

2024



For Maintenance and Safety

OWNER'S MANUAL

PROSTAR S4
INDY XC
INDY ADVENTURE
VOYAGEUR
NORDIC PRO

POLARIS
Think Outside



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

Operating, servicing, and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

For more information go to www.P65Warnings.ca.gov/passenger-vehicle.



*For videos and more information
about a safe riding experience with
your Polaris vehicle, scan this QR
Code® with your smartphone
or visit: www.polaris.com/en-us/safety/*



2024 Owner's Manual

**Matryx Platform
ProStar S4**

***Indy XC 129 / 137
Indy Adventure 137
Voyageur 146
Nordic Pro 146***

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

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

Here at POLARIS we proudly produce an exciting line of utility and recreational products. 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 can be performed by a factory certified Master Service Dealer (MSD) technician.

Your POLARIS dealer knows your vehicle best and is interested in your total satisfaction. Your POLARIS dealership can perform all of your service needs during and after the warranty period.

For the most up-to-date owner's manual visit <https://www.polaris.com/en-us/owners-manuals>.

SAFETY SYMBOLS AND SIGNAL WORDS

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.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING

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

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **COULD** result in minor to moderate injury.

NOTICE

NOTICE provides key information by clarifying instructions.

IMPORTANT

IMPORTANT provides key reminders during disassembly, assembly, and inspection of components.

The Prohibition Safety Sign indicates an action **NOT** to take in order to avoid a hazard.



The Mandatory Action Sign indicates an action that **NEEDS** to be taken to avoid a hazard.



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INTRODUCTION

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 at specific mileage intervals. This service can be performed by your authorized POLARIS dealer.

You and your authorized POLARIS 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.

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.

INTRODUCTION

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

AIR POLLUTION

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

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

VEHICLE IDENTIFICATION NUMBERS

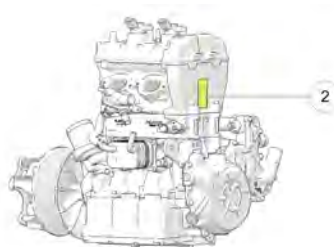
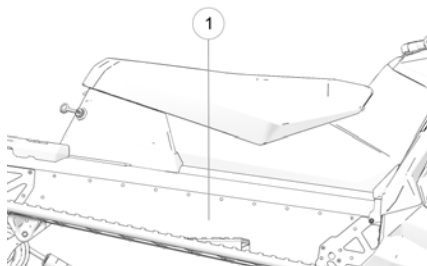
Record your snowmobile's identification numbers and key number in the spaces provided.

NOTICE

If installing an aftermarket tunnel wrap, do not cover the tunnel certification, tunnel VIN or emissions certification labels with the wrap. If the tunnel wrap doesn't provide an opening for these labels, remove the section of wrap where the labels are located.

The vehicle identification number (VIN) ① can be found stamped into the side of the tunnel and printed on the tunnel VIN label.

The engine serial number ② can be found on the identification label on the side of the cylinder head.



VEHICLE MODEL NUMBER:	
TUNNEL VIN:	
ENGINE SERIAL NUMBER:	
KEY NUMBER:	

KEY IDENTIFICATION

The ignition keys are etched with an identification number. Remove the spare key and store it in a safe place. Your key can be duplicated only by mating a POLARIS key blank using the same identification number with one of your existing keys, so if both keys are lost, the ignition switch assembly must be replaced.

INTRODUCTION

NEAR-FIELD COMMUNICATION (NFC) (IF EQUIPPED)

Some Polaris vehicles come equipped with a near-field communication (NFC) chip. The NFC chip is embedded in the Polaris emblem located at the front of the vehicle and seamlessly connects you to a digital platform of vehicle information and tools. See your dealer for more information.

IMPORTANT

Not all devices are equipped with an NFC reader. Additionally, some devices require third party applications to access NFC content. For questions regarding the NFC reader on your device, refer to the device's user manual.

On models equipped with NFC, place your smartphone directly over the Polaris emblem to do the following:

- View vehicle-specific information
- Access your Polaris Garage
- Download and view the owner's manual
- View accessory instructions
- Watch how-to videos
- Access warranty information
- Check for service notifications



RIDE COMMAND WITH NFC

Additional NFC features are available when using the Ride Command mobile app. To access these features, do the following:

1. Download the Ride Command mobile app from the Apple App Store® or Google Play® store.
2. Create or log in to an existing account.
3. From the Ride Command mobile app home screen, select **Add Vehicle**.
4. On the vehicle, tap the NFC-enabled badge with the phone to scan the vehicle.
5. Confirm information, name your vehicle, and tap add to garage.

SYSTEM REQUIREMENTS

Refer to device manufacturer's instructions to verify NFC read capability, and/or NFC-capable add-ons.

RADIO COMPLIANCE STATEMENTS

USA RADIO COMPLIANCE

This vehicle may contain the following radio equipment or components that contain radio equipment:

COMPONENT	COMPONENT ID	MANUFACTURER
9200 Series Display	RC-7W	Polaris Industries Inc.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA RADIO COMPLIANCE

This vehicle contains the following radio equipment or components that contain radio equipment:

COMPONENT	COMPONENT ID	MANUFACTURER
9200 Series Display	RC-7W	Polaris Industries Inc.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS (s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

IMPORTANT

For applications that use vehicle-to-vehicle (V2V) communication, radio transmitter IC 5966A-RC7W has been approved by Innovation, Science and Economic Development Canada (ISED) to operate with Polaris antenna (part number 4080356) with gain of 3 dBi. Any antenna that has a gain greater than 3 dBi is prohibited for use with this device.

INTRODUCTION

EUROPEAN UNION (EU) RADIO COMPLIANCE

This vehicle may contain the following radio equipment or components that contain radio equipment:

COMPONENT	9200 Series Display
COMPONENT ID	RC-7W
MANUFACTURER	Polaris Industries Inc.
TRANSMITTING FREQUENCY*	2402 - 2480 MHz
MAX RF TRANSMITTING POWER	0.1 W
* Other transmitting radio frequencies may exist outside of EU markets.	

This vehicle may contain the following radio equipment or components that contain radio equipment:

Hereby, Polaris Sales Europe Sarl, declares that the above radio equipment is in compliance with EU Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

<https://www.polaris.com/en-us/radio-conformity/>

REPORTING SAFETY DEFECTS (CANADA)

To report a safety defect to Transport Canada, you may either fill out an online defect complaint form at their website (English: <http://www.tc.gc.ca/recalls>, French: <http://www.tc.gc.ca/rappels>) or contact POLARIS Owner Connections:

United States & Canada: 1-800-POLARIS (1-800-765-2747) or visit polaris.com

SAFETY

OPERATOR SAFETY

Follow the recommended maintenance program in the Maintenance chapter of this manual to ensure that all critical components on the snowmobile are thoroughly inspected at specific mileage intervals. Your authorized POLARIS dealer can perform this service.

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.

STAY CLEAR OF TRACK

Your snowmobile is propelled by a revolving track that must be partially exposed for proper operation. Do not stand on the plastic flap.

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 authorized POLARIS dealer perform all track service and alignment procedures.

SAFETY

STAY CLEAR OF ENGINE

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

WARNING

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

RIDING POSITION

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

WARNING

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

RIDING APPAREL

HELMET

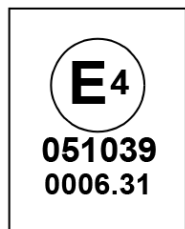
Wearing a helmet can prevent a severe head injury. Whenever riding this POLARIS vehicle, always wear a helmet that meets or exceeds established safety standards. Clasp the buckle and pull each strap tight to ensure the helmet is properly secured to the head.

Parents should verify that young operators have a helmet that fits, and should obtain one of proper size if it does not fit before allowing operation.

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.

SAFETY

CLOTHING

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.

Be prepared, be warm and be comfortable when riding. Be aware of the weather forecast, especially the windchill, and dress accordingly. See page 28.



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
- Fuel Deicer
- Winter Survival Kit
- Trail Map
- First Aid Kit
- Tool Kit

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.

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 and bare roads limit the effectiveness of the steering system. 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.

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.

DISABLED OPERATORS

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

MOUNTAINOUS TERRAIN RIDING

Mountainous terrain operation, even for experienced riders, can present conditions and situations that could result in serious injury or death. Please review all of the information about riding in mountainous terrain on the following pages of this manual.



An avalanche can occur at any time, in any conditions and on any slope.

The avalanche information provided in this manual should be considered basic information and is not intended to replace your participation in an avalanche safety training course. After reviewing the avalanche information in this manual, be sure to participate in an avalanche safety training course before riding in mountainous terrain. The training course will provide more information as well as the opportunity to practice riding and using proper search and recovery techniques.

For more information, education, training courses, and links to additional resources, visit:

- www.avalanche.org for North American riders.
- www.avalanche.ca for Canadian riders.
- www.lavinprognoser.se for Swedish riders.
- www.avalanches.org for European riders.

GET THE SAFETY GEAR

In addition to carrying a spare belt, spark plugs and tools on each snowmobile, each person in your riding group should wear the recommended snowmobile riding apparel and carry (on their person) the following survival items when riding in mountainous terrain:

- A digital avalanche beacon with new “fresh” alkaline batteries
- An avalanche probe
- A compact shovel and hand saw
- A backpack (preferably an avalanche air bag backpack)
- Emergency provisions, including the following items:
 - Small first aid kit
 - Extra pair of gloves
 - Extra dry socks
 - Tow rope, map, compass/GPS
 - Lighter or waterproof matches
 - Signal mirror and whistle
 - Bottled water
 - High calorie snack food
 - Compact emergency blanket



GET TO KNOW YOUR SAFETY GEAR

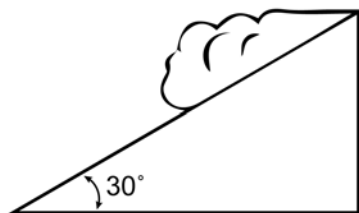
Following the safety gear and apparel recommendations will increase your chances of survival if you encounter an avalanche or become stranded in the backcountry, but even experienced and properly-equipped snowmobilers, hikers and skiers perish in avalanches or succumb to hypothermia. Using a beacon or probe for the first time during an avalanche recovery operation, or not knowing how to deploy your avalanche air bag backpack during a slide, should be considered UNACCEPTABLE to you and all members of your riding group. It's critical that you *and all members of your riding group* know how to use the safety gear.

While you may know how to use your gear, you may have to rely on your riding group to find you in an avalanche. Make sure they know how to use their gear.

- Dress in layers. Multiple layers of clothing provide the best barrier to cold and wind. Layers can be removed, but if you start out without enough layers, they cannot be added later. Avoid cotton materials, which will freeze if they get wet.
- Wear highly visible gear.
- Try on all gear and equipment to make sure it fits and doesn't interfere with your riding capabilities. Place all survival aids in your backpack and wear the backpack at all times. Non-essential items can be stored on the snowmobile in an accessory bag.
- Read and follow the manufacturer's user and maintenance instructions for all gear. If you have questions about how your gear works, contact the manufacturer for more information.
- Practice using your beacons, shovels and probes with your riding group in real-world conditions wearing all of your gear. Have someone hide an active "transmitting" beacon by throwing it (not walking it) into a snowbank and timing your group's search for it.
- Test deploying your gear. If you own an avalanche air bag backpack, check with the manufacturer's test deployment guidelines and bottle weight replacement specifications. Most air bag backpack manufacturers recommend testing the pack once a year so you know it works and feel comfortable with the bag and deployment time.
- Make sure your probe and shovel are in good condition and that you know how to assemble them.

GET THE PICTURE

Slopes steeper than 30° are more prone to avalanches, but any slope should be considered avalanche terrain, even small slopes with trees. Low-angle slopes are also avalanche terrain if they have steeper slopes above them.



NOTICE

The 30° slope graphic is for illustration purposes only. The risk of an avalanche is always present in mountainous terrain, regardless of slope angle.

Always look for the following warning signs of unstable snow. If you see or hear any of these signs, riding on or below any slope is dangerous and should be avoided:

- Recent avalanches
- A “whumpfing” sound under a snowpack
- Cracks across the top of a snowpack
- A recent heavy snowfall
- Blowing snow
- Rain
- Rapid warming

GET OUT OF HARM’S WAY

- Before riding, always tell a responsible person (i.e. at the lodge or gas station) where your group is going.
- Never ride alone. Always ride in a small, manageable group. Riding in a large group makes it more difficult to track riders or find missing members.
- Go “one at a time”. Only one snowmobile at a time should cross, ascend or highmark a slope. Other riders should watch from a safe location until the previous rider exits the slope.
- Never park at the base of a slope or at the bottom of a gully or valley. When parking to take a break or watch other riders, park at the sides of the slope with the front of your snowmobile pointed away from the slope.

GET THE FORECAST

Make a riding plan based on the current avalanche and weather forecast. It is important to remember that overnight weather conditions may have created unsafe riding terrain that was considered safe the day before.

Follow the page links below to locate current avalanche reports and conditions for your area of operation.

- www.avalanche.org for North American riders.
- www.avalanche.ca for Canadian riders.
- www.lavinprognoser.se for Swedish riders.
- www.avalanches.org for European riders.

GET AVALANCHE SAFETY TRAINING

POLARIS recommends you and all members of your riding group participate in an avalanche safety course. Visit the education section of the Avalanche website for your region.

AVALANCHE AWARENESS

Avalanches are a matter of timing. A steep slope can be safe one day, but unsafe the next day due to changing weather and wind conditions.

- Always review the user instructions provided with your safety equipment and follow the recommendations for maintenance, testing and use. Always test your safety equipment to ensure it works properly before riding in mountainous terrain.
- Always store your survival gear in your backpack and wear the backpack. Do not store your survival gear on the snowmobile.
- Always research current avalanche conditions in your area of operation before riding. Check with local law enforcement, resort or lodging personnel, gas station attendants and other riders to learn about current conditions and any advisories in the area.
- Read and understand the avalanche danger scale. Pay attention to any danger level warnings issued for your area of operation.
- Always remain alert while riding in mountainous terrain. Be aware of snowpack conditions above you as you ride. Avalanches can occur at any time regardless of current condition reports.

North American Public Avalanche Danger Scale

Avalanche danger is determined by the likelihood, size and distribution of avalanches.

DANGER LEVEL		TRAVEL ADVICE	LIKELIHOOD OF AVALANCHES	AVAILANCE SIZE AND DISTRIBUTION
5 Extreme		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.
4 High		Very dangerous avalanche conditions. Travel in avalanche terrain <u>not</u> recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
3 Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
2 Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
1 Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or extreme terrain.
Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.				

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 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.

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.

HIDDEN OBSTRUCTIONS

Always be aware of surroundings and terrain when riding your snowmobile. Hazardous obstructions may be hidden beneath the snow. Reduce speed and use extra caution whenever riding off established trails. Striking a hidden obstacle could cause loss of control of your vehicle and lead to severe injury or death. Remain on established trails whenever possible to reduce exposure to hazards.

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.

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 roll-over.

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

If you're unable to continue up a hill, turn the 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.

SAFETY

DRIVE BELT

Do not operate the engine with the drive belt removed.

Any servicing that requires operation without a belt can be performed by your authorized POLARIS dealer.



Operation of the engine with the belt removed may result in injury or damage to the engine.

INTAKE SILENCER

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

NOTICE

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 can be performed by your authorized POLARIS 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.

On 2-up machines, always operate 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 based on rider weight and foot position on running boards.

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 snowmobile and with what it will and won't do under various conditions. Even seasoned drivers should spend some time getting the feel for a snowmobile 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.

SAFETY

WINDCHILL/TEMPERATURE CHARTS

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

WINDCHILL CHART (°F)

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

WINDCHILL CHART (°C)

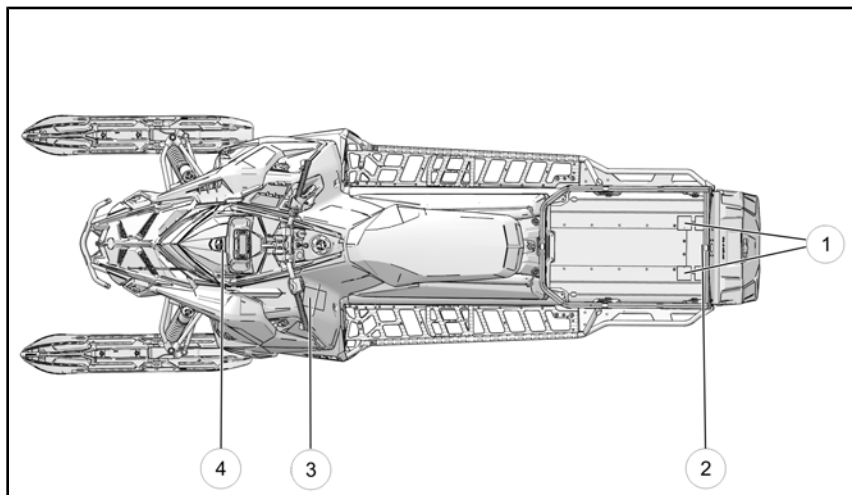
Wind Speed in Km/h	Actual Thermometer Reading (°C)																	
	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37	-40	-43	-46
	Equivalent Temperature (°C)																	
Calm	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37	-40	-43	-46
8	3	0	-4	-7	-11	-14	-18	-22	-25	-29	-32	-36	-39	-43	-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.					

SAFETY LABELS AND LOCATIONS

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

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

INDY VOYAGEUR NORDIC PRO



- ① Hot Surface Warning
- ② Moving Parts Warning
- ③ General Warning
- ④ Flammable Liquids (Under Hood)

SAFETY

GENERAL WARNING

⚠ WARNING

This snowmobile is designed for one (1) operator and as many passengers as there are seats with handgrips installed on the snowmobile.

- Read and understand all warnings and Owner's Manual before operation.
- Never consume alcohol or drugs before or while operating this vehicle.
- Sharp turns could destabilize vehicle.
- Always wear DOT approved helmet and proper riding gear while operating this vehicle.
- Set parking brake before removing key from ignition.
- Do not attempt adjustment with engine running.

Part Number: 7300286.

MOVING PARTS WARNING

⚠ WARNING

- Read owner's manual.
- Moving parts can crush and cut.
- Keep hands clear.
- Do not operate with guards or side panels removed.

Part Number: 7300297.

HOT SURFACE CAUTION

⚠ WARNING

Hot Surface. DO NOT touch. Burns may result.

Part Number: 7300117.

FUEL TRANSPORT WARNING

⚠ WARNING

NEVER carry fuel or other flammable liquids on this vehicle

Failure to follow this instruction could lead to serious burn injuries or death.

Part Number: 7300679.

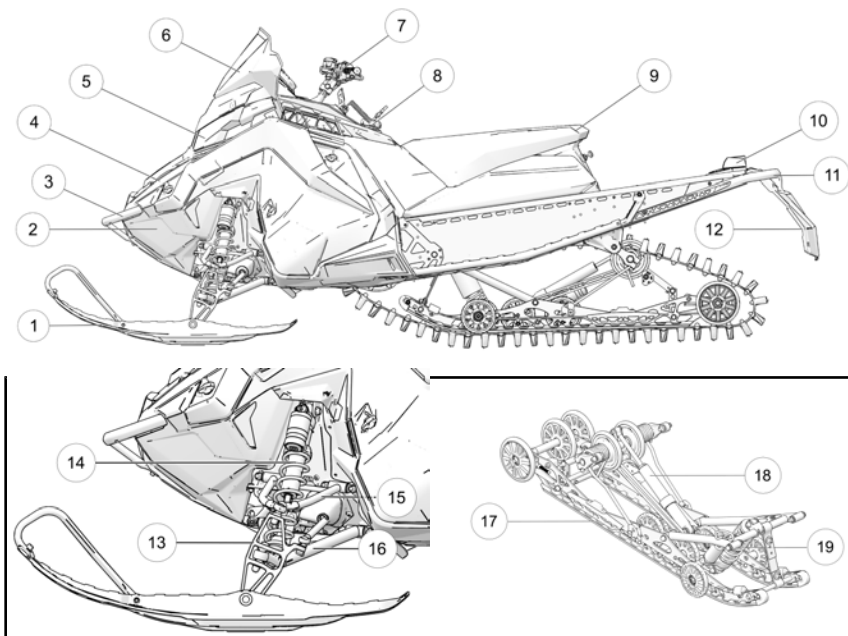


FEATURES

COMPONENT LOCATIONS

NOTICE

The figures below are for reference only. Your model may differ slightly.



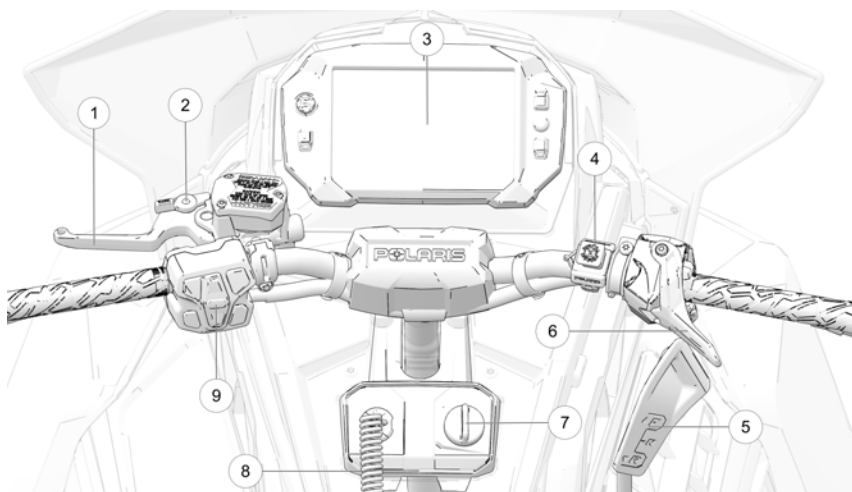
- | | | |
|----------------|--------------------------------------|---------------------|
| ① Skis | ⑧ Fuel Cap | ⑮ Upper Control Arm |
| ② Nosepan | ⑨ Operator Seat | ⑯ Lower Control Arm |
| ③ Front Bumper | ⑩ Taillight | ⑰ Rail |
| ④ Hood | ⑪ Rear Bumper | ⑱ Rear Track Shock |
| ⑤ Headlight | ⑫ Snow Flap | ⑲ Front Track Shock |
| ⑥ Windshield | ⑬ Spindle | |
| ⑦ Handlebar | ⑭ Independent Front Suspension Shock | |

FEATURES

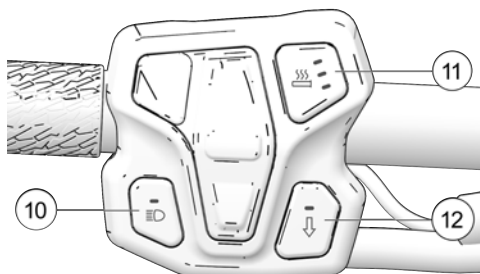
CONTROLS

NOTICE

The figures below are for reference only. Your model may differ slightly.



- ① Brake Lever
- ② Parking Brake Lock
- ③ 7S Display (if equipped)
- ④ Engine Stop Switch
- ⑤ Shift Lever
- ⑥ Throttle Control
- ⑦ Ignition Switch
- ⑧ Tether Switch
- ⑨ Hand Controls
- ⑩ Headlight Dimmer Button
- ⑪ Heated Grips Button
- ⑫ Reverse Override Switch



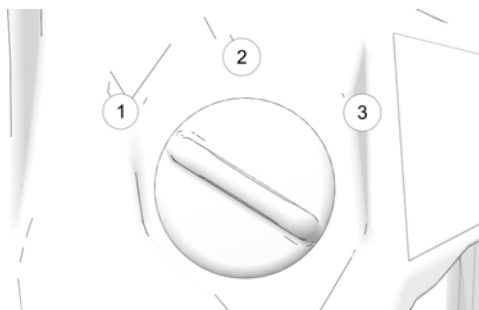
NOTICE

For information about the Ride Command hand controls, see page 74.

IGNITION SWITCH

The ignition switch has three positions: OFF, RUN, and START.

- ① **OFF** Vehicle / Display power off
- ② **RUN** Vehicle / Display power on
- ③ **START** Activates starter motor (if equipped)



If equipped with electric start, turn the key to START to crank the engine. When released, the key automatically returns to the RUN position.

IMPORTANT

If planning to be away from your vehicle for longer than a few minutes, always turn the ignition switch to the OFF position after using the engine stop switch. If the ignition is left in the RUN position, the 7S Display will remain active and continue to draw power from the battery. This snowmobile is not equipped with manual start. If the battery is fully depleted, the engine will not start.

FEATURES

12-VOLT DC POWER RECEPTACLE

NOTICE

The 12-volt DC power receptacle and the jumper harness required to connect the receptacle to the hood wiring harness can be purchased from your POLARIS dealer.

If equipped, the 12-volt DC power receptacle is located on the hood next to the instrument cluster. The 12-volt power receptacle is protected by a 2 amp mini blade fuse located the fuse block, or in a protective bag above the clutch cover. Use of the 12-volt DC power receptacle is recommended for connecting power-sensitive devices such as GPS units and cell phones.

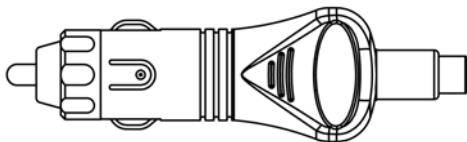


12-VOLT RCA POWER SOURCES

Some rider accessories require the use of an RCA power adapter. If your model is not equipped with an RCA power plug, an accessory 12-volt RCA adapter or RCA power plug can be purchased from your POLARIS dealer.

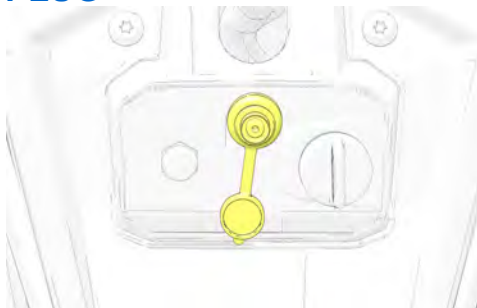
12-VOLT RCA ADAPTER

The RCA adapter can be used if your model is equipped with the 12-volt DC power receptacle. Plug the adapter into the receptacle to convert it to a 12-volt RCA power outlet.



12-VOLT RCA POWER PLUG

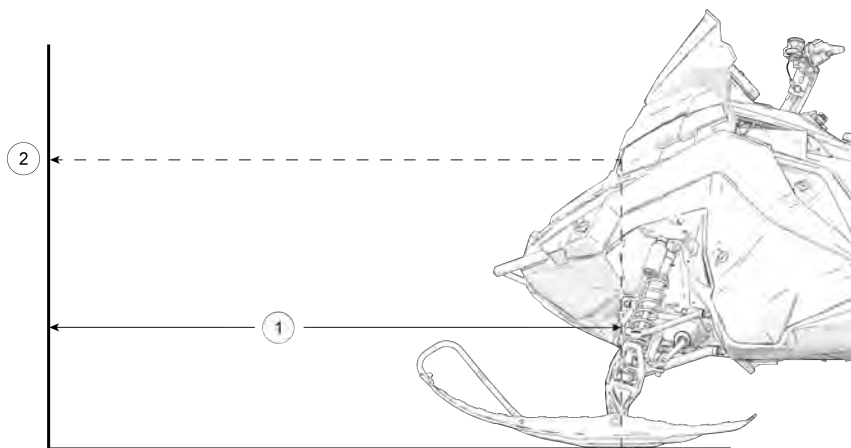
The RCA power plug (with cover) mounts next to the key switch and is plugged into the main vehicle wire harness. Installation instructions are provided with the accessory. This power point is powered by the load shed relay and is not fuse protected. POLARIS recommends using this power point for electric helmet shields.



ADJUSTABLE HEADLIGHT

NOTICE

The image below is for reference only. Your model may differ slightly.



HEADLIGHT INSPECTION

It is very crucial to correctly complete the steps below in order to achieve optimal headlight performance. The headlight can be inspected for vertical aim using the following procedure.

1. In a well-ventilated area, position the snowmobile on a level surface with the headlight approximately 25 feet (7.6 m) from a wall ①.
2. Place the rider or the approximate weight of the rider on the seat or tunnel floorboards.
3. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height ②.
4. Start the engine. Move the headlight switch to low beam.
5. Observe the headlight aim on the wall. There should be a distinct horizontal line on the wall from the low beam. That line should align with the mark on the wall ②.

FEATURES

HEADLIGHT ADJUSTMENT

1. Shut off engine.

WARNING

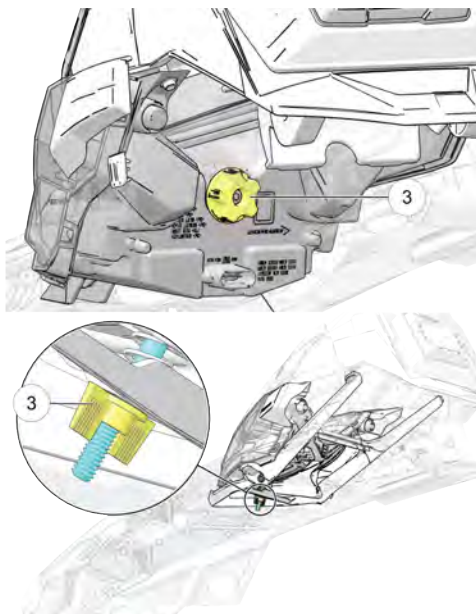
To prevent serious injury, NEVER attempt to adjust the headlight while the engine is running.

2. If adjustment is necessary, an adjuster knob is located on the back of the headlight, which can be accessed by removing the vehicle's left side panel.

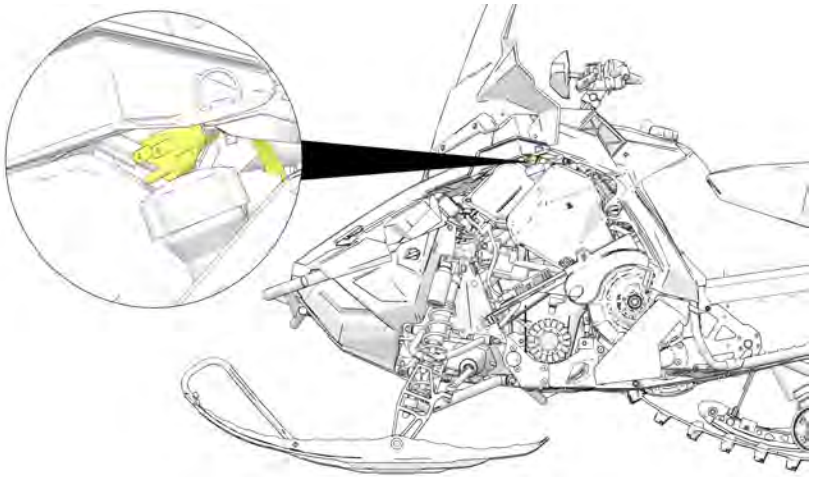
NOTICE

Depending on the model, the headlight adjuster knob ③ will be located on the bottom of the headlight assembly or at the rear of the light above the plug.

- To LOWER the beam, turn the adjuster knob CLOCKWISE.
- To RAISE the beam, turn the adjuster knob COUNTERCLOCKWISE.



BLOCK HEATER



This snowmobile is equipped with a 120 volt block heater. Use the factory-installed block heater to maintain engine coolant viscosity, prolong the life of your engine, and aid engine turnover in temperatures below 5 °F (-15 °C).

To gain access to the block heater, remove the left side panel and insert the block heater plug into a grounded electrical socket. For optimum performance and energy savings, plug in the block heater at least 1 hour prior to vehicle use.

FEATURES

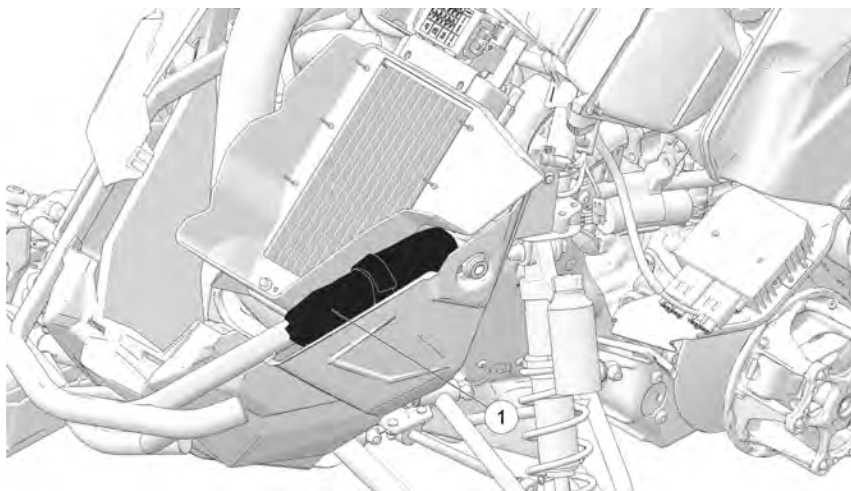
TOOLS

The following tools are provided with the snowmobile.

- Tool Kit Pouch
 - Torx Wrench, T-30
 - 5/8 in Spark Plug Wrench, T-30
- Driven Clutch L-Wrench
- Spare Belt Holder

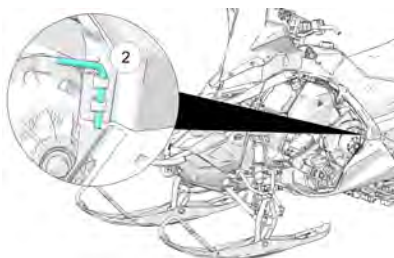
TOOL KIT

When not in use, the tool kit pouch ① is located under the hood, secured to the front bumper by a velcro strap. To access the tool kit, remove both side panels and the hood. See the Maintenance chapter for side panel and hood removal procedures.



L-WRENCH

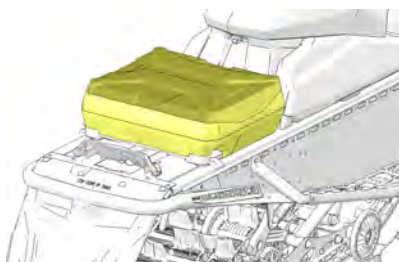
The L-wrench ② is used to open and close the driven clutch when working with the drive belt. To retrieve the L-wrench, rotate it counterclockwise and slide it upward from the bracket. When not in use, slide the L-wrench down into the bracket and rotate clockwise until it snaps securely into the housing.



CARGO STORAGE

Never hang heavy items or fuel containers from the rear of the tunnel. Cargo may be stowed only in the tunnel storage bag (if equipped) or under the seat.

The maximum weight capacity for the tunnel is 15 lbs. (7 kg). Include the weight of the cargo bag when determining cargo weight.



NOTICE

Exceeding the tunnel cargo weight capacity could result in tunnel and or suspension pad damage. Do not exceed the weight limit.

RAIL SCRATCHERS

Some models are equipped with rail scratchers to help prevent overheating when riding on ice or hard-packed snow.

NOTICE

Do not install accessory bogie wheels on the inside of the rail beams if your model is equipped with a remote reservoir rear track shock or damage will occur. The rail scratchers must be removed as they interfere with the accessory bogie wheels.

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:

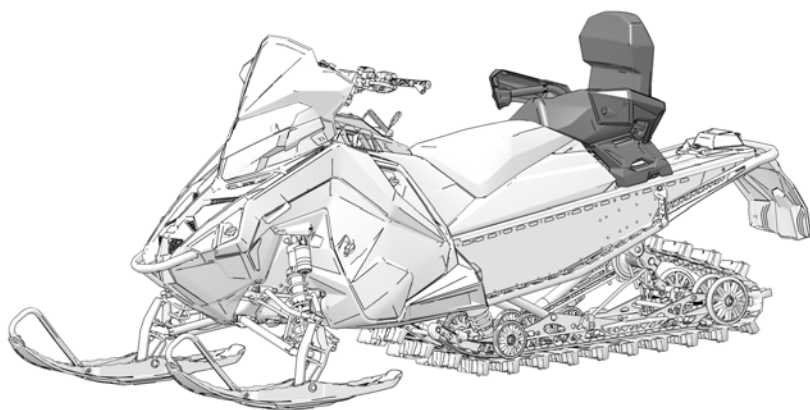
- Non-compliance with government/industry requirements
- Voiding of warranty
- Injury to self or others

This applies to, 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 authorized POLARIS dealer for service.

FEATURES

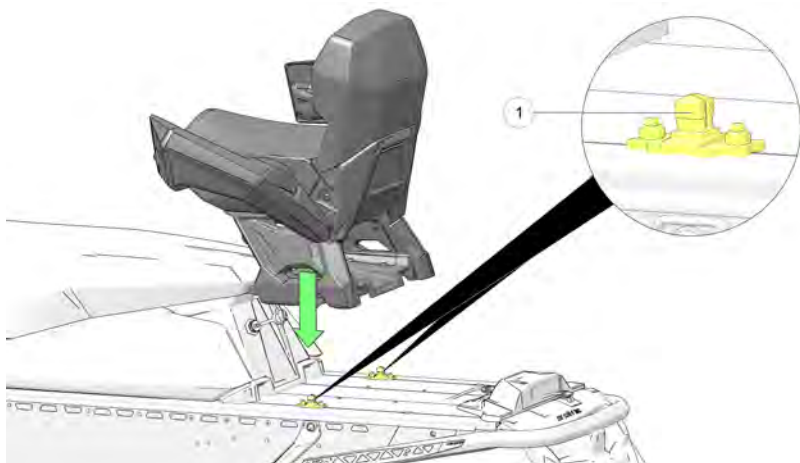
PASSENGER SEAT

The passenger seat is available on all Adventure Matrix models.

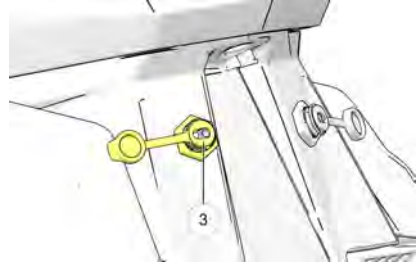
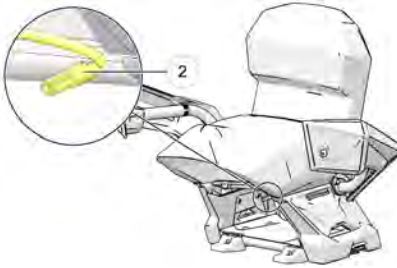


PASSENGER SEAT INSTALLATION

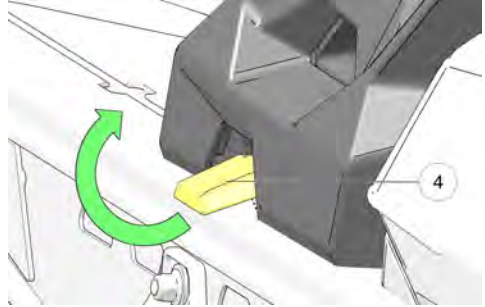
1. Clean the top of the tunnel with a clean shop rag, and clear any debris from inside the mounting channels.
2. Position the passenger seat onto the tunnel above the mounting brackets ①.



3. Connect the main seat harness connector ② to the 12-volt power harness ③.



4. Align the latch handles to the mounting brackets on the tunnel.
5. Lift upward on the latch handles ④ to engage the latch pins securely within the brackets.



PASSENGER SEAT REMOVAL

1. To remove the seat, lift the seat upward while pulling up on the two latch handles.
2. Disconnect the seat harness connector from the 12-volt power harness.

EXTENDED IDLE ENGINE SHUTOFF

This engine feature causes the ECU to shut down the engine when coolant temperature reaches 181° F (83° C) and there is no throttle lever input for 15 minutes.

NOTICE

If equipped with a Polaris Interactive Digital Display (PIDD), the gauge will remain on because the key is in the ON position.

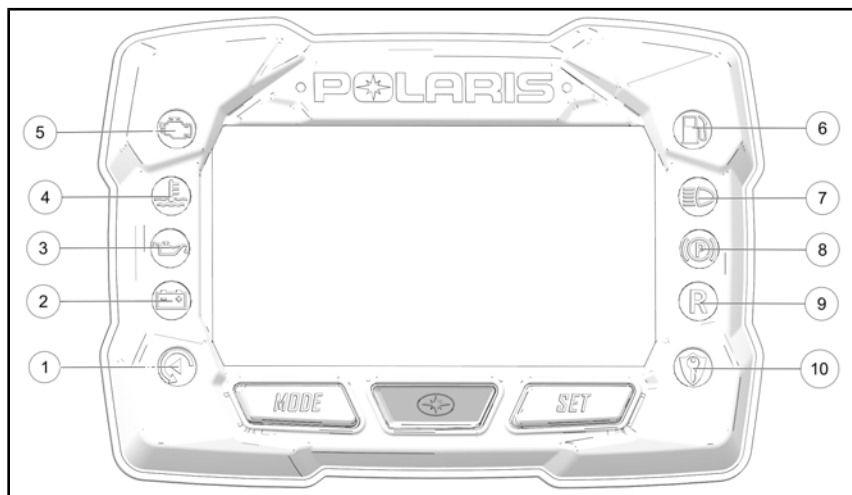
ECU SPEED LIMITER

The ECU monitors the vehicle speed supplied by the vehicle speed sensor. The sensor is mounted to the transmission behind the brake disc.

FEATURES

GEAR POSITION	ENGINE SPEED LIMIT
Neutral	N/A
Reverse – Override button off (button not pressed)	3500 rpm
Reverse – Override button on (button pressed)	6500 rpm
Low/High – Speed sensor signal lost	6600 rpm

GAUGE STANDARD INSTRUMENT CLUSTER



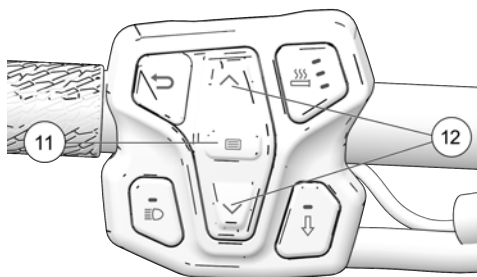
- | | | |
|-----------------------|----------------|-----------------|
| ① Playback | ⑤ Check Engine | ⑧ Parking Brake |
| ② Low Battery Voltage | ⑥ Low Fuel | ⑨ Reverse |
| ③ Low Oil | ⑦ High Beam | ⑩ Security |
| ④ Engine Hot | | |

NOTICE

Certain products will damage the lens and other plastic surfaces. Do not use alcohol to clean the instrument cluster. Immediately clean off any gasoline that splashes on the instrument cluster.

GAUGE

The instrument cluster and gauge (if equipped) contains indicator lights and the rider information center. The information center can be controlled by the SELECT button ⑪ and ARROW buttons ⑫ on the hand controls.



INDICATOR LAMPS

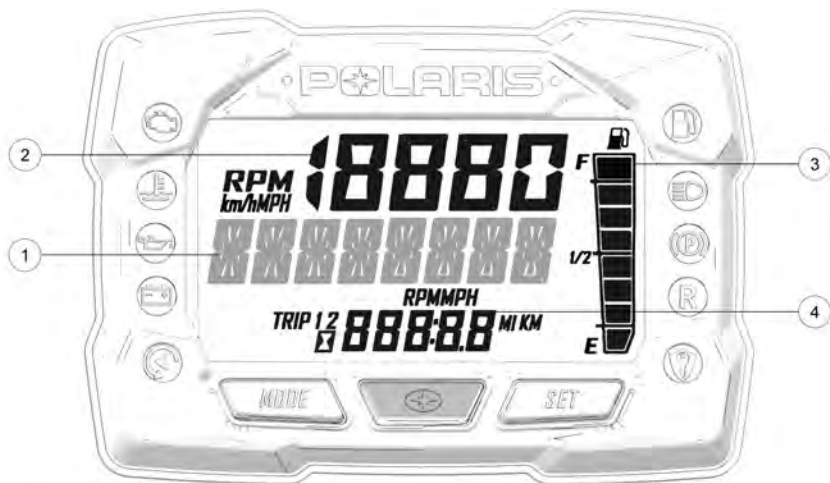
ICON	INDICATOR	DESCRIPTION
	Check Engine	This indicator appears if an EFI-related fault occurs. Do not operate the snowmobile if this warning appears. Serious engine damage could result. Your dealer can assist.
	Engine Hot	The over-temperature indicator will illuminate when the engine is overheating. Take action to cool the engine. The indicator will flash when engine temperature reaches critical levels. Stop the engine immediately.
	Low Oil	The Low Oil Indicator illuminates when low engine oil pressure is detected. When the light illuminates, stop the engine immediately and inspect the engine oil level. See page 151 for oil check procedure. Operating with low oil pressure could result in serious engine damage.
	Low Battery Voltage	The low battery voltage indicator illuminates when the battery voltage is low.

ICON	INDICATOR	DESCRIPTION
	Neutral	This lamp illuminates when the transmission is in the neutral position.
	Low Fuel	The low fuel indicator illuminates when fuel is low.
	High Beam	The high beam indicator illuminates when the lights are set to high beam.
	Parking Brake	The parking brake indicator illuminates when the parking brake is engaged. It will also illuminate when the service brake is in use.
	Reverse	The reverse indicator flashes when the transmission is in reverse.
	Active Security System	The security indicator illuminates when the security system is activated.

RIDER INFORMATION CENTER

The rider information center is located in the instrument cluster. The center displays vehicle speed, engine speed, odometer, resettable trip meters (2), total engine hours of operation, fuel level, engine temperature, and a diagnostic display mode.

Setting changes must be made with the engine running or with the vehicle powered by an external DC power supply connector. The information center is set to display standard units of measurement for distance and temperature.



① **Information Display Area** - This area displays either engine speed or vehicle speed (whichever is not displayed in the speed display), engine temperature and maximum vehicle speed.

② **Speed Display** - The speed display area displays either vehicle speed or engine speed.

③ **Fuel Gauge** - Not available on all models. The segments of the fuel gauge show the level of fuel in the fuel tank. When the last segment clears, a low fuel warning is activated. All segments including the fuel icon will flash. Refuel immediately.

NOTICE

The low fuel indicator and fuel level gauge on the Standard Instrument Cluster are not supported on models with a fuel level gauge on the fuel cap.

TIP

If the fuel icon fails to display, an open or short circuit has occurred in the fuel sensor circuit. See your authorized POLARIS dealer.

- ④ **Odometer/Engine Hour Display** - This area displays the odometer, Trip A, Trip B and engine hours.

INFORMATION DISPLAY AREA

This area displays either engine speed or vehicle speed (whichever is not displayed in the speed display), engine temperature, maximum vehicle speed, and speed or RPM. To change the display, *press and release* the MODE button or the MODE switch until the desired item is displayed.

SPEED DISPLAY AREA

The speed display area displays either vehicle speed or engine speed. Vehicle speed is displayed in either miles per hour (MPH) or kilometers per hour (km/h). Engine speed is displayed in revolutions per minute (RPM).

1. To change which item displays, first make sure the information display area is set to display either engine speed or vehicle speed.
2. *Press and release* the center button.

FUEL GAUGE (IF EQUIPPED)

The segments of the fuel gauge show the level of fuel in the fuel tank. When the last segment clears, a low fuel warning is activated. All segments including the fuel icon will flash. Refuel immediately.

NOTICE

The low fuel indicator and fuel level gauge on the Standard Instrument Cluster are not supported on models with a fuel level gauge on the fuel cap.

TIP

If the fuel icon fails to display, an open or short circuit has occurred in the fuel sensor circuit. See your authorized POLARIS dealer.

ODOMETER/ENGINE HOUR DISPLAY AREA

This area displays the odometer, Trip 1 meter, Trip 2 meter, CLOCK, and Engine Hours meter.

GAUGE

The odometer displays the total distance traveled by the vehicle since manufacture. Each trip meter records the distance traveled by the vehicle on a trip if the meter is reset before each trip. The CLOCK displays the time, and the engine hour meter displays the total hours the engine has been in operation since manufacture.

To change the display, *press and release* the SET button or SET switch until the desired item is displayed.

To reset a trip meter, *press and hold* the SET button or SET switch until the meter resets to zero.

PLAYBACK FUNCTION

The playback function allows the rider to record and play back engine speed, vehicle speed and throttle position sensor information for up to three minutes.

TO RECORD

1. *Press and hold* the center  button on the instrument cluster to enter the Options Menu.
2. *Press and release* the MODE button until PLAYBACK appears in the information display area.



3. Press and release the SET button.

RECORD will appear in the information display area.



4. To begin recording, Press and release the SET button.

The playback indicator will flash while recording is in progress. Recording is complete when the light stops flashing.

NOTICE

To stop recording at any time during the recording process, *press and release* the SET button.

TO PLAYBACK

1. To play back the recorded data, stop the vehicle and wait for engine speed to drop below clutch engagement.
2. Press and hold the center  button on the instrument cluster to enter the Options Menu.
3. Press and release the MODE button until **PLAYBACK** appears in the information display area.



GAUGE

4. Press and release the SET button twice.

PLAY will appear in the information display area.



5. Press and release the SET button to play the recorded data.

Once playback has concluded, REPLAY will appear in the information display area.

6. Press and release the SET button to REPLAY recorded data.
7. Press and release the MODE button to end playback and return to the Options Menu.

STANDARD/METRIC DISPLAY

The odometer and temperature displays can be viewed in either standard or metric units of measurement. Both displays change if units are changed. The new settings will remain until changed by the operator.

Change Method 1

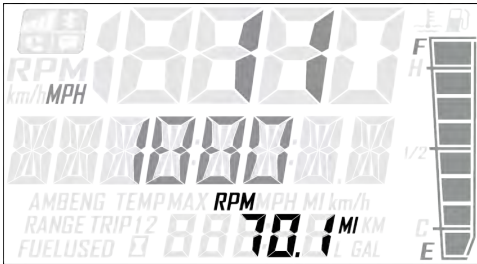
1. Press and hold the center  button on the instrument cluster to enter the Options Menu.
2. Press and release the MODE button until engine temperature appears in the information display area.



3. Press and release the SET button or SET switch to change units.

Change Method 2

1. *Press and release* the SET button or SET switch until the odometer appears in the information display area.



2. *Press and hold* the SET button or SET switch until the units change.

SECURITY SYSTEM (IGNITION LOCK SYSTEM)

This system is an optional feature and will not function until it has been activated by your authorized POLARIS dealer. If you have this feature activated, you can lock the ignition to prevent unauthorized use when leaving the snowmobile unattended. A locked system will limit engine speed to 3000 RPM, which prevents clutch engagement, and the snowmobile will not move when throttle is applied.

If you wish to use this feature, you must complete all four tasks on the following pages to have your system activated and to change the security code to one of your own choosing.

FIRST TIME USE OF YOUR SECURITY SYSTEM

Perform all tasks in the order shown if you wish to activate and use the optional security system.

TASK 1: Activate the security system

See your authorized POLARIS dealer to have the optional security system feature activated in the electronic control unit (ECU).

TASK 2: Lock the System the First Time

NOTICE

To lock the system for the first time, use code 000.

1. *Press and hold* the center  button on the instrument cluster to enter the Options Menu.
2. *Press and release* the MODE button until SECURITY OFF appears in the information display area.



3. *Press and release the SET button.*

ENTER CODE will appear in the information display area.



4. *Press and release the SET button to increase the 1st digit.*
5. *Press and hold the SET button to accept the 1st digit and advance to the 2nd digit.*



6. *Press and release the SET button to increase the 2nd digit.*

GAUGE

7. *Press and hold* the SET button to accept the 2nd digit and advance to the 3rd digit.



8. *Press and hold* the SET button to accept the 3rd digit and submit code.

If code is correct, SECURITY ON will appear in the information display area. The system is now locked. Proceed immediately to Task 3.



If code is incorrect, BAD CODE will appear in the information display area. Return to step 3 to re-enter code.



TASK 3: Unlock the System

NOTICE

To unlock the system for the first time, use code 000.

1. While the engine is running, *Press and release* the SET button.

ENTER CO will appear in the information display area.



2. *Press and release* the SET button to increase the 1st digit.
3. *Press and hold* the SET button to accept the 1st digit and advance to the 2nd digit.



4. *Press and release* the SET button to increase the 2nd digit.

GAUGE

5. *Press and hold* the SET button to accept the 2nd digit and advance to the 3rd digit.



6. *Press and release* the SET button to increase the 3rd digit.
7. *Press and hold* the SET button to accept the 3rd digit and submit code.
- If code is correct, SECURITY OFF will appear in the information display area*



NOTICE

The system is now *unlocked*.

If code is incorrect, BAD CODE will appear in the information display area. Return to step 1 to re-enter code.



8. You must now enter a new security code. Proceed immediately to TASK 4.

TASK 4: Enter Your New Security Code

1. Immediately after locking and unlocking the system, and while SECURE OFF is displayed, simultaneously *press and hold* the MODE and SET buttons.

SET NEW CODE will appear on the information display area.



2. *Press and release* the SET button to increase the 1st digit.
3. *Press and hold* the SET button to accept the 1st digit and advance to the 2nd digit.



4. *Press and release* the SET button to increase the 2nd digit.
5. *Press and hold* the SET button to accept the 2nd digit and advance to the 3rd digit.



GAUGE

6. *Press and release* the SET button to increase the 3rd digit.
7. *Press and hold* the SET button to accept the 3rd digit.

CODE SET will appear in the information display area, and then the new code will blink three times in the information display area



NOTICE

Your new code is now set. The system is NOT locked.

8. Record your new security code in a safe place for future reference.

Record your new personal security code here: _____

TIP

If you lose your personal security code, see your authorized POLARIS dealer to have the code reset to "000". Then perform TASK 2 through TASK 4 to change the code to one of your own choosing.

LOCKING SYSTEM WITH PERSONAL SECURITY CODE

1. Start the engine.
2. *Press and hold* the center  button on the instrument cluster to enter the Options Menu.
3. *Press and release* the MODE button until SECURITY OFF appears in the information display area.



4. *Press and release* the SET button.
ENTER CODE will appear in the information display area.



5. *Press and release* the SET button to increase the 1st digit.

GAUGE

6. *Press and hold* the SET button to accept the 1st digit and advance to the 2nd digit.



7. *Press and release* the SET button to increase the 2nd digit.

8. Press and hold the SET button to accept the 2nd digit and advance to the 3rd digit.



9. Press and hold the SET button to accept the 3rd digit and submit code.

If code is correct, SECURITY ON will appear in the information display area. The system is now locked. Proceed immediately to Task 3.



If code is incorrect, BAD CODE will appear in the information display area. Return to step 3 to re-enter code.



UNLOCKING SYSTEM WITH PERSONAL SECURITY CODE

1. While the engine is running, *Press and release* the SET button.

ENTER CODE will appear in the information display area.



2. *Press and release* the SET button to increase the 1st digit.
3. *Press and hold* the SET button to accept the 1st digit and advance to the 2nd digit.



4. *Press and release* the SET button to increase the 2nd digit.
5. *Press and hold* the SET button to accept the 2nd digit and advance to the 3rd digit.



6. Press and release the SET button to increase the 3rd digit.
7. Press and hold the SET button to accept the 3rd digit and submit code.

If code is correct, SECURITY OFF will appear in the information display area



NOTICE

The system is now *unlocked*.

If code is incorrect, BAD CODE will appear in the information display area. Return to step 1 to re-enter code.



CHANGING TO A NEW SECURITY CODE

Any time you wish to change your current security code to a new code, perform TASK 2 through TASK 4 of the First Time Use of Your Security System procedure. Instead of using the factory default code "000" in TASK 2 and TASK 3, use your current security code.

SECURITY SYSTEM ACCESS QUICK REFERENCE

Now that you have become familiar with the procedure for locking and unlocking the system, use the chart below as a quick reference.

SECURITY SYSTEM ACCESS QUICK REFERENCE CHART	
ACTION	RESULT
1. Start engine 2. <i>Press and hold</i> the center  button 3. <i>Press and release</i> the SET button until SECURITY appears in information display area. 4. <i>Press and release</i> SET button.	Displays ENTER CODE (to lock the system)
<i>Press and release</i> the SET button	Advances a digit on the ENTER CODE screen
<i>Press and hold</i> the SET button	Accepts a digit and displays the next digit position (if any remain) on the ENTER CODE screen
While SECURITY OFF is shown on the information display area, simultaneously <i>Press and hold</i> the MODE and SET button.	Allows user to change security code.

SPEED LIMITER

ENABLE THE SPEED LIMITER

- Press and hold the Polaris button.
- Press the MODE button to scroll through menu options until SPD LMT appears in the information display area. Then press the SET button.
- Enter your passcode.
- Press SET Button to toggle ON or OFF.

SPEED LIMIT STATUS



- Press and hold the Polaris button
- Press MODE button to scroll through menu options.
- “SPD LMT” will display as ON or OFF.
 - On = Enabled
 - Off = Disabled

CHANGE SPEED LIMIT



- Press and hold the Polaris button
- Press MODE button to scroll through menu options.
- Press SET Button when “SET SPD” appears on the screen.
- Enter Passcode.
- Press SET button on “MAX SPD” menu option.
- Press SET and MODE buttons to increase and decrease the speed setting.

DIAGNOSTIC DISPLAY MODE

The diagnostic display mode is for informational purposes only. Your authorized POLARIS dealer can perform all major repairs.

The diagnostic mode is accessible only when the check engine warning indicator is illuminated *and* a diagnostic code is active.



GAUGE

Do not stop the engine if you want to view the active code (failure code). Active codes cannot be retrieved if power is interrupted to the instrument cluster. The codes will become inactive codes if power is interrupted. Inactive codes are stored in the history of the unit. Please see your authorized POLARIS dealer can help retrieve inactive codes.

Use the following procedure to view active codes.

1. Do not stop the engine.
2. *Press and hold* the center  button on the instrument cluster to enter the Options Menu.
3. *Press and release* the MODE button until DIAGCODE appears in the information display area. The Diagnostic display mode will appear in the Options Menu if there is an active trouble code.

TIP

When the diagnostic mode is displayed, the check engine warning indicator will begin to flash.

4. A set of two numbers will appear in the display.
 - The 2-6 digit suspect parameter number (SPN) in the information display area indicates which component is generating the fault code.
 - The 1-2 digit failure mode indicator (FMI) number in the odometer area indicates the fault mode, such as open or short circuit.
5. More than one fault may be active. Press and hold the SET button or SET switch for two seconds to toggle to the next active code. Repeat until all codes are retrieved.
6. See Diagnostic Trouble Codes for code definitions and failure descriptions.

HEATED GRIPS

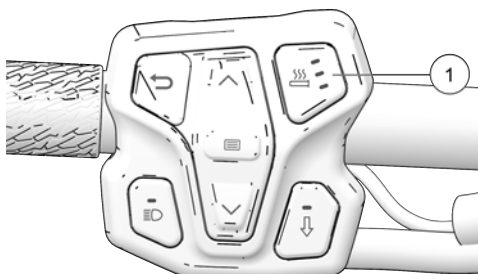
The heated handlebar grips can be operated using the left hand controls. To customize the temperature of the grips, follow the procedure below.



ACTIVATE HEATED GRIPS

To activate the SmartWarmer system in the handlebars, press the Heated Grips button ① on the left hand controls. There are four heat levels to choose from:

- Low
- Medium
- High
- Off



SET GRIP TEMPERATURE

The temperature of each heat level can be customized using your gauge or hand controls. Use the following procedure to adjust the temperature of your heated hand grips.

1. Start the engine.
2. *Press and hold* the center  button to enter the Options Menu.
3. *Press and release* the MODE button until HEATERS is displayed in the information display area.

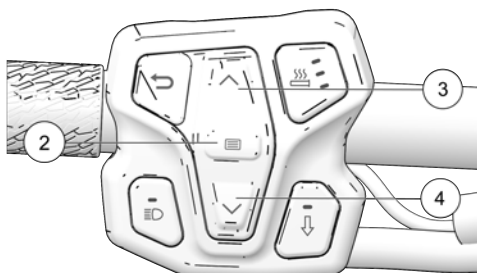
Using the Gauge Buttons

1. *Press and release* the MODE button to select which SmartWarmer element to customize: grips or thumb. Press the SET button to select.
2. *Press and release* the MODE button to choose a heat level: low, medium, or high. Press the SET button to select.
3. Use the SET and MODE buttons to increase/decrease the temperature to desired setting.
 - MODE decreases the temperature.
 - SET increases the temperature.
4. Press the Polaris button to lock in temperature.
5. Press the MODE button to advance to the next heat setting.
6. Repeat steps 3-5 for each setting: low, medium, and high.
7. Press the Polaris button to exit.
8. *Press and release* the SET or Polaris button to exit. The grips will adjust to the temperatures of the new settings when the hand grip warmers are enabled.

GAUGE

Using the Left Hand Controls

1. *Press and release* the Select button ② to select which SmartWarmer element to customize: grips or thumb. Press the Select button to select.
2. *Press and release* the Down Arrow ④ to choose a heat level: low, medium, or high. Press the Select button to select.
3. Use the Up arrow and Down arrows to increase/decrease the temperature to desired setting.
 - UP increases ③ the temperature.
 - DOWN arrow ④ decreases the temperature.
4. Press the Select button to lock in temperature.
5. Press the Down arrow to advance to the next heat setting.
6. Repeat steps 3-5 for each setting: low, medium, and high.
7. Press the Select button to exit.
8. Press the SET or Polaris button on the gauge to exit. The grips will adjust to the temperatures of the new settings when the hand grip warmers are enabled.



ENGINE OVERHEAT INDICATORS

The over-temperature indicators on the standard instrument cluster and Polaris Interactive Digital Display (PIDD) will illuminate and/or flash when the engine is overheating.

TEMPERATURE	ACTION
232 °F (111 °C)	Indicator lamp illuminates
248 °F (119 °C)	Indicator lamp flashes, engine shut down

OVER-TEMPERATURE INDICATOR (STANDARD CLUSTER)

The over-temperature indicator on the standard instrument cluster will *illuminate* when the engine is overheating. Take action to cool the engine. See the Engine Cooling Actions section for more information. The indicator will *flash* when engine temperature reaches critical levels. *Stop the engine immediately.*



OVERHEAT WARNING (7S DISPLAY)

When the engine is overheating, a red bar will appear at the top of the 7S display. *Stop the engine immediately* and take action to cool the engine. See the Engine Cooling Actions section for more information.



FLASHING INDICATOR

Flashing indicators indicate continued operation could result in serious engine damage. The engine management system will automatically reduce engine power and create a misfire condition. Stop the engine *immediately*. Allow the engine to cool down.

NOTICE

If engine overheating seems to be caused by something other than poor cooling conditions, your authorized POLARIS dealer or other qualified technician can perform a diagnosis.

ENGINE-COOLING ACTIONS

If the engine is overheating, promptly take action to cool the engine.

- Drive in loose snow.
- Stop the engine and allow it to cool down.
- View the coolant level. *Do not open the pressure cap while the engine is hot.*
- Add coolant if the level is low. *Do not add coolant while the engine is hot. Wait for the engine to cool before adding coolant.*
- If snowmobile is equipped with rail scratchers, make sure they are deployed.

NOTICE
If you must continue to operate while the indicator light is <i>illuminated</i> , drive slowly and stop the engine frequently to allow it to cool down.

RIDE COMMAND

INTRODUCTION

Thank you for purchasing a RIDE COMMAND Display, and welcome to the Polaris RIDE COMMAND App. This intuitive display gives you access to your vehicle's custom information and a variety of features.

For a safe and enjoyable riding experience with your new Display, please read your vehicle's owner's manual and this Display owner's manual. If you should need additional assistance with Display operation or software updates, please see your Polaris dealer or visit polaris.com/ridecommand.

For the latest information about your RIDE COMMAND Display, including software updates, please visit ridecommand.polaris.com.

WARNING

Do not enter information while operating your vehicle. Failure to pay attention to operating your vehicle could result in loss of control, injury, or death. You assume all risks associated with using this device. Read your User Guide. Always ride with the latest maps and trails data from <https://ridecommand.polaris.com/en-us/update>.

BEFORE YOU RIDE

Before riding with your new display, do the following:

- Read this entire manual.
- Familiarize yourself with the features and operations of the Display while the vehicle is stationary.
- Download the Polaris Ride Command App from the Apple® App Store® or the Google Play® store and create your personalized Ride Command account.
- Check your display to ensure you have the appropriate maps and trails visible for your area.
- Check <https://www.polaris.com/en-us/owners-manuals/> for the latest updates to the owner's manual.
- Complete the pre-ride checklist.

NOTICE

Trails change often, and the trail data file is only considered valid for 90 days after the release date. Please keep your trail data up to date. Download the latest trails at <http://ridecommand.polaris.com>.

RIDE COMMAND

NOTICE

Using the display for an extended period of time while the vehicle's engine is off can drain the battery (if equipped).

DEVICE OPERATING REQUIREMENTS

Phone functionality is dependent on the capabilities of your cell phone.

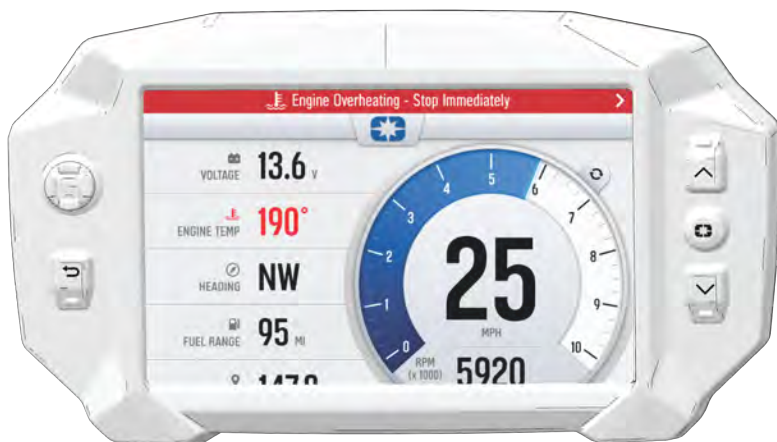
NOTICE

Some cell phones or operating systems will not work as shown in this manual.

ENGINE OVERHEAT INDICATOR

When the engine goes over temperature, a red banner will appear at the top of your 7S Display stating: ENGINE OVERHEATING – STOP IMMEDIATELY.

The appearance of this banner indicates continued operation of your snowmobile could result in serious engine damage. The engine management system will automatically reduce engine power and set a fault. Stop the engine immediately. Allow the engine to cool down.



NOTICE

If engine overheating seems to be caused by something other than poor cooling conditions, see your dealer or other qualified technician for service.

OVERVIEW

For the latest information about your Ride Command display, including software updates, please visit: <https://ridecommand.polaris.com>.

⚠ WARNING

Driving while distracted can result in loss of vehicle control, crash, and injury. We strongly recommend that you use extreme caution when using any device that may take your focus off the trail. Your primary responsibility is the safe operation of your vehicle. We recommend against the use of any hand-held device while riding and encourage the use of voice-operated systems when possible. Be aware of all applicable local laws that may affect the use of electronic devices while riding.



NOTICE

If your vehicle is equipped with electric start, the 7S display (if equipped) will remain on when the key is in the ON position and will continue to pull power from the battery. This snowmobile is not equipped with manual start. If the battery drain from the display depletes the battery, the engine will fail to restart. After 60 seconds, the display backlight will dim and then fully shut down after 10 minutes of inactivity.

RIDE COMMAND BUTTONS

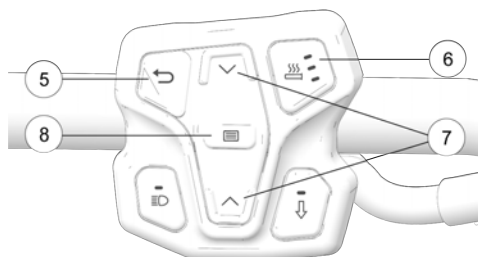
DISPLAY



	BUTTON	DESCRIP-TION	FUNCTION
①		5-Way UI Control	Moves the cursor and pans the focus on the map screen.
②		Back Button	Cycles all screens and backs user out of menus.
③		Up/Down Buttons	Zooms in and out of map and scrolls through lists of features.
④		Polaris Button	Opens and closes the Badge Panel.

LEFT HAND CONTROLS

The electronic hand controls are located on the left side of the handlebars. The hand controls operate certain Ride Command features, headlights, reverse operation, and heated grips.



	BUTTON	DESCRIPTION	FUNCTION
⑤		Back Button	Cycles all screens and backs user out of menus.
⑥		Heated Grips Button	Activates the SmartWarmers in the handlebars and throttle lever.
⑦		Up and Down Buttons	Zooms in and out of map and scrolls through lists of features.
⑧		Select Button	Opens the Badge Panel and chooses options.

GAUGE SCREEN

The Gauge Screen is the screen that will appear upon vehicle start-up and displays a customizable view of vehicle information including speed, RPM, fuel level, engine temperature, engine hours, trip meter, battery voltage, and compass.



CONFIGURE GAUGE SCREEN

The display allows up to four customized gauge screens. All but one screen can be deleted; one will always remain as the default.

NOTICE

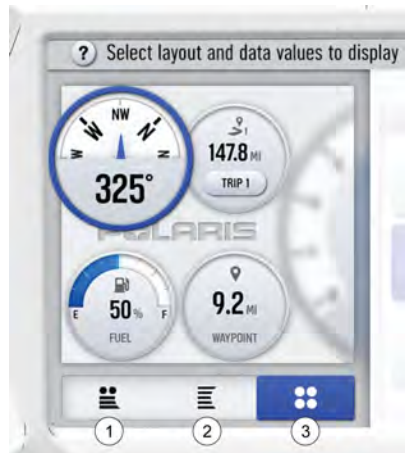
When in the gauge configuration panel, the display buttons and left-hand control buttons will not function. You must use the touchscreen to change screen settings and layouts.

Follow the instructions below to create customized gauge screens.

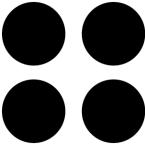
1. Press the Gear Icon in the bottom right corner of the touchscreen.
2. On the right side of the configuration panel, press the Screens Tab followed by the "Add New" button.



3. In the left side panel, choose a gauge layout from the three provided options.



RIDE COMMAND

NO	CONFIGURATION	DESCRIPTION
①		Two circular widgets and three linear widgets.
②		Five linear widgets.
③		Four circular widgets.

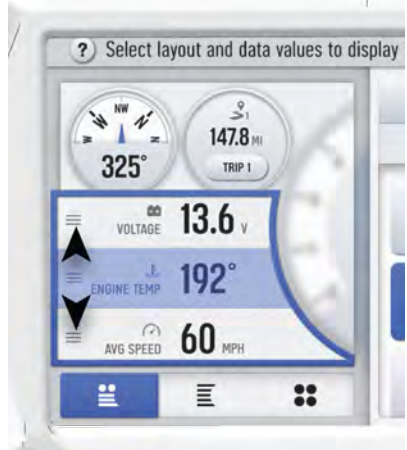
4. Select the Data Tab. Choose up to 5 widgets to display on the screen.

TIP

Keep your display software up-to-date as more widget options become available. For more information, see page 104.



5. Reorder the widgets by pressing and holding down on the widget and sliding the widget up or down into the desired position.



6. Click the green check mark or “Done” to close the configuration panel.

GAUGE VIEW MODE

Press ① to toggle between the two available gauge view modes, **Analog** and **Digital**.



RIDE COMMAND

ICON BAR

The Icon Bar is located across the top of the touchscreen and displays cell phone and headset connectivity, fuel range, compass heading and local time.

NOTICE

The Icon Bar will not appear when the Badge Panel is open.



ICON	DESCRIPTION	FUNCTION
①	Headset	Displays icon if headset is connected
②	Signal Strength	Displays current cell signal strength
③	Fuel Level	Displays current fuel capacity percentage
④	Vehicle Direction	Displays vehicle direction
⑤	Clock	Displays current time

BADGE PANEL

The badge panel provides easy access to frequently used features, basic display and vehicle controls, and a list of recent notifications.

ACCESSING THE BADGE PANEL

There are two ways to open the Badge Panel, press the Polaris icon ① at the top of the touchscreen or the Polaris Button ② on the right side of the display.



FEATURES

NOTICE

Press and hold the Polaris Icon for 2 seconds to disable the touchscreen.



③ Controls Tab

④ App Tray

⑤ Display Mode

⑥ Display Brightness

⑦ Badge Panel/Polaris Icon

⑧ Notifications Tab

⑨ Heated Grips

⑩ Fuel Type

⑪ Lock Vehicle Button

⑫ All Settings Button

CONTROLS TAB

Press the Controls tab to change display mode, display brightness, activate heated grips, and change fuel type.

APP TRAY

The App Tray provides easy access to key features on the display screen. Tap on any of the listed icons to navigate to that display screen. For example, tap the map icon to navigate to the map screen, or press the audio icon to navigate to the audio screen.

DISPLAY MODE

From the Control tab, select the display mode from the available options. The display mode can be set to Day, Night, or AUTO mode.

Day Mode



Night Mode



POLARIS BUTTON

The Polaris icon opens and closes the Badge Panel.

NOTIFICATIONS TAB

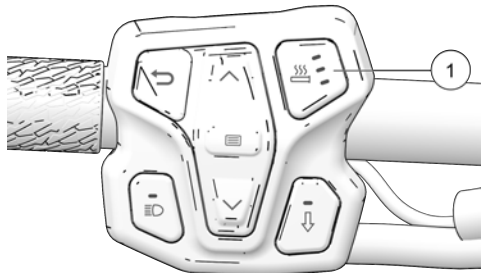
Press the Notifications tab to view DTC codes, installed software, and vehicle warnings.

HEATED GRIPS

Matrx models are equipped with three individual SmartWarmers heated grips: the left hand grip, right hand grip, and right thumb throttle lever. The warmers automatically adjust with the ambient temperature and wind chill to always keep the temperature of the grips at the preset temperature.

There are four heat settings:

- Low
- Medium
- High
- Off



Change the heat level by pressing the Heated Grip button ① on the left hand controls or by opening the Badge Panel.

The heat levels of the grips are customizable by temperature. To change the heat settings of your hand grips, press the Polaris button to open the Badge Panel.



In the Heated Grips section of the Badge Panel, press the Heated Grip Settings button on the touchscreen. To customize the temperature of your hand grips and thumb lever, use Plus and Minus Buttons beside each heat level to choose your preferred setting. Click the “X” in the top left of the screen, or the Back Button, to close the menu.

BUTTON	BUTTON NAME	FUNCTION
	Heated Grips Button	Changes the level of hand grip warmth to low, medium, high, or off.
	Heated Grips Settings	Opens the SmartWarmers settings to customize the temperature of each heat level.
	Plus Button	Increases the grip warmth by one degree.
	Minus Button	Decreases the grip warmth by one degree.

NOTICE
To change the temperature units from Fahrenheit or Celsius, open the All Settings menu from the Badge Panel and navigate to the General tab.

DISPLAY BRIGHTNESS

From the Controls tab, select display brightness by moving the touchscreen slider to the left or right. Press the AUTO check box to allow the screen to adjust automatically based on ambient light conditions.

LOCK VEHICLE

Snowmobiles equipped with a 7S display have the ability to lock the snowmobile into a low power mode until a security passcode is entered. Locking the snowmobile using the Lock Vehicle button will limit the vehicle's RPM so the vehicle will remain motionless.

NOTICE

The vehicle can be locked only when the engine is running and the vehicle is not in motion. If the engine is OFF, the Lock Vehicle button will be disabled.

CHANGING YOUR PASSCODE

A default passcode is available at the time of vehicle purchase. Changing the passcode will always require the old passcode. To change the security passcode, do the following:

1. Press the Polaris button to open the Badge Panel.
2. Press the All Settings button and open the Vehicle Settings tab.
3. Under Passcode Security, click "Change Passcode".
4. Enter the existing/old passcode.
5. Enter the new passcode.
6. Enter the new passcode again.
7. A popup box should appear confirming your passcode has changed.

LOCKING YOUR SNOWMOBILE

To lock your vehicle, do the following:

1. Stop vehicle completely. Keep the engine running.
2. Press the Polaris Button to open the Badge Panel.
3. Press the Lock Vehicle button.
4. Enter your 4-digit passcode.

LOCKING YOUR SNOWMOBILE

To unlock your vehicle, do the following:

RIDE COMMAND

1. Start the engine.
2. A banner will appear at top of the display screen prompting you to enter your passcode. Click on the ribbon or the Unlock Vehicle button from the Badge Panel.
3. Enter your 4-digit passcode.

ALL SETTINGS BUTTON

Press the All Settings button to navigate to the settings menu. For more information about the settings menu, see page 99.

MUSIC SCREEN



NOTICE

Your snowmobile is not equipped with a speaker system. Audio can only be transmitted through a Bluetooth® media device or headset. Only one device and one headset can be connected at a time.

Audio playback through USB or Bluetooth® devices are compatible with your Ride Command display. The Music Screen allows you to access music stored on your smartphone or other music device. You can pair your device using Bluetooth®, or by connecting it to the display's USB port.

DEVICE REQUIREMENTS

Audio playback is only available on USB flash drives formatted to exFAT® or FAT32 and operating systems iOS® 10 and Android® 5.0 or newer.

PHONE SCREEN

The phone screen displays recent calls, contact list, keypad, and messages. The display will only show messages received while smartphone is paired via Bluetooth® and “show notifications” is enabled on your smartphone.



Connect a smart phone and headset to listen to audio, make and receive calls and text messages, access a phone's contact list, and call history.

CONNECT YOUR PHONE TO THE DISPLAY

The Ride Command display is compatible with Android® and iOS®. Go to <https://ridecommand.polaris.com/en-us/supported-devices> for latest operating system compatibility.

Connect your Bluetooth® device to do the following:

- Connect your Bluetooth® device to pair and connect phones and Bluetooth® headsets.
- View list of paired devices with connection status.
- For phones, view signal strength.
- Listen to music using headset or optional vehicle speakers.

NOTICE

Ensure that your smartphone Bluetooth® settings are set to share phone calls, media audio, text messages, and contact information.

RIDE COMMAND

NOTICE

There is no built in microphone in the display. Phone call audio will play through the phone speakers or Polaris approved headset if connected. Some dial options may be unavailable at speeds greater than 3 MPH.

IPHONE®

To connect your iPhone® to the display, do the following:

1. In your iPhone® settings turn on Bluetooth®. If available, make your phone discoverable to other devices in your Bluetooth® settings. When your phone appears on the display press the “+” button next to it.
2. A prompt will appear on your iPhone® requesting permission to pair with your phone.
3. Ensure the confirmation code on the screen and your phone are the same then press “Pair” on your phone.
4. For optimal experience, enable notifications and sync contacts from your smartphone’s Bluetooth® settings.

ANDROID®

To connect your Android® device to the display, do the following:

1. From your smartphone settings, open the Bluetooth® options on your device and ensure that Bluetooth® is turned on.

NOTICE

On some phones you have to make the phone visible to other devices. If your phone has this feature, it should show up on the Bluetooth® connection screen of your phone. If no option exists to make your phone visible to the display, it is already visible to the display.

2. Press the add device button, then press “OK” on the display.
3. When your phone appears on the display press the “+” button next to it to pair with your phone.
4. Ensure the confirmation code on the screen and your phone are the same then press “OK” on your phone.
5. For optimal experience press “Accept” on your phone when requested to access contacts and messages.
6. The display will now show a list of previously connected phones on the display. If it is unpaired, click on your phone from the list.

7. Once the display says connected/paired, your phone is now connected to the display via Bluetooth®. After a phone is connected, the Device Manager Screen will appear.
8. When a smartphone is connected to the display via Bluetooth®, users are able to make phone calls from the display through the keypad, recent calls, or their contacts by pressing the phone icon in the device manager screen or through the pull down menu.

CONNECTING YOUR BLUETOOTH® HEADSET WITH THE DISPLAY

The Ride Command touchscreen display can be connected to a smartphone and headset simultaneously. The display can connect with Polaris-approved Bluetooth® headsets to listen to music, take phone calls, and talk with other riders.

To connect your Bluetooth® headset to your display, do the following:

1. Put your Bluetooth® device into pairing mode.
2. Press the Polaris button to open the Badge Panel.
3. From the Bluetooth® device settings screen, the Phone screen, or the Music screen, tap on the Add Device button to bring up the pairing prompt.
4. Select the name of the device you want to pair from the touchscreen display to finish the pairing process.

NOTICE
For a better riding experience, connect your headset directly to the display, not your mobile device.

MAP SCREEN

Press the Back Button to cycle to the map screen or press the Map button from the App Tray in the Badge Panel. The map will center you based on the location of the in-vehicle GPS.



NOTICE

Controls on the map surface disappear after 10 seconds of inactivity, return with a tap anywhere on the map.

ZOOM

Use the plus and minus signs on the left side of the screen, or pinch the screen with your fingers, to zoom in and out on the map.

The waypoint icon appears when navigation is in use and the GPS is routed to a specific waypoint. Press the waypoint icon to focus on the destination point. To set the focus back to your location, press the target icon in the bottom right corner of the screen.

- Pinch zoom
- Plus / Minus button
- Auto-zoom to waypoint while navigating
- Current zoom level relative to maximum and minimum zoom



MAP ORIENTATION



The compass icon on the right side of the screen toggles how the map orients itself during navigation. There are two orientation options: North Up and Course Up. Pressing this button will also re-center your vehicle if not already centered.

RIDE COMMAND

MAP ORIENTATION	MAP ICON
North Up view locks the maps orientation so that North is always at the top of the screen, regardless of your vehicle's position or direction.	
Course Up view rotates the map to match the direction of your vehicle.	

WAYPOINTS

Waypoints are user-defined locations on the map. Waypoints can be saved and shared with friends.

To add a waypoint, do the following:

1. From the map screen, tap the map menu icon at the bottom of the display screen ①.
2. Select **Add Waypoint** ② from available options.



POINTS OF INTEREST (POI)

Points of interest (POI), such as restaurants, gas stations, hotels, dealers, and more, are available from the map screen. POI will display on map screen as you zoom in and out of the map. Tap on the POI icon to view more information about the location.

GO TO NAV

Go to Nav is available from the map screen when viewing a waypoint or POI. Go to Nav will display the distance and directional bearing of the POI.

NOTE

Go to Nav does not provide turn-by-turn directions to a POI.

GROUP RIDE

NOTICE

The display requires a GPS lock, indicated by a blue arrow marker (as shown below), before you are able to setup or join a group ride.



Invite your friends to a group to see their live location on the map of your smartphone, tablet, or in vehicle Ride Command Display.

For information on how Group Ride works and for instructions on how to set up Group Ride using your smartphone, or with a vehicle-to-vehicle (V2V) antenna, tap the "i" icon beside the title from the Group Ride Panel ①.



GROUP RIDE SETUP

There are two ways to set up a group ride.

- Mobile Phone
- Vehicle-to-Vehicle Antenna

MOBILE PHONE GROUP RIDE

Features of using your mobile phone for group riding:

- Works within cellular range
- Requires a tethered mobile phone
- Infinite range between vehicles
- Works with friends using the mobile app

To set up a group ride using a mobile phone, do the following:

1. Enable your Bluetooth® tethering in your phone's settings. Tap instruction for more information of how to enable tethering on an iPhone® or Android® phone.
2. Connect your phone via Bluetooth®. If you phone is currently connected you **MUST** disconnect and reconnect it.

3. Press the **login** button to login to your Ride Command account. If you do not have a ride command account, sign up at ridecommand.polaris.com

NOTICE

Once you've completed all three steps above, your information will be stored (unless cleared manually) and you will not need to login again into your Ride Command account for future group rides.

4. Press the back button to go back to the group ride screen and join your Group Ride.

NOTICE

In order for mobile phone users to join a V2V ride group, at least one group member must be connected via both the V2V antenna and a mobile phone.

VEHICLE TO VEHICLE (V2V) ANTENNA

Features of using the Vehicle-to-Vehicle antenna for group riding:

- Works anywhere, no phone required
- Requires an installed V2V antenna, standard on vehicles equipped with a 7S display
- 1+ miles range between vehicles



Use the following procedure to setup a V2V Group Ride:

RIDE COMMAND

1. From the map menu, tap the **Group Ride** button.
2. Tap **Setup V2V Group Ride** button on the display screen.
3. Tap the **Antenna Installed** toggle switch to the **Yes** position.

JOINING A RIDE GROUP

To join a group, do the following:

1. From the map menu, tap the Group Ride button.
2. Nearby ride groups will display in order of distance.
3. Tap the **Join** button ① to join a group.

NOTICE

You can only be active in one ride group at a time.



Close the pop up to show the map view of your chosen ride group. Other riders appear as dots on the map. If a rider is moving, the dot includes a heading arrow pointing in the direction they are riding. The ride group panel on the side of the screen shows the name of the group and lists all group members with their name, icon color, distance and bearing from you to that rider.

NOTICE

The map is set to zoom-to-group and as you ride it will automatically zoom to keep all riders in view. Tap the zoom control to return to manual zoom mode.

RIDING WITH A GROUP

1. Tap the handle by the group name ② to minimize the panel and show more map.
2. After 10 seconds of not interacting with the screen, the map controls will disappear. Tap the screen to make them visible again.



3. Tap on a rider icon in the ride group panel to show that rider relative to your location. If center-on-me is enabled, the display reverts to the centered state after 10 seconds.

CREATING A RIDE GROUP

To create a Ride Group, do the following:

1. On the Group Ride Panel, tap the “New Group” button ③ to create a group for others to join.
2. Give the group a name and choose whether a passcode should be required for others to join the group. If the “Private” toggle is tapped, you will be prompted to enter a four-digit passcode.

RIDE COMMAND



3. After creating a group, the panel closes and shows the new group on the map.
4. If your ride group has been set to Private, other riders must enter your chosen passcode to join the group.
5. After a second rider joins, the map will switch to zoom-to-group and as you ride it will automatically zoom to keep all riders in view. Tap the zoom control to return to manual zoom mode.

SETTINGS

From Settings, you can view important details about your vehicle and personalize your touchscreen display. The settings menu is comprised of four categories: Vehicle Info, General, Time, and Vehicle Settings.

To open Settings, press the Polaris button on the display and then the All Settings button from the touchscreen.



RIDE COMMAND

VEHICLE INFORMATION

From the Information settings tab you can view the following:

- Vehicle Identification Number (VIN)
- Installed Software Version
- Mileage
- Total Engine Hours
- Next Service Interval



GENERAL SETTINGS

From the General settings tab you can do the following:

- Connect to Ride Command account
- Manage Bluetooth® devices
- Change the display language
- Set the speed units of measure (MPH or KM/H)
- Set the temperature units (F or C)
- System information
- Update software
- Update maps and trails



TIME SETTINGS

From the Time Settings tab you can do the following:

- Set time from internal GPS location
- Set time zone
- Set time (if GPS time is not enabled)
- Set date
- Enable GPS Time (automatically sets the time to the time zone you are currently in)
- Set the time format (12-hour or 24-hour)



VEHICLE SETTINGS

From the Vehicle Settings you can do the following:

- Access vehicle diagnostics
- GPS Status
- Set fuel type
- Customize heated grip temperatures



MAINTENANCE

CARE AND MAINTENANCE

To clean the display shell, use a soft cloth with mild soap and water. Do not use harsh or abrasive cleaners. For best results, use a micro-fiber towel to clean the screen.

NOTICE

Certain products will damage the screen and other plastic surfaces. Do not use alcohol to clean the display. Immediately clean off any gasoline that splashes on the display.

VEHICLE STORAGE

When preparing the vehicle for storage make sure the ignition switch is in the OFF position to prevent battery drain and diminished battery life.

SPEED LIMITATION

Various aspects of the display such as the front and rear cameras, phone contacts, and call logs may be unavailable while driving at high speeds.

UPDATE SOFTWARE

NOTICE

Before updating the Display, always export your existing rides and waypoints to a USB drive to avoid losing them.

To update the software, do the following:

ON YOUR PERSONAL COMPUTER

1. Go to ridecommand.polaris.com/update.
2. Log into your account, or create a new account.
3. Using the Vehicle Identification Number (VIN), add your new Polaris vehicle to your Garage.
4. Locate and download the latest software to a USB flash drive (8+ GB).

ON YOUR VEHICLE

1. Connect the USB flash drive to the USB cable and power up your vehicle.
2. On the RIDE COMMAND display, select the Settings menu on your display by pressing the POLARIS icon at the top of the screen.
3. Select General Settings, then Update Software.

4. Select the file you wish to load (use date listed in the file name to determine most recent file).
5. Select Yes to restart display (restart required).

ERROR MESSAGES

If an error occurs while updating your software, perform one or all of the following actions to resolve the issue:

1. Remove and reconnect the USB flash drive securely.
2. Make sure the display files are not inside a folder on the flash drive.
3. Make sure only display files are on the flash drive. Remove any other files if necessary.
4. Try using a different USB flash drive.

UPDATE MAPS

To update the maps on your display, do the following:

1. Go to ridecommand.polaris.com/update and download the map update to a USB flash drive.
2. Insert USB flash drive into the USB port on your vehicle.
3. Press the Update maps in the General Settings.
4. Select the file you want to install by pressing the corresponding down arrow icon.
5. This will update the display's map which will automatically restart the display once the update is complete. Do not remove the USB flash drive until the display has fully restarted.

USB HARDWARE

SOFTWARE UPDATES

For software update, POLARIS recommends using a SanDisk® or similar USB flash drive with a minimum of 4GB in available memory, formatted using the FAT32 or exFAT® file systems. For best results remove all files from the flash drive before starting the update process.

MAP UPDATES

For Map updates, a 32GB USB drive is required (USB 3.0 drive is highly recommended) USB drive must be formatted to exFAT® before copying the map file onto it.

TRAIL UPDATES

For Trail updates, a 4GB drive formatted to FAT32 can be used.

RIDE COMMAND

USB PORT

TIP

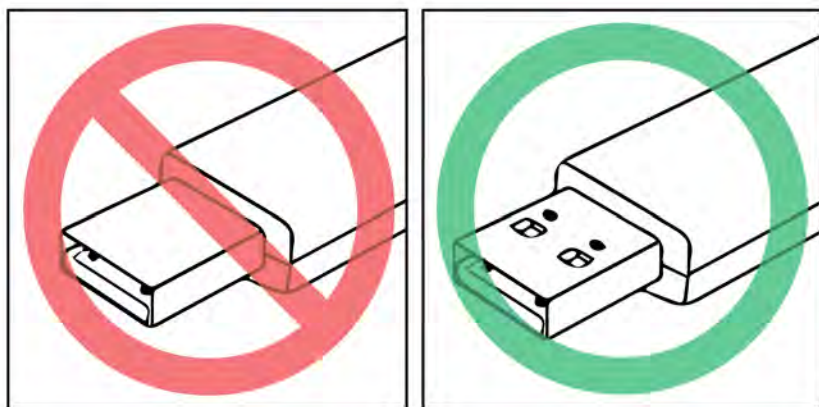
The USB Port is located in the storage compartment behind the display.

The USB Port makes it easy to power devices, such as phones, audio sources, or GPS units, in addition to allowing you to stream music through the LCD display to your Bluetooth® headset.

On models equipped with a Polaris Ride Command display, the USB port is also used to update the display software. For the latest software, go to <https://ridecommand.polaris.com/en-us/update>.

IMPORTANT

Due to harsh riding environments, Polaris recommends using a USB device with retention features.



THE PERFECT FIT

SUSPENSION QUICK SET-UP GUIDE

The front and rear suspensions on your Matryx snowmobile are easy to adjust. Just remember three simple steps:

1. Ride your snowmobile.
2. Adjust the *rear track shock spring* to tune *vehicle balance* (ski pressure and weight transfer).
3. Adjust *shock clickers* (if equipped) to tune *ride quality* (stiffer or softer ride).

Step 1: Ride your snowmobile.

Ride the snowmobile in various terrain to fully experience the existing suspension settings before making any adjustments.

Step 2: Adjust the torsion spring settings to tune vehicle balance.

After riding, you should be able to determine if the snowmobile needs more or less transfer.

- For more transfer, *decrease* the torsion spring setting.
- For less transfer, *increase* the torsion spring setting.

If you prefer your snowmobile has lighter steering, decrease the torsion spring setting or increase the front track shock spring preload.

Step 3: Adjust shock clickers (if equipped) for ride quality.

For models equipped with monotube shocks, always adjust the rear track shock spring preload to enhance bottoming resistance.

For models with shock clickers, you can adjust the clickers to control bottoming and adjust ride comfort.

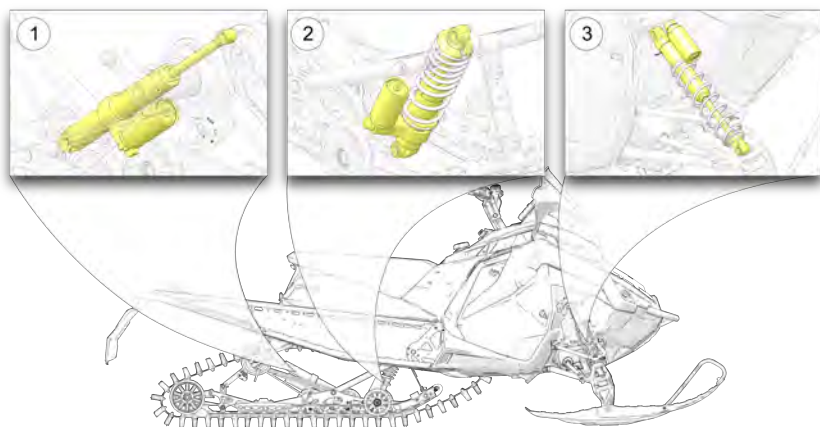
- Turn a clicker counter-clockwise to decrease damping for a softer ride.
- Turn a clicker clockwise to increase damping for a stiffer ride and less bottoming.

NOTICE
Always adjust the clicker at least one click below full stiff (full clockwise) or shock damage will occur.

Test ride the snowmobile and continue making spring and clicker adjustments until you achieve the perfect ride.

THE PERFECT FIT

SHOCK LOCATIONS



- ① Rear track shock
- ② Front track shock
- ③ Front (IFS) shocks

SHOCK COMPRESSION DAMPING

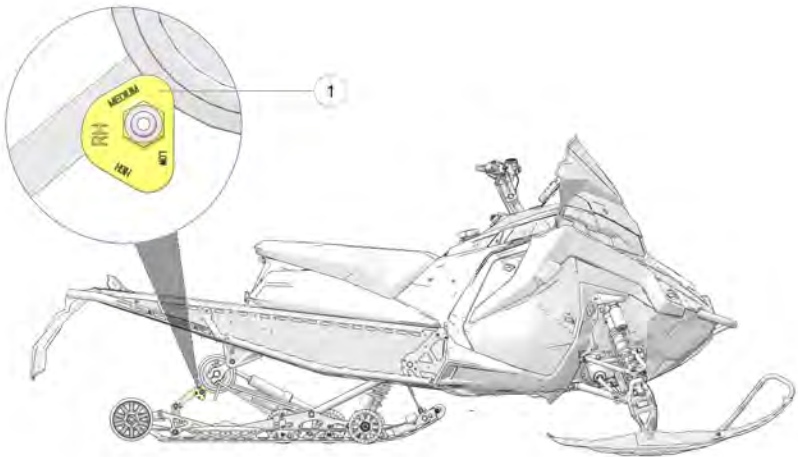
The primary adjustment for overall vehicle balance is torsion spring preload. Perform this adjustment first. After adjusting torsion spring preload to your satisfaction, compression damping adjustments can be made to control ride quality and bottoming resistance.

Compression damping can be adjusted at the front suspension and at the front and rear track shock. Make adjustments in 2-click increments, then test ride. When adjusting the front suspension, always adjust both clickers equally.

To stop bottoming of the front or rear suspension (stiffer ride), rotate the clicker (s) clockwise two clicks (as viewed from the top of the clicker), then test ride. Repeat the adjustment until bottoming stops and the desired ride quality is achieved.

For a more plush ride at the front or rear suspension, rotate the clicker(s) counter-clockwise two clicks, then test ride. Repeat the adjustment until the desired ride quality is achieved.

TORSION SPRING ADJUSTMENTS



To adjust rear torsion spring preload, rotate the three-position cam ① using the engine spark plug tool. Adjustment is easiest when the cam is rotated from low to medium, and then to high. Rotating directly from low to high will require significantly more effort. Different rate torsion springs are available if a firmer ride is desired. See your dealer for more information.

NOTE

Adding 1+1 seat, or additional cargo may affect handling and require a spring rate change.

TORSION SPRING SETTING	RECOMMENDED USAGE
Low	Rider(s) and gear = 140-180lb If less than 140, use the optional spring chart for softer springs.
Medium	Rider(s) and gear = 180-220lb
High	Rider(s) and gear = 220-260lb If above 260, use the optional spring chart for heavier springs.

THE PERFECT FIT

REAR TORSION SPRING KITS

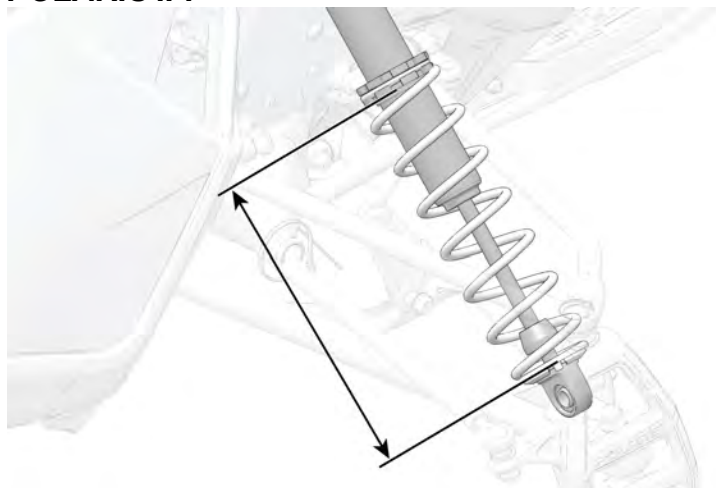
All AXYS and MATRYX vehicles are equipped with standard stock rear track suspension springs. To customize your ride, rear torsion spring kits can be installed to accommodate your particular total rider weight range.

KIT DESCRIPTION	PART NUMBER	WEIGHT RANGE – LBS (KG)
Factory-Installed Stock Spring	7045190, 7045191	140-260 lb (64-118 kg)
Factory-Installed Stock Spring (144/146)	7041629, 7041630	140-260 lb (64-118 kg)
Factory-Installed Stock Spring (Adv X2)	7045924, 7045925	
129/137 Light Duty	2884973	0-180 lb (0-82 kg)
144/146 Light Duty	2884976	0-180 lb (0-82 kg)
129/137 Heavy Duty	2884974	220-350 lb (100-159 kg)
144/146 Heavy Duty	2884977	220-350 lb (100-159 kg)
129/137 Extra Heavy Duty	2884975	310-425 lb (141-193 kg)

FRONT SUSPENSION (IFS) SHOCK SETTINGS

Always perform shock spring preload adjustments with the weight of the vehicle removed from the shock and with the shock at full extension.

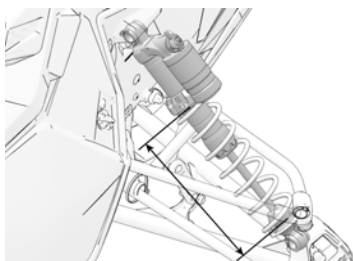
POLARIS IFP



MODEL	Matryx Nordic Pro	Matryx Voyageur
FACTORY INSTALLED LENGTH	10.92 in (27.74 cm)	10.92 in (27.74 cm)
MINIMUM INSTALLED LENGTH	9.67 in (24.56 cm)	9.67 in (24.56 cm)
FACTORY CLICKER SETTING*	No clicker	No clicker

THE PERFECT FIT

POLARIS TS



MODEL	INDY Adventure	INDY XC	INDY Adventure X2
FACTORY INSTALLED LENGTH	10.05 in (25.53 cm)	10.05 in (25.53 cm)	10.05 in (25.53 cm)
MINIMUM INSTALLED LENGTH	8.55 in (21.72 cm)	8.55 in (21.72 cm)	8.55 in (21.72 cm)
FACTORY CLICKER SETTING*	Medium	Medium	Medium
* From Full Stiff			

FRONT TRACK SHOCK SETTINGS

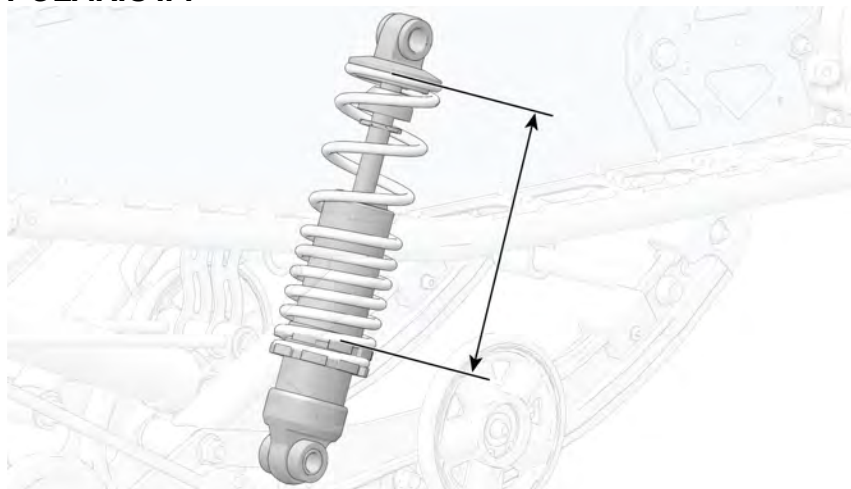
Factory settings, combined with user adjustments to the rear track shock spring (RTSS), should be all that's necessary to provide the best riding experience for most riders. The primary adjustment for overall vehicle balance is RTSS preload. Perform this adjustment first.

Always perform shock spring preload adjustments with the weight of the vehicle removed from the shock, limiter strap(s) disconnected, and the shock at full extension.

NOTICE

Never adjust spring preload to an installed length longer than the factory length or shorter than the minimum length as shown in the following chart. Damage to the suspension could result. When decreasing preload, make sure at least two turns of preload are holding the retainer against the spring.

The front track shock is measured from the bottom of the spring to the top of the body cap.

POLARIS IFF

MODEL	FACTORY INSTALLED LENGTH	MINIMUM INSTALLED LENGTH	FACTORY CLICKER SETTING
Nordic Pro	8.38 in (21.29 cm)	6.63 in (16.84 cm)	No clicker
Voyageur	8.38 in (21.29 cm)	6.63 in (16.84 cm)	No clicker
Indy Adventure	7.47 in (18.97 cm)	7.22 in (18.34 cm)	No clicker
Indy XC	7.47 in (18.97 cm)	7.22 in (18.34 cm)	No clicker
Indy Adventure X2	8.34 in (21.18 cm)	6.59 in (16.74 cm)	No clicker

THE PERFECT FIT

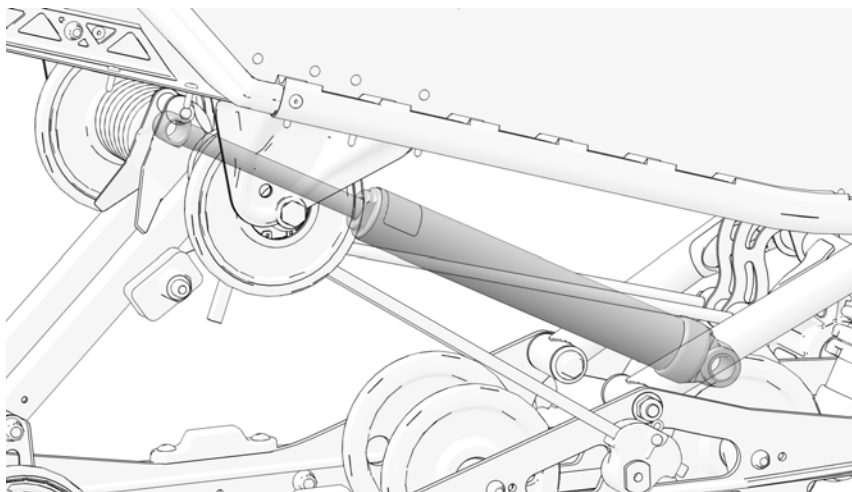
REAR TRACK SHOCK SETTINGS

Always perform shock spring preload adjustments with the weight of the vehicle removed from the shock and with the shock at full extension.

To reset shock clickers, rotate the clicker to full stiff, and then back off the same number of clicks for each shock.

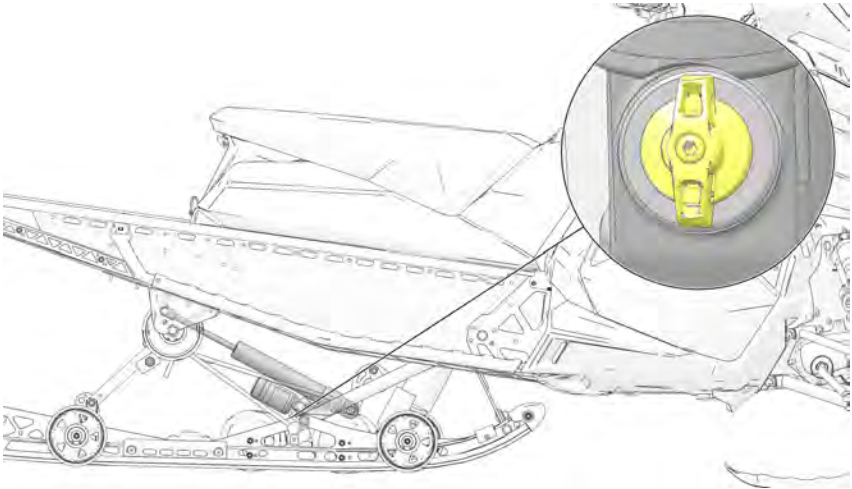
POLARIS IFP

Nordic Pro and Voyageur models are equipped with Polaris IFP monotube rear track shocks. These shocks are non-adjustable. Adjust the front track shock spring and torsion springs for additional weight transfer.



MODEL	Matryx Nordic Pro	Matryx Voyageur
FACTORY INSTALLED LENGTH	No Spring	No Spring
FACTORY CLICKER SETTING	No clicker	No clicker

POLARIS TS



MODEL	Indy Adventure	Indy XC	Indy Adventure X2
FACTORY INSTALLED LENGTH	No Spring	No Spring	No Spring
FACTORY CLICKER SETTING*	Medium	Medium	Medium
* From Full Stiff			

REAR REAR SCISSOR STOP (RRSS) (IF EQUIPPED)

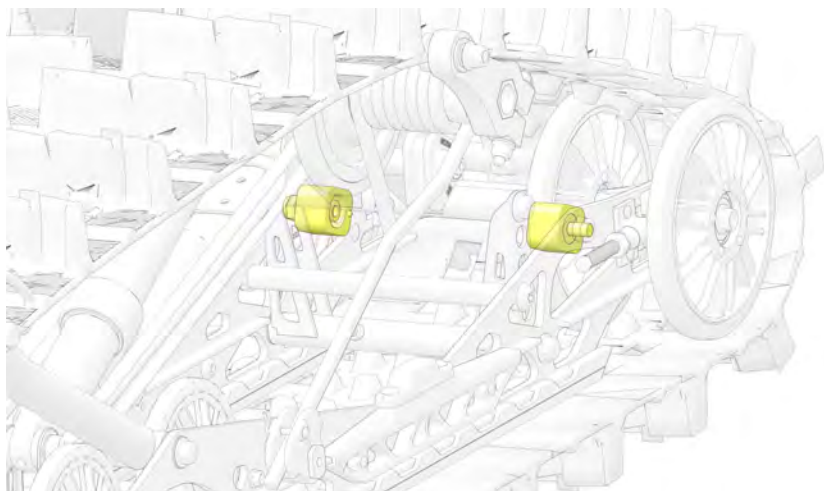
REAR REAR SCISSOR STOP (RRSS) - ATTRIBUTES

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

- Reduced weight transfer
- Improved chatter bump ride
- Improved cornering performance
- Increased load carrying capacity (2-up)

WEIGHT TRANSFER DURING ACCELERATION

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



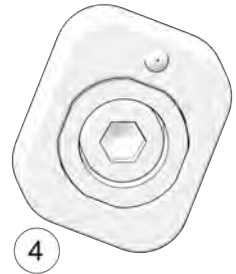
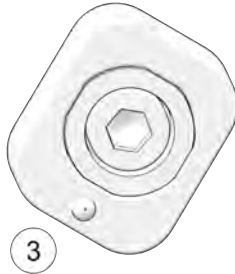
To decrease weight transfer under acceleration (for improved cornering), rotate the RRSS to a higher position.

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

NOTICE

When adjusting for weight transfer, both the left and right rear rear scissor stop adjuster blocks must be adjusted to the same position.

- ① High
- ② Medium
- ③ Low
- ④ Low



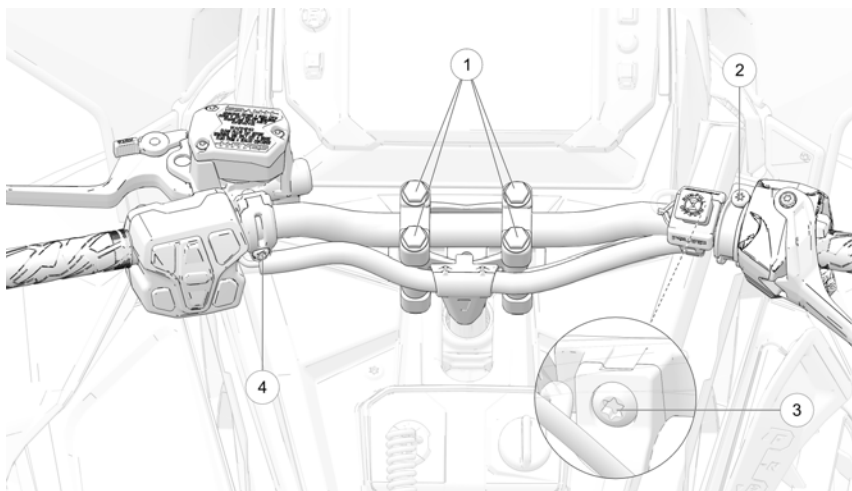
TIP

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

HANDLEBAR COMPONENT FASTENER TORQUES

IMPORTANT

Moving a handlebar component without first loosening its screws/set screws may cut grooves into the handlebar, making it difficult to secure the component. Do not move a handlebar component without first loosening its mounting screws/set screws. Take care to avoid damaging hand warmer/brake switch wires when moving components.



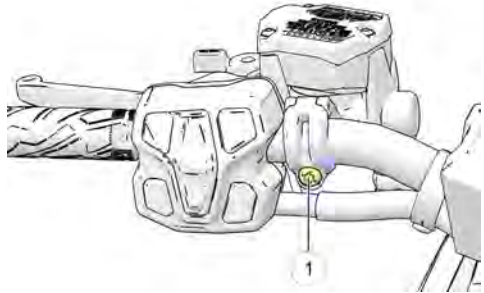
COMPONENT		TORQUE <i>DO NOT OVER-TIGHTEN</i>
①	Upper / Lower Riser Clamps	14.8 ft-lbs (20 N·m)
②	Throttle Block Clamp Screw	20 in-lbs (2.3 N·m)
③	Engine Stop Switch Clamp Screw	20 in-lbs (2.3 N·m)
④	Brake Lever / Master Cylinder	70 in-lbs (7.9 N·m)
⑤	Left Hand Control Block	20 in-lbs (2.3 N·m)
Not Shown	Hand Guard Mounts (if applicable)	Hand-Tighten

BRAKE MASTER CYLINDER ALIGNMENT

⚠ CAUTION

Take care to avoid damaging hand warmer/brake switch wires when moving components.

1. Loosen the mounting screw ①.
2. Move the master cylinder to the desired position.
3. Tighten the screw to specification. Do not over-torque.



TORQUE

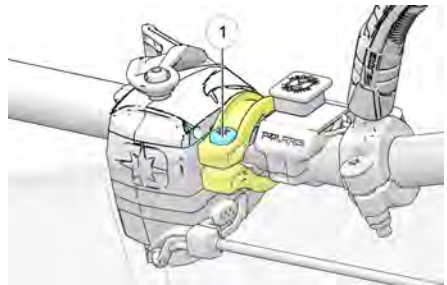
Master Cylinder Mounting Screw
60-80 in-lbs (6.7-9 N·m)

THROTTLE BLOCK ALIGNMENT

1. Slightly loosen the throttle block clamp screw ①.
2. Move the throttle block to the desired position.

NOTICE

Take care to avoid damaging hand warmer wires when moving components.



3. Tighten the screw to specification. Do not over-torque.

TORQUE

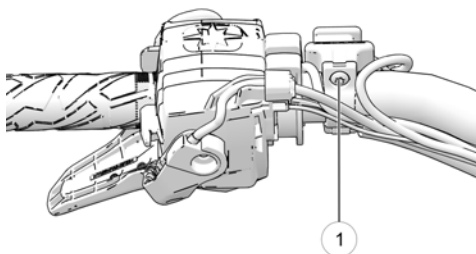
Throttle Block Clamp Screw
27 in-lbs (3 N·m)

4. With the engine off, test throttle lever movement after tightening the screw.

THE PERFECT FIT

ENGINE STOP SWITCH ALIGNMENT

1. Slightly loosen the set screw ① on the bottom of the housing.
2. Move the switch to the desired position.
3. Tighten the screw to specification. Do not over-torque.



CAUTION

The stop switch must be positioned in an easily accessible location.

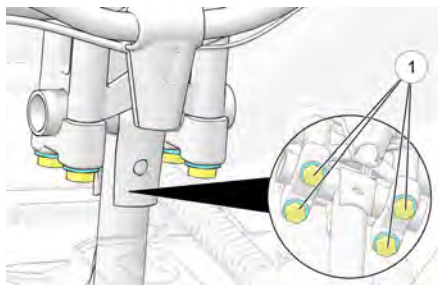
TORQUE

Stop Switch Set Screw
20 in-lbs (2.3 N·m)

RISER ANGLE

Riser angle can be adjusted to suit rider preference.

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



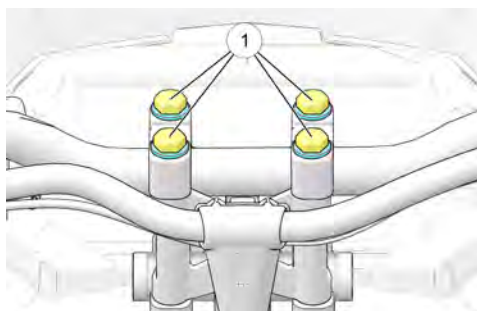
TORQUE

Adjuster Block Bolts
14.8 ft-lbs (20 N·m)

HANDLEBAR ANGLE

Handlebar angle can be adjusted to suit rider preference.

1. Loosen the four bolts ① on the top riser block.
2. Adjust the handlebar upward or downward to the desired angle. Be sure the handlebar, brake lever and throttle lever operate smoothly and do not hit the gas tank, windshield or any other part of the machine when turned fully to the left or right.



If necessary, loosen the set screws for the left and right controls, rotate the controls *slightly*, then tighten the set screws to the proper torque.

3. Torque the bolts to specification.

TORQUE

Handlebar Block Bolts
14.8 ft-lbs (20 N·m)

NOTICE

Do not stretch wires while adjusting the controls. Stretching the wires could damage the handwarmers.

TRACTION PRODUCTS

TRACK STUDDING

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

When studded tracks are used, increased wear to the brake pads will result from increased braking and requires increased brake inspection intervals.

Installing studs can also cause the track to stretch more than a non-studded track. For this reason, POLARIS recommends inspecting track tension more often and setting the tension at the preferred measurement.

THE PERFECT FIT

Always adhere to the manufacturer's stud maintenance procedures and stud nut torque specifications.

Before equipping your snowmobile with traction products, be aware of regulations pertaining to the use of traction products in your area of operation.

STUDS

NOTICE

Failure to heed the following recommendations will result in tunnel or track damage and a voided warranty.

Track damage resulting from improperly installed or maintained studs is not covered under warranty. Use only POLARIS-approved traction products on your snowmobile. See your dealer for more information about installing studs and/or carbides.

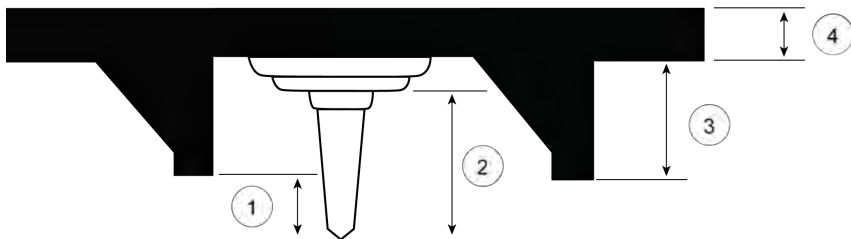
NOTICE

Use of studs longer than the recommended length on snowmobiles equipped with center coolers will result in center cooler damage or damage to the tunnel.

The Matryx chassis requires a stud protection kit to be installed before installing studs or chassis damage will occur. This stud protection kit will protect against chassis damage with the following track/stud combinations.

CHASSIS/TRACK	STUD PROTECTION KIT
Matryx 129 / Storm 150	PN: 2884961
Matryx 137 / Cobra / Ice Ripper	PN: 2884962
Matryx 146 / Cobra 1.3	PN: 2884963

- 1.325 in Polaris/Woody's® studs installed in a Ripsaw II 1.25 in or Cobra 1.352 in track .
- 1.575 in Polaris/Woody's® studs installed in a Storm 150 track, center band only.



- ① Penetration Range 1/4 - 3/8 in (6-9 mm)
- ② Stud Size
- ③ Track Lug Height
- ④ Track Belt Thickness

CARBIDE SKAGS

A skag is a replaceable bar attached to the underside of the ski to assist in turning the snowmobile and to prevent ski wear caused by contact with roads and other bare terrain. See page 189.

PRE-RIDE INSPECTIONS

PRE-RIDE CHECKLIST

Inspect all items on the checklist for proper operation or condition before each use of the snowmobile. Procedures are outlined in the referenced sections.

ITEM	SEE SECTION
Drive Belt	page 171
Steering System	page 186
Coolant Level	page 163
Transmission Oil Level	page 176
Oil Level Check	page 151
Brake System	page 128, page 129, and page 164
Auxiliary Shut-Off Switch (Engine Stop Switch)	page 138
Ignition Switch	page 33
Headlight/Taillight/Brakelight	page 131
Suspension Mounting Bolts	page 126
Skags (Wear Bars)	page 189
Ski Saddle and Spindle Bolts	page 126
Hood and Side Panel Fasteners	page 130
Throttle Lever	page 127
Rear Wheel Idler Bolt	page 183
Tether Switch/Strap (if equipped)	page 130
Track Alignment/Condition	page 130 and page 185
Rail Slide Condition	page 190

PRE-RIDE INSPECTIONS

PRE-RIDE SUSPENSION INSPECTION

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

ITEM	SEE SECTION
Check suspension mounting bolts for tightness.	-
Check rear idler wheel bolt for tightness.	page 183
Check rear idler adjusting bolt locknuts for tightness.	-
Check front torque arm limiter strap condition.	-
Check rail slide condition.	page 190
Check track tension.	page 183
Check ski runner/skag condition.	page 189
Check ski spindle bolts for tightness.	-
Check tie rod end nuts for tightness.	-

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, contaminated, 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.

STEERING SYSTEM

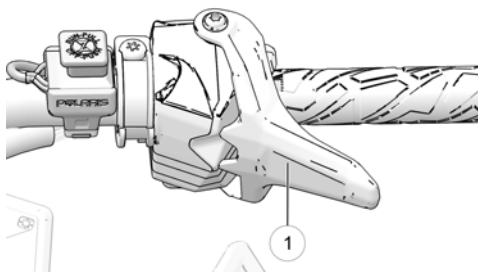
WARNING

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.

THROTTLE LEVER

The throttle lever ① and brake are the primary controls of your snowmobile. Always make sure both are functioning properly.



PRE-RIDE INSPECTIONS

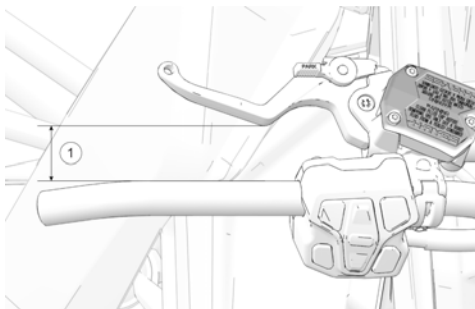
Squeeze the throttle lever to make sure it compresses evenly and smoothly. When released, the lever should immediately return to the idle position without binding or hesitation. If the throttle does not function smoothly, or if you discover excessive lever freeplay, DO NOT start the engine. Have the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

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 0.5 in (1.3 cm) ①. A smaller distance indicates low brake fluid level or air in the hydraulic system. Refer to the brake bleeding information on page 166. Your dealer can assist.



LEVER FEEL

If the brake lever feels “spongy” when squeezed, check the brake fluid level and condition. Add fluid as needed. See the Brake Fluid section for details.

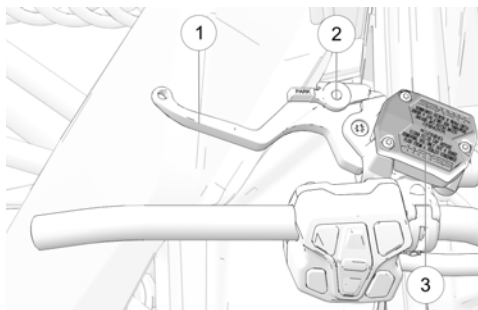
WARNING

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.

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



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.

PRE-RIDE INSPECTIONS

TRACK

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

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.

WARNING

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.

HOOD AND SIDE PANEL FASTENERS

CAUTION

The hood and side panels of the snowmobile protect the operator from moving parts. Never operate a snowmobile with the hood or side panels open or removed. Always ensure that the hood and side panels are securely in place before starting the engine.

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 page 127.

ENGINE STOP SWITCH

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

IGNITION SWITCH

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

TETHER SWITCH (IF EQUIPPED)

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

LIGHTING

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

MIRRORS (IF EQUIPPED)

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

OPERATING AREA

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

OPERATION

STARTING THE ENGINE

1. Apply brake.

NOTICE

Engine will not start if brake lever is not actuated.

2. Turn the key to the ON position.
3. Pull the engine stop switch up to the RUN position.
4. Turn the key to START to crank the engine. Release the key to the ON position when the engine starts.
5. If engine does not immediately start, hold the key in the START position for a maximum of 10 seconds, or until the engine starts. Repeat if necessary. When possible, use block heater for assistance with starting in colder temperatures.

 CAUTION

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

NOTICE

Operating the vehicle immediately after cold starting could cause engine damage. Allow the engine to warm up for several minutes before operating the vehicle. If cold drive-away is attempted, the engine RPM may stumble slightly to protect the engine.

RESTARTING THE ENGINE

If the rider stops the engine by pushing the engine stop switch down, restart the engine using the normal starting procedure. If the engine fails to start using the normal procedure:

1. Push the engine stop switch down to the OFF position.
2. Turn the key to the OFF position.
3. Reset the engine stop switch.
4. Turn key to the ON position. Wait for the fuel pump to stop running.
5. Crank the engine up to 10 seconds.
6. If engine fails to start, repeat steps 1-5.

EXTREME COLD RESTARTING

For better cold restarting performance, do the following after engine shutdown when the engine will be at rest for more than 2 hours and ambient temperatures fall below 0 °F (-18 °C). This procedure ensures the maximum amount of oil has been pumped from the crankcase to the external oil bottle and reduces cranking friction.

1. Shut off the engine and wait 10 seconds.
2. Restart the engine.
3. Allow engine to idle for 10 seconds. Do not increase RPM.
4. Shut off the engine.
5. When starting a cold engine, continue to hold the ignition key in the START position for 3 seconds following first combustion events. Keeping the starter engaged helps the engine continue firing if there is poor combustion due to the extreme cold.

TRACK WARM-UP

WARNING

A loose track or flying debris could cause serious injury or death. Stand clear of the front of the snowmobile and the moving track. Never hold the snowmobile up or stand behind it while warming up the track. Do not use excessive throttle during warm-up or when the track is free-hanging. Use a stable rear support.

WARNING

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

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

1. Use an appropriate stand to securely support the rear of the snowmobile at the rear bumper. The track should be about 4 inches (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.

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.

FUEL RECOMMENDATION

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.

NORTH AMERICAN FUEL

For peak performance, POLARIS recommends the use of 87 octane fuel or higher, with no more than 10% ethanol. Do not use lower than 87 octane fuel. Operating with obstructed fuel systems will result in serious engine damage. Perform maintenance as recommended. Prolonged exposure to petroleum based products may damage paint. Always protect painted surfaces when handling fuel.

The tables below indicate the recommended fuel for your ProStar engine.

IMPORTANT

Do not use fuel containing more than 10% ethanol. Never use E85 or 88 E15 fuel in your snowmobile.

PROSTAR S4 MODELS		
ETHANOL CONTENT	87 (R+M)/2	91 (R+M)/2
Non-Ethanol Fuel	STANDARD	STANDARD
Up to 10% Ethanol	OPTIMUM	STANDARD
<i>Shaded cells indicate the optimum fuel recommendation for this engine.</i>		

INTERNATIONAL FUEL

For peak performance, POLARIS recommends the use of 95 octane E10 gasoline or higher octane. If lower octane is used, some engine performance will be lost and fuel economy will decrease. Do not use gasoline with higher ethanol rating than E10.

The tables below indicate the recommended fuel for your ProStar engine.

PROSTAR S4 MODELS		
ETHANOL CONTENT	95 RON	98 RON
Non-Ethanol	STANDARD	STANDARD
1-10% Ethanol or MTBE	OPTIMUM	STANDARD
<i>Shaded cells indicate the optimum fuel recommendation for this engine.</i>		

FUEL SYSTEM DEICERS

If you use non-ethanol fuel (sometimes labeled “non-oxygenated”), POLARIS recommends the regular use of isopropyl-based fuel system deicer. Add 1-2 ounces per gallon (8-16 ml per liter) of gasoline to prevent damage resulting from fuel system icing. Never use deicers or additives containing methanol. POLARIS recommends the use of Carbon Clean.

IMPORTANT
If you use fuel with up to 10% ethanol (sometimes labeled “oxygenated”) do not add deicers or additives that contain any form of alcohol. Adding deicer to oxygenated fuels could result in severe engine damage.

OPERATION

OIL RECOMMENDATION

Polaris Recommended Engine Oil
PS-4 Extreme 0W-50 Full Synthetic Engine Oil

NOTICE

NEVER mix oil brands or use non-recommended oil. Engine damage caused by mixing oil or using non-recommended oil may not be covered by the Polaris limited warranty.

THROTTLE LEVER

⚠ WARNING

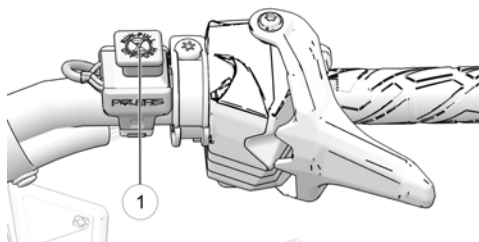
An improperly functioning throttle lever may cause erratic snowmobile behavior and loss of control, which could result in serious injury or death. If the throttle lever does not work properly, DO NOT start the engine.

If the engine stops abruptly when the throttle lever is released, do the following:

1. Turn the ignition switch to OFF.
2. Test the throttle lever by compressing and releasing it several times. The lever must return to the idle position quickly and completely.
3. If the throttle lever operates properly, turn the ignition switch on and go through normal starting procedures.
4. If the engine doesn't start, see your authorized POLARIS dealer or other qualified technician for service.

ENGINE STOP SWITCH

Push down on the engine stop switch ① to ground out the ignition and stop the engine quickly. Pull the switch up to the ON position to allow restarting.



EMERGENCY STOPPING

The following chart lists methods for stopping the snowmobile in the event of an emergency.

SYSTEM	WHAT IT DOES
Ignition Switch	Interrupts ignition circuit
Brake	Slows jackshaft
Engine Stop Switch	Interrupts ignition circuit
Tether Switch	Interrupts ignition circuit

VEHICLE TIPOVER

In the event of a tipover, or if the snowmobile is tipped on its side at an angle of 65 degrees or greater, the engine will automatically shut off after one second.

To restart the engine, turn the snowmobile over so the skis and track are flat on the ground. Then follow the normal restarting procedure on page 133.

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 inches (10 cm) off the ground.

Remove the key and cover the snowmobile.

TOWING

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.

OPERATION

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.

SNOWMOBILE BREAK-IN ENGINE BREAK-IN

IMPORTANT

Engines equipped with an electronic oil pump do not require initial fuel premix.

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.

CAUTION

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.

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

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 should be 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.

TRACK BREAK-IN

It is very important to inspect and adjust track tension after every ride for the first 150 miles (240 km) of use to ensure the proper tension during the break-in period. Aggressive riders in certain snow conditions may need to adjust track tension as early as 20 miles (32 km). After the break-in period track tension should be inspected every 150 miles (240 km).

IMPORTANT

Track tension must be kept at specification – neither too loose nor too tight. Overly loose track tension is inefficient and overly tight tension causes premature wear or drive train system failures.

SNOWMOBILE BREAK-IN

NOTICE

Ratcheting occurs when the drive shaft drivers slip on the track. A ratcheting event typically produces extreme vibration and is often experienced when the track is subjected to heavy loads.

Early wear can be caused by two conditions – improper track tension and/or sustained trail riding at high speeds without scratchers. Neither condition results from a defect in the track, and wear caused by either or both of these conditions is not covered by warranty.

Loose tracks reduce drive system efficiency because:

- Track tension constantly varies on snowmobiles as the rear suspension extends and compresses.
- Loose track tension increases the chance for the drive shaft to ratchet in high load driving modes. Track ratcheting may damage the track and drive nubs.
- Loose track tension decreases rail slider life and can cause uneven slider wear.
- The slack in a loose track bows out in front of the rail tips. This bowing effect significantly reduces drive system efficiency, creates drag, and changes the approach angle of the rear suspension, which decreases the snowmobile's ability to get on top of the deep snow.

MAINTENANCE

EMISSION CONTROL INFORMATION

Any qualified repair shop or qualified person may maintain, replace, or repair the emission control devices or systems on your snowmobile. An authorized POLARIS dealer can perform any service that may be necessary for your vehicle. POLARIS also recommends POLARIS parts for emissions related service, however equivalent parts may be used for such service. 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.

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 an authorized POLARIS 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, or other qualified person, 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.

POLARIS RECOMMENDED MAINTENANCE PROGRAM

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.

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 239.

The recommended maintenance schedule on your snowmobile calls for service and maintenance inspections at 150 miles (240 km), 500 miles (800 km), 1000 miles (1600 km), and 2000 miles (3200 km). These inspections should be performed by a qualified service technician. For continued optimum performance and component life, continue maintenance checks at 1000 mile (1600 km) intervals.

All necessary replacement parts and labor incurred, with the exception of authorized warranty repairs, become the responsibility of the registered owner.

If, during the course of the warranty period, part failures occur as a result of owner neglect in performing recommended regular maintenance, the cost of repairs are the responsibility of the owner.

Personal safety is critical when attempting to service or 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, your authorized POLARIS dealer can provide any needed service.

WARNING

Take precaution and wear appropriate PPE (gloves and safety glasses) when servicing or inspecting areas under the hood, exhaust components, chassis components, or rear suspension components for any items that could be sharp.

PRE-SEASON MAINTENANCE

The chart below outlines inspection procedures that should be performed before the start of each riding season.

Air Box	Inspect or Adjust
Bogie / Wheel Condition / Fastener Bolts	Inspect or Adjust
Brake Fluid Level / Leaks / Fluid Condition	Inspect or Adjust
Brake Hose Condition / Routing	Inspect or Adjust
Brake Lever	Inspect or Adjust
Brake Pads / Brake Disc	Inspect or Adjust
Clutch Alignment / Offset	Inspect or Adjust
Controls	Inspect or Adjust the following: • Auxiliary Shut-Off • Ignition Switch • Headlights / Brake light / Taillights • Hand / Thumbwarmers
Coolant Level	Inspect or Adjust
Cooling Hoses / Pipes	Inspect or Adjust
Drive / Driven Clutch Condition	Inspect or Adjust; Clean if needed
Drive Belt Condition / Ride Out	Inspect or Adjust
Drive Chain Tension (If Equipped)	Inspect or Adjust
Engine Mounts	Inspect or Adjust
Exhaust Pipe / Retaining Springs	Inspect or Adjust
Front / Rear Suspension Mounting Bolts	Inspect or Adjust

MAINTENANCE

Front Limiter Strap	Inspect or Adjust
Fuel / Vent Hoses	Inspect or Adjust
Hood / Seat / Chassis / Engine Compartment	Clean if needed
Oil Hoses	Inspect or Adjust
Rail Slide Condition	Inspect or Adjust
Rear Idler Wheel Bolts / Adjuster Bolt Jam Nuts	Inspect or Adjust
Shocks / Springs	Inspect or Adjust; Lubricate if needed
Ski Fasteners	Inspect or Adjust; Clean if needed
Ski Skags	Inspect or Adjust
Ski Toe Alignment / Handlebar Centering	Inspect or Adjust
Steering Fasteners / Linkage / Handlebars	Inspect or Adjust
Throttle Lever	Inspect or Adjust
Track Alignment / Track Tension	Inspect or Adjust
Transmission Oil	Inspect or Adjust

POLARIS MAINTENANCE SCHEDULE

The intervals shown in this table are based on vehicles operated under normal conditions.

Each interval is given in miles (kilometers). Service the components or systems at that interval.

Continue to follow the maintenance schedule as miles/kilometers increase on the vehicle. For example, after the 2000 miles (3200 km) service has been completed, do the service every 2000 miles (3200 km).

Vehicles subjected to severe use must be serviced at 50% of the stated interval. Examples of Severe Use: Immersion in mud, water, or sand, constant high RPM use, prolonged low-speed heavy load operation, extended idle, any operation in dusty conditions, and short trip cold weather operation.

INITIAL BREAK-IN SERVICE FIRST 25 HOURS / ONE MONTH

Engine Oil and Filter	Change the engine oil and filter.
The break-in period consists of the first 25 hours of operation or one month. After initial break-in oil change, perform every 115 hours / 4000 miles (6400 km) or annually prior to summer storage. Careful treatment of a new engine and drive components will result in more efficient performance and longer life for these components. The items outlined in this service interval only need to be performed at the first 25 hours of operation. They do not need to be performed every 25 hours.	

Vehicles subjected to severe use must be serviced at 50% of the stated interval. Examples of severe use include: constant high RPM use; prolonged low-speed or heavy load operation; extended idle; short trips.

150 MILES (240 KM)

Brake Pads / Brake Disc	Inspect or Adjust
Transmission Oil	Inspect or Adjust
Rail Slide Condition	Inspect or Adjust
Ski Skags	Inspect or Adjust
Track Alignment / Track Tension	Inspect or Adjust

MAINTENANCE

Vehicles subjected to severe use must be serviced at 50% of the stated interval. Examples of severe use include: constant high RPM use; prolonged low-speed or heavy load operation; extended idle; short trips.

500 MILES (800 KM)

Brake Pads / Brake Disc	Inspect or Adjust
Transmission Oil	Replace
Rail Slide Condition	Inspect or Adjust
Ski Skags	Inspect or Adjust
Track Alignment / Track Tension	Inspect or Adjust

Vehicles subjected to severe use must be serviced at 50% of the stated interval. Examples of severe use include: constant high RPM use; prolonged low-speed or heavy load operation; extended idle; short trips.

1000 MILES (1600 KM)

Brake Pads / Brake Disc	Inspect or Adjust
Transmission Oil	Inspect or Adjust
Rail Slide Condition	Inspect or Adjust
Ski Skags	Inspect or Adjust
Track Alignment / Track Tension	Inspect or Adjust

Vehicles subjected to severe use must be serviced at 50% of the stated interval. Examples of severe use include: constant high RPM use; prolonged low-speed or heavy load operation; extended idle; short trips.

EVERY 2000 MILES (3200 KM)

Brake Fluid	Replace
Brake Pads / Brake Disc	Inspect or Adjust
Transmission Oil	Inspect or Adjust
Clutch Alignment / Offset	Inspect or Adjust
Exhaust System	Inspect or Adjust
Rail Slide Condition	Inspect or Adjust
Shocks (If serviceable)	Replace oil and recharge; Rebuild if needed.
Ski Skags	Inspect or Adjust
Spark Plugs	Replace
Track Alignment / Track Tension	Inspect or Adjust

ADDITIONAL MAINTENANCE INTERVALS

Every 4000 miles (6400 km)	Engine Oil and Filter	Change the engine oil and filter.*
	Transmission Oil	Replace Fluid
	Engine Valve Clearance Inspection	Check the engine valve clearances; adjust if necessary
Every 60 months / 5 years	50/50 Extended Life Coolant	Replace Fluid
*Change engine oil and oil filter annually prior to summer storage.		

MAINTENANCE

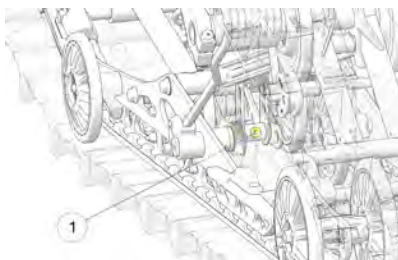
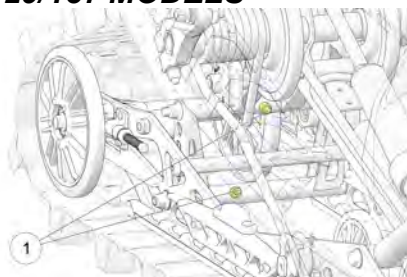
LUBRICATION

REAR SUSPENSION

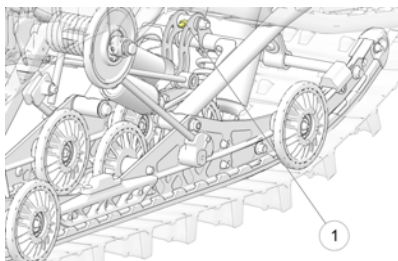
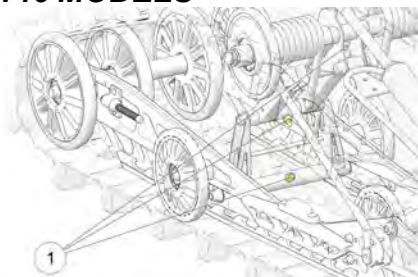
Lubricate the suspension pivot shafts ① with POLARIS All Season Grease at the intervals outlined in the Periodic Maintenance Table and before seasonal storage. When operating in heavy, wet snow conditions, lubricate every 500 miles (800 km).

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.

129/137 MODELS



146 MODELS



ENGINE OIL

WARNING

Vehicle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine seizure, accident and injury. Always perform the maintenance procedures as outlined in the Periodic Maintenance Chart.

Always check and change the oil at the intervals outlined in the Periodic Maintenance Chart. Always use the recommended engine oil. Always change the oil filter whenever changing oil.

Pay special attention to the oil level. A rise in oil level during cold weather can indicate contaminants collecting in the oil sump or crankcase. Change oil immediately if the oil level begins to rise. Monitor the oil level, and if it continues to rise, discontinue use and determine the cause. Your dealer can assist.

OIL LEVEL CHECK

NOTICE

Check the oil level when the engine has reached an operating temperature of at least 173 °F (78 °C). Never check the oil with the engine running.

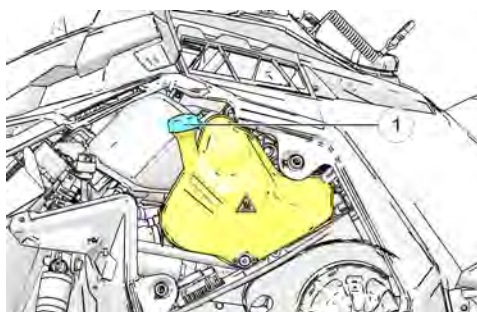
Polaris Recommended Engine Oil
PS-4 Extreme 0W-50 Full Synthetic Engine Oil

To check the oil level, do the following:

1. Position the snowmobile on a level surface.
2. Start the engine. Let engine warm to an operating temperature of 173 °F (78 °C) or warmer.

IMPORTANT

Checking the oil level before the engine has reached this temperature may result in an inaccurate oil level measurement.



3. Shut off engine for 10 seconds.

MAINTENANCE

4. Re-start engine and idle for 10 seconds.
5. Shut off the engine.
6. Remove the left side panel.
7. Remove the dipstick ① and wipe it dry with a clean cloth.
8. Reinstall the dipstick until fully seated.
9. Remove the dipstick and check the oil level. Oil level is in the safe range if it falls between the two marks on the dipstick ②.
10. If needed, add the recommended lubricant as needed. Do NOT overfill.
11. Reinstall and tighten the dipstick.

OIL AND OIL FILTER CHANGE

WARNING

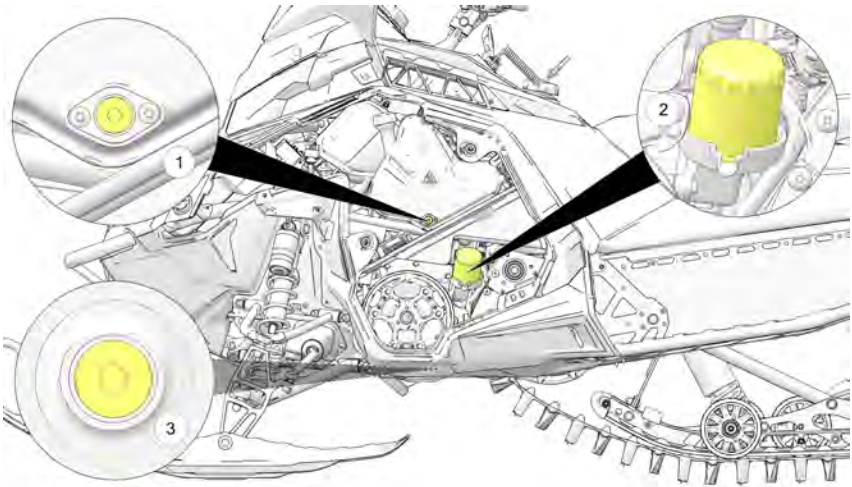
Spilled oil left on engine components or in the engine area may pose a fire hazard. Use shop rags to clean any spilled oil. If needed, use a non-flammable solvent on the rag to aid the cleaning process. Do not use any device such as pressurized water or air as this may disperse the oil onto engine components and could pose a fire hazard.

CAUTION

Engine oil is hot after use and can cause burns to skin.

Always change the oil and filter according to the intervals outlined in the Polaris Maintenance Schedule on page 147. Replace the oil filter every time the oil is changed.

1. Park the snowmobile on level ground, put the transmission in Neutral, and engage the parking brake.
2. Shut off the engine.
3. Remove the left side panel.
4. Remove the drive belt. See page 172 for drive belt removal procedure.
5. Remove the driven clutch. See page 175 for driven clutch removal procedure.



6. Drain oil from the oil reservoir.

- a. Hold an oil pan under the drain plug ①.
- b. Use care to keep oil from spilling onto the clutch guard or clutches.
- c. Once oil is fully drained, re-install the oil bottle drain plug with a new washer. Torque the plug to specification.

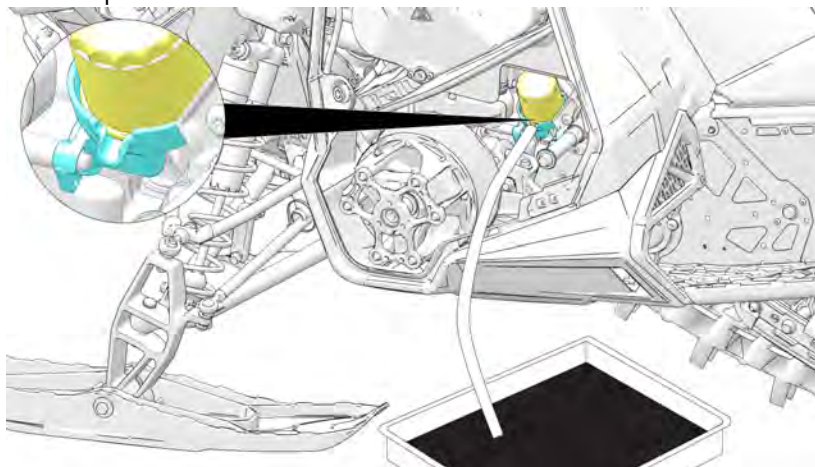
TORQUE

Oil Reservoir Drain Plug
13.27 ft-lbs (18 N·m)

7. Drain the oil from oil filter adaptor ② by attaching an 0.5 in (13 mm) (internal diameter) hose to the adaptor spigot and route to a drain pan.

MAINTENANCE

8. Using an oil filter wrench, partially loosen the oil filter by turning the filter counterclockwise. This will open the flow of oil from the housing adaptor to the drain pan.



9. Locate the crankcase drain plug ③ on the bottom of the crankcase. The drain plug can be accessed through the access hole in the bulkhead. Place a drain pan below the plug.
10. Remove the sump drain plug and sealing washer.
11. Once oil is fully drained, re-install the drain plug with NEW washer and torque to specification.

TORQUE

Engine Sump Drain Plug
13.27 ft-lbs (18 N·m)

12. When the oil filter adaptor has drained completely, remove the filter and clean the filter sealing surface with a clean dry cloth.
13. Lubricate the O-ring on the new filter with a film of fresh engine oil. Ensure the O-ring is in good condition before installing.
14. Twist the new filter into place and turn by hand until filter O-ring contacts the sealing surface, then tighten with an additional $\frac{3}{4}$ turn.
15. Remove the hose from the oil filter adaptor.

16. Fill the oil reservoir with the Polaris recommended engine oil.

FLUID CAPACITY
Recommended Engine Oil PS-4 Extreme 0W-50 Full Synthetic 4-Cycle Engine Oil Total System Capacity 4 qt (3.78 L)

17. Start the engine.

18. Ensure there are no leaks from the reservoir, sump drain plug, or oil filter adaptor.

19. Stop the engine.

20. Check the oil level. See page 151 for oil level check procedure.

21. Re-install the driven clutch.

22. Re-install the drive belt. See page 172 for belt installation procedure.

23. Re-attach the left side panel.

SIDE PANEL AND HOOD

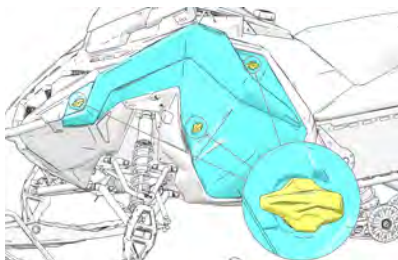


CAUTION

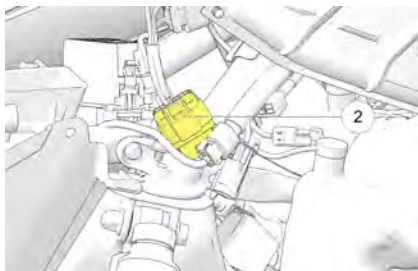
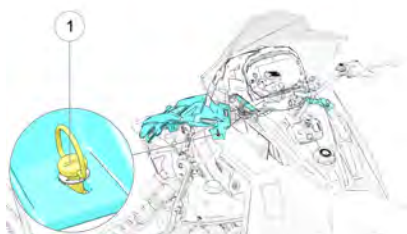
The hood and side panels of the snowmobile protect the operator from moving parts. Never operate a snowmobile with the hood or side panels open or removed. Always ensure that the hood and side panels are securely in place before starting the engine

SIDE PANELS

To open a side panel, rotate the three 1/4-turn fasteners on the outer edges of the side panel. To remove an open side panel, pull the panel outward to release the tabs at the lower edge of the panel.



HOOD



To remove the hood, do the following:

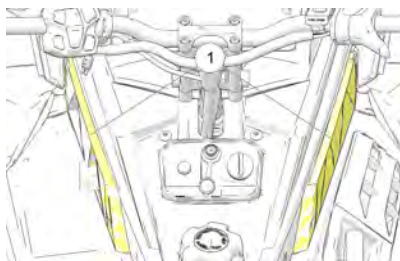
1. Remove the left and right side panels.
2. Rotate the 1/4 turn fasteners ① at the rear corners of the hood.
3. Disconnect the hood wire harness connector ②.
4. Remove the hood assembly from the vehicle.

NOTE

Store the hood in a position that will not damage the brake cooler duct.

INTAKE SCREENS

The intake screens ① limit snow ingestion into the intake system. When operating in loose powder snow, check the filters periodically to remove any accumulation of snow or ice.



FUEL PUMP

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

FUEL PUMP PRIME PROCEDURE

The fuel injection system must be purged of air:

- If the fuel system was run out of fuel
- If the fuel system has been disassembled

IMPORTANT

Make sure there is at least 2 gallons (7.6 liters) of fuel in the fuel tank.

1. Start with vehicle key in OFF position.
2. Turn vehicle key to ON position without cranking.
3. Cycle the throttle lever five times within 5 seconds to open throttle.
4. Turn vehicle key to START. Crank until vehicle starts or 20 seconds have passed.

IMPORTANT

Turning vehicle key to OFF position will restart the procedure.

5. If vehicle fails to start, repeat Steps 1–4 up to four times.

NOTICE

Contact your authorized POLARIS dealer if the engine does not start after repeating this procedure four times.

FUEL FILTER / FUEL LINES

This snowmobile is not equipped with an in-line fuel filter. The fuel pump uses a sock-type pickup filter located within the fuel tank. This filter should only require maintenance if debris or foreign material enters the fuel tank. An authorized POLARIS dealer can provide service.

Contaminated or poor quality fuel may shorten the life of fuel system components and result in poor engine performance. Always store fuel in clean fuel containers. If low fuel pressure or reduced engine performance occurs, the filter may need replacement. An authorized POLARIS dealer can assist.

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.

SPARK PLUGS

SPARK PLUG RECOMMENDATIONS

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.

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

Refer to the Specifications chapter for the specific spark plug to be used in your snowmobile.

Change the spark plugs at the intervals outlined in the Periodic Maintenance section.

- Use recommended spark plugs with the proper gap. Refer to the specifications section for the specific spark plug to be used in your snowmobile.
- Use only resistor-type spark plugs.
- Torque spark plugs to specification.
- Always carry spare spark plugs.

Polaris Recommended Spark Plug
NGK® 95897 MR7F
PN: 3022662

TORQUE

Spark Plug
8.8 ft-lbs (12 N·m)

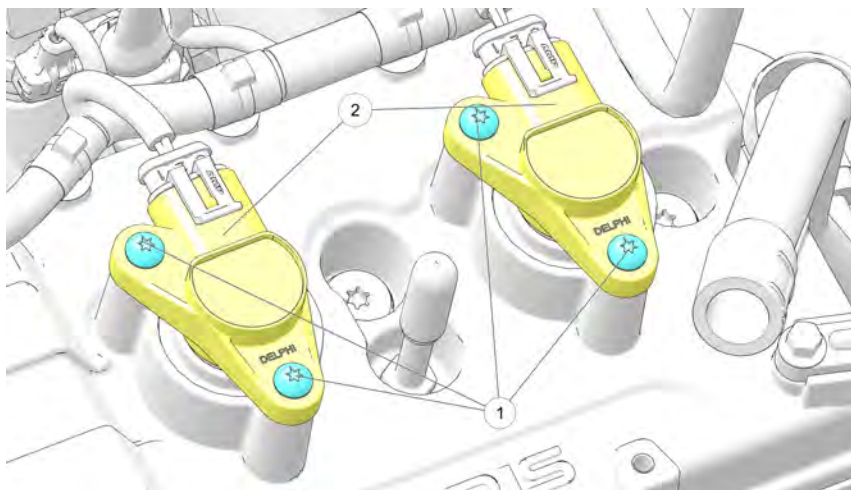
MAINTENANCE

SPARK PLUG MAINTENANCE

Inspect and replace the spark plugs as outlined in the periodic maintenance table.

CAUTION

Never inspect or replace the spark plugs while the engine is running or warm. Hot engine parts can cause burns. Ensure engine is fully shut down and allow adequate time for the engine to cool.



The spark plugs can be serviced by using the following procedure. Tools needed for this procedure can be found in tool kit provided with your snowmobile.

1. Remove the side panels and hood assembly.
2. Use the torx wrench from the tool kit to remove the screws ① from each of the spark plug coils.
3. Pull upward on the spark plug coils ② to remove.
4. Clean the plug area so no debris can fall into engine when plug is removed.
5. Use the spark plug wrench to unscrew the plugs by turning the wrench counter-clockwise. Once loose, remove plugs from engine.

TIP

If experiencing difficulty removing the spark plugs, re-insert the coil into the hole until it secures to the loose plug. Pull upward to remove.

Replace the spark plug if the following is observed:

- Insulator is damaged or cracked.
- Insulator is fouled.
- Regular replacement interval has been reached as indicated in the maintenance table.

When inspecting a spark plug, take note of the insulator color. A light brown or dark tan color indicates the engine is running properly. If the spark plug insulator is white, the engine may be running lean. Inspect the engine, throttle body boots, etc. for air leaks.

If the spark plug insulator is black, oily, or shows heavy soot, the engine may be running rich. Inspect the engine, fuel system, and lubrication system for problems.

Set the electrode gap to specification before installing a new spark plug.

MEASUREMENT
Spark Plug Gap Range 0.027 - 0.031 in (0.7 - 0.8 mm)

When installing the spark plug, ensure it is clean and dry. Torque to specification.

TORQUE
Spark Plug 8.8 ft-lbs (12 N·m)

SPARK PLUG CONDITION

NORMAL PLUG

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

TIP
The tip should not be white. A white insulator tip indicates overheating, caused by use of an improper spark plug or poor engine performance.

FOULED PLUG

There are three possible causes of a fouled spark plug:

MAINTENANCE

- **Wet Fouled Plug:** Plug will be visibly wet and smell of fuel. A wet fouled plug is caused by an overly rich fuel mixture in combustion chamber. The plug may be reused if dried completely.
- **Carbon / Soot Fouled Plug:** Insulator tip of plug will appear black. A carbon or soot fouled plug is caused by extensive light load usage, extended short trip driving, weak ignition system, among other causes. Replace plug.
- **Oil Fouled Plug:** Plug will have a thin layer of oil visible. A oil fouled plug is caused by worn piston rings, valve guides and/or seals, or high oil carryover. Replace plug.

COOLING SYSTEM

WARNING

Do not attempt to bleed the cooling system. ProStar cooling systems require filling via the vacuum fill method and an improperly filled coolant system may cause damage to the water pump. See your Polaris dealer or other qualified technician for cooling service on your snowmobile.

COOLANT

Recommended Coolant

Polaris Extended Life 50/50 Pre-Mixed Anti-Freeze
PN: 2880513 (1 gal)

Polaris recommends the use of Polaris Extended Life 50/50 Pre-Mixed Anti-Freeze. This anti-freeze is already premixed and ready to use. Do not dilute with water. If planning to store or operate the vehicle at temperatures lower than -34 °F (-37 °C), greater protection may be required. An authorized dealer can assist.

To ensure the coolant maintains its ability to protect the engine, Polaris recommends completely draining the cooling system every five (5) years and replacing with fresh Anti-freeze 50/50 Premix.

Any time the cooling system has been drained for maintenance or repair, replace the coolant with fresh Antifreeze 50/50 Premix.

NOTICE

If coolant flow becomes restricted or plugged, coolant loss, air lock, or engine damage may result.

COOLANT LEVEL

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

- Coolant bottle/overflow tank
- Pressure cap
- Connecting hoses
- In-bottle Thermostat

Always maintain the coolant level at or slightly above the FULL COLD mark on the coolant bottle (when the engine is cold).

MAINTENANCE

1. Stop the engine and ensure engine is cold.
2. Remove the right side panel.
3. View the coolant level in the coolant bottle. Add coolant as needed.

NOTICE

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

FLUSHING THE COOLING SYSTEM

To ensure that the coolant maintains its ability to protect the engine, Polaris recommend that the system be completely drained every five (5) years and fresh Antifreeze 50/50 Premix added. This service must be performed when the engine is cold. Your authorized POLARIS dealer can check the coolant when performing the fall tune-up on your snowmobile.

EXHAUST SYSTEM

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

WARNING

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

1. Open the side panels and remove the hood.
2. Inspect the muffler and pipes for cracks or damage.
3. Check for weak or missing retaining springs or damper/support grommets.
4. Check for loose clamps on the pipe covers.
5. Reinstall the hood and side panels.

BRAKES

HYDRAULIC BRAKE INSPECTION

Inspect the brake lever reserve before each use of the snowmobile. See page 128.

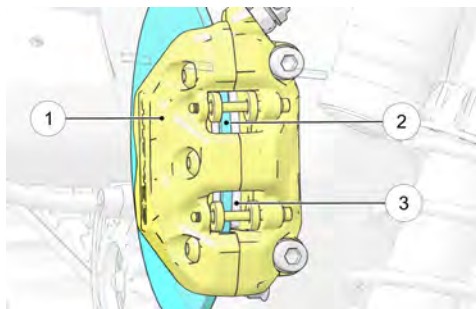
Brake pads must be replaced when the brake pad material becomes thinner than the backing plate (approximately 1/16 inch or 1.5 mm). A kit is available for replacing brake pads. Your POLARIS dealer can assist.

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 inch or 1.5 mm).

BRAKE COMPONENTS

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



EXCESSIVE LEVER TRAVEL

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

TIP

The lightweight brake discs have vent holes that may cause a high-pitched sound during operation.

BRAKE FLUID

Replace brake fluid at least every two years with POLARIS DOT 4 high temperature brake fluid, or an equivalent product.

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.

MAINTENANCE

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.

NOTICE

Brake fluid will damage labels, paint and some plastics. Always wipe up spills immediately.

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.

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.

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

1. Remove the brake master cylinder reservoir cover and gasket.
2. Fill the master cylinder reservoir to 1/4-5/16 inch (.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 4–5 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 165.
8. Reinstall the gasket and cover.

LIGHTS

The headlight and taillight assemblies feature LED elements and are not serviceable. If an LED fails to illuminate in either the headlight or taillight, the entire assembly must be replaced.

FUSE REPLACEMENT

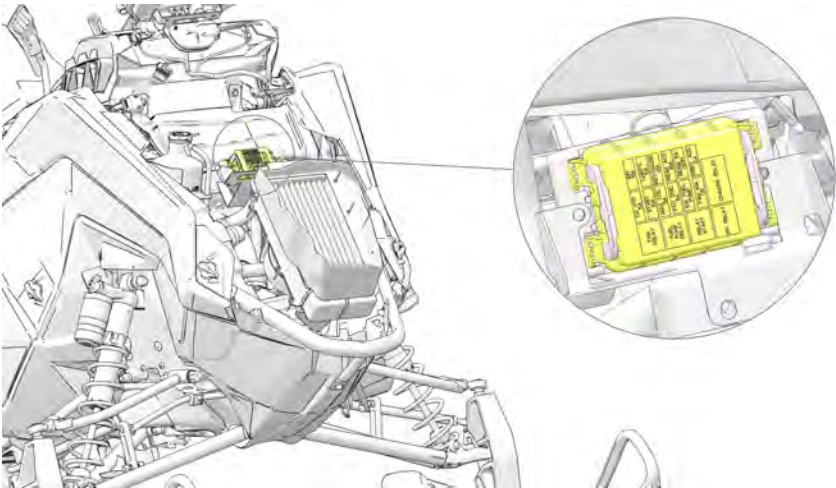
If the engine stops or will not start, or if an electrical component fails to operate, a fuse may need replacement. Locate and correct any damage or short circuits that may have caused the blown fuse, then replace the fuse.

NOTICE

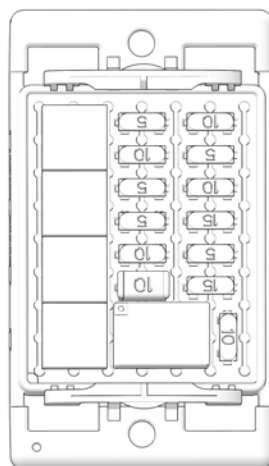
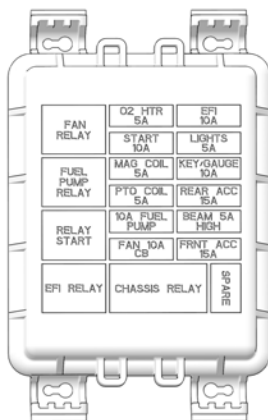
Always replace a blown fuse with a new fuse having the same amperage rating of the blown fuse. Never replace a fuse with a fuse of a higher amperage rating.

LOAD CENTER

The load center is located just above the radiator, below the headlight. To access the fuse box, remove the side panels and hood assembly.



LOAD CENTER DETAILS



CIRCUIT	PIN	FUNCTION
Fan Relay	43	Coil Low
	44	Relay In
	37	Relay Out
	38	Coil High
Fuel Pump Relay	31	Coil Low
	32	Relay In
	25	Relay Out
	26	Coil High
Relay Start	19	Coil Low
	20	Relay In
	13	Relay Out
	14	Coil High
EFI Relay	7	Coil Low
	8	Relay In
	1	Relay Out
	2	Coil High
O2 HTR 5A Fuse	45	Power Out

MAINTENANCE

CIRCUIT	PIN	FUNCTION
	46	Power In
Start 10A Fuse	39	Power Out
	40	Power In
MAG Coil 5A Fuse	33	Power Out
	34	Power In
PTO Coil 5A Fuse	27	Power Out
	28	Power In
Fuel Pump 10A Fuse	21	Power Out
	22	Power In
Fan CB 10A Fuse	15	Power Out
	16	Power In
Chassis Relay	9	Coil Low
	—	Not Applicable
	11	Relay Out
	3	Relay In
	—	Not Applicable
	5	Coil High
EFI 10A Fuse	47	Power Out
	48	Power In
Lights 5A Fuse	41	Power Out
	42	Power In
Key/Gauge 10A Fuse	35	Power Out
	36	Power In
Rear Accessory 15A Fuse	29	Power Out
	30	Power In
High Beam 5A Fuse	23	Power Out
	24	Power In
Front Accessory 15A Fuse	17	Power Out
	18	Power In
Spare Fuse	12	—
	6	—

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 authorized POLARIS dealer or qualified person immediately. Do not operate the snowmobile until repairs have been made.

All clutch maintenance and repairs can 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. Your dealer can perform service and adjustments. A special tool is required to check for proper alignment.

DRIVE BELT CONDITION

Periodically check the condition and tension of the drive belt. Inspect the belt for signs of excessive wear (frayed edges, missing cogs, cracks) and excessive looseness. Replace the belt if any of these conditions exist. See page 226.

Always carry a spare drive belt. When placing the belt in the holder, orientate the belt to match the profile of the hood.

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

MAINTENANCE

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

1. Stop the engine after operating in a forward motion.
2. Turn the ignition key off. Wait for the engine to come to a complete stop.
3. Lock the parking brake.
4. Remove the left side panel.
5. Rotate the driven clutch counter-clockwise 1/4 turn by hand to ensure forward engagement.
6. Locate the L-wrench in the tool kit. Install the wrench into the open threaded hole in the outer sheave of the clutch.
7. Turn the wrench clockwise until the sheaves open far enough to remove the belt. If the wrench does not turn readily, rotate the driven clutch counter-clockwise an additional 1/4 turn by hand and try again.
8. Remove the belt from the driven clutch.

DRIVE BELT INSTALLATION

1. With the L-wrench inserted into the threaded hole and the sheaves in the open position, install the drive belt.

IMPORTANT

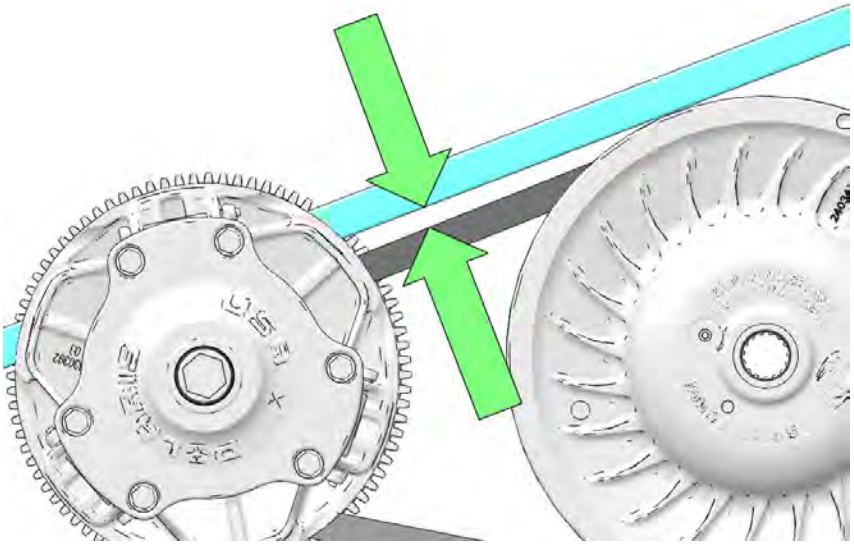
Install the belt so that the numbers can be read correctly on the left side of the vehicle, or in the direction in which the belt was originally installed.

2. Rotate the belt clockwise to remove slack while removing the L-wrench.
3. Reinstall the side panel.
4. Break in the new belt. See page 141.

DRIVE BELT DEFLECTION INSPECTION

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

Place a straight edge on the belt and apply 4 pounds of downward pressure while measuring at point. This measurement should be 1/2 inch (12.7 mm).



MEASUREMENT

Belt Deflection:
0.5" (12.7 mm)

MAINTENANCE

DRIVE BELT DEFLECTION ADJUSTMENT

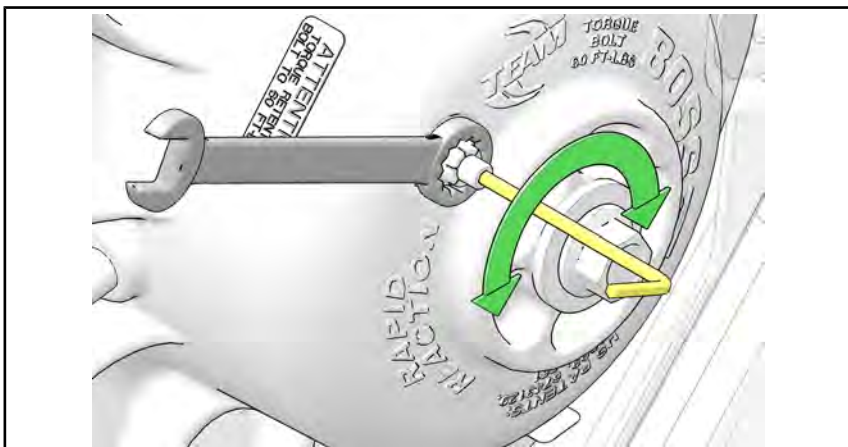
NOTICE

Proper drive belt deflection is an important factor for good transmission shifting performance. Make sure the drive belt deflection is set to specification.

MEASUREMENT

Belt Deflection:
0.5" (12.7 mm)

1. Loosen the 7/16 in. jam nut on the belt width adjuster screw.
2. Using a 1/8 in. Allen wrench, turn the set screw inward (clockwise) to increase the distance between the sheaves (increase deflection) or outward (counter-clockwise) to decrease the distance (decrease deflection).



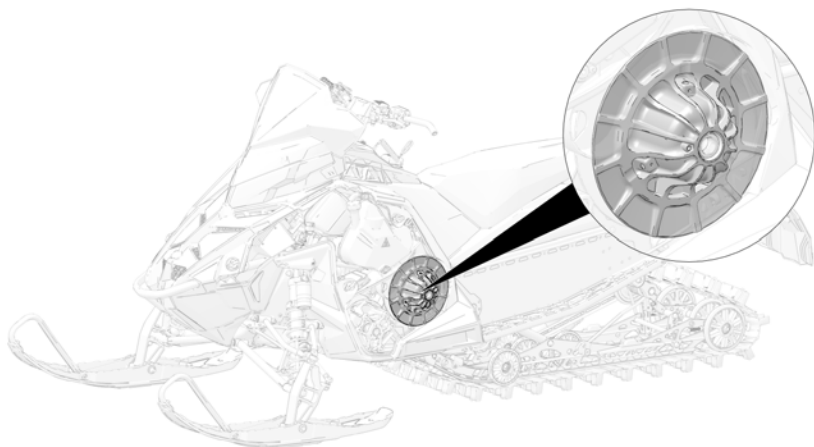
SYMPTOM	CAUSE
Significant “clunk” noise when shifting	Belt too tight
Difficult to shift	Belt too loose

IMPORTANT

Do not shift the transmission if the engine is off.

DRIVEN CLUTCH REMOVAL

To access the Driven Clutch, remove the left side panel.

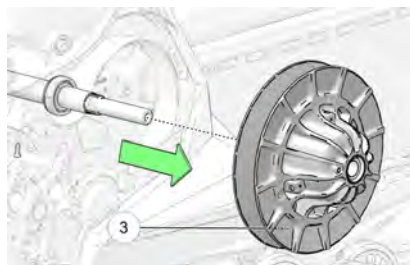


1. Remove the drive belt. See page 172 for drive belt removal procedure.
2. Lock the parking brake.

NOTICE

If the transmission is in Neutral the driven clutch will spin with the parking brake on. The transmission must be in High, Low, or Reverse for the parking brake to stop the driven clutch from spinning.

3. Remove the spare belt holder.
4. Remove the driven clutch bolt ① and flat washer ②.
5. Remove the driven clutch assembly ③ from the jackshaft.



MAINTENANCE

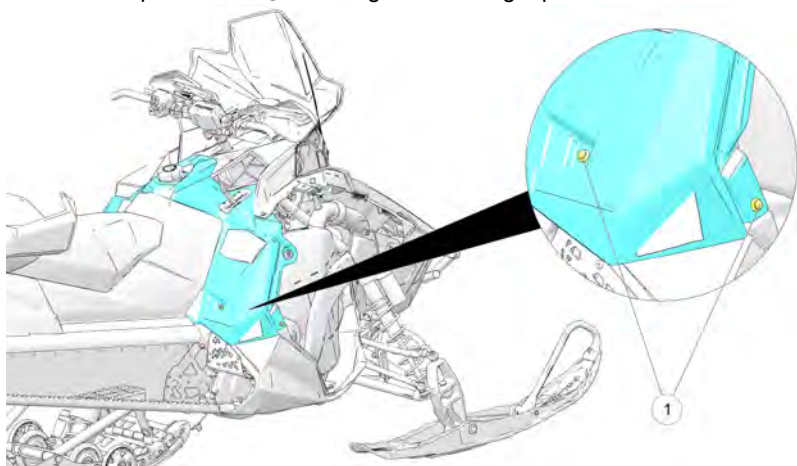
6. Inspect the jackshaft and driven clutch splines for damage. Replace components as required.

DRIVE SYSTEM

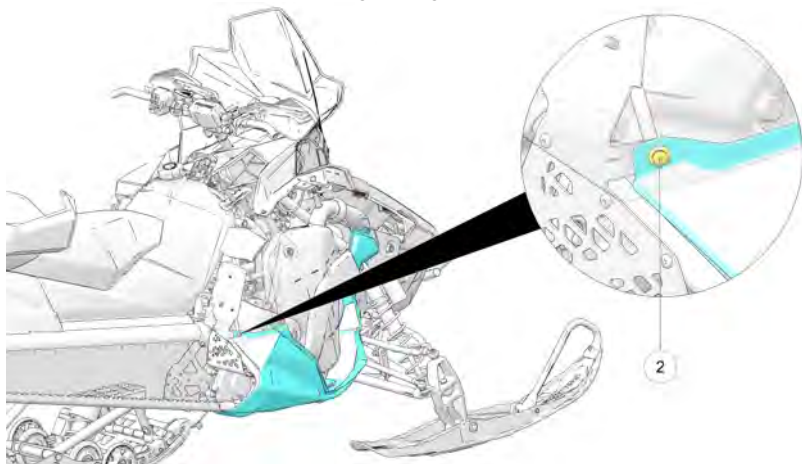
TRANSMISSION FLUID LEVEL CHECK

The fill plug is located on the right side of the transmission. Access the fill plug using the following procedure. Maintain fluid level even with the bottom of the fill plug hole.

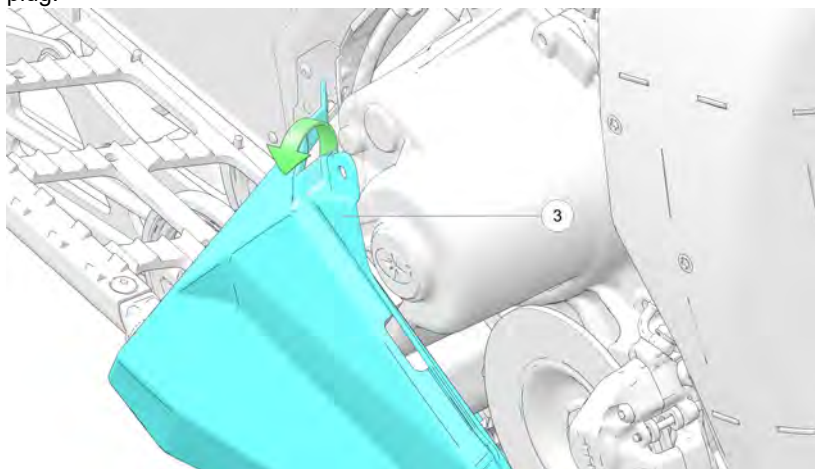
1. Position vehicle on a level surface.
2. Remove the right side panel.
3. Remove the push rivets ① securing the lower right portion of the console.



4. Remove the push rivet ② securing the right fender to the footrest.



5. Carefully flex the right fender ③ outward and down to gain access to the fill plug.



MAINTENANCE

6. Remove the fill plug ④ and check the fluid level.



7. For fill specification see page 178. Do not overfill.
8. Reinstall the fill plug and torque to specification.

TORQUE

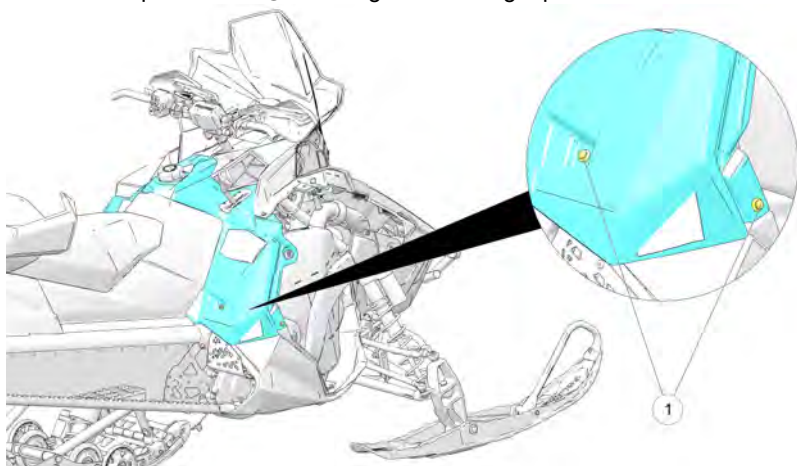
Transmission Fill Plug:
12 ft-lbs (16 N·m)

TRANSMISSION FLUID CHANGE

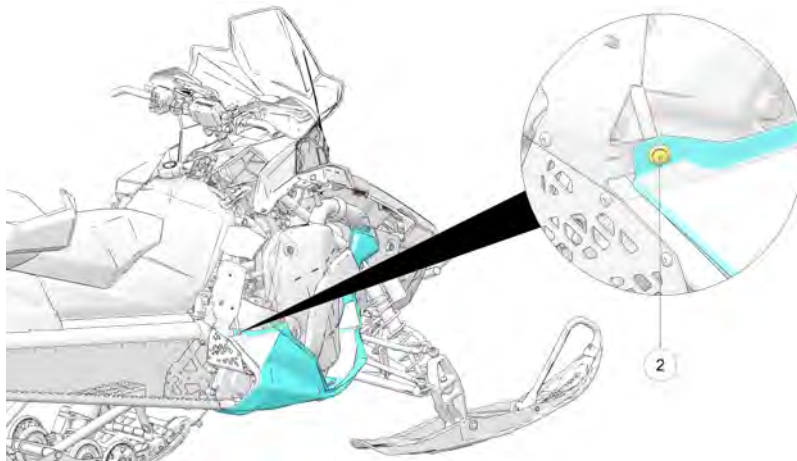
The drain plug is located on the bottom of the right side of the transmission. Access the drain plug using the following procedure.

1. Position vehicle on a level surface.
2. Remove the right side panel.

3. Remove the push rivets ① securing the lower right portion of the console.

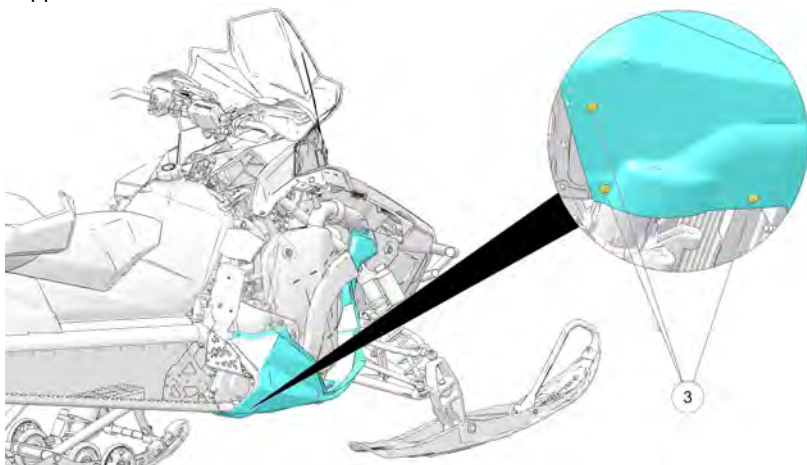


4. Remove the push rivet ② securing the right fender to the footrest.

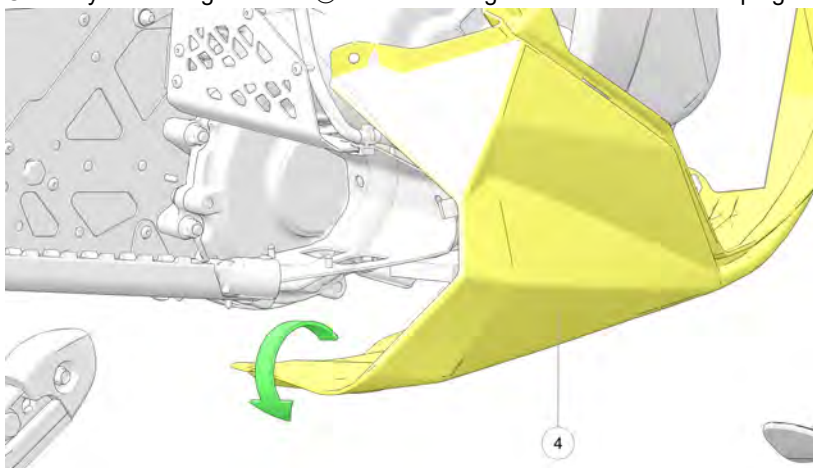


MAINTENANCE

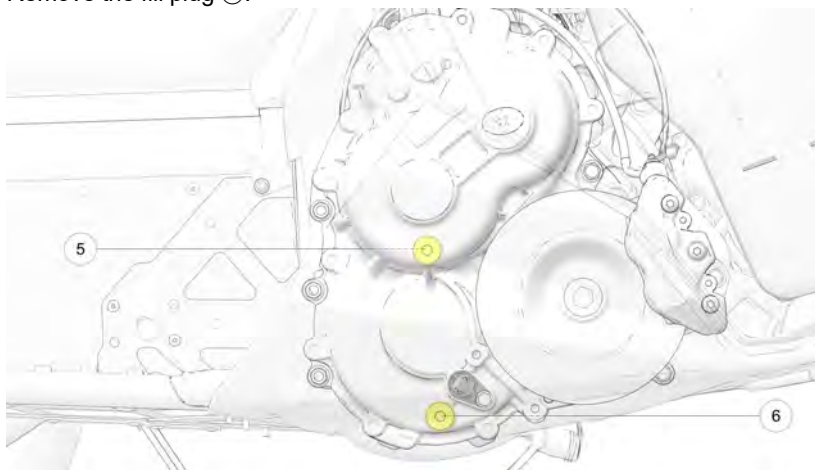
5. Remove the fasteners ③ securing the rear of the right fender to the footrest support.



6. Carefully flex the right fender ④ downward to gain access to the drain plug.



7. Remove the fill plug ⑤.



8. Place a drain pan under the transmission drain plug.
9. Remove the drain plug ⑥ and allow fluid to drain completely.

NOTICE

Fluid may run down the fender before draining into the drain pan. Once fluid has drained completely, wipe up any residual fluid on the fender.

10. Clean the drain plug magnetic surface.
11. Reinstall the drain plug and torque to specification.

TORQUE

Transmission Drain Plug
12 ft-lbs (16 N·m)

12. Add the recommended amount of fluid through the fill hole. Do not overfill.

FLUID CAPACITY

Transmission Lubricant:
AGL Synthetic Gearcase

Transmission Capacity
23.6 oz (700 mL)

MAINTENANCE

13. Reinstall the fill plug and torque to specification.

TORQUE

Transmission Fill Plug
12 ft-lbs (16 N·m)

14. Check for leaks. Dispose of used fluid properly.

TRACK MAINTENANCE

⚠ WARNING

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

TRACK INSPECTION

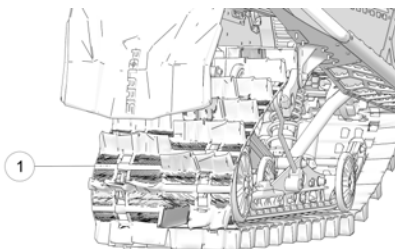
⚠ WARNING

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

NOTICE

The figures below are for reference only. Your model may differ slightly.

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 ①. Bend the track to check for breakage.
4. Replace the track if any rod damage is found.



WARNING

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 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.

If excessive rail slide wear occurs due to poor snow conditions, additional wheel kits are available. Your authorized POLARIS dealer can provide more information.

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

TRACK TENSION

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

TRACK TENSION DATA CHART			
SUSPENSION	SLACK MEASUREMENT	WEIGHT	MEASUREMENT LOCATION
All Models	7/8-1 1/8 inch (2.2-2.6 cm)	10 lbs. (4.54 kg)	16 inches (40 cm) ahead of rear idler shaft

TIP

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

MAINTENANCE

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.
4. Measure at the point where the weight is hanging.
5. Check for specified slack between the wear surface of the track clip and the plastic slider. Refer to the Track Tension Data Chart above.

If the track needs adjustment:

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

TIP
Check more frequently when the snowmobile is new.

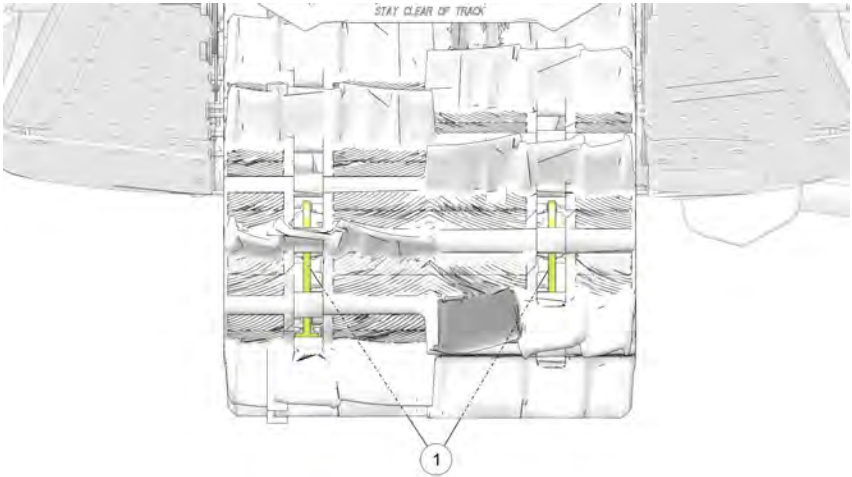
10. Start the engine and slowly rotate the track at least five revolutions. Let the track come to a stop (do not apply brakes).
11. Check track alignment (see page 185) and adjust as necessary.
12. Tighten the locknuts.
13. Tighten the idler shaft bolt.

TORQUE
Idler Shaft Bolt 35 ft-lbs (47.5 N·m)

TRACK ALIGNMENT

Periodically check that the track is centered and running evenly on the slide rails

- ①. 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 idler shaft bolt, then loosen the left locknut and tighten the left adjusting bolt. If the track runs to the right, loosen the idler shaft bolt, then loosen the right locknut and tighten the right adjusting bolt.
4. After adjustments are complete, tighten the locknuts and torque the idler shaft bolt to specification.

TORQUE

Idler Shaft Bolt
55 ft-lbs (75 N·m)

5. Repeat steps 2-3 to verify proper alignment.

STEERING SYSTEM

The steering systems on POLARIS snowmobiles can be adjusted with ski toe alignment. Improper toe alignment can cause erratic steering. Your authorized POLARIS dealer can assist with adjustments.

 WARNING

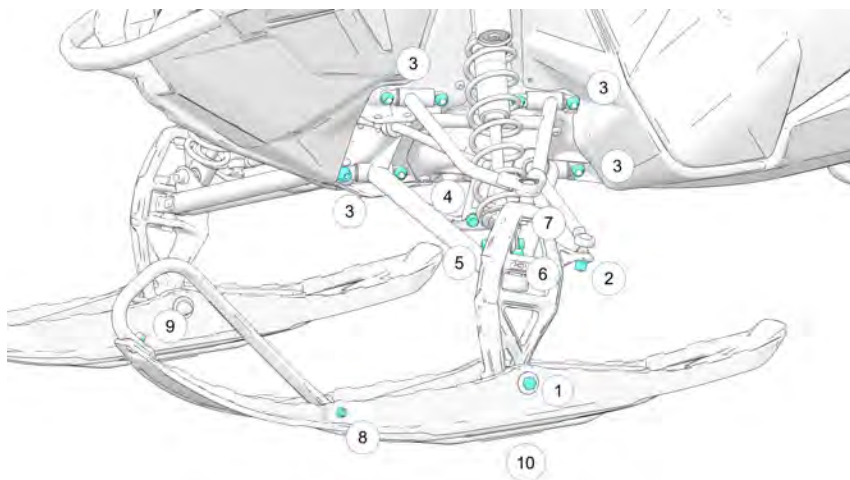
Improper alignment or adjustment may cause loss of steering control, resulting in serious injury or death. Do not attempt to change the ski alignment. Your authorized POLARIS dealer can assist.

FRONT SUSPENSION INSPECTION

⚠ WARNING

Improper fastener torque or front suspension component damage may cause loss of steering control, resulting in serious injury or death. Your POLARIS dealer can assist.

Each week, or before a long ride, check the following items. If component damage or loose fasteners are found, your POLARIS dealer can provide service.

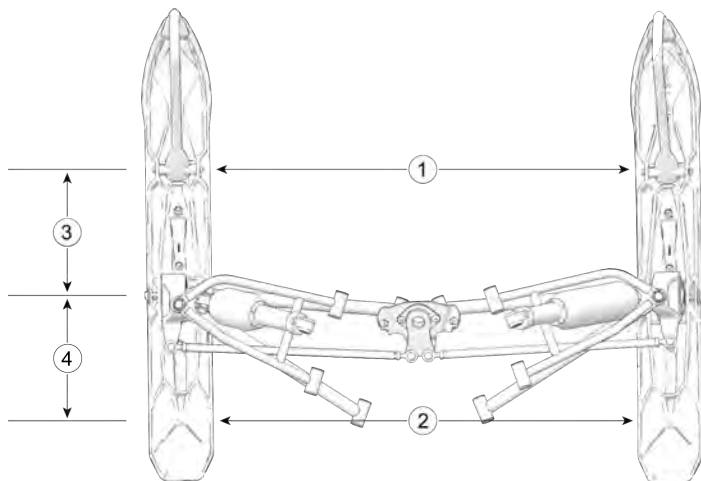


- | | |
|--------------------------------------|----------------------------------|
| ① Ski Bolt Nuts | ⑥ Lower Control Arm Spindle Nuts |
| ② Tie Rod End Nuts | ⑦ Upper Control Arm Spindle Nuts |
| ③ Upper/Lower Control Arm Nuts (All) | ⑧ Ski Loop Rear Fasteners |
| ④ Sway Bar Fasteners | ⑨ Ski Loop Front Fasteners |
| ⑤ Shock Mounting Fasteners | ⑩ Ski Skag Fasteners |

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. Your authorized POLARIS dealer can assist.



To align skis, do the following:

1. Place the handlebars in a straight-ahead position.
2. With only vehicle weight compressing the suspension, measure 10 in (25.4 cm) ③ forward from the center of the ski mounting bolt. From this point, measure the distance between the skis ①.
3. Measure 10 in (25.4 cm) ④ rearward from the center of the ski mounting bolt. From this point, measure the distance between the skis ②.
4. Measurement ① should be 1/8 in (3 mm) greater than measurement ②.

SKI SKAGS

⚠ WARNING

Worn skis and/or skags will adversely affect handling. Loss of vehicle control may result, causing serious injury or death. Your dealer's studding chart can provide the 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.

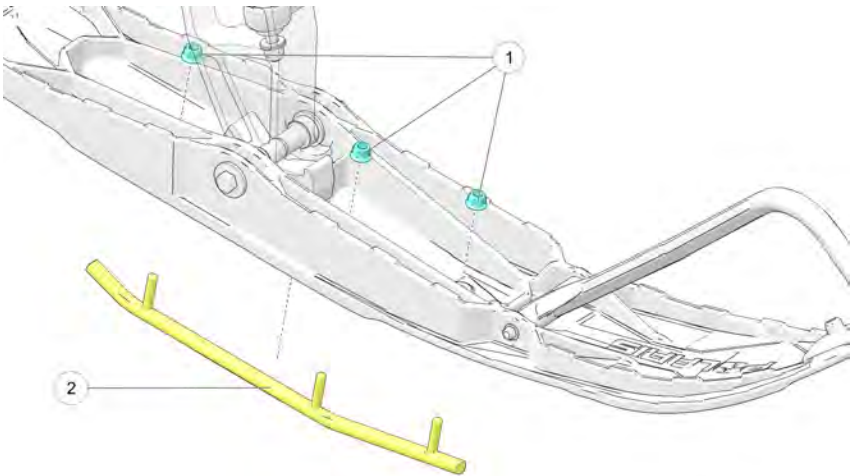
Check skags before each use of the snowmobile to ensure positive steering characteristics. Skags must be replaced when worn to half their original diameter.

TIP

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

SKAG REPLACEMENT

To replace a ski skag, do the following:



1. Raise and support the front of the snowmobile so the skis are approximately 6 in (15.2 cm) from the ground.
2. Remove the attaching ski skag fasteners ① and pry the skag ② downward.
3. Remove the front end of the skag.
4. Remove the rear end of the skag.

MAINTENANCE

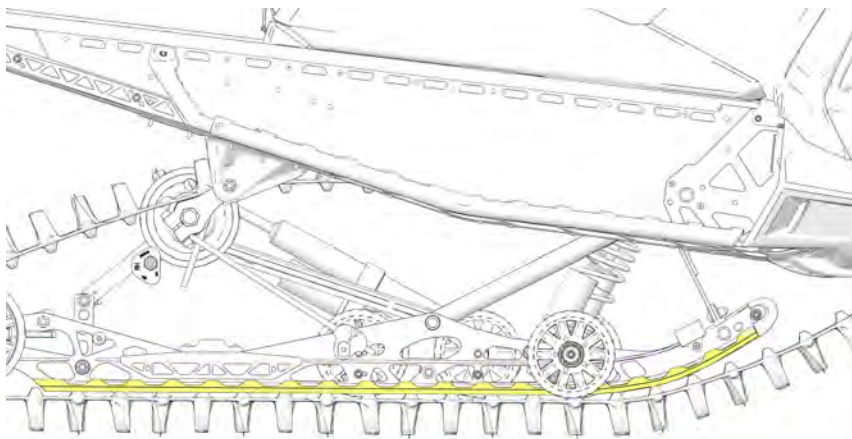
- Reverse the steps to install a skag.
- Torque skag fasteners to specification.

TORQUE

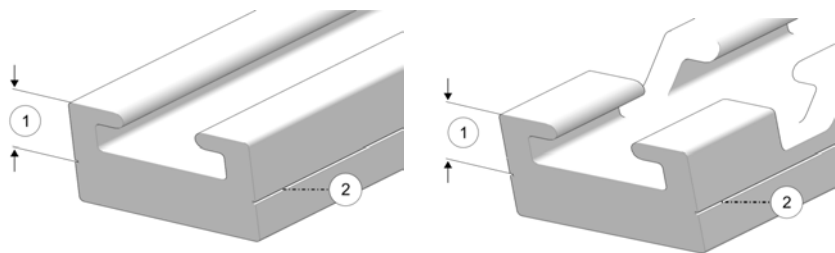
Ski Skag Fasteners
8 ft-lbs (11)

RAIL SLIDE WEAR INSPECTION

Polaris rail slides run along the bottom of the rail to prevent track wear. The rail slide should be inspected periodically and replaced when necessary.



For ease of inspection, all POLARIS rail slides have a wear limit indicator groove ② to indicate the minimum permissible slide thickness ①. 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.



BATTERY

 WARNING**CALIFORNIA PROPOSITION 65 WARNING:**

Batteries, battery posts, terminals and related accessories can expose you to chemicals including lead, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

 WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing. Antidote:

- **External:** Flush with water.
- **Internal:** Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.
- **Eyes:** Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases.

Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries.

KEEP OUT OF REACH OF CHILDREN.

BATTERY IDENTIFICATION

It is important to properly identify the type of battery installed in your snowmobile as different battery types require different service procedures. Proper servicing and battery maintenance is crucial for battery longevity.

The four types of batteries are:

- Lead Acid Conventional
- Dry Shipped Absorbed Glass Mat (AGM)
- Lead Acid Low Maintenance
- AGM Low Maintenance

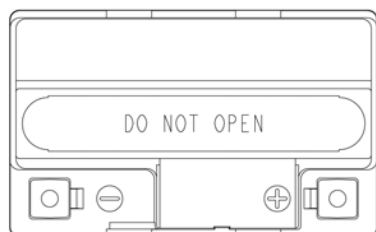
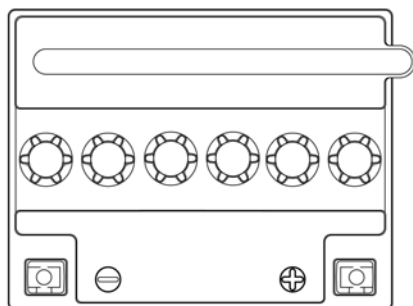
Refer to the following examples to identify the type of battery in your vehicle.

MAINTENANCE

LEAD ACID CONVENTIONAL AND DRY SHIPPED AGM BATTERIES

These batteries are characterized by the following features:

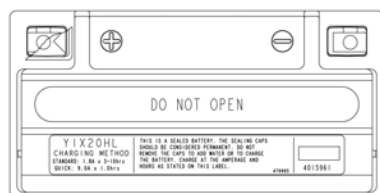
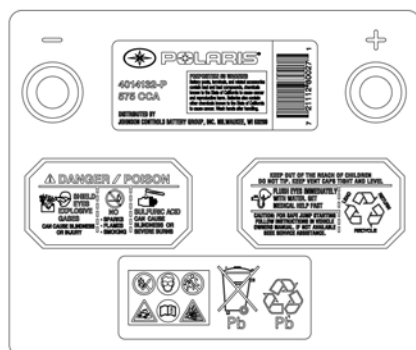
- Battery is NOT activated when packaged
- Removable cap plugs and strip are found top-side of the battery
- *Lead Acid Conventional batteries ONLY:*
 - Distilled water is added, as needed
 - Vent tube is located on the side of the battery



LOW MAINTENANCE BATTERIES

Low maintenance batteries are characterized by the following features:

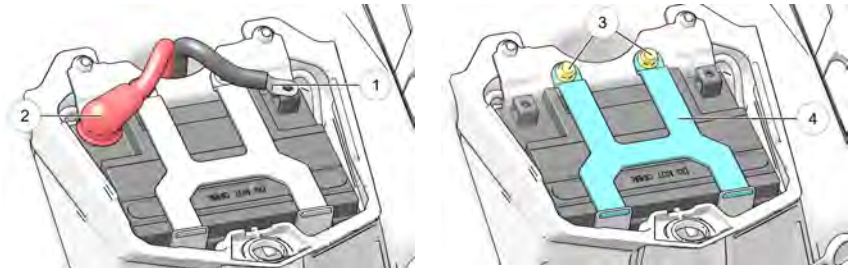
- Battery is pre-activated when packaged
- Non removable cap(s) is located top-side of the battery
- Distilled water or electrolyte is NEVER added



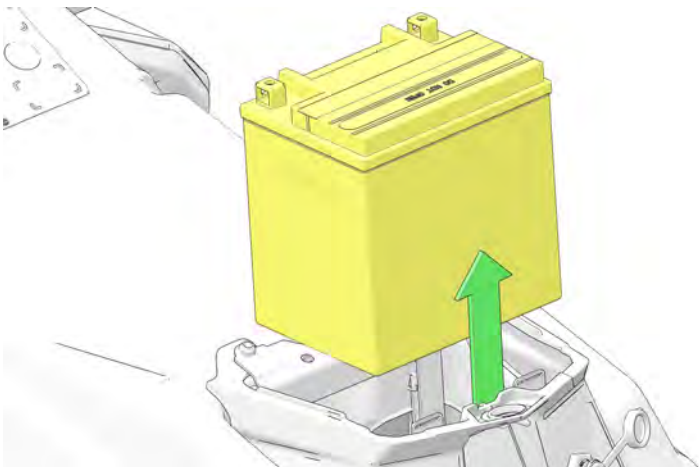
BATTERY REMOVAL

⚠ WARNING

Improperly connecting or disconnecting battery cables can result in an explosion and cause serious injury or death.
When removing the battery, always disconnect the negative (black) cable first.
When re-installing the battery, always connect the negative (black) cable last.



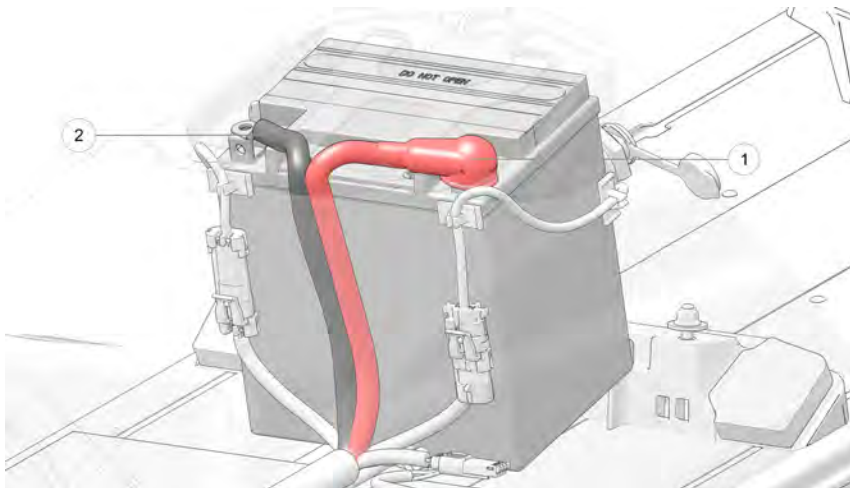
1. Locate and release the 1/4-turn fastener at the back of the seat. Lift to remove seat.
2. Disconnect the black (negative) battery cable ① first.
3. Disconnect the red (positive) cable ② last.
4. Remove fasteners ③ that secure the battery box cover.
5. Remove the battery box cover ④.
6. Remove the battery from the battery box.



MAINTENANCE

BATTERY INSTALLATION

When installing a new battery, ensure it has a full charge prior to initial use. Using a new battery with a partial charge can damage the battery, cause shorter battery life, and hinder vehicle performance. Follow the charging instructions, included with your new battery, before installing.



To install a new battery in your snowmobile, do the following:

1. Ensure the battery is fully charged.
2. Set the battery in the battery bracket.
3. Place the battery cover on the battery bracket.
4. Secure the two battery cover screws.
5. Connect and tighten the positive (red) cable ① to the positive terminal first.
6. Connect and tighten the negative (black) cable ② to the negative terminal last.

CAUTION

Verify the battery cables and wiring harness do not come into contact with the brake disc. Move the wiring harness/cables behind the chassis tube and away from the brake disc.

7. Verify the cables are properly routed.
8. Re-install the seat. Ensure it latches securely.

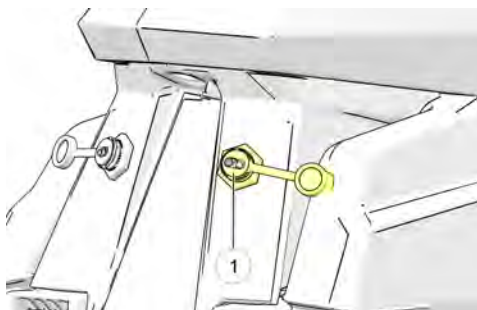
BATTERY CHARGING

WARNING

An overheated battery may explode, causing severe injury or death. Always watch charging times carefully. Stop charging if the battery becomes very warm to the touch. Allow it to cool before resuming charging.

To ensure your battery maintains its level of charge, the battery should be connected to a battery trickle charger using the battery charge port when not in use. The battery charge port ① is located on the back of the seat.

1. Check the battery voltage with a voltmeter or multimeter. A fully charged battery will register 12.8 V or higher.
2. If the voltage is less than 12.8 volts, recharge the battery at 1.2 amps or less until the battery voltage is 12.8 or greater using the battery charge port.



MAINTENANCE

USING A CONSTANT CURRENT CHARGER

When charging the battery using an automatic charger, always refer to the charger manufacturer's instructions before use.

When using a constant current charger, use the following guidelines:

State of Charge	Voltage	Action	Charge Time*
100%	12.8-13.0 volts	None; check at 3 months from date of manufacture	None required
75%-100%	12.5-12.8 volts	May need slight charge. If no charge given, check in 3 months	3-6 hours
50%-75%	12.0-12.5 volts	Needs charge	5-11 hours
25%-50%	11.5-12.0 volts	Needs charge	At least 13 hours, verify state of charge
0%-25%	11.5 volts or less	Needs charge with de-sulfating charger	At least 20 hours
<i>*Using constant current charge at standard amps specified on top of battery.</i>			

Always verify battery condition before charging and 1-2 hours after charging.

BATTERY CHARGE RELAY CONTROL

The battery provides power for two purposes:

- Engaging the electric starter motor to start the engine
- Powering the 7S display when the engine is off

The engine management system engages the battery charge relay and charges the battery only when the following conditions are met:

- Load shed relay is engaged by the engine management system
- Engine speed exceeds 2500 RPM
- Chassis DC voltage exceeds 13 volts

BATTERY MAINTENANCE

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

Never store a battery in a partially charged condition or hard, crystal sulfation will form on the plates resulting in reduced efficiency and shorter service life of the battery.

If you do not drive the vehicle for more than TWO weeks, maintain Absorbent Glass Mat (AGM) batteries with the BatteryMINDER® 2012 AGM - 2 AMP charger (or a similar charger).

BatteryMINDER® 2012 AGM - 2 AMP battery charger PN 2830438

If you plan to store the vehicle for ONE month or longer, remove the battery from the vehicle and store in a cool, dry location. Batteries will self-discharge more rapidly when stored in extreme temperatures. Continue to maintain the battery with a 2-AMP charger and inspect the battery every 60 days.

BATTERY TYPE	RECHARGE FREQUENCY	GENERAL MAINTENANCE
Lead Acid Conventional	Every 30 to 60 days	NEVER add electrolyte to the battery once the battery is in service. If necessary, only add distilled water to the battery.
Dry Shipped AGM	Inspect every 60 days	NEVER add electrolyte or distilled water to the battery once the battery is in service.
Lead Acid Low Maintenance	Every 30 to 60 days	NEVER add electrolyte or distilled water to the battery. Doing so will damage the case and shorten the life of the battery.
AGM Low Maintenance	Inspect every 60 days	NEVER add electrolyte or distilled water to the battery. Doing so will damage the case and shorten the life of the battery.

TRANSPORTING THE SNOWMOBILE

Whenever the snowmobile is transported:

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

NOTICE

Use of a cover is recommended when transporting your vehicle on an open trailer or sled deck. If transporting backward on an open trailer, remove the windshield before transport.

SUMMER STORAGE GUIDE

TREATING THE FUEL SYSTEM

As the riding season draws to a close, Polaris recommends riders begin treating their snowmobile's fuel system with Polaris Carbon Clean or similar commercially-available fuel stabilizer.

Treating the fuel system with Carbon Clean during the last few rides of the season ensures the entire fuel system is treated. Then, when it comes time to store the snowmobile, all the rider has to do is completely fill the fuel tank with fresh, non-oxygenated fuel and treat the new fuel with Carbon Clean.

It is also recommended riders use non-oxygenated fuel during the last rides of the season as non-oxygenated fuel stores better than oxygenated fuel and resists water vapor absorption.

If the rider was unable to treat the fuel system and/or use non-oxygenated fuel at the end of the riding season, the rider should do the following:

1. The rider should consume as much fuel in the fuel tank as possible during the last rides of the season.
2. When performing the summerization storage procedures, fill the fuel tank completely with non-oxygenated fuel. Note that most oxygenated fuels contain ethanol. Since ethanol is hygroscopic, oxygenated fuel will absorb a small amount of water vapor during the storage season and more so in humid locations. Completely filling the tank with non-oxygenated fuel minimizes water vapor absorption during the storage period and limits the amount of air and water vapor that can accumulate in the tank.
3. Treat the fuel in the fuel tank with the recommend amount of Polaris Carbon Clean. The recommended mixing ratio is outlined on the bottle label.
4. Position the snowmobile outside in a well-ventilated area.
5. Start and run the engine for 10-15 minutes to distribute the treated fuel throughout the fuel system.

NOTICE

On Carbureted engines (550cc / 120 Youth), run the engine for 10-15 minutes and then turn the fuel shut off valve to 'OFF'. Continue to run the engine until the engine stalls and turns off. Doing this drains the carburetors of fuel.

FOGGING THE ENGINE

Fogging the engine with Polaris fogging oil or similar commercial alternative is probably the most important storage step a rider can do to ensure the internal parts of their snowmobile's engine do not rust and corrode during the storage season.

To fog the engine, do the following:

1. Remove the spark plugs from the engine.
2. Liberally spray fogging oil into each spark plug hole. If possible, have an assistant slowly pull on the recoil rope to rotate the engine while spraying the oil into each cylinder.
3. Loosely install the spark plugs.

NOTICE

Do not install new spark plugs after fogging the cylinders. Fogging oil prevents the formation of rust / corrosion by sticking to the internal engine components – including the spark plug electrodes. Replace these spark plugs the following season after all of the fogging oil has been burned out of the engine.

DRIVE BELT STORAGE

Never leave the drive belt installed in the clutches as oxidation may form where the belt contacts the aluminum clutch sheave faces.

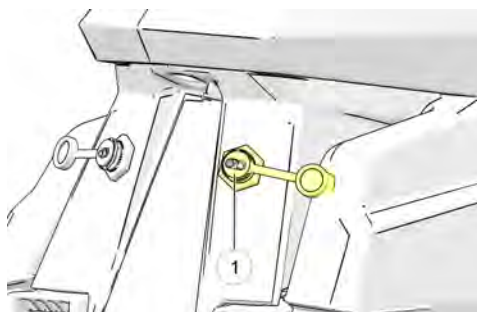
To clean the drive and driven clutches, do the following:

1. Remove the primary and spare drive belt from the snowmobile.
2. Inspect the drive belt for wear and glazing. Compare the primary belt with the spare belt. Decide if a new belt is needed next season and note the primary belt can now be used as the spare belt next season.
3. Clean the drive and driven clutch sheaves with Isopropyl Alcohol. Allow the alcohol to air dry. Continue cleaning the sheave faces until all belt residue is removed.

MAINTENANCE

BATTERY AND ELECTRICAL SYSTEM STORAGE

Never leave a battery unattended during the storage season. Snowmobile batteries are small and cannot maintain their charge over the storage season. To ensure your battery maintains its level of charge, the battery should be connected to a battery trickle charger using the battery charge port ①.



1. While the battery can remain installed on the snowmobile, it is recommended the battery be removed from the snowmobile and stored in a cool, and dry location. Removing the battery from the snowmobile facilitates off-site storage of the snowmobile where electricity may not be available to connect a battery charger. In addition, removing the battery allows access to other maintenance items.
2. Connect a Polaris battery charger or equivalent commercially available charger to the battery.
3. Inspect the electrical connections and wire harnesses throughout the snowmobile. If damage is found, make a note of the damage so that you and your authorized Polaris dealer can address the concern.

CLEANING THE SNOWMOBILE

Snowmobiles, especially those transported on sled decks and open trailers can accumulate a lot of water and road dirt / salt during the riding season. The snowmobile must be thoroughly washed and cleaned to prevent corrosion and rust formation.

1. Wash the snowmobile with a garden hose and a solution of soapy water. Note that if a pressure washer is used, care should be taken to not point the pressure washer nozzle close to the snowmobile which may force high pressure water into suspension / shock shaft seals and exposed electrical connectors.
2. Dry the snowmobile with a lint-free towel. Allow the entire snowmobile to air dry afterwards.
3. Clean the engine compartment. Use a shop vacuum if required to remove dirt, leaves, cat tails, etc. from within the engine compartment.

4. Hand wash the exhaust system and dry the pipe and silencer with a clean shop towel.
5. Apply “spray” metal protectant on exposed metal components, such as the exhaust pipe, silencer, shock shafts, and suspension springs / pivots.

IMPORTANT

Do not spray metal protectant on the drive or driven clutches.

LUBRICATE THE PIVOTS

After washing the snowmobile, it is important to use Polaris Premium All Season grease to lubricate the various suspension / steering pivot points. Doing so forces any water accumulated within the joints out which prevents the formation of corrosion and rust.

1. Use a grease gun and Polaris Premium All Season Grease. Reference the appropriate Owner's Manual to locate any / all grease zerks on the steering and suspension systems.
2. Pump fresh grease into all zerks until the grease can be seen purging out of each joint.
3. Use a paper towel to clean up and remove all of the residual purged grease from the joints.

STORING THE SNOWMOBILE

Never store the snowmobile in a hot, humid location if possible. Try to store the snowmobile away from direct sunlight.

1. Cover the snowmobile with a Polaris cover or after-market equivalent cover.
2. Store in a location away from water, tall grass, and direct sunlight. The storage location should have some level of ventilation to prevent stagnant, humid air from accumulating in and around the snowmobile.

WINTER RIDE PREPARATION

Preparing a snowmobile for in-season service is basically performing some of the summer storage procedures in reverse order.

1. Move the snowmobile outside to a well-ventilated area. Raise the rear suspension up, off the ground. Remove the engine compartment side panel and hood.
2. Prep the primary and back up (secondary) for winter use. It is recommended the belts be washed with a solution of warm, soapy water and allowed to air dry.

MAINTENANCE

3. Remove the battery from the battery charger and re-install it back into the battery box. Follow the owner's manual for battery installation procedures.
4. Verify the spark plugs are installed and torqued. Re-install the spark plug coils, if needed.
5. If you placed dryer sheets inside the engine compartment, remove them.
6. Using clean and dry shop towel, wipe down the exhaust pipe , silencer, and clutch sheaves.
7. Install the primary drive belt onto the clutches with the "Polaris" writing readable from the outside of the snowmobile.
8. Install the back-up (secondary) drive belt into the belt holder.
9. On the carbureted snowmobiles, turn the fuel shut-off valve to the ON position.
10. With the track suspended up, off the ground, follow the track tension adjustment procedure as outlined in your owner's manual.
11. Start and run the engine. Allow the engine to run for at least 15 minutes. Occasionally "blip" the throttle to rev the engine.

NOTICE
The exhaust may emit more smoke than usual as the fogging oil is burned out of the engine.

12. While the engine is running, verify there are no coolant leaks (on liquid cooled engines). After engaging the throttle a few times to spin the track, verify the track is aligned with the slide rails.
13. Turn off the engine. If the track requires, re-align the track at this time.
14. After adjusting the track or allowing the engine to cool down. Add coolant to reservoir bottle if required.
15. Re-start the engine and allow it to run for another 15 minutes. After 15 minutes, shutoff the engine and allow the exhaust pipe to cool.
16. Inspect the ski wear bars/carbides. Now is the time to replace the wear bars if damage is found or carbides are worn.
17. Add Carbon Clean to the fuel tank.
18. Log onto www.ridecommand.com and download the latest trails update files. Update the 7S display (if equipped) with the latest software.
19. Grease the rear suspension grease zerks with Polaris Premium All Season grease just enough to push out any water that may have accumulated in the suspension pivot points.

SPECIFICATIONS**INDY XC****INDY ADVENTURE****VOYAGEUR****NORDIC PRO**

CAPACITIES AND DIMENSIONS	
Body Style	MATRYX
Rider Capacity	1 rider Adventure Models: 2 riders
Coolant Capacity	8 qt (7.6 L)
Chaincase Oil Capacity	N/A
Fuel Tank Capacity	11 gal (41.6 L)
Gearcase Oil Capacity	23.6 oz (700 mL)
Oil Capacity	4 qt (3.78 L)
Drive Clutch Center Distance	10.625 in (26.99 cm)
Drive Belt P/N	3211165
Drive Clutch	P-22
Driven Clutch	Team Boss
Reverse Transmission	Standard

SPECIFICATIONS

ENGINE AND COOLING	
Engine	S8639-0999-LL9F
Displacement	999 cc
Cylinders	2
Bore x Stroke (mm)	93 x 73.5
Alternator Output	560 w @ 5,000 RPM
Throttle Body	2414637
Throttle Body Bore Size	(46 mm)
Recommended Engine Oil	PS-4 Extreme 0W-50 4-Cycle Oil
Idle RPM	1250 +/- 50
Rated Operating RPM	8000 +/- 250
Cooling	Liquid
Ignition Type	Coil on Plug
Spark Plug / Gap	NGK® 95897 MR7F / .027 in (.7 mm)
Recommended Fuel Octane	87 recommended (max 10% ethanol)
FEATURES	
Electronic Fuel Gauge	Standard
Electric Start	Standard
Oil Pressure Sensor	Standard
Parking Brake	Standard
Speedometer	Standard
Tachometer	Standard

CLUTCHING CHART

CLUTCH SETTINGS					
ALTITUDE meters (feet)	DRIVE CLUTCH		DRIVEN CLUTCH		
	Shift Weight	Clutch Spring	Clutch Spring	Driven Helix	Chaincase Gearing / Pitch
0-900 (0-3000)	15-76 (1327216)	58 / 120 (7044504)	200 / 240 (7046009)	42 Straight (3236113)	N/A
900-1500 (3000-5000)	15-74 (1327215)				N/A
1500-2100 (5000-7000)	15-72 (1327140)				N/A
2100-2700 (7000-9000)	15-70 (1327214)				N/A
2700-3300 (9000-11,000)	15-68 (1327213)				N/A
3300-3900 (11,000-13,000)	15-66 (1327212)				N/A
Shaded cells indicate factory settings. Use 2 gram lighter shift weights when operating in temperatures above 40° F (5° C). Primary Drive Clutch Bolt Torque: 110 ft-lbs (150 N·m). Re-torque after running engine.					

DIAGNOSTIC TROUBLE CODES (DTC)**DIAGNOSTIC TROUBLE CODES (DTCS)**

DIAGNOSTIC TROUBLE CODES (DTCS) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Throttle Position Sensor 1 Voltage High	51	3	P0123	This Trouble Code sets if the Throttle Position Sensor Signal is above 4.61 Volts. Can be caused by Damaged Wiring, a faulty Throttle Position Sensor or ECU / Connections.
Throttle Position Sensor 1 Voltage Low	51	4	P0122	This Trouble Code sets if the Throttle Position Sensor Signal is below 0.7 Volts. Can be caused by Damaged Wiring, a faulty Throttle Position Sensor or ECU / Connections.
TPS Unrealistic Transition	51	10	P0120	This Trouble Code sets when the Throttle Position Sensor Signal changes too rapidly to be correct. The condition can be caused by intermittent connections causing the TPS voltage to jump around between readings. Check for damaged connectors or wiring.
Vehicle Speed Sensor Signal Fault	84	2	P0503	This Trouble Code Sets if the Vehicle Speed Signal is intermittent or missing. Can be caused by Damaged Wiring/Connections or a Faulty/Loose Vehicle Speed Sensor.
Intake Air Temp Sensor Circuit Voltage High	105	3	P0113	This Trouble Code sets if the Intake Air Temperature Sensor Signal is above 4.9 Volts. Can be caused by Damaged Wiring, a faulty Intake Air Temperature Sensor or ECU / Connections.
Intake Air Temp Sensor Circuit Voltage Low	105	4	P0112	This Trouble Code sets if the Intake Air Temperature Sensor Signal is below 0.19 Volts. Can be caused by Damaged Wiring, a faulty Intake Air Temperature Sensor or ECU / Connections.
IAT Sensor Abnormal Rate of Change	105	10	P0114	This Trouble Code sets if the Intake Air Temperature Sensor Signal indicates an Unrealistic Rate of Change. Can be caused by Damaged Wiring, a faulty Intake Air Temperature Sensor or ECU / Connections.
Barometric Sensor Circuit Voltage High	108	3	P2229	This Trouble Code Sets if the Barometric Pressure Sensor Signal Circuit is Open or Shorted to Battery Voltage. Can be

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
				caused by Damaged Wiring/Connections, a Faulty Ambient Pressure Sensor or ECU.
Barometric Sensor Circuit Voltage Low	108	4	P2228	This Trouble Code Sets if the Barometric Pressure Sensor Signal Circuit is Shorted to Ground. Can be caused by Damaged Wiring/Connections, a Faulty Ambient Pressure Sensor or ECU.
Engine Temperature Over-Temp Shutdown	110	0	P1217	This Trouble Code sets if the Engine Temperature indicates a Critical Over Temperature Condition and the engine is running in a limp-home mode to prevent damage. Can be caused by any failure that would cause the engine to overheat.
Engine Temperature Sensor Circuit Voltage High	110	3	P0118	This Trouble Code sets if the Engine Coolant Temperature Sensor Signal is above 4.8 Volts. Can be caused by Damaged Wiring, a faulty Coolant Temperature Sensor or ECU / Connections.
Engine Temperature Sensor Circuit Voltage Low	110	4	P0117	This Trouble Code sets if the Engine Coolant Temperature Sensor Signal is below 0.1 Volts. Can be caused by Damaged Wiring, a faulty Coolant Temperature Sensor or ECU / Connections.
Engine Temperature Abnormal Rate of Change	110	10	P0119	This Trouble Code sets if the Engine Coolant Temperature Sensor Signal is erratic. Can be caused by Damaged Wiring, a faulty Coolant Temperature Sensor or ECU / Connections.
Engine Over-temperature Fault	110	16	P0217	This Trouble Code sets if the Engine Temperature indicates a Severe Over Temperature Condition. Can be caused by any failure that would cause the engine to overheat. This Trouble Code Does Not indicate a problem with the Engine Temperature Sensor.
Fuel Rail Pressure Sensor Voltage High	157	3	P0193	This trouble code sets if the Fuel Pressure Sensor Voltage is above 4.85V. Can be caused by Damaged Wiring, a faulty Fuel Pressure Sensor or ECU / Connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Fuel Rail Pressure Sensor Voltage Low	157	4	P0192	This Trouble Code Sets if the Fuel Pressure Sensor Circuit is below 0.1V. Can be caused by Damaged Wiring, a faulty Fuel Pressure Sensor or ECU / Connections.
Fuel Rail Pressure Below Power Limit	157	18	P0196	This Trouble Code Sets if the Fuel Pressure drops below 3Bar (43.5PSI) for 10 seconds. Can be caused by a faulty Pump Flange Assembly (PFA).
Battery Voltage High	158	3	P1567	This Trouble Code Sets if the if the Battery Voltage is above 15.0V. Can be caused by Damaged Wiring, a faulty Battery or ECU / Connections.
Battery Voltage Low	158	4	P1566	This Trouble Code Sets if the if the Battery Voltage is below 10.0V. Can be caused by Damaged Wiring, a faulty Battery or ECU / Connections.
Exhaust Over-Temperature Shutdown	173	0	P1517	This Trouble Code Sets if the engine was shut down due to High Exhaust Temperature. Can be caused by a Faulty Exhaust Temperature Sensor/Connections or Lean Air/Fuel Ratio causing high exhaust temperature.
Exhaust Temp Sensor Signal High	173	3	P0546	This Trouble Code sets if the engine has been running above 3000 RPM for more than 2 minutes and the Exhaust Temperature Sensor Signal is above 4.90 Volts. Can be caused by Damaged Wiring, a faulty Engine Temperature Sensor or ECU / Connections.
Exhaust Temp Sensor Signal Low	173	4	P0545	This Trouble Code sets if the engine has been running above 3000 RPM for more than 2 minutes and the Exhaust Temperature Sensor Signal is below 0.06 Volts. Can be caused by Damaged Wiring, a faulty Engine Temperature Sensor or ECU / Connections.
Exhaust Temp Sensor Unrealistic Transition	173	10	P1546	This Trouble Code sets if the Exhaust Temperature Sensor Signal changes too quickly to be considered a Realistic Value. Can be caused by Damaged Wiring, a faulty Exhaust Temperature Sensor or ECU / Connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TRouble CODE	SPN	FMI	P-COD- E	CONDItION
Fuel Temperature Sensor Voltage High	174	3	P1322	This trouble code sets if the Fuel Temperature Sensor Voltage is above 4.81V. Can be caused by Damaged Wiring, a faulty Fuel Pressure Sensor or ECU / Connections.
Fuel Temperature Sensor Voltage Low	174	4	P1323	This trouble code sets if the Fuel Temperature Sensor Voltage is Below 0.01V. Can be caused by Damaged Wiring, a faulty Fuel Pressure Sensor or ECU / Connections.
ECU Memory Checksum Error	628	13	P0601	This Trouble Code Sets if an Internal Memory Fault is detected in the Engine Controller. Can only be caused by a defective ECU.
Crankshaft Sensor Signal Fault	636	2	P0335	This Trouble Code sets if the Engine is Running and No Signal is Detected from the 5X Crankshaft Sensor. Can be caused by Damaged Wiring, a faulty Crankshaft Sensor or ECU / Connections.
Crankshaft Position Sensor Circuit Fault	636	8	P0336	This Trouble Code sets if the Engine is Running and the number of pulses from the 5X Crankshaft Sensor is not correct. Can be caused by Damaged Wiring, a faulty Crankshaft Sensor or ECU / Connections.
MAG Cylinder Port Injector Short to B+	651	3	P0262	This Trouble Code sets if a Short to Voltage is detected in the MAG Cylinder Port Injector Control Circuit. Can be caused by Damaged Wiring, a faulty Fuel Injector or ECU / Connections.
MAG Cylinder Port Injector Open Circuit	651	5	P0261	This Trouble Code sets if an Open Circuit Condition is detected in the MAG Cylinder Port Injector Control Circuit. Can be caused by Damaged Wiring, a faulty Fuel Injector or ECU / Connections.
PTO Cylinder Port Injector Short to B+	652	3	P0265	This Trouble Code sets if a short to Voltage is detected in the PTO Cylinder Port Injector Control Circuit. Can be caused by Damaged Wiring, a faulty Fuel Injector or ECU / Connections.
PTO Cylinder Port Injector Open Circuit	652	5	P0264	This Trouble Code sets if an Open Circuit Condition is detected in the PTO Cylinder Port Injector Control Circuit. Can be caused by Damaged Wiring, a faulty Fuel Injector or ECU / Connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Ignition Coil 1 (MAG) Driver Circuit Open	1268	5	P1351	This Trouble Code Sets if Ignition Coil 1 (MAG) Driver Circuit is Open. Can be caused by Damaged Wiring/Connections, a Faulty MAG Ignition Coil or ECU.
Ignition Coil 2 (PTO) Driver Circuit Open	1269	5	P1352	This Trouble Code Sets if Ignition Coil 2 (PTO) Driver Circuit is Open. Can be caused by Damaged Wiring/Connections, a Faulty PTO Ignition Coil or ECU.
Max. Detonation Correction Limit Reached, MAG Cylinder	1352	0	P1336	This Trouble Code Sets if the Engine Controller Reaches the Maximum Detonation Control Limit by Fuel Correction on the Mag Cylinder Can be caused by Incorrect Fuel (low octane or Ethanol content) or Low Fuel Pressure.
Cylinder 1 (MAG) Knock Level Critical	1352	16	P2336	This Trouble Code Sets if Cylinder 1 (MAG) Knock Sensor reaches a Critical Level. Can be caused by Excessive Knock (Fuel Problems), a Lean Running Condition or Engine Mechanical Problems.
Max. Detonation Correction Limit Reached, PTO Cylinder	1353	0	P1337	This Trouble Code Sets if the Engine Controller Reaches the Maximum Detonation Control Limit by Fuel Correction on the PTO Cylinder. Can be caused by Incorrect Fuel (low octane or Ethanol content) or Low Fuel Pressure.
Cylinder 2 (PTO) Knock Level Critical	1353	16	P2337	This Trouble Code Sets if Cylinder 2 (PTO) Knock Sensor reaches a Critical Level. Can be caused by Excessive Knock (Fuel Problems), a Lean Running Condition or Engine Mechanical Problems.
Sensor Supply Voltage 1 Low	3509	4	P06B1	This Trouble Code sets if the Sensor Supply 1 Voltage is below an acceptable limit (approx. 4.50 Volts). Can be caused by Damaged Wiring or Faulty/Shorted Sensors.
Sensor Supply Voltage 2 Low	3510	4	P06B4	This Trouble Code sets if the Sensor Supply 2 Voltage is below an acceptable limit (approx. 4.50 Volts). Can be caused by Damaged Wiring or Faulty/Shorted Sensors.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Vehicle Speed Sensor Supply Voltage Low	3511	4	P16B6	This Trouble Code sets if the Sensor Supply 3 Voltage is below an acceptable limit (approx. 4.5 Volts). Can be caused by Damaged Wiring or Faulty Sensor/shorted to ground.
Oil Pump Driver Circuit Open	3589	5	P16BA	This Trouble Code Sets if the Oil Pump Driver Circuit is Open. Can be caused by Damaged Wiring/Connections, a Faulty Oil Pump/Connections or Faulty ECU/Connections.
Oil Pump Driver Circuit Fault	3589	12	P16BC	This Trouble Code Sets if a Failure is Detected in the Oil Pump Driver Circuit. Can be caused by Damaged Wiring/Connections, a Faulty Oil Pump/Connections or Faulty ECU/Connections.
Injector Output Supply 2 Voltage High	3598	3	P16A9	This Trouble Code sets if the Injector Output Supply 2 Voltage is above an acceptable limit. Can be caused by Damaged Wiring or Faulty/Shorted Connectors.
Injector Output Supply 2 Voltage Low	3598	4	P16A8	This Trouble Code sets if the Injector Output Supply 2 Voltage is below an acceptable limit. Can be caused by Damaged Wiring or Faulty/Shorted Connectors.
Regulator: Critical Voltage Too Low	32523	4	P1609	This Trouble Code Sets if the Regulator has detected Low Voltage in the Critical Circuit. Can be caused by damaged Regulator wiring or connections, electrical modifications or faulty Regulator.
Regulator: Critical Open Circuit	32523	5	P160B	This Trouble Code Sets if the Regulator has detected an Open Circuit in the Critical Circuit. Can be caused by damaged wiring, faulty headlight, Fuel Pump or Regulator connections.
Regulator: Critical Short Circuit	32523	6	P160C	This Trouble Code Sets if the Regulator has detected Excessive Current in the Critical Circuit. Can be caused by damaged wiring, faulty headlight, Fuel Pump or Regulator connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Regulator: Critical Voltage Too High	32523	15	P160D	This Trouble Code Sets if the Regulator has detected Excessive Voltage in the Critical Circuit. Can be caused by damaged wiring, faulty headlight, Fuel Pump or Regulator connections.
Regulator: Chassis Voltage Too Low	32523	20	P160E	This Trouble Code Sets if the Regulator has detected Low Voltage in the Chassis Circuit. Can be caused by damaged wiring or faulty grip heaters.
Regulator: Chassis Short Circuit	32523	22	P160F	This Trouble Code Sets if the Regulator has detected Excessive Current Draw in the Chassis Circuit. Can be caused by damaged wiring or faulty grip heaters.
Regulator: Chassis Voltage Too High	32523	31	P1610	This Trouble Code Sets if the Regulator has detected Excessive Voltage in the Chassis Circuit. Can be caused by damaged wiring, Regulator connections or Regulator.
Regulator: Stator Output Low	32531	36	P1510	This Trouble Code Sets if the Regulator has detected a Low Voltage condition in the Stator. Can be caused by a Short to ground in the Stator or damaged Stator wiring.
Regulator: Stator Open Circuit	32531	37	P1511	This Trouble Code Sets if the Regulator has detected an Open Circuit condition in the Stator. Can be caused by an Open Circuit in the Stator or damaged Stator wiring.
Exhaust Temperature Sensor 2 - Temperature Too High	520173	0	P1487	This Trouble Code sets if the Exhaust Temperature 2 Signal is greater than 750C. Can be caused by a Faulty Exhaust Temperature Sensor/Connections or Lean Air/Fuel Ratio causing high exhaust temperature.
Exhaust Temperature Sensor 2 Voltage High	520173	3	P1484	This Trouble Code Sets if the if the Exhaust Temp Sensor 2 Voltage is above 4.96V. Can be caused by Damaged Wiring, a faulty Exhaust Temp Sensor or ECU / Connections.
Exhaust Temperature Sensor 2 Voltage Low	520173	4	P1485	This Trouble Code Sets if the if the Exhaust Temp Sensor 2 Voltage is Below 0.06V. Can be caused by Damaged Wiring, a faulty Exhaust Temp Sensor or ECU / Connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Exhaust Temperature Sensor 2 Abnormal Rate of Change	520173	10	P1486	This Trouble Code sets if the Exhaust Temperature Sensor Signal changes too quickly to be considered a Realistic Value. Can be caused by Damaged Wiring, a faulty Exhaust Temperature Sensor or ECU / Connections.
Exhaust Temperature Sensor 2 Mismatch with Sensor 1	520173	14	P1488	This Trouble Code Sets when Exhaust Temperature Sensor 2 signal is 250C greater than Exhaust Temp Sensor 1 signal. The condition can be caused by Damaged Wiring, faulty Exhaust Temperature Sensor or ECU / Connections.
ECU Supply Voltage High	520174	3	P1341	This Trouble Code sets if the ECU Supply Voltage is above 17.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections
ECU Supply Voltage Low	520174	4	P1342	This Trouble Code sets if the ECU Supply Voltage is below 10.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Critical Supply Voltage High	520175	3	P1343	This Trouble Code sets if the Critical Supply Voltage is above 17.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Critical Supply Voltage Low	520175	4	P1344	This Trouble Code sets if the Critical Supply Voltage is below 10.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Chassis Supply Voltage High	520176	3	P1345	This Trouble Code sets if the Chassis Supply Voltage is above 18.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Chassis Supply Voltage Low	520176	4	P1346	This Trouble Code sets if the Chassis Supply Voltage is below 14.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Peak Injector Voltage High	520177	3	P1347	This Trouble Code sets if the Peak Injector Supply Voltage is above 24.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.
Peak Injector Voltage Low	520177	4	P1348	This Trouble Code sets if the Peak Injector Supply Voltage is below 20.00V. Can be based by faulty wiring, faulty regulator or ECU / Connections.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-COD-E	CONDITION
EV Actuator Position High in Open Position	520178	16	P2627	This Trouble Code sets if the Exhaust Valve Actuator Position is greater than 80.0% when trying to achieve Open position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
EV Actuator Position Low in Open Position	520178	18	P2628	This Trouble Code sets if the Exhaust Valve Actuator Position is less than 70.0% when trying to achieve Open position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
EV Actuator Position High in Mid Position	520179	16	P2629	This Trouble Code sets if the Exhaust Valve Actuator Position is greater than 55.0% when trying to achieve Mid position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
EV Actuator Position Low in Mid Position	520179	18	P2630	This Trouble Code sets if the Exhaust Valve Actuator Position is less than 45.0% when trying to achieve Mid position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
EV Actuator Position High in Closed Position	520180	16	P2631	This Trouble Code sets if the Exhaust Valve Actuator Position is greater than 30.0% when trying to achieve Closed position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
EV Actuator Position Low in Closed Position	520180	18	P2632	This Trouble Code sets if the Exhaust Valve Actuator Position is less than 20.2% when trying to achieve Closed position. This can be caused by a faulty Exhaust Valve Actuator, Broken Cable or Broken Exhaust Valve Assembly.
Throttle Release Switch Signal Circuit Short to Voltage	520194	3	P1555	This Trouble Code Sets if the Throttle Release Switch Signal is Open Circuit or Shorted to Battery Voltage. Can be caused by Damaged Wiring/Connections, a Faulty Throttle Safety Switch or ECU.
Throttle Release Switch Signal Circuit Short to Ground	520194	4	P1554	This Trouble Code Sets if the Throttle Safety Switch Signal is Shorted to Ground. Can be caused by Damaged Wiring/Connections, a Faulty Throttle Safety Switch or ECU.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TRouble CODE	SPN	FMI	P-COD-E	CONDItION
Throttle Stuck Error	520194	7	P1552	This Trouble Code Sets if the Throttle Release Switch Signal Indicates a Throttle Stuck Open. Can be caused by a Stuck Throttle or Misadjusted/Stuck Throttle Linkage.
Accessory Relay Driver Circuit Short to B+	520219	3	P1647	This Trouble Code Sets if the Accessory Relay Driver Circuit is Shorted to Voltage. Can be caused by Damaged Wiring/Connections, a Faulty Accessory Relay or ECU.
Accessory Relay Driver Circuit Open	520219	5	P1646	This Trouble Code Sets if the Accessory Relay Driver Circuit is Open. Can be caused by Damaged Wiring/Connections, a Accessory Ignition Relay or ECU.
Charge Relay Driver Circuit Short to B+	520220	3	P163D	This Trouble Code Sets if the Charge Relay Driver Circuit is Shorted to Voltage. Can be caused by Damaged Wiring/Connections, a Faulty Charge Relay or ECU.
Charge Relay Driver Circuit Open	520220	5	P163C	This Trouble Code Sets if the Charge Relay Driver Circuit is Open. Can be caused by Damaged Wiring/Connections, a Charge Relay or ECU.
Oil Pump or Fuel Injector Offset not Programmed	520241	13	P1278	This Trouble Code Sets if Either the Fuel Injector or Oil Injection Pump Calibration has Not Been Programmed. Update the Injector/Oil Pump Settings. WARNING: Do Not Operate the Vehicle with This Trouble Code Set!
Ground Speed Pulses Per Mile not Programmed	520242	13	P1279	This Trouble Code Sets if the Vehicle Speed Sensor Setting is Not Properly Programmed in the ECU. Reset the ECU Offset Values to Resolve this Fault Condition.
Exhaust Valve Position Out of Range (Open)	520325	31	P140A	This Trouble Code sets if: Valve UP position voltage out of range. Check the following: (1) Measure cable travel length, (2) Verify smooth valve operation by operating the cable by hand through its full travel, (3) Relearn EVIf no problem.
Exhaust Valve Position Out of Range (Mid)	520326	31	P140B	This Trouble Code sets if: Valve MID position voltage out of range. Check the following: (1) Measure cable travel length,

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
				(2) Verify smooth valve operation by operating the cable by hand through its full travel, (3) Relearn EVIf no problem.
Exhaust Valve Position Out of Range (Closed)	520327	31	P140C	This Trouble Code sets if: Valve DOWN position voltage out of range. Check the following: If occasional, this fault is nothing to be concerned about If persistent: Measure cable travel length and Verify smooth valve operation.
Riding With Brakes On Moderately Severe	520555	31	C2418	This Trouble Code Sets if the Sled has been driven with the brakes applied continuously for 10 seconds, 4500 RPM.
Riding With Brakes On Most Severe	520556	31	C2419	This Trouble Code Sets if the Sled has been driven with the brakes applied continuously for 20 seconds , 4500 RPM.
Regulator Near Thermal Shutdown	520660	31	P161B	This Trouble Code Sets if the Regulator is near the thermal shutdown point. Can be caused by excessive power consumption or insufficient cooling air flow.
Batch Fire Detection	523959	31	P3022	This Trouble Code Sets if the engine is in "Batch Fire Mode". Can be caused by Damaged Wiring, a faulty Crankshaft Sensor or ECU / Connections.
Exhaust Valve Actuator Short Circuit	523958	3	P3023	This trouble code sets if the ECU detects a short in the EV Actuator Drive circuit. Can be caused by Damaged Wiring, Faulty EV Actuator, or ECU / Connections. Inspect EV Actuator Drive wires. (White/Green & White/Blue).
Exhaust Valve Actuator Open Circuit	523958	5	P3024	This trouble code sets if the ECU detects low current or an open EV Actuator Drive circuit. Can be caused by Damaged Wiring, Faulty EV Actuator, or ECU / Connections. Inspect EV Actuator Drive wires. (White/Green & White/Blue).
Exhaust Valve Actuator Open Circuit	523958	4	P3025	This trouble code sets if the ECU detects low current or an open EV Actuator Drive circuit. Can be caused by Damaged Wiring, Faulty EV Actuator, or ECU / Connections. Inspect EV Actuator Drive wires. (White/Green & White/Blue).

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCs) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TROUBLE CODE	SPN	FMI	P-CODE	CONDITION
Exhaust Valve Actuator Over Current	523958	6	P3026	This trouble code sets if the ECU detects high current on the EV Actuator Drive circuit. Can be caused by Damaged Wiring, Faulty EV Actuator, or ECU / Connections. Inspect EV Actuator Drive wires. (White/Green & White/Blue).
Exhaust Valve Actuator Internal IC Voltage High	523957	3	P3027	This trouble code sets if the ECU has detected a Exhaust Valve Actuator internal IC voltage above 6V. Can be caused by a faulty ECU.
Exhaust Valve Actuator Internal IC Voltage Low	523957	4	P3028	This trouble code sets if the ECU has detected a Exhaust Valve Actuator internal IC voltage Below 4V. Can be caused by a faulty ECU.
Exhaust Valve Actuator Internal IC Over Current / Over Temp	523957	6	P3029	This trouble code sets if the ECU has detected a Exhaust Valve Actuator internal IC current above 2A or 200C. Can be caused by a faulty ECU.
Exhaust Valve Actuator Internal IC Communication Loss	523957	19	P3032	This trouble code sets if the ECU loses communication with the Exhaust Valve Actuator IC. Can be cause by a faulty ECU.
Exhaust Valve Actuator Position Sensor Voltage High	523956	3	P3033	This trouble code sets if the Exhaust Valve Actuator Position Sensor voltage is greater than 4.5V for 1 sec. Can be caused by Damaged wiring, Faulty EV actuator, or ECU / Connections. Inspect EV Actuator Position Sensor wires. Power: Red/White. Ground: Brown/White. Feedback: Dark Green/Orange.
Exhaust Valve Actuator Position Sensor Voltage Low	523956	4	P3034	This trouble code sets if the Exhaust Valve Actuator Position Sensor voltage is Less than 0.4V for 1 sec. Can be caused by Damaged wiring, Faulty EV actuator, or ECU / Connections. Inspect EV Actuator Position Sensor wires. Power: Red/White. Ground: Brown/White. Feedback: Dark Green/Orange.
Exhaust Valve Actuator Abnormal Rate of Change	523956	10	P3035	This trouble code sets if the Exhaust Valve Actuator Position Sensor voltage is Less than 0.4V for 1 sec. Can be caused by Damaged wiring, Faulty EV actuator, or ECU / Connections. Inspect EV Actuator Position Sensor wires. Power: Red/White. Ground: Brown/White. Feedback: Dark Green/Orange.

DIAGNOSTIC TROUBLE CODES (DTC)

DIAGNOSTIC TROUBLE CODES (DTCS) – MATRYX				
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR				
TRouble CODE	SPN	FMI	P-COD-E	CONDItION
Exhaust Valve Learning Default Position	520337	7	P3036	This trouble code sets if the Exhaust Valve Learn values are different from the Exhaust Valve Check Values. Can be caused by an obstruction in the Exhaust Valves, Broken Cable, or broken Exhaust Valve.
Water Temperature Unrealistic Transition	110	10	P0119	This trouble code sets if the water temperature changes by 20C in 1 sec 3 times. Can be caused by Faulty Wiring, Faulty Water Temperature Sensor, or Faulty ECU.

DIAGNOSTIC TROUBLE CODES (DTCS) – LEFT HAND CONTROLS

MATRYX LEFT HAND CONTROLS – DIAGNOSTIC TROUBLE CODES (DTCS)					
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR					
SPN	FMI	P-CODE	DESCRIPTION	FAULT SETTING	FAULT HEALING
516360	0	C1106	Left Grip Heater Driver Over Temp	The temperature at left grip heater driver is greater than 60 DegC for 5 seconds	The temperature at left grip heater driver is less than 60 DegC for 5 seconds
	5	C1107	Left Grip Heater Driver Under Current	The current at left grip heater driver is less than 1A for 5 seconds	The current at left grip heater driver is greater than 1.5A for 5 seconds
	6	C1108	Left Grip Heater Driver Over Current	The current at left grip heater driver is greater than 7A for 5 seconds	The current at left grip heater driver is less than 6A for 5 seconds
	31	C1109	Left Grip Heater Driver Internal Short	An internal short has been detected at the left grip heater driver. This would result in a 100% duty cycle output when not expected.	An internal short is not detected at the left grip heater driver.

DIAGNOSTIC TROUBLE CODES (DTC)

MATRIX LEFT HAND CONTROLS – DIAGNOSTIC TROUBLE CODES (DTCs)					
SPN = SUSPECT PARAMETER NUMBER / FMI = FAILURE MODE INDICATOR					
SPN	FMI	P-CODE	DESCRIPTION	FAULT SETTING	FAULT HEALING
516361	0	C110A	Right Grip Heater Driver Over Temp	The temperature at right grip heater driver is greater than 60 DegC for 5 seconds	The temperature at right grip heater driver is less than 60 DegC for 5 seconds
	5	C110B	Right Grip Heater Driver Under Current	The current at right grip heater driver is less than 1A for 5 seconds	The current at right grip heater driver is greater than 1.5A for 5 seconds
	6	C110C	Right Grip Heater Driver Over Current	The current at right grip heater driver is greater than 7A for 5 seconds	The current at right grip heater driver is less than 6A for 5 seconds
	31	C110D	Right Grip Heater Driver Internal Short	An internal short has been detected at the right grip heater driver. This would result in a 100% duty cycle output when not expected.	An internal short is not detected at the right grip heater driver.
516362	0	C110E	Thumb Heater Driver Over Temp	The temperature at thumb heater driver is greater than 60 DegC for 5 seconds	The temperature at thumb heater driver is less than 60 DegC for 5 seconds
	5	C110F	Thumb Heater Driver Under Current	The current at thumb heater driver is less than 0.2A for 5 seconds	The current at thumb heater driver is greater than 0.25A for 5 seconds
	6	C1110	Thumb Heater Driver Over Current	The current at thumb heater driver is greater than 1.4A for 5 seconds	The current at thumb heater driver is less than 1.2A for 5 seconds
	31	C1111	Thumb Heater Driver Internal Short	An internal short has been detected at the thumb heater driver. This would result in a 100% duty cycle output when not expected.	An internal short is not detected at the thumb heater driver.

TROUBLESHOOTING

ENGINE TROUBLESHOOTING

Unless you have experience and training in four-cycle engine repair, your dealer can assist if technical problems arise.

PROBLEM	PROBABLE CAUSE	SOLUTION
Erratic engine operating RPM during acceleration or load variations	Drive clutch binding	Your dealer can perform this service.
	Driven clutch malfunction	Your dealer can perform this service
Harsh drive clutch engagement	Drive belt worn or too narrow	Replace the drive belt.
	Excessive belt/sheave clearance	Your dealer can perform this service.
Drive belt turns over	Wrong belt for application	Replace the drive belt.
	Clutch alignment out of spec	Your dealer can perform this service.
	Engine mount broken or loose	Inspect and replace. Your dealer can perform this service.
Machine fails to move	Clutch jammed	Check for twisted belt or broken spring. Your dealer can perform this service.
	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. Your dealer can perform this service.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Noise in drive system	Broken drive clutch components	Your dealer can perform this service.
	Bearing failure/ chaincase, jackshaft, or front drive shaft	Your dealer can perform this service.
	Drive belt surface flat spots	Inspect and replace as needed.
	Drive chain loose	Inspect and adjust (or replace).
	Drive chain worn, sprocket teeth broken	Your dealer can perform this service.
Poor low RPM performance	Worn drive belt	Inspect and replace as needed.
	Excessive belt/sheave clearance	Your dealer can perform this service.
	Sticky clutch	Your dealer can perform this service.
	Poor fuel quality	Use 87-91 octane fuel (or higher).
Engine doesn't turn	Seized engine	Your dealer can perform this service. Seizure is a result of poor lubrication, inadequate fuel supply, broken parts or improper cooling.
	Hydrostatic lock	Water or fuel may have entered the crankcase while the vehicle was standing or being transported. Drain plug is located on the lower crankcase for emergency draining. Remove the spark plugs. Your dealer can perform this service

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, Your dealer can perform this service.
	No fuel to engine	• Make sure tank contains fuel. • Ice may be in the fuel line, filter or pump. Add isopropyl alcohol to the fuel system. • Your dealer can perform this service.
	Poor engine compression	This indicates a major engine problem that must be repaired before operating. Your dealer can perform this service.
Engine lacks power	Fouled or defective spark plug(s)	Replace the plug(s).
	Fuel filter (loss of high RPM power)	Your dealer can perform this service.
	Plugged fuel filter or tank pick-up sock	Your dealer can perform this service.
	Incorrect clutching	Your dealer can perform this service.
Engine continually backfires	Faulty plug(s)	Change plug(s), ensure caps are seated.
	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	Your dealer can perform this service.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Engine requires more than normal cranking time to start	Poor fuel	Replace with fresh winter fuel.
	Not enough fuel getting to engine	Your dealer can perform this service.
	Plugged fuel filter or tank pick-up sock	Your dealer can perform this service.
	Weak Battery	Your dealer can perform battery service.

DRIVE SYSTEM TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Machine fails to move	Clutch jammed	Check for twisted belt or broken spring. Your POLARIS dealer can assist.
	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. Your POLARIS dealer can assist.
	Sheared teeth on QUICKDRIVE belt	Replace QUICKDRIVE belt.
	Broken QUICKDRIVE belt	Replace QUICKDRIVE belt.
Ratcheting or jerky drive-away from slow speed	Sheared teeth on QUICKDRIVE belt	Replace QUICKDRIVE belt.
	Drive belt surface flat spots	Inspect and replace as needed.

PROBLEM	PROBABLE CAUSE	SOLUTION
Noise in drive system	Broken drive clutch components	Your POLARIS dealer can assist..
	Bearing failure/ chaincase, jackshaft, or front drive shaft	Your POLARIS dealer can assist..
	Drive belt surface flat spots	Inspect and replace as needed.
	Drive chain loose or worn, sprocket teeth broken	- Inspect and adjust, or replace. - Your POLARIS dealer can assist..
	Sheared teeth on QUICKDRIVE belt	Replace QUICKDRIVE belt.
Harsh drive clutch engagement	Worn or narrow belt	Replace the drive belt.
	Excessive belt/sheave clearance	Your POLARIS dealer can assist.
Drive belt turns over	Wrong belt	Replace the drive belt.
	Clutch alignment out of spec	Your POLARIS dealer can assist.
	Engine mount broken or loose	Inspect and replace. Your POLARIS dealer can assist..

DRIVE BELT TROUBLESHOOTING

BELT WEAR/BURN DIAGNOSIS	
CAUSES	SOLUTIONS
Driving at low RPM	Drive at higher RPMs. Gear the machine down. Check belt deflection.
Insufficient warm-up	Warm the engine at least five minutes. Put the transmission in neutral to warm belt. In extreme cold weather, take the drive belt off the snowmobile and warm it up. Break snowmobile 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/16 km/h)	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 snowmobile in extremely cold weather and warm it up. Break snowmobile loose from the snow.
Poor engine performance	Check for fouled plugs and water, ice or dirt in the fuel tank or fuel line.
Loading snowmobiles onto trailers	Skis may gouge into trailers and prevent the drivetrain from spinning properly. Use enough speed to drive the snowmobile completely onto the trailer. Push and pull it to finish loading if necessary.
Clutch malfunction	Inspect clutch components. Your dealer can perform this service.
Slow, easy clutch engagement	Use fast, aggressive throttle to engage clutch.

SUSPENSION TROUBLESHOOTING

PROBLEM	SOLUTION
Rear suspension bottoms too easily	• Refer to page 107. • Revalve rear track shock (see your dealer).
Rides too stiff in rear	• Refer to page 114. • Check for binding suspension shafts and grease all pivot points.
Too much weight transfer when climbing	Refer to page 116.
Too little weight transfer when climbing	Refer to page 116.
Machine darts from side to side	• Check ski alignment. • Make sure spindles and all steering components turn freely. • Check for excessive play in steering assembly (see your dealer). • Ensure skags are straight on skis.
Front end pushes	• Check for worn skags. • Check for binding front suspension shafts and steering components, grease all pivot points (elevate front of snowmobile). • Increase IFS preload (if equipped).
Steering is heavy	• Make sure spindles and all steering components turn freely. • Check ski alignment. • Check skags and skis for damage.

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 OWNER CONNECTIONS

United States & Canada: 1-800-POLARIS (1-800-765-2747)

WARRANTY

LIMITED WARRANTY

Polaris Industries Inc., 2100 Highway 55, Medina, MN 55340 (POLARIS) gives a 12 MONTH LIMITED WARRANTY on all components of your POLARIS vehicle against defects in material or workmanship. This warranty covers parts and labor charges for repair or replacement of defective parts and begins on the date of purchase by the original retail purchaser. The duration of this warranty may vary by international region based upon local laws and regulations.

THIS WARRANTY MAY BE VOIDED BY ANY UNAPPROVED MODIFICATIONS TO THIS VEHICLE THAT ALTER, DAMAGE OR AFFECT POWERTRAIN, EXHAUST, CHASSIS OR SUSPENSION.

Promotional warranties are sometimes offered by POLARIS, including but not limited to:

- Two-year extended engine coverage
- Two-year powertrain coverage
- Extended service contract

See your authorized POLARIS dealer for details and separate terms and conditions for any promotional warranties.

REGISTRATION

At the time of sale, the Warranty Registration Form must be completed by your dealer and submitted to POLARIS within ten days of purchase. 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 your proof of warranty coverage. If you have not signed the original registration and received the customer copy, please contact your dealer immediately. Initial dealer preparation and set-up of your vehicle is very important in ensuring trouble-free operation.

WARRANTY COVERAGE AND EXCLUSIONS

LIMITATIONS OF WARRANTIES AND REMEDIES

This POLARIS Limited Warranty excludes any failures that are not caused by a defect in material or workmanship. THIS WARRANTY DOES NOT COVER CLAIMS OF DEFECTIVE DESIGN. This warranty also does not cover acts of God, accidental damage, normal wear and tear, abuse or improper handling. This warranty also does not cover damage to any vehicle, component or part as a result of being structurally altered, modified, neglected, improperly maintained or used for racing, competition or purposes other than for which it was designed.

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; 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.

This warranty excludes damages or failures caused by abuse, accident, fire or any other cause other than a defect in materials or workmanship and provides no coverage for consumable components, general wear items or any parts exposed to friction surfaces, stresses, environmental conditions and/or contamination for which they were not designed or not intended, including but not limited to the following items:

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	Spark Plugs
Sealants	Lubricants
Coolant	Filters
Fuel	

WARRANTY

LUBRICANTS AND FLUIDS

1. Mixing oil brands or using non-recommended oil may cause engine damage. We recommend the use of POLARIS engine oil.
2. Damage or failure resulting from the use of non-recommended lubricants or fluids is not covered by this warranty.

This warranty provides no coverage for personal loss or expense, including mileage, transportation costs, hotels, meals, shipping or handling fees, product pick-up or delivery, replacement rentals, loss of product use, loss of profits, or loss of vacation or personal time.

THE EXCLUSIVE REMEDY FOR BREACH OF THIS WARRANTY SHALL BE, AT POLARIS' OPTION, REPAIR OR REPLACEMENT OF ANY DEFECTIVE MATERIALS, 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.

THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS EXCLUDED FROM THIS LIMITED WARRANTY. ALL OTHER IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY) ARE LIMITED IN DURATION TO THE ABOVE 12 MONTH WARRANTY PERIOD. POLARIS DISCLAIMS ALL EXPRESS WARRANTIES NOT STATED IN THIS WARRANTY. SOME STATES DO NOT PERMIT THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR ALLOW LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU IF INCONSISTENT WITH CONTROLLING STATE LAW.

HOW TO OBTAIN WARRANTY SERVICE

You are responsible for presenting your vehicle to an authorized POLARIS Dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. However any damage caused to the product by you or any non-authorized third party may void this warranty. Warranty or Service Bulletin repairs must be done by an authorized POLARIS Dealer, or other qualified person authorized by POLARIS.

OUTSIDE THE COUNTRY WHERE YOUR PRODUCT WAS PURCHASED:

If you are traveling temporarily outside the country where your product was purchased, you should take your product 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. Product importation rules vary considerably from country to country. You may be required to present documentation of your move to POLARIS to continue your warranty coverage. You may also be required to obtain documentation from POLARIS to register your product in your new country. We recommend that you register your product at a local authorized POLARIS dealer promptly after you move.

IF YOU PURCHASE FROM A PRIVATE PARTY:

If you purchase a POLARIS product from a private party, to be kept and used outside of the country in which the product was originally purchased, all warranty coverage will be denied. However, we encourage you to register your product at a local authorized POLARIS dealer promptly to receive safety information and notice regarding your product.

WARRANTY

EXPORTED PRODUCTS

EXCEPT WHERE SPECIFICALLY REQUIRED BY LAW, THERE IS NO WARRANTY OR SERVICE BULLETIN COVERAGE ON THIS PRODUCT IF IT IS SOLD OUTSIDE THE COUNTRY OF THE SELLING DEALER'S AUTHORIZED LOCATION. This policy does not apply to products that have received authorization for export from POLARIS. Dealers may not give authorization for export. You should consult an authorized dealer to determine this product's warranty or service coverage if you have any questions. This policy does not apply to products 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.

NOTICE

If your product is registered outside of the country where it was purchased and you have not followed the procedure set above, your product will no longer be eligible for warranty or service bulletin coverage of any kind, other than safety bulletins. Products registered to Government officials or military personnel on assignment outside of the country where the product was purchased will continue to be covered by the Limited Warranty.

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

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state or in different countries. If any of the above terms are void because of federal, state, local law, all other warranty terms will remain in effect.

For questions call POLARIS Owner Connections:

United States & Canada: 1-800-POLARIS (1-800-765-2747)

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; 4,000 kilometers (2,485 miles) of vehicle travel; or 30 calendar months from the date of purchase, whichever comes first.

This Emissions Limited Warranty covers components if their failure increases the vehicle's regulated emissions, and it covers components of systems if their 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 if their 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
- Ignition system
- Fuel system
- Exhaust gas recirculation systems

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

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

WARRANTY

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.

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 damage to any engine as a result of being 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 POLARIS parts, however, equivalent parts may be used for such service. 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 POLARIS Owner Connections:

United States & Canada: 1-800-POLARIS (1-800-765-2747) or visit polaris.com.

MAINTENANCE LOG

MAINTENANCE LOG

Present this section of your manual to your authorized POLARIS 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)		

MAINTENANCE LOG

DATE	HOURS	TECHNICIAN	SERVICE PERFORMED / COMMENTS

12-Volt DC Power Receptacle	34
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