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## FOREWORD

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This Arctic Cat Service Manual contains service and maintenance information for the Model Year 2007 Arctic Cat 4-Stroke Snowmobiles. The manual is designed to aid service personnel in service-oriented applications.

This manual is divided into sections. The sections cover specific snowmobile components or systems and, in addition to the standard service procedures, includes assembling, disassembling, and inspecting instructions. When using this manual as a guide, the technician should use discretion as to how much disassembly is needed to correct any given condition.

The service technician should become familiar with the operation and construction of the components or systems by carefully studying the complete manual. This will assist the service technician in becoming more aware of and efficient with servicing procedures. Such efficiency not only helps build consumer confidence but also saves time and labor.

All Arctic Cat publications and snowmobile decals display the words Warning, Caution, and Note to emphasize important information. The symbol  **WARNING** identifies personal safety-related information. Be sure to follow the directive because it deals with the possibility of severe personal injury or even death. The symbol  **CAUTION** identifies unsafe practices which may result in snowmobile-related damage. Follow the directive because it deals with the possibility of damaging part or parts of the snowmobile. The symbol  **NOTE:** identifies supplementary information worthy of particular attention.

At the time of publication, all information, photographs, and illustrations were technically correct. Some photographs and illustrations used in this manual are used for clarity purposes only and are not designed to depict actual conditions. Because Arctic Cat Inc. constantly refines and improves its products, no retroactive obligation is incurred.

All materials and specifications are subject to change without notice.

Keep this manual accessible in the shop area for reference.

**Product Service and Warranty Department**  
**Arctic Cat Inc.**

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## Foreword

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# SECTION 1 — GENERAL INFORMATION

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## General Specifications

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■ **NOTE:** General specifications for each 2007 Arctic Cat Snowmobile can be accessed from the Arctic Cat Dealer Communication System on-line.

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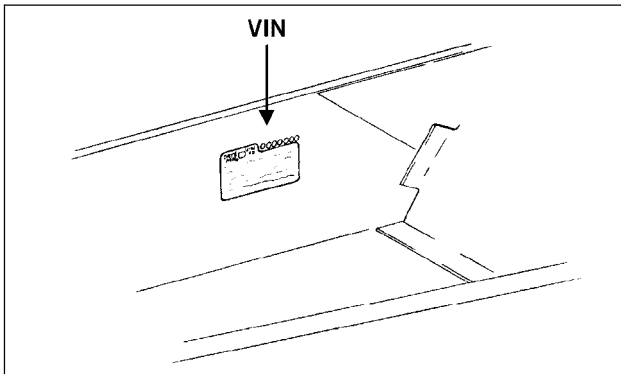
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## Snowmobile Identification

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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.

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## Recommended Gasoline and Oil

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### RECOMMENDED GASOLINE

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. Do not use gasolines containing methanol.

**⚠ CAUTION**

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

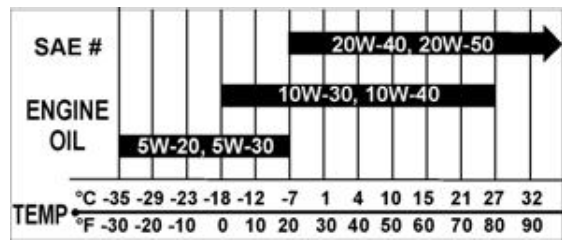
### RECOMMENDED OIL (120 cc)

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

**⚠ CAUTION**

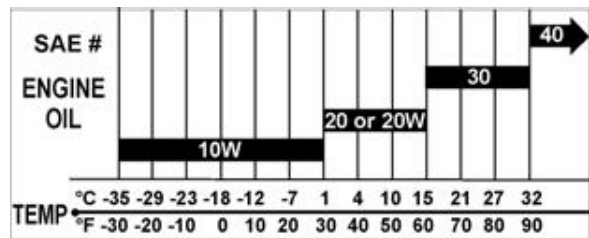
Any oil used in place of the recommended oil may cause serious damage.

#### Multi-Grade



GEN-0048

#### Single-Grade



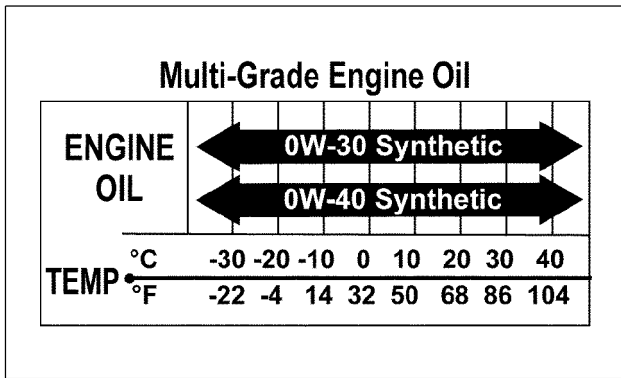
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### RECOMMENDED OIL (660 cc/1100 cc Z1)

The recommended oil to use is 0W-30 for the 660 cc non-turbo models in all temperatures and conditions and Synthetic Turbo 0W-40 Oil (p/n 3639-510) for the 660 cc turbo models and the 1100 cc Z1 model in all temperatures and conditions.

**⚠ CAUTION**

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



OILCHART F

After the engine break-in period, the engine oil should be changed every 2500-3000 miles on the 660 cc non-turbo models and the 1100 cc Z1 model and every 2000 miles on the 660 cc turbo models and before prolonged storage.

## Break-In Procedure

### 660 cc/1100 cc Z1 MODELS

The Arctic Cat 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 500 miles or after one month, whichever comes first. This service is at the discretion and expense of the snowmobile owner.

### 120 cc MODEL

The Arctic Cat engine requires a short break-in period (approximately 10 operating hours) before being subjected to heavy load conditions or full-throttle operation. Strict adherence to the break-in procedure will contribute to optimum performance and longevity of the engine.

During break-in, a maximum of 1/2 throttle is recommended; however, brief full-throttle accelerations and variations in driving speeds contribute to good engine break-in. After the 10 hour break-in period, the snowmobile may be taken to an authorized Arctic Cat Snowmobile dealer for a checkup and oil change. 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 (660 cc/1100 cc Z1)

Operating a snowmobile at varying altitudes requires changes in performance components. These changes affect drive train components.

A high altitude information decal is located beneath the hood of the snowmobile.

## Drive Chain Lubrication (120 cc Model)

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).

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■ **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.

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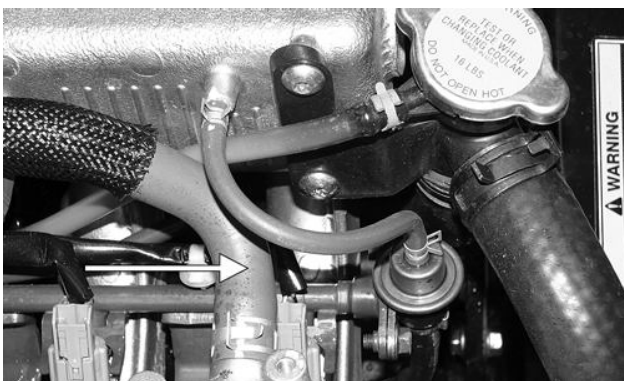
## Tipped Snowmobile (660 cc Models)

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Tipping the snowmobile on its side is sometimes desirable for maintenance purposes; however, on a 660 cc model, Arctic Cat recommends **NOT TIPPING IT ON ITS SIDE IN EXCESS OF A 70° ANGLE.**

**⚠ CAUTION**

If a 660 cc model must be tipped in excess of a 70° angle for servicing purposes, use a suitable clamping device to clamp off the oil hose next to the valve cover inlet to prevent oil from seeping into the upper engine through the air-intake system. Severe engine damage could result if the engine is run with oil in the upper engine. Care must be taken to remove the clamping device after servicing.



CM118A

If a 660 cc model is tipped on its side in excess of a 70° angle or if it has been upside down at all, return the snowmobile to the upright position and use the following procedure:

1. With the ignition switch in the OFF position, remove the engine to air silencer hose at the engine. If oil is present, proceed to step 2. If no oil is present, install the hose and start the engine.
2. Remove the air silencer from the engine. If oil is present in the air silencer, proceed to step 3. If no oil is present, install the air silencer and the engine to air silencer hose; then start the engine.

■ **NOTE:** Prior to doing step 3, clean the air silencer thoroughly.

3. Remove the coil cover; then unplug and remove the coils.
4. Remove the spark plugs from the engine and cover the spark plug holes with a rag. With the emergency stop button in the down (OFF) position, turn the ignition switch to the START position.
5. Allow the engine to turn over for approximately 10 seconds. If oil was noted coming from the spark plug holes during this procedure, repeat the process until all oil has been discharged from the cylinders.
6. Install the spark plugs, coils, and coil cover; then install the air silencer and the engine to air silencer hose.

■ **NOTE:** The engine should now be safe to operate.

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## Low Oil Pressure Warning Light (660 cc/1100 cc Z1 Models)

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The Low Oil Pressure Warning Light indicates engine oil pressure, not the oil level; however, if the oil level is low, it may affect oil pressure. The light should illuminate each time the ignition switch is turned to RUN or START, and it should go out when the engine starts. If the light stays illuminated or it illuminates while the engine is running, oil pressure has been lost and the engine will automatically shut off.

■ **NOTE:** The following oil check procedures are valid only if the oil pressure warning light has activated.

If oil pressure is lost on a 660 cc model, use the following procedure:

1. Check the oil level.

■ **NOTE:** To ensure an accurate reading, the snowmobile should be on level ground.

2. If the oil level is below the lower hole in the oil level stick, add only enough recommended oil to raise the level between the upper and lower holes. DO NOT overfill the crankcase with oil.

If oil pressure is lost on a 1100 cc Z1 model, use the following procedure:

1. With the engine off, remove the engine oil level stick and wipe it clean. Without screwing it in, set the stick back in the oil tank. Remove it and observe the oil level on the stick.

■ **NOTE:** To ensure an accurate reading, the snowmobile should be on level ground.

2. If the oil level is at or below the ADD mark on the oil level stick, add only enough recommended oil to raise the level to the NORMAL range. DO NOT overfill the reservoir with oil.
3. After adding oil if the engine starts, oil pressure should be normal.

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## Check Engine Light (660 cc/1100 cc Z1 Models)

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The Check Engine Light is controlled by the ECU and may illuminate for a number of reasons. The light should illuminate each time the key is turned to RUN or START, and it should go out when the engine starts. If the light stays illuminated or it illuminates while the engine is running, the ECU is receiving input that is outside of its established parameters.

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## Diagnostic Codes/ Check Engine (660 cc Models)

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These diagnostic codes are flashed by the check engine light incorporated within the speedometer/tachometer (T660 models) or within the gauge hole plate (Bearcat Wide Track/Panther 660 models). Refer to the following chart for diagnostic code sequences.

■ **NOTE:** On these double-digit codes (1-1, 1-3, etc.), the first number indicated will flash in an uninterrupted sequence, there will be a short pause, and the second number indicated will flash in an uninterrupted sequence.

Number of Flashes	Trouble
1-1 (Check Engine Light)	Open or short circuit in manifold air pressure sensor.
1-3 (Check Engine Light)	Open or short circuit in throttle position sensor.
1-4 (Check Engine Light)	Failure in oxygen sensor.
1-5 (Check Engine Light)	Failure in crankshaft position sensor.
1-6 (Check Engine Light)	Failure in speed sensor.
1-7 (Check Engine Light)	Open or short circuit in knock sensor.
1-8 (Check Engine Light)	Open or short circuit in intake manifold air temperature sensor.

Number of Flashes	Trouble
1-9 (Check Engine Light)	Open or short circuit in water temperature sensor.
2-7 (Check Engine Light)	Failure in coil.
2-9 (Check Engine Light)	Failure in barometric pressure sensor.

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## Diagnostic Codes/ Check Engine (1100 cc Z1)

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These diagnostic codes are flashed by the check engine light incorporated within the speedometer/tachometer. Refer to the following chart for diagnostic code sequences.

■ **NOTE:** On single-digit codes (2, 3, etc.), the number indicated will flash in an uninterrupted sequence. On double-digit codes (1-1, 1-2, etc.), the first number indicated will flash in an uninterrupted sequence, there will be a short pause, and the second number indicated will flash in an uninterrupted sequence.

Number of Flashes	Trouble
1 (Check Engine Light)	Failure in the fuel system.
1-1 (Check Engine Light)	Failure in speed sensor.
1-2 (Check Engine Light)	Failure in coil (#1).
1-3 (Check Engine Light)	Failure in coil (#2).
1-4 (Check Engine Light)	Failure in ISC valve.
1-5 (Check Engine Light)	Failure in oxygen sensor.
1-9 (Check Engine Light)	Failure in camshaft position sensor.
2 (Check Engine Light)	Failure in injector (#2).
3 (Check Engine Light)	Failure in injector (#1).
4 (Check Engine Light)	Failure in barometric pressure sensor.
5 (Check Engine Light)	Open or short circuit in intake manifold air temperature sensor.
6 (Check Engine Light)	Open or short circuit in water temperature sensor.
7 (Check Engine Light)	Open or short circuit in throttle position sensor.
8 (Check Engine Light)	Open or short circuit in manifold air pressure sensor.
9 (Check Engine Light)	Failure in crankshaft position sensor.

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## Chassis Control Unit (1100 cc Z1)

The Chassis Control Icon may illuminate for a number of reasons. The light should illuminate each time the key is turned to RUN or START, and it should go out when the engine starts. If the light stays illuminated or it illuminates while the engine is running, the CCU is receiving input that is outside of its established parameters.

## Diagnostic Codes/ Chassis Control Unit (1100 cc Z1)

These diagnostic codes are flashed by the wrench icon light incorporated within the speedometer/tachometer. Refer to the following chart for diagnostic code sequences.

■ **NOTE:** On these double-digit codes (3-1, 3-2, etc.), the first number indicated will flash in an uninterrupted sequence, there will be a short pause, and the second number indicated will flash in an uninterrupted sequence.

Number of Flashes	Trouble
3-1 (CCU Icon)	Stator failure (input open or shorted).
3-2 (CCU Icon)	High power DC output deactivated (output over current).
3-3 (CCU Icon)	High power DC output shorted (output above 80 amps).
3-4 (CCU Icon)	Low power DC output deactivated (output over current).
3-5 (CCU Icon)	Low power DC output shorted (output above 80 amps).
3-6 (CCU Icon)	System under voltage (below 11 volts).
3-7 (CCU Icon)	System over voltage. (above 15.5 volts).
3-8 (CCU Icon)	Gear shift actuator failure (over current or over temperature).
3-9 (CCU Icon)	Spare output over current (limited to 10 amps).
4-2 (CCU Icon)	Tachometer input failure (engine running - no tachometer signal present).
4-3 (CCU Icon)	Gear position switch failure (did not change - no (or invalid) position input).
4-4 (CCU Icon)	CCU over temperature (above 40° C - 104° F).

## 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.
  3. Change the engine oil; then clean the air filter.
  4. Plug the exhaust system outlet with a clean cloth.
  5. Fill the gas tank to its rated capacity; then add Arctic Cat Fuel Stabilizer (p/n 4639-907) to the gas tank following directions on the container for the stabilizer/gasoline ratio. Tighten the gas tank cap securely.
  6. On 1100 cc Z1 model, change the gear case lubricant (see Section 8).
  7. On 660 cc models, 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 4639-364) into the filler hole according to appropriate specifications.
  8. 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.
- **NOTE:** For removing drive belt on models with the ACT Roller Driven Pulley, see **Removing/Installing Drive Belt (ACT Roller Driven Pulley)** in Section 8 of this manual.
9. Apply light oil to the upper steering post bushing, ski spindles and bolts, front and rear pivot bushings of the skid frame, and rods of the shock absorbers.



10. Lubricate all grease fittings (front and rear suspension and spindles, speedometer drive adapter, and the driven shaft support bearing) with a low-temperature grease.
11. 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.
12. 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 PROPPELLANT WILL DAMAGE THE FINISH.
13. Disconnect the battery cables making sure to disconnect the negative cable first; then clean the battery posts and cables.
14. 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, ventilated tarpaulin to protect it from dirt and dust.
15. 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, ventilated 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.

## Preparation After Storage

Taking the snowmobile out of storage and correctly preparing it for another season will assure many miles and hours of trouble-free snowmobiling. Arctic Cat recommends the following procedure:

1. Clean the snowmobile thoroughly. Polish the exterior of the snowmobile.

2. Clean the engine. Remove the cloth from the exhaust system. Check exhaust system and air-intake silencer/air filter for obstructions.
3. Inspect all control wires and cables for signs of wear or fraying. Replace if necessary. Use cable ties or tape to route wires and cables away from hot or rotating parts.
4. Remove and inspect the drive belt for cracks and tears. Check belt specifications. Replace if damaged or worn. Install the drive belt.

■ **NOTE: For removing drive belt on models with the ACT Roller Driven Pulley, see Removing/Installing Drive Belt (ACT Roller Driven Pulley) in Section 8 of this manual.**

■ **NOTE: If the old belt is worn but in reasonable condition, retain it with the snowmobile as a spare in case of emergency.**

5. Inspect all fuel hoses and oil hoses for deterioration or cracks; replace if necessary. Make sure all connections are tight.
6. Inspect the entire brake system, all controls, headlight, taillight, brakelight, ski wear bars, and headlight aim; adjust or replace as necessary.
7. On the 120 cc, inspect each spark plug. Replace, gap, or clean as necessary.
8. Adjust the track to the proper tension and alignment. Lock the jam nuts.
9. Tighten all nuts, bolts, and cap screws making sure all calibrated nuts, bolts, and cap screws are tightened to specifications.
10. An the 120 cc, inspect the drive chain and drive chain tightener. Replace if necessary; then lubricate the binding screw drum with WD-40 and the drive chain with a dry, graphite-based chain lubricant.
11. Lubricate all grease fittings (front and rear suspension and spindles, speedometer drive adapter, and the driven shaft support bearing) with a low-temperature grease.
12. Check the coolant level and all coolant hoses and connections for deterioration or cracks. Add properly mixed coolant as necessary.
13. Charge the battery; then connect the battery cables making sure to connect the positive cable first. Test the electric start system.

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## After Break-In Checkup (500 Miles)

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The 500 mile checkup offered by some dealerships reduces problems and warranty costs. A program of this kind should be offered by all dealerships. Many dealerships have added the price of the checkup into the selling price of the snowmobile, and others offer it as a bonus to the customers who purchase snowmobiles from their dealership.

There are three areas that require adjustment after the break-in period in order to obtain peak performance. These areas are the following.

- A. Drive belt deflection/Break-in (660 cc/1100 cc Z1 Models)
- B. Track tension and alignment

**DRIVE BELT DEFLECTION** — Drive belt deflection is very important to the snowmobile. Even if it is checked and is correct when the snowmobile is set up, it does change (more so during the break-in period). This is because the rubber engine mounts will all take a “set” during the first 100 miles, which allows the distance between the drive clutch and driven pulley to shorten. When this happens, the snowmobile will appear to have a too long drive belt. To add to this, the drive belt itself wears and stretches somewhat. This all leads to a low-end performance problem and, if not corrected, causes premature drive belt wear.

After the break-in period, drive belt deflection should be checked according to the instructions given in Section 8 of this manual.

**DRIVE BELT BREAK-IN** — It is critical for maximum drive belt life to allow the belt to break in before subjecting it to hard use such as wide-open-throttle operation or hill climbing.

The first 20 miles on the drive belt should be at 1/2 throttle or lower. This will allow the belt to cure totally before it is subjected to hard use.

If this procedure isn't followed, it is possible to destroy a new drive belt in less than 50 miles. This should be explained to customers at the time of drive belt sales.

To increase the life of a drive belt, it is very important that the belt be warmed up before subjecting it to any type of use. In cold temperature (0° or below), the engine should be allowed to idle for a period of 8 to 10 minutes. This will allow heat from the engine compartment to soften the drive belt. Not only will this procedure increase belt life but will also help prevent engine damage from cold seizure.

### **WARNING**

**When following the above procedure, the operator must not leave the snowmobile unattended during the warm-up period.**

Each operator should be instructed to drive the snowmobile for several minutes at a low throttle setting to warm the belt up before using wide-open-throttle. This practice should be followed on all models for maximum belt life.

**TRACK TENSION AND ALIGNMENT** — There is a certain amount of stretch on all tracks during the first 500 miles. The track must be adjusted after the first 50 to 100 miles to the specifications given in the Setup and Pre-delivery Manual and periodically thereafter. If these adjustments aren't performed, the track may “derail” which leads to track and slide rail damage.

Along with these three major areas, there are also other areas that should be checked and adjusted during the “After Break-In Checkup.” A checklist to assist you with this service follows. Not only will the customer be happier, but it also gets the customer back into your dealership, which in many cases will mean additional sales in accessories, belts, oil, etc.

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## **After Break-In Checkup Checklist**

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Below is a recommended list of items to check after the break-in period. By performing this inspection, warranty cost can be reduced and customer satisfaction can be increased.

The recommended mileage for this inspection is between 100 and 300 miles. Please encourage the customers to have this important checkup done.

- Adjust drive belt deflection
- Adjust track tension and alignment
- Adjust throttle cable tension
- Check engine idle
- Check coolant level
- Check chain case/gear case lubricant level
- Check engine oil level
- Check lights (high/low beam, brakelight)
- Check safety switch operation
- Check engine area for any rubbing components (hoses, electrical)
- Check steering hardware for tightness
- Check skid frame and A-arm mounting hardware for tightness
- Check brake lever travel and adjustment
- Grease all lubrication points

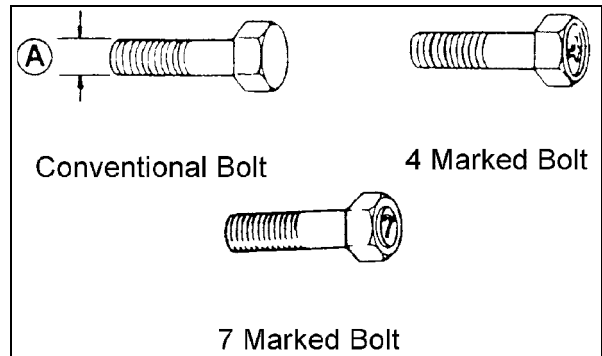
# Torque Conversions

kg-m x 7.235 = ft-lb  
ft-lb x 0.1383 = kg-m

ft-lb	kg-m	ft-lb	kg-m	ft-lb	kg-m	ft-lb	kg-m	ft-lb	kg-m
1	0.1	21	2.9	41	5.7	61	8.4	81	11.2
2	0.3	22	3.0	42	5.8	62	8.6	82	11.3
3	0.4	23	3.2	43	5.8	63	8.7	83	11.5
4	0.6	24	3.3	44	6.1	64	8.9	84	11.6
5	0.7	25	3.5	45	6.2	65	9.0	85	11.8
6	0.8	26	3.6	46	6.4	66	9.1	86	11.9
7	1.0	27	3.7	47	6.5	67	9.3	87	12.0
8	1.1	28	3.9	48	6.6	68	9.4	88	12.2
9	1.2	29	4.0	49	6.8	69	9.5	89	12.3
10	1.4	30	4.2	50	6.9	70	9.7	90	12.5
11	1.5	31	4.3	51	7.1	71	9.8	91	12.6
12	1.7	32	4.4	52	7.2	72	10.0	92	12.8
13	1.8	33	4.6	53	7.3	73	10.1	93	12.9
14	1.9	34	4.7	54	7.5	74	10.2	94	13.0
15	2.1	35	4.8	55	7.6	75	10.4	95	13.1
16	2.2	36	5.0	56	7.7	76	10.5	96	13.3
17	2.4	37	5.1	57	7.9	77	10.7	97	13.4
18	2.5	38	5.3	58	8.0	78	10.8	98	13.6
19	2.6	39	5.4	59	8.2	79	10.9	99	13.7
20	2.8	40	5.5	60	8.3	80	11.1	100	13.8

## Tightening Torque (General Bolts)

Type of Bolt	Thread Diameter A (mm)	Tightening Torque	
		kg-m	ft-lb
(Conventional or 4 Marked Bolt)	5	0.2-0.4	1.5-3.0
	6	1.0-1.1	7.0-8.0
	8	1.0-1.6	7.0-11.5
	10	2.2-3.5	16.0-25.5
(7 Marked Bolt)	5	0.3-0.6	2.0-4.5
	6	0.8-1.2	6.0-8.5
	8	1.8-2.8	13.0-20.0
	10	4.0-6.0	29.0-43.5



## Fraction/Decimal Conversion Chart

8ths	16ths	32nds	64ths	64ths (cont)
1/8 = .125	1/16 = .0625	1/32 = .03125	1/64 = .015625	33/64 = .515625
1/4 = .250	3/16 = .1875	3/32 = .09375	3/64 = .046875	35/64 = .546875
3/8 = .375	5/16 = .3125	5/32 = .15625	5/64 = .078125	37/64 = .578125
1/2 = .500	7/16 = .4375	7/32 = .21875	7/64 = .109375	39/64 = .609375
5/8 = .625	9/16 = .5625	9/32 = .28125	9/64 = .140625	41/64 = .640625
3/4 = .750	11/16 = .6875	11/32 = .34375	11/64 = .171875	43/64 = .671875
7/8 = .875	13/16 = .8125	13/32 = .40625	13/64 = .203125	45/64 = .703125
—	15/16 = .9375	15/32 = .46875	15/64 = .234375	47/64 = .734375
—	—	17/32 = .53125	17/64 = .265625	49/64 = .765625
—	—	19/32 = .59375	19/64 = .296875	51/64 = .796875
—	—	21/32 = .65625	21/64 = .328125	53/64 = .828125
—	—	23/32 = .71875	23/64 = .359375	55/64 = .859375
—	—	25/32 = .78125	25/64 = .390625	57/64 = .890625
—	—	27/32 = .84375	27/64 = .421875	59/64 = .921875
—	—	29/32 = .90625	29/64 = .453125	61/64 = .953125
—	—	31/32 = .96875	31/64 = .484375	63/64 = .984375

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## Drill Bit Sizes (Number) Chart

No.	Size of Drill in Inches	No.	Size of Drill in Inches	No.	Size of Drill in Inches	No.	Size of Drill in Inches
1	.2280	21	.1590	41	.0960	61	.0390
2	.2210	22	.1570	42	.0935	62	.0380
3	.2130	23	.1540	43	.0890	63	.0370
4	.2090	24	.1520	44	.0860	64	.0360
5	.2055	25	.1495	45	.0820	65	.0350
6	.2040	26	.1470	46	.0810	66	.0330
7	.2010	27	.1440	47	.0785	67	.0320
8	.1990	28	.1405	48	.0760	68	.0310
9	.1960	29	.1360	49	.0730	69	.0292
10	.1935	30	.1285	50	.0700	70	.0280
11	.1910	31	.1200	51	.0670	71	.0260
12	.1890	32	.1160	52	.0635	72	.0250
13	.1850	33	.1130	53	.0595	73	.0240
14	.1820	34	.1110	54	.0550	74	.0225
15	.1800	35	.1100	55	.0520	75	.0210
16	.1770	36	.1065	56	.0465	76	.0200
17	.1730	37	.1040	57	.0430	77	.0180
18	.1695	38	.1015	58	.0420	78	.0160
19	.1660	39	.0995	59	.0410	79	.0145
20	.1610	40	.0980	60	.0400	80	.0135

## MM/IN. Conversion Chart

mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
.01	.00039	.41	.01614	.81	.03189	21	.82677	61	2.40157
.02	.00079	.42	.01654	.82	.03228	22	.86614	62	2.44094
.03	.00118	.43	.01693	.83	.03268	23	.90551	63	2.48031
.04	.00157	.44	.01732	.84	.03307	24	.94488	64	2.51968
.05	.00197	.45	.01772	.85	.03346	25	.98425	65	2.55905
.06	.00236	.46	.01811	.86	.03386	26	1.02362	66	2.59842
.07	.00276	.47	.01850	.87	.03425	27	1.06299	67	2.63779
.08	.00315	.48	.01890	.88	.03465	28	1.10236	68	2.67716
.09	.00354	.49	.01929	.89	.03504	29	1.14173	69	2.71653
.10	.00394	.50	.01969	.90	.03543	30	1.18110	70	2.75590
.11	.00433	.51	.02008	.91	.03583	31	1.22047	71	2.79527
.12	.00472	.52	.02047	.92	.03622	32	1.25984	72	2.83464
.13	.00512	.53	.02087	.93	.03661	33	1.29921	73	2.87401
.14	.00551	.54	.02126	.94	.03701	34	1.33858	74	2.91338
.15	.00591	.55	.02165	.95	.03740	35	1.37795	75	2.95275
.16	.00630	.56	.02205	.96	.03780	36	1.41732	76	2.99212
.17	.00669	.57	.02244	.97	.03819	37	1.45669	77	3.03149
.18	.00709	.58	.02283	.98	.03858	38	1.49606	78	3.07086
.19	.00748	.59	.02323	.99	.03898	39	1.53543	79	3.11023
.20	.00787	.60	.02362	1.0	.03937	40	1.57480	80	3.14960
.21	.00827	.61	.02402	1	.03937	41	1.61417	81	3.18897
.22	.00866	.62	.02441	2	.07874	42	1.65354	82	3.22834
.23	.00906	.63	.02480	3	.11811	43	1.69291	83	3.26771
.24	.00945	.64	.02520	4	.15748	44	1.73228	84	3.30708
.25	.00984	.65	.02559	5	.19685	45	1.77165	85	3.34645
.26	.01024	.66	.02598	6	.23622	46	1.81102	86	3.38582
.27	.01063	.67	.02638	7	.27559	47	1.85039	87	3.42519
.28	.01102	.68	.02677	8	.31496	48	1.88976	88	3.46456
.29	.01142	.69	.02717	9	.35433	49	1.92913	89	3.50393
.30	.01181	.70	.02756	10	.39370	50	1.96850	90	3.54330
.31	.01220	.71	.02795	11	.43307	51	2.00787	91	3.58267
.32	.01260	.72	.02835	12	.47244	52	2.04724	92	3.62204
.33	.01299	.73	.02874	13	.51181	53	2.08661	93	3.66141
.34	.01339	.74	.02913	14	.55118	54	2.12598	94	3.70078
.35	.01378	.75	.02953	15	.59055	55	2.16535	95	3.74015
.36	.01417	.76	.02992	16	.62992	56	2.20472	96	3.77952
.37	.01457	.77	.03032	17	.66929	57	2.24409	97	3.81889
.38	.01496	.78	.03071	18	.70866	58	2.28346	98	3.85826
.39	.01535	.79	.03110	19	.74803	59	2.32283	99	3.89763
.40	.01575	.80	.03150	20	.78740	60	2.36220	100	3.93700

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