

ARCTIC CAT[®]

SERVICE MANUAL CD-ROM

2002



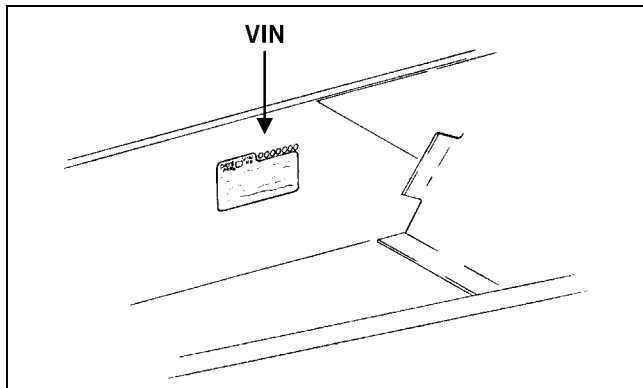
SECTION 1 — GENERAL INFORMATION

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Snowmobile Identification

The Arctic Cat Snowmobile has two important identification numbers. The Vehicle Identification Number (VIN) is stamped into the tunnel near the right-side footrest. The Engine Serial Number (ESN) is stamped into the crankcase of the engine.



0726-383

These numbers are required to complete warranty claims properly. No warranty will be allowed by Arctic Cat Inc. if the engine serial number or VIN is removed or mutilated in any way.

Recommended Gasoline and Oil

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.

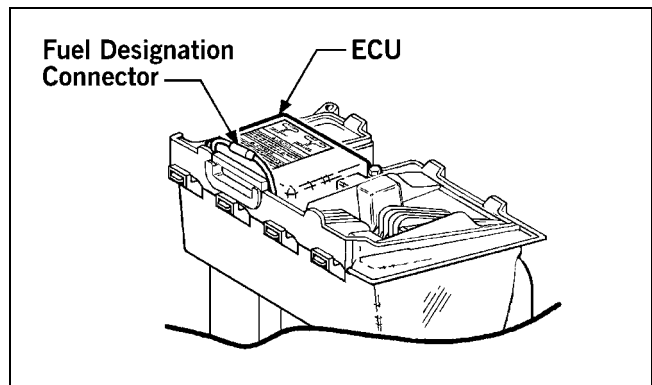
When using ethanol blended gasoline, it is not necessary to add a gasoline antifreeze since ethanol will prevent the accumulation of moisture in the fuel system.

⚠ CAUTION

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

RECOMMENDED GASOLINE (EFI Models)

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.



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⚠ CAUTION

Do not use white gas or gasoline containing methanol. Only Arctic 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.

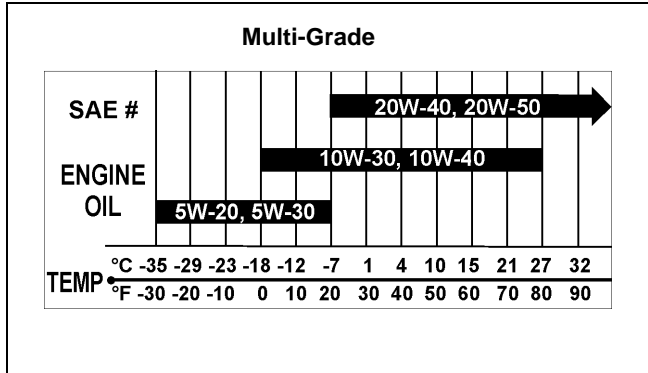
RECOMMENDED OIL (Oil-Injection System)

The recommended oil to use in the oil-injection system is Arctic Cat 50:1 Injection Oil (for standard models) or Arctic Cat Synthetic APV 2-Cycle Oil (for APV models). The oil is specially formulated to be used either as an injection oil or as a pre-mix oil (for carbureted model break-in) and meets all of the lubrication requirements of the Arctic Cat snowmobile engine.

RECOMMENDED OIL (4-Stroke Model)

The recommended oil to use is a multi-grade oil calibrated to the ambient temperature at which the engine is run. See the viscosity chart for details.

CAUTION
Any oil used in place of the recommended oil may cause serious damage.



GEN-0048

After the engine break-in period, the engine oil should be changed every 3500 miles (on the 4-Stroke Touring and Trail) and before prolonged storage.

Break-In Procedure (2-Stroke Models)

The Arctic Cat 2-stroke engine (when new or rebuilt) requires a short break-in period before the engine is subjected to heavy load conditions. Arctic Cat requires that the first tankful of fuel be premixed at a 100:1 ratio in all oil-injection models.

During the break-in period, a maximum of 1/2 throttle is recommended; however, brief full-throttle accelerations and variations in driving speeds contribute to good engine break-in.

CAUTION
DO NOT exceed the one (1) tankful limitation of a 100:1 gas/oil break-in mixture. Continuous use of a gas/oil mixture, unless consistently operating in extremely cold conditions (-26°C/-15°F or colder), could cause spark plug fouling and excessive carbon buildup. A 100:1 gas/oil mixture must be used in conjunction with the oil-injection system to ensure adequate engine lubrication in extremely cold conditions.

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Break-In Procedure (4-Stroke Model)

The Arctic Cat 4-stroke engine (when new or rebuilt) requires a short break-in period before the engine is subjected to heavy load conditions.

This engine does not require any pre-mixed fuel during the break-in period.

CAUTION
DO NOT use premixed fuel in the snowmobile gas tank. Engine damage will occur.

To ensure trouble-free operation, careful adherence to the following break-in guidelines will be beneficial.

0-200 miles	1/2 Throttle (45 MPH-max)
200-400 miles	1/2-3/4 Throttle
400-600 miles	1/2-3/4 Throttle *

* With occasional full-throttle operation.
To ensure proper engine break-in, Arctic Cat recommends that the engine oil and filter be changed after 600 miles or after one month, whichever comes first. This service is at the discretion and expense of the snowmobile owner.

Genuine Parts

When replacement of parts is necessary, use only genuine Arctic Cat parts. They are precision-made to ensure high quality and correct fit.

High Altitude Operation

Operating a snowmobile at varying altitudes requires changes in performance components. These changes affect drive train components (on all models) and carburetion components (on carbureted models).

A high altitude information decal is located beneath the hood of the snowmobile. On carbureted models, the information is incorporated into the Main Jet Chart decal.

 **CAUTION**

On carbureted models, carefully follow the Main Jet Chart recommendations for proper main jet selection for altitude, temperature, and gasoline being used.

A number of Arctic Cat snowmobiles are initially set up at the factory for operation between 5000-9000 feet. Consult the appropriate specifications for this information.

Drive Chain Lubrication (120 cc)

The drive chain should be lubricated every 20 operating hours with a dry, graphite-based chain lubricant. By using a dry, graphite-based chain lubricant, dirt buildup on the drive chain will be minimized. Before each lubrication, inspect the drive chain for dirt accumulation.

To lubricate the drive chain, shut the engine off and wait for all moving parts to stop, remove the drive chain guard and lubricate the drive chain. After lubricating the drive chain, install the drive chain guard.

If the drive chain is excessively dirty, it should be removed and cleaned prior to being lubricated (see Drive Chain and Sprockets in Section 8).

NOTE: If a dry, graphite-based chain lubricant is not available, lubricate the drive chain with several drops of petroleum-based oil. If the snowmobile is operated in the summer with the optional wheel kit, the drive chain should be lubricated more frequently.

Preparation For Storage

Prior to storing the snowmobile, it must be properly serviced to prevent corrosion and component deterioration. An authorized Arctic Cat Snowmobile dealer should perform this service; however, the owner/operator can perform this service if desired. To prepare the snowmobile for storage, Arctic Cat recommends the following procedure:

1. Clean the seat cushion with a damp cloth and Arctic Cat Vinyl Protectant (p/n 0638-313).
2. Clean the snowmobile thoroughly by hosing dirt, oil, grass, and other foreign matter from the skid frame, tunnel, hood, and belly pan. Allow the snowmobile to dry thoroughly. **DO NOT** get water into any part of the engine.

NOTE: Steps 3-7 are only for models with an oil-injection system.

3. Place the rear of the snowmobile up on a shielded safety stand.

NOTE: On some models, the air-intake silencer is a one-piece unit, and the silencer boot(s) can be removed to access the intake bore(s). Remove the boots; then proceed to step 7.

NOTE: On some models, the air-intake silencer includes a cover/tool tray assembly and a baffle/resonator, and the silencer boot cannot be removed to access the intake bores. Proceed to step 4.

4. Open the air-intake silencer cover; then remove the three screws securing the cover/tool tray assembly to the silencer.
5. Close the cover; then tip the cover/tool tray assembly forward and out of its slots and remove the assembly.
6. Using a large flat-blade screwdriver, remove the baffle/resonator tabs from the air-intake silencer slots and remove the baffle/resonator to access the intake bores.

■ **NOTE:** The baffle/resonator can be removed more easily by removing the back tabs first.

7. Start the engine and allow to idle. With the engine idling, spray Arctic Cat Engine Storage Preserver (p/n 0636-177) into the intake(s) until the engine exhaust starts to smoke heavily or until the engine starts to drop in RPM. Turn engine off.

■ **NOTE:** On some models, install the air-intake silencer boot(s); on some models, install the baffle/resonator and the cover/tool tray assembly.

8. Plug the exhaust system outlet with a clean cloth.

 **CAUTION**

Do not do step 9 on the 4-stroke model; severe engine damage could result.

9. With the ignition switch in the OFF position:
 - A. Disconnect the high tension lead(s) from the spark plug(s); then remove the plug(s), connect it/them to the lead(s), and ground it/them on the cylinder head(s).

 **CAUTION**

Never crank the engine over without grounding the spark plug(s). Damage to coils and/or CDI unit may result.

- B. Pour 29.5 ml (1 fl oz) of SAE #30 petroleum-based oil into each spark plug hole and pull the recoil starter handle slowly about 10 times.
 - C. Install the spark plug(s) and connect the high tension lead(s).
10. On the 4-stroke model, change the engine oil; then clean the air filter.
11. On carbureted models, drain the gas from each carburetor float chamber.
12. Fill the gas tank to its rated capacity; then add Arctic Cat Fuel Stabilizer (p/n 0638-165) to the gas tank following directions on the container for the stabilizer/gasoline ratio. Tighten the gas tank cap securely.
13. If applicable, drain the chain-case lubricant by removing the chain-case drain plug located on the backside of the chain-case assembly. Remove the chain-case cover and inspect chain, sprockets, chain tensioner, and rollers for wear and the chain for proper tension. Install the drain plug, chain-case cover, and seal; then pour Arctic Cat Transmission Lube (p/n 0636-817) into the filler hole according to appropriate specifications.

14. Clean and inspect the drive clutch and driven pulley.
15. If applicable, remove the drive belt from the drive clutch/driven pulley. Lay the belt on a flat surface or slide it into a cardboard sleeve to prevent warping or distortion during storage; then clean and inspect the drive clutch and driven pulley.
16. Apply light oil to the upper steering post bushing, ski spindles and bolts, front and rear pivot bushings of the skid frame, and plungers of the shock absorbers.
17. Lubricate all grease fittings (front and rear suspension, spindles, speedometer drive adapter, and the driven shaft support bearing) with a low-temperature grease.
18. Tighten all nuts, bolts, and cap screws making sure all calibrated nuts, bolts, and cap screws are tightened to specifications. Make sure all rivets holding the components together are tight. Replace all loose rivets.
19. Clean and polish the hood, console, and chassis with Arctic Cat Hood and Windshield Cleaner/Polish (p/n 0636-174). **DO NOT USE SOLVENTS OR SPRAY CLEANERS. THE PROPPELLENT WILL DAMAGE THE FINISH.**
20. On electric start models, disconnect the battery cables making sure to disconnect the negative cable first; then clean the battery posts and cables.
21. If possible, store the snowmobile indoors. Raise the track off the floor by blocking up the back end making sure the snowmobile is secure. Loosen the track adjusting bolts to reduce track tension. Cover the snowmobile with a machine cover or a heavy tarpaulin to protect it from dirt and dust.
22. If the snowmobile must be stored outdoors, position the snowmobile out of direct sunlight; then block the entire snowmobile off the ground making sure the snowmobile is secure. Loosen the track adjusting bolts to reduce track tension. Cover with a machine cover or a heavy tarpaulin to protect it from dirt, dust, and rain.

 **CAUTION**

Avoid storing in direct sunlight and using a plastic cover as moisture may collect on the snowmobile causing corrosion.

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