PMS 419

POLARIS®

The Way Out.

600 RMK® 144
600 RMK® 144 ES
600 RMK® 155
600 RMK® 155 ES

Snowmobile Owner's Manual
for Maintenance and Safety

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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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POLARIS
The Way Out.

For your nearest Polaris dealer,
call 1-800-POLARIS
or visit www.polarisindustries.com
Polaris Sales Inc.,
2100 Hwy. 55, Medina, MN 55340
Phone 1-888-704-5290
Part No. 9922868 Rev 01
Printed in USA

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WELCOME

Thank you for purchasing a Polaris vehicle, and welcome to our world-wide family of Polaris owners. We proudly produce an exciting line of utility and recreational products.

- Snowmobiles
- All-terrain vehicles (ATVs)
- *RANGER*® utility vehicles
- Victory Motorcycles®
- Low emission vehicles (LEVs)

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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The original instructions for this vehicle are in English. Other languages are provided as translations of the original instructions.

Printed in U.S.A.

2011 600 RMK 144/155 Owner’s Manual P/N 9922868

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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.

Some of the illustrations and photos used in this manual are general representations. Your model may differ.

Follow the maintenance program outlined in this manual. Preventive maintenance ensures that critical components of the snowmobile are inspected by your dealer at specific mileage intervals.

You and your dealer must complete the registration form included with your snowmobile and forward it to us. This completed form is necessary to ensure warranty coverage.

Protect and preserve your right to ride by joining your local trail riding clubs.

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

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INTRODUCTION
Preservation of the Environment

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

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

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Vehicle Identification Numbers

Record your snowmobile's identification numbers and key number in the spaces provided below. The key number is stamped on the spare key. The number on the rubber-coated key is in the form of raised dots. Remove the spare key and store it in a safe place. An ignition key can be duplicated only by ordering a Polaris key blank (using your key number) and mating it with one of your existing keys. The ignition switch must be replaced if all keys are lost.



Vehicle Model Number: _____

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

Engine Serial Number (on valve cover): _____

Key Number: _____

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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 indicates a potential personal injury hazard.

WARNING

A WARNING indicates a hazardous situation which, if not avoided, may result in death or serious injury.

CAUTION

A CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

A NOTICE indicates a situation that may result in property damage.

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Operator Safety

Follow the recommended maintenance program outlined beginning on page 68 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.

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Operator Safety

Riding Position

Operating a snowmobile requires skill and balance for proper control. Rider positions may vary with experience; 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.

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.

Always carry the owner's manual on your snowmobile. For added protection, purchase and carry the following items on your snowmobile as well:

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

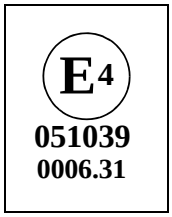
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SAFETY
Operator Safety
Riding Apparel
Helmet

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.

Clothing

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 21.

WARNING! Avoid wearing loose clothing or long scarves, which can become entangled in moving parts and cause serious injury. Always wear an approved helmet and eye protection.



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Operator Safety

Disabled Operators

Safe operation of this rider-active vehicle requires good judgement and physical skills.

WARNING! Operators with cognitive or physical disabilities have an increased risk of loss of control, which could result in serious injury or death. Do not allow disabled persons to operate this vehicle.

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.

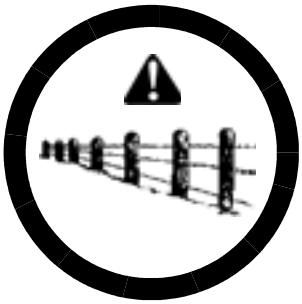
Always observe all state and local laws governing snowmobile operation and speed limits. Always be alert and pay attention to the trail ahead. If your speed is 40 MPH (64 km/h), your snowmobile is traveling about 60 feet (18 m) per second. If you look back for only two seconds, your snowmobile will travel about 120 feet (36 m). If your speed is 60 MPH (96 km/h), your snowmobile will travel about 180 feet (55 m) 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 snowmobile 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 snowmobile 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. Never travel on frozen bodies of water unless you have first verified that the ice is sufficiently thick to support the weight and moving force of the snowmobile, you and your cargo, together with any other vehicles in your party. Always check with local authorities and residents to confirm ice conditions and thickness over your entire route. Snowmobile operators assume all risk associated with ice conditions on frozen bodies of water.

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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 the American and Canadian online avalanche centers 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 snowmobile, 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 Downhill

When riding downhill, shift your weight to the rear of the snowmobile 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 snowmobile 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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Operator Safety

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.

Driving in Hilly Terrain

WARNING! Climbing a hill or crossing the face of a slope may result in loss of balance and snowmobile rollover, 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 snowmobile to maintain proper balance and avoid possible rollover.

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 snowmobile 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 snowmobile, pull the rear of the snowmobile around and point the front end and skis downhill. Remount the snowmobile, restart the engine, release the parking brake, and descend the hill carefully.

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SAFETY
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.

NOTICE: 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 snowmobile into motion, but always operate within safety limits and, on 2-up machines, with respect for a passenger.

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 snowmobiles designed to carry a load or a passenger.

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Operator Safety

Inadequate Snow Conditions

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 snowmobile.

NOTICE: Driving in too little snow will result in excessive wear and damage to the slide rail, track and/or engine.

WARNING! Inadequate cooling and lubrication will lead to overheating of the slide rail and track, causing premature wear, damage and failure, which can result in serious injury. Reduce speeds and frequently drive into fresh snow to allow adequate cooling and polishing of the slide rail and track surfaces. Avoid operating for prolonged periods on ice, hard-packed surfaces or roads.

Operating in Deep Snow

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

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SAFETY
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 to 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 over large drifts or similar terrain. Jumping may injure your back because of spinal compression that could occur when the snowmobile impacts the ground. 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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Operator Safety

Windchill/Temperature Charts

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

WIND CHILL 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.							

WIND CHILL 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	-4	-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
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

The clutch cover warning decal is 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

The pressure cap warning decal is found under the hood on the pressure cap of applicable liquid cooled models.

WARNING

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

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Safety Decals and Locations

"No Passenger" Warning

Snowmobiles designed for only a single rider have a warning decal on the console below the steering post.



"No Passenger" Warning

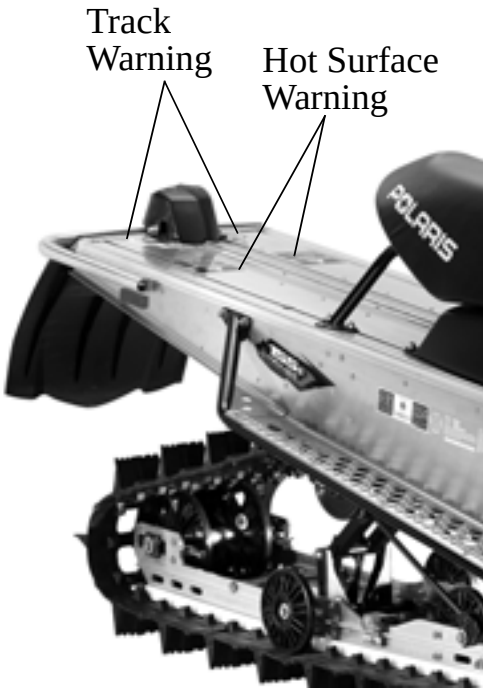
WARNING

This vehicle is designed for operator only.

"NO PASSENGER"

Track Warning

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



WARNING

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.

Hot Surface Warning

The hot surface warning is on the rear center of the tunnel.

WARNING

Hot Surface

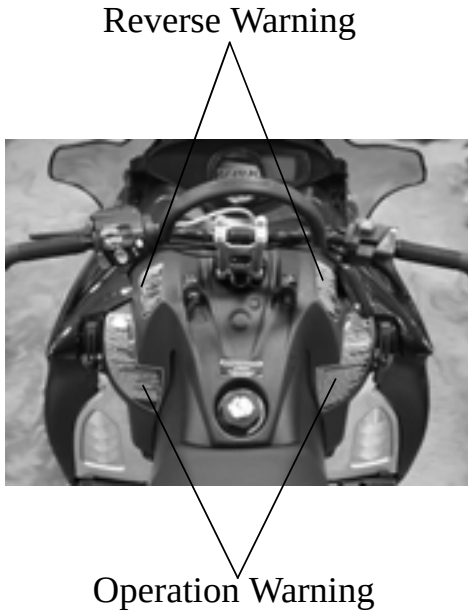
Do Not Touch

Burns may result. Entire top of tunnel may be hot. Install only accessories specifically approved for this model by Polaris. Do not place clothing, bags or cargo on tunnel. Do not cover this label.

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SAFETY
Safety Decals and Locations
Reverse Warning

Polaris snowmobiles equipped with electric reverse have a reverse warning decal on the console.



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 console of all Polaris snowmobiles.

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.**

(continued on next page)

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Safety Decals and Locations

Operation Warning

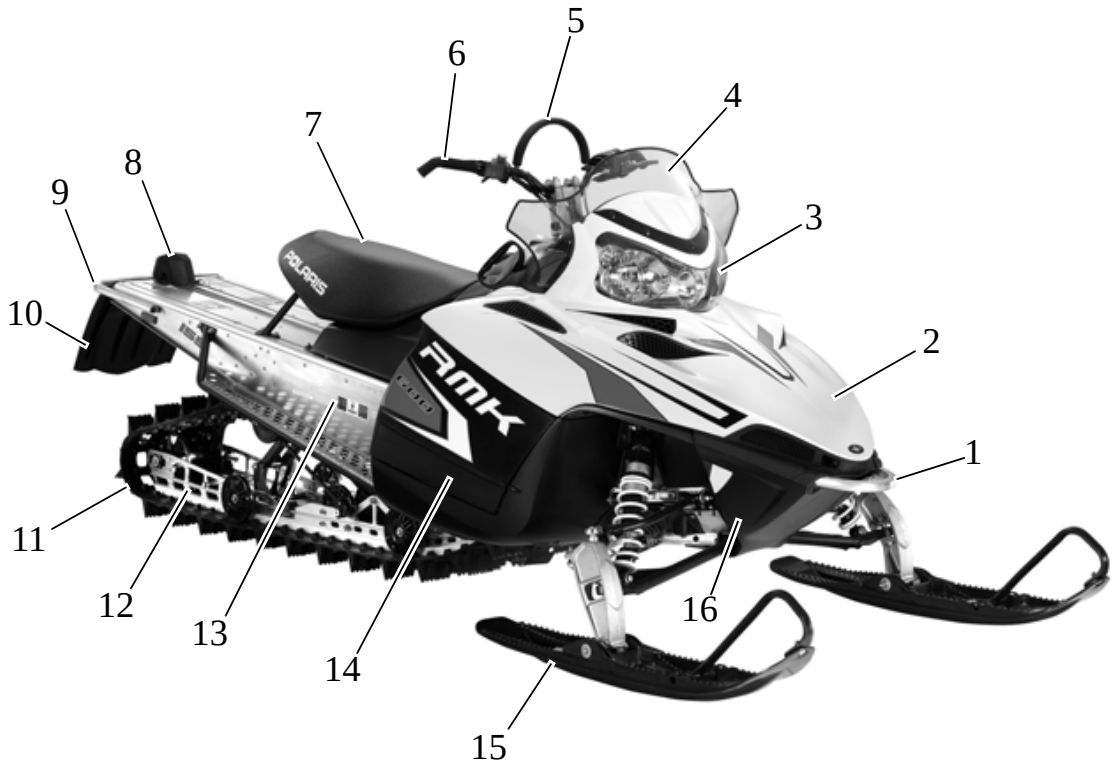
(continued from previous page)

- **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 the 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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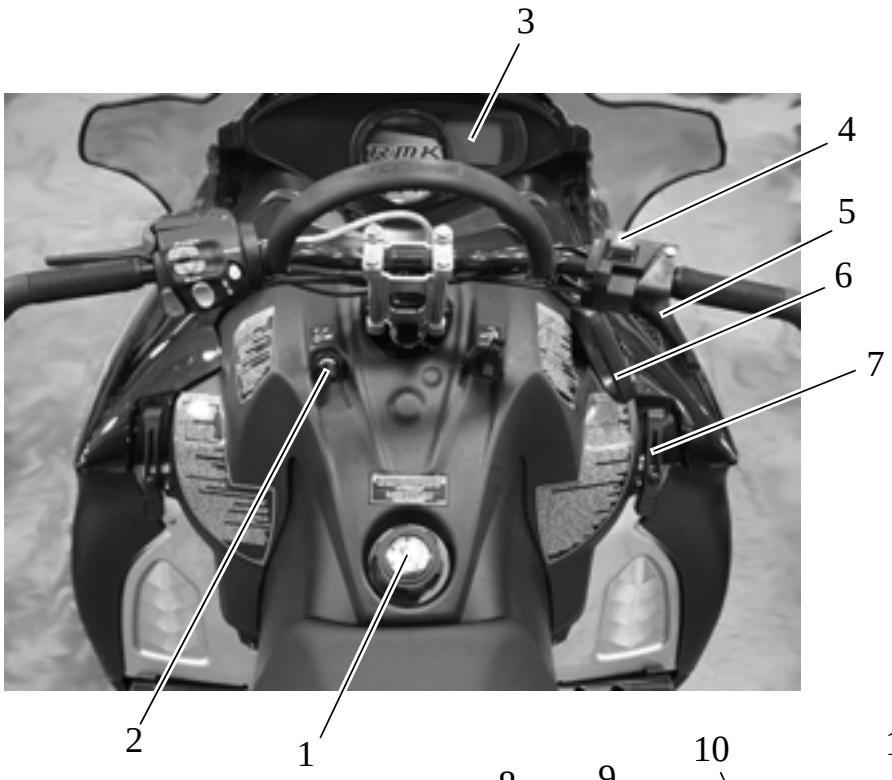
FEATURES

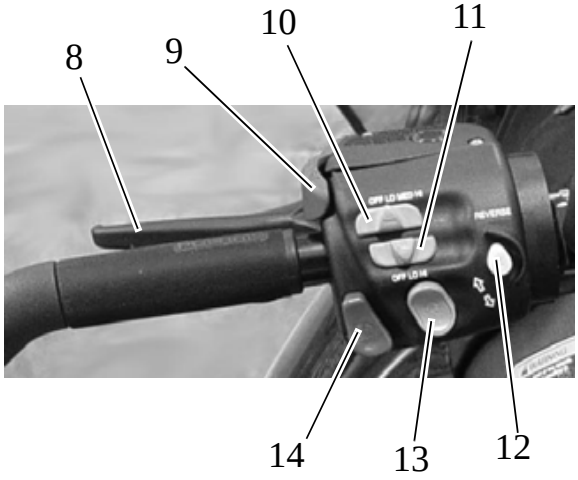


1. Front Bumper (do not use for pulling or dragging the snowmobile)
2. Hood
3. Headlight
4. Windshield
5. Mountain Bar (if equipped)
6. Handlebar
7. Seat
8. Taillights
9. Rear Bumper
10. Snow Flap
11. Track
12. Suspension
13. Tunnel
14. Side Panel
15. Ski
16. Nosepan

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FEATURES





1. Fuel Filler Cap
2. Ignition Switch
3. MFD (Multi-Function Display)
4. Engine Stop Switch
5. Throttle Control
6. Recoil Starter Handle
7. Hood Hold-Down Straps
8. Brake Lever
9. Parking Brake
10. Handlebar Grip Warmer Switch
11. Thumbwarmer Switch
12. Electronic Reverse Button
13. MFD Control
14. Headlight Dimmer Switch

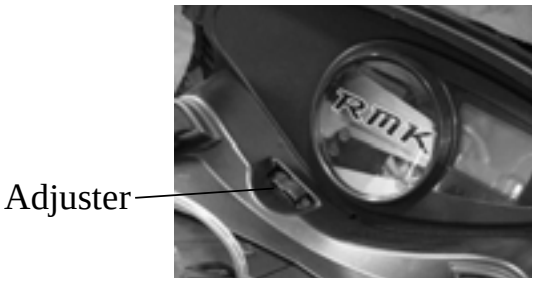
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FEATURES

Adjustable Headlights

Move the adjuster to the left to lower the headlight beam.

Move the adjuster to the right to raise the headlight beam.



Headlight Dimmer Switch

Use the headlight dimmer switch to adjust the headlights between high beam and low beam. Switch headlights to low beam when meeting oncoming traffic.



Adjustable Steering

The adjustable steering system allows you to adjust the handlebar position to fit your style of riding. See page 45.

Accessory Cargo System

The maximum weight capacity for the rear cargo area is 15 lbs. (7 kg). Always secure cargo before operating. Do not exceed the cargo weight limit. Do not allow a passenger to sit on the seat back or the cargo area.

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Detonation Elimination Technology (DET)

A detonation sensor monitors the engine and responds to detonation by automatically reducing the engine timing and adding fuel. This results in decreased engine RPM and performance.

Effect of DET

The DET system prevents damage to the engine from detonation while developing the maximum power of the engine safely. If the system senses detonation beyond a preset limit, it retards ignition timing and adds fuel to reduce the detonation and prevent engine damage.

When the detonation returns to a permissible level, the system will return spark and fuel to normal, allowing the engine to run at rated power levels.

Sensor Fail-Safe

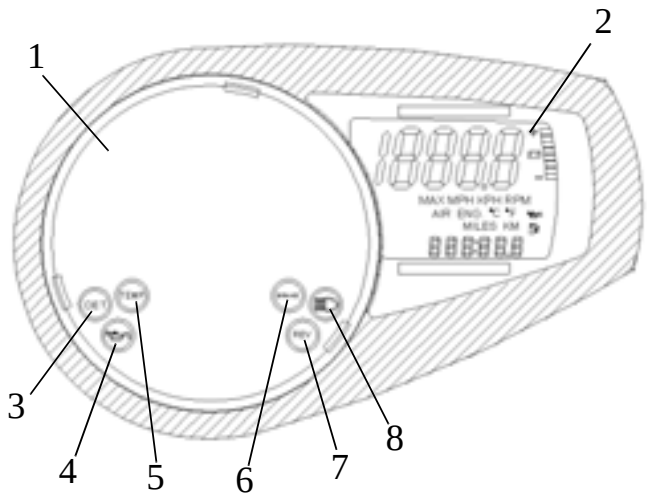
The DET includes a sensor fail-safe system to prevent the engine from damage if the sensor fails, becomes disconnected or is unable to detect detonation. The rider will experience a loss in power. The sensor must be reconnected or repaired to regain full power.

TIP: The check engine light will flash six times if the sensor fails or becomes disconnected.

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FEATURES
Instrumentation
MFD Component Identification

Item	
1	Analog Gauge (if equipped)
2	Digital Gauge
3	Check Engine Indicator
4	Low Oil Indicator
5	High Temp Indicator
6	Brake Indicator
7	Reverse Indicator
8	High Beam Indicator



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Instrumentation

Digital Display Identification

Item	
1	RPM or Speed Altitude (if equipped) Service Interval
2	Electrical System Voltage Level
3	MAX -Maximum MPH/ KPH or RPM MPH - Miles per hour KPH - Kilometers per hour RPM - Engine crankshaft revolutions per minute
4	Air Temp (if equipped) Engine Temp Degrees Celsius Degrees Fahrenheit
5	Miles Kilometers
6	Hours Trip 1/Trip 2/Trip F Service Label Altitude Label



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FEATURES
Instrumentation
MFD Settings

The MFD Control Switch allows you to set the MFD display to your preferences. The rocker switch has a MODE button (top) and a SET button (bottom). Specific instructions are outlined on the following pages.



MFD Control Switch

MODE

SET

Standard vs. Metric

The MFD will display either standard or metric units of measurement. While viewing a screen that displays measurements (MPH, km/h or temperatures), press and hold the MODE switch until the unit of measurement changes (about 10 seconds).



Speedometer/Tachometer

To change viewing preferences, press and hold the MODE button for three seconds. When the button is released, the new setting becomes active and screen colors change.

Option	Digital Display	Screen Backlight
1	RPM	Blue
2	Speed	Red

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Instrumentation

MFD Digital Display Programs

Press and release the MODE button to cycle through the three MFD programs: Performance, Engine and History. Each program remains active until you cycle to the next program. While any program is active, press and release the SET button to cycle through the program's screens.

Performance Program

Press and release the MODE button until the performance program screen is active. The default display for this screen includes electrical system voltage, fuel level (if equipped) and either speed or tachometer, whichever is selected (see page 32).

Press and release the SET button to cycle through the following screens: odometer, trip 1 odometer, trip 2 odometer, fuel trip odometer (if fuel is low) and clock (if equipped). Use the following procedures to make changes to these screens.

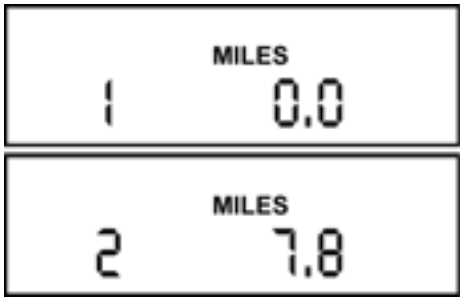
Odometer Setting

The odometer records the vehicle's total distance traveled since manufacture. The odometer cannot be reset.



Trip Settings

Trip 1 and Trip 2 are odometers used to check fuel mileage or to keep track of distance traveled. Both odometers can be reset to zero.



1. Enter the Performance Program.
2. Press and release the SET button until the desired trip screen is active.
3. Press and hold the SET button for two seconds to reset the trip odometer to zero.
4. Press and release the SET button to view another trip screen if desired.

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FEATURES
Instrumentation
MFD Digital Display Programs
Performance Program
Trip Settings



Trip F automatically displays when the fuel level is low if the snowmobile is equipped with an electronic fuel gauge. The fuel symbol and the last fuel bar on the MFD gauge (if equipped) will blink when the fuel level reaches 1/8 of a tank.

The Trip F odometer records distance traveled, and the fuel symbol continues to blink, until enough fuel is added to raise the level above 1/4 of a tank. The Trip F odometer will automatically reset to zero after refueling.

Engine Program

Press and release the MODE button until the engine program screen is active. The default display for this screen includes engine hours, electrical system voltage level, fuel level (if equipped) and either engine coolant temperature, air temperature (accessory) or altimeter (accessory).

Press and release the SET button to cycle through the following screens: hour meter, engine temperature, air temperature (available as an accessory) and altimeter (available as an accessory).

Hour Meter



The hour meter records the total hours of engine operation since manufacture. This meter cannot be reset.

Engine Temperature

A thermometer measures water temperature, giving an indication of engine temperature.

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Instrumentation

MFD Digital Display Programs

Engine Program

Air Temperature (accessory)



The MFD displays actual air temperature. Press and hold the MODE switch for ten seconds to switch between standard and metric units of measurement.

Altimeter (accessory)



The rider can calibrate the altimeter for current atmospheric conditions. Altimeter accuracy will be +/-300 ft. (91 m) after adjustment.

TIP: When “ALt-FT” displays, the program is in the standard mode. If only "ALt" displays, the program is in the metric mode.

1. Enter the Engine Program.
2. Press and release the SET button until the altimeter screen is active.
3. Press and hold the SET button for five seconds.
4. When the digits begin to flash, release the SET button.
5. Press and release the SET button to advance the reading in 50-foot (15 m) increments, or press and hold the button to advance quickly. Adjust the altitude display to within 50 ft. (15 m) of the current altitude.

TIP: The gauge reads barometric pressure and allows the rider to compensate for daily fluctuations in air pressure. The gauge can adjust the displayed altitude to +/- 1300 ft. (396 m) from the preset value. It will adjust up to +1300 ft. (396 m) above the calibrated altitude. Once the +1300 ft. (396 m) offset has been reached, the next adjustment is -1300 ft. (396 m) from the calibrated altitude, and 50 ft. (15 m) will be added to the altitude each time the SET button is pressed.

6. Press the MODE button to hold the reading at the adjusted value. If the MODE button is not pressed within five seconds, the gauge will automatically save the new setting.

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FEATURES
Instrumentation
MFD Digital Display Programs
History Program

Press and release the MODE button until the history program screen is active. This screen will always display electrical system voltage level and fuel level (if equipped).

Press and release the SET button to cycle through the following screens: maximum vehicle speed, maximum engine RPM and service interval reminder.

Maximum Speed/Maximum RPM



The gauge automatically logs the maximum speed and engine RPM even if the history program is not active in the display.

1. Enter the History Program.
2. Press and release the SET button until one of the two screens is active. The MPH and RPM values are both reset at the same time. Reset the values before each run to obtain accurate readings.
3. Press and hold the SET button for three seconds to reset the recorded maximum values for both MPH and RPM.

TIP: Due to electrical noise, the MFD may occasionally display MAX MPH/RPM values that are not representative of actual values.

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Instrumentation

MFD Digital Display Programs

History Program

Service Interval Reminder



The gauge logs the number of engine hours accumulated between service reminders. When the logged hours reaches the designated service interval (set by the user), the gauge provides a reminder that service is due. "SErVCE" will flash in the odometer area and "ENG" will flash in the icon area for five seconds each time the engine is started (until the service reminder is reset.) Use the following procedures to reset the reminder.

To reset the reminder at the existing interval:

1. Enter the History Program.
2. Press and release the SET button until the service interval screen is active.
3. Press and hold the SET button for *ten* seconds, continuing to hold even after the display begins to flash.
4. When the display stops flashing, release the button. The service interval has been reset.

To reset the reminder at a new interval:

1. Enter the History Program.
2. Press and release the SET button until the service interval screen is active.
3. Press and hold the SET button for *five* seconds, until the hours begin to flash. Immediately release the button.
4. Press the button again, up to five times, to advance the reminder in 20-hour increments. The maximum interval is 200 hours.

To disable the service interval reminder, press the SET button once after reaching 200 hours on the display. The gauge will display "OFF".

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FEATURES
Instrumentation
Gauge Cleaning

1. Wipe the gauge face as needed using a clean cloth and a mild soap and water solution. Wipe dry with clean, soft cloth.
2. Clean the back side of the gauge using a clean cloth and a mild soap and water solution. Do not remove the electrical connectors or protective rubber boot. Do not spray the back side of the gauge or the wire harness with a pressure washer or other water source.

NOTICE: To prevent damage to the lens, do not use alcohol for cleaning. Do not allow chemicals or sprays to contact the lens. Immediately clean off any gasoline that splashes on the gauge during refueling.

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IQ Front Suspension Adjustments

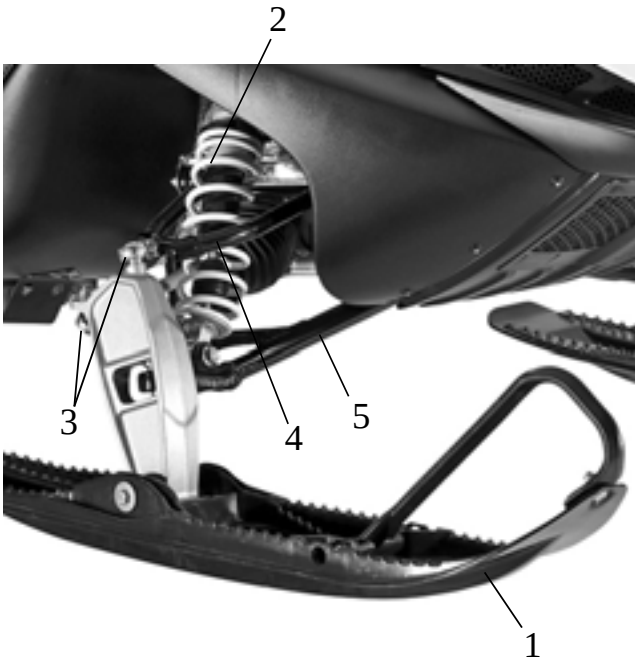
Independent Front Suspension (IFS)

Break in the suspension for approximately 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 snowmobile 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. Ski
2. Front shock and spring
3. Rod ends
4. Upper control arms
5. Lower control arms



IFS Adjustment Options

- Shock spring preload
- Shock valving
- Optional springs
- Toe (ski alignment) (see page 98)
- Camber (see your dealer)

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THE PERFECT FIT
IQ Front Suspension Adjustments

WARNING! Always verify ski alignment before making adjustments to the IFS. See page 98 to check alignment. If the skis are misaligned, see your dealer, as the camber adjustment may also be affected.

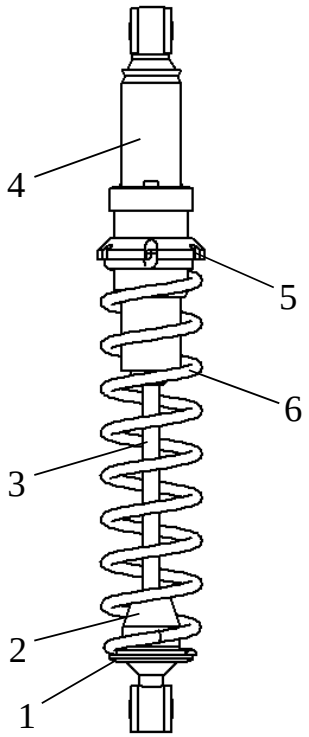
Standard Shocks

The tension at which the shock coil spring is set is called spring preload. For the best ride, the suspension should be adjusted to use the full travel of the shocks with occasional light bottoming.

The front springs can be changed if spring preload alone isn't sufficient and further adjustment is desired to control suspension stiffness. See your Polaris dealer for more information.

Shock Absorber Components

1. Retainer
2. Jounce Bumper
3. Shock Rod
4. Body
5. Threaded Spring Preload Adjuster Nut
6. Spring (Standard only)



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

Make adjustments to one area at a time so you can evaluate the change. For further assistance, see your dealer.

Suspension Performance Tips

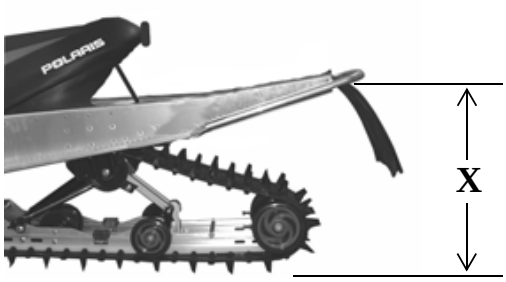
- Rider weight usually determines the position at which the spring preload should be set. However, this may vary with riding style. With a little experimentation, each rider can find a preferred set-up. These adjustments are easy to make, involve very little time or effort, and greatly affect the ride.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

TIP: 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 the suspension lubrication information beginning on page 73.

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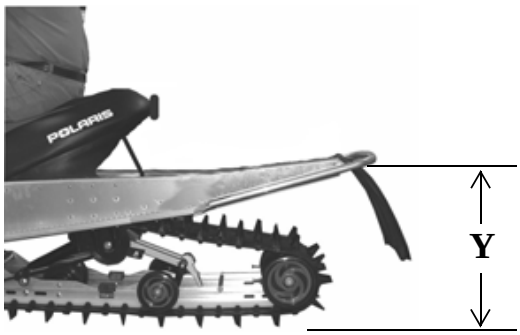
THE PERFECT FIT
Rear Suspension Adjustments
Initial Spring Preload Setting (Sag Method)

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



Take this measurement with no rider and with the rear suspension at full extension.

TIP: The rear bumper may need to be lifted upward slightly to fully extend the suspension.



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

To determine sag, commonly referred to as ride-in, subtract measurement Y from X (Sag=X-Y). Adjust sag by rotating the torsion spring preload cams located on the rear torque arm. See illustration. The ideal amount of sag for this rear suspension is five inches (12.7 cm) (X-Y=5 in./12.7 cm).

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

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Rear Suspension Adjustments

Torsion Spring Preload

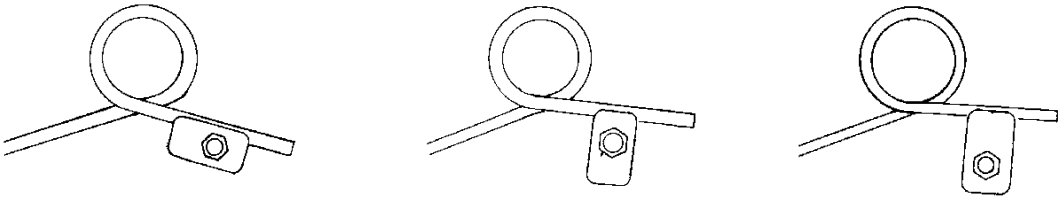
To adjust rear torsion spring preload, rotate the three-position cam using the engine spark plug tool. Different rate torsion springs are available if a firmer ride is desired. Contact your dealer for more information.

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

Soft (long end of cam to front)

Medium (short end of cam up)

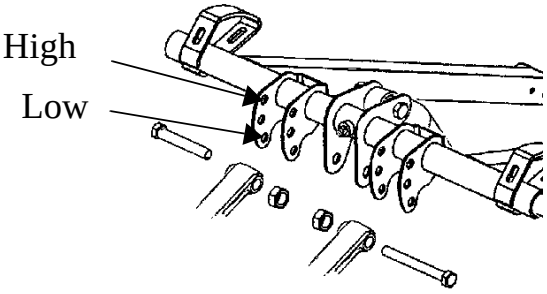
Firm (long end of cam up)



Soft Medium Firm

Limiter Strap Position

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



High: Limiter strap in high position increases ski pressure

Low: Limiter strap in low position decreases ski pressure

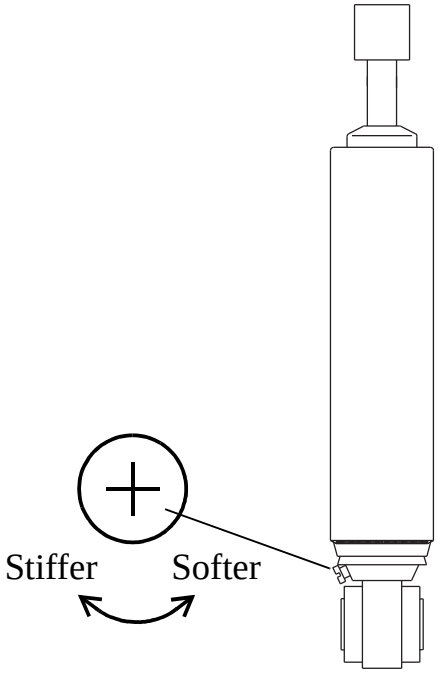
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THE PERFECT FIT
Rear Suspension Adjustments
Shock Compression Valving
Standard Rear Track Shock

The standard RMK rear track shock is an Arvin MPV Select shock that allows for adjustments to the compression valving. Adjustments are made by turning the adjustment screw located near the base of the shock. In half-turn increments:

- Turn the screw clockwise for a stiffer ride.
- Turn the screw counterclockwise for a softer ride.

If bottoming continues after the screw has been turned fully clockwise, the torsion spring should be adjusted (see page 43). Return the screw to its original starting position after the torsion spring has been adjusted.



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Handlebar Adjustments

WARNING! Some aftermarket accessories (including windshields and cargo bags) may interfere with the handlebar. Such accessories could limit your ability to steer the vehicle and/or may contact the brake lever. This could lead to loss of control resulting in serious injury or death. Always be sure that accessories do not contact the handlebar or brake lever at any handlebar position.

Handlebar position and handlebar angle can be adjusted to rider preference. After making handlebar adjustments, check to make sure wires are not pinched or kinked. Make sure the handlebars, brake lever and throttle lever operate smoothly and do not hit the gas tank, windshield or any other part of the vehicle when the handlebars are turned fully to the left or right.

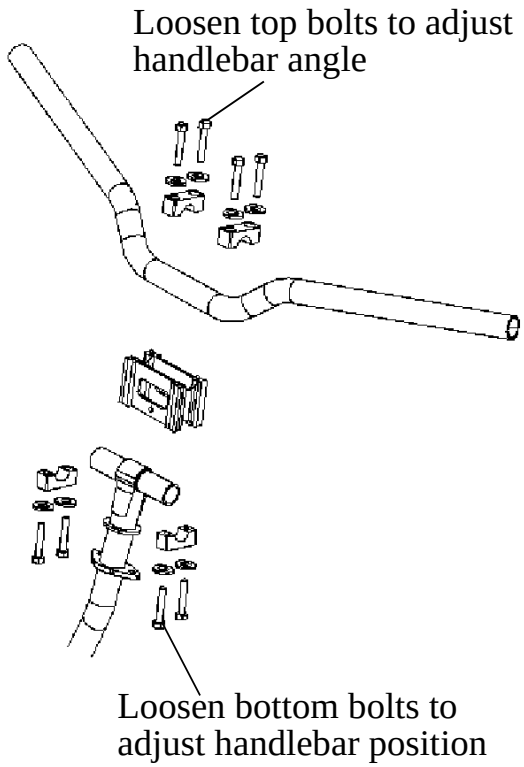
When adjustments are complete, torque the front adjuster block bolts first, then torque the rear bolts. Torque the bolts to 11-13 ft. lbs. (15-18 Nm).

Handlebar Position

1. Loosen the four bolts on the bottom of the adjuster block. If necessary, pry the blocks apart with a screwdriver.
2. Adjust the handlebar forward or rearward to the desired position.
3. Tighten the bolts.

Handlebar Angle

1. Loosen the four bolts on the top of the adjuster block. If necessary, pry the blocks apart with a screwdriver.
2. Adjust the handlebar forward or rearward to the desired angle.
3. Tighten the bolts.



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THE PERFECT FIT
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.

Tether Switch

The accessory tether switch is available for all models. Order part number 2870668.

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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 (**n**) on the referenced pages to locate the pre-ride inspection items.

Item	See Page
Drive Belt Condition	89
Steering System	51
Recoil Rope	49
Parking Brake Lock/Brake Lever/Brake System	49, 50, 84
Throttle Lever	48
Throttle Safety Switch	48
Auxiliary Shut-Off Switch (Engine Stop Switch)	53, 63
Ignition Switch	53, 63
Taillight/Brakelight/Headlight	53
Coolant Level	80
Gearcase Oil Level	N/A
Engine Oil Level	60
Suspension Mounting Bolts	52
Skags (Wear Bars)	99
Ski Saddle and Spindle Bolts	52
Hood Straps/Latches	48
Seat Latches (if equipped)	N/A
Rear Wheel Idler Bolts	52, 95
Tether Switch/Strap	53
Track Alignment/Condition	51, 96
Rail Slide Condition	100
Chaincase Oil Level	74
Oil Level	60

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PRE-RIDE INSPECTIONS
Before Starting the Engine

Before starting the engine, always refer to all safety warnings pertaining to snowmobile operation. Never start the engine without checking all vehicle components to be sure of proper operation.

WARNING! Operating the vehicle with worn, damaged, or malfunctioning components could result in serious injury or death. Never start the engine without checking all vehicle 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.

n 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.

n Throttle Safety Switch

Test the throttle safety switch system before the snowmobile is operated. See page 61 for procedure.

n 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.

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Before Starting the Engine

n Recoil Rope

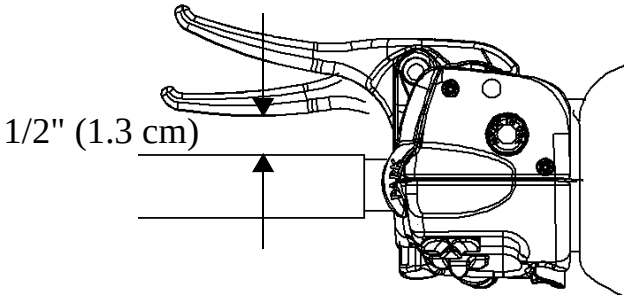
Inspect the recoil rope and handle for excessive wear, and make sure the knot securing the rope inside the handle is secure. If excessive wear is found, see your Polaris dealer for replacement.

n 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 86.



Brake Lever Feel

If the brake lever feels “spongy” when squeezed, check the brake fluid level and condition. Add fluid as needed. See page 85.

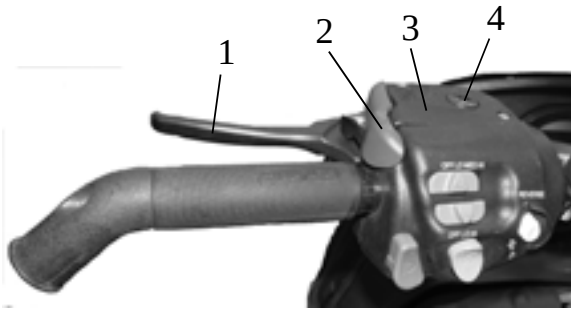
Check for the presence of air in the fluid system. See page 86 for more information, or see your dealer for service.

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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PRE-RIDE INSPECTIONS
Before Starting the Engine
n Parking Brake Lever Lock

Use the parking brake lever lock only when you want the snowmobile 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.

NOTICE: 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 parking brake light on the gauge will light up if the parking brake lever lock is set while the engine is running. It will also be lit 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 unlocked 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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Before Starting the Engine

n Steering System

Manually turn the skis completely to the right and to the left. If any difficulty is encountered, remove any ice and snow build-up that may be obstructing the steering linkage.

n Track Inspection

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

Deep Lug Tracks (if equipped)

The 2.4" powder track is designed specifically for deep snow applications. Operation in low snow conditions at high speeds may cause track lug separation. Track lug separation is not covered under the Polaris limited warranty policy. **Polaris does not recommend operation above 70 mph with this track.**

NOTICE: High speed use on hard-packed surfaces is not recommended for models equipped with a deep lug track. Track lug damage may occur. Keep high speed use to a minimum, including frequent slow-speed intervals for track cooling.

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PRE-RIDE INSPECTIONS
Before Starting the Engine
n 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.

Item	Check	Page
Suspension mounting bolts	Tightness	--
Rear idler wheel bolts	Tightness	95
Rear idler adjusting bolt locknuts	Tightness	--
Torque arm bolts	Tightness	--
Carrier and bogie wheel bolts	Tightness	--
Front torque arm limiter strap	Condition	--
Rail slide	Condition	100
Track	Tension	94
All rear suspension components	Lubrication	72
Ski runner/skag	Condition	--
Ski spindle bolts	Tightness	--
Tie rod end nuts	Tightness	--

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Start the Engine and Check

Before starting the engine, always refer to all safety warnings pertaining to snowmobile operation. Never engage the starter when the engine is running. Never start the engine without checking all vehicle components to be sure of proper operation. See Before Starting the Engine beginning on page 48.

n 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.

n Ignition Switch

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

n Tether Switch

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

n Lighting

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

n Mirror Adjustment

If equipped, adjust your mirrors so they can be used to their full advantage.

n Operating Area

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

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OPERATION
Starting the Engine

NOTICE: 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 key to the ON position. Pull the engine stop switch up to the RUN position.

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

2. 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.
3. If not equipped with electric start, grasp the starter handle and pull slowly until the recoil engages; then pull abruptly to crank the engine.

TIP: 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.

4. Repeat the cranking procedure as needed until the engine starts.

TIP: It may require as many as eight to ten pulls to prime the fuel system and start the engine if the fuel tank has been completely emptied.

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Break-In Period

Engine Break-In

Always follow these recommended break-in procedures for new or rebuilt engines. The first tank of fuel is considered the break-in period for the engine.

Premix the first tank of fuel as outlined below. Oil added to the fuel and oil injection systems will provide the necessary engine lubrication.

Oil Recommendations	
First Tank of Fuel:	POLARIS Premium 2-Cycle Semi-Synthetic Oil
After Break-in:	POLARIS VES Gold Plus Oil

Tip: The semi-synthetic oil will seat the rings faster than the VES Gold Plus oil.

See page 104 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.

Initial Fuel Premix

Always premix fuel in 5-gallon (19-liter) increments in a separate fuel container. Never add oil directly to the fuel tank.

Fuel	Semi-Synthetic Oil	Ratio
Each 5 gal. (19 l)	16 oz. (473 ml)	40:1

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OPERATION
Break-In Period
Engine Break-In

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 vehicle speeds to reduce friction on all close-fitting machined parts, allowing them to break in slowly without damage.

NOTICE: 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 snowmobile.

Oil Injection System

Always check and fill the oil tank when refueling. See page 60.

NOTICE: 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.

Drive Belt Break-In

The break-in period for a new drive belt is 30 miles (48 km). During this time, vary the throttle position under 50% and limit full throttle use.

New drive belts that feature a sanded finish should be first washed with warm, soapy water and allowed to air dry prior to use.

Always take time to warm up the belt and driveline prior to operating the snowmobile. Free the track and skis from the ground before engaging throttle.

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Slide Rail and Track Cooling

NOTICE: 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.

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. Be sure the rear support is stable.

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 approximately 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.

TIP: 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 snowmobile 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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OPERATION
Fuel Safety

⚠ 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.

⚠ 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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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).*

NOTICE: Operating with obstructed fuel systems will result in serious engine damage. Perform maintenance as recommended.

Damage to the fuel pump will occur if the snowmobile is operated with an empty fuel tank. Do not allow the snowmobile to run out of fuel. Always refuel when the level is low.

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 104 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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OPERATION

n Oil

Low Oil Indicator Light

The low oil indicator light may flicker at times due to oil movement in the bottle, but when the light comes on and remains on, add the recommended oil before further operation. See page 55 for oil recommendations.

Visually check the oil level in the bottle. The engine may be operated as long as oil is visible in the oil tank. If oil is not visible, continued operation may cause serious engine damage.

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

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

NOTICE: Mixing brands or using a non-recommended oil may cause serious engine damage. We recommend the use of POLARIS 2-cycle oils for your snowmobile. Never mix brands.

Operating the snowmobile without proper engine lubrication can result in serious engine damage. Always check the oil level when refueling.

Low Oil Level

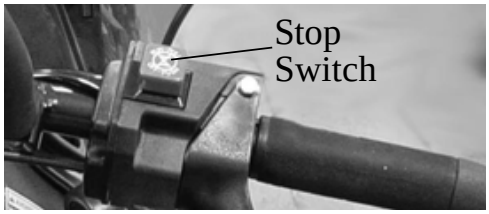
Always do a visual check of the oil level when refueling. When the oil reaches the low level mark, add the recommended oil to the tank.

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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n 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 RUN position to allow restarting.



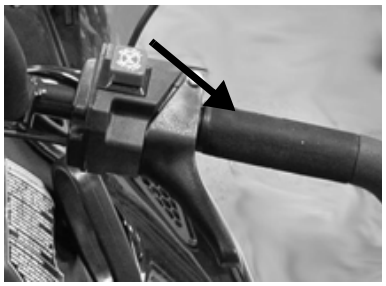
n Throttle Safety Switch

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



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OPERATION

n 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 throttle body 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.

TIP: Excessive freeplay in the throttle cable may cause the safety switch to activate, preventing the engine from starting. If this occurs, return the snowmobile 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 snowmobile with the throttle safety switch disconnected. Return the snowmobile to an authorized Polaris dealer for service as soon as possible.

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n Emergency Stopping

The following chart lists methods for stopping the snowmobile in the event of an emergency. See page 61 for more information about the engine stop switch.

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

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OPERATION
Electronic Reverse (PERC)

⚠ 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.

Electronic reverse will activate only if the engine RPM is below 4000. The maximum engine RPM will be 6000 when in reverse.

NOTICE: 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.

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Electronic Reverse (PERC)

Engaging Reverse

1. Stop the snowmobile and leave the engine idling.
2. Make sure the area behind your snowmobile is clear.
3. Push the reverse button on the left-hand control for one second, then release. The engine will automatically reduce RPM and start a reverse rotation.



Reverse Button

TIP: A reverse light on the instrument panel will indicate that the transmission is in reverse.

4. Apply the throttle slowly to make sure the transmission is in reverse.

TIP: 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.

NOTICE: 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.

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

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OPERATION
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 snowmobile.

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.

WARNING! 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.

NOTICE: 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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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. 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.

Owner's Responsibilities

Please read the Snowmobile Engine Emissions Limited Warranty, and read the maintenance section of your owner's manual. You are responsible for ensuring that the specified maintenance is performed. Polaris recommends that you contact an authorized Polaris dealer to perform any service that may be necessary.

Non-ionizing Radiation

This vehicle emits some electromagnetic energy. People with active or non-active implantable medical devices (such as heart monitoring or controlling devices) should review the limitations of their device and the applicable electromagnetic standards and directives that apply to this vehicle.

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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 119.

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.

NOTICE: 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)	88		**I**	**I**	**I**	
Drive Belt Condition	89		**I**	**I**	**I**	**I**
Clutches (disassemble)	88		**C**	**C**	**C**	
Belt Tension	--		**I**	**I**	**I**	**I**
Clutch Sheaves	88		**I**	**I**	**I**	**I**
ENGINE/COOLING						
Engine Mounts	--		**I**	**I**	**I**	**I**
Recoil Rope	--		**I**	**I**	**I**	**I**
Engine Torque Stop	92		**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	76	**I**	**I**	**I**	**R**	**I**
Exhaust Pipe	79				**I**	**I**
Exhaust Retaining Springs	79		**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	84		**I**	**I**	**I**	**I**
Brake Disc	--		**I**	**I**	**I**	**I**
Parking Brake	50		**I**	**I**	**I**	**I**
Brake System	49, 84					**I**
Brake Fluid	85				**R**	
FUEL MANAGEMENT						
Idle RPM	--		**I**	**I**	**I**	
Throttle Lever	48, 62	**I**	**I**	**I**	**I**	**I**
Oil Pump Lever (synchronize)	--		**I**	**I**	**I**	
Throttle Cable	73		**L**	**L**	**L**	
Vent Lines	--		**I**	**I**	**I**	**I**
Throttle Position Sensor	--		**I**	**I**	**I**	
Fuel Lines	79	**I**	**I**	**I**	**I**	**I**
Fuel Filter	79	**R - Every 2000 mi. (3200 km) or Every 2 years**				
Oil Filter	78			**R**	**R**	
Oil Lines	78			**I**	**I**	**I**
Air Box/Plenum	--	**I**	**I**	**I**	**I**	**I**
Fuel Injectors	--		**I**	**I**	**I**	
ELECTRICAL						
Engine Stop Switch	61	**I**	**I**	**I**	**I**	**I**
Throttle Safety Switch	61	**I**	**I**	**I**	**I**	**I**
Ignition Switch	--	**I**	**I**	**I**	**I**	**I**
Taillight	53	**I**	**I**	**I**	**I**	**I**
Brakelight	53	**I**	**I**	**I**	**I**	**I**
Headlight	53	**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**
Cooling Fins/Shroud	--		**I**	**I**	**I**	**I**
Drive Shaft Bearings	73		**L**	**L**	**L**	**I**
Jackshaft Bearings	102		**L**	**L**	**L**	**I**
Skags (Wear Bars)	99	**I**	**I**	**I**	**I**	**I**
Ski Saddle/Spindle Bolts	--	**I**	**I**	**I**	**I**	**I**
Drive Chain Tension	83	**I**	**I**	**I**	**I**	**I**
Hood Latches	48	**I**	**I**	**I**	**I**	**I**
Rear Wheel Idler Bolts	95	**I**	**I**	**I**	**I**	**I**
Idler Bolt Jam Nut	95	**I**	**I**	**I**	**I**	**I**
Rear Suspension Pivot Shafts	72		**L**	**L**		**L**
Camber Alignment	--		**I**	**I**	**I**	
Handlebar Centering	--					**I**
Tether Switch and Strap	53	**I**	**I**	**I**	**I**	**I**
Track Alignment	96	**I**	**I**	**I**	**I**	**I**
Track Tension	95	**I**	**I**	**I**	**I**	**I**
Front Limiter Strap	--	**I**	**I**	**I**	**I**	**I**
Rail Slide Condition	100					**I**
Chaincase Oil	74	**I**	**I**	**I**	**R**	**I**

I - Inspect (clean, adjust, tighten, lubricate, replace if necessary)

C - Clean R - Replace L - Lubricate

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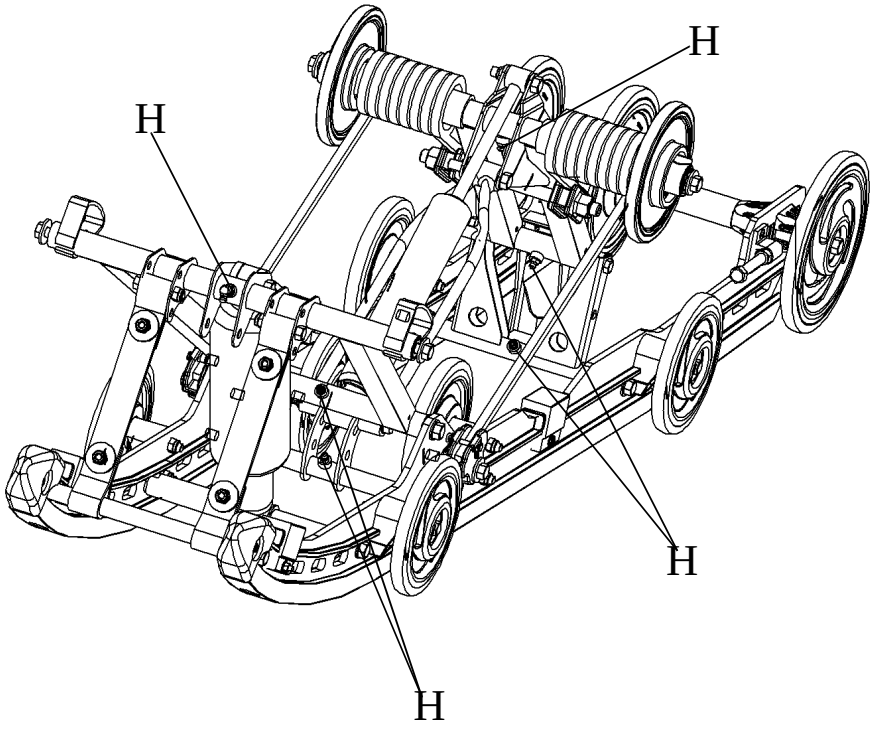
MAINTENANCE
Lubrication
Front Suspension

The front suspension does not require lubrication.

Rear Suspension

Lubricate the suspension pivot shafts with Polaris Premium All Season Grease at the intervals outlined in the Periodic Maintenance Table beginning on page 69 and before seasonal storage. When operating in heavy, wet snow conditions, lubricate every 500 miles (800 km).

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.

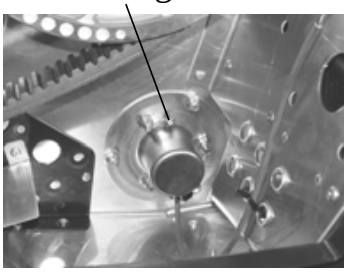


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Lubrication

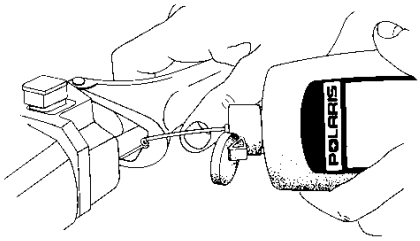
Driveshaft Bearing

Fitting



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.

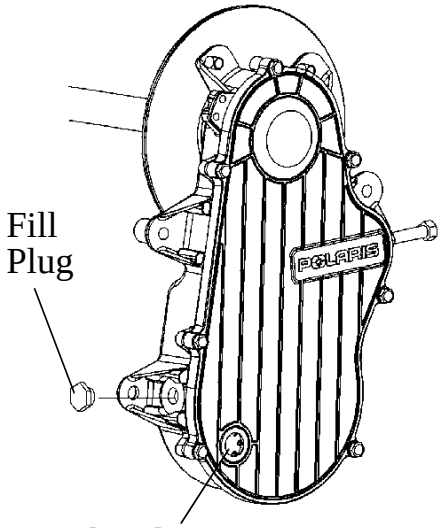
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MAINTENANCE
Lubrication

n Chaincase Oil

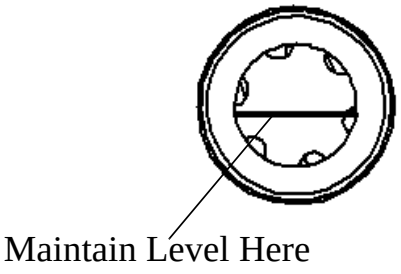
Check the chaincase oil level at the intervals outlined in the maintenance charts beginning on page 68. The sight glass is located on the lower rear of the chaincase. Maintain the oil level at or slightly below the center of the sight glass. Change the chaincase oil after the first 500 miles (800 km), then every 1000 miles (1600 km) or seasonally.

Polaris recommends the use of Polaris Synthetic Chaincase Lube. See page 104 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 and add the recommended oil as needed. Do not overfill.
4. Reinstall the fill plug, making sure it is seated properly.

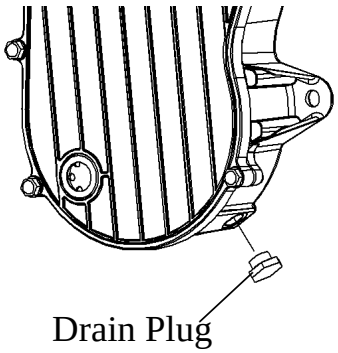


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Lubrication

Chaincase Oil

Oil Change


Drain Plug

1. Position the vehicle on a level surface.
2. Remove the drain plug 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. 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

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.

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

Normal Spark 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.

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 Spark 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 carburetor/throttle body adjustments.

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

NOTICE: 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 Removal and Replacement

1. Remove the spark plug cap.
2. Using the special wrench provided in the tool pouch, rotate the spark plug counterclockwise to remove it.
3. Reverse the procedure for spark plug installation.
4. Torque to specification.
5. Reinstall the spark plug cap.

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MAINTENANCE
Intake Filters

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

NOTICE: Operating the snowmobile with the intake filters removed may cause intake icing. The result will be poor fuel economy or intake malfunction. Always reinstall the intake filters before operating the snowmobile.

Intake Foam Filters/Pre-filter



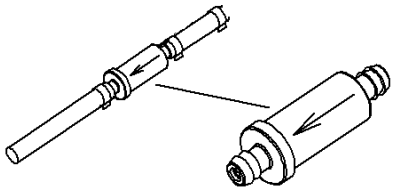
Oil Lines

Inspect oil line condition at the intervals outlined in the Periodic Maintenance Table beginning on page 69.

Oil Filter

Have your dealer change the oil filter and bleed the system at the intervals outlined in the Periodic Maintenance Table beginning on page 69.

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



Fuel Injectors

All fuel injector service must be performed by an authorized Polaris dealer. Do not attempt to clean or service the fuel injectors.

Fuel Pump

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

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Fuel Filter

See your Polaris dealer for replacement of the fuel filter at the intervals outlined in the Periodic Maintenance Table beginning on page 69.

Contaminated or poor quality fuel will shorten the life of the fuel filter and result in poor engine performance. Always store fuel in clean fuel containers. If low fuel pressure or reduced engine performance occurs between the recommended fuel filter service intervals, the filter may need replacement. See your dealer.

Fuel Lines

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.

NOTICE: 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.

Exhaust System

Check the exhaust system for wear or damage at the intervals outlined in the Periodic Maintenance Table beginning on page 68.

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

Always allow the engine and exhaust system to cool completely before inspecting.

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
Cooling System
Coolant

The coolant supplied in the system is a 60/40 mixture of ethylene-glycol and distilled water. This mixture provides protection against freezing. Contact your dealer if greater protection is required.

Use 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 104 for the part numbers of Polaris products.

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

n Coolant Level

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

- Coolant bottle or overflow tank
- 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.

NOTICE: 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

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 snowmobile 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.

TIP: 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.

Bleeding the Cooling System

CAUTION! Steam and hot liquids will cause 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.

NOTICE: 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.

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MAINTENANCE
Cooling System
Bleeding the Cooling System

Bleed the cooling system at the intervals outlined in the Periodic Maintenance Table beginning on page 69. Perform the bleeding procedure when the engine is cold.

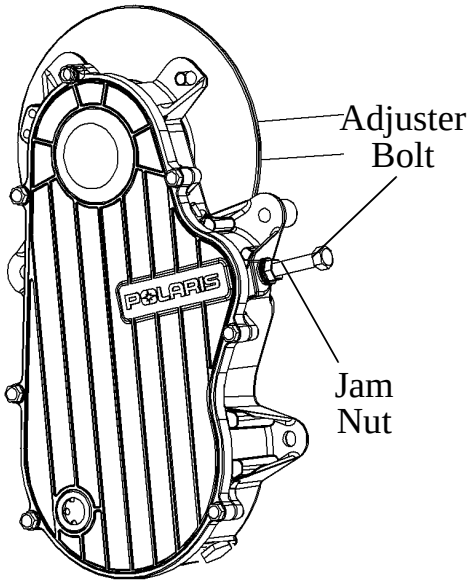
1. Remove the pressure cap and fill the coolant bottle with properly mixed coolant to the maximum mark.
2. Elevate the front end of the machine slightly to aid in bleeding of the heat exchangers.
3. Remove the bleed screw from the water outlet manifold and/or the thermostat housing. Allow the coolant to bleed through the system until it runs out the bleed holes. Reinstall the bleed screw into the manifold.
4. 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.
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.

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Drive Chain Tension

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

1. Rotate the driven clutch counterclockwise to move all chain slack to the tensioner side. Lock the brake lever lock, or have an assistant hold the brake lever firmly.
2. Loosen the adjuster bolt jam nut.
3. Finger tighten the adjuster bolt 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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MAINTENANCE
Brakes
n Hydraulic Brake Inspection

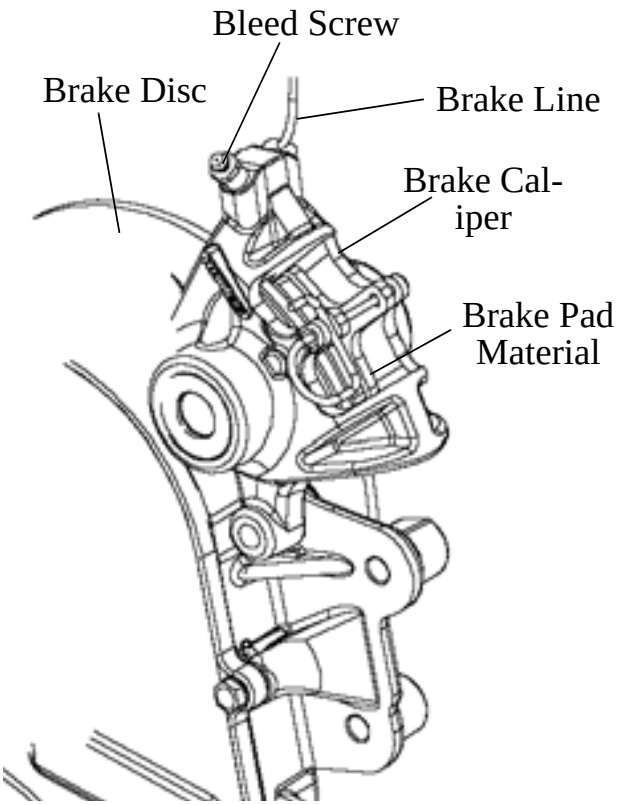
Inspect the brake lever travel before each use of the snowmobile. See page 49.

Brake pads must be replaced when the brake pad material becomes thinner than the backing plate, approximately 1/16" (1.5mm). 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" (1.5mm).

Brake Components

- Brake Disc
- Bleed Screw
- Brake Line
- Brake Caliper
- Brake Pad Material - Replace when thickness is less than 1/16" (1.5mm).



Excessive Lever Travel

Hydraulic brakes are self-adjusting, but if excessive brake pad clearance develops (see page 84) bring the snowmobile to an authorized Polaris dealer for inspection and adjustment.

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Brakes

n Brake Fluid

Replace brake fluid at least every two years with Polaris DOT 4 high temperature brake fluid. See page 104 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.

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.



NOTICE: Brake fluid will damage decals, paint and some plastics. Always wipe up spills immediately.

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MAINTENANCE
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 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 85.
8. Reinstall the gasket and cover.

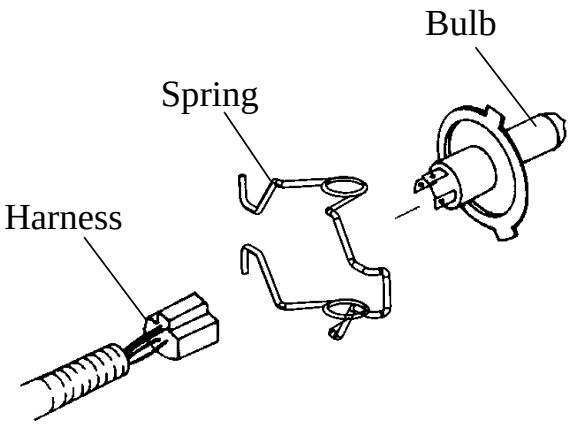
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Lights

Removing Halogen Bulbs

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.

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



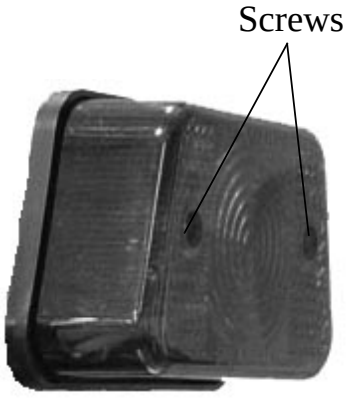
5. Grasp the bulb by its metal base and carefully separate the bulb from the harness.

Installing Halogen Bulbs

1. Hold the bulb by its metal base and install it into the wire harness.
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. Adjust headlight aim. See page 28.

Replacing Taillight Bulbs

1. Remove the screws securing the taillight lens.
2. Remove the bulb and install a new bulb.
3. Reinstall the 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 snowmobile 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.

NOTICE: 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. Please see your Polaris dealer if you experience a decrease in performance.

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

n Drive Belt Condition

Belt width and length must match the center distance of the clutches and sheave width of the drive clutch. For this reason, Polaris recommends that only O.E.M. belts be used. Other belts may match the dimensions, but can drastically change the shift pattern, resulting in poor performance. See Drive Belt Troubleshooting on page 109.

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.

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

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

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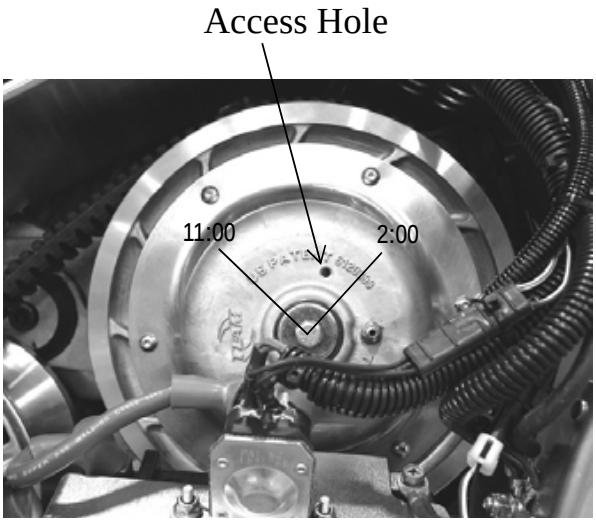
MAINTENANCE
Clutch System
Drive Belt Removal

NOTICE: 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.

TIP: For easier accessibility, make sure the clutch tool access hole is visible between the 11:00 and 2:00 positions of the clutch sheave.

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. Rotate the driven clutch counterclockwise 1/4 turn by hand to ensure forward engagement before attempting to remove the belt.



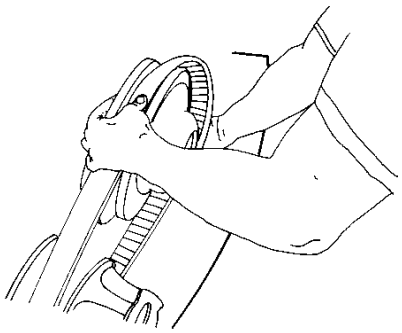
7. Locate the L-wrench in the tool kit. Install the wrench into the open threaded access hole in the outer sheave of the clutch.
8. Turn the wrench clockwise until the sheaves open far enough to remove the belt.

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Clutch System

Drive Belt Installation

1. Drop the drive belt over the drive clutch and pull back the slack. The belt cord line should be flush with, or slightly above, the outer circumference of the driven clutch sheaves. The belt will seat itself in the driven clutch during the break-in period. Adjust the belt ride-out after the break-in period by readjusting belt deflection.



TIP: 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.

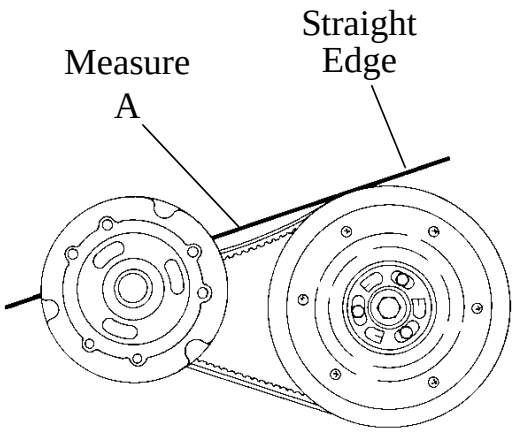
2. Rotate the L-wrench counter-clockwise to tighten the sheaves while working the belt to the outer edge of the sheaves.
3. Remove the wrench and store it in the tool kit.
4. Reinstall the side panel.
5. Close and secure the hood.
6. Break in the new belt. See page 56.

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MAINTENANCE
Clutch System
n Drive Belt Deflection

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

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

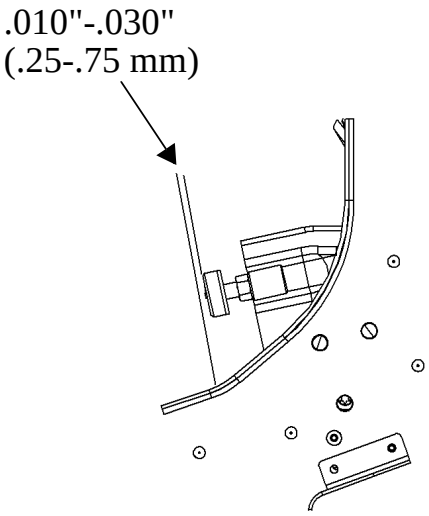


Drive Belt Adjustment

1. Install the L-wrench into the open threaded hole in the outer sheave of the clutch (see page 90). 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 (counterclockwise) 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, measure rear torque stop clearance from the engine case. Rear torque stop clearance should be .010"-.030" (.25-.75mm). Adjust if necessary. Secure the nut.



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Track Replacement

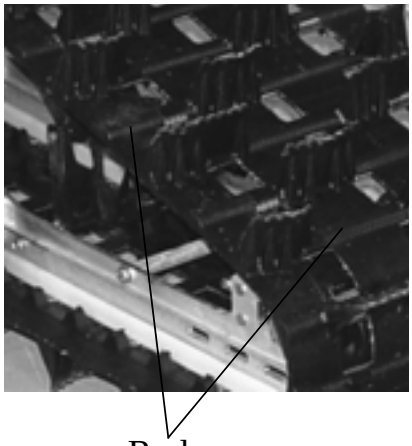
When replacing the track, always install a track having the lug size recommended for your model. See your Polaris dealer.

NOTICE: Installing tracks with larger lugs on machines equipped with coolers will result in damage to the cooler or tunnel. Always install a track having the lug size recommended for your model.

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.



Track 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.

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.

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

NOTICE: High speed use on hard-packed surfaces is not recommended for models equipped with a deep lug track. Track lug damage may occur. Keep high speed use to a minimum, including frequent slow-speed intervals for track cooling.

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MAINTENANCE
Track Tension

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 is critical for maximum efficiency and performance. Track tension controls the approach angle of the track to the rail beam in powder snow conditions. *Deep snow performance will be optimized at the specified tension. Looser tensions will cause the track to "bunch" in front of the rail tips, causing improper approach angle and poor performance.* New tracks will need to be retightened and aligned after the first ride.

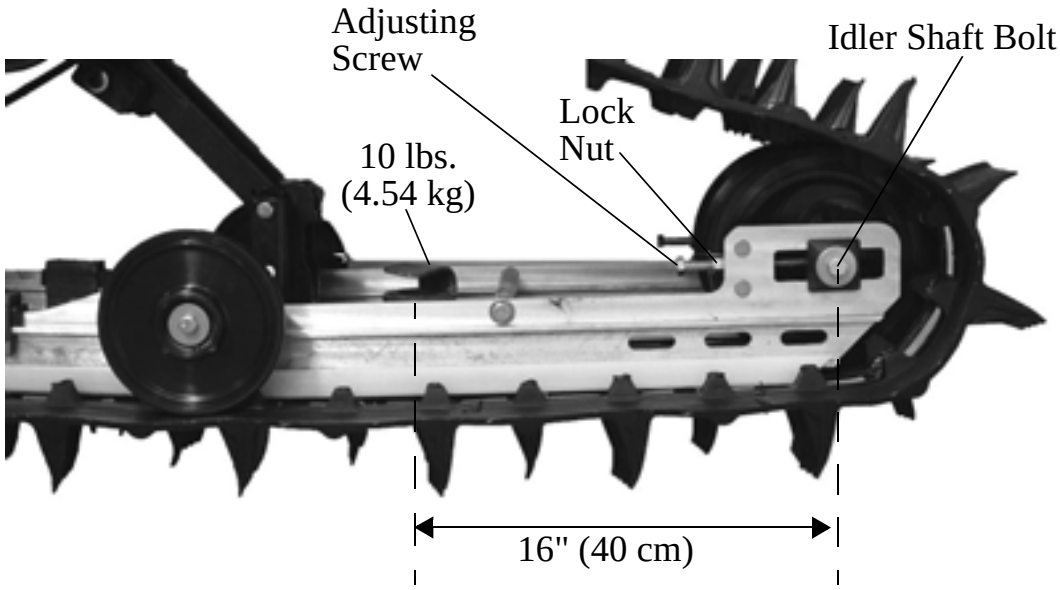
TRACK TENSION DATA CHART			
Suspension	**Weight**	**Measurement Location**	**Slack Measurement**
IQ RMK	10 lbs. (4.54 kg)	16" (40 cm) ahead of rear idler shaft	3/8"-1/2" (1-1.3 cm)

TIP: 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 snowmobile 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. Measure at the point where the weight is placed.
4. Check for specified slack between the wear surface of the track clip and the plastic rail slide.

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Track Tension



If the track needs adjustment:

5. Loosen the rear idler shaft bolt.
6. Loosen the lock nuts.
7. Tighten or loosen the track adjusting screws as necessary to provide equal adjustment on both sides of the track.
8. Repeat the measurement on the other side of the track.

TIP: Check more frequently when the snowmobile is new.

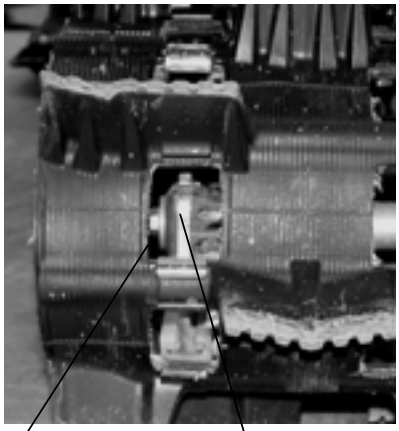
9. Start the engine and slowly rotate the track at least five revolutions. Let the track come to a stop (do not apply brakes).
10. Check track alignment (see page 96) and adjust as necessary.
11. Tighten the lock nuts.
12. Tighten the idler shaft bolts. Torque to 35 ft. lbs. (47.5 Nm).

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MAINTENANCE

n 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.



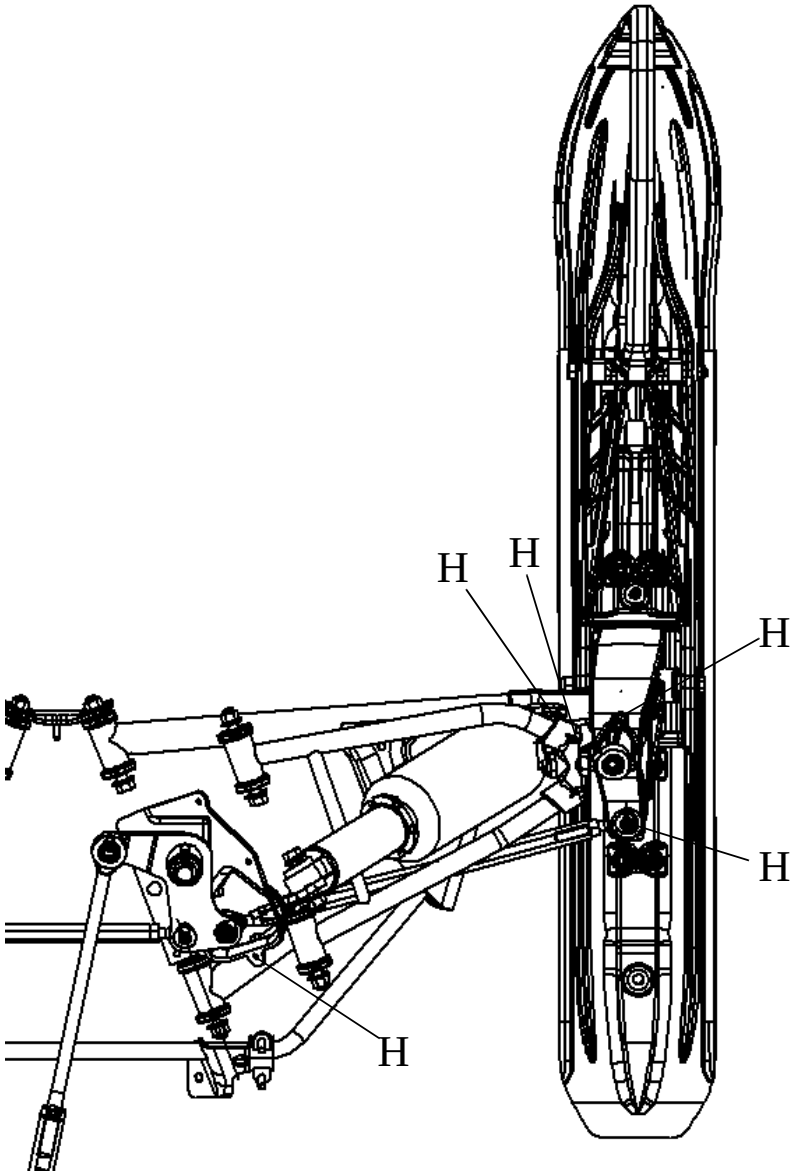
1. Safely support the rear of the snowmobile with the track off the ground.
2. Start the engine and apply a small amount of throttle until the track turns slowly at least five complete revolutions. Stop the engine and let the track come to a stop (do not apply brakes).
3. Inspect track alignment by looking through the track window to make sure the rails are evenly spaced on each side. If the track runs to the left, loosen the left locknut and tighten the left adjusting bolt. If the track runs to the right, 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

Check all steering system fasteners weekly and before a long ride. Tighten any loose fasteners.



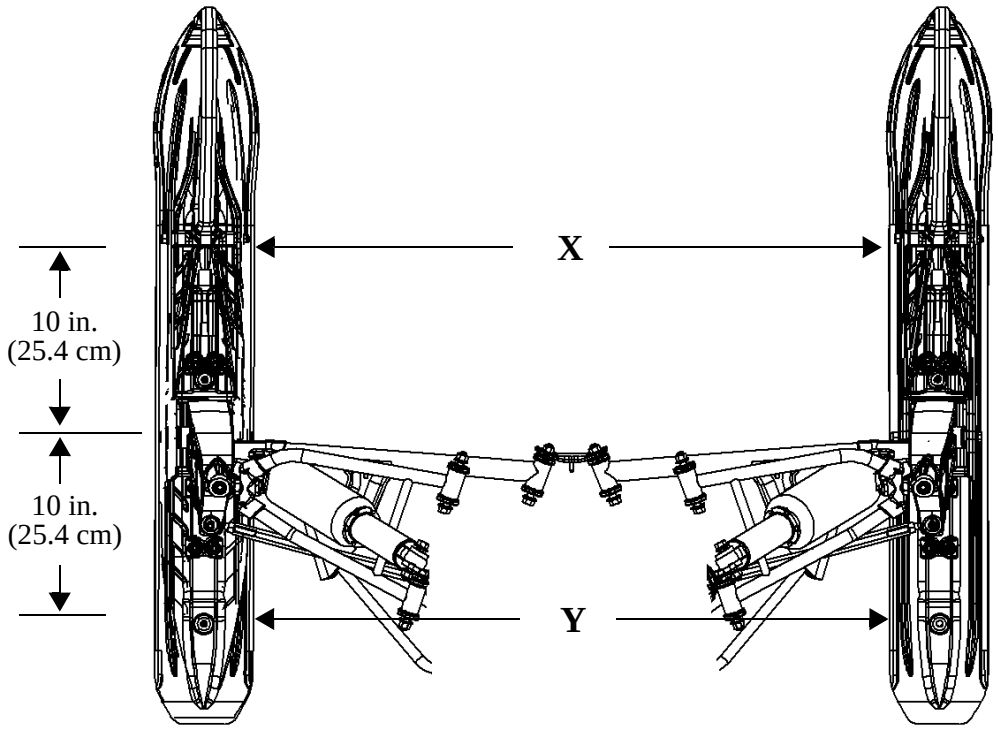
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MAINTENANCE
Steering System
Ski Alignment

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.

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

n Ski Skags

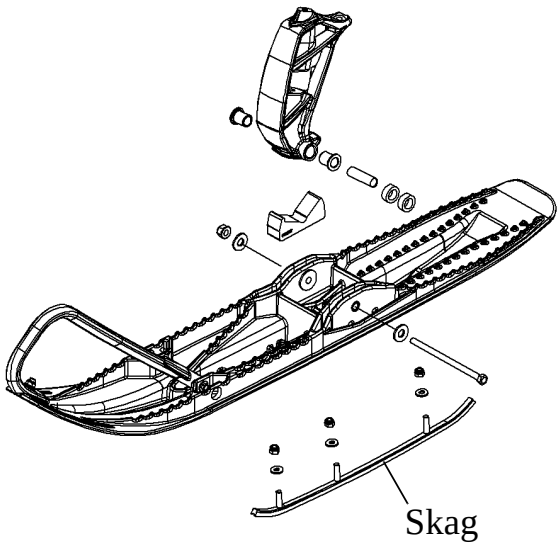
WARNING! Worn skis and/or skags will adversely affect handling. Loss of vehicle control may result, causing serious injury or death. See your dealer's studding chart for recommended skags. If you install longer or more aggressive carbide skags than the original equipment, it may also be necessary to 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. Carbide skags must be replaced if any abnormal wear or chipping is found.

Skag Replacement

Some models are equipped with single skags. Other models are equipped with dual skags.

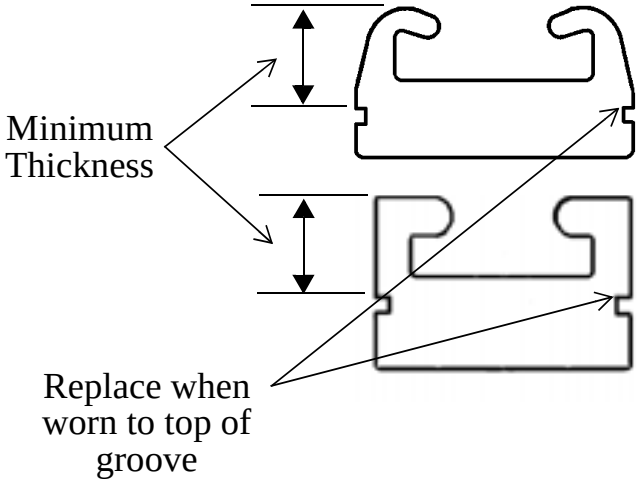
1. Raise and support the front of the snowmobile so the skis are approximately 6" (15 cm) from the ground.
2. Remove the attaching nuts and pry the skag downward.
3. Remove the front end of the skag.
4. Remove the rear end of the skag.
5. Reverse the steps to install a skag.



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MAINTENANCE
Steering System
n Rail Slide Wear

For ease of inspection, all Polaris rail slides have a wear limit indicator groove to indicate the minimum permissible slide thickness. Replace the rail slides if they are worn to the top of the groove at any point along their length. Failure to do so may result in permanent damage to the track or rails.



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Matte Clear Coat Cleaning (if equipped)

Matte finish products are prone to trapping dirt, oils and other contaminants. Polaris Industries recommends cleaning with warm water and a mild dish detergent. Use a soft sponge to gently rub the surface and rinse with clean warm water. For stubborn stains such as grease or oil use a citrus based cleaner (3M Citrus Base Cleaner recommended). Spray onto the area to be cleaned and rub with a soft sponge. Allow to sit for a couple of minutes and wash away with clean warm water. Repeat as necessary to clean the surface.

NOTICE: Never use a polishing/buffing wax or any sponge that has an abrasive surface. These products will buff the matte surface of the finish resulting in a glossy finish. It is not recommended that you clean matte finishes with a pressure washer as this will further imbed contaminants into the clear coat and possibly damage the decals.

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 104 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 snowmobile 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.

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MAINTENANCE
Extended Storage
Controls and Linkage

Lubricate all bushings, spindle shafts, tie rod ends and cables as outlined in the Periodic Maintenance Table beginning on page 69.

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 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.

TIP: Do not spray fogging oil into the plenum. Remove the plenum and spray the fogging oil into the boost box. Continue spraying until the engine stops.

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. See page 68.

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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. Be sure the fuel cap and oil cap are installed correctly.
2. Always tie the snowmobile to the transporting unit securely using suitable straps.
3. Remove the ignition key to prevent loss.

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POLARIS PRODUCTS

Part No.	Description
Engine Lubricants	
2870791	Fogging Oil (12 oz. Aerosol)
2875035	Premium 2-Cycle Semi-Synthetic Oil (qt./.95 l)
2875036	Premium 2-Cycle Semi-Synthetic Oil (gal./3.8 l)
2875038	Premium 2-Cycle Semi-Synthetic Oil (2.5 gal./9.5 l)
2877882	VES Gold Plus 2-Cycle Oil (qt./.95 l)
2877883	VES Gold Plus 2-Cycle Oil (gal./3.8 l)
2877884	VES Gold Plus 2-Cycle Oil (2.5 gal./9.5 l)
Chaincase Lubricants	
2873105	Synthetic Chaincase Lubricant (qt./.95 l)
2872951	Synthetic Chaincase Lubricant (12 oz./355 ml)
Grease/Specialized Lubricants	
2871312	Grease Gun Kit, Premium All Season (3 oz./89 ml)
2871322	Premium All Season Grease (3 oz./89 ml cartridge)
2871423	Premium All Season Grease (14 oz./414 ml cartridge)
2871329	Dielectric Grease (Nyogel™)
Coolant	
2871323	Anitfreeze, 60/40 Premix (gal./3.8 l)
2871534	Anitfreeze, 60/40 Premix (qt./.95 l)
Additives/Miscellaneous	
2871326	Carbon Clean Plus
2870652	Fuel Stabilizer
2872189	DOT4 Brake Fluid
2872893	Engine Degreaser
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 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 tank contains fuel. • Ice may be in the fuel line, filter or pump. Add isopropyl alcohol to the fuel system.
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.
Engine continually backfires	Faulty plug(s)	• Change plug(s).
	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
Suspension Troubleshooting

Problem	Solution
Rear suspension bottoms too easily	• Set static sag (see page 42). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions.
Rides too stiff in rear	• Check for binding suspension components and grease all pivot points. • Set static sag (see page 42). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions.
Too much weight transfer when climbing	• Set static sag (see page 42). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag. • Move limiter strap to high position (see page 43).
Too little weight transfer when climbing	• Set static sag (see page 42). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag. • Move limiter strap to low position (see page 43).
Front end pushes	• Check for worn skags. • Check for binding front suspension shafts/steering components, grease all pivot points (elevate front of machine). • Set static sag (see page 42). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag. • Increase IFS preload (if equipped). • Move limiter strap to high position (see page 43).
Steering is heavy	• Make sure spindles and all steering components turn freely. • Check ski alignment (see page 98). • Check skags and skis for damage. • Set static sag (see page 42).
Machine darts from side to side	• Check ski alignment (see page 98). • Check for binding front suspension shafts/steering components, grease all pivot points (elevate front of machine). • Check for excessive play in steering assembly (see dealer). • Ensure skags are straight on skis. • Set static sag (see page 42). • Check rail slide/replace if worn (see page 100). • Install Accu-Trak dual skags (see your dealer).

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Drive Belt Troubleshooting

Belt Wear/Burn Diagnosis	
Causes	**Solutions**
Driving at low RPM	• Drive at higher RPM. 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 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: 1-888-704-5290

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 set-up of your snowmobile is very important in ensuring trouble-free operation. Purchasing a snowmobile in the crate or without proper dealer set-up 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. THIS EXCLUSION OF CONSEQUENTIAL, INCIDENTAL, AND SPECIAL DAMAGES IS INDEPENDENT FROM AND SHALL SURVIVE ANY FINDING THAT THE EXCLUSIVE REMEDY FAILED OF ITS ESSENTIAL PURPOSE. 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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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 Bulletins.

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. You should warranty register your vehicle at a local POLARIS dealer in your new country immediately after you move to continue your warranty coverage and to ensure that you receive safety information and notices regarding your vehicle.

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WARRANTY

Exported Vehicles

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. You must nonetheless warranty register your vehicle under your name and address with a local POLARIS dealer in your country to ensure that you receive safety information and notices regarding your vehicle.

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, other than *safety* bulletins. (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 110).

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U.S.A. EPA Emissions Limited Warranty

This emissions limited warranty is in addition to the Polaris standard limited warranty for your vehicle. Polaris Industries Inc. warrants that at the time it is first purchased, this emissions-certified vehicle is designed, built and equipped so it conforms with applicable U.S. Environmental Protection Agency emission regulations. Polaris warrants that the vehicle is free from defects in materials and workmanship that would cause it to fail to meet these regulations.

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

This emissions limited warranty covers components whose failure increases the vehicle's regulated emissions, and it covers components of systems whose only purpose is to control emissions. Repairing or replacing other components not covered by this warranty is the responsibility of the vehicle owner. This emissions limited warranty does not cover components whose failure does not increase the vehicle's regulated emissions.

For exhaust emissions, emission-related components include any engine parts related to the following systems:

- Air-induction system
- Fuel system
- Ignition system
- Exhaust gas recirculation systems

The following parts are also considered emission-related components for exhaust emissions:

- Aftertreatment devices
- Crankcase ventilation valves
- Sensors
- Electronic control units

The following parts are considered emission-related components for evaporative emissions:

- Fuel Tank
- Fuel Cap
- Fuel Line
- Fuel Line Fittings
- Clamps*
- Pressure Relief Valves*
- Control Valves*
- Control Solenoids*
- Electronic Controls*
- Vacuum Control Diaphragms*
- Control Cables*
- Control Linkages*
- Purge Valves
- Vapor Hoses
- Liquid/Vapor Separator
- Carbon Canister
- Canister Mounting Brackets
- Carburetor Purge Port Connector

*As related to the evaporative emission control system.

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WARRANTY

U.S.A. EPA Emissions Limited Warranty

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. THIS EXCLUSION OF CONSEQUENTIAL, INCIDENTAL, AND SPECIAL DAMAGES IS INDEPENDENT FROM AND SHALL SURVIVE ANY FINDING THAT THE EXCLUSIVE REMEDY FAILED OF ITS ESSENTIAL PURPOSE.

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. 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 when the vehicle 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 may deny warranty claims for failures that have been caused by the owner’s or operator’s improper maintenance or use, by accidents for which Polaris has no responsibility, or by acts of God.

Any qualified repair shop or person may maintain, replace, or repair the emission control devices or systems on your vehicle. Polaris recommends that you contact an authorized Polaris dealer to perform any service that may be necessary for your vehicle. Polaris also recommends that you use only Pure Polaris parts. 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.

If you have any questions regarding your warranty rights and responsibilities, please contact the Polaris Warranty Department at 1-888-704-5290.

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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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DATE	MILES (KM)	TECHNICIAN	SERVICE PERFORMED / COMMENTS

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