

## 2003 RECREATIONAL VEHICLE FUEL RECOMMENDATIONS

### ARTIC CAT

- *Snowmobile*

#### RECOMMENDED GASOLINE (Carbureted Models)

The recommended gasoline to use in these snowmobiles is 87 minimum octane regular unleaded. In many areas, oxygenates (either ethanol or MTBE) are added to the gasoline. Oxygenated gasolines containing up to 10% ethanol or up to 15% MTBE are acceptable gasolines; however, whenever using oxygenated gasolines, the carburetor main jet must be one size larger than the main jet required for regular unleaded gasoline. For example, if a 400 main jet is recommended for regular unleaded gasoline, a 410 main jet must be installed if using an oxygenated gasoline.

When using ethanol blended gasoline, it is not necessary to add a gasoline antifreeze since ethanol will prevent the accumulation of moisture in the fuel system

#### CAUTION

**Do not use white gas or gasolines containing methanol. Only Artic Cat approved gasoline additives should be used.**

#### RECOMMENDED GASOLINE (EFI Models)

**! NOTE: The 4-stroke models are not equipped with a fuel designation connector.**

The recommended gasoline to use in these snowmobiles is 87 minimum octane regular unleaded, and the Fuel Designation Connector at the ECU must be connected. In many areas, oxygenates (either ethanol or MTBE) are added to the gasoline. Oxygenated gasolines containing up to 10% ethanol or up to 15% MTBE are acceptable gasolines; however, if oxygenated gasoline is used, the fuel designation connector at the ECU must be disconnected. Do not use gasolines containing methanol.

#### CAUTION

**Do not use white gas or gasolines containing methanol. Only Artic Cat approved gasoline additives should be used.**

#### CAUTION

**If oxygenated gasoline is to be used, it is extremely important that the fuel designation connector at the ECU is disconnected. If the connector is not disconnected when using oxygenated gasoline, severe engine damage may occur.**

**! NOTE: In order for the ECU to change modes, the engine must be OFF when connecting or disconnecting the fuel designation connector.**

### BOMBARDIER

- *Quest All Terrain Vehicle (ATV)*

#### RECOMMENDED FUEL

Use regular unleaded gasoline or gasohol containing less than 10% of ethanol or methanol, available from most service stations. The gasoline used must have an octane number of 87(R + M)/2 or higher.

**NOTE:** In most service stations, pump octane number corresponds to (R + M)/2 octane number. Usually a sticker can be found on the pump.

**CAUTION: Never experiment with other fuels. The use of unrecommended fuel can result in watercraft performance deterioration and damage to critical parts in the fuel system and engine components.**

**CAUTION: Never mix oil with fuel. This ATV has a 4-stroke engine. Oil must be added to engine base only.**

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- **Seadoo 4TEC Jet Ski**

### RECOMMENDED FUEL

Use unleaded regular gasoline with a 87 octane (Ron + Mon)/2 specification.

**CAUTION: Never experiment with other fuels or fuel ratios. Never use fuel containing more than 10% alcohol, (ethanol or methanol). The use of non-recommended fuel can result in watercraft performance deterioration and damage to critical parts in the fuel system and engine components.**

- **Skidoo Snowmobile**

### RECOMMENDED FUEL

Use regular unleaded gasoline available from most service stations or oxygenated fuel containing less than 10% of ethanol or methanol. The gasoline used must have an octane number (R + M)/2 of 87 or higher.

**NOTE:** In most service stations, pump octane number corresponds to (R + M)/2 octane number.

**CAUTION: Never experiment with other fuels or fuel ratios. Never use fuel containing more than 10% alcohol, (ethanol or methanol). The use of non-recommended fuel can result in snowmobile performance deterioration and damage to critical parts in the fuel system and engine components. Do not mismatch oil reservoir cap with fuel tank cap. Oil reservoir cap is identified OIL.**

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## HONDA

- **Fourtrax, Foreman FM, TRX450FM All Terrain Vehicle (ATV)**

### FUEL RECOMMENDATIONS

Your engine is designed to use any gasoline that has a pump octane number of 86 or higher. (Gasoline pumps at service stations normally display the pump octane number.)

We recommend unleaded gasoline because it produces fewer engine and spark plug

deposits and extends the life of the exhaust system. Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

Using a lower octane than recommended can cause persistent "pinging" or heavy "spark knock" (a metallic rapping noise). If severe, these can lead to engine damage.

### CAUTION:

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, consult your authorized Honda dealer. Failure to do so is considered misuse, and damage caused by misuse is not covered by Honda's Limited Warranty.

### Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirements.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA approved percentages of oxygenates.

**ETHANOL** (ethyl or grain alcohol) 10% by volume

You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

**MTBE** (Methyl Tertiary Butyl Ether) 15% by volume

You may use gasoline containing up to 15% MTBE by volume.

**METHANOL** (methyl or wood alcohol) 5% by volume

## 2003 Recreational Vehicle Fuel Recommendations

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You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

- **AQUATRAX F-12/F-12X JET SKI**

### FUEL RECOMMENDATION

Type	Unleaded
Pump Octane Number	91 (or higher)

This marine engine is certified to operate on premium unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

Your engine is designed to use any gasoline that has a pump octane number of 91 or higher. (Gasoline pumps at service stations normally display the pump octane number.)

If you are unable to find premium unleaded gasoline, you may substitute an unleaded regular gasoline (minimum unleaded gasoline 86 pump octane or higher). However, keep the engine under 5,000 rpm, and substitute to unleaded premium gasoline as soon as possible.

Never use stale or contaminated gasoline. Avoid getting dirt, dust or water in the fuel tank.

### Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound.

These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions. If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

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### ETHANOL (ethyl or grain alcohol) 10% by Volume

You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

### MTBE (Methyl Tertiary Butyl Ether) 15% by Volume

You may use gasoline containing up to 15% MTBE by volume.

### METHANOL (methyl or wood alcohol) 5% by Volume

You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

Oxygenated fuels can damage paint and plastic. Be careful not to spill fuel when filling the fuel tank. Wipe up any spills immediately.

## 2003 Recreational Vehicle Fuel Recommendations

### NOTICE

Oxygenated fuels can damage paint and plastic. Damage caused by spilled fuel is not covered by warranty.

## KAWASAKI

- **Prairie All Terrain Vehicle (ATV)  
Model KVF300B1**

### FUEL REQUIREMENTS

#### Fuel Type

Use clean, fresh unleaded gasoline with a minimum Antiknock Index of 87. The Antiknock Index is posted on service station pumps in the U.S.A. The octane rating of a gasoline is a measure of its resistance to detonation or "knocking." The Antiknock Index is an average of the Research Octane Number (RON) and the Motor Octane Number (MON) as shown in the table below.

Octane Rating Method	Minimum Rating
(RON + MON) Antiknock Index ----- 2	87
Research Octane Number (RON)	91

### CAUTION

If engine "knocking" or "pinging" occurs, use a different brand of gasoline of a higher octane rating. If this condition is allowed to continue it can lead to severe engine damage.

Gasoline quality is important. Fuels of low quality or not meeting standard industry specifications may result in unsatisfactory performance. Operating problems that result from the use of poor quality or nonrecommended fuel may not be covered under your warranty.

### Fuels Containing Oxygenates

Gasoline frequently contains oxygenates (alcohols and ethers) especially in areas of the U.S. and Canada which are required to sell such reformulated fuels as part of a strategy to reduce exhaust emissions.

The types and volumes of fuel oxygenates approved for use in unleaded gasoline by the U.S. Environmental Protection Agency includes a broad range of alcohols and ethers, but only two components have seen any significant level of commercial use.

Gasoline/Alcohol Blends – Gasoline containing up to 10% ethanol (alcohol produced from agricultural products such as corn), also known as "Gasohol" is approved for use.

### CAUTION

**Avoid using blends of unleaded gasoline and methanol (wood alcohol) whenever possible, and never use "gasohol" containing more than 5% methanol. Fuel system damage and performance problems may result.**

Gasoline/Ether Blends – The most common ether is methyl tertiary butyl ether (MTBE). You may use gasoline containing up to 15% MTBE.

### NOTE

Other oxygenates approved for use in unleaded gasoline include TAME (up to 16.7%) and ETBE (up to 17.2%). Fuels containing these oxygenates can also be used in your Kawasaki.

### CAUTION

**Never use gasoline with an octane rating lower than the minimum specified by Kawasaki.**

**Never use "gasohol" with more than 10% ethanol, or more than 5% methanol. Gasoline containing methanol must also be blended with cosolvents and corrosion inhibitors.**

**Certain ingredients of gasoline may cause paint fading or damage. Be extra careful not to spill gasoline or gasoline oxygenate blends during refueling.**

## 2003 Recreational Vehicle Fuel Recommendations

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### CAUTION

When not operating your Kawasaki for 30 to 60 days, mix a fuel stabilizer (such as STABIL) with the gasoline in the fuel tank. Fuel stabilizer additives inhibit oxidation of the fuel and minimize gummy deposits.

Never store this product with "gasohol" in the fuel system. Before storage it is recommended that you drain all fuel from the fuel tank and carburetors. See the Storage section in this manual.

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## POLARIS

- *All Terrain Vehicle (ATV)*

### FUEL TANK

The fuel tank filler cap is located directly below the handlebar. Use either leaded or unleaded gasoline with a minimum pump octane number of 87 = (R+M/2) octane. Refer to your owner's manual supplement for tank capacity.

- *Personal Task Vehicle (PTV) 4x4 Series 10*

### SPECIFICATIONS

#### Carburetion

Fuel Octane (R+M/2).

87 Non-Oxygenated or 89 Oxygenated.

- *Utility Task Vehicle (UTV) 2x2, 4x4, 6x6 Series 11*

### FUEL CAP/FUEL GAUGE

The fuel tank filler cap is located on the right-hand side of the vehicle near the passenger seat. It has a built-in fuel gauge that indicates the amount of fuel remaining in the tank.

When the indicator needle nears the E (empty) mark, refuel at the earliest opportunity. When refueling, always use either leaded or unleaded gasoline with a minimum pump octane number of 87 (R+M/2) octane.

- *Jet Ski*

*Models: Freedom, Genesis, Virage*

### FUEL

#### CAUTION

Using a non-recommended fuel may cause serious engine damage. We recommend the use of 87 octane non-oxygenated or 89 oxygenated fuel only.

Your watercraft features an oil injection system, and it's not necessary to pre-mix the gasoline and oil, except during the engine break-in period.

#### Refueling

Use fresh, seasonal gasoline that has been stored in a clean container. For the best performance from gasoline, purchase only what is needed for a month or less of operation.

- *Snowmobile*

### FUEL

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

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

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

#### Premium Fuel Switch

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

When using fuels with a pump-posted octane rating of 91 or higher, turn the key switch to "ON/PREM." When the engine is started, a yellow "Premium Fuel" light

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illuminates on the instrument panel. When the key is in this position, the fuel *must* be a minimum of 91 octane.

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

### **CAUTION**

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

If you are uncertain about the quality or octane rating of the fuel you use, turn your key switch to "ON/REG." The Premium Fuel light will go out. This setting will adjust the timing of your engine to run on fuels with 87 octane or higher

### **Fuel System Deicers**

If you use non-oxygenated fuel, Polaris recommends the regular use of isopropyl-based fuel system deicers (Polaris PN 2870505). Add one to two ounces per gallon (8-16 milliliters per liter) of gasoline to prevent engine damage resulting from fuel system icing and lean fuel mixtures. *Never use deicers or additives containing methanol* If you use oxygenated fuel containing ethanol, additional alcohol deicers or water absorbing additives are not required and should not be used.

in your ATV without jeopardizing the New Vehicle Limited Warranty.

NOTE: Oxygenated fuels are fuels which contain oxygen-carrying additives such as MTBE or alcohol.

### **Gasoline containing MTBE**

Unleaded gasoline containing MTBE. (Methyl Tertiary Butyl Ether) may be used in your ATV if the MTBE content is not greater than 15%. This oxygenated fuel does not contain alcohol.

### **Gasoline/Ethanol Blends**

Blends of unleaded gasoline and ethanol (grain alcohol), also known as GASOHOL, may be used in your ATV if the ethanol content is not greater than 10%.

### **Gasoline/Methanol**

Fuel containing 5% or less methanol (wood alcohol) may be suitable for use in your ATV if they contain co-solvents and corrosion inhibitors. **DO NOT USE** fuels containing more than 5% methanol under any circumstances. Fuel system damage or ATV performance problems resulting from the use of such fuels are not the responsibility of Suzuki and may not be covered under the New Vehicle Limited Warranty.

### **Fuel Pump Labeling**

In some states, pumps that dispense oxygenated fuels are required to be labeled for the type and percentage of oxygen, and whether important additives are present. Such labels may provide enough information for you to determine if a particular blend of fuel meets the requirements listed above. In other states, pumps may not be clearly be labeled as to the content or type of oxygen and additives. If you are not sure that the fuel you intend to use meets these requirements, check with the service station operator or the fuel suppliers.

NOTE:

- *To help clean the air, Suzuki recommends that you use the oxygenated fuels.*

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## SUZUKI

- **QuadSport Z400 All Terrain Vehicle (ATV)**

### **FUEL AND ENGINE OIL RECOMMENDATIONS**

#### **FUEL**

Your vehicle requires regular unleaded gasoline with a minimum pump octane rating of 87 ((R+M)/2 method). In some areas, the only fuels that are available are oxygenated fuels.

Oxygenated fuels which meet the minimum octane rating requirement and the requirements described below may be used

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- *Be sure any oxygenated fuel you use has octane ratings of at least 87 pump octane ((R+M)/2 method).*
- *If you are not satisfied with the driveability or fuel economy of your ATV when you are using an oxygenated fuel, you should switch back to regular unleaded gasoline.*
- *If you are not satisfied with the driveability or fuel economy of your ATV when you are using an oxygenated fuel, or if engine pinging is experienced, substitute another brand as there are differences between brands.*

### CAUTION

**Spilled gasoline containing alcohol can harm your ATV.**

**Alcohol can damage painted surfaces.**

**Be careful not to spill any fluid when filling the fuel tank. Wipe spilled gasoline up immediately.**

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## YAMAHA

- **VT600 Snowmobile**

### FUEL

Recommended fuel  
Unleaded gasoline  
Pump octane  $\frac{R+M}{2}$ ; 88 or higher  
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### CAUTION

- **Oxygenated fuels (gasohol) containing a maximum 5% of ethanol can be used, although richer jetting may be required to prevent engine damage. Consult a Yamaha dealer. Gasohol containing methanol is not recommended.**
- **Make sure that snow or ice does not enter the fuel tank when refueling.**
- **Do not use alcohol deicers or water absorbing additives with oxygenated fuel.**
- **The fuel tank should be filled with straight gasoline as specified.**

- **FYMM400 ALL TERRAIN VEHICLE (ATV)**

### FUEL

#### Recommended Fuel

UNLEADED GASOLINE ONLY

### CAUTION

**Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to the engine internal parts such as valves, piston rings, exhaust system, etc.**

Your Yamaha engine has been designed to use regular unleaded gasoline that with a pump octane number (R+M/2) of 86 or higher, or research octane number of 91 or higher. If knocking or pinging occurs, use a different brand of gasoline or premium unleaded fuel. Unleaded fuel will give you longer spark plug life and reduced maintenance cost.

### Gasohol

There are two types of gasohol; gasohol containing ethanol and that containing methanol. Gasohol containing ethanol can be used if ethanol content does not exceed 10%. Gasohol containing methanol is not recommended by Yamaha because it may cause fuel system damage or fuel performance problems.