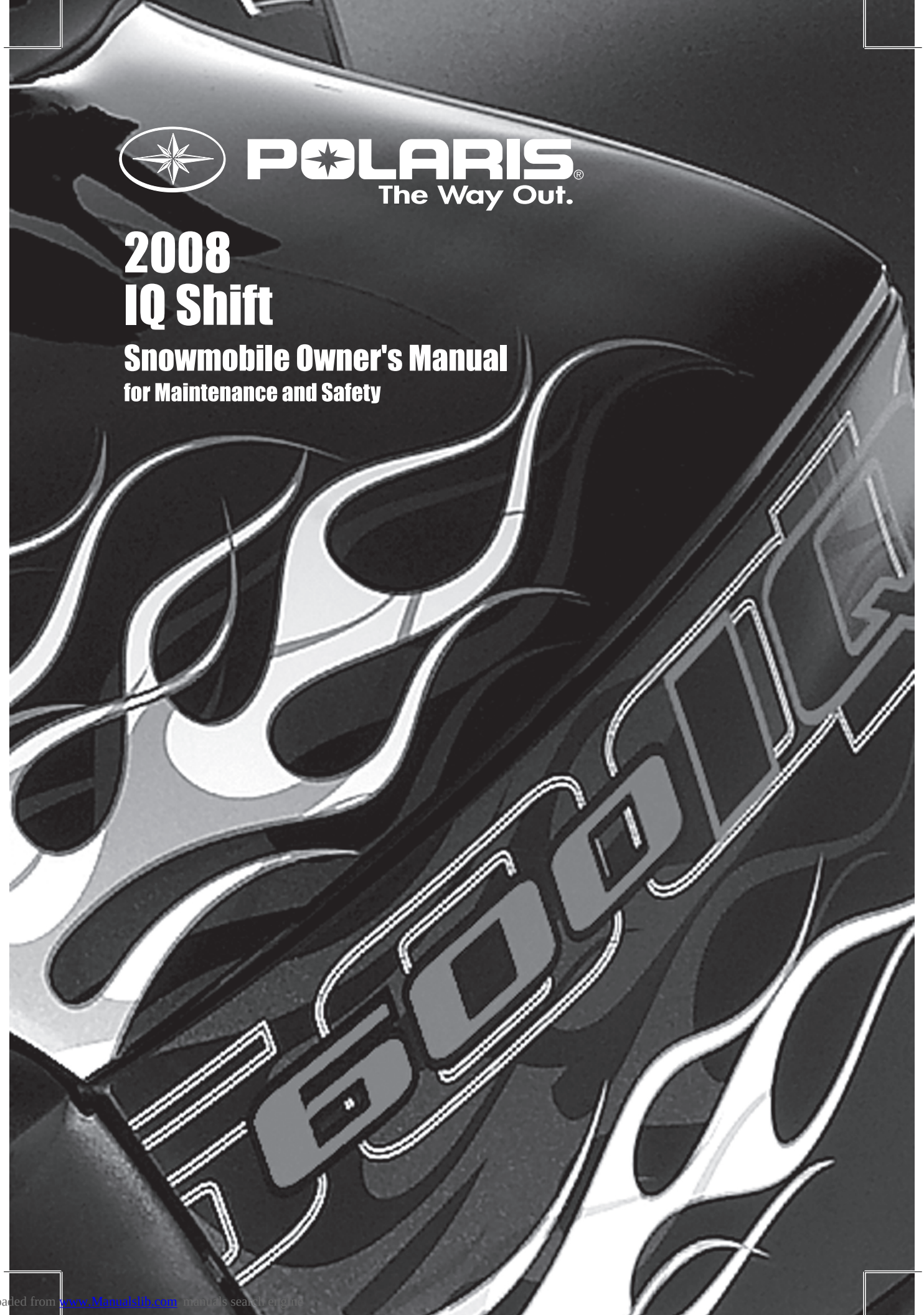
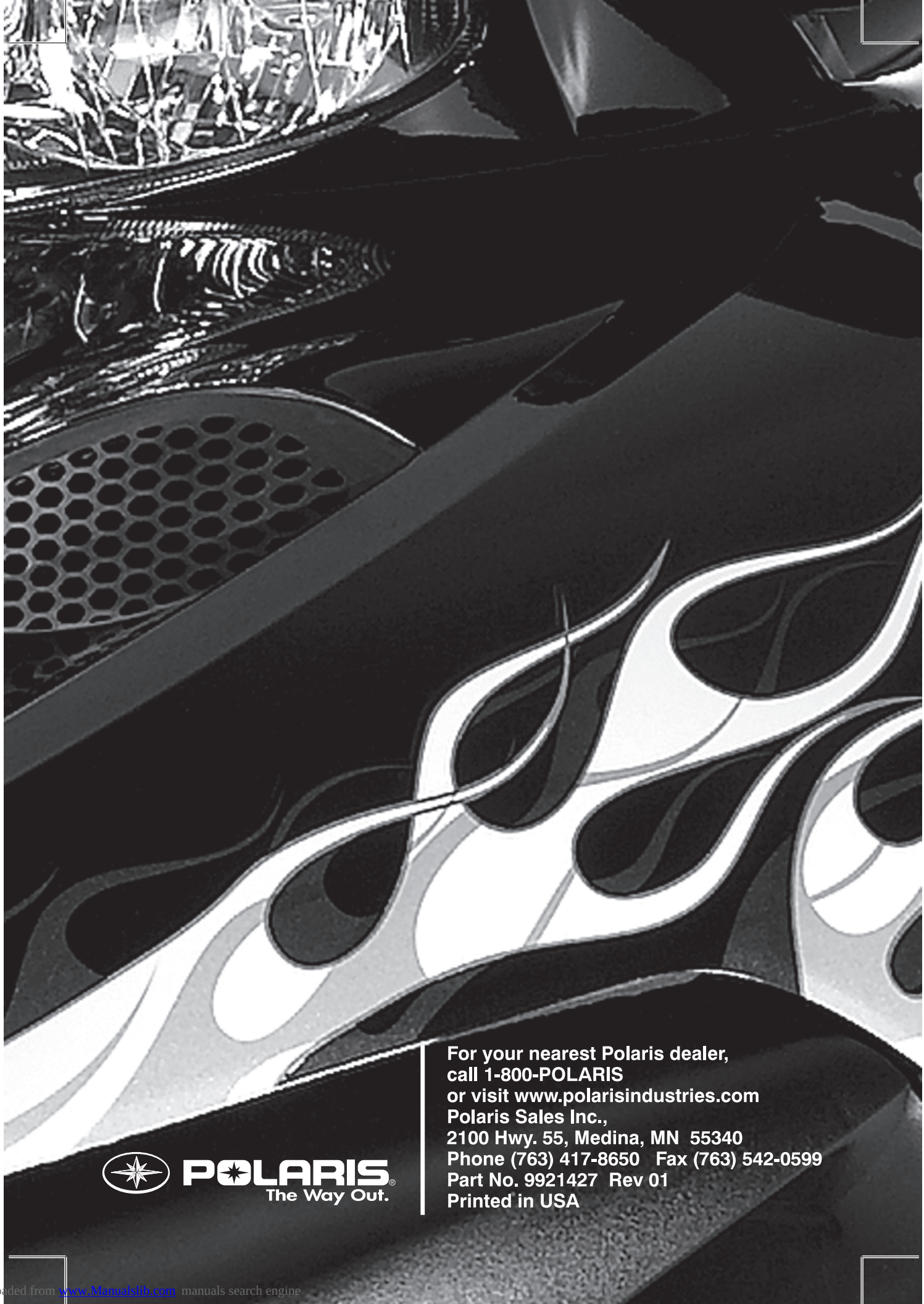


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POLARIS®
The Way Out.

For your nearest Polaris dealer,
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Phone (763) 417-8650 Fax (763) 542-0599
Part No. 9921427 Rev 01
Printed in USA

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⚠ 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.

⚠ WARNING

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

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WELCOME

Thank you for purchasing a Polaris vehicle, and welcome to our worldwide family of Polaris enthusiasts. Be sure to visit us online at www.polarisindustries.com for the latest news, new product introductions, upcoming events, career opportunities and more.

Here at Polaris we proudly produce an exciting line of utility and recreational products.

- Snowmobiles
- All-terrain vehicles (ATVs)
- *RANGER* utility vehicles
- Victory motorcycles

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

For safe and enjoyable operation of your vehicle, be sure to follow the instructions and recommendations in this owner's manual. Your manual contains instructions for minor maintenance, but information about major repairs is outlined in the Polaris Service Manual and should be performed only by a Factory Certified Master Service Dealer (MSD) Technician.

Your Polaris dealer knows your vehicle best and is interested in your total satisfaction. Be sure to return to your dealership for all of your service needs during, and after, the warranty period.

We also take great pride in our complete line of apparel, parts and accessories, available through our online store at www.purepolaris.com. Have your accessories and clothing delivered right to your door!

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Printed in U.S.A.

2008 IQ Shift Owner's Manual P/N 9921427

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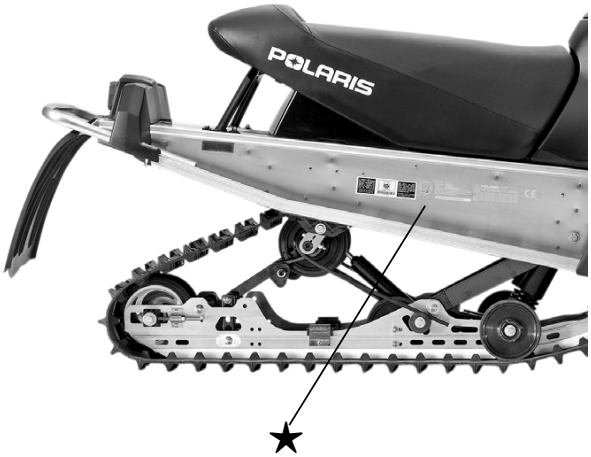
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INTRODUCTION
Vehicle Identification Numbers

Record your snowmobile's identification numbers and key number in the spaces provided. Remove the spare key and store it in a safe place. Your key can be duplicated only by mating a Polaris key blank with one of your existing keys, so if both keys are lost, the ignition switch must be replaced.



Vehicle Model Number: _____

Tunnel VIN (★)(right side of the tunnel):_____

Engine Serial Number (on recoil housing): _____

Key Number: _____

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 the snowmobile is sold.

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.

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Preservation of the Environment

Polaris is committed to supporting an environmental education campaign. We encourage governments 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 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.

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SAFETY
Operator Safety

The following signal words and symbols appear throughout this manual and on your vehicle. 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 vehicle or in this manual, alerts you to the potential for injury.

⚠ WARNING

The *safety alert warning* indicates a potential hazard that may result in serious injury or death.

⚠ CAUTION

The *safety alert caution* indicates a potential hazard that may result in minor injury or damage to the vehicle.

CAUTION

A *caution* indicates a situation that may result in damage to the vehicle.

NOTE

A *note* will alert you to important information or instructions.

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Operator Safety

Follow the recommended maintenance program beginning on page 66 of this manual to ensure that all critical components on the snowmobile are thoroughly inspected by your dealer at specific mileage intervals.

⚠ WARNING

Driving a snowmobile requires your full attention. DO NOT drink alcohol or use drugs or medications before or while driving or riding as a passenger. They will reduce your alertness and slow your reaction time.

Snowmobiles are capable of traveling at high speeds. Use extra caution to ensure operator safety. Make sure your snowmobile is in excellent operating condition at all times. Always 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.

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SAFETY
Operator Safety
Stay Clear of Track

Your snowmobile is propelled by a revolving track that must be partially exposed for proper operation.

⚠ WARNING

Serious injuries may result if hands, feet, or clothing become entangled in the track. Be alert when riding, and remain properly seated to stay clear of the track.

Never hold the snowmobile up or stand behind it while warming up the track. A loose track or flying debris could cause serious injury or death. We recommend having your dealer perform all track service and alignment procedures.



Stay Clear of Engine

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.

⚠ WARNING

Serious injury can occur if fingers or clothing contact the moving parts of an engine. Always stop the engine before attempting adjustments.

Riding Position

Operating a snowmobile requires skill and balance for proper control. Rider positions may vary with experience and the features available on some snowmobiles, but under many conditions, the proper position is to be seated with both feet on the running boards and both hands on the handlebar grips for proper throttle, brake and steering control.

⚠ WARNING

Improper riding position may reduce control and could result in serious injury or death. Always ride in a position that allows for control of your vehicle.

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Operator Safety

Riding Apparel

Be prepared, be warm and be comfortable when riding. Be aware of the weather forecast, especially the windchill, and dress accordingly. See the chart on page 20.



⚠ WARNING

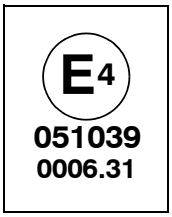
Avoid wearing loose clothing or long scarves, which can become entangled in moving parts and cause serious injury.

Helmet

Wearing a helmet can prevent a severe head injury. Whenever riding a Polaris vehicle, always wear a helmet that meets or exceeds established safety standards.

Approved helmets in the USA and Canada bear a U.S. Department of Transportation (DOT) label.

Approved helmets in Europe, Asia and Oceania bear the ECE 22.05 label. The ECE mark consists of a circle surrounding the letter E, followed by the distinguishing number of the country which has granted approval. The approval number and serial number will also be displayed on the label.



Eye Protection

Do not depend on eyeglasses or sunglasses for eye protection. Whenever riding a Polaris vehicle, always wear shatterproof goggles or use a shatterproof helmet face shield. Polaris recommends wearing approved Personal Protective Equipment (PPE) bearing markings such as VESC 8, V-8, Z87.1, or CE. Make sure protective eye wear is kept clean.

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SAFETY
Operator Safety
Survival Preparation

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.

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

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

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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.

Rider Capacity

Your Polaris snowmobile is designed for a single rider only. Do not carry a passenger.

Excessive Speed

⚠ WARNING

High speed driving, especially at night, could result in serious injury or death. Always reduce speed when driving at night or in inclement weather.

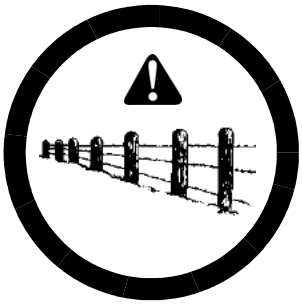
Always observe all laws governing snowmobile operation and speed limits. Always be alert and pay attention to the trail ahead. Multiplying speed (MPH) by 1.5 will equal the approximate number of feet per second your machine travels. If your speed is 40 MPH, your machine is traveling about 60 feet per 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.

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SAFETY
Operator Safety
Driver Awareness

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. You may drown if you break through the ice. Avoid travelling on frozen bodies of water.

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.

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Operator Safety

Avalanches

Snowmobilers should always be properly trained and equipped before traveling in mountainous terrain:



- Take an avalanche class
- Travel with experienced people
- Travel on designated trails
- Make sure each person is equipped with a shovel, probe and avalanche beacon.

You don't have to be snowmobiling on a slope for an avalanche to occur. Be aware that all of the snow is connected. You may be riding on a flat slope or snow covered road, but if the snowpack above is unstable enough you can trigger an avalanche on a steeper slope above you. Always be aware of snow conditions above you as you travel in mountainous terrain.

Before riding in mountainous terrain, call or log on to your local avalanche advisory to get current weather and snow stability information.

For more information about avalanche training and avalanche conditions, contact local law enforcement in your area, or visit either the American Avalanche Association online at www.americanavalancheassociation.org or the U.S. Forest Service National Avalanche Center at www.avalanche.org.

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SAFETY
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, remove ice and snow build-up that may be obstructing the steering linkage.

Driving on Slippery Surfaces

⚠ WARNING

Never attempt an abrupt change of direction when operating on slippery surfaces. Proceed slowly and use extra caution.

Driving on ice or hard-packed snow reduces steering and braking control, which may result in loss of control and serious injury or death. Slow down and use extra caution when operating on slippery surfaces.

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Operator Safety

Driving 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.

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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.

Use extra caution when operating in hilly terrain. If climbing a hill is unavoidable, keep 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.

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Operator Safety

Drive Belt

Do not operate the engine with the 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 injury or damage to the engine.

Intake Silencer

Do not operate the engine with the intake silencer or filter removed.

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

Clutches

Do not attempt to service the clutches.

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.

Maneuverability

While much control and maneuverability is achieved through the steering system and skis, maximum control is achieved by the shifting of your body weight. Maneuverability will change for lighter operators or machines designed to carry a load.

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SAFETY
Operator Safety
Inadequate Snow Conditions

⚠ WARNING

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

⚠ 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.

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Operator Safety

Driving Responsibly

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.
- When traveling in a group of snowmobiles, don't tailgate (follow too closely). Leave enough distance between snowmobiles to provide ample stopping room and to provide protection from flying snow and debris. Allow even more distance when driving on slippery surfaces or when driving in darkness or other low visibility conditions. Be aware of any snowmobile traffic around your vehicle. Drive defensively to avoid accidents.
- Remove the key from the ignition when you leave the snowmobile unattended.

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SAFETY
Operator Safety
Windchill/Temperature Charts

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

WINDCHILL CHART (°F)

Wind Speed in MPH	Actual Thermometer Reading (°F)																	
	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
	Equivalent Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98
Frostbite in >>							30 min.		10 min.		5 min.							

WINDCHILL CHART (°C)

Wind Speed in KPH	Actual Thermometer Reading (°C)																	
	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37	-40	-43	-46
	Equivalent Temperature (°C)																	
Calm	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37	-40	-43	-46
8	3	0	-	-7	-11	-14	-18	-22	-25	-29	-32	-36	-39	-43	-46	-50	-53	-57
16	2	-2	-6	-10	-13	-17	-21	-24	-28	-32	-36	-39	-43	-47	-50	-54	-58	-62
24	1	-3	-7	-11	-15	-19	-22	-26	-30	-34	-38	-42	-45	-49	-53	-57	-61	-65
32	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-39	-43	-47	-51	-55	-59	-63	-67
40	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41	-45	-49	-53	-57	-61	-65	-69
48	-1	-5	-9	-13	-18	-22	-26	-30	-34	-38	-42	-46	-50	-54	-58	-62	-66	-70
56	-2	-6	-10	-14	-18	-22	-26	-31	-35	-39	-43	-47	-51	-55	-59	-64	-68	-72
64	-2	-6	-10	-15	-19	-23	-27	-31	-35	-40	-44	-48	-52	-56	-61	-65	-69	-73
72	-2	-7	-11	-15	-19	-23	-28	-32	-36	-40	-45	-49	-53	-57	-61	-66	-70	-74
80	-3	-7	-11	-15	-20	-24	-28	-33	-37	-41	-45	-50	-54	-58	-62	-67	-71	-75
88	-3	-7	-12	-16	-20	-24	-29	-33	-37	-42	-46	-50	-55	-59	-63	-67	-72	-76
96	-3	-8	-12	-16	-21	-25	-29	-34	-38	-42	-47	-51	-55	-60	-64	-68	-73	-77
Frostbite in >>							30 min.		10 min.		5 min.							

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Safety Decals and Locations

Warning decals have been placed on the snowmobile for your protection. Read and follow the instructions of the decals and other warnings on the snowmobile carefully. If any of the decals depicted in this manual differ from the decals on your snowmobile, always read and follow the instructions of the decals on the snowmobile.

If any decal becomes illegible or comes off, contact your Polaris dealer to purchase a replacement. Replacement safety decals are provided by Polaris at no charge. The part number is printed on the decal.

Clutch Cover Warning

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

WARNING

Do not operate engine with hood open.

Do not attempt adjustment with engine running.

Do not operate engine with plenum/belt guard removed.

Never run engine with drive belt removed.

Never service clutches yourself -- see your dealer.

Pressure Cap Warning

This warning decal is found under the hood on the pressure cap of applicable liquid cooled models:

Do not open hot. Test or replace when changing coolant. Press down and turn to release cap. 13 PSI

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SAFETY
Safety Decals and Locations
Track Warning

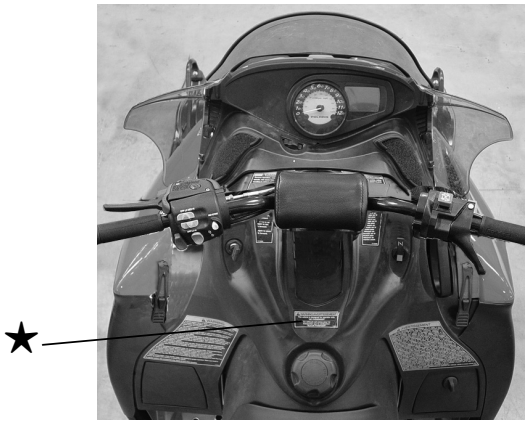
The track warning decal is on the rear of the tunnel:



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.

"No Passenger" Warning

The "NO PASSENGER" warning decal is on the console below the steering post:



WARNING

This vehicle is designed for operator only.

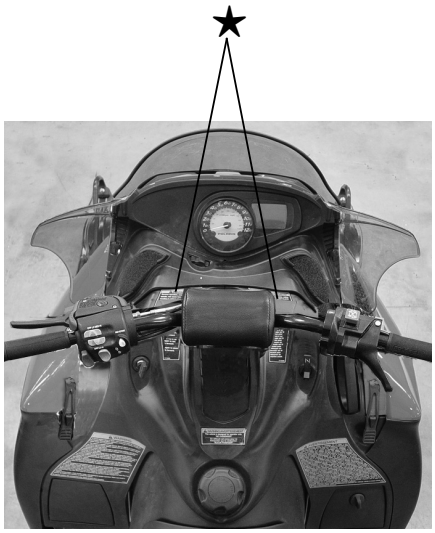
“NO PASSENGER”

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Safety Decals and Locations

Reverse Warning

The reverse warning decal is located on the console below the windshield:



WARNING

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

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

NOTE: For more information, see Owner's Manual.

If electric reverse:

- **Machine stopped and engine at idle, push yellow button on LH control to reverse. Flashing light on dash indicates reverse operation.**
- **Push button again to return to forward.**

Operation Warning

The operation warning decal is located on the lower console. See page 24 for the text.



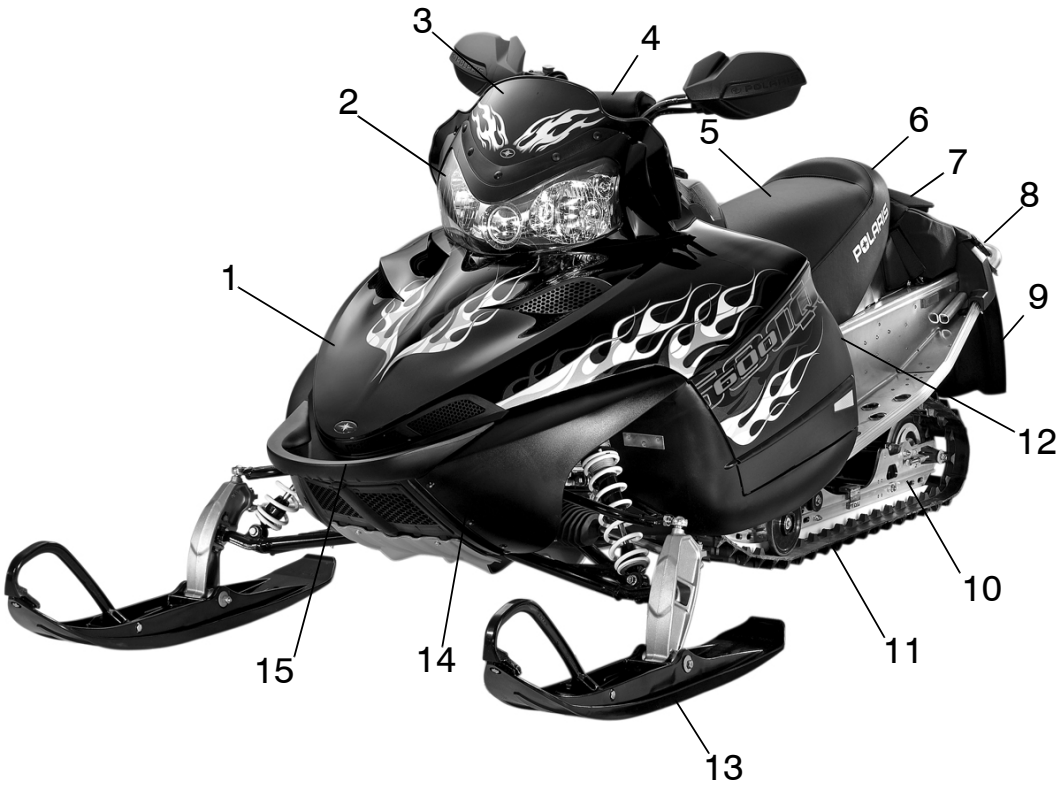
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SAFETY
Safety Decals and Locations
Operation Warning

- **To avoid serious injury or death, read and understand all warnings and the Owner's Manual before operation. If manual is missing, contact a Polaris dealer for a replacement.**
- **This vehicle is capable of high speeds. Buried objects or uneven terrain can cause loss of control. Reduce speed and use extreme caution when operating in unfamiliar terrain.**
- **Excessive speed, especially at night or with limited visibility, can result in insufficient time for you to react to terrain changes, to avoid unexpected obstacles, or to stop safely.**
- **Never consume alcohol or drugs before or while operating this vehicle.**
- **In an emergency, push down the Auxiliary Shut-Off Switch, located on the top of the throttle control assembly, to stop the engine. Then pull the brake lever to stop.**
- **Always wear an approved helmet, eye protection, and adequate clothing while operating this vehicle.**
- **This vehicle is designed for adult use only. Check local laws for age requirements.**
- **When operating with a passenger (on approved models only) reduce speed and allow extra space for steering and stopping. A passenger reduces your ability to control the vehicle.**
- **When operating on hard-packed snow, ice, or when crossing roads, steering and braking ability are greatly reduced. Reduce speed and allow extra space to turn or stop.**
- **To maintain vehicle control on ice or hard-packed surfaces, you should have a proper balance of ski carbides to track studs. See Owner's Manual for proper use of traction products.**
- **Repeated stops from high speed may cause fading or sudden loss of braking ability.**
- **Parking brake may relax when used for long periods. Do not leave brake engaged for more than five minutes.**
- **Before starting engine, check throttle, brake, and steering for proper operation. Make sure hood is latched. Be seated and in position to control the vehicle.**

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

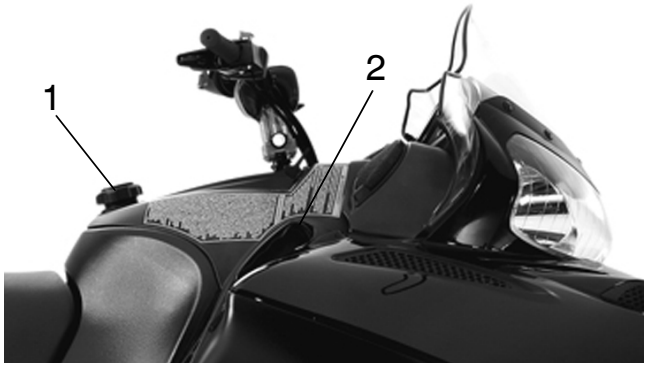
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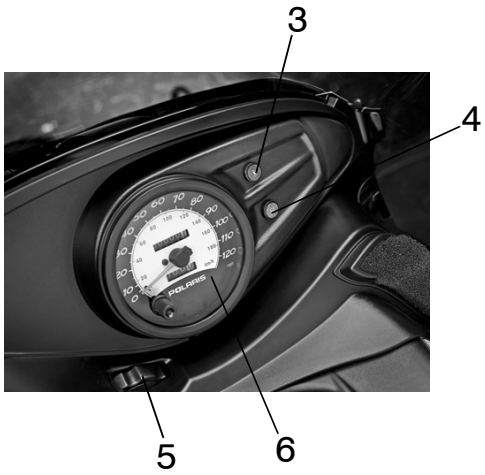


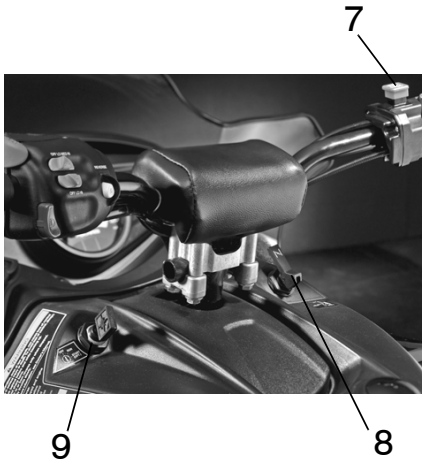
1. Hood
2. Headlight
3. Windshield
4. Handlebar
5. Seat
6. Seat Storage Compartment
7. Taillights
8. Rear Bumper
9. Snow Flap
10. Suspension
11. Track
12. Console Storage Compartment (if equipped)
13. Skis
14. Nosepan
15. Front Bumper (do not use for pulling or dragging the snowmobile)

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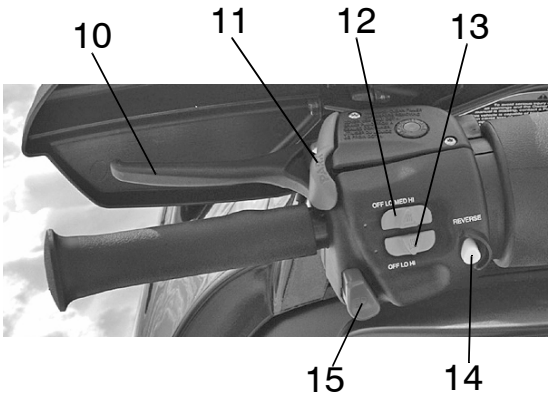
FEATURES

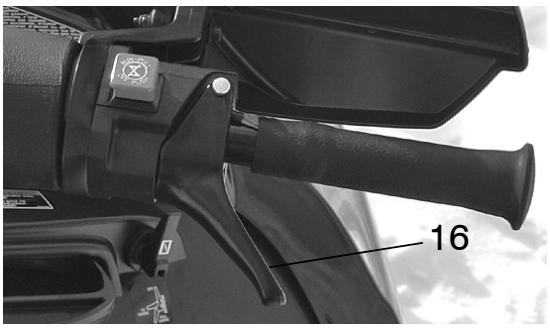






1. Fuel Filler Cap/Dipstick
2. Recoil Starter Handle
3. High Temperature Indicator
4. Reverse Indicator
5. Headlight Adjuster
6. Speedometer
7. Engine Stop Switch
8. Choke Lever
9. Ignition Switch
10. Brake Lever
11. Parking Brake
12. Handlebar Grip Warmer Switch
13. Thumbwarmer Switch
14. Electronic Reverse Button
15. Headlight Dimmer Switch
16. Throttle Control



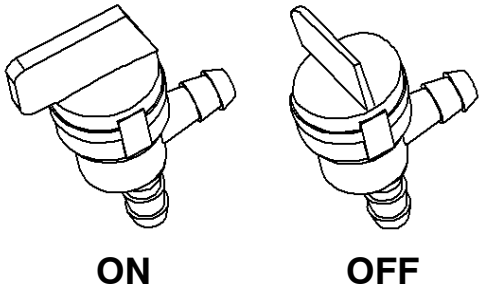


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Fuel Valve

The fuel valve is located under the hood. Turn the fuel valve off whenever the snowmobile is stored or parked.

1. Turn the valve clockwise to turn off the fuel supply.
2. Turn the valve counter-clockwise to turn on the fuel supply.



Adjustable Headlights

Adjust the headlight beam by moving the adjuster to the left or right.



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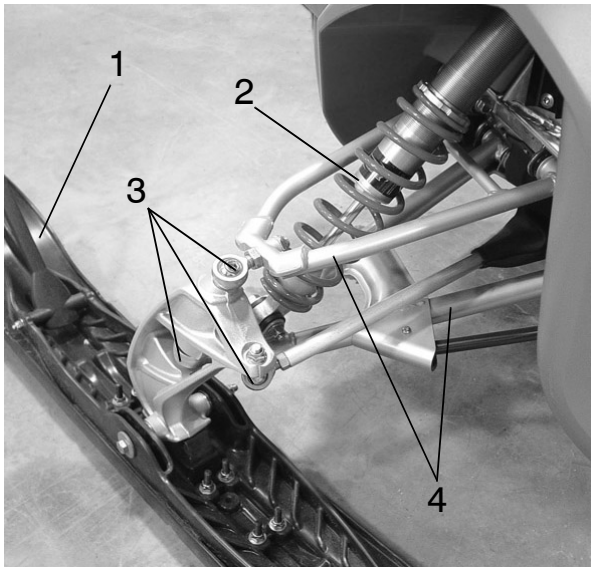
THE PERFECT FIT
Front Suspension Adjustments
Independent Front Suspension (IFS)

Break in the suspension for about 150 miles (240 km) before making any fine-tuning adjustments.

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, one change at a time, under the same conditions (trail and snow conditions, vehicle speed, riding position, etc.) after each adjustment until the best ride is achieved.

IFS Components

1. Skis
2. Front shocks and springs
3. Rod ends
4. A-arms



IFS Adjustment Options

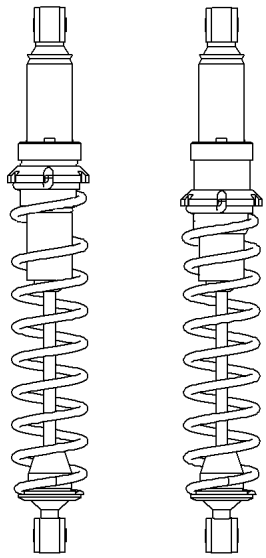
- Front shock spring preload
- Optional springs
- Optional shock valving

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Front Suspension Adjustments

Shock Spring Preload

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



Low Preload | High Preload

To change front shock spring preload, grasp the spring and rotate it.

Increasing the spring preload too much may adversely affect the handling of the snowmobile and the performance of the suspension. Never exceed one inch of preload beyond the factory settings, and ensure that both sides are adjusted the same. When decreasing preload, make sure at least two turns of preload are holding the spring between the retainer on the top of the shock and the threaded spring preload adjuster nut on the shock body. Failure to do so could cause the retainer to fall off when the suspension is fully extended.

NOTE: Not all models have shocks with thread-adjustable spring preload. See your dealer for more information.

CAUTION

On some models equipped with a plastic adjuster nut, the nut will break if it is unscrewed from the threaded body. Do not force the nut if resistance suddenly increases while you're turning it.

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THE PERFECT FIT
Front Suspension Adjustments
Shock Valving

Shocks can be revalved if spring preload alone isn't sufficient and further adjustment is desired to control suspension stiffness.

⚠ WARNING

Changing shock valving 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. We recommend that this work be performed by a Polaris dealer.

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Rear Suspension Adjustments

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 snowcross racing would provide a very stiff ride on the trail. A suspension set up for trail riding would bottom out harshly on a snowcross course.

Refer to the suspension setup label on your snowmobile, or see your Polaris dealer for initial suspension setup information. Additional adjustments can be made after initial setup. Make adjustments to one area at a time so you can evaluate the change. For further assistance, see your dealer.

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THE PERFECT FIT
Rear Suspension Adjustments
Suspension Performance Tips

- Rider weight usually determines the position at which the spring preload should be set. However, this may vary with riding style. With a little experimentation, each rider can find a preferred setup. These adjustments are easy to make, involve very little time or effort, and greatly affect the ride.
- In deep snow, a new rail slide will offer improved performance over worn rail slide. 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.

NOTE: 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 beginning on page 102.

Track Tension

Track adjustment is critical for proper handling. Always maintain correct tension and alignment. Refer to the track tension maintenance section beginning on page 94.

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Rear Suspension Adjustments

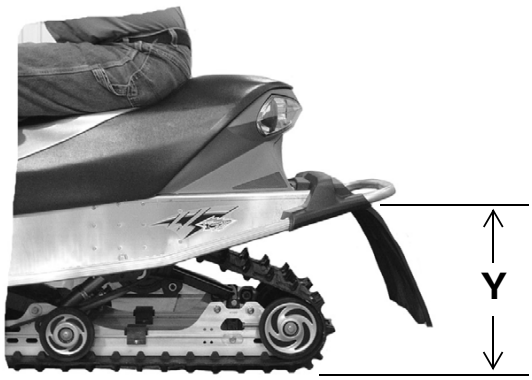
Initial Spring Preload Setting (Sag Method)

To set up the 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). If the measured sag is incorrect, adjust the FRA position and/or rear torsion spring preload.

Suspension	Recommended Sag	Adjustment	See Page
IQ (121)	4-5 inches (10-13 cm)	Torsion Spring Preload	34

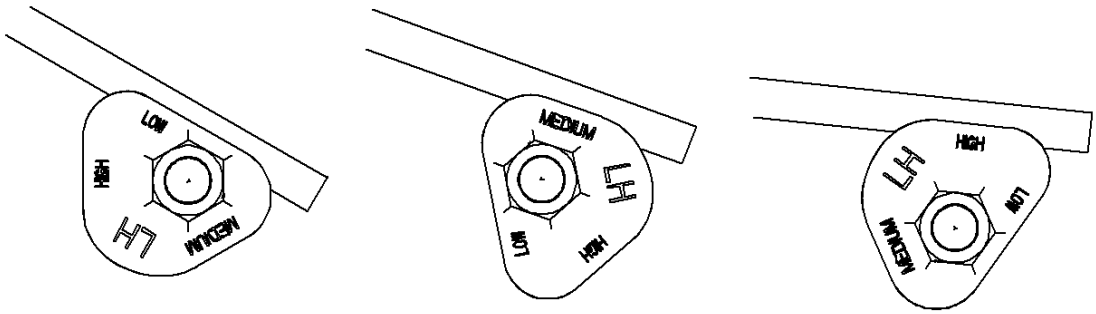
NOTE: This is only an initial setup, and final spring preload may vary based on rider preference and riding conditions.

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THE PERFECT FIT
IQ Rear Suspension Adjustments
Torsion Spring Preload

To adjust rear torsion spring preload, rotate the three-position cam using the engine spark plug tool. Adjustment is easiest when the cam is rotated from low to medium, and then to high. Rotating directly from low to high will require significantly more effort.

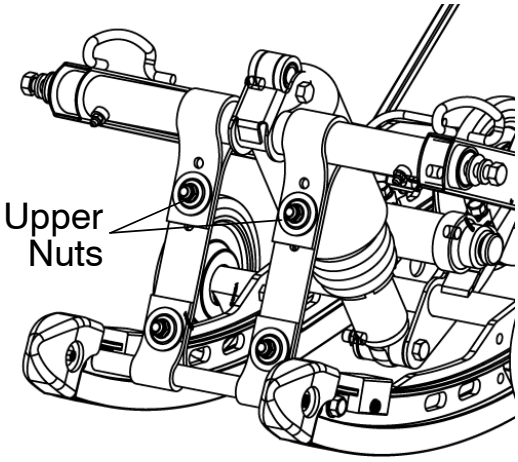
Different rate torsion springs are available if a firmer ride is desired. See your dealer for more information.



Soft Medium Firm

Limiter Strap Position (Ski Pressure)

Ski pressure is set at the factory to deliver the optimum balance between ride and handling. If a rider prefers more ski pressure for improved steering performance, adjustments can be made to the front limiter straps. Tighten the straps to increase ski pressure. Loosen the straps to reduce ski pressure.

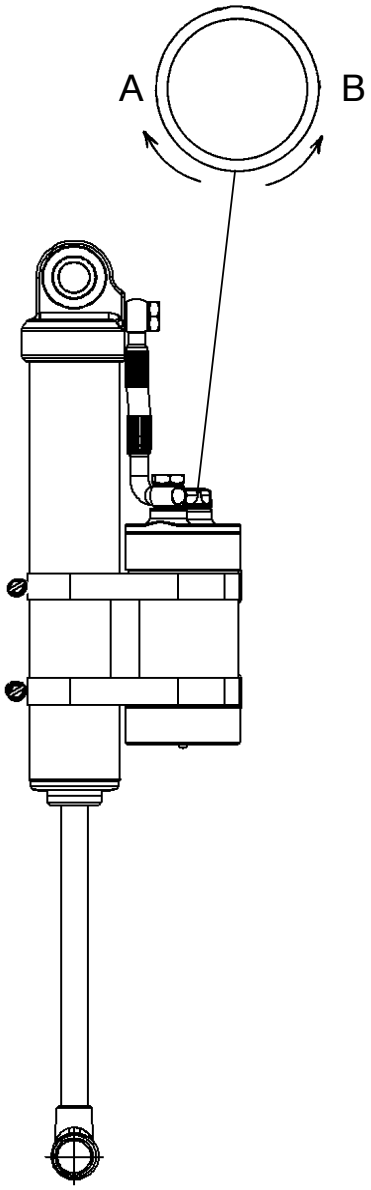


1. Remove the nuts and flat washers from the upper limiter straps.
2. Relocate the straps to the desired position.
3. Reinstall the nuts and washers. Tighten securely.

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IQ Rear Suspension Adjustments

Rear Shock Compression Damping (Premium Shocks)



Turn the adjustment knob on the shock reservoir to make adjustments to the compression damping. Positions are labeled on the shock. When adjusting, we recommend that you turn the adjuster slightly, then test ride.

- Turn the knob clockwise (A) for a stiffer ride.
- Turn the knob counter clockwise (B) for a softer ride.

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THE PERFECT FIT
IQ Rear Suspension Adjustments
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)

This type of coupling is available as an accessory for your model.

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 reducing kickback.

The factory setting is usually adequate for all riders and conditions.

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IQ Rear Suspension Adjustments

Suspension Coupling

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

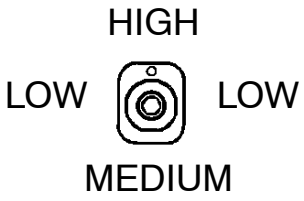
Moving the RRSS to a higher position will have the following effects on the suspension:

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

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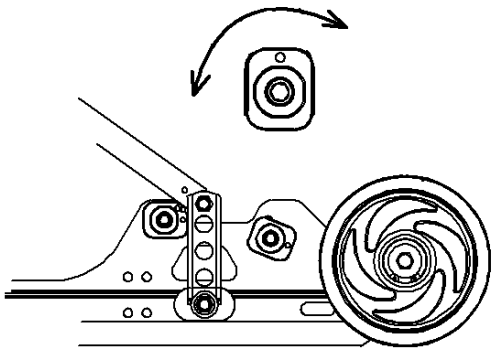
THE PERFECT FIT
IQ Rear Suspension Adjustments
Weight Transfer During Acceleration

The preferred method for controlling weight transfer during acceleration is by adjusting the rear rear scissor stop (RRSS). The factory setting is the best for most trail riding conditions.



To decrease weight transfer under acceleration (for improved cornering), rotate the RRSS to a higher position.

To increase weight transfer or ski lift during acceleration, rotate the RRSS to a lower position.



NOTE: Your dealer can help you with initial setup and additional setup instructions to help you achieve your optimum ride. A scissor stop tool is also available from your dealer.

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Accessories

Polaris offers a wide range of accessories for your snowmobile to help make each ride more enjoyable.

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
- Injury to self or others

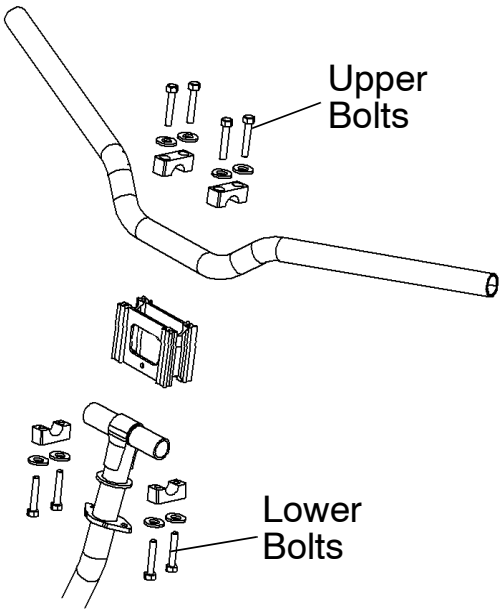
This applies, but is not limited to the following areas: brakes, clutches, fuel systems, and exhaust systems.

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

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THE PERFECT FIT
Handlebar Adjustments

When making handlebar adjustments, always be sure the handlebars, brake lever and throttle lever operate smoothly and do not contact the fuel tank, windshield or any other part of the vehicle when the handlebars are turned fully to the left or right.



Handlebar Position

Follow these steps to adjust handlebar position.

1. Remove the handlebar cover.
2. Loosen the four upper and four lower adjuster block bolts.
3. Adjust the handlebar to the desired position.
4. Torque the front bolts first, then torque the rear bolts. Torque the bolts to 15-17 ft. lbs. (20-23 Nm).
5. Reinstall the handlebar cover.

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Handlebar Adjustments

Handlebar Angle

Follow these steps to adjust handlebar angle at the handlebar block.

1. Remove the handlebar cover.
2. Loosen the four upper adjuster block bolts.
3. Adjust the handlebar to the desired angle.
4. Torque the bolts to 15-17 ft. lbs. (20-23 Nm).
5. Reinstall the handlebar cover.

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THE PERFECT FIT
Traction Products
Studs

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

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.

See your dealer about installing studs and/or carbides.

CAUTION
Always install wear strips before installing studs. Failure to install wear strips may result in cooler or tunnel damage. See page 43. 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 the recommended length on machines equipped with center coolers will result in center cooler damage or damage to the tunnel.

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.

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.

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. The center of the stud must be at least 1 1/8″ (2.86 cm) from the outside edge of the track.

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Traction Products

Carbide Skags

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. Use carbide skags with studded tracks to help maintain proper vehicle steering and control. See page 101.

If your machine has carbide skags, it may be necessary to add track studs to maintain proper vehicle control. Maintain a proper balance between the number of studs and the length of carbide on the skags (the more studs you use, the longer the carbide on the skags should be). See your dealer's track studding chart.

Wear Strips

To avoid excessive tunnel wear, tunnel wear strips must be installed whenever track studding is used. Wear strips are designed for a specific stud length. **See your dealer's studding chart for recommended traction accessories.**

CAUTION
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.

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PRE-RIDE INSPECTIONS
Pre-Ride Checklist

Inspect all items on the checklist for proper operation or condition before each use of the snowmobile. Procedures are outlined on the referenced pages. Look for a checkmark (✓) on the referenced pages to locate the pre-ride inspection items.

Item	See Page
Drive Belt Condition	91, 93
Steering System	48
Recoil Rope	49
Coolant Level	80
Parking Brake Lock/Brake Lever/Brake System	46, 47, 85
Auxiliary Shut-Off Switch (Engine Stop Switch)	50
Ignition Switch	50
Taillight/Brakelight/Headlight	50
Suspension Mounting Bolts	102
Skags (Wear Bars)	101
Ski Spindle Bolts	102
Hood Straps/Latches	49
Seat Latches (if equipped)	N/A
Throttle Lever/Safety Switch	60, 61
Rear Wheel Idler Bolts	97
Tether Switch/Strap (accessory)	50
Track Alignment/Condition	48, 98
Rail Slide Condition	102
Chaincase Oil Level	72
Injection Oil Level	57

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Before Starting the 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. The manual is your guide to safe and enjoyable snowmobiling experience.

Throttle Lever

The throttle and brake are the primary controls of your snowmobile. Always make sure both are functioning properly.

Squeeze the throttle lever to make sure it compresses evenly and smoothly. When released, the lever should immediately return to the idle position without binding or hesitation. If the throttle does not function smoothly, or if you discover excessive lever freeplay, DO NOT start the engine. Have the throttle serviced immediately.

Throttle Safety Switch

Test the throttle safety switch system before the machine is operated. See page 60.

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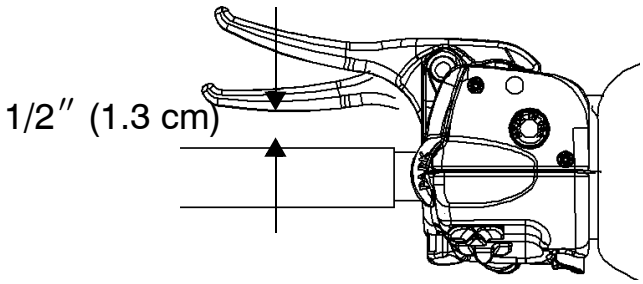
PRE-RIDE INSPECTIONS
Before Starting the Engine

Brakes

Always check the following items for proper operation before starting the engine.

Brake Lever Travel

Squeeze the brake lever. It should move no closer to the handgrip than 1/2″ (1.3 cm). A smaller distance indicates low brake fluid level or air in the hydraulic system. Refer to the brake bleeding information on page 87 or see your dealer for service.



Lever Feel

If the brake lever feels “spongy” when squeezed, check the brake fluid level and condition. Add fluid as needed. See page 86.

⚠ WARNING

Continued use of “spongy” brakes may cause a complete loss of brakes, which could result in serious injury or death. Always have the brakes serviced at the first sign of sponginess.

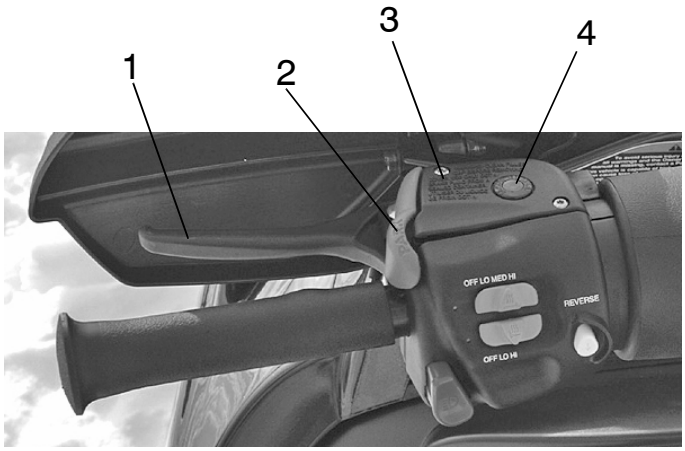
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Before Starting the Engine

Parking Brake Lever Lock

Use the parking 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.

1. Brake Lever
2. Parking Brake Lever Lock
3. Master Cylinder Reservoir/ Cover
4. Fluid Level Indicator



Lock Engagement

To engage the lock, squeeze the brake lever tightly and push forward on the lock. Hold the lock forward while releasing the brake lever.

NOTE: If the brake lever is squeezed tightly enough, the lock will move freely into place. Do not force the lock or it may break.

The brake light will illuminate if the parking brake lever lock is set while the engine is running. It will also illuminate when the service brake is in use. If the parking brake light does not come on when the parking brake or service brake is in use, have it serviced by your dealer.

Lock Release

To release the lock, squeeze the brake lever tightly. The lock will return to the unlock position.

⚠ WARNING

If the parking brake lever lock is partially or entirely engaged while riding, the brakes may overheat, resulting in brake damage. In extreme cases it could cause a fire, which could result in serious injury or death. Always ensure that the lever lock is completely disengaged before operating the snowmobile.

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PRE-RIDE INSPECTIONS
Before Starting the Engine

Steering System

⚠ 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, remove ice and snow build-up that may be obstructing the steering linkage.

Track

⚠ WARNING

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. Always inspect the track for damage before using the vehicle.

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.

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Before Starting the Engine

Hood Latches

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. Always ensure that the hood straps are in good condition and that the latches are securely in place before operating the snowmobile.

Recoil Rope

Inspect the recoil rope and handle for excessive wear, and make sure the knot securing the rope inside the handle is secure. If excessive wear is found, see your Polaris dealer for replacement.

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PRE-RIDE INSPECTIONS
Start the Engine and Check

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 Before Starting the Engine beginning on page 45.

Engine Stop Switch

Check the auxiliary shut-off switch for proper operation. Push the switch down to stop the engine. Pull it up to allow restarting.

Ignition Switch

Make sure the engine stops when the ignition switch is turned to OFF.

Tether Switch (if equipped)

If your machine has a tether switch, remove the tether from the switch to make sure the engine stops immediately.

Lighting

Check the headlight (high and low beam), taillight, and brake light. Replace burned out lamps before operating.

Mirrors (if equipped)

Adjust the mirrors so they can be used to their full advantage.

Operating Area

Before driving away, check your surroundings. Be aware of obstacles and make sure bystanders are a safe distance from the machine.

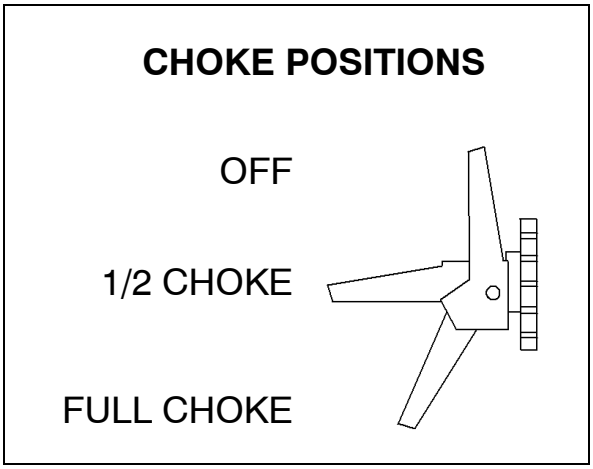
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Starting the Engine

CAUTION

Engaging the starter when the engine is running WILL result in serious engine damage, especially if the transmission is in reverse. Never engage the starter when the engine is running.

1. Turn the fuel valve on. See page 27.
2. Turn the key to the ON position.
3. Pull the engine stop switch up to the RUN position.
4. If starting a cold engine, flip the choke toggle to FULL CHOKE. Do not use the choke if starting a warm engine.



NOTE: Do not depress the throttle until the engine starts.

⚠ CAUTION

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

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

5. If equipped with electric start, turn the key to START to crank the engine. Release the key to the ON position when the engine starts.
6. If not equipped with electric start, grasp the starter handle and pull slowly until the recoil engages; then pull abruptly to crank the engine.
7. Repeat the cranking procedure as needed until the engine starts.
8. 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 CHOKE position.

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OPERATION
Emergency Stopping

The following chart lists methods for stopping the snowmobile in the event of an emergency. See page 60 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 jackshaft	All
Choke	Floods engine	Half throttle or less
Engine Stop Switch	Interrupts ignition circuit	All
Throttle Safety Switch	Interrupts ignition circuit	All
Tether Switch (accessory)	Interrupts ignition circuit	All

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 fuel 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

Excessive heat build-up during the first three hours of operation will damage close-fitted engine parts. Do not operate at full throttle or high speeds for extended periods during the first three hours of use. Vary the throttle openings and machine speeds to reduce friction on all close-fitting machined parts, allowing them to break in slowly without damage.

Use of any lubricants other than those recommended by Polaris may cause serious engine damage. We recommend the use of Polaris lubricants for your vehicle.

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

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Engine Break-In

Oil Injection System

Always check and fill the oil tank when refueling. See page 57.

CAUTION
Serious engine damage can occur without the proper lubrication. Check the oil tank level often during the first tank of fuel. If the oil level doesn't go down, contact your dealer immediately.

Oil Recommendations

This snowmobile is equipped with a variable exhaust system (VES). Engine lubrication comes from oil added to the fuel and oil injection systems. Polaris recommends the use of VES II 2 Cycle Oil for this engine. See page 106 for the part numbers of Polaris products.

Never mix brands of oil. Serious chemical reactions can cause injection system blockage, resulting in serious engine damage. Oils may also 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.

Slide Rail and Track Cooling

CAUTION
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. Avoid operating on ice, hard-packed surfaces or roads.

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OPERATION
Track Warm-Up

⚠ WARNING

A loose track or flying debris could cause serious 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 warming up the track. Do not use excessive throttle during warm-up or when the track is free-hanging. Use a stable rear support.

⚠ WARNING

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

Follow these steps to ensure proper warm-up of the engine, drive train and track.



1. Use an appropriate stand to securely support the rear of the snowmobile at the rear bumper. The track should be about 4″ (10 cm) off the ground.
2. Start the engine and allow it to warm up two to three minutes.
3. Depress the throttle abruptly and allow the track to rotate several revolutions.

NOTE: It will take longer to warm up the track sufficiently during colder outdoor temperatures.

4. Release the throttle, apply the brakes, shut off the engine and lower the machine to the ground.
5. Grasp the skis by their front loops and move them from side to side to loosen snow and ice.

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Fuel

⚠ WARNING

Gasoline is highly flammable and explosive under certain conditions.

- Always exercise extreme caution whenever handling gasoline.
- Always refuel outdoors or in a well-ventilated area.
- Always turn off the engine before refueling.
- Do not overfill the tank. Do not fill the tank neck.
- Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- If gasoline spills 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. Engine exhaust fumes are poisonous and can cause loss of consciousness or death in a short time.
- Turn the fuel valve off whenever the snowmobile is stored or parked.

⚠ WARNING

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm. Operate this vehicle only outdoors or in well-ventilated areas.

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OPERATION
Fuel

For peak performance, Polaris recommends the use of 91 octane or higher fuel. Although 87 octane fuel is usable, some engine performance will be lost and fuel economy will decrease. Do not use lower than 87 octane fuel. *Do not use fuel containing more than 10% ethanol (including E85).*

CAUTION
Operating with obstructed fuel systems will result in serious engine damage. Perform maintenance as recommended. Prolonged exposure to petroleum based products may damage paint. Always protect painted surfaces when handling fuel.

Fuel System Deicers

If you use non-oxygenated fuel, Polaris recommends the regular use of isopropyl-based fuel system deicer. Add one to two ounces per gallon (8-16 ml per liter) of gasoline to prevent engine damage resulting from fuel system icing and lean fuel mixtures. *Never use deicers or additives containing methanol.* Polaris also recommends the use of Carbon Clean Plus. See page 106 for the part numbers of Polaris products.

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

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Oil

Low Oil Indicator Light

The low oil indicator light will alert the operator if the oil level is low. Visually check for oil in the bottle. Add oil before further operation of the snowmobile. See page 53 for oil recommendations.

Low Oil Level

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

CAUTION
Operating the snowmobile without adequate engine lubrication can result in serious engine damage. Always check the oil level when refueling. Add oil as needed.

Always maintain a visible level of oil in the tank. If oil is not visible, continued operation may cause serious engine damage. See page 53 for oil recommendations.

The Polaris oil cap on the oil bottle is vented to allow proper oil flow. See your Polaris dealer for recommended replacement parts.

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OPERATION
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.

⚠ WARNING

Improper carburetor adjustments may result in operator safety hazards as well as serious engine damage. Always have your Polaris dealer perform any carburetor adjustments.

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Carburetion

Jetting Guidelines

Changes in altitude and temperature affect air density, which is the amount of oxygen available for combustion. In low elevations and cold temperatures, the air has more oxygen. In higher elevations and higher temperatures, the air is less dense.

The carburetors are calibrated for an altitude of 0-2000 ft. (0-600 m) and ambient temperatures between -15° to +5° F. (-26° to -15° C). Carburetors must be re-calibrated if the snowmobile is operated outside this production temperature and/or altitude range. The main jet installed in production is not correct for all altitudes and/or temperatures. See page 78 for more information.

CAUTION
A main jet that's too small will cause a lean operating condition and may cause serious engine damage. Jet the carburetors carefully for elevation and temperature according to the jetting charts in your Owner's Manual Supplement.

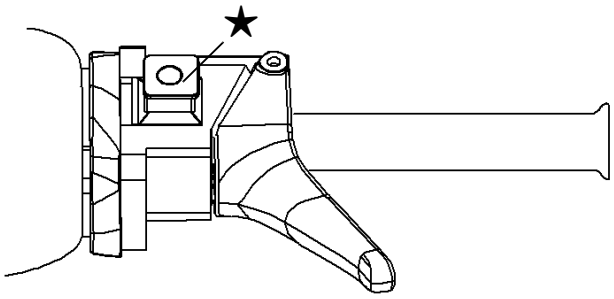
NOTE: It's the owner's responsibility to ensure that the correct jets are installed in the machine for a geographical area. Be very careful when jetting down in warm weather. As the weather turns colder it will be necessary to re-jet upward to prevent engine damage. When selecting the proper main jet always use the lowest elevation and temperature that is likely to be encountered.

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OPERATION

Engine Stop Switch

Push down on the engine stop switch (★) to ground out the ignition and stop the engine quickly. Pull the switch up to the ON position to allow restarting.



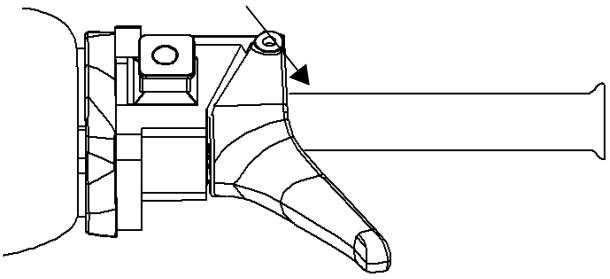
Throttle Safety Switch

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

Operating the snowmobile with a faulty throttle safety switch can result in serious injury or death in the event of an accident. 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 again until the malfunction has been corrected by your dealer.

Test the throttle safety switch system daily before operation.



1. Sit on the seat.
2. Start the engine and allow it to idle.
3. Hold the throttle lever pin stationary by exerting pressure on the pivot pin in the direction shown in the illustration.
4. Apply a slight amount of throttle. A properly functioning switch must shut down the engine.

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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 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 freeplay 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.

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OPERATION
Electronic Reverse (PERC™)

Electronic reverse will activate only if the engine RPM is below 4000.

⚠ WARNING

Improper reverse operation, even at low speeds, may cause loss of control, resulting in serious injury or death. Damage will occur to the chaincase or transmission if shifting is attempted when the engine is operating above idle speed.

- Shift to or from reverse only when the snowmobile is stopped and when engine speed is at idle.
- Look behind the vehicle before and while backing.
- Avoid sharp turns.
- Apply throttle slowly.

Engaging Reverse

1. Stop the snowmobile and leave the engine idling.
2. Make sure the area behind your vehicle is clear.
3. Push the yellow reverse button on the left-hand control for one second, then release. The engine will automatically reduce RPM and start a reverse rotation. A flashing reverse light on the instrument panel will indicate that the machine is in reverse.
4. Apply the throttle slowly to make sure the machine is in reverse.

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

NOTE: If the engine stops running, the snowmobile will be in forward gear when it's restarted.

Disengaging Reverse

1. Stop the snowmobile and leave the engine idling.
2. Push the yellow reverse button for one second and release. The engine will slow and and begin to rotate forward. The light on the instrument panel will shut off.
3. Apply the throttle slowly to make sure the machine is in forward.

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Towing

Do not use the front bumper to pull or drag the snowmobile. The front bumper is not designed for this type of use and may detach from the vehicle if force is applied.

For your safety, do not attempt to use a tow hitch until you've read the following warnings and understand the proper hitch functions.

⚠ WARNING

Objects towed with a rope have no braking power and can easily collide with the rear of the snowmobile or other objects, resulting in serious injury or death. DO NOT tow toboggans, sleds, saucers, or any type of vehicle with a rope. Only a stiff metal pole connecting the towed object and the 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 snowmobile's track and a person riding in the towed object.

Braking distances increase when towing loads. Slow down to maintain control of the snowmobile.

If the snowmobile becomes 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 to the ski loops) to prevent damage to the steering components. Remove the drive belt before towing, and have someone ride on the towed snowmobile to operate the brake and steering when necessary.

CAUTION

Towing a disabled snowmobile with the drive belt in place can result in serious damage to the engine and drive system. Always remove the drive belt from a disabled snowmobile before towing.

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MAINTENANCE
Emission Control Information

Any qualified repair shop or qualified person may maintain, replace, or repair the emission control devices or systems on your snowmobile.

Emission Control Label

Your snowmobile is equipped at the time of sale with an emission control information (ECI) label and a factory-installed emissions information hangtag. These items are required by U.S. Environmental Protection Agency regulations. The ECI label is permanently affixed to either the right side of the tunnel or the engine recoil cover. The ECI label should not be removed, even after you purchase the snowmobile. You may remove the factory-installed emissions information hangtag, which is intended solely for your use in making a purchasing decision.

Emission Control Maintenance Requirements

Your snowmobile is certified to operate on gasoline with a minimum octane level of 87 (R+M)/2. The emission control system designation per SAE J1930 is EM. If your snowmobile is equipped with a check engine light and it comes on, you must take your snowmobile to a qualified dealer for diagnostic service. Specifications and adjustments for engine tune-ups are located in the Service Manual, which is available to your qualified service technician. Reverse (if equipped) must not be engaged during engine tune-ups.

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Emission Control Information

Owner's Responsibilities

Please read the Snowmobile Engine Emissions Limited Warranty on page 119, and read the maintenance section of your owner's manual. You are responsible for ensuring that the specified maintenance is performed, including the emission-related maintenance outlined in these sections of the manual.

You must inspect the air intake system on your snowmobile prior to each use (including the airbox foam filter and hood foam filters) and clean these components as necessary. Polaris considers the specified maintenance for the spark plugs, oil changes, air intake system and exhaust valves to be critical emission-related maintenance. The specified maintenance for the fuel filter is recommended additional emission-related maintenance. Polaris recommends that you contact an authorized Polaris dealer to perform any service that may be necessary.

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MAINTENANCE
Polaris Recommended Maintenance Program

To ensure many trouble-free miles of snowmobiling enjoyment, follow recommended regular maintenance and perform service checks as outlined in this manual. Record maintenance and service in the Maintenance Log beginning on page 121.

The recommended maintenance schedule on your snowmobile calls for service and maintenance inspections at 150 miles (240 km), 500 miles (800 km) and 1000 miles (1600 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 make adjustments to 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.

CAUTION
Hot components can cause damage to plastic. Always make sure the exhaust system and engine have cooled before tipping the snowmobile on its side for service or inspection.

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Periodic Maintenance Interval Table

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	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
CLUTCH						
Clutch Alignment Offset (without belt)	90		I	I	I	
Drive Belt Condition	91		I	I	I	I
Clutches (disassemble)	90		C	C	C	
Belt Tension	--		I	I	I	I
Clutch Sheaves	90		I	I	I	I
ENGINE/COOLING						
Engine Mounts	--		I	I	I	I
Recoil Rope	--		I	I	I	I
Engine Torque Stop	93		I	I	I	I
Cylinder Head Bolts	--		I	I	I	
Cylinder Base Nuts	--	I	I	I	I	
Ignition Timing BTDC	--		I	I	I	
VES System	--		C	C	C	I
Coolant Level	80		I	I	R	I
Coolant Hose	--		I	I	I	I
Heat Exchangers	82	I	I	I	I	I
Coolant Circulation	--		I	I	I	
Coolant Leaks	--		I	I	I	I
Spark Plug Condition	75	I	I	I	R	I
Exhaust Pipe	83				I	I
Exhaust Retaining Springs	83		I	I	I	I

I - Inspect (clean, adjust, tighten, lubricate, replace if necessary)
C - Clean R - Replace L - Lubricate

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MAINTENANCE
Periodic Maintenance Interval Table

Item	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
BRAKES						
Hose Routing	--		I	I	I	I
Hose Condition	--		I	I	I	I
Fluid Leaks	--		I	I	I	I
Brake Pads	85		I	I	I	I
Brake Disc	--		I	I	I	I
Parking Brake	47		I	I	I	I
Brake System	46, 85					I
Brake Fluid	86				R	
FUEL MANAGEMENT						
Pilot Air Screws	--		I	I	I	
Carburetor (synchronize)	78		I	I	I	
Idle RPM	--		I	I	I	
Throttle Lever	61	I	I	I	I	I
Oil Pump Lever (synchronize)	--		I	I	I	
Throttle Cable	71		L	L	L	
Choke Cable	71		L	L	L	
Choke	71		I	I	I	
Vent Lines	--		I	I	I	I
Throttle Position Sensor	--		I	I	I	
Fuel Lines	77	I	I	I	I	I
Fuel Filter	77			R	R	
Oil Filter	76			R	R	
Oil Lines	76			I	I	I
Air Box	--	I	I	I	I	I
Drain and Water Traps	79		I	I	I	
ELECTRICAL						
Auxiliary Shut-Off Switch	60	I	I	I	I	I
Throttle Safety Switch	60	I	I	I	I	I
Ignition Switch	--	I	I	I	I	I
Taillight	50	I	I	I	I	I
Brakelight	50	I	I	I	I	I
Headlight	50	I	I	I	I	I

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Periodic Maintenance Interval Table

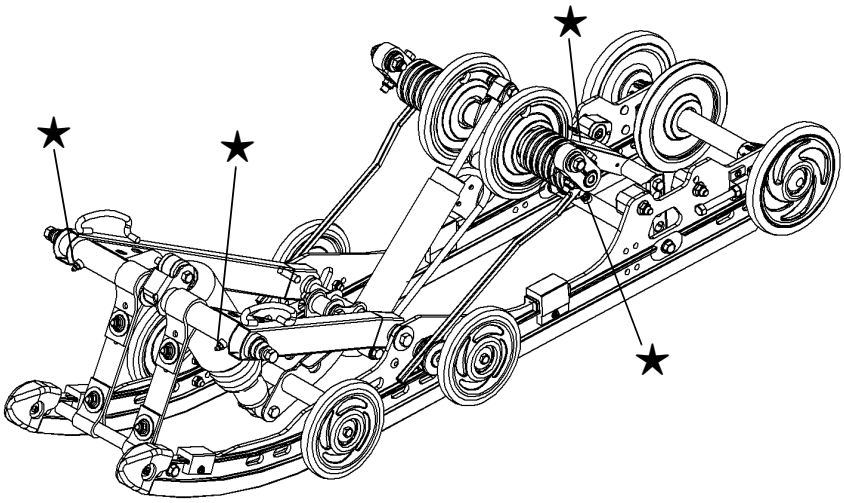
Item	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
CHASSIS						
Ski Toe Alignment	--		I	I	I	
Suspension Mounting Bolts	--	I	I	I	I	I
Steering Fasteners	--	I	I	I	I	C
Rear Suspension Fasteners	--	I	I	I	I	I
Suspension Shock Oil	--		I	I	I	I
Cooling Fins and Shroud	--		I	I	I	I
Drive Shaft Bearing	71		L	L	L	I
Jackshaft Bearings	104		L	L	L	I
Skags (Wear Bars)	101	I	I	I	I	I
Ski Saddle/Spindle Bolts	--	I	I	I	I	I
Drive Chain Tension	84	I	I	I	I	I
Hood Latches	49	I	I	I	I	I
Rear Wheel Idler Bolts	97	I	I	I	I	I
Idler Bolt Jam Nut	97	I	I	I	I	I
Rear Suspension Pivot Shafts	70		L	L		L
Steering Post U-Joint	70		L	L		L
Camber Alignment	--		I	I	I	
Handlebar Centering	--					I
Tether Switch and Strap	50	I	I	I	I	I
Track Alignment	98	I	I	I	I	I
Track Tension	96	I	I	I	I	I
Front Limiter Strap	--	I	I	I	I	I
Rail Slide Condition	102					I
Chaincase Oil	72	I	I	I	R	I

I - Inspect (clean, adjust, tighten, lubricate, replace if necessary)
C - Clean R - Replace L - Lubricate

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MAINTENANCE
Lubrication
Front Suspension
The front suspension does not require lubrication.

Rear Suspension
Lubricate the suspension pivot shafts with Polaris Premium All Season Grease at 500 miles (800 km) initially, every 1000 miles (1600 km) after that, and before off-season storage each year. Lack of lubrication will adversely affect your ride and the life of the suspension. For more information about suspension lubrication and adjustments, see your Polaris dealer.

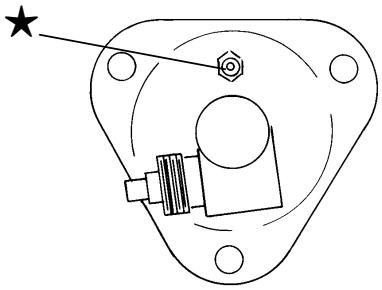


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Lubrication

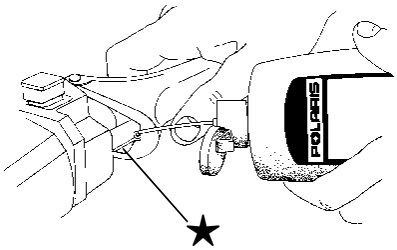
Driveshaft Bearing

Inject grease into the fitting on the speedometer sensor housing until grease purges from the seal on the inside of the tunnel. This should take approximately two pumps. Do not use more than four pumps.



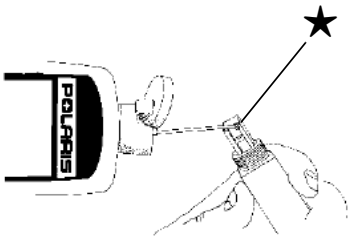
Throttle Cable

Lubricate the throttle cable lightly with grease or oil. With the engine off, turn the handlebars to the left and lubricate liberally as shown.



Choke and Choke Cable

Lubricate the choke slide and cables lightly with oil or grease. 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.



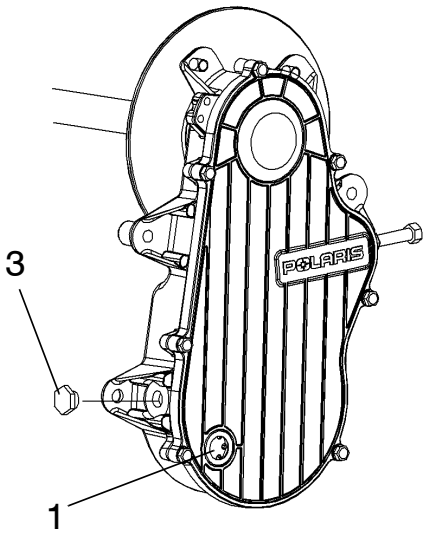
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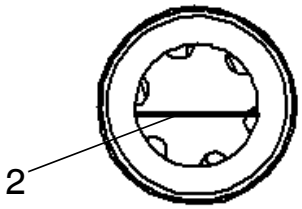
MAINTENANCE
Lubrication

Chaincase Oil

Check the chaincase oil level at the intervals outlined in the maintenance charts beginning on page 66. The sight glass (1) is located on the lower rear of the chaincase. Maintain the oil level at or slightly below the center of the sight glass (2). Change the chaincase oil after the first 500 miles (800 km), then every 1000 miles (1600 km) or seasonally.

Polaris recommends the use of Polaris Synthetic Chaincase Lube. See page 106 for the part numbers of Polaris products.





Oil Check

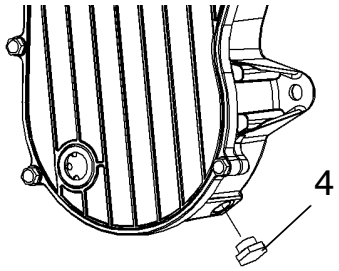
1. Position the vehicle on a level surface.
2. View the oil level at the sight glass.
3. Remove the fill plug (3) and add the recommended oil as needed. Do not overfill.
4. Reinstall the fill plug, making sure it is seated properly.

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Lubrication

Chaincase Oil

Oil Change



1. Position the vehicle on a level surface.
2. Remove the drain plug (4) and drain the oil into a drain pan. Allow the oil to drain completely.
3. Clean off all metal shavings from the plug.
4. Install a new sealing washer on the drain plug.

NOTE: The sealing surfaces on the drain plug and the oil tank should be clean and free of burrs, nicks or scratches.

5. Reinstall the drain plug. Torque to 6-10 ft. lbs. (8-13 Nm).
6. Remove the fill plug. Clean off all metal shavings from the plug.
7. Add 11 oz. (325 ml) of the recommended oil. Do not overfill.
8. Reinstall the fill plug, making sure it is seated properly.

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MAINTENANCE
Spark Plugs

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.

Refer to your Owner's Manual Supplement for the specific spark plug to be used in your machine.

Change the spark plugs every 2000-2500 miles (3200-4000 km).

CAUTION

Using non-recommended spark plugs can result in serious engine damage. A spark plug with a heat range too high will always cause engine damage if the engine is operated in conditions more severe than intended for that plug. Always use the spark plugs recommended for your snowmobile. See your Owner's Manual Supplement.

- Use recommended spark plugs with the proper gap.
- Use only resistor-type spark plugs.
- Torque spark plugs to 18-22 ft. lbs. (24-30 Nm).
- Always carry spare spark plugs.

Spark plug condition is indicative of engine operation. The spark plug firing end condition should be read after the engine has been warmed up and the vehicle has been driven at higher speeds. Immediately check the spark plug for correct color.

⚠ WARNING

A hot exhaust system and engine can cause serious burns. Wear protective gloves when removing a spark plug for inspection.

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.

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Spark Plugs

Spark Plug Condition

Normal Plug

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

NOTE: The tip should not be white. A white insulator tip indicates overheating, caused by use of an improper spark plug or incorrect carburetor/throttle body adjustments.

Wet Fouled Plug

The wet fouled insulator tip is black. A damp oil film covers the firing end. There may be a carbon layer over the entire nose. Generally, the electrodes are not worn. General causes of fouling are excessive oil, use of non-recommended injection oil, improper use of the choke, or incorrect carburetion adjustments.

Spark Plug Removal and Replacement

1. Remove the spark plug cap.
2. Rotate the spark plug counterclockwise to remove it.
3. Reverse the procedure for spark plug installation.
4. Torque to 18-22 ft. lbs. (24-30 Nm).
5. Reinstall the spark plug cap.

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MAINTENANCE
Intake Filters

The intake foam filters limit snow ingestion into the intake system. When operating in loose powder snow, check the foam filters 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. Always reinstall the intake filters before operating the snowmobile.

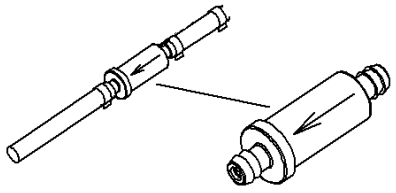
Oil Lines

Inspect oil line condition every 1000 miles (1600 km).

Oil Filter

The oil filter is located at the side of the oil tank. Have your dealer change the oil filter and bleed the system annually or every 1000 miles (1600 km).

NOTE: The direction of the arrows indicates the direction of flow through the filter.



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Fuel Pump

All fuel pump service must be performed by an authorized Polaris dealer. Do not attempt to service the fuel pump.

Fuel Filter/Fuel Lines

See your Polaris dealer for replacement of the in-tank fuel filter every 1000 miles (or annually).

Inspect the fuel lines regularly for signs of deterioration or damage. Always check fuel line condition after periods of storage. Normal deterioration from weather and fuel compounds may occur. Replace worn or damaged fuel lines promptly.

CAUTION
Kinking the fuel lines or using a pliers or similar tools to remove fuel lines may cause damage to the lines. If a fuel line has been damaged or kinked, replace it promptly.

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MAINTENANCE
Carburetor

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
Operating the snowmobile with incorrect jetting can result in serious engine damage. Have your Polaris dealer perform all carburetor adjustments to ensure all adjustments are done correctly.

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 conditions, the carburetor may need adjustment:

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

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Carburetor Water/Sediment Trap

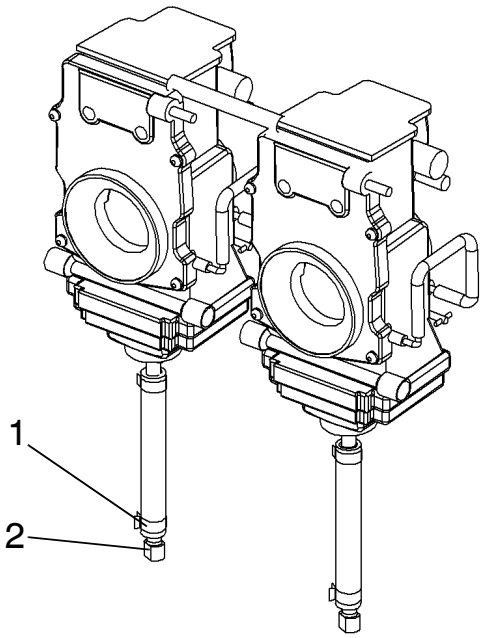
Most Polaris snowmobiles contain patented carburetor bowl water/sediment traps located at the bottom of each carburetor. The trap, consisting of a hose with a plug, should be drained about every 1000 miles (1600 km) and inspected for contamination.

⚠ 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 fuel warnings on page 55.

Cleaning Procedure

1. Turn the fuel valve off.
2. Place a container or shop towels below the plug to catch drained fuel.
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 clamp.
5. Repeat the draining procedure for any remaining traps.



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MAINTENANCE
Cooling System
Coolant

The coolant supplied in the system at the factory is a 50/50 mixture of ethylene-glycol and distilled water, which will provide adequate freeze protection under most conditions. If the vehicle will be stored or operated at extremely low temperatures, greater protection may be required. Please see your Polaris dealer.

When adding or changing coolant, Polaris recommends using Premium 60/40 anti-freeze coolant, which is already premixed and ready to use. Do not dilute with water. Never exceed a 60% antifreeze/40% water mixture. See page 106 for Polaris products.

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 Level

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

- Coolant bottle or overflow tank
- Engine filler neck
- Pressure cap
- Connecting hoses

Always maintain the coolant level between the minimum and maximum marks on the coolant bottle (when engine is cold) to prevent overheating and serious engine damage.

CAUTION
Operating the snowmobile with insufficient coolant will result in overheating and serious engine damage. Always maintain the coolant level as recommended.

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Cooling System

Coolant High Temperature Indicator Light

⚠ WARNING
Steam and hot liquids will cause serious burns to your skin. Never remove the pressure cap when the engine is warm or hot.

The high temperature indicator light will illuminate when engine coolant temperature becomes too hot for safe continued operation of the engine. 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. Driving in deep snow will also help cool the engine. See your dealer for service. Add coolant if the level is low.

NOTE: Engine performance will be reduced if you continue operating when the high temperature light is on.

Flushing the Cooling System

To ensure that the coolant maintains its ability to protect the engine, drain the system completely every two years and add a fresh mixture of antifreeze and distilled water. This service must be performed when the engine is cold. Ask your Polaris dealer to check the coolant when he performs the fall tune-up on your snowmobile.

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MAINTENANCE
Cooling System
Bleeding the Cooling System

⚠ WARNING

Steam and hot liquids will cause serious burns to your skin. Never bleed the cooling system or remove the pressure cap when the engine is warm or hot.

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

CAUTION

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

Perform the bleeding procedure when the engine is cold.

1. Position the vehicle so that the top of the tunnel is level. Elevate the front of the vehicle slightly if necessary.
2. Remove the pressure cap and fill the coolant bottle with properly mixed coolant to the maximum mark.
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. Add coolant to the coolant bottle to the maximum mark.
5. Start the engine and run at a fast idle for two to three minutes. Loosen the bleed screw occasionally to purge any trapped air.

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Cooling System

Bleeding the Cooling System

6. Stop the engine and check the coolant bottle 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.

Exhaust System

Check the exhaust system for wear or damage at approximately 2000 miles (3200 km). Always allow the engine and exhaust system to cool completely before inspecting.

⚠ 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.

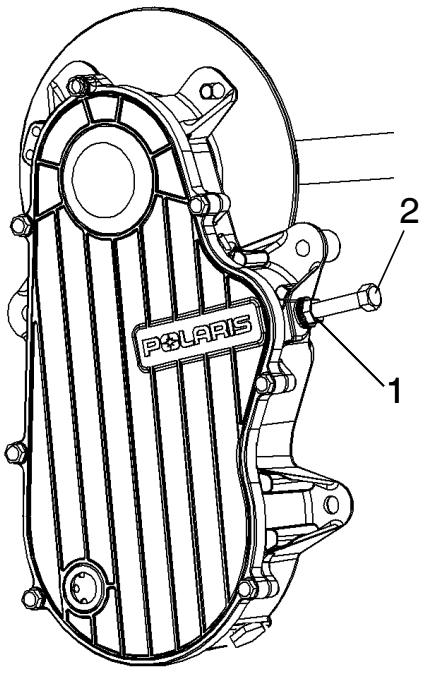
1. Open the hood and inspect the muffler and pipes for cracks or damage.
2. Check for weak or missing retaining springs or damper/support grommets.
3. Check for loose clamps on the pipe covers.

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MAINTENANCE
Drive Chain Tension

Check drive chain tension weekly and before each long trip. To obtain correct chain tension:

1. Rotate the driven clutch counter-clockwise 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 (1).
3. Finger tighten the adjuster bolt (2) 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. Torque to 21 ft. lbs. (28 Nm).
5. Release the brake lever lock.



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Brakes

Hydraulic Brake Inspection

Inspect brake lever travel before each use of the snowmobile. See page 46.

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.

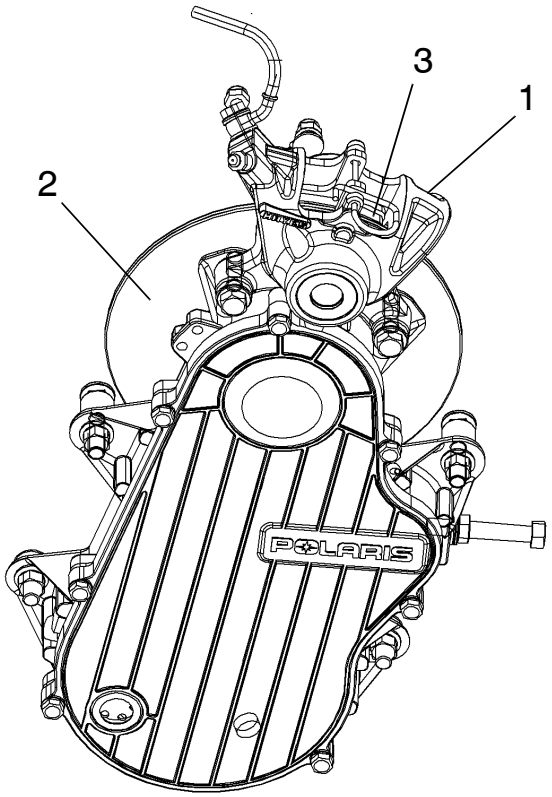
⚠ WARNING

Brake failure during operation can result in serious injury or death. Properly functioning brakes are vital to your safety. Be sure the brake pads do not drag on the disc and that brake lever travel is not excessive.

Always replace brake pads when the brake pad material becomes thinner than the backing plate (approximately 1/16″).

Brake Components

1. Brake Caliper
2. Brake Disc
3. Brake Pad Material (Replace when thickness is less than 1/16″/1.5 mm).



Excessive Lever Travel

Hydraulic brakes are self-adjusting, but if excessive brake pad clearance develops, bring the machine to an authorized Polaris dealer for inspection and adjustment.

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MAINTENANCE
Brakes
Brake Fluid

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.

Replace brake fluid at least every two years with Polaris DOT 4 high temperature brake fluid. See page 106 for the part numbers of Polaris products.

⚠ WARNING

After opening a bottle of brake fluid, always discard any unused portion. Never store or use a partial bottle. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. The moisture causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of accident or serious injury.

⚠ WARNING

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. Always wipe up spills immediately.

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Brakes

Bleeding the Hydraulic Brake System

Air in the hydraulic brake system will cause spongy brake lever action. Bleed the system before operating the snowmobile.

⚠ WARNING

Operating the vehicle with a spongy brake lever can result in loss of brakes, which could cause an accident and lead to serious injury or death. Never operate the vehicle with a spongy-feeling brake lever.

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

1. Remove the 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 the brake lever a full stroke. Then unscrew the bleeder valve 3/4 of a turn to release air.
5. Close the bleeder valve and release the brake lever.
6. Repeat steps 4 and 5 until fluid flows from the bleeder valve in a solid stream free of air bubbles.

⚠ WARNING

Overfilling the master cylinder leaves no room for fluid expansion and may cause the brakes to lock, resulting in serious injury or death. Always add brake fluid to the fill line as recommended.

7. After bleeding is complete, refill the reservoir to the proper level. See page 86.
8. Reinstall the gasket and cover.

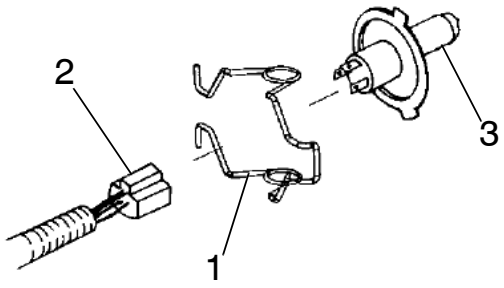
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MAINTENANCE
Lights

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. If fingers do touch the bulb, clean it with an alcohol-moistened towel.

Headlight Bulb Removal

1. Remove the plenum covering from the headlight assembly.
2. Lift the rubber boot to expose the bulb.
3. Push down on the spring (1) to release it from the housing.
4. With the wire harness (2) attached to the bulb (3), withdraw the bulb from the housing.



5. Grasp the bulb by its metal base and carefully separate the bulb from the harness.

Headlight Bulb Installation

1. Hold the bulb by its metal base and install it into the wire harness.

NOTE: Recommended replacement bulbs include H4, HB2 and 9003 bulbs.

2. Insert the bulb into the housing.
3. Connect the spring to the housing.
4. Carefully flip the spring back into the housing, placing it around the wire harness.
5. Reinstall the plenum covering on the headlight assembly.
6. Verify headlight aim.

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Lights

Taillight/Brakelight Replacement

1. Remove the screws securing the taillight lens. Remove the lens.
2. Push the bulb inward and turn it counterclockwise to remove it.
3. Install a new bulb. Push the bulb inward and turn it clockwise to secure it.
4. Reinstall the taillight lens.

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MAINTENANCE
Clutch System

Periodically inspect clutch sheaves for damage, wear or belt residue. To maintain optimum performance, clean with non-oil based cleaners such as isopropyl alcohol.

⚠ WARNING

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

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.

CAUTION

The bushings in the weights and rollers of Polaris clutches are made of a material that may be damaged if lubricated. Do not lubricate clutch bushings.

Clutch Alignment Offset

Clutch alignment offset is important for maintaining optimum performance. See your dealer for service and adjustments. A special tool is required to check for proper alignment.

Clutch Center Distance

See your Owner's Manual Supplement for recommended center distance for your machine. If adjustment is necessary, see your dealer.

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Clutch System

Drive Belt Condition

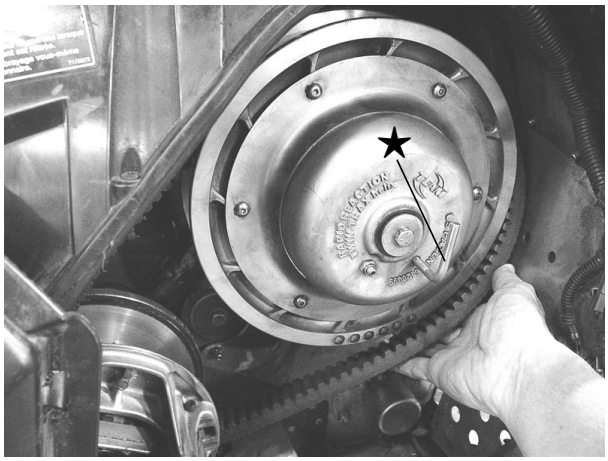
Periodically check the condition and tension of the drive belt, and always carry a spare. Inspect the belt for signs of excessive wear: frayed edges, missing cogs, cracks and excessive looseness. Replace the belt if any of these conditions exist. See Drive Belt Troubleshooting on page 111.

For improved drive-away during extremely cold temperatures, remove the belt and warm it to room temperature. Reinstall it before starting the snowmobile.

Drive Belt Removal

CAUTION

Do not attempt to remove the drive belt after operating in reverse. The snowmobile must be stopped after forward motion to prevent damage to components during belt removal.

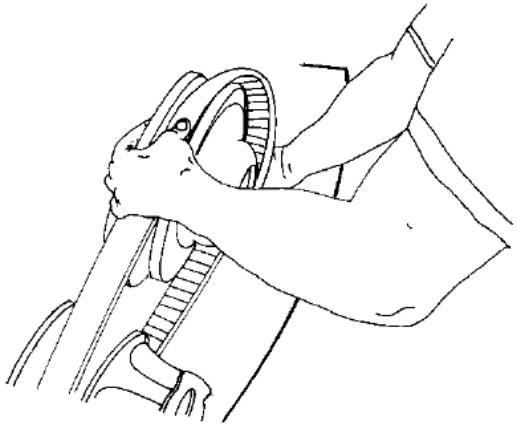


1. Stop the engine after operating in a forward motion.
2. Turn the ignition key off. Wait for the engine to come to a complete stop.
3. Lock the parking brake.
4. Open the hood.
5. Remove the left side panel.
6. Locate the L-wrench in the tool kit. Install the wrench into the open threaded hole in the outer sheave of the clutch (★).
7. Turn the wrench clockwise until the sheaves open far enough to remove the belt.

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MAINTENANCE
Clutch System
Drive Belt Installation

1. 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. If required, separate the sheaves as outlined in the belt removal procedures.

2. Rotate the L-wrench counter-clockwise to tighten the sheaves while working the belt to the outer edge of the sheaves.
3. Remove the L-wrench and store it in the tool kit.
4. Reinstall the side panel.
5. Close and secure the hood.

Drive Belt

Belt width and length must match the center distance of the clutches and sheave width of the drive clutch. Polaris recommends the use of O.E.M. belts. Other belts may match the dimensions, but can drastically change the shift pattern, resulting in poor performance.

NOTE: A worn belt will continue to function, but will not deliver maximum performance. Always carry a spare belt in case of an emergency.

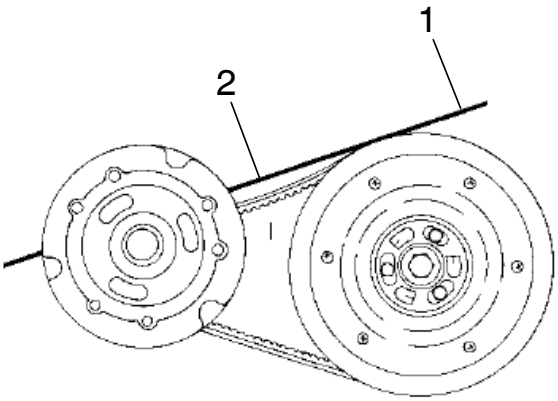
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Clutch System

Drive Belt Deflection

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

Place a straight edge (1) on the belt and apply downward pressure while measuring at point 2. This measurement should be 1 1/4″ (3.2 cm).



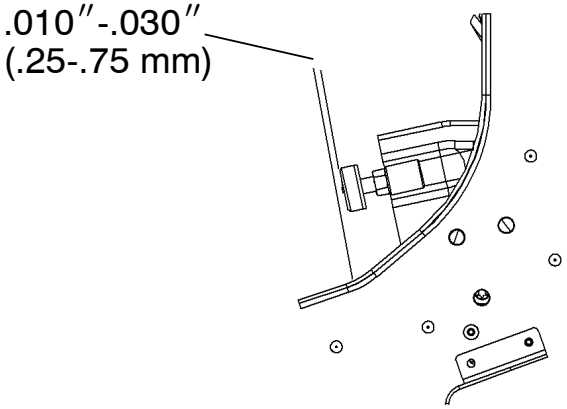
Drive Belt Adjustment

1. Install the L-wrench into the open threaded hole in the outer sheave of the clutch (see page 91). Turn the wrench clockwise *slightly* to remove pressure from the sheaves.
2. Loosen the 7/16″ jam nut.
3. Using a 1/8″ Allen wrench, turn the set screw inward (clockwise) to increase the distance between the sheaves or outward (counter-clockwise) to decrease the distance.
4. Tighten the jam nut. Store the L-wrench in the tool kit.

Torque Stop

Periodically check torque stop clearance. With clutches in proper alignment, the torque stop clearance should be .010″-.030″ (.25-.75 mm) from the engine case.

Adjust if necessary, and lock the jam nut.



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MAINTENANCE
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.

Track Maintenance

Track Inspection

⚠ WARNING

Broken track rods can cause a rotating track to come off the machine, which could cause serious injury or death. Never operate with a damaged track. Never rotate a damaged track under power.

1. Using a hoist, safely lift and support the rear of the snowmobile off the ground.
2. Rotate the track by hand to check for damage.
3. Carefully examine the track along the entire length of each rod (★). Bend the track to check for breakage.
4. Replace the track if any rod damage is found.



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Track Maintenance

Track Lubrication

⚠ WARNING

Operating with insufficient lubrication between the rail slide and track guide clips can cause track failure, loss of vehicle control and loss of braking ability, which can result in serious injury or death. Avoid operating for extended periods on ice and other surfaces that have little or no snow for lubrication.

The slide rail needs snow for lubrication. Excessive wear indicates insufficient lubrication. A new rail slide can cause faster heat build-up in limited lubrication, resulting in excessive wear.

NOTE: If excessive rail slide wear occurs due to poor snow conditions, additional wheel kits are available. See your dealer for more information.

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

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MAINTENANCE
Track Maintenance

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

Track Tension

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

TRACK TENSION DATA CHART			
Suspension	**Weight**	**Measurement Location**	**Slack Measurement**
IQ	10 lbs. (4.54 kg)	16″ (40 cm) ahead of rear idler shaft	7/8″-1 1/8″ (2.2-2.9 cm)

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

1. Turn the engine 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) ahead of the center of the rear idler wheel.

NOTE: Measure at the point where the weight is hanging.

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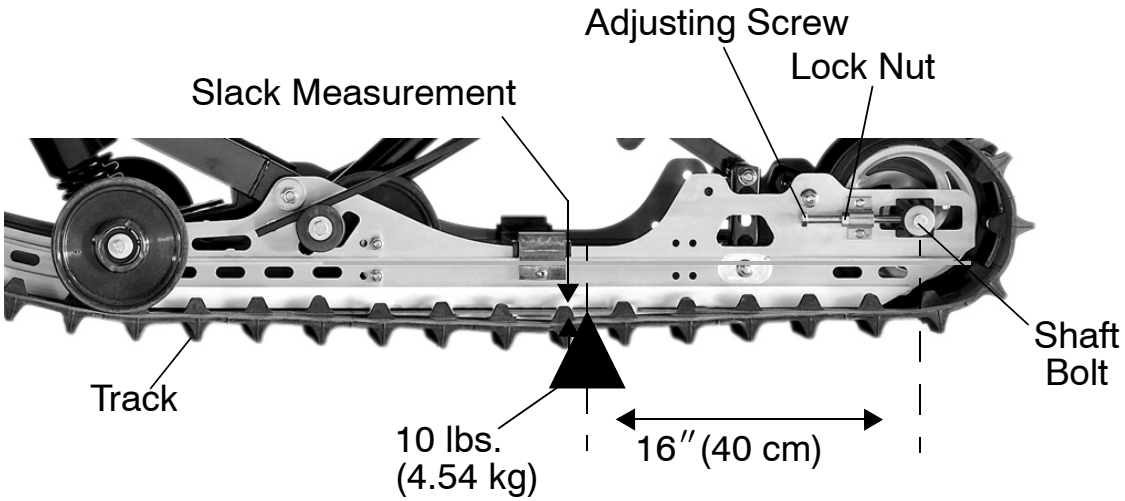
Track Maintenance

Track Tension

4. Check for specified slack between the wear surface of the track clip and the plastic slider. Refer to the Track Tension Data Chart on page 96.

If the track needs adjustment:

5. Loosen the rear idler shaft bolt.
6. Loosen the locknuts.



7. Tighten or loosen the track adjusting screws to provide equal adjustment on both sides of the track.
8. Repeat the measurement on the other side of the track.

NOTE: Check more frequently when the machine is new.

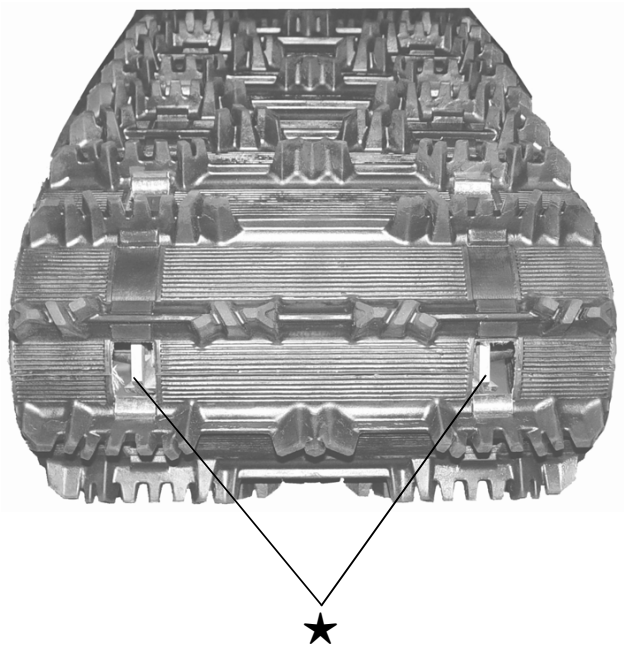
9. Start the machine and slowly rotate the track at least five revolutions. Let the track come to a stop (do not apply brakes).
10. Check track alignment (see page 98) and adjust as necessary.
11. Tighten the locknuts.
12. Tighten the idler shaft bolts.
13. (✓) Torque idler shaft bolts to 35 ft. lbs. (47.5 Nm).

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MAINTENANCE
Track Maintenance
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 (★) are evenly spaced on each side. If the track runs to the left, loosen the idler shaft bolts, then loosen the left locknut and tighten the left adjusting bolt. If the track runs to the right, loosen the idler shaft bolts, then loosen the right locknut and tighten the right adjusting bolt.



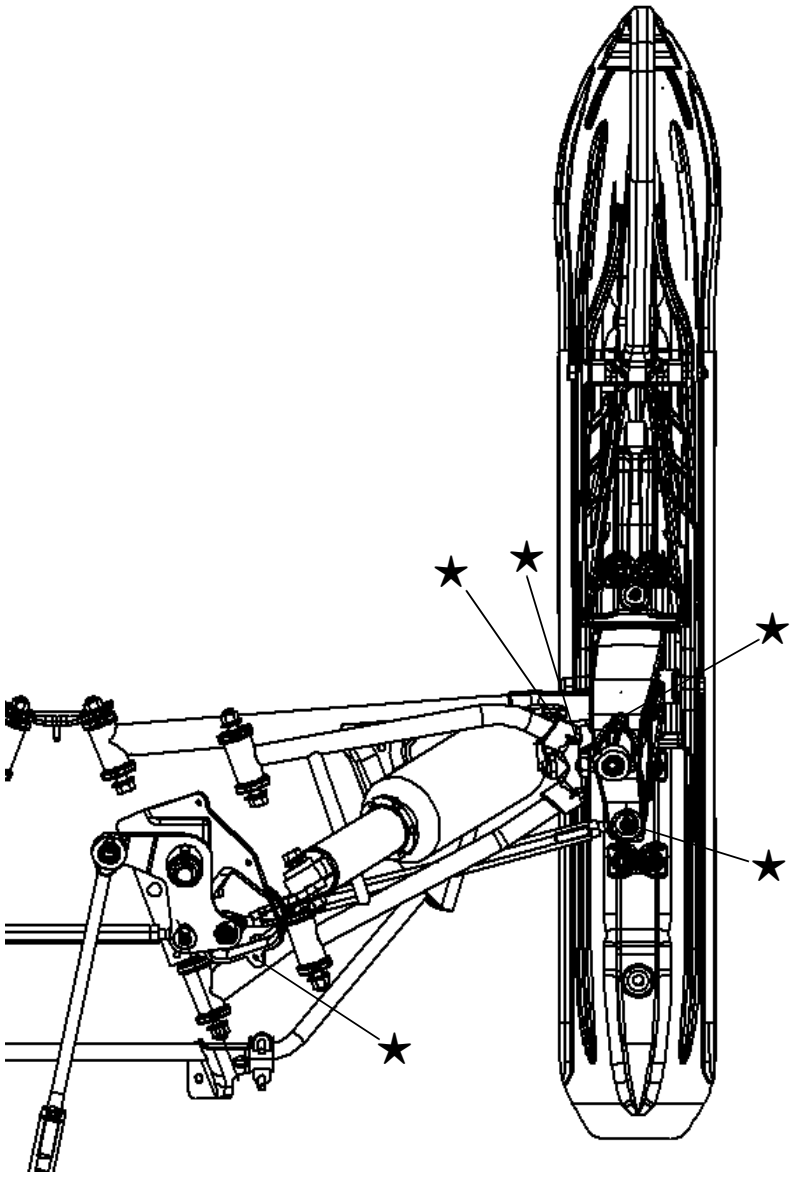
4. After adjustments are complete, tighten the locknuts and torque idler shaft bolts to 35 ft. lbs. (47.5 Nm).
5. Repeat steps 2 and 3 to verify proper alignment.

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Steering System

Steering Inspection and Adjustment

Each week, or before a long ride, check all steering system fasteners and tighten if necessary.



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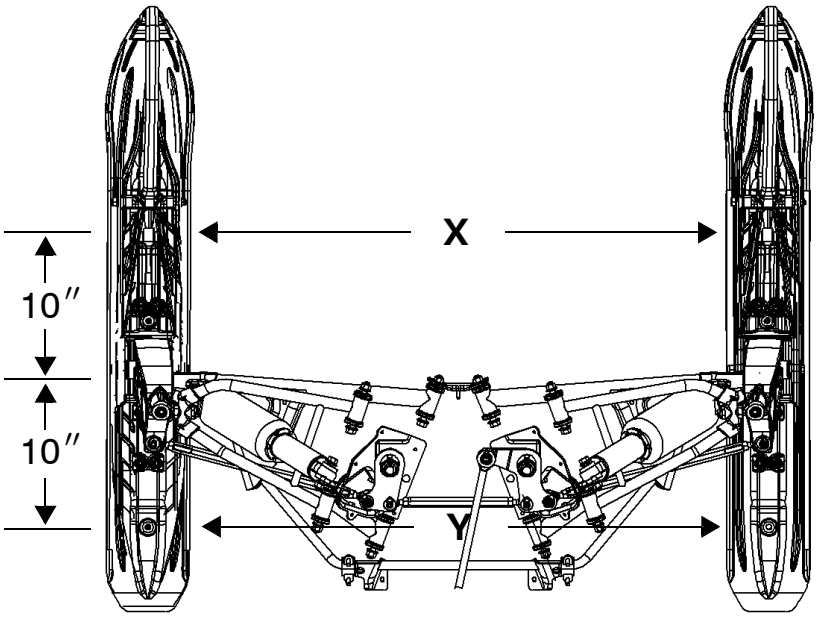
MAINTENANCE
Steering System
Ski Alignment

⚠ 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 the handlebars in a 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″ (3-6 mm) greater than the measurement at point Y.

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



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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.

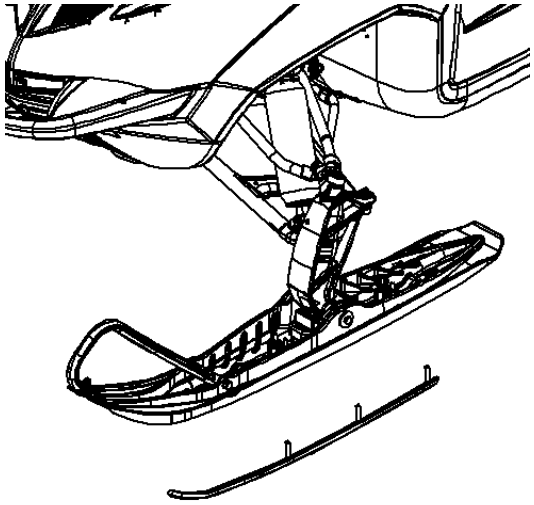
See your dealer's studding chart for recommended skags. If you install longer or more aggressive carbide skags than the original equipment, it may also be necessary to add track studs to maintain proper vehicle control while turning on hard-packed snow or ice.

Check skags before each use of the snowmobile to ensure positive steering characteristics. Skags must be replaced when worn to half their original diameter.

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

Skag Replacement

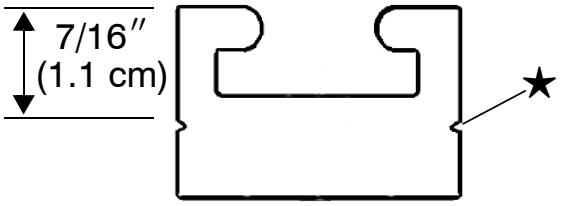
1. Raise and support the front of the machine so the skis are approximately 6″ (15.2 cm) from the ground.
2. Remove the attaching nuts and pry the skag downward.
3. Remove the rear end of the skag.
4. Remove the front end of the skag.
5. Reverse the steps to install a skag.



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MAINTENANCE
Steering System
Rail Slide Wear

Measure slide thickness at several points along the rail. Have your dealer replace the slide when it's worn down to the top of the wear limit indicator groove (★). Do not operate the snowmobile if slide thickness measures less than 7/16″ (1.1 cm).



Suspension Maintenance
Pre-Ride Suspension Inspection

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 suspension mounting bolts for tightness.
- Check rear idler wheel bolts for tightness. See page 97.
- Check rear idler adjusting bolt locknuts for tightness.
- Check front torque arm limiter strap condition.
- Check rail slide condition.
- Check track tension. See page 96.
- Lubricate all rear suspension components. See page 70.
- Check ski runner/skag condition. See page 101.
- Check ski spindle bolts for tightness.
- Check tie rod end nuts for tightness.

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Daily Storage



At the end of each ride, park the snowmobile on a level surface and support it at the rear with an appropriate track stand. The track should be suspended approximately 4″ (10 cm) off the ground.

Remove the key and cover the machine.

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. See page 106 for the part numbers of Polaris products.

Cleaning and Preservation

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

Lubricate all bushings and cables as outlined in the Periodic Maintenance Table beginning on page 67.

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MAINTENANCE
Extended Storage
Bearings

Grease the jackshaft and drive shaft clutch side bearings with Polaris Premium All-Season Grease or a similar high quality grease to prevent corrosion.

Clutch and Drive System

Remove the drive belt and store in a cool dry location. Do not lubricate clutch components, except the driven clutch shaft bushing as outlined in the 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 with fogging oil. Follow the engine fogging instructions provided on the container.

Always add Premium Carbon Clean or a fuel conditioner/stabilizer to the fuel tank. Follow the instructions on the container, running the engine for five minutes to get additives through the entire fuel system. Top off with fresh fuel. *Do not allow the snowmobile to run out of fuel.*

If stabilizer is not used, drain the carburetors by removing the water trap drain plugs. See page 79.

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

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Extended Storage

Electrical Connections

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.

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.

Transporting the Snowmobile

Whenever the snowmobile is transported:

1. Turn the fuel valve off. See page 27.
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.
4. Remove the ignition key to prevent loss.

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POLARIS PRODUCTS

Part No.	Description
Engine Lubricants	
2870791	Fogging Oil (12 oz. Aerosol)
2871098	Premium 2-Cycle Engine Oil (qt.)
2871097	Premium 2-Cycle Engine Oil (gal.)
2871240	Premium 2-Cycle Engine Oil (2.5 gal.)
2871721	Premium Gold Synthetic 2-Cycle Engine Oil (qt.)
2871722	Premium Gold Synthetic 2-Cycle Engine Oil (gal.)
2872347	Premium Gold Synthetic 2-Cycle Engine Oil (2.5 gal.)
2874438	VES II Synthetic 2-Cycle Engine Oil (qt.)
2874439	VES II Synthetic 2-Cycle Engine Oil (gal.)
2874443	VES II Synthetic 2-Cycle Engine Oil (2.5 gal.)
Chaincase Lubricants	
2873105	Synthetic Chaincase Lubricant (qt.)
2872951	Synthetic Chaincase Lubricant (12 oz.)
Grease/Specialized Lubricants	
2871312	Grease Gun Kit, Premium All Season (3 oz.)
2871322	Premium All Season Grease (3 oz. cartridge)
2871423	Premium All Season Grease (14 oz. cartridge)
2871329	Dielectric Grease (Nyogel™)
Coolant	
2871323	Anitfreeze, 60/40 Premix (gal.)
2871534	Anitfreeze, 60/40 Premix (qt.)
Additives/Miscellaneous	
2871326	Carbon Clean Plus (12 oz.)
2870652	Fuel Stabilizer (16 oz.)
2872189	DOT 4 Brake Fluid (12 oz.)
2872893	Engine Degreaser (12 oz.)
2870505	Isopropyl
2872889	Brake and Clutch Cleaner
2872890	Carb and Throttle Body Cleaner

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Engine Troubleshooting

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

Problem	Probable Cause	Solution
Erratic engine operating RPM during acceleration or load variations	Drive clutch binding	• SEE YOUR DEALER.
	Driven clutch malfunction	• SEE YOUR DEALER.
Harsh drive clutch engagement	Drive belt worn or too narrow	• Replace the drive belt.
	Excessive belt/ sheave clearance	• SEE YOUR DEALER.
Drive belt turns over	Wrong belt for application	• Replace the drive belt.
	Clutch alignment out of spec	• SEE YOUR DEALER.
	Engine mount broken or loose	• Inspect and replace. SEE YOUR DEALER.
Machine fails to move	Clutch jammed	• Check for twisted belt or broken spring. SEE YOUR DEALER.
	Track jammed	• Foreign object may be caught or the rail slide melted to the track clips due to lack of lubrication. • Track may be iced up or frozen to the ground.
	Chaincase sprocket or chain jammed or broken	• Chain is loose or broken or chain tightener is loose. SEE YOUR DEALER.

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TROUBLESHOOTING
Engine Troubleshooting

Problem	Probable Cause	Solution
Noise in drive system	Broken drive clutch components	• SEE YOUR DEALER.
	Bearing failure/ chaincase, jackshaft, or front drive shaft	• SEE YOUR DEALER.
	Drive belt surface flat spots	• Inspect and replace as needed.
	Drive chain loose	• Inspect and adjust (or replace).
	Drive chain worn, sprocket teeth broken	• SEE YOUR DEALER.
Poor low RPM performance	Worn drive belt	• Inspect and replace as needed.
	Excessive belt/ sheave clearance	• SEE YOUR DEALER.
	Loose torque stop	• Inspect and adjust.
	Sticky clutch	• SEE YOUR DEALER.
	Poor fuel quality	• Use 87-91 octane fuel (or higher).
Engine doesn't turn	Seized engine	• SEE YOUR DEALER. Seizure is a result of poor lubrication, inadequate fuel supply, broken parts or improper cooling.
	Hydrostatic lock	• Fuel may have entered the crankcase while the vehicle was standing or being transported. SEE YOUR DEALER to correct the cause. Drain plug(s) are located on the lower crankcase for emergency draining.

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Engine Troubleshooting

Problem	Probable Cause	Solution
Engine turns but fails to start	Faulty ignition	• Install new spark plug(s). If engine still fails to start, check for spark. If there's no spark, SEE YOUR DEALER.
	No fuel to engine	• Make sure the fuel valve is on. • Use the choke. See page 51. • Make sure the fuel tank contains fuel. • Ice may be in the fuel line, filter or pump. Add isopropyl alcohol to the fuel system.
	Poor engine compression	• Mixture is too lean. A main jet that is too small will cause seizure resulting in loss of power. This indicates a major engine problem that must be repaired before operating. SEE YOUR DEALER.
Engine lacks power	Fouled or defective spark plug(s)	• Replace the plug(s).
	Fuel filter (loss of high RPM power)	• SEE YOUR DEALER.
	Incorrect clutching	• SEE YOUR DEALER.
	Carburetor and fuel pump	• There is no adjustment to change power output. SEE YOUR DEALER.
Engine continually backfires	Faulty plug(s)	• Change plug(s).
	Carburetor / Fuel System	• Dirt or ice may be in the fuel system (deicer should be added to non-ethanol fuel at all times for assurance against fuel line icing).
	Incorrect throttle freeplay or faulty switch	• SEE YOUR DEALER.
Engine requires more than normal pulls to start	Poor fuel	• Replace with fresh winter fuel.
	Not enough fuel getting to engine	• SEE YOUR DEALER.
Engine backfires but fails to start	Spark plug wires may be on wrong cylinder	• Reinstall spark plug wires to the corresponding cylinder.

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TROUBLESHOOTING
IQ Suspension Troubleshooting

Problem	Solution
Rear suspension bottoms too easily	• Adjust torsion spring preload to achieve proper static sag (see page 33). • Change torsion spring to stiffer optional spring (see your dealer). • Revalve rear track shock (see your dealer).
Rides too stiff in rear	• Check for binding suspension shafts and grease all pivot points. • Adjust torsion spring preload to achieve proper static sag (see page 33). • Change torsion spring to softer optional spring (see your dealer). • Check track tension (see page 96).
Machine darts from side to side	• Check ski alignment (see page 100). • Make sure spindles and all steering components turn freely. • Check for excessive play in steering assembly (see your dealer). • Ensure skags are straight on skis. • Set static sag (see page 33). • Check rail slide/replace if worn (see page 102). • Install Accu-Trak dual skags (see your dealer).
Front end pushes	• Check for worn skags. • Check for binding front suspension shafts and steering components, grease all pivot points (elevate front of machine). • Set static sag (see page 33). • Install single skag (see your dealer). • Increase IFS preload (if equipped) (see page 28). • Rotate RRSS to high position (see page 38).
Steering is heavy	• Make sure spindles and all steering components turn freely. • Check ski alignment (see page 100). • Check skags and skis for damage. • Set static sag (see page 33).

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Drive Belt Troubleshooting

Belt Wear/Burn Diagnosis	
Causes	**Solutions**
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. Reduce RPM. Avoid riding in high ambient temperatures. Check for snow ingestion.
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 carburetor and choke synchronization, fouled plugs, debris in the carburetor(s) and water, ice or dirt in the fuel 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.

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WARRANTY
Service and Warranty Information
Obtaining Service and Warranty Assistance

Read and understand the service data and the Polaris warranty information contained in this manual. Contact your Polaris dealer for replacement parts, service or warranty. Your dealer receives frequent updates on changes, modifications and tips on snowmobile maintenance, which may supersede information contained in this manual. Your dealer is also familiar with Polaris 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. Previous correspondence

Use the page provided near the front of your Owner's Manual to record the identification numbers of your snowmobile and its engine.

Polaris Customer Service

United States: 1-763-417-8650

Canada: 1-204-925-7100

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Service and Warranty Information

Polaris Anti-Theft System

The Polaris anti-theft system (PATS) monitoring program 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 Polaris Customer Service.

   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 notifying the proper owner when a unit is recovered.

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WARRANTY

Limited Warranty

Polaris Sales Inc., 2100 Highway 55, Medina, MN 55340, provides 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 that are covered by this warranty. The warranty begins on the date of purchase. This warranty is transferable to another consumer, during the warranty period, through a Polaris dealer.

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 THE SNOWMOBILE IS REGISTERED WITH POLARIS.

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

Warranty Coverage and Exclusions

Limitations of warranties and remedies

This warranty excludes any failures not caused by a defect in material or workmanship. The warranty does not cover accidental damage, normal wear and tear, abuse or improper handling. The warranty also does not cover any snowmobile that has been structurally altered, neglected, improperly maintained, used for racing or used for purposes other than for which it was manufactured. The warranty does not cover any damages that occur during trailer transit or as a result of unauthorized service or 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 the 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.

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Limitations of warranties and remedies

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 recommends 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. Your dealer will contact the appropriate personnel at Polaris if additional assistance is needed.

This warranty 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. Mixing oil brands or using non-recommended oil may cause engine damage. We recommend the use of Polaris engine oil.

2. Damage resulting from the use of non-recommended lubricants may not be covered by warranty.

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WARRANTY

Conditions and Exclusions

In order to qualify for warranty, the product must have been properly set up and tested by a Polaris Dealer (if applicable). Failure of any dealer to perform the required vehicle Pre-Delivery Inspection, perform all applicable service bulletins and have the consumer sign the PDI form prior to delivery may void the warranty. Failure to provide proof of required periodic maintenance upon request may result in denial of warranty coverage. Use of the recommended Polaris products for lubrication and maintenance as directed by the Owner's manual is highly recommended. Should a failure occur during the warranty period resulting from the use of non-recommended products, warranty coverage may be denied.

Warranty does not apply to parts exposed to friction surfaces, stresses, environmental conditions and/or contamination. The following items are excluded from warranty consideration if the failure was due to wear or not the direct result of a defect:

Skis	Ski wear rods
Tracks	Slide rails
Suspension components	Finished and unfinished surfaces
Brake components	Carburetor/Throttle body components
Seat components	Engine components
Clutches and components	Drive belts
Steering components	Hydraulic components
Batteries	Circuit breakers/Fuses
Light bulbs/Sealed beam lamps	Electronic components
Idler wheels	

Warranty applies to the product only and does not allow for coverage of personal loss. Some items are considered "consumable," meaning they are considered part of normal maintenance or part of completing an effective repair. The following items are excluded from warranty coverage in the event of a warranty claim:

Spark Plugs	Lubricants such as oil, grease, etc.
Filters	Batteries (unless defective)
Fuel	Cosmetic damage/repair
Sealants	Coolants
Hotel fees	Meals
Towing charges	Shipping/ handling fees
Mileage	Product pick-up/delivery
Rentals/Loss of product use	Loss of vacation/personal time

This warranty also excludes failures resulting from improper lubrication; improper engine timing; improper fuel; surface imperfections caused by external stress, heat, cold or contamination; operator error or abuse; improper component alignment, tension, adjustment or altitude compensation; failure due to snow, water, dirt or other foreign substance ingestion/contamination; improper maintenance; modified components; use of aftermarket components resulting in failure; unauthorized repairs; repairs made after the warranty period expires or by an unauthorized repair center; use of the product in competition or for commercial purposes. Warranty will not apply to any product which has been damaged by abuse, accident, fire or any other casualty not determined a defect of materials or workmanship.

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Polaris Second Year Engine Service Contract

Second Year Engine Service Contract is standard on all eligible new and unused snowmobiles that were Snow Checked through an authorized Polaris dealer during the March/April Snow Check promotion. The free Second Year Engine Service Contract is honored by all authorized Polaris snowmobile dealers in North America and is transferable 120 days after the original purchase date, free of charge, through any Polaris snowmobile dealer. Coverage on Snow Check units is automatic. Although you do not receive a warranty card, your dealership should have printed a copy of the warranty registration form. This form is your proof of warranty.

Consumer Exclusions

- Each repair visit after the first twelve months of standard warranty coverage is subject to a $50 deductible.
- The free Second Year Engine Service Contract applies to the first 5,000 miles or two (2) calendar years from date of purchase, whichever comes first. Tampering with the odometer shall void all warranties/service contracts. No extensions to coverage under this engine service contract can be given. Used snowmobiles are not eligible under this program.
- Snowmobiles used for commercial purposes or for racing are excluded from coverage.

Coverage

Coverage for second year engine failures due to defects in materials and workmanship will be determined by Polaris in its sole discretion. Coverage is automatic with no additional paperwork required. The free Second Year Engine Service Contract is subject to a $50 deductible per visit. Regular, documented service maintenance visits are required to validate this warranty.

A partial list of items excluded from coverage includes:

- Damage due to accident, fire, explosion, theft, or other causes beyond Polaris' control.
- Damage caused by the failure of other components of the snowmobile.
- Failures caused by improper fuel or oil.
- Piston seizures, unless caused by a defective engine component.
- Failures caused due to improper adjustments.
- Failure due to unauthorized service.
- Failures due to lack of service as required in the owner's manual or Polaris updates. This includes off-season storage as listed in the owner's manual.
- Failure due to use of unauthorized parts or modifications.
- Normal wear parts, including but not limited to spark plugs, hoses, batteries, controls, and recoil ropes are excluded from coverage. Gaskets are covered, as are intake and exhaust manifolds excluding paint coverage.
- Electrical coverage is limited to the ECU box, coils, stator plate, and sensors. Wiring and other electrical components are excluded from coverage.
- Cooling system coverage is limited to the water pump assembly and components, fan, fan bearings, temperature sensor, gasket and seals.
- Non wear related throttle body parts are covered. The fuel pump is covered.
- Clutches and related clutch parts, including but not limited to, the drive belt, are excluded from coverage.
- Electrical components are excluded from coverage.
- Gearcases and transmissions are excluded from coverage.

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WARRANTY

Exported Vehicles

EXCEPT WHERE SPECIFICALLY REQUIRED BY LAW, THERE IS NO WARRANTY OR SERVICE BULLETIN COVERAGE ON THIS VEHICLE IF IT IS SOLD OUTSIDE THE COUNTRY OF THE SELLING DEALER'S AUTHORIZED LOCATION.

This policy does not apply to vehicles that have received authorization for export from Polaris Industries. Dealers may not give authorization for export. You should consult an authorized dealer to determine this vehicle's warranty or service bulletin coverage if you have any questions.

This policy does not apply to vehicles registered to government officials or military personnel on assignment outside the country of the selling dealer's authorized location.

This policy does not apply to Safety Recalls.

How to Get Service

In the Country where your vehicle was purchased:

Warranty or Service Bulletin repairs must be done by an authorized Polaris dealer. If you move or are traveling within the country where your vehicle was purchased, Warranty or Service Bulletin repairs may be requested from any authorized Polaris dealer who sells the same line as your vehicle.

Outside the Country where your vehicle was purchased:

If you are traveling temporarily outside the country where your vehicle was purchased, you should take your vehicle to an authorized Polaris dealer. You must show the dealer photo identification from the country of the selling dealer's authorized location as proof of residence. Upon residence verification, the servicing dealer will be authorized to perform the warranty repair.

If You Move:

If you move to another country, be sure to contact Polaris Customer Assistance and the customs department of the destination country before you move. Vehicles importation rules vary considerably from country to country. You may be required to present documentation of your move to Polaris Industries in order to continue your warranty coverage. You may also be required to obtain documentation from Polaris Industries in order to register your vehicle in your new country.

If Purchased From A Private Party:

If you purchase a Polaris product from a private citizen outside of the country in which the vehicle was originally purchased, all warranty coverage will be denied.

Notice

If your vehicle is registered outside of the country where it was purchased, and you have not followed the procedure set out above, your vehicle will no longer be eligible for warranty or service bulletin coverage of any kind. (Vehicles registered to Government officials or military personnel on assignment outside of the country where the vehicle was purchased will continue to be covered by the basic warranty.)

For questions call Polaris Customer Assistance (see page 112).

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Snowmobile Engine Emissions Limited Warranty

This snowmobile engine emissions limited warranty is in addition to the Polaris standard limited warranty for snowmobiles.

Polaris Industries Inc. warrants that the new engine, including all parts of its emission-control system, is designed, built and equipped so it conforms to current U.S. Environmental Protection Agency regulations applicable to snowmobile emissions under 40 CFR1051, 1065 and 1068 at the time of sale to the ultimate purchaser. Polaris warrants that the engine is free from defects in materials and workmanship that may keep it from meeting these regulations.

The warranty period for this emissions certified snowmobile engine starts on the date when the engine is first purchased and continues for 4000 kilometers (2485 miles) of vehicle travel, 200 hours of operation, or 30 calendar months, whichever comes first.

This engine emissions limited warranty covers the parts and labor charges for repair or replacement of defective parts that are covered by this warranty. This includes components whose failure increases the snowmobile engine's emissions. To the extent they are present on your snowmobile engine, this includes electronic controls, fuel injection components, exhaust gas recirculation system components, and aftertreatment system components. Replacing or repairing other components not covered by this warranty is the responsibility of the snowmobile owner.

The exclusive remedy for breach of this limited warranty shall be, at the exclusive option of Polaris, repair or replacement of any defective materials, components or products. THE REMEDIES SET FORTH IN THIS LIMITED 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. ALL IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE LIMITED IN DURATION TO THE WARRANTY PERIOD DESCRIBED HEREIN. POLARIS DISCLAIMS ALL EXPRESS WARRANTIES NOT STATED IN THIS WARRANTY.

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WARRANTY

Snowmobile Engine Emissions Limited Warranty

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply if it is inconsistent with the controlling state law. This limited warranty excludes failures not caused by a defect in material or workmanship. This limited warranty does not cover damage due to accidents, abuse or improper handling, maintenance or use. This limited warranty also does not cover any engine that has been structurally altered, or any engine that has been used in racing competition. This limited warranty also does not cover physical damage, corrosion or defects caused by fire, explosions or other similar causes beyond the control of Polaris.

Owners are responsible for performing the scheduled maintenance identified in the owner's manual. Polaris can deny an emissions warranty claim if any specified critical emissions-related maintenance is not performed. Performance of other scheduled maintenance is strongly recommended, but is not necessary to keep the emissions-related warranty valid. Any qualified repair shop or qualified person may maintain, replace, or repair the emission control devices or systems on your snowmobile. Polaris recommends that you contact an authorized Polaris dealer to perform any service that may be necessary.

It is a potential violation of the Clean Air Act if a part supplied by an aftermarket parts manufacturer reduces the effectiveness of the vehicle's emission controls. Tampering with emission controls is prohibited by federal law and may result in civil penalties.

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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.

DATE	MILES (KM)	TECHNICIAN	SERVICE PERFORMED / COMMENTS
	150 mi. (240 km)		
	500 mi. (800 km)		
	1000 mi. (1600 km)		
	2000 mi. (3200 km)		

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MAINTENANCE LOG

DATE	MILES (KM)	TECHNICIAN	SERVICE PERFORMED / COMMENTS

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