate the fuel pump diaphragm to keep it flexible and help prevent loss of prime.

If stabilizer is not used, drain the carburetors by removing the water trap drain plugs (see page 116). Catch fuel in a container or shop cloth. Reinstall plugs securely. Observe all fire safety rules when draining carburetors. See gasoline warnings on page 80.

Jet restriction caused by improper storage can cause lean conditions and very poor slow speed driving quality.



## Extended Storage

### Engine and Carburetor Protection

Using a fuel stabilizer and topping off the fuel tank eliminates the need to drain the fuel system. If you prefer to drain the fuel tank, use the following procedure:

- 1 Transfer unused fuel from the fuel tank to an approved fuel container using a siphon pump. Do not re-use fuel after storage.
- 2 Securely support the front of the snowmobile with a jack stand so the machine is elevated and the engine is tilted rearward.
- 3 Remove the spark plug(s).
- 4 Rotate the engine slowly, watching the piston until it's at bottom dead center (BDC), the lowest position in the cylinder. On twin cylinder models, the opposite piston will be up.
- 5 Pour approximately two ounces of Polaris injector oil into the spark plug hole.
- 6 Wait one to two minutes and perform steps 3 to 5 on remaining cylinders.
- 7 Replace the spark plugs and lower the machine to the floor.

### Electrical Connections

Separate electrical connector blocks and clean corrosive build-up from connectors. Lubricate or pack connector blocks with dielectric grease (PN 2871044) and re-connect. Replace worn or frayed electrical wire and connectors. Be sure wiring harness is properly secured away from sharp edges, steering linkage, moving parts, and hot exhaust parts.

### Battery

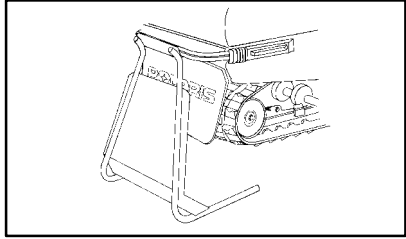
Always prepare and maintain the battery as outlined on page 153.

# MAINTENANCE

## Extended Storage

### Track and Suspension

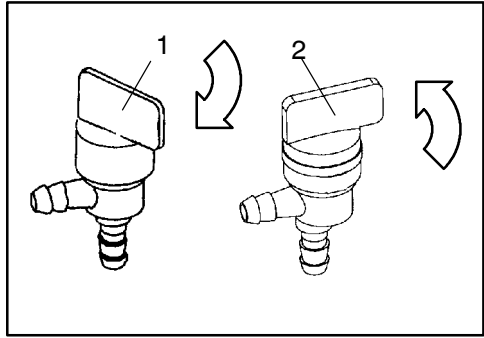
Moderate track tension should be maintained during summer storage. The machine should be supported off the ground to allow the track to hang freely. See illustration.



### Transporting the Snowmobile

Whenever the snowmobile is transported:

- 1 Turn the fuel valve clockwise to “OFF” to shut off the fuel supply (1). Turn the valve counter-clockwise to “ON” to turn the fuel supply on (2).  
**NOTE:** The fuel valve is located to the right of the fuel pump or behind the airbox, between the fuel pump and fuel tank.



- 2 Be sure the fuel cap and oil cap are installed correctly.
- 3 Always tie the snowmobile to the transporting unit securely using suitable straps.

## Battery

### **⚠ WARNING**

Battery electrolyte is poisonous. It contains acid! Serious burns can result from contact with the skin, eyes, or clothing. If contact occurs, seek immediate medical attention.

**KEEP OUT OF REACH OF CHILDREN.**

**EXTERNAL:** Flush with water.

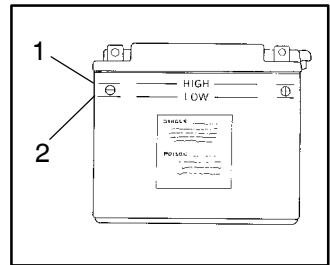
**INTERNAL:** Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

**EYES:** Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, open flames, cigarettes, etc. away. Ventilate when charging or using in closed space. Always shield eyes when working near batteries.

## Battery Fluid

A poorly maintained battery will deteriorate rapidly. Check the battery fluid level often. The fluid level should be kept between the upper (1) and lower (2) level marks.



# MAINTENANCE

## Battery

### Battery Connections

Keep battery terminals and connections free of corrosion. When cleaning is necessary, remove the corrosion with a stiff wire brush. Wash terminals and connections with a solution of one tablespoon baking soda and one cup water. Rinse well with tap water and dry with clean shop towels. Coat the terminals with dielectric grease or petroleum jelly.

### CAUTION

Tap water contains minerals that will damage a battery and shorten its life. Use only distilled water to refill your battery. Never allow cleaning solution or tap water to enter the battery.

### Battery Removal

### WARNING

Batteries contain gases that can explode. Whenever removing or installing the battery, disconnect the negative (black) cable first and reinstall the negative cable last to avoid the possibility of explosion.

- 1 Disconnect battery hold down straps.
- 2 Remove battery vent tube from battery.
- 3 Disconnect black (negative) battery cable first.
- 4 Disconnect red (positive) battery cable second.
- 5 Carefully lift the battery out of the snowmobile. Do not tip it sideways or spill electrolyte.

### CAUTION

Battery electrolyte contains acid. If electrolyte spills on the snowmobile, immediately wash it off with a solution of one tablespoon baking soda and one cup water to prevent damage.

## Battery

When your snowmobile is placed in storage for one month or more:

- Remove the battery.
- Charge it to the proper level.
- Store it in a cool dry place.

Before using the battery, take it to your dealer for testing and recharging.

Batteries may freeze if not fully charged, resulting in cell damage.

Charge Condition:	Will Freeze At:
100%	-75° F (-59° C)
75%	-24° F (-31° C)
50%	0° F (-18° C)
25%	+13° F (-11° C)
0%	+18° F (-8° C)

## Battery Installation

### **WARNING**

Batteries contain gases that can explode. If the battery vent tube is pinched or kinked, battery gases could accumulate. Whenever removing or installing the battery, disconnect the negative (black) cable first and reinstall the negative cable last to avoid the possibility of explosion.

Battery electrolyte contains acid. Avoid skin contact with electrolyte as severe burns may result.

- 1 Place the battery in its holder. Attach the hold down strap.
- 2 Install the battery vent line. It must be free from obstructions and securely installed. Route the vent line properly to prevent kinks and to allow for proper drainage.
- 3 Connect and tighten the red (positive) cable first.
- 4 Connect and tighten the black (negative) cable last.
- 5 Verify that cables and vent hose are properly routed.

# - NOTES -

## **SECTION 8 - TROUBLESHOOTING**

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<b>Suspension Troubleshooting</b> .....	<b>158 - 162</b>
<b>Belt Troubleshooting</b> .....	<b>163</b>
<b>Engine Troubleshooting</b> .....	<b>164 - 166</b>

Section 8 is a quick reference guide to solving problems.

# TROUBLESHOOTING

## Suspension Troubleshooting

### X-12

<b>Problem</b>	<b>Solution (perform only one change at a time)</b>
Rear suspension bottoms too easily	<ul style="list-style-type: none"><li>-Check to be sure FRSS block is in highest position</li><li>-Adjust torsion spring blocks to highest position</li><li>-Adjust coil over spring on front track shock to increase preload</li><li>-Change torsion springs to .421 diameter (on 121" models only)</li><li>-Change to next heavier coil spring</li><li>-Increase front track shock compression damping by turning screw clockwise</li></ul>
Rides too stiff in rear	<ul style="list-style-type: none"><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Decrease torsion spring preload adjustments</li><li>-Remove rear track shock spring</li><li>-Decrease front track shock compression damping by turning screw counter-clockwise</li><li>-Adjust front track shock spring to less preload.</li></ul>
Machine darts from side to side	<ul style="list-style-type: none"><li>-Make sure skis are aligned properly</li><li>-Make sure spindles and all steering components are free turning</li><li>-Make sure skags are straight on skis</li><li>-Ensure use of E-Z Steer™ skags</li><li>-Shift FRSS to highest position</li></ul>
Front end pushes	<ul style="list-style-type: none"><li>-Check for worn skags</li><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Increase front IFS preload</li><li>-Change FRSS to low setting or move to forwardmost hole</li></ul>
Steering is heavy	<ul style="list-style-type: none"><li>-Check ski alignment</li><li>-Check skags and skis for damage</li><li>-Change FRSS to high setting</li><li>-Decrease IFS spring preload</li><li>-Make sure spindles and all suspension components are free turning</li></ul>
Setting up for deep snow operation	<ul style="list-style-type: none"><li>-Rotate FRSS to lowest setting, depending upon rider preference</li><li>-Decrease preload on front track spring</li><li>-Tighten limiter strap one hole</li><li>-Move FRSS to forwardmost hole</li><li>-Tighten limiter strap one hole</li></ul>



# TROUBLESHOOTING

## Suspension Troubleshooting

### X-12, 133"

<b>Problem</b>	<b>Solution (perform only one change at a time)</b>
Rear suspension bottoms too easily	<ul style="list-style-type: none"><li>-Check to be sure FRSS block is in highest position</li><li>-Adjust torsion spring blocks to highest position</li><li>-Adjust coil over spring on front track shock to increase preload</li><li>-Replace front track spring with overload kit #2871439</li><li>-Increase front and rear track shock compression damping by turning screw clockwise</li></ul>
Rides too stiff in rear	<ul style="list-style-type: none"><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Decrease spring preload adjustments</li><li>-Remove rear track shock spring or reduce rate of spring (see your dealer)</li><li>-Change front track shock to lighter spring</li><li>-Decrease front and rear track shock compression damping by turning screw counter-clockwise</li></ul>
Machine darts from side to side	<ul style="list-style-type: none"><li>-Make sure skis are aligned properly</li><li>-Make sure spindles and all steering components are free turning</li><li>-Ensure use of "E-Z Steer" skags</li><li>-Check Hi-fax and replace if worn</li></ul>
Front end pushes	<ul style="list-style-type: none"><li>-Check for worn skags</li><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Increase front IFS preload by adjusting threaded preload collar</li><li>-Move FRSS to low position or move to forward hole</li></ul>
Steering is heavy	<ul style="list-style-type: none"><li>-Check ski alignment</li><li>-Check skags and skis for damage</li><li>-Decrease IFS spring preload</li><li>-Make sure spindles and all suspension components are free turning</li><li>-Reduce ski pressure:<ul style="list-style-type: none"><li>•Increase front track spring preload</li><li>•Reduce IFS spring preload by adjusting threaded preload collar</li></ul></li></ul>
Setting up for deep snow operation	<ul style="list-style-type: none"><li>-Rotate FRSS to lowest setting, depending upon rider preference</li><li>-Decrease preload on front track spring</li><li>-Tighten limiter strap one hole</li><li>-Move FRSS to forward most hole</li></ul>

# TROUBLESHOOTING

## Suspension Troubleshooting

### X-10 and Edge

<b>Problem</b>	<b>Solution (perform only one change at a time)</b>
Rear suspension bottoms too easily	<ul style="list-style-type: none"><li>-Increase torsion spring preload</li><li>-Increase rear shock compression damping by turning screw clockwise</li><li>-Increase torsion spring wire diameter (see your dealer)</li></ul>
Rides too stiff in rear	<ul style="list-style-type: none"><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Decrease torsion spring preload adjustments</li><li>-Decrease rear shock compression valving by turning screw counterclockwise (if equipped with optional Indy Select shock)</li><li>-Change to lighter valving if (if equipped with Fox™ shocks)</li><li>-Check for proper track tension</li></ul>
Machine darts from side to side	<ul style="list-style-type: none"><li>-Make sure skis are aligned properly</li><li>-Make sure spindles and all steering components are free turning</li><li>-Make sure skags are straight on skis</li><li>-Check Hi-fax and replace if worn</li><li>-Reduce ski pressure:<ul style="list-style-type: none"><li>•Reduce IFS spring preload</li><li>•Reduce rear torsion spring preload</li></ul></li></ul>
Front end pushes	<ul style="list-style-type: none"><li>-Check for worn skags</li><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Increase IFS spring preload by adjusting cam or threaded adjuster</li><li>-Decrease front limiter strap length</li></ul>
Steering is heavy	<ul style="list-style-type: none"><li>-Check ski alignment</li><li>-Check skags and skis for damage</li><li>-Reduce ski pressure:<ul style="list-style-type: none"><li>•Increase front track spring preload</li><li>•Reduce IFS spring preload by adjusting cam</li><li>•Reduce rear torsion spring preload</li></ul></li></ul>
Setting up for deep snow operation	<ul style="list-style-type: none"><li>-Change worn Hi-fax</li><li>-Move front track shock assembly to upper position</li></ul>

# TROUBLESHOOTING

## Suspension Troubleshooting

### EDGE RMK

<b>Problem</b>	<b>Solution (perform only one change at a time)</b>
Rear suspension bottoms too easily	<ul style="list-style-type: none"><li>-Adjust torsion spring blocks</li><li>-Increase torsion spring diameter (see your dealer)</li><li>-Increase rear shock compression damping by turning screw clockwise (RMK) or rotating knob towards the right side of the machine (Vertical Edge)</li></ul>
Rides too stiff in rear	<ul style="list-style-type: none"><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Verify sag dimension (refer to set-up decal or page 50)</li><li>-Adjust torsion spring blocks</li><li>-Install optional torsion springs (see your dealer)</li><li>-Decrease rear shock compression damping by turning screw counter-clockwise (RMK) or rotating knob towards the left side of the machine (Vertical Edge)</li></ul>
Too much weight transfer when climbing	<ul style="list-style-type: none"><li>-Verify sag dimension (refer to set-up decal or page 50)</li><li>-Adjust torsion spring blocks</li><li>-Install optional torsion springs (see your dealer)</li><li>-Move limiter strap on front torque arm to high position</li><li>-See your dealer for optional mounting</li></ul>
Too little weight transfer when climbing	<ul style="list-style-type: none"><li>-Verify sag measurement (refer to set-up decal or page 50)</li><li>-Adjust torsion spring blocks</li><li>-Install optional torsion springs (see your dealer)</li><li>-Move limiter strap on front torque arm to low position (refer to set-up decal or page 50)</li><li>-See your dealer for optional mounting</li></ul>
Machine darts from side to side	<ul style="list-style-type: none"><li>-Make sure skis are aligned properly</li><li>-Make sure spindles and all steering components are free turning</li><li>-Make sure skags are straight on skis</li><li>-Install "E-Z Steer™" skags</li></ul>
Front end pushes	<ul style="list-style-type: none"><li>-Check for worn skags</li><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Verify sag dimension (refer to set-up decal or page 50)</li><li>-Adjust torsion spring blocks</li><li>-Increase torsion spring diameter (see your dealer)</li><li>-Increase IFS preload by turning the spring collar to the right</li><li>-Move limiter strap on front torque arm to high position</li></ul>
Steering is heavy	<ul style="list-style-type: none"><li>-Verify sag dimension (refer to set-up decal or page 50)</li><li>-Adjust torsion spring blocks</li><li>-Install optional torsion springs (see your dealer)</li><li>-Decrease IFS preload</li></ul>

# TROUBLESHOOTING

## Suspension Troubleshooting

### XTRA LITE

<b>Problem</b>	<b>Solution (perform only one change at a time)</b>
Rear suspension bottoms too easily	<ul style="list-style-type: none"><li>-Adjust torsion spring block to next higher position</li><li>-Increase rear shock compression damping by turning screw clockwise</li><li>-Change torsion springs to next higher rate springs</li><li>-Change front track spring to next higher rate</li></ul>
Rides too stiff in rear	<ul style="list-style-type: none"><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Decrease torsion spring preload adjustments</li><li>-Decrease rear shock compression damping by turning screw counter clockwise</li><li>-Change torsion springs to next lower rate springs</li></ul>
Machine darts from side to side	<ul style="list-style-type: none"><li>-Make sure skis are aligned properly</li><li>-Make sure spindles and all steering components are free turning</li><li>-Make sure skags are straight on skis</li><li>-Install "E-Z Steer" skags</li></ul>
Front end pushes	<ul style="list-style-type: none"><li>-Check for worn skags</li><li>-Check for binding suspension shafts and grease all pivot points</li><li>-Increase IFS preload</li><li>-Shorten limiter strap on front torque arm</li><li>-Increase torsion spring preload</li></ul>
Steering is heavy	<ul style="list-style-type: none"><li>-Make sure spindles and all steering components are free turning</li><li>-Check ski alignment</li><li>-Check skags and skis for damage</li><li>-Decrease IFS preload</li><li>-Change front track spring to next higher rate</li></ul>
Too much weight transfer when climbing	<ul style="list-style-type: none"><li>-Shorten limiter strap on front torque arm</li><li>-Increase torsion spring preload</li><li>-Move rear torque arm assembly and associated parts to rearward mounting position</li></ul>
Too little weight transfer when climbing	<ul style="list-style-type: none"><li>-Lengthen limiter strap on front torque arm</li><li>-Decrease torsion spring preload</li><li>-Move rear torque arm assembly and associated parts to forward mounting position</li></ul>

# TROUBLESHOOTING

## Belt Troubleshooting

### Belt Wear/Burn

<b>Belt Wear/Burn Diagnosis</b>	
<b>Causes</b>	<b>Solutions</b>
Driving at low RPM	Drive at higher RPMs. Gear the machine down. Check belt deflection.
Insufficient warm-up	Warm the engine at least five minutes. Take the drive belt off the machine in extremely cold weather and warm it up. Break machine loose from the snow.
Towing at low RPM	Do not tow in deep snow. Use fast, aggressive throttle to engage clutch.
Riding with high RPM and slow speed (8000 RPM/10 MPH)	Lower the gear ratio. Remove windage plates from the clutch. Reduce RPM. Avoid riding in high ambient temperatures.
Ice and snow build-up between track and tunnel	Warm the engine at least five minutes. Take the drive belt off the machine in extremely cold weather and warm it up. Break machine loose from the snow.
Poor engine performance	Check for carb and choke synchronization, fouled plugs, debris in the carbs, and water, ice, or dirt in gas tank or fuel line.
Loading machines onto trailers	Skis may gouge into trailers and prevent the drivetrain from spinning properly. Use enough speed to drive the machine completely onto the trailer. Push and pull it to finish loading if necessary.
Clutch malfunction	Inspect clutch components. See your dealer.
Slow, easy clutch engagement	Use fast, aggressive throttle to engage clutch.

# TROUBLESHOOTING

## Engine Troubleshooting

**CAUTION:** Unless you have experience and training in two-cycle engine repair, see your dealer if technical problems arise.

<b>Problem</b>	<b>Probable Cause</b>	<b>Solution</b>
Erratic engine operating RPM during acceleration or load variations	Drive clutch binding  Driven clutch malfunction	-Disassemble drive clutch to inspect shift weights for wear and free operation. SEE YOUR DEALER. -Clean and polish stationary shaft hub.  -Replace ramp buttons and rollers. SEE YOUR DEALER. -Inspect movable sheaves for excessive bushing clearance and replace if necessary. SEE YOUR DEALER.
Harsh drive clutch engagement	Drive belt worn or too narrow  Excessive belt/sheave clearance	-Replace drive belt.  -SEE YOUR DEALER.
Drive belt turns over	Wrong belt for application  Clutch alignment out of spec  Engine mount broken or loose	-Replace drive belt.  -Adjust alignment offset.  -Inspect and adjust or replace. SEE YOUR DEALER.
Machine fails to move	Transmission in neutral  Clutch jammed  Track jammed  Chaincase sprocket or chain jammed or broken	-Shift out of neutral.  -Belt twisted, spring broken, weights stuck, lubricated. SEE YOUR DEALER.  -Foreign object caught or Hi-fax melted to track clips due to lack of lubrication. -Machine may be frozen to ground. Track may be iced up.  -Chain is loose or broken, chain tightener is loose. SEE YOUR DEALER.

# TROUBLESHOOTING

## Engine Troubleshooting

<b>Problem</b>	<b>Probable Cause</b>	<b>Solution</b>
Noise in drive system	Broken drive clutch components Bearing failure/chaincase, jackshaft, or front drive shaft Drive belt surface flat spots Drive chain loose or worn, sprocket teeth broken	-SEE YOUR DEALER. -SEE YOUR DEALER. -Inspect and replace if necessary. -Inspect and adjust or replace.
Poor low RPM performance	Worn drive belt Excessive belt/sheave clearance Loose torque stop Sticky clutch	-Inspect and replace if necessary. -SEE YOUR DEALER. -Inspect and adjust. -SEE YOUR DEALER.
Engine doesn't start (electric start models)	Wire connections	-SEE YOUR DEALER.
Engine doesn't turn	Seized engine Hydrostatic lock	-SEE YOUR DEALER. Seizure is a result of poor lubrication, inadequate fuel supply, broken parts, or improper cooling. -Fuel may have entered crankcase while vehicle was standing or being transported. SEE YOUR DEALER to correct cause. Drain plug(s) are located on lower crankcase for emergency draining.

# TROUBLESHOOTING

## Engine Troubleshooting

Problem	Probable Cause	Solution
Engine turns but fails to start	Faulty ignition	-Remove spark plug(s) and replace with new plug(s). If engine still fails to start, check for spark; if no spark SEE YOUR DEALER.
	No fuel to engine	-Make sure the fuel valve is "ON". Check tank level and fill up with correct fuel. -Ice in fuel line, filter, or pump. On the standard Polaris carburetor, the choke will not function with the throttle depressed. See second item under "Probable Cause" of "Engine continually backfires".
	Flooded engine (normal situation caused by too much choking)	-Hold throttle open, crank engine several times (may be necessary to change plug(s), however, the plug(s) may operate satisfactorily when dried).
	Poor engine compression	-Running too lean a mixture (too small a main jet will cause seizure resulting in loss of power). SEE YOUR DEALER. This indicates a major engine problem that must be repaired before engine is run.
Engine lacks power	Fouled or defective spark plug	-Change and test operation.
	Fuel filter (loss of high RPM power)	-Check fuel filter flow. Disconnect hose and drain about 1/2 cup. Fuel flow should be steady and encompass the entire diameter of fuel line. If not, replace filter.
	Incorrect clutching Carburetor and fuel pump	-SEE YOUR DEALER. -There's no adjustment to change power output. SEE YOUR DEALER.
Engine continually backfires	Faulty plug(s)	-Change plug(s)
	Carburetor	-Dirt or ice in fuel system. (Deicer should be added to fuel at all times for assurance against fuel line icing.)
Engine requires more than normal pulls to start	Poor gasoline or not enough fuel getting to engine	-Replace with fresh winter fuel.



# - NOTES -

# - NOTES -

## SECTION 9 - WARRANTY

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Section 9 contains specific warranty information.

# WARRANTY

## Service And Warranty Information

### Polaris Anti-Theft System

The Polaris anti-theft system monitoring program (PATS) is designed to aid owners of registered snowmobiles in recovery of stolen machines.

#### Administration

- 1 Polaris snowmobile owner reports theft.
  - A. In addition to notifying the proper law enforcement officials, the owner must call the Polaris warranty department:  
**United States #612-542-0500**  
**Canada #204-925-7100**
  - B. Owners must provide their name, address, telephone number and the model and serial number of stolen machines.
- 2 Polaris warranty will provide all dealerships with a monthly updated list of all stolen units to further monitor thefts.
- 3 Polaris warranty will aid in notification of recovered units to their proper owner.

#### Obtaining Service and Warranty Assistance

Read carefully and understand the service data and the Polaris warranty contained in this manual. Contact your Polaris dealer for replacement parts, service or warranty. He's constantly kept up to date on changes, modifications and tips on snowmobile maintenance, which may supersede information contained in this manual. He's familiar with our policies and procedures and will be happy to assist you.

When contacting us about parts, service, or warranty, always provide the following information:

1. Serial number
2. Model number
3. Dealer name
4. Date of purchase
5. Details of trouble experienced
6. Length of time and conditions of operation
7. Indicate previous correspondence

Use the space provided on page 9 to record the model and serial numbers of your machine and engine.

# WARRANTY

## LIMITED WARRANTY

Polaris Industries Inc., 1225 Highway 169 North, Minneapolis, Minnesota 55441-5078, gives a ONE YEAR LIMITED WARRANTY on all components of the Polaris snowmobile against defects in material or workmanship. This warranty covers the parts and labor charges for repair or replacement of defective parts which are covered by this warranty. This warranty begins on the date of purchase. This warranty is transferrable to another consumer during the warranty period through a Polaris dealer. There is a charge of \$35.00 payable to Polaris Industries Inc.

## REGISTRATION

At the time of sale, the Warranty Registration Form must be completed by your dealer and submitted to Polaris within ten days. Upon receipt of this registration, Polaris will record the registration for warranty. No verification of registration will be sent to the purchaser as the copy of the Warranty Registration Form will be the warranty entitlement. If you have not signed the original registration and received the "customer copy", please contact your dealer immediately. **NO WARRANTY COVERAGE WILL BE ALLOWED UNLESS YOUR SNOWMOBILE IS REGISTERED WITH POLARIS.**

Initial dealer preparation and set-up of your snowmobile is very important in ensuring trouble-free operation. Purchasing a machine in the crate or without proper dealer set-up will void your warranty coverage.

# **WARRANTY**

## **WARRANTY COVERAGE AND EXCLUSIONS:**

### **LIMITATIONS OF WARRANTIES AND REMEDIES**

The warranty excludes any failures that are not caused by a defect in material or workmanship. This warranty does not cover accidental damage, normal wear and tear, abuse or improper handling. This warranty also does not cover any snowmobile that has been altered structurally, neglected, improperly maintained, used for racing, or used for purposes other than for which it was manufactured, or for any damages which occur during trailer transit or as a result of unauthorized service or the use of unauthorized parts. In addition, this warranty does not cover physical damage to paint or finish, stress cracks, tearing or puncturing of upholstery material, corrosion, or defects in parts, components or snowmobile due to fire, explosions or any other cause beyond Polaris' control.

This warranty does not cover the use of unauthorized lubricants, chemicals, or fuels that are not compatible with the snowmobile.

The exclusive remedy for breach of this warranty shall be, at Polaris' exclusive option, repair or replacement of any defective materials, or components or products. **THE REMEDIES SET FORTH IN THIS WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON FOR BREACH OF THIS WARRANTY. POLARIS SHALL HAVE NO LIABILITY TO ANY PERSON FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY DESCRIPTION, WHETHER ARISING OUT OF EXPRESS OR IMPLIED WARRANTY OR ANY OTHER CONTRACT, NEGLIGENCE, OR OTHER TORT OR OTHERWISE.** Some states do not permit the exclusion or limitation of incidental or consequential damages or implied warranties, so the above limitations or exclusions may not apply to you if inconsistent with controlling state law.

# WARRANTY

ALL IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE LIMITED IN DURATION TO THE ABOVE ONE YEAR WARRANTY PERIOD. POLARIS FURTHER DISCLAIMS ALL EXPRESS WARRANTIES NOT STATED IN THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you if inconsistent with controlling state law.

## How to Obtain Warranty Service

If your snowmobile requires warranty service, you must take it to a Polaris dealer authorized to repair Polaris snowmobiles. When requesting warranty service you must present your copy of the Warranty Registration form to the dealer. (THE COST OF TRANSPORTATION TO AND FROM THE DEALER IS YOUR RESPONSIBILITY). Polaris suggests that you use your original selling dealer; however, you may use any Polaris Servicing Dealer to perform warranty service.

Please work with your dealer to resolve any warranty issues. Should your dealer require any additional assistance they will contact the appropriate person at Polaris.

This warranty also gives you specific legal rights, and you may also have other rights which vary from state to state.

If any of the above terms are void because of state or federal law, all other warranty terms will remain in effect.

## Engine Oil

1. Always use Polaris engine oil.
2. Never substitute or mix oil brands as serious engine damage and voiding of warranty can result.

# WARRANTY

## Polaris Extended Service Contract

Polaris' extended engine service contract provides these benefits:

- Additional engine protection beyond the original twelve month warranty.
- Backed by the strength of Polaris - no third party involvement.
- Repairs use only genuine top quality Polaris parts.
- Peace of mind. The Polaris Extended Service Contract is honored by all authorized Polaris snowmobile dealers in North America. However, when possible, please contact the selling dealer. There are no cards for you to carry as repair authorization as your dealer is only a phone call away.
- Because the extended service contract is transferable for a \$35.00 fee, the snowmobile's resale value is increased.
- The Polaris Extended Service Contract is very affordable and can be financed with the Polaris Star Card.

### Conditions:

- The Polaris Extended Service Contract must be purchased within 90 days from the date of the unit's registration.
- Each repair visit is subject to a \$50.00 deductible.
- The Extended Service Contract applies to the first 5000 miles, or two calendar years from date of registration, whichever comes first. Tampering with the odometer shall void the Extended Service Contract. No extensions to coverage under the Extended Service Contract will be given.
- Snowmobiles used in commercial purposes or for racing are excluded from coverage.

### Coverage:

Second year coverage is extended to 1997 and 1998 model engine failures caused by defects in material and workmanship as determined by Polaris in its sole discretion. Used snowmobiles are not eligible under this program. Following is a partial list of exclusions from coverage:

- Damage due to accident, fire, explosion, theft, or other causes beyond Polaris' control.
- Damage caused by the failure of other components of the snowmobile.



# WARRANTY

## Polaris Extended Service Contract

### Coverage Exclusions (continued):

- Failures caused by improper fuel or oil.
- Failures caused due to improper adjustments, including but not limited to carburetor jetting and clutching.
- Failure due to unauthorized service.
- Failures due to lack of service as specified in the Owner's Manual or Polaris updates. This includes off-season storage as listed in the Owner's Manual.
- Failure due to unauthorized parts or modifications.
- Normal wear parts, including but not limited to: spark plugs, hoses, batteries, controls, and recoil ropes. Gaskets and intake and exhaust manifolds are covered (excluding paint coverage).
- Electrical coverage is limited to the CD and ECU box, coils, stator plate, and sensors. Wiring and other electrical components are excluded from coverage.
- Oil injection system coverage is limited to the control module, sensors, solenoids, pump, and throttle cable switch.
- Cooling system coverage is limited to the water pump assembly and components, fan, fan bearings, temperature sensor, gasket and seals.
- Non-wear related carburetor parts are covered. Carburetor jetting and adjustments are excluded from coverage. The fuel pump and choke are covered.
- Clutches and related clutch parts, including but not limited to the drive belt, are excluded from coverage.
- Electrical components are excluded from coverage.
- The gearcase and transmission are excluded from coverage.

### Polaris acknowledges the following products mentioned in this manual:

Loctite, Registered Trademark of the Loctite Corporation

Fox™, Registered Trademark of Fox Shox

Hi-Fax, Trademark of Himont Advanced Materials

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