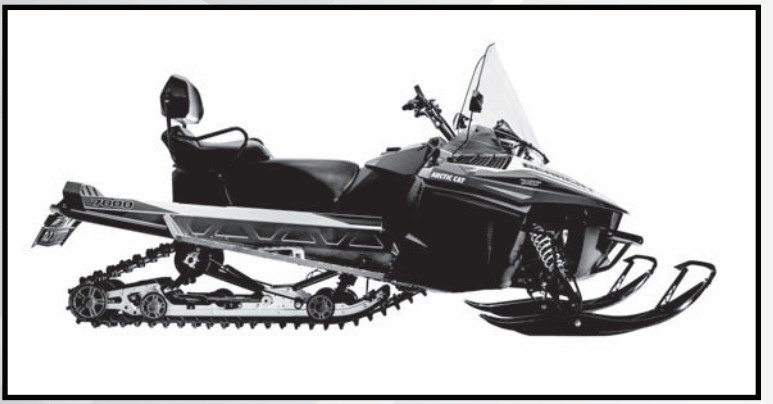
2016
OPERATOR MANUAL



PANTERA® 7000 XT™ LTD/
BEARCAT®/LYNX®
2000/3000/7000

ARCTIC CAT®
SHARE OUR PASSION.™
www.arcticcat.com

Limited Warranty

Arctic Cat Inc. (hereinafter referred to as Arctic Cat) extends a limited warranty as described below on each new Arctic Cat Snowmobile it assembles and on each genuine Arctic Cat Snowmobile part and accessory assembled and sold by an authorized Arctic Cat Snowmobile dealer. The limited warranty on an Arctic Cat Snowmobile is extended to the original retail purchaser for the time periods described below; however, the balance of the remaining warranty may be transferred to another party unless the purchase is for commercial use (see below). Warranty coverage is only available in the country in which the original retail purchase occurs to the original retail purchaser resident in that country or to a transferee resident in that country of the balance of the remaining warranty.

Arctic Cat warrants only the products it assembles and/or sells and does not warrant that other products will function properly when used with an Arctic Cat Snowmobile or will not damage the Arctic Cat Snowmobile. Arctic Cat does not assume any liability for incidental or consequential damages.

Arctic Cat will repair or replace, at its option, free of charge (including any related labor charges), any parts that are found to be warrantable in material or workmanship. This repair work MUST be done by an authorized Arctic Cat Snowmobile dealer. No transportation charges, rental charges, or inconvenience costs will be paid by Arctic Cat. The warranty is validated upon examination of said parts by Arctic Cat or an authorized Arctic Cat Snowmobile dealer. Arctic Cat reserves the right to inspect such parts at its factory for final determination if warranty should apply.

The warranty periods are as follows:

1. For snowmobiles used for recreational purposes:
   —If purchased between May 1 and November 30, warranty expires ONE (1) YEAR from December 1 of the current year.
   —If purchased between December 1 and April 30, ONE (1) YEAR from the date of sale.
2. For snowmobiles used for commercial purposes (including rental operations), ONE (1) YEAR from the date of invoice and/or 5000 MILES whichever comes first (non-transferable).
3. THIRTY (30) DAYS from date of sale of snowmobile on Arctic Cat supplied batteries.

Exclusions to this warranty include normal wear, abuse (i.e. a track run on marginal snow conditions without proper lubrication or additional idler wheels), and the following parts:

Fuel Filter	Light Bulbs	Windshield	Drive Belt	Torn or Punctured Upholstery
Wear Bars	Brake Pads	Spark Plugs	Drive Clutch/Driven Pulley Wear Parts	
Wear Strips	Shock Absorber(s)*			

* Limited to one (1) year of "normal" riding conditions - replace for defective or leaking shock, corroded or pitted shaft, peeling chrome.

■**NOTE: Snowmobiles that are factory equipped with Fox, Elka, or JRI shocks and experience a shock failure of workmanship or material within the factory warranty period must not be tampered with. Only the air pressure valve (p/n 2603-511 - Fox shocks only) is serviceable during the warranty period. Any other tampering with the shock will void warranty.**

The following will VOID Arctic Cat's warranty:

1. Failure to perform the proper break-in procedure and all related maintenance, storage procedures (if stored for extended periods), and/or service as recommended in the Operator's Manual.
2. Repairs and/or adjustments by anyone other than an authorized Arctic Cat Snowmobile dealer.
3. Use of an improper fuel mixture ratio.
4. Use of improper carburetor jets.
5. Use of improper gasoline, lubricating oils, or spark plugs.
6. An accident or subjecting the snowmobile to misuse, abuse, or negligent operation.
7. Any modification, addition, or removal of parts unless instructed to do so by Arctic Cat.
8. Use of the snowmobile in any way for racing purposes.
9. Removal of the engine for use in another vehicle.
10. Removal or mutilation of the Vehicle Identification Number or Engine Serial Number.
11. Use of parts not sold or approved by Arctic Cat.
12. Track and tunnel damage resulting from either ice stud or hooker plate installation.
13. Damage due to improper transportation.

Arctic Cat shall not be responsible for and this limited warranty excludes recovery of economic, punitive, consequential and incidental damages, lost profits, and loss of use. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. Arctic Cat's aggregate liability may not exceed the price of the product. The law of the State of Minnesota shall apply to all claims or disputes, exclusive of its conflicts of law provisions.

IMPLIED WARRANTY EXCLUSION AND DISCLAIMER

To the fullest extent permitted by law, Arctic Cat excludes and disclaims all implied warranties of merchantability and fitness for a particular purpose.

If you are not satisfied with warranty service or repairs, you should contact Arctic Cat at (U.S.) 1-218-681-9851 or (Canada) 1-204-982-1656.

Table of Contents

Limited Warranty .....Inside Front Cover
Foreword 1
Declaration of Conformity.....2
Snowmobile Safety Rules 3
General Information 4-21
Control Locations 4
Snowmobile Identification.....5
Gasoline-Oil.....5
Engine Break-In.....6
Drive Belt Break-In 7
Speedometer/Tachometer/Digital Gauge 7
Diagnostic Codes 11
Handlebar Tilt 13
Exhaust System 14
Air-Intake Silencer 14
Air-Intake Filter (7000).....14
Cooling System (3000/7000).....14
Battery 14
Drive Clutch and Driven Clutch 16
Drive Clutch/Driven Clutch Alignment 16
Fuel Pump 16
Shock Absorbers 16
Standard-Lug Track 16
Track Studs.....16
Reverse Operation 17
Adjustable/Movable Backrest 19
Removable Rear Seat 19
Removable Light Bar (Bearcat XT GS) 20
Towing 21
Operating Instructions 22
Pre-Start.....22
Starting and Stopping Engine 23
Braking 23
Emergency Stopping 24
Engine Heater (Pantera 7000 XT LTD/Bearcat 7000 GS) 25
Throttle/Ignition Monitor Switch 25
Varying Altitude Operation.....26
Lubrication.....28-32
Gear Case (2000).....28
Chain Case (3000) 29
Transmission (7000) 30
Front Suspension (2000) 31
Rear Suspension 31
Maintenance.....32-62
Periodic Maintenance Checklist.....32
Fuel System.....33
Checking Engine Oil Level.....34
Changing Engine Oil/Filter.....35
Coolant Level.....37
Adjusting/Calibrating Carburetors (2000) 38
Spark Plugs 41
Valve Clearance.....42
Battery 42
Fuses.....44
Brake System 45
Burnishing Brake Pads 48
Drive Belt 48
Checking/Adjusting Deflection.....50
Track Tension.....51
Track Alignment 52
Suspension.....53
Lights 55
Ski Wear Bars.....60
Adjusting Ski Stance.....60
Rail Wear Strips.....61
Preparation for Storage 62
Preparation after Storage 63
U.S. EPA Emission Control Statement/Warranty Coverage (U.S. Only) 64
Change of Address, Ownership, or Warranty Transfer 65
Warranty Procedure/Owner Responsibility .....Inside Back Cover

Reference Information

Write the appropriate information for your Arctic Cat Snowmobile in the spaces below.

Always use these numbers when referring to your snowmobile.

Model: _____
Date of Purchase: _____
Vehicle Identification Number: _____
Engine Serial Number: _____
Your Arctic Cat Dealer: _____
Address: _____
Phone: _____

⚠ WARNING

A snowmobile is a very high performance vehicle. Because it does accelerate rapidly and is capable of very high speeds, it should not be operated by a novice or an inexperienced operator. Never accelerate rapidly or drive at high speed beyond the limits of visibility or without being totally familiar with the terrain and what lies in front of you. Obey speed limits and never operate at speeds that do not allow adequate maneuvering and stopping distances. Read and study the entire Operator's Manual and Safety Handbook.
Failure to follow this warning could result in personal injury to yourself or others.

Personal Injury

- To avoid injury to yourself and others, NEVER operate the snowmobile without first reading and understanding this manual and the Snowmobile Safety Handbook; then follow the instructions and heed the warnings given.
- USE COMMON SENSE.
- DON'T DRINK and DRIVE.
- STAY IN CONTROL at ALL TIMES.
- TELL YOUR FRIENDS. If you see a friend operating a snowmobile recklessly, at excessive speeds, while intoxicated, or in other unsafe ways, don't wait until it is too late to warn of the consequences of snowmobile misuse. Such conduct endangers everyone. TAKE AN ACTIVE ROLE IN THE SAFETY OF YOURSELF AND OTHERS.

Parts and Accessories

When in need of replacement parts, oil, or accessories for your Arctic Cat Snowmobile, be sure to only use GENUINE ARCTIC CAT PARTS, OIL, AND ACCESSORIES. Only genuine Arctic Cat parts, oil, and accessories are engineered to meet the standards and requirements of your Arctic Cat Snowmobile. For a complete list of accessories, refer to the current Arctic Cat Accessory Catalog. To aid in service and maintenance procedures on these snowmobiles, an Illustrated Parts Manual and a Service Manual are available through your local Arctic Cat Snowmobile dealer.

Foreword

Congratulations! You have chosen a quality Arctic Cat Snowmobile designed and assembled to give dependable service. Be sure, as the owner/operator of an Arctic Cat Snowmobile, to become thoroughly familiar with its basic operation, maintenance, and off-season storage procedures. Read this manual and the accompanying Snowmobile Safety Handbook before operating the snowmobile to learn safe and proper use of your new Arctic Cat Snowmobile. Always operate the snowmobile within your level of skill and current terrain conditions.

The Operator's Manual, Snowmobile Safety Handbook, 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 serious personal injury or even death. A **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.

This manual covers operator-related maintenance, operating instructions, and off-season storage instructions. If major repair or service is ever required, contact an authorized Arctic Cat Snowmobile dealer for professional service.

At the time of publication, all information and illustrations were technically correct. Some 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.

This Operator's Manual should be considered a permanent part of the snowmobile and must remain with the snowmobile at the time of resale. If the snowmobile changes ownership more than once, contact Arctic Cat Inc., Service Department, P.O. Box 810, Thief River Falls, MN 56701, for proper registration information. This manual was prepared by the Product Service and Warranty Department of Arctic Cat Inc.

Every Arctic Cat Snowmobile meets or exceeds the standards of the Snowmobile Safety and Certification Committee and displays the SSCC decal. Arctic Cat Inc. endorses and encourages the safe use of all snowmobiles. Always wear a helmet and eye protection. Drive with caution, observe all state and local regulations, and respect the rights of others. ISMA members like Arctic Cat do their part to improve trails, sponsor events, and generally support the sport of snowmobiling. As a member of the National Snowmobile Foundation, Arctic Cat Inc. promotes snowmobiling through education, charity, and research programs.

Printed in U.S.A.

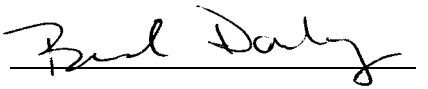
Declaration of Conformity

Application of council directives: EMC Directive 2004/108/EC
Issued by European Commission. EC Machinery Directive 2006/42/EC
Type of Equipment: Snowmobile Brand Name: Arctic Cat
Model Numbers:

S2016BCDFCOSL	S2016BCDWTUSL	S2016BCUWTRUL	S2016PTTTOOSB
S2016BCDFCUSL	S2016BCTLTUSL	S2016BCUWTRUR	S2016PTTTORUB
S2016BCDWEOSB	S2016BCUWGOSO	S2016BCUWTUSL	S2016PTTTOUSB
S2016BCDWERUB	S2016BCUWGRUO	S2016BCUWTUSR	S2016PTUWLOSB
S2016BCDWEUSB	S2016BCUWGUSO	S2016LXDFCUSB	S2016PTUWLRUB
S2016BCDWTOSL	S2016BCUWTOSL	S2016LXDLTUSB	S2016PTUWLUSB
S2016BCDWTRUL	S2016BCUWTOSR		

Standards to which conformity is declared:
EMC: EN 55012, EN 61000-6-2 MACHINERY: EN 12100:2010
Manufacturer (if not issuing agent): Arctic Cat Inc.
601 Brooks Ave. S.
Thief River Falls, MN 56701 USA

I, the undersigned, hereby declare that the equipment specified above conforms to the directive(s) and standard(s) as specified.



Brad Darling
Vice President/General Manager - Snowmobile Division

SNOWMOBILE SAFETY RULES

Arctic Cat® endorses and encourages the safe use of all snowmobiles.
Always follow these rules to ensure your continued enjoyment of the sport.
Receive proper training and operate within your capabilities. See operator's manual for complete safety instructions.

RÈGLEMENTS DE SÉCURITÉ EN MOTONEIGE

Arctic Cat® endosse et encourage l'utilisation sécuritaire de toutes motoneiges.
Respectez toujours ces règlements qui vous permettront de pratiquer ce sport avec plaisir.
Obtenez la formation nécessaire et conduisez selon vos capacités.
Veuillez vous référer au manuel de l'opérateur pour les instructions complètes de sécurité.

SÄKERHETSREGLER VID SNÖSKOTERKÖRNING

Arctic Cat® manar till försiktighet vid snöskoterkörning. Följ alltid dessa regler när du är ute och kör.

MOOTTORIKELKAN TURVASÄÄNNÖT

Arctic Cat® korostaa ja kannustaa moottorikelkkojen turvallista käyttöä.
Näitä sääntöjä tarkkaan noudattaen saat kelkkailusta irti parhaan mahdollisen huvin ja hyödyn.

SIKKERHETSREGLER FOR BRUK AV SNØSCOOTER

Arctic Cat® oppfordrer alle til å utvise forsiktighet ved bruk av snøscootere.
Følg alltid disse reglene når du er ute og kjører.

NORME DI SICUREZZA PER LE MOTOSLITTE

La Arctic Cat® sostiene ed incoraggia la sicurezza delle motoslitte.
Per un divertimento continuo di questo sport seguite sempre le suddette norme.

スノーモービルの安全運転ルール

アークティック・キャット社はスノーモービルの安全性に賛同しています。いつまでもスノーモービルをお楽しみ頂けるよう、下記の安全運転ルールを守りましょう。

1
Don't drink and ride.
Ne buvez pas lorsque vous conduisez.
Kör aldrig om du är alkoholpåverkad.
Jos otat, älä kelkkaile!
Kjør aldri under påvirkning av alkohol.
Non bevete durante la guida.
飲酒運転はしないこと。

2
Always wear a helmet.
Portez toujours un casque.
Hjälm ska alltid bäras.
Käytä aina suojakypärää.
Bruk alltid hjelm.
Indossate sempre il casco.
常時、ヘルメットを着用すること。

3
Watch out for thin ice/open water.
Évitez la glace mince et les trous d'eau.
Se upp för tunn is/öppet vatten.
Varo heikkoja jäitä ja avantoja.
Se opp for tynn is/åpent vann.
Attenti allo spessore/rottura del ghiaccio.
薄氷やまだ凍ってない場所は警戒すること。

4
Use caution when crossing road/train tracks.
Soyez prudent lorsque vous traversez des routes et des chemins de fer.
Var försiktig när du korsar väg/järnväg.
Ole varovainen kun ajat tien tai rautatien poikki.
Vær forsiktig når du krysser veier/jernbaneskinner.
Usate prudenza nell'attraversare strade/passaggi a livello.
道路や踏切を横切るときは注意すること。

真夜中以後は乗らないこと。

本や障害物に用心すること。

7
Always use a solid hitch for towing.
Assurez-vous d'avoir une attache solide pour remorquer.
Använd alltid stel koppling vid bogsering.
Käytä aina vahvoja vetolaitteita.
Bruk alltid solid slepeutstyr for tauing.
Usate un gancio fisso per il traino.
牽引にはしっかりしたロープを使うこと。

8
Observe proper rider capacity.
A. Maximum one rider on 1-Up sleds.
B. Maximum two riders on 2-Up sleds.
Respectez le nombre recommandé de passagers.
A. Maximum un passager sur les modèles réguliers.
B. Maximum deux passagers sur les modèles à 2-Niveaux.
Begränsa antal åkande.
A. Enkeldyna: Endast förare.
B. Dubbeldyna: Förare och en passagerare.
Ota huomioon kuormitusrajat.
A. Vain yksi henkilö yhden istuttavaan kelkkaan.
B. Korkeintaan kaksi kahden hengen kelkkaan.
Vær oppmerksom på passasjerkapasiteten.
A. Maks. En person på en-seters scootere.
B. Maks. To personer på to-seters scootere.
Osservate la capienza del veicolo.
1-posto: Massimo 1 passeggero.
2-posti: Massimo 2 passeggeri.
乗車定員を守ること。
一人乗りには一人だけ。
二人乗りには二人まで。

9
Check controls and maintain your machines.
Vérifiez les commandes et entretenez votre véhicule.
Kontrollera reglage och underhåll din maskin.
Tarkista kaikki säädöt ja pidä koneesi kunnossa.
Sjekk instrumentene og hold scooteren vedlike.
Controllate i comandi ed eseguite la manutenzione.
操作系のチェックや整備を定期的にすること。

10
Be of legal age.
Soyez d'âge légal.
Respektera åldersgränsen.
Odota kunnes saavutat vaaditun ikärajan.
Vær må være over aldersgrensen.
Dovete essere maggiorenni.
運転は法律の定める年齢に達していること。

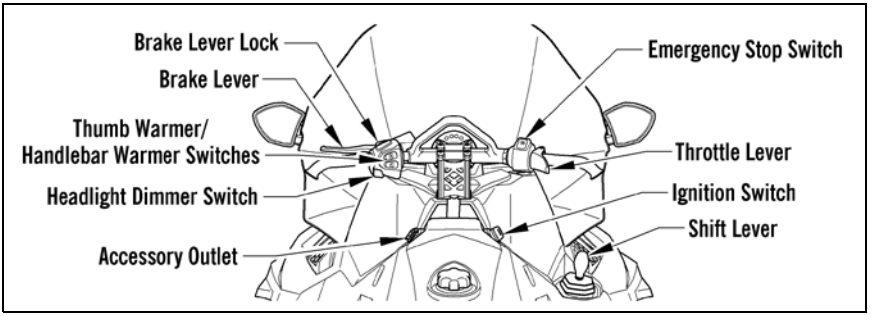
11
Read and understand your Operator's Manual.
Lisez et comprenez votre Manuel de l'opérateur.
Läs och förstå Instruktionsboken.
Lue ja ymmärrä mitä Käyttöoppaassa sanotaan.
Les og forstå Brukerhåndboken.
Leggete attentamente il Manuale di Guida.
オーナーズ・マニュアルをよく読み、理解すること。

12
Obey all local laws and regulations and use common sense.
Obéissez aux lois et recommandations locales et usez de bon sens.
Följ torrängkörningslagen och lokala bestämmelser. Använd sunt förnuft.
Noudata kaikkia lakeja ja paikallismääräyksiä, ja käytä myös terveettä järkeä.
Overhold lokale lover og regelverk og bruk sunn fornuft.
Osservate tutte le norme di legge nazionali.
地域の条例や規則を守り、常識ある行動をすること。

Control Locations

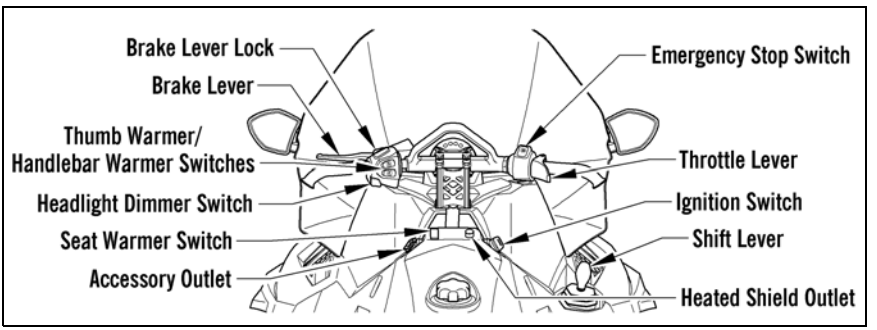
Shown are the control locations.

Bearcat 7000 XT



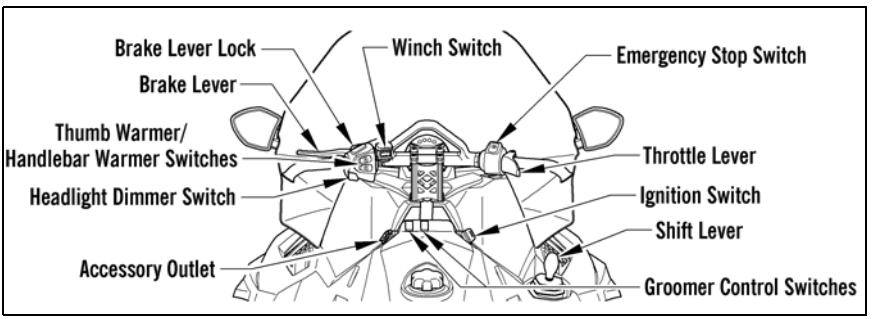
XM314A

Pantera 7000 XT LTD



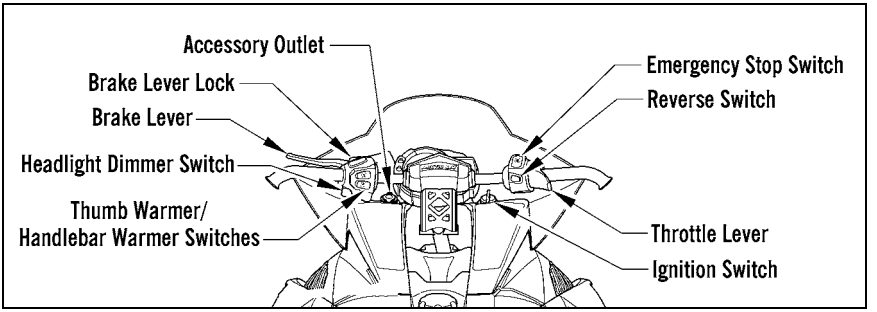
0749-189

Bearcat 7000 XT GS



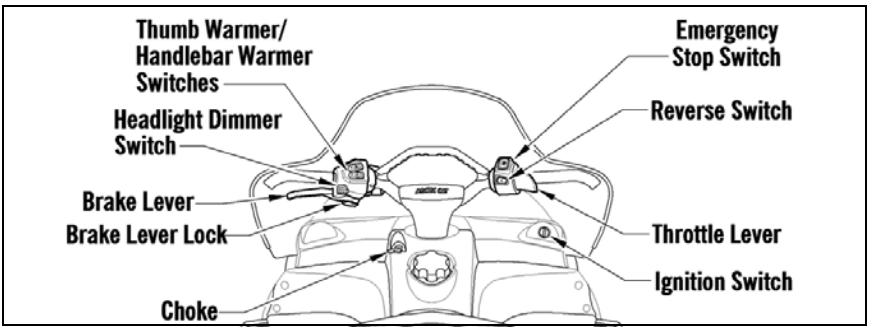
0749-190

Bearcat 3000 LT



0747-616B

Bearcat 2000/Lynx



0744-441

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.

These numbers are required by the dealer 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.

Always provide the snowmobile name, VIN, and ESN when contacting an authorized Arctic Cat Snowmobile dealer for parts, service, accessories, or warranty. If the complete engine must be replaced, ask the dealer to notify Arctic Cat for correct registration information.

Gasoline-Oil

Recommended Gasoline

The recommended gasoline to use in these snowmobiles is 87 octane regular unleaded. In many areas, oxygenates are added to the gasoline. Oxygenated gasolines containing up to 10% ethanol are acceptable gasolines; however, on the 2000 models 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 220 main jet is recommended for regular unleaded gasoline, a 230 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.

Recommended Engine Oil

CAUTION

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

2000

The recommended oil to use in the oil-injection system is Arctic Cat Formula 50 Injection Oil (p/n 5639-475 - qt) or (p/n 5639-476 - gal.). This oil is specially formulated to be used either as an injection oil or as a pre-mix oil (for break-in) and meets all of the lubrication requirements of the Arctic Cat snowmobile engine.

3000/7000

The recommended oil to use is C-TEC4 Synthetic Oil (p/n 6639-524 - qt) or (p/n 6639-525 - gal.).

After the engine break-in period, the engine oil should be changed every 2500 miles and before prolonged storage.

Filling Gas Tank

Since gasoline expands as its temperature increases, the gas tank must be filled to its rated capacity only. Expansion room must be maintained in the tank particularly if the tank is filled with cold gasoline and then moved to a warm area.

Also, if the snowmobile is to remain on a trailer after filling the gas tank, the bed of the trailer must be maintained level to prevent gasoline from draining out through the gas tank vent hose.

⚠ WARNING

Always fill the gas tank in a well-ventilated area. Never add gasoline to the snowmobile gas tank near any open flames or with the engine running. DO NOT SMOKE while filling the gas tank.

Engine Break-In

2000

Before mixing gasoline and oil, make sure the oil is at room temperature (20° C/68° F). Use a U.L. approved 22.7 l (6 U.S. gal.) gasoline container for mixing the gasoline and oil. To properly mix the fuel at a 100:1 ratio, use the following procedure:

CAUTION

Never mix oil and gasoline in the snowmobile gas tank.

1. Pour gasoline into the gasoline container until approximately half full.
2. Pour 236 ml (8 fl oz) of the recommended 2-cycle oil into the gasoline container.
3. Install cap on gasoline container and shake the mixture vigorously.
4. Fill the gasoline container with gasoline; then cap the gasoline container and shake the mixture vigorously.
5. Using a fine-mesh screened funnel, pour the fuel mixture from the gasoline container into the snowmobile gas tank.

⚠ WARNING

Always fill the gas tank in a well-ventilated area. Never add gasoline to the snowmobile gas tank near any open flames or with the engine running. DO NOT SMOKE while mixing fuel or filling the gas tank.

3000

This engine does not require any premixed 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 (30 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. This service is at the discretion and expense of the snowmobile owner.

7000

Premixing fuel and oil during the break in period is not required. There is never a more important period in the life of the engine than the first 300 miles.

Since the engine is brand new, do not put an excessive load on it for the first 300 miles. The various parts in the engine wear and polish themselves to the correct operating clearances. During this period, prolonged full throttle operation or any condition that might result in engine overheating must be avoided.

Operating your snowmobile for the first time: Start the engine and let it idle for 15 minutes.

0-160 km (0–100 miles): Avoid prolonged operation above 6000 RPM.

160-500 km (100–300 miles): Avoid prolonged operation above 8000 RPM.

500 km (300 miles) and beyond: The snowmobile can now be operated normally.

■ **NOTE: After 500 miles of operation, the engine oil must be changed and the oil filter replaced. If any engine trouble should occur during the engine break-in period, immediately have a Arctic Cat dealer check the snowmobile.**

Drive Belt Break-In

Drive belts require a break-in period of 25 miles. Drive the snowmobile for 25 miles at 3/4 throttle or less. By revving the engine up and down (but not exceeding 60 mph), the exposed cord on the side of a new belt will be worn down. This will allow the drive belt to gain its optimum flexibility and will extend drive belt life.

■ **NOTE: Before starting the snowmobile in extremely cold temperatures, the drive belt should be removed and warmed up to room temperature. Once the drive belt is at room temperature, install the drive belt.**

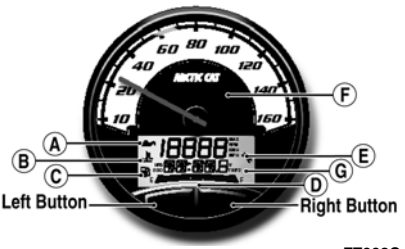
CAUTION

Never run the engine with the drive belt removed. Excessive revving of the engine could result in serious engine damage and drive clutch failure.

Speedometer/ Tachometer/Digital Gauge

Standard Gauge (2000)

Certain models are equipped with a standard gauge combination speedometer/ tachometer. Indicator icons are incorporated within the speedometer/tachometer. Also incorporated into the speedometer/tachometer is a digital readout screen.



FZ003C

RPM/MPH (kph)

By pushing the left button once, the RPM and MPH will be displayed (one on the readout screen and one with the needle). By pushing the button once again, the functions will be reversed.

By pushing the left button (with speed being displayed) for more than two seconds, the display will change between standard mph or metric kph. Release the button when desired display appears.

With RPM displayed on the readout screen by pushing and holding the left button, maximum RPM will be displayed on the readout screen. The maximum RPM readout will reset when the right button is pushed (while maximum RPM is displayed).

Odometer/Trip-Meter (1)/ Trip-Meter (2)/Hour-Meter/Clock

■ NOTE: The clock is available on electric start models only.

By pushing the right button, the readout screen will display odometer, trip-meter (1), trip-meter (2), hour-meter, and clock. To reset the trip meter with the trip meter displayed, push and hold the right button until the display is cleared. The hour-meter readout will not reset.

Clock (Electric Start)

With the clock selected on the readout screen by pushing and holding the right button for two seconds, the option of selecting the 12-hour or 24-hour clock is available. Push the left button for 12-hour display; push the right button for 24-hour display. At this point, the hours and minutes will begin to flash. Push the left button to change the hour display; push the right button to change the minute display (either tap the buttons for individual number display or push and hold the buttons for rapid number display).

■ NOTE: During clock setting if neither button (left, right) is pushed within a 5-second time period, the clock-setting mode will be exited with changes saved.

A. Low Oil Warning Icon

This icon is designed to alert the snowmobile operator when the oil in the oil injection reservoir gets below a prescribed level; however, it is highly recommended that a visual verification of the oil level in the reservoir be done prior to operating the snowmobile. Once the Low Oil Warning Icon illuminates during operation of the snowmobile, the operator must periodically monitor the level of oil in the reservoir and must fill the reservoir the next time gasoline is added to the gas tank.

The "alert level" of the Low Oil Warning Icon is approximately equal to 1 tankful of gasoline under normal operating conditions.

B. Coolant Temperature Warning Icon

■ NOTE: When cold-starting the engine, the coolant temperature warning icon will illuminate, the readout screen will display TEMP, and engine RPM limit will be below drive system engagement speed.

When the engine reaches proper operating temperature, the coolant temperature warning icon and TEMP display will cease to flash.

If the coolant temperature rises too far above proper operating temperature, the coolant temperature warning icon will flash a warning (alert) and the engine will "surge" to alert the operator. If the coolant temperature rises to a critical point above proper operating temperature, the coolant temperature warning icon will cease flashing and will remain constantly illuminated.

■ NOTE: If the coolant temperature icon is constantly on, the engine will shut off if vehicle speed is reduced to 1.5 kph (0.9 MPH) or slower.

CAUTION

At this point, take precautionary measures such as changing to loose snow terrain, shutting the engine off (allowing the engine to cool down), and checking coolant level. If unable to either determine or remedy the problem, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

C. Low Fuel Indicator

The indicator illuminates whenever the gas in the gas tank is low.

D. Fuel Level Display

This bar display shows the approximate amount of gas remaining in the gas tank.

E. Service Icon

On electric start models, the icon should illuminate each time the key is turned to RUN or START, and it should go out when the engine starts. If the icon stays illuminated (on electric start models) or it illuminates while the engine is running, the system is receiving input that is outside of its established parameters. If the icon illuminates indicating an error, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

F. High Beam Indicator

The indicator is on whenever the high beam mode is selected by the headlight switch.

Standard Gauge (3000/ 7000)

XM248A

1. Left Button - Shifts top display through speedometer, RPM, and clock.
2. Middle Button - Shifts middle display through speedometer, RPM, clock, odometer, trip 1, trip 2, and engine hours.
3. Right Button - Shifts bottom display through coolant temperature, battery voltage, and fuel level.
4. Speedometer/Tachometer Display - Indicates approximate vehicle speed in MPH or KM/H when speedometer function is selected, RPM when tachometer function is selected. Press the Left Button to change which parameter is being displayed. With speedometer selected, press and hold the Left Button to shift between standard (MPH/miles/Fahrenheit) and metric (km/h/kilometers/ Celsius).
5. Engine Hour Meter/Odometer/Trip Meter/Speedometer/Tachometer/ Clock Display - Displays engine hours, odometer, trip meter, speedometer, tachometer, or clock. Press the Middle Button to change which parameter is being displayed. The Engine Hour Meter and Odometer cannot be reset. To reset the trip meter, select the Trip Meter; then press and hold the Middle Button until the trip meter display reads 0.

   With the clock mode selected, press and hold the Left Button to set the clock. The option of selecting the 12-hour or 24-hour clock is available; press the Left Button to alternate between the two modes. Next, press the Middle Button to set the clock. Press the Left or Right to set the hours; then press the Middle Button to set the minutes. Press the Left or Right Button to set the minutes. When the proper time has been set, press the Middle Button to return to the main gauge display.
6. Coolant Temperature/Battery Voltage/Fuel Level Display - Displays coolant temperature, battery voltage, and fuel quantity. Press the Right Button to change which parameter is being displayed. Press and hold the Right Button to see the actual values associated with the mode selected.
7. Gear Position Indicator - Indicates what gear the transmission is in.
8. Coolant Temperature Indicator - When the snowmobile is started, this indicator will flash and LOW TEMP will be displayed until the engine reaches operating temperature.

If the coolant temperature rises too far above proper operating temperature, the indicator will flash a warning (alert) and the engine will "surge" to alert the operator. If the coolant temperature rises to a critical point above proper operating temperature, the indicator will cease flashing and will remain constantly illuminated.

CAUTION

If the indicator is illuminated, stop the engine immediately and allow it to cool down. If unable to either determine or remedy the problem, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

■ NOTE: If the indicator is constantly on, the engine will shut off if vehicle speed is reduced to 1.5 km-h (0.9 MPH) or slower.

9. High Beam Indicator - The indicator is on whenever the high beam mode is selected by the headlight switch.
10. Oil Pressure Indicator - The indicator relates to engine oil pressure, not the oil level; however, if the oil level is low, it may affect oil pressure. If oil pressure is lost, check the oil level. If the indicator does not go out or if the engine does not start, take the snowmobile to an authorized Arctic Cat Snowmobile dealer. If not under warranty, this service is at the discretion and expense of the snowmobile owner.
11. Fuel Level Indicator - The indicator will display whenever gas is low in the fuel tank.

Deluxe Digital Gauge (Pantera 7000 XT LTD)

CWI-051A

A. Coolant Temperature Indicator

The indicator and LOW TEMP display will cease to flash when the engine reaches proper operating temperature.

If the coolant temperature rises too far above proper operating temperature, the indicator will flash a warning (alert) and the engine will "surge" to alert the operator. If the coolant temperature rises to a critical point above proper operating temperature, the indicator will cease flashing and will remain constantly illuminated.

■ NOTE: If the indicator is constantly on, the engine will shut off if vehicle speed is reduced to 1.5 km-h (0.9 MPH) or slower.

CAUTION

If the indicator is illuminated, stop the engine immediately and allow it to cool down. If unable to either determine or remedy the problem, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

B. High Beam Indicator

The indicator is on whenever the high beam mode is selected by the headlight switch.

C. Oil Pressure

The indicator relates to engine oil pressure, not the oil level; however, if the oil level is low, it may affect oil pressure. If oil pressure is lost, check the oil level.

If the indicator does not go out or if the engine does not start, take the snowmobile to an authorized Arctic Cat Snowmobile dealer. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

D. Low Fuel Indicator

The indicator illuminates whenever the gas in the gas tank is low.

E. Coolant Temperature/ Battery Voltage/Intake Air Temperature Display

This bar display shows coolant temperature, battery voltage, and intake air temperature. Press the Lower Left Button to change which parameter is being displayed. Press and hold the Lower Left Button to see the actual values associated with the mode selected.

F. Fuel Level Display

This bar display shows the approximate amount of gas remaining in the gas tank.

G. RPM/Speed/Clock/ Altimeter

Press the Upper Left Button to cycle the left screen between RPM and speed.

■ NOTE: When RPM is displayed on the left screen, the right screen will display speed, clock, or altimeter. When speed is displayed on the left screen, the right screen will display RPM, clock or altimeter.

Press the Upper Right Button to cycle the right screen between speed, RPM, clock, and altimeter.

Press and hold the Upper Button on the speed-side of the gauge to shift between standard (MPH/miles/Fahrenheit) and metric (km/h/kilometers/Celsius).

Press and hold the Upper Button on the RPM-side to view maximum RPM. This value is reset each time the ignition key is turned off.

With the clock mode selected by pressing the Upper Right Button, press and hold the Upper Right Button to set the clock. The option of selecting the 12-hour or 24-hour clock is available; press the either Left Button to alternate between the two modes. Next, press the Lower Right Button to set the clock. Press either Left Button to set the hours; then press the Lower Right Button to set the minutes. Press either Left Button to set the minutes. When the proper time has been set, press the Lower Right Button to return to the main gauge display.

With the altimeter mode selected by pressing the Upper Right Button, press and hold the Upper Right Button to set the current altitude by using either Left Button. When the proper altitude has been set, press the Lower Right Button to return to the main gauge display.

H. Engine Hour Meter/ Odometer/Trip Meter/ Clock

This display shows engine hours, odometer, trip meter, or clock. Press the Lower Right Button to change which parameter is being displayed. The Engine Hour Meter and Odometer cannot be reset. To reset the trip meter, select the Trip Meter; then press and hold the Lower Right Button until the trip meter display reads 0.

■ NOTE: The clock can only be displayed in this position if it is not already being displayed in the main right screen. To set the clock when the clock is in this position, press and hold the Lower Right Button; then use the procedure found in G.

Diagnostic Codes

Diagnostic codes are activated by the ECM and may be displayed on the readout screen for a number of reasons. If a code is displayed while the engine is running, the ECM is receiving input that is outside of its established parameters.

If a code has been activated, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

3000

Code	Trouble
P0016	Crankshaft Position - Camshaft Position Correlation
P0030	O2 Heater Control Circuit
P0031	O2 Heater Control Circuit Low
P0032	O2 Heater Control Circuit High
P0107	Manifold Absolute Pressure Circuit Low
P0108	Manifold Absolute Pressure Circuit High
P0112	Intake Air Temperature Sensor Circuit Low
P0113	Intake Air Temperature Sensor Circuit High
P0114	Intake Air Temperature Sensor Circuit Intermittent
P0117	Engine Coolant Temperature Sensor 1 Circuit Low
P0118	Engine Coolant Temperature Sensor 1 Circuit High
P0119	Engine Coolant Temperature Sensor 1 Circuit Intermittent
P0121	Throttle Position Sensor Circuit Range Performance
P0122	Throttle Position Sensor Circuit Low
P0123	Throttle Position Sensor Circuit High
P0130	O2 Sensor Circuit
P0131	O2 Sensor Circuit Low Voltage
P0132	O2 Sensor Circuit High Voltage
P0171	System Too Lean
P0172	System Too Rich
P0201	Injector Circuit/Open - Cylinder 1
P0202	Injector Circuit/Open - Cylinder 2
P0261	Cylinder 1 Injector Circuit Low
P0262	Cylinder 1 Injector Circuit High
P0264	Cylinder 2 Injector Circuit Low
P0265	Cylinder 2 Injector Circuit High
P0340	Camshaft Position Sensor “A” Circuit
P0500	Vehicle Speed Sensor “A”
P0508	Idle Air Control System Circuit Low
P0509	Idle Air Control System Circuit High
P0562	System Relay Voltage Low
P0563	System Relay Voltage High
P0642	Sensor Reference Voltage “A” Circuit Low
P0643	Sensor Reference Voltage “A” Circuit High
P0780	Shift Error
P1315	Crankshaft Position Out of Sync
P1338	Crankshaft Spike Detected
P1339	Crankshaft Tooth Number Detection Error
P1685	Main Relay Open Circuit
P1686	Main Relay Circuit Low
P1687	Main Relay Circuit High
P1688	Reverse Relay Open Circuit
P1689	Reverse Relay Circuit Low
P1690	Reverse Relay Circuit High
P1691	Forward Relay Open Circuit
P1692	Forward Relay Circuit Low
P1693	Forward Relay Circuit High
P1694	Headlight Relay Open
P1695	Headlight Relay Low
P1780	Shift Switch Stuck
P2282	Air Leak Between Throttle Body and Intake Valves
P2300	Ignition Coil “A” Primary Control Circuit Low
P2301	Ignition Coil “A” Primary Control Circuit High
P2303	Ignition Coil “B” Primary Control Circuit Low/Open
P2304	Ignition Coil “B” Primary Control Circuit High
U1000	Vehicle not registered or invalid PIN
U1001	Vehicle not registered and vehicle limits enabled
U0155	Lost Communication with the Gauge

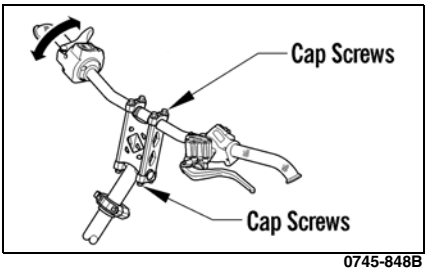
7000

Code	Trouble
P0031	O2 Heater Control Circuit Low
P0032	O2 Heater Control Circuit High
P0107	Manifold absolute pressure circuit low
P0108	Manifold absolute pressure circuit high
P0112	Intake air temp sensor circuit low
P0113	Intake air temp sensor circuit high
P0115	Engine coolant temp sensor 1 circuit
P0117	Engine coolant temp sensor 1 circuit low
P0118	Engine coolant temp sensor 1 circuit high
P0120	Throttle position sensor circuit
P0122	Throttle position sensor circuit low
P0123	Throttle position sensor circuit high
P0130	O2 sensor circuit
P0131	O2 sensor circuit low
P0132	O2 sensor circuit high
P0171	System too lean
P0172	System too rich
P0201	Injector circuit/open - cylinder 1
P0202	Injector circuit/open - cylinder 2
P0203	Injector circuit/open - cylinder 3
P0217	Engine coolant over temp condition
P0261	Cylinder 1 injector circuit low
P0264	Cylinder 2 injector circuit low
P0267	Cylinder 3 injector circuit low
P0508	Idle air control system circuit low
P0509	Idle air control system circuit high
P0511	Idle air control circuit
P0522	Engine oil pressure sensor circuit low
P0523	Engine oil pressure sensor circuit high
P0562	System voltage low
P0563	System voltage high
P0780	Shift Error
P1315	Crankshaft Position out of sync
P1338	Crankshaft spike detected
P1339	Crankshaft tooth not detected
P1685	Main relay open circuit
P1686	Main relay circuit low
P1688	Reverse relay open circuit
P1689	Reverse relay circuit low
P1691	Forward relay open circuit
P1692	Forward relay circuit low
P1694	Headlight relay open circuit
P1695	Headlight relay circuit low
P2228	Barometric pressure sensor A circuit low
P2229	Barometric pressure sensor A circuit high
P2300	Ignition coil A primary control circuit low
P2303	Ignition coil B primary control circuit low
P2306	Ignition coil C primary control circuit low
U1000	Vehicle not registered or invalid PIN
U1001	Vehicle not registered and vehicle limits enabled
U0155	Lost communication with the ECM

Handlebar Tilt

3000/7000

1. Loosen the four lock nuts securing the handlebar caps and block to the steering post.



0745-848B

2. Adjust the handlebar to operator's desired tilt; then tighten the cap screws evenly and securely to 15 ft-lb. Check steering for maximum right/left turning capabilities.

■ **NOTE: Do not adjust the handlebar to a position that allows air to enter the brake system.**

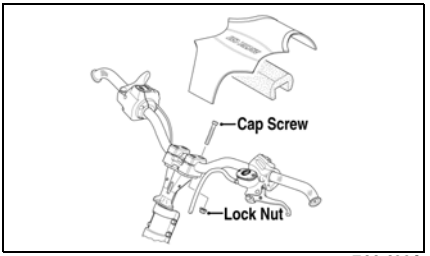
⚠ WARNING

Tighten cap screws according to specifications to prevent unexpected "movement" of the handlebar during operation over rough terrain. DO NOT position handlebar so steering (maximum right/left turning capabilities) or throttle and brake controls are affected.

2000

The handlebar can be adjusted to the operator's preference. To adjust the handlebar, use the following procedure:

1. Loosen the four cap screws and lock nuts securing the handlebar caps to the riser and the riser to the steering post.



744-439A

2. Adjust the handlebar to operator's desired position, tighten the cap screws evenly to 25 ft-lb, and check steering for maximum right/left turning capabilities.

■ **NOTE: Do not rotate the handlebar to a position that allows air to enter the brake system.**

⚠ WARNING

Tighten lock nuts/cap screws according to specifications to prevent unexpected "movement" of the handlebar during operation over rough terrain. DO NOT position the handlebar so steering (maximum right/left turning capabilities) or throttle and brake controls are affected.

Exhaust System

The exhaust system is designed to reduce noise and to improve the total performance of the engine. If any exhaust system component is removed from the engine and the engine is run, severe engine damage will result.

Air-Intake Silencer

Used in conjunction with the fuel intake system is a specially designed air-intake silencer. The purpose of the silencer is to quiet the intake of fresh air. Since the fuel intake system is calibrated with the air-intake silencer in place, the engine must never be run with the silencer removed. Performance will not be improved if the air-intake silencer is removed. In contrast, severe engine damage will occur.

CAUTION

These snowmobiles are not designed to be operated in dusty conditions. Operating the snowmobile in dusty conditions will result in severe engine damage.

Air-Intake Filter (7000)

The air filter is used in conjunction with the air-intake system. The purpose of the filter is to clean the outside air before it is sucked into the engine. Since the fuel intake system is calibrated with the filter in place, the engine must never be run with the filter removed.

Cooling System (3000/7000)

These snowmobiles are equipped with a closed liquid cooling system for engine cooling. The cooling system should be inspected daily for leakage and damage. Also, the coolant level should be checked daily. If leakage or damage is detected, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Battery

It is extremely important that the battery be maintained at full charge at all times and that the battery connections be clean and tight. If charging the battery becomes necessary, refer to Battery sub-section in the Maintenance section.

CAUTION

Always turn the ignition switch key to the OFF position when the snowmobile is not being used. Leaving the ignition switch in the ON position will result in discharging the battery and possible damage to the battery.

Jump-Starting

■ **NOTE: Arctic Cat does not recommend jump-starting a snowmobile with a dead battery but rather to remove the battery, service it, and correctly charge it; however, in an emergency, it may be necessary to jump-start a snowmobile. If so, use the following procedure to carefully and safely complete this procedure.**

⚠ WARNING

Improper handling or connecting of a battery may result in severe injury including acid burns, electrical burns, or blindness as a result of an explosion. Always remove rings and watches.

1. On the snowmobile to be jump-started, slide any terminal boots away.

⚠ WARNING

Any time service is performed on a battery, the following must be observed: keep sparks, open flame, cigarettes, or any other flame away. Always wear safety glasses. Protect skin and clothing when handling a battery. When servicing a battery in an enclosed space, keep the area well-ventilated.

2. Inspect the battery for any signs of electrolyte leaks, loose terminals, or bulging sides. Leaking or bulging battery cases may indicate a frozen or shorted battery.

⚠ WARNING

If any of these conditions exist, DO NOT attempt to jump-start, boost, or charge the battery. An explosion could occur causing serious injury.

3. Inspect the vehicle to be used for jump-starting to determine if voltage and ground polarity are compatible. The vehicle must have a 12-volt DC, negative ground electrical system.

CAUTION

Always make sure the electrical systems are of the same voltage and ground polarity prior to connecting jumper cables. If not, severe electrical damage may occur.

4. Move the vehicle to be used for the jump-start close enough to ensure the jumper cables easily reach; then set and lock the brakes, shut off all electrical accessories, and turn the ignition switch OFF.

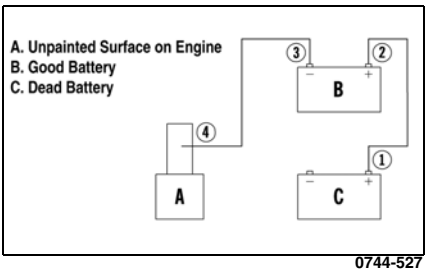
■ NOTE: Make sure all switches on the snowmobile to be jump-started are turned OFF.

5. Disconnect all external accessories such as cell phones, GPS units, and radios on both vehicles.

CAUTION

Failure to disconnect electronic accessories during jump-starting may cause system damage due to power spikes.

6. Attach one clamp of the positive (red) cable to the positive (+) terminal (1) of the dead battery (C) being careful not to touch any metal with the other clamp; then attach the other clamp of the positive (red) cable to the positive (+) terminal (2) of the good battery (B).



0744-527

■ NOTE: Some jumper cables may be the same color but the clamps or ends will be color-coded red and black.

7. Attach one clamp of the negative jumper cable (black) to the negative (-) terminal (3) of good battery (B); then attach the other clamp of the negative (black) jumper cable (4) to an unpainted metal surface (A) on the engine or frame well away from the dead battery and fuel system components.

⚠ WARNING

Never make the final connection to a battery as a spark could ignite hydrogen gases causing an explosion of the battery resulting in acid burns or blindness.

8. Stand well away from the dead battery and start the vehicle with the good battery. Allow the vehicle to run for several minutes applying some charge to the dead battery.

9. Start the snowmobile with the dead battery and allow it to run for several minutes before disconnecting the jumper cables.
10. Remove the jumper cables in opposite order of hook-up (4, 3, 2, 1). Be careful not to short cables against bare metal.

■ **NOTE: Have the battery and electrical system checked prior to operating the snowmobile again.**

Drive Clutch and Driven Clutch

The drive clutch and driven clutch do not require lubrication; therefore, no special maintenance is required by the snowmobile owner except for periodical cleaning (see the Periodic Maintenance Checklist in the Maintenance section).

However, the drive clutch and driven clutch should be disassembled, cleaned, and inspected by an authorized Arctic Cat Snowmobile dealer after every 800 miles of operation or at the end of the snowmobiling season whichever occurs first. This service is at the discretion and expense of the snowmobile owner.

When operating the snowmobile at high altitudes, it may be necessary to change certain component parts of the drive clutch and/or the driven clutch. See an authorized Arctic Cat Snowmobile dealer for further information.

CAUTION

DO NOT attempt to service the drive clutch and driven clutch. The drive clutch and driven clutch must be serviced by an authorized Arctic Cat Snowmobile dealer only.

Drive Clutch/Driven Clutch Alignment

The offset between the drive clutch and driven clutch are set at the factory. Normally, no adjustment is necessary as long as neither the drive clutch nor the driven clutch is removed or disassembled. However, if premature drive belt wear is experienced or if the drive belt turns over, the drive clutch/driven clutch alignment must be checked. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Fuel Pump

The fuel pump is designed to provide adequate amount of gas to the injectors at all throttle settings. If a fuel delivery problem is suspected, take the snowmobile to an authorized Arctic Cat Snowmobile dealer. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Shock Absorbers

Each shock absorber should be visibly checked weekly for fluid leakage, cracks or breaks in the lower case, or a bent plunger. If any one of these conditions is detected, replacement is necessary. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Standard-Lug Track

Accelerated wear strip wear caused by operating on ice or hard-packed snow conditions is NOT covered under Arctic Cat Inc. warranty policy.

Track Studs

■ **NOTE: Stud or hooker plate installation will void track and tunnel warranty.**

■ **NOTE: Arctic Cat does not recommend studding a track with a 1.5 inch lug or greater.**

■ **NOTE: Stud installation can be performed by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.**

⚠ WARNING

When installing studs on a single-ply track, it is important to use Arctic Cat-approved studs (proper head diameter). If approved studs (proper head diameter) are not used, studs could tear free of the track causing possible injury or even death. Consult an authorized Arctic Cat Snowmobile dealer for information.

For proper installation, use the following procedure:

1. Using a Stud Template, mark the desired stud pattern to be used.
2. Using the proper-sized stud hole drill bit, drill out the stud holes.
3. Push the stud through the hole from inside the track; then place the domed support plate and lock nut on the exposed stud.
4. Using a wrench to secure the stud, tighten the lock nut on the exposed stud.

It is also recommended that whenever studs are installed on a track, carbide wear bars should be installed on the skis. Carbide wear bars complement the track studs to balance steering control under these conditions. The length of the carbide on the wear bars should be proportionate to the number of track studs (i.e. small number of track studs — short length of carbide...many track studs — long length of carbide). The proper proportion between the number of studs and carbide length on the wear bar will maintain steering balance.

⚠ WARNING

Always balance the snowmobile with the proper proportion between the number of studs and carbide length on the wear bars. Do not "over drive" conditions; use common sense in all operating conditions.

CAUTION

Do not use studs that are more than 9.525 mm (0.375 in.) longer than the track lug height.

⚠ WARNING

Do not operate a snowmobile with loose studs as they may be thrown from the track. Always use a shielded safety stand whenever performing any maintenance or adjustments.

⚠ WARNING

DO NOT stand behind the snowmobile or near the rotating track. NEVER run the track at high speed when the track is suspended.

Reverse Operation

The reverse function offers the operator the convenience of being able to back up the snowmobile rather than having to turn the snowmobile around by hand.

Shifting Into Reverse

7000

CAUTION

Shift only when the vehicle is stopped and the engine is at idle or severe transmission damage may occur.

1. Move the gear shift knob into the neutral (center) position; then pull back on the knob and move it to the reverse position.

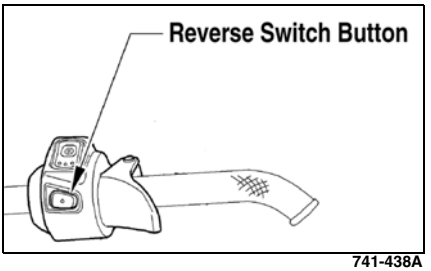
XM307

2. After shifting into reverse, apply the throttle slowly and evenly to allow the clutches to engage properly.

⚠ WARNING

Do not use high speed when backing up. Control could be lost and injury could occur.

2000/3000



741-438A

1. Always warm up the engine for 2-3 minutes prior to shifting into reverse. The reverse function is canceled when engine temperature is below or above normal operating range.
2. Shift only with the engine at idle RPM and the snowmobile completely stopped. The reverse function will not engage if engine is above 3000 RPM.
3. Upon pressing the reverse switch button, the reverse function will make up to three attempts to engage into reverse. If the function is not completed after the third attempt, the engine will shut down.

CAUTION

Never shift into reverse while the snowmobile is moving forward as it is hard on the driven clutch torque bracket and the cam rollers.

Operating in Reverse

7000

1. When reverse is engaged, a reverse icon will illuminate in the speedometer/tachometer and a reverse alarm sounds.

⚠ WARNING

Do not use high speed when backing up. Control could be lost and injury could occur.

2. To shift into forward, stop the snowmobile and allow the engine to idle (under 3000 RPM); then move the shift lever to either of the forward gears.
3. After shifting from reverse to forward (or from forward to reverse), apply the throttle slowly and evenly to allow the driven clutch to engage properly.

2000/3000

CAUTION

Never engage the electric starter or pull the recoil starter rope when the engine is running or when operating in reverse. Damage to the engine and/or either the electric start or recoil start system will occur.

1. When reverse is engaged, a reverse icon will illuminate in the speedometer/tachometer and a reverse alarm sounds.
2. On 2000 models, the reverse function will cancel if operated in reverse longer than 45 seconds. Whenever the reverse function has been canceled, the engine must be run in the forward mode for a minimum of 60 seconds at 2000 RPM before the reverse function can be used again.

⚠ WARNING

Do not use high speed when backing up. Control could be lost and injury could occur.

■ **NOTE: While operating in reverse, a "rev-limiter" will activate at 6000 RPM.**

3. To shift into forward, stop the snowmobile and allow the engine to idle (under 3000 RPM); then press the reverse button and release. The forward selection will be complete.
4. After shifting from reverse to forward (or from forward to reverse), apply the throttle slowly and evenly to allow the driven clutch to engage properly.
5. The reverse function is canceled whenever the engine is shut off.

CAUTION

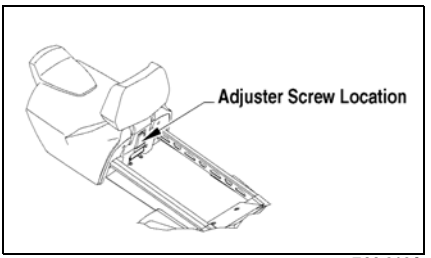
After reversing in deep powder snow conditions, make sure the snowflap does not become "caught up" in the track. Track and/or snowflap damage may occur.

Adjustable/Movable Backrest

Bearcat 2000/Lynx 2000 LT

The backrest is designed for maximum comfort and safety. When riding double, the backrest must be in the passenger seat position.

To change the height of the backrest, loosen the adjuster screw, move the backrest up or down to the desired position, and tighten the adjuster screw to lock the backrest in place.



744-610A

When riding single, the backrest can be moved to the forward seat position.

⚠ WARNING

Moving the backrest to the forward seat position limits the seating capacity to one person only.

To move the backrest, loosen, but do not remove, the cap screw at the rear of seat, install/adjust the passenger seat, and tighten the cap screw securely.

■ NOTE: If moving the backrest to the forward seat position, the passenger seat must be removed.

Removable Rear Seat

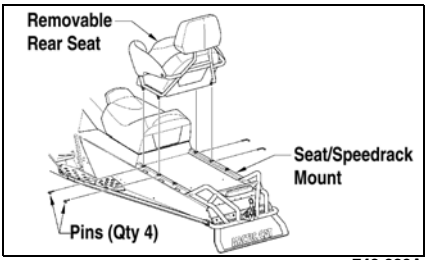
Bearcat 2000 XT/XTE

These snowmobiles are equipped with a removable rear seat to allow for additional cargo space when no passenger is being carried.

■ NOTE: If additional cargo is being added, maximum weight on the snowmobile (operator/passenger/cargo) should not exceed the maximum limitation set for each snowmobile. See the chart in the Suspension - Overload Springs sub-section in the Maintenance section for details. Also, the overload springs should be engaged.

To remove the rear seat, use the following procedure:

1. Remove the four pins securing the rear seat to the seat/Speedrack mount.



743-329A

2. Lift on the back of the rear seat and move it rearward to remove it from the mount.

To install the rear seat, use the following procedure:

1. Place the rear seat into position on the mount making sure the four pin holes are properly aligned with the mounting location on mount.
2. Install the four pins making sure they are properly seated.

⚠ WARNING

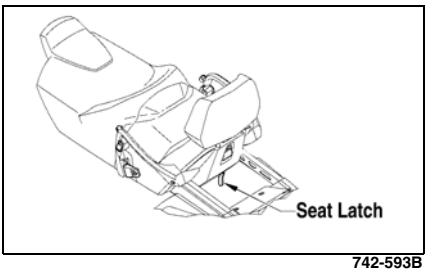
Make sure the rear seat is securely locked in place with the pins before carrying a passenger or personal injury may result.

Bearcat 2000 LT/Lynx 2000 LT

These snowmobiles are equipped with a removable rear seat to allow for additional cargo space when no passenger is being carried.

■ **NOTE: If additional cargo is being added, maximum weight on the snowmobile (operator/passenger/cargo) should not exceed the maximum limitation set for each snowmobile. See the chart in the Suspension - Overload Springs sub-section in the Maintenance section for details. Also, the overload springs should be engaged.**

To remove the rear seat, rotate the seat latch either clockwise or counterclockwise and hold it in that position; then lift and remove the seat from the tunnel.



742-593B

To install the seat, use the following procedure:

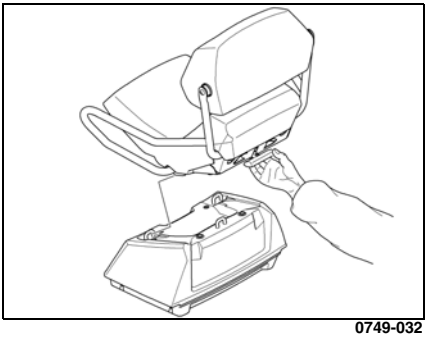
1. Place the seat into position on the tunnel.
2. Rotate the seat latch either clockwise or counterclockwise and hold it in that position; then slide the seat forward, allow it to settle into position, and release the latch to lock the seat securely.

⚠ WARNING

Make sure the rear seat is securely locked in place before carrying a passenger or personal injury may result.

Bearcat 7000 XT

To remove the rear seat, lift up the lever on the rear of the seat and hold it in that position; then lift and remove the seat.



0749-032

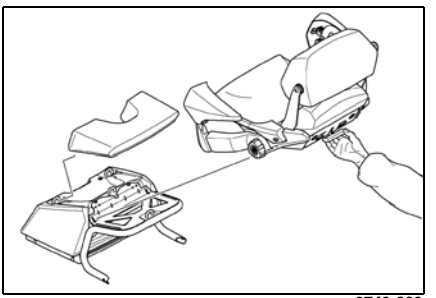
To install the rear seat, position the front of the seat base tabs under the loops in the seat frame; then press down and secure.

⚠ WARNING

Make sure the rear seat is securely locked in place before carrying a passenger or personal injury may result.

Pantera 7000 XT LTD

To remove the rear seat, lift up the lever on the rear of the seat and hold it in that position; then lift and remove the seat.



0749-032

To install the rear seat, position the front of the seat base tabs into the two slots in the seat frame; then press down and secure.

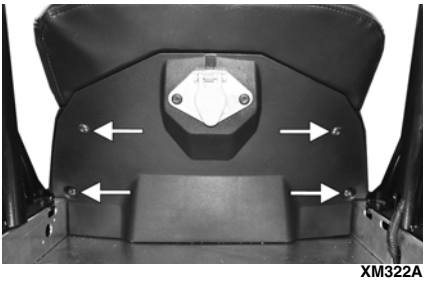
⚠ WARNING

Make sure the rear seat is securely locked in place before carrying a passenger or personal injury may result.

Removable Light Bar (Bearcat XT GS)

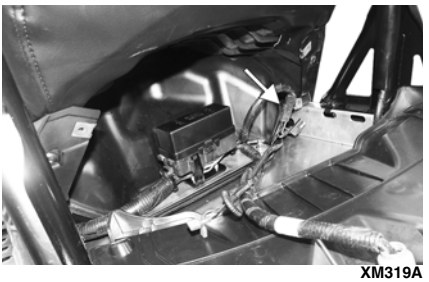
This snowmobile is equipped with a removable light bar. To remove and install, use the following procedure.

1. Remove the four screws securing the seat panel to the rear of the seat base.



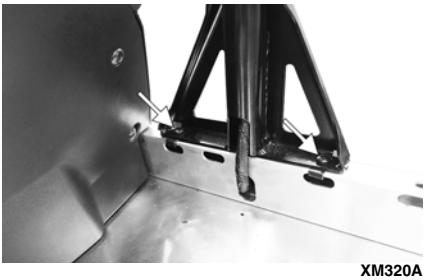
XM322A

2. Disconnect the style-21 connector to the right of the fuse block then carefully pull the light bar harness through the tunnel mount.



XM319A

3. Remove the four screws securing the light bar to the tunnel mounts.



XM320A

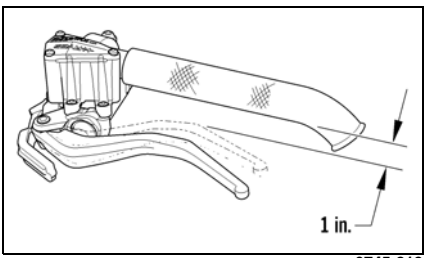
Towing

If the snowmobile is to be towed by another snowmobile, do not tow using the loops in the skis. The tow rope should be attached to the spindles.

Pre-Start

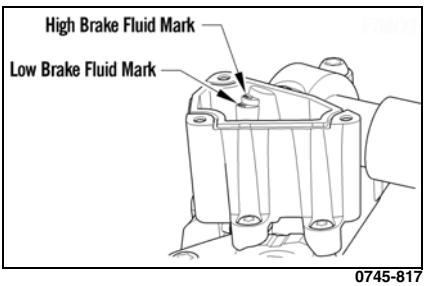
It is imperative that the brake system be checked for wear and proper operation and that all safety checks found in the accompanying Snowmobile Safety Handbook be performed before attempting to start the engine. After the engine has been started, check the headlights (high and low beam), taillight, and brakelight to be sure they are working properly and adjusted correctly. Make sure all lights are clean to provide maximum illumination. The headlight and taillight must be clean and must be illuminated whenever the engine is running.

1. Test the operation of the brake system by compressing the brake lever. The brake lever must feel firm when compressed; then while holding the brake lever in the compressed position, measure the distance between the brake lever and the handlebar. The distance must be greater than 2.54 cm (1 in.).



0745-816

2. With the brake fluid reservoir in a level position and the cover removed, check the fluid level. The brake fluid level must be at the high brake fluid mark in the reservoir.



0745-817

3. If the brake fluid is below the high brake fluid mark, add Arctic Cat approved DOT 4 brake fluid until the fluid is at the recommended level. Install and secure the reservoir cover. Do not allow moisture to contaminate the brake system.

CAUTION

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the snowmobile.

⚠ WARNING

Do not overfill the brake fluid reservoir. Overfilling the reservoir may cause the brake system to hydraulically lock. Use only Arctic Cat approved brake fluid.

⚠ WARNING

Do not start the engine if the brake system is not functioning properly. Service the brake system or have it properly repaired prior to operating the snowmobile. Serious personal injury or even death may occur if the brake system is not operating properly.

4. Test the throttle control lever by completely compressing and releasing it several times. The lever MUST return to the idle position quickly and completely.

CAUTION

Always check the coolant level before starting the engine.

5. Make sure the battery is fully charged to ensure the engine is turning over at a sufficient RPM to start.

■ **NOTE: Even though the engine turns over, the engine may not have sufficient RPM to start.**

6. Check the spark plugs and replace as necessary. Short engine run times cause carbon buildup on spark plugs.

■ **NOTE: Spark plugs can be changed by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for inspection and service. This service is at the discretion and expense of the snowmobile owner.**

7. Ensure the gas tank is full of fresh gas whenever the snowmobile is removed from storage.
8. Ensure drive belt tension and deflection are correct to reduce starter drag.

Starting and Stopping Engine

1. Move the emergency stop switch to the UP or RUN position.
2. Insert key into ignition switch; then rotate key to the RUN position.

■ **NOTE: When a cold engine is being started, DO NOT COMPRESS THE THROTTLE CONTROL LEVER. If the throttle control lever is compressed, the engine will not start because the fuel/air mixture will be too lean.**

■ **NOTE: Wait for the gauge to completely power up before attempting to start the engine.**

3. Rotate the key to the START position for 5-10 seconds; then when the engine starts, release the key.

CAUTION

Do not continuously run the starter for more than 10 seconds at a time.

4. A "cold drive-away" function is incorporated within the engine. This function is active until the engine reaches operating temperature.

CAUTION

It is extremely important that the engine is properly warmed up before subjecting the engine to high speed operation or heavy loads. The engine should be allowed to idle at least 3-4 minutes before it is operated at more than 1/2 throttle. In extremely cold conditions, the warm-up time will be longer. Cold seizure and piston scuffing caused by insufficient warm-up will not be covered by warranty. Also, do not idle the engine for excessively long periods of time.

5. Flooding — If the engine does not start but seems ready to start, engage the brake lever lock; then compress the throttle control lever fully and try to start the engine. When the engine starts, release the throttle control lever immediately. After the warm-up, release the brake lever lock.
6. To shut off the engine, turn the ignition key to the OFF position or push the emergency stop switch to the DOWN position.

CAUTION

Always turn the ignition switch key to the OFF position when the snowmobile is not being used. Leaving the ignition switch in the ON position will result in discharging the battery and possible damage to the battery.

■ **NOTE: When the engine is turned off, wait for the gauge to completely power down before attempting to start the engine.**

Braking

The following items are items that the operator must be familiar with when operating this snowmobile and its hydraulic brake system. Important additional information on the proper maintenance of the brake system is found in the Maintenance section.

1. Use the brakes wisely. Each time the brakes are applied in all hydraulic brake systems (including automotive applications), heat is transferred to the brake fluid. The amount of heat transferred during high speed stops and/or repetitive use may be high enough to boil the brake fluid and cause the brakes to either fade or may cause an unexpected loss of brakes.

   If this occurs, the brake fluid requires a cool-down period before the brakes will again function properly. This cool-down period will vary depending upon the ambient air temperature and the temperature of the brake fluid. If loss of brakes has occurred because of high fluid temperatures, do not operate the snowmobile until the cool-down period has expired and brake lever firmness has returned.

⚠ WARNING

Excessive, repetitive use of the hydraulic brake for high speed stops will cause overheating of the brake fluid and premature brake pad wear which will result in an unexpected loss of brakes.

2. Be sure to maintain the brake fluid at the proper level and take care not to get any moisture in the system as moisture in the brake fluid lowers the boiling point. If the brake fluid is ever boiled (by high speed stops or repetitive use) or if moisture is allowed to enter the system, it must be changed. Never substitute or mix different types or grades of brake fluid.

⚠ WARNING

Use only Arctic Cat approved DOT 4 brake fluid. Never substitute or mix different types or grades of brake fluid. Brake loss can result. Check brake fluid level and pad wear before each use. Brake loss can result in severe injury or even death.

3. Never ride the brake. Even maintaining minimal pressure on the brake lever will cause the brake pads to drag on the disc and may overheat the brake fluid.
4. The brake lever lock is not a parking brake and should not be applied for periods exceeding 5 minutes. NEVER OPERATE THE SNOWMOBILE WITH THE BRAKE LEVER LOCK ENGAGED.

⚠ WARNING

The brake lever lock is not a parking brake and should not be applied for periods exceeding 5 minutes. The brake lever lock maintains the brake lever in the compressed position and maintains pressure against the brake disc; however, after a period of time, the pressure applied to the brake disc may relax below the amount required to hold the snowmobile stationary.

5. Pumping the brake lever is permissible; however, if pumping the brake lever more than twice is necessary to obtain the necessary stopping power, immediately take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.
6. When new brake pads are installed, a "burnishing" process is required. Drive the snowmobile slowly and compress the brake lever several times until the pads just start to heat up; then allow them to thoroughly cool down. This process stabilizes the pad material and extends the life of the pads.

Emergency Stopping

There are several methods of stopping or slowing the snowmobile under a variety of situations. Identified in the following chart are the ways a snowmobile may be brought to a stop and the effectiveness under normal conditions.

Item	Function	Condition
Emergency Stop Switch	interrupts ignition circuit	ALL
Throttle/Ignition Monitor Switch	interrupts ignition circuit	ALL
Ignition Switch	interrupts ignition circuit	ALL
Brake	slows the drive system	ALL

Engine Heater (Pantera 7000 XT LTD/Bearcat 7000 GS)

CAUTION

Do not start the snowmobile while heating element is plugged in. Damage to the heater element will occur.

CAUTION

Do not plug in heater above -5°C/23°F or heater and/or engine damage may occur.

These models are equipped with engine heaters which will improve start-up in extreme weather. To locate the engine heater plug in, open the hood and remove the right-side access panel. This plug in will be located just behind the transmission case. When not in use make sure the end is tucked away from any moving components.

XM324A

Throttle/Ignition Monitor Switch

The throttle control is equipped with a monitor switch for safety purposes which will stop the engine when a loss of return spring force occurs. If ice forms in the throttle system or if there is some other malfunction of the throttle system resulting in a loss of return spring force, the monitor switch will stop the engine when the throttle control lever is released.

⚠ WARNING

If any malfunction of the throttle system occurs (such as freezing in fluffy snow) and the monitor switch does not shut off the engine, press down on the emergency stop switch IMMEDIATELY to stop the engine. DO NOT start the engine until the malfunction in the throttle system has been located and corrected.

If the snowmobile engine stops abruptly when the throttle control lever is released and the activation of the monitor switch is suspected, use the following procedure:

1. Rotate the ignition key to the OFF position.
2. Remove ice and snow from the throttle system and wait 5-10 minutes for the engine heat to thaw ice from the throttle system.
3. Test the throttle control lever by compressing and releasing it several times. The lever MUST return to the idle position quickly and completely.

■ **NOTE: If the throttle control lever operates properly and the engine does not start, compress the throttle lever slightly (approximately 1/8 throttle) and try starting the engine. If the engine now starts and stops when the throttle lever is released, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.**

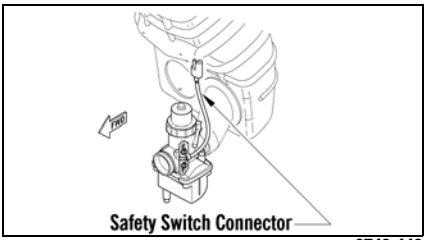
⚠ WARNING

If the throttle control lever does not work properly, DO NOT ATTEMPT TO START THE ENGINE.

4. If the throttle control lever operates properly, rotate the ignition key to the RUN position and go through normal starting procedures.

■ **NOTE: On the 2000 models if the throttle control lever operates properly and the engine does not start, either a malfunctioning monitor switch or a misadjusted magnetic carburetor switch may be the problem. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner. However, if a dire emergency exists wherein the engine must be started, disconnect the carburetor safety switch connectors. If disconnection of the carburetor safety switch connectors is needed to start the engine, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service as soon as possible. If not under warranty, this service is at the discretion and expense of the snowmobile owner.**

■ **NOTE: On the 2000 models to access the switch connectors, open the left-side access panel and remove the belt guard; then locate the switch on the left-side of the carburetor and trace the wire to the connector.**



0743-448

■ **NOTE: On the 3000/7000 models if the throttle control lever operates properly and the engine does not start, a malfunctioning monitor switch may be the problem. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner. However, if a dire emergency exists wherein the engine must be started, disconnect the throttle monitor switch located in the right-side handlebar control.**

■ **NOTE: On the 3000/7000 models if disconnection of the throttle monitor switch is needed to start the engine, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service as soon as possible. If not under warranty, this service is at the discretion and expense of the snowmobile owner.**

⚠ WARNING

Under no circumstances should disconnection of the throttle control wiring harness be used as a substitute for the monitor switch during normal operation of the snowmobile. Personal injury and damage could occur if the throttle system malfunctions or if the operator is unable to stop the engine in an emergency. If the snowmobile must be operated with a disconnected throttle control wiring harness, EXTREME CAUTION MUST BE TAKEN. NEVER EXCEED 10 MPH WITH THE THROTTLE CONTROL WIRING HARNESS DISCONNECTED.

■ **NOTE: The monitor switch is now bypassed. All other ignition/electrical features (ignition switch, emergency stop switch, headlight, taillight, and brakelight) will operate properly.**

Varying Altitude Operation

Operating a snowmobile at varying altitudes requires changes in performance components. These changes affect drive train components and carburetion components (2000).

The altitude information decal is located on the belt guard of the snowmobile (Lynx 2000). On the Bearcat 2000 LT/ Lynx 2000 LT the information is incorporated into the Carburetor Jet Chart decal on the belt guard.

■ **NOTE: Just as important as calibrating the snowmobile for higher altitudes is recalibrating the snowmobile when going to lower altitudes. Always consult the altitude decal.**

CAUTION
On the 2000 models, carefully follow the Carburetor Jet Chart recommendations for proper altitude calibration.

■ **NOTE: Carburetion and drive train changes can be made by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.**

Gear Case (2000)

It is very important that the gear case be flushed and the lubricant be replaced after each season of use. Arctic Cat recommends that the flushing and replacing be done prior to off-season storage.

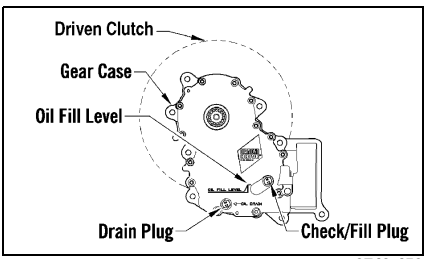
■ NOTE: Flushing the gear case and replacing the lubricant can be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

To flush the gear case and replace the lubricant, use the following procedure:

1. Open the left-side access panel; then remove the panel and the belt guard.
2. Remove the drive belt: then remove the driven clutch.

■ NOTE: If excessive oil deposits are noticed, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

3. Using Handlebar Stand (p/n 5639-152) or a suitable substitute, tip the snowmobile onto its right side.
4. Remove the drain plug from the gear case; then install a drain adapter fitting with hose into the drain plug hole.



0743-456

■ NOTE: To aid in draining the lubricant, it is advisable to fashion a drain adapter by acquiring a fitting - Gear Case Drain Fitting (p/n 0644-552) - and a length of 3/8-in. hose.

5. Tip the snowmobile back to the upright position; then place a drain pan on the floor next to the drain hose and tip the snowmobile toward its left side far enough to allow the lubricant to drain from the gear case into the drain pan.
6. Secure the snowmobile in this position until the lubricant is completely drained.
7. When the lubricant has completely drained from the gear case, tip the snowmobile back to the upright position, remove the drain adapter, and install and securely tighten the drain plug; then remove the check/fill plug.
8. Pour Arctic Cat ACT Drive Flush Fluid (p/n 4639-333) into the check/fill hole; then install the plug. Tighten securely.

CAUTION

Do not add more or less than the recommended amount (6 fl oz) of flush fluid to the gear case.

9. Install the driven clutch; then install the drive belt (see Drive Belt subsection in the Maintenance section) and the belt guard.
10. Install the left-side access panel; then close the access panel.
11. Position the tips of the skis against a wall; then using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.

⚠ WARNING

The tips of the skis must be positioned against a wall or similar object.

⚠ WARNING

DO NOT stand behind the snowmobile or near the rotating track. NEVER run the track at high speed when the track is suspended.

12. Start the engine and accelerate slightly. Use only enough throttle to turn the track several revolutions. SHUT ENGINE OFF.

13. Open the left-side access panel; then remove the panel and the belt guard.
14. Remove the drive belt (see Drive Belt sub-section in the Maintenance section); then remove the driven clutch.
15. Using Handlebar Stand (p/n 5639-152) or a suitable substitute, tip the snowmobile onto its right side.
16. Remove the drain plug from the gear case; then install the drain adapter fitting with hose into the drain plug hole.
17. Tip the snowmobile back to the upright position; then place a drain pan on the floor next to the drain hose and tip the snowmobile toward its left side far enough to allow the flush fluid to drain from the gear case into the drain pan.
18. Secure the snowmobile in this position until the flush fluid is completely drained.

CAUTION

It is critical that all of the flush fluid be drained from the gear case prior to filling with new lubricant.

19. When the fluid has completely drained from the gear case, tip the snowmobile back to the upright position, remove the drain adapter, and install and securely tighten the drain plug; then remove the check/fill plug.

CAUTION

The correct lubricant to use in the gear case is Arctic Cat Synthetic ACT Gear Case Fluid (see chart). Any substitute may cause serious damage to the drive system.

20. Pour 444 ml (15 fl oz) of Arctic Cat Synthetic ACT Gear Case Fluid into the check/fill hole; then install the plug. Tighten securely.

CAUTION

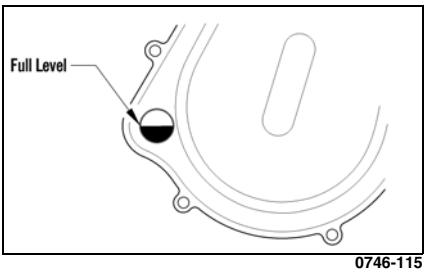
Do not add more or less than the recommended amount of lubricant to the gear case or damage to the gear case will occur. Oil level should be at the Oil Fill Level on the gear case cover.

21. Install the driven clutch; then install the drive belt (see Drive Belt subsection in the Maintenance section) and the belt guard.
22. Install the left-side access panel; then close the access panel.

Chain Case (3000)

■ NOTE: The snowmobile must be on a level surface for this procedure.

Check the lubricant level in the chain case by using the sight glass. The correct level is when the lubricant is at least halfway up in the sight glass.



0746-115

■ NOTE: Adding lubricant can be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

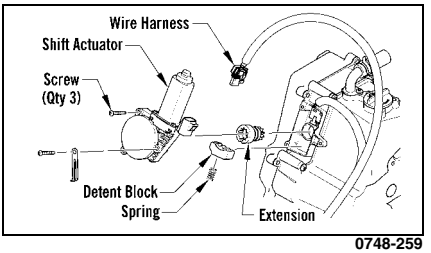
■ NOTE: Make sure the snowmobile is fully shifted into forward.

1. If the lube level is low, remove the three screws securing the shift actuator to the chain case, disconnect the actuator wiring harness, and remove the actuator extension, shift detent, and spring; then add appropriate amount of Arctic Cat Synthetic Chain Lube (p/n 6639-539) through the shift actuator opening until the lube is halfway up the sight glass.
2. Install the actuator extension and gently rotate counter clockwise to make sure the shift fork is in the forward position.

3. Remove the actuator extension; then re-install the actuator extension making sure the notch in the extension is directed downward.
4. Install spring into the bottom of detent block and install into the chain case cover. The notch in the extension should be lined up with the notch in the block.

■ NOTE: Rotate the extension clockwise approximately 20° making sure not to pull out the extension when rotating. This is only to aid in the installation of the actuator.

5. Install the actuator and secure using the existing three torx-head screws. Tighten to 36 in-lb.
6. Connect the harness to the gear position sensor; then secure the connector to the main harness using a cable tie.



0748-259

7. Start the engine and verify proper reverse and forward operation by shifting in and out of reverse three times.

■ NOTE: If excessive build-up of moisture or discolored oil is detected in the chain case, it may be necessary to replace the lube.

Transmission (7000)

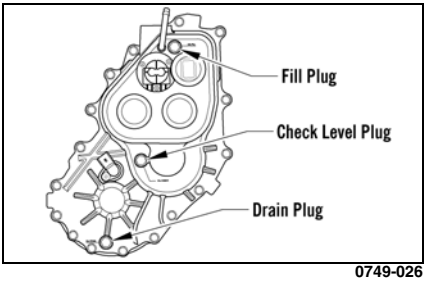
■ NOTE: The snowmobile must be on a level surface for this procedure.

It is very important that the transmission be flushed and the lubricant be replaced after each season of use. Arctic Cat recommends that the flushing and replacing be done prior to off-season storage.

■ NOTE: Flushing the transmission and replacing the lubricant can be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

To flush the transmission and replace the lubricant, use the following procedure:

1. Open the hood and remove the right-side access panel.
2. Remove the drain plug from the transmission cover; then allow all lubricant to drain into a suitable container.



0749-026

■ NOTE: It is critical that the snowmobile is on a level surface to ensure the lubricant drains properly and completely.

3. When the lubricant has completely drained, install and securely tighten the drain plug; then remove the fill plug.
4. Pour Arctic Cat ACT Drive Flush Fluid (p/n 4639-333) into the fill plug hole; then install the plug. Tighten securely.
5. Install the right-side access panel and close the hood.
6. Using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.

⚠ WARNING

DO NOT stand behind the snowmobile or near the rotating track. NEVER run the track at high speed when the track is suspended.

7. Start the engine and accelerate slightly. Use only enough throttle to turn the track several revolutions. SHUT THE ENGINE OFF.
8. Open the hood and remove the right-side access panel.
9. Place a drain pan on the floor under the transmission; then remove the drain plug from the transmission. Allow the fluid to drain into the pan until the flush fluid is completely drained.
10. When the fluid has completely drained, install and securely tighten the drain plug; then remove the check level and fill plugs.
11. Pour Arctic Cat Synthetic ACT Heavy Duty 3-Speed Transmission Fluid (p/n 7639-080) into the fill hole until fluid is level with the bottom of the check level hole; then install both plugs. Tighten securely.

CAUTION

Any substitute may cause serious damage to the drive system.

CAUTION

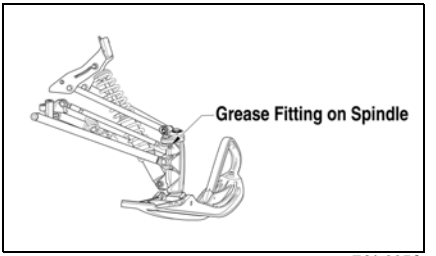
Do not add more or less than the recommended amount of lubricant to the gear case or damage to the gear case will occur.

12. Install the right-side access panel and close the hood.

Front Suspension (2000)

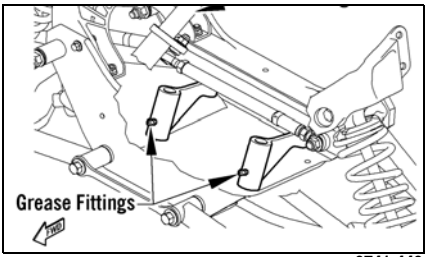
■ NOTE: Arctic Cat recommends that Arctic Cat All-Temp Grease (p/n 4639-365) be used for this procedure.

It is very important that the front suspension is greased on a monthly basis using all-temperature grease. The front suspension should also be greased after trailering the snowmobile on an open trailer. Pump grease into the spindle grease fitting (both sides) until grease is noted coming out of the top and bottom of the spindle. Wipe excess grease from the spindle.



741-335A

Turn the handlebar to the right; then from the right side, pump grease into the steering arms until grease is noted coming out of either end of the arms. Wipe excess grease from the arms.



0741-440

Rear Suspension

This procedure should be done every 40 operating hours.

■ NOTE: Arctic Cat recommends that Arctic Cat All-Temp Grease (p/n 4639-365) be used for this procedure.

1. Shut engine off and wait for all moving parts to stop.
2. Lubricate the grease fittings with all-temperature grease.

Periodic Maintenance Checklist			
Item	**Interval**	**Page**	**Remarks**
Brake System	Daily	45	Check for binding, leakage, and proper operation; lever firmness, travel, caliper, disc, and pads
Cooling System - Liquid	Daily	14,37	Check for leakage, damage, obstructions, coolant level
Oil System	Daily	—	Check for leakage, damage, and injection/engine oil level
Engine Oil (3000/7000)	2500 Mi/ Seasonal	34	Change oil and filter
Air-Intake Filter	2500 Mi/ Seasonal	8	Inspect/change filter during every oil change.
Battery	Daily	14,42	Check for proper charge and tight connections
Stop Switch	Daily	—	Check for proper operation
Hoses	Daily	—	Check for damage, leakage, and wear
Headlight & Taillight/Brakelight	Daily	55	Check for proper operation and cleanliness
Steering System	Daily	—	Check for proper operation, tightness of bolts, and binding
Throttle Control System	Daily	25	Check for binding, sticking, proper operation, throttle cable tension, and wear
Drive Belt	Daily Monthly	48	Check for wear, cracks, and fraying Check length and width dimensions
Ski Wear Bars	Daily	60	Check for wear and damage
Electrical Wiring	Weekly	—	Check for wear, damage, and tight connections
Exhaust System	Weekly	14	Check for damage, leakage, and obstructions
Nuts, Bolts, Fasteners	Weekly	—	Check tightness
Shock Absorbers	Weekly	16,53	Check for fluid leakage and damage
Valve Clearance	5000 Mi/ Seasonal	42	Check/adjust
Suspension	Weekly	53	Check for damage, loose components, and proper adjustment
Track Tension/Alignment	Weekly	51,52	Check/adjust as necessary
Wear Strips	Weekly	61	Check for wear and damage
Wires & Cables	Weekly	—	Check for wear, damage, and fraying
Fuel System - Tank, Pump, In-Line Filter, & Vent Hose	Weekly	—	Check for damage, wear, obstructions, and leakage
Fuel Filter	5000 Mi/ 2 years	—	Replace
Transmission/Chain Case/Gear Case	Seasonal	29	Flush and change drive fluid prior to storage
Heat Exchangers	Monthly	—	Check for wear, leakage, and damage
Drive Clutch/Driven Clutch	Monthly	16,16	Check for damage, binding, and wear/remove drive belt, clean drive clutch/driven clutch with compressed air, and clean sheaves with suitable parts-cleaning solvent
Front & Rear Suspension	Monthly	31,31	Grease

The longevity and safety of the snowmobile can be increased by making periodic checks of the items in the preceding checklist.

If, at any time, abnormal noises, vibrations, or improper working conditions of any component of this snowmobile are detected, DO NOT OPERATE THE SNOWMOBILE. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for inspection and adjustment or repair. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

The snowmobile should be taken to an authorized Arctic Cat Snowmobile dealer at the end of each snowmobiling season for general inspection and for off-season storage servicing. This inspection and servicing is at the expense of the snowmobile owner.

Fuel System

⚠ WARNING

Whenever any maintenance or inspection is made on the fuel system in which there may be fuel leakage, there should be no welding, smoking, open flames, etc., in the area.

In-Line Fuel Filter

2000

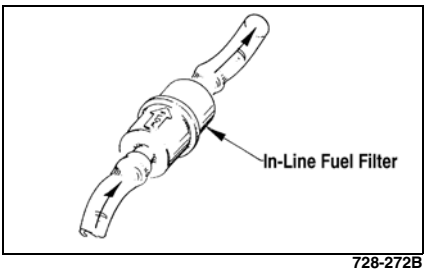
Arctic Cat recommends that the in-line fuel filter be checked weekly. The in-line fuel filter is located just in front of the fuel pump inlet fitting. The filter must be clean to allow the fuel hose to transmit the amount of gasoline required.

If the in-line fuel filter is obstructed, gasoline flow will be restricted; therefore, the filter must be replaced. To remove and install the in-line fuel filter, use the following procedure:

1. Pinch off the fuel hose between the gas tank and fuel filter.
2. Remove and discard the clamps; then pry the fuel hoses off the in-line fuel filter and remove the filter.

■ NOTE: The in-line fuel filter must be replaced if obstructed. Filters are available from an authorized Arctic Cat Snowmobile dealer.

3. Install the new in-line fuel filter (if necessary) in the fuel hose so the arrow on the filter points toward the fuel pump. Make sure the fuel hoses fit tightly on the filter. If the existing fuel hose does not fit tightly on the filter, cut 6 mm (1/4 in.) from the end of the fuel hose; then install on the filter and secure with new clamps.



728-272B

⚠ WARNING

The fuel hoses must fit tightly on the fuel filter. If the fuel hose length doesn't permit this procedure, replace the fuel hose. Also, after installing the fuel hoses on the filter, check to be sure that the fuel hoses do not contact any hot or rotating components.

7000

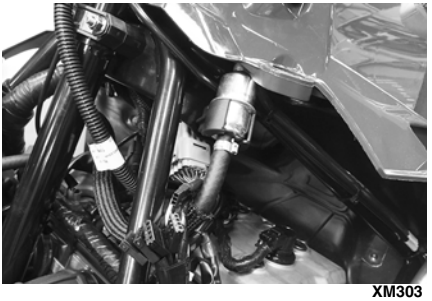
Arctic Cat recommends that the in-line fuel filter be replaced every 5000 miles. The in-line fuel filter is located under the hood and on the clutch side of the steering post. The filter must be clean to allow the fuel hose to transmit the amount of gasoline required.

If the in-line fuel filter is obstructed, gasoline flow will be restricted; therefore, the filter must be replaced. To remove and install the in-line fuel filter, use the following procedure:

⚠ WARNING

Since the fuel supply hose may be under pressure, always wear safety glasses; then remove the hose slowly to release the pressure. Place an absorbent towel around the connection to absorb the fuel.

■ NOTE: Before removing the fuel filter, take note of the filter inlet and outlet for installing purposes.



XM303

1. Remove the fuel filter from the fuel filter bracket.
2. Remove and discard the existing hose clamps; then slowly remove the fuel hoses from the fuel filter. Dispose of the excess fuel from the filter properly.
3. Inspect the fuel hoses thoroughly for any signs of cracking, cuts, or wear points.
4. Place new hose clamps on the gasline hoses; then press the hoses fully onto the fuel filter making sure the inlet and outlet oriented correctly.
5. When installing the new hose clamps make sure there is no more than 9 mm between the filter and the clamps. Secure the new hose clamps using Fuel Hose Clamp Tool (p/n 0644-545) to make sure the clamps are tight by crimping the clamps until the two clamp areas touch.

SNO-1308

6. Install fuel filter to the fuel filter bracket; then start the engine and inspect the fuel hoses and filter for any signs of leaks.

Gasoline Additives

Fuel de-icer can be used for all models. Also, periodic use of an injector cleaner is recommended especially in the last tank of gasoline before storage. Arctic Cat Fuel Stabilizer (p/n 0436-907) should also be added to the last tank of gasoline before storage.

Fuel Pickup Valves

If ever there is a restricted fuel flow and a pickup valve is suspected, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Checking Engine Oil Level

3000

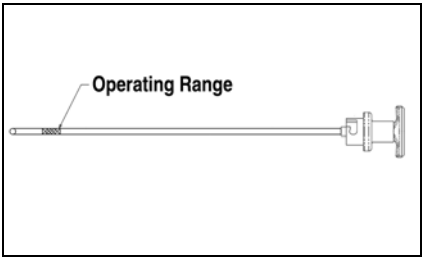
■ NOTE: The snowmobile must be on a level surface for this procedure.

■ NOTE: The engine must be at operating temperature before checking the oil level or an incorrect oil level will result.

1. Start the engine and let it idle and warm up until the fan on the radiator turns on, or if the snowmobile was operated, allow the engine to idle for approximately 30 seconds.
2. Shut the engine off; then remove the left access panel. Remove the oil level stick and wipe it with a clean cloth.

XM317A

3. Install the oil level stick and remove the oil level stick; the engine oil level should be within the operating range but not above the FULL mark.



SNO-525A

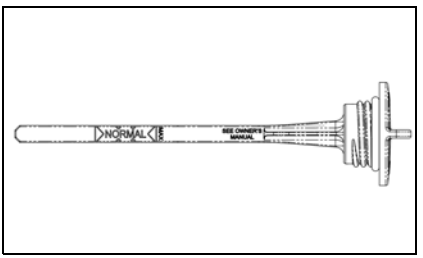
4. If step 1-3 was followed and the oil level is not within the operating range, add the recommended engine oil through the oil stick tube. Install the oil level stick and the left access panel.

7000

■ NOTE: The snowmobile must be on a level surface for this procedure.

■ NOTE: The engine must be at operating temperature before checking the oil level or an incorrect oil level will result.

1. Start the engine and let it idle and warm up until the fan on the radiator turns on, or if the snowmobile was operated, allow the engine to idle for approximately 30 seconds.
2. Shut the engine off; then allow the engine to cool. Remove the oil level stick from the oil tank and verify it is within the "NORMAL" range on the stick.



SNO-482

3. If step 1 and 2 was followed and the oil level is not within the "NORMAL" range, add the recommended engine oil.

■ NOTE: Care must be taken not to over-fill the oil tank.

Changing Engine Oil/ Filter

3000

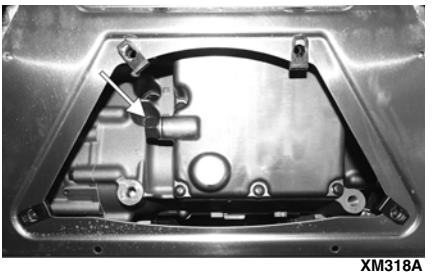
⚠ WARNING

Engine oil is extremely hot immediately after the engine is turned off. Burning could occur if oil contacts skin or clothing.

■ NOTE: Recycle or properly dispose of the used engine oil.

■ NOTE: The access panels and hood must be removed for this procedure.

1. Park the snowmobile on a level surface; then start the engine and let it idle and warm up until the fan on the radiator turns on, or if the snowmobile was operated, allow the engine to idle for approximately 30 seconds. Shut the engine off.
2. Remove the torx-head screws and the rear access plate from beneath the snowmobile.
3. Place a drain pan beneath the engine oil drain screw; then remove the screw and allow the oil to drain completely.



XM318A

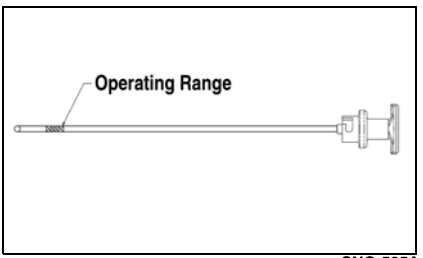
4. Using Oil Filter Wrench, loosen (but do not remove) the oil filter and allow the oil to drain from the filter into the drain pan; then remove the filter.

XM323

5. Apply a light coat of fresh engine oil to the seal of the new oil filter.
6. Install the new oil filter by turning the oil filter by hand until the seal has contacted the oil filter mounting surface; then tighten the oil filter to 12 ft-lb.
7. Install the engine oil drain screw with a new washer. Tighten the screw to 10 ft-lb.
8. Pour 2.8 L (3 US quarts) of engine oil in through the oil level stick tube.
9. Install the oil level stick; then start the engine and check for the oil pressure warning icon.

■ NOTE: The warning icon should go out within five seconds. If it does, proceed to step 10. If the warning icon does not illuminate, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

10. Shut the engine off; remove the oil level stick from the oil tank and verify it is within the operating range on the stick.



SNO-525A

■ NOTE: If the oil and engine are not at operating temperature, the oil level may read too low. Always make sure the engine is at operating temperature before checking the oil.

11. Install the access plate and torx-head screws beneath the snowmobile; then install the hood and access panels.

7000

⚠ WARNING

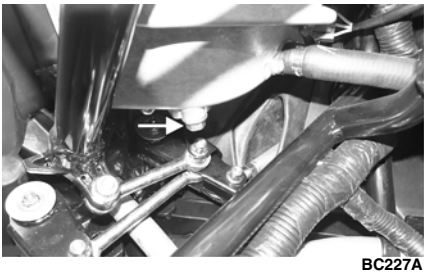
Engine oil is extremely hot immediately after the engine is turned off. Burning could occur if oil contacts skin or clothing.

1. Park the snowmobile on a level surface; start the engine and let it idle and warm up until the fan on the radiator turns on, or if the snowmobile was operated, allow the engine to idle for approximately 30 seconds. Shut the engine off and allow the engine to cool.
2. Remove the torx-head screws securing the skid plate and access plate from beneath the engine.
3. Place a drain pan beneath the engine oil pan drain plug; then remove the plug and allow the oil to drain completely.

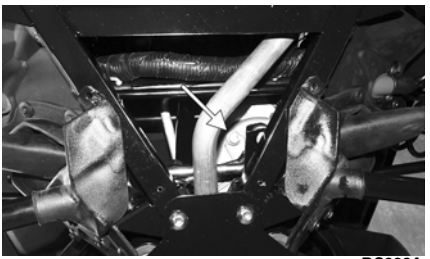
XM306A

4. Using Oil Filter Wrench, loosen (but do not remove) the oil filter and allow the oil to drain from the filter into the drain pan; then remove the filter.
5. Open the hood; then remove the air temperature sensor and the three hoses from the air silencer. Loosen the three hose clamps securing the intake boots to the throttle body. Remove the air silencer.

6. Remove the cap screw on the bottom of the oil tank and let the oil drain into the drain pan.



BC227A



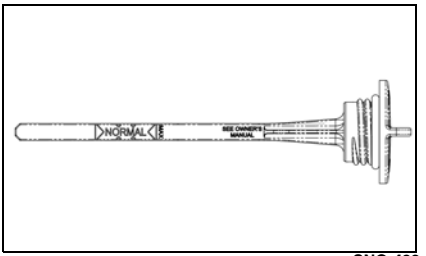
BC228A

■ NOTE: The handlebar may have to be turned slightly for the oil to drain directly downward and not onto the bellcrank.

7. After the oil has drained completely, install the drain plug with a new O-ring and tighten to 16 ft-lb; then install the air silencer assembly.
8. Apply a light coat of fresh engine oil to the seal of the new oil filter.
9. Install the new oil filter by turning the oil filter by hand until the seal has contacted the oil filter mounting surface; then tighten the oil filter to 12 ft-lb.
10. Install the engine oil drain screw with a new gasket. Tighten the screw to 7.2 ft-lb.
11. Pour 3.5 L (3.7 US quarts) of engine oil in through the oil level stick tube.
12. Install the oil level stick then start the engine and check for the oil pressure warning icon.

■ NOTE: The warning icon should go out within five seconds. If it does, proceed to step 10. If the warning icon does not illuminate, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

13. Let the engine idle and warm up until the fan on the radiator turns on; then shut the engine off and remove the oil level stick from the oil tank and verify it is within the "NORMAL" range on the stick.



SNO-482

■ NOTE: If the oil and engine are not at operating temperature, the oil level may read too low. Always make sure the engine is at operating temperature before checking the oil.

■ NOTE: Do not over-fill the oil tank or oil may be pushed out through the breather hose.

14. Install the skid plate and access plate and secure with the torx-head screws; then close the hood.

Coolant Level

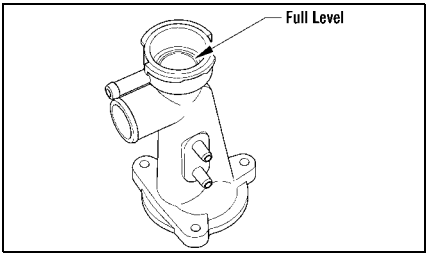
3000/7000

■ NOTE: Use a good quality, ethylene glycol-based, automotive-type coolant.

⚠ WARNING

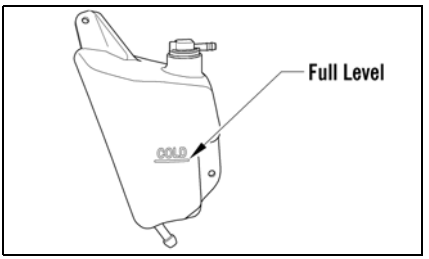
Always check the coolant level with the engine cold.

Locate the filler neck located above the resonator; then remove the coolant cap from the filler neck. Verify that the coolant is at the bottom of the filler neck.

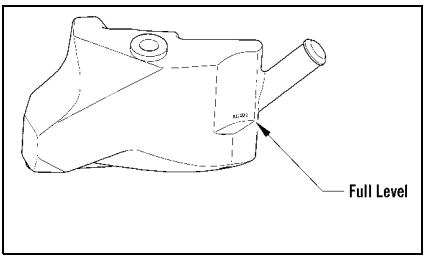


0747-547

Locate the coolant tank; then remove the plug from the coolant tank. Add coolant to the full level (COLD) on the tank. Install the plug.



0749-003

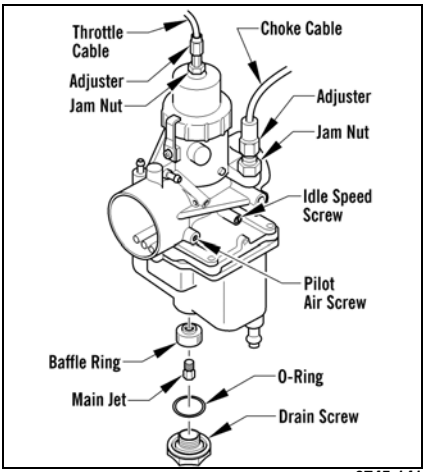


0747-766

CAUTION

If the coolant is below the neck and if coolant has been added, immediately inspect for leakage and/or damage. If leakage or damage is detected, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Adjusting/Calibrating Carburetors (2000)



0745-141

The carburetors have been adjusted/calibrated at the factory for average riding conditions; however, altitude, temperature, and general wear may necessitate certain carburetor adjustments.

CAUTION

For information on altitude operation, see Varying Altitude Operation subsection in the Operating Instructions section.

Carburetor adjustments critically affect engine performance; therefore, the following three external adjustments and two internal calibrations can be made on each carburetor.

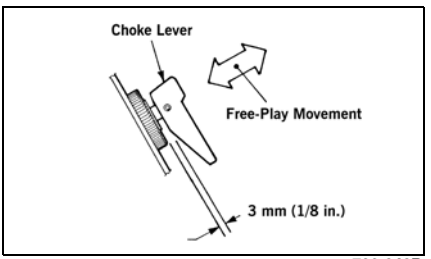
CAUTION

Make sure to perform these adjustment/calibration procedures on both carburetors.

■ **NOTE: The following external carburetor adjustments may be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.**

Adjusting Choke Cable (External)

1. Be sure the ignition switch key is in the OFF position and the brake lever lock is set.
2. Slide the insulators away from the adjusters; then loosen the jam nut securing each choke cable adjuster. Rotate each choke cable adjuster clockwise until free-play is noted in the choke lever.
3. Slowly rotate one choke cable adjuster counterclockwise while checking the choke lever for free-play. As soon as all free-play has been removed from the end of the lever, stop rotating the adjuster.
4. With free-play removed from the lever, slowly rotate each choke cable adjuster once again clockwise while checking the choke cable lever for free-play. Adjust until 3 mm (1/8 in.) free-play between front bottom edge of lever and housing is attained. Securely tighten the adjuster jam nut; then slide the insulators onto the adjusters.



732-848B

■ **NOTE: If a carburetor choke cable is adjusted too tight when the engine reaches operating temperature, the air/fuel mixture will be incorrect and the engine will idle poorly and may operate only on one cylinder.**

Synchronizing Throttle Cable/Piston Valves (External)

1. Remove the air-intake silencer boots from the silencer to access the intake bores.
2. Rotate the idle speed screws counterclockwise until all spring tension is removed.
3. Slide the insulators away from the adjusters; then loosen the jam nut securing each throttle cable adjuster. Rotate each adjuster clockwise until each piston valve bottoms in the piston valve bore.
4. In turn on each carburetor, place a finger lightly against the side of the piston valve; then rotate the carburetor adjuster counterclockwise until slight upward movement of the valve is noted.
5. Check to make sure the valves start to open at the exact same moment by placing a thumb and finger against the valves; then lightly compress the throttle lever.

■ **NOTE: If an individual piston valve starts to open before another, rotate the adjuster on the valve which is lifting first clockwise, just enough to synchronize the valves. Recheck by repeating steps 2-5.**

6. With the piston valves synchronized, tighten the adjuster jam nuts securely; then slide the insulators onto the adjusters.

■ **NOTE: There must be free-play in the throttle lever.**

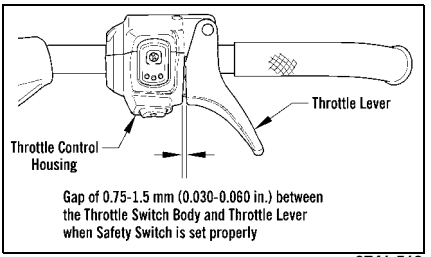
⚠ WARNING

Be sure to tighten the adjuster jam nuts securely. If an adjuster jam nut is not tightened, the adjuster can rotate out of the carburetor cap causing the piston valve not to return to the full-closed position.

7. In turn on each carburetor, place a finger against the piston valve. Rotate the idle speed screw clockwise until it contacts the valve.
8. Compress the throttle lever to the full-open position; then rotate each idle speed screw clockwise 2 complete turns. Release the throttle lever.

■ **NOTE: There must be 0.75-1.5 mm (0.030-0.060 in.) free-play between the throttle lever and the control housing.**

9. At this point, there must be 0.75-1.5 mm (0.030-0.060 in.) of cable free-play gap in the throttle lever. If there is no cable free-play in the throttle lever, the throttle safety switches will not function properly, and the engine will cut out in the idle position.



0741-518

■ NOTE: If cable free-play gap is not correct, rotate each adjuster an equal amount until recommended free-play is achieved. Each piston valve must be resting against the tip of its idle speed screw.

■ NOTE: If throttle cable free-play is incorrect, the carburetor safety switches will be activated prematurely and the engine will not start.

Fine-Tuning Pilot Air Screws and Idle Speed Screws (External)

1. While counting the rotations, carefully rotate the pilot air screws clockwise until lightly seated.

CAUTION

Do not force a pilot air screw when rotating it clockwise; damage to the pilot air screw needle tip will result.

2. Rotate the pilot air screws counterclockwise the exact number of rotations ± 1/4 turn from the seated position as an initial setting.
3. Install the air-intake silencer boots taking care that the boots are properly positioned and that the boots are not "folded" in the air-intake silencer causing a restriction of air flow.
4. With the snowmobile on a shielded safety stand, start the engine, release the brake lever lock, and thoroughly warm up.

⚠ WARNING

DO NOT stand behind the snowmobile or near the rotating track. NEVER run the track at high speed when the track is suspended.

■ NOTE: Make engine idle adjustment only after the engine has reached running temperature. Since the idle speed screws have not been fine-tuned, slight throttle pressure may be necessary to keep the engine running. Allow engine to warm up for 2-3 minutes.

5. After the engine has been thoroughly warmed up, fine-tune the pilot air screws (equally) and the idle speed screws (equally) until the engine runs smoothly.

■ NOTE: Engine idle should be within a range of 1600-1700 RPM.

⚠ WARNING

If a tachometer is not available, care must be taken not to adjust engine idle speed too high.

CAUTION

It is important that the pilot air screws are adjusted equally and that the idle speed screws are adjusted equally.

6. Test the throttle control lever by compressing and releasing it several times. The lever must return to the idle position quickly and completely.

⚠ WARNING

DO NOT operate the snowmobile when any component in the throttle system is damaged, frayed, kinked, worn, or improperly adjusted. If the snowmobile is operated when the throttle system is not functioning properly, personal injury could result.

Calibrating Main Jets/ Pilot Jets/Jet Needle E-Clips (Internal)

Altitude, temperature, and the use of oxygenated gasoline affect the carburetion needed for optimum engine performance. The carburetor main jets must be changed in conjunction with changes in operating altitude, oxygenated gasoline usage, and temperature. Also, the pilot jets and jet needle E-clip positions may have to be changed with changes in operating altitude. To change pilot jets and E-clip positions, the carburetors must be removed and disassembled (float chamber, etc.). Arctic Cat highly recommends that this service be done by an authorized Arctic Cat Snowmobile dealer only.

CAUTION

For information on altitude operation, see Varying Altitude Operation subsection in this manual.

■ **NOTE: The following internal carburetor calibrations may be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.**

As the ambient temperature rises or as the snowmobile is operated at a higher altitude, the main jets must be replaced with leaner main jets. The original equipment (production) main jets may need to be changed (depending on the type of gasoline you are using, your operating altitude, and temperature). A Carburetor Jet Chart decal is located on the belt guard of the snowmobile. It should be noted that when selecting the proper main jets, it is better to be too rich rather than too lean. To change carburetor main jets, use the following procedure:

■ **NOTE: Refer to Illustration 0745-141 in this section for location of components.**

⚠ WARNING

Whenever any maintenance is performed on the fuel system, there should be no welding, smoking, open flames, etc., in the area.

CAUTION

Use only GENUINE Mikuni brass main jets. Also, if using an oxygenated gasoline (up to 10% ethanol), the carburetor main jet must be one size larger than the main jet required for regular unleaded gasoline.

CAUTION

A main jet which is too small will cause severe engine damage. Engine damage caused by lean jetting WILL NOT BE covered by Arctic Cat Inc. warranty policy.

1. Loosen each carburetor flange clamp and remove each carburetor from the intake flange and boot.
2. Remove each drain screw and O-ring from the carburetor float chamber and drain the gas into a small container or shop towels.
3. Using the main jet wrench (from the tool kit), thread the main jet out of each carburetor. Account for the baffle ring. Install the new main jet and the existing baffle ring. Tighten the main jet securely.
4. Install each drain screw and O-ring; then tighten securely.
5. Install and secure the carburetors.

Spark Plugs

■ **NOTE: Always use the recommended spark plugs in the engine. See the appropriate specifications sheet for correct spark plug gap.**

Varying terrain conditions and operating usage may require spark plugs of a different heat range. For example, sustained cross-country riding will usually require colder heat-range spark plugs while trail riding or other continual slow speed operation will usually require hotter heat-range spark plugs.

2000

1. Open the hood and remove the spark plug caps from the plugs.
2. Using a spark plug wrench, remove the plugs.
3. Install the plugs and finger-tighten.
4. Tighten the spark plugs to 19 ft-lb; then install the spark plug caps and close the hood.

3000/7000

■ NOTE: Always use the recommended spark plugs in the engine. See the appropriate specifications sheet for correct spark plug gap.

CAUTION

If adjusting spark plug gap is necessary, do not use the center electrode as a leverage point. Damage to the plug may occur.

1. Open the hood and disconnect the main harness from the ignition coils; then remove the ignition coils from the cylinder head cover.
2. Remove the spark plugs.

■ NOTE: Prior to installing the spark plugs, check the gap between the electrode and ground strap. The clearance should be 0.028-0.031 in.

3. Install new spark plugs. Tighten to 9.4 ft-lb.
4. Install the ignition coils onto the cylinder head cover making sure they are fully seated. Connect the main harness to the ignition coils.
5. Close the hood.

Valve Clearance

3000

After 5,000 miles or prior to seasonal storage, valve clearance should be checked and adjusted as necessary.

7000

After 25,000 miles or prior to seasonal storage, valve clearance should be checked and adjusted as necessary.

■ NOTE: Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for inspection and service. This service is at the discretion and expense of the snowmobile owner.

CAUTION

It is critical that the checking/adjusting valve clearance be done at the recommended intervals or severe engine damage may occur.

Battery

These sealed batteries after being in service require regular cleaning and charging in order to deliver peak performance and maximum service life. The following procedure is recommended for cleaning and maintaining sealed batteries. Always read and follow instructions provided with battery chargers and battery products.

■ NOTE: Battery maintenance may be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

⚠ WARNING

Improper handling or connecting of a battery may result in severe injury including acid burns, electrical burns, or blindness as a result of an explosion. Always remove rings and watches. Any time service is performed on a battery, the following must be observed: keep sparks, open flame, cigarettes, or any other flame away. Always wear safety glasses. Protect skin and clothing when handling a battery. When servicing a battery in an enclosed space, keep the area well-ventilated.

⚠ WARNING

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands after handling.

1. Remove the negative battery cable and ground wire; then remove the positive cable.

⚠ WARNING

Avoid spillage and contact with skin, eyes, and clothing.

CAUTION

Do not charge the battery while it is in the snowmobile with the battery terminals connected.

2. Thoroughly wash the battery with soap and water; then using a wire brush, clean the battery posts and cable ends removing all corrosive buildup. Replace damaged cables or cable ends.

■ NOTE: If battery posts or cable ends have a build-up of white/green powder residue, apply water and baking soda to neutralize acid; then flush off with warm soapy water.

CAUTION

Do not remove seal strip on a sealed battery.

⚠ WARNING

Battery acid is harmful if it contacts eyes, skin, or clothing. Care must be taken whenever handling a battery.

3. Using a multimeter, test the battery voltage. The meter must read no less than 12.5 DC Volts for a fully charged battery.
4. If the meter reads less than specified voltage, charge the battery using the following guidelines.
   A. When using an automatic battery charger, always follow the charger manufacturer's instructions.
   B. When using a constant-current battery charger, use the following Battery Charging Chart.

CAUTION

Never exceed the standard charging rate.

⚠ WARNING

An overheated battery could explode causing severe injury or death. Always monitor charging times and charge rates carefully. Stop charging if the battery becomes very warm to the touch. Allow it to cool before resuming charging.

Battery Charging Chart (Constant-Current Charger)

Battery Voltage (DC)	Charge State	Charge Time Required (at 1.5-2.0 Amps)
12.5 (minimum)	100%	None
12.2-12.4	75%-99%	3-6 hours
12.0-12.2	50%-74%	5-11 hours
11.0-11.9	25%-49%	13 hours (minimum)
11.5 or less	0-24%	20 hours (minimum)

■ NOTE: If the battery voltage is 11.5 DC Volts or less, some chargers may "cut off" and fail to charge. If this occurs, connect a fully charged booster battery in parallel (positive to positive and negative to negative) for a short period of time with the charger connected. After 10-15 minutes, disconnect the booster battery leaving the charger connected and the charger should continue to charge. If the charger "cuts off," replace the battery.

5. After charging the battery for the specified time, remove the battery charger and allow the battery to sit for 1-2 hours.
6. Connect the multimeter and test the battery voltage. The meter should read no less than 12.5 DC Volts. If the voltage is as specified, the battery is ready for service.

■ NOTE: If voltage in step 6 is below specifications, charge the battery an additional 1-5 hours; then retest. The battery is ready for service.

7. Place the battery into position in the snowmobile; then coat the battery posts and cable ends with a light coat of multi-purpose grease.

CAUTION

Before installing the battery, make sure the ignition switch is in the OFF position.

8. Secure the red positive cable to the positive terminal on the battery using a cap screw, lock washer, and a flat washer. Tighten securely.
9. Secure the main black negative cable and the small black negative cable to the battery using a cap screw, lock washer, and a flat washer. Tighten securely.

CAUTION

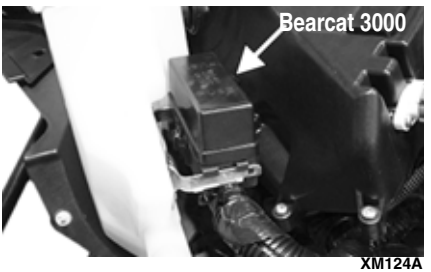
Connecting cables in reverse (positive to negative and negative to positive) can cause serious damage to the electrical system.

■ **NOTE: Assure the harness wires and cables are routed properly as noted during removing battery procedure.**

Fuses

Fuses protect the snowmobile electrical system from overloading. If electrical parts in the snowmobile are not working, the system may have been overloaded and caused a blown fuse. Before repairing or replacing any electrical part, check the appropriate fuses. If a fuse blows (opens a circuit), all the parts of the snowmobile that use that circuit will not work.

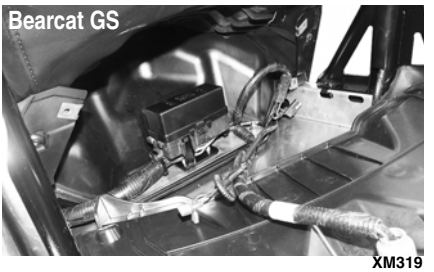
1. Locate the fuse block; then remove the cover.



XM124A

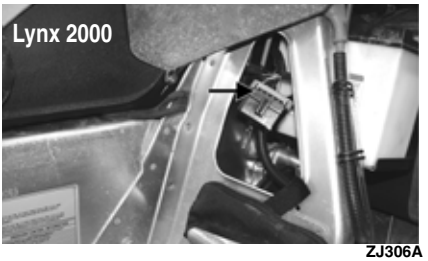
XM309

■ **NOTE: On the Bearcat GS, remove the screws securing the rear seat panel to the seat base to locate the fuse block.**

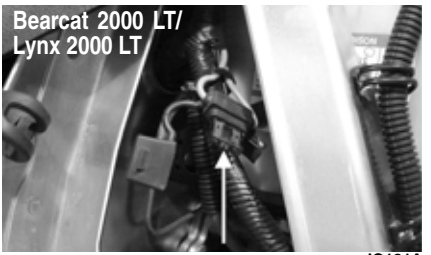


XM319

■ **NOTE: On 2000 models, remove the right-side access panel to locate the fuse block.**



ZJ306A



IO121A

■ **NOTE: There are spare fuses beneath the fuse block cover.**

2. Remove the suspected fuse.

■ **NOTE: Fuse function descriptions are next to the fuse contacts in the fuse block.**

3. Look through the clear side of the fuse to see if the element inside is burned or separated. If it is, the fuse is blown and should be replaced with a fuse of the correct amperage rating.

⚠ WARNING

Always replace a fuse with one having the same specified amperage rating. Using a fuse with a higher rating can cause severe wire damage and could start a fire.

4. Install the fuse panel cover.

Even after replacing a fuse, it may continue to blow if the cause of the overload is not determined. If the fuse continues to blow, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

Brake System

Arctic Cat recommends that the brake system (brake lever, fluid reservoir, hose, caliper, pads, and brake disc) be checked daily for fluid leakage, wear, or damage and for proper operation. Also, the brake fluid level must be checked every time before starting the engine. The brake fluid must be visible in the sight glass.

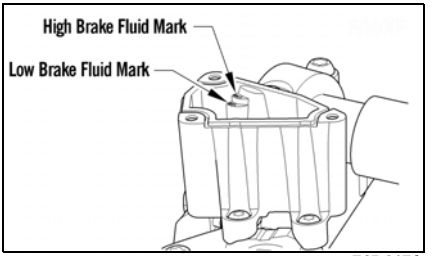
⚠ WARNING

DO NOT operate the snowmobile when the brake lever lock is engaged or when any component in the brake system is damaged, worn, or adjusted improperly. If the snowmobile is operated and the brake system is not functioning properly, severe personal injury could result.

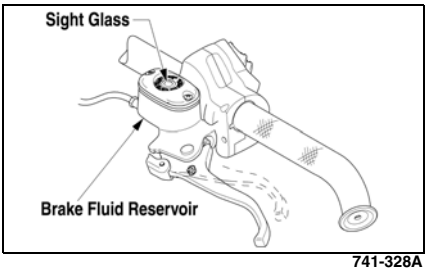
Checking/Adding Brake Fluid

1. With sight glass reservoir in a level position, check the fluid level. The brake fluid level must be visible in the sight glass.

■ **NOTE: If the sight glass appears dark, there is a sufficient amount of fluid in the reservoir.**



745-817A



741-328A

2. If the brake fluid is not visible in the sight glass, remove the reservoir cover and add Arctic Cat approved DOT 4 brake fluid until the fluid is at the recommended level. Install and secure the reservoir cover. Do not allow moisture to contaminate the brake system.

CAUTION

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the snowmobile.

⚠ WARNING

Do not overfill the brake fluid reservoir. Overfilling the reservoir may cause the brake system to hydraulically lock. Use only Arctic Cat approved DOT 4 brake fluid. Never substitute or mix different types or grades of brake fluid. Brake loss can result. Brake loss can result in severe injury or even death.

Changing Brake Fluid

The brake fluid must be changed on a regular basis and whenever the brake fluid has been overheated or contaminated. The brake fluid should be changed every 1000 miles or at the end of the snowmobiling season, whichever occurs first. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

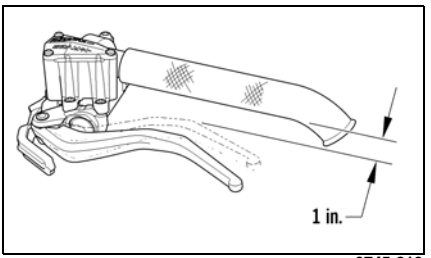
Checking Brake Lever Travel

Before each use, check the brake lever travel using the following procedure:

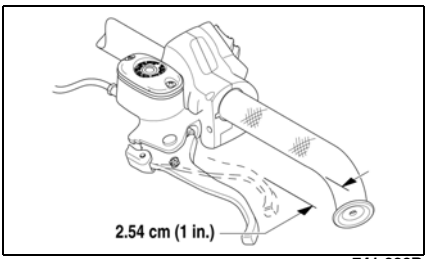
1. Compress the brake lever fully.

■ NOTE: Do not pump the brake lever as it will produce an inaccurate reading.

2. Measure the distance between the brake lever and the handlebar. The distance must be greater than 2.54 cm (1 in.).



0745-816



741-328B

3. If the resultant distance is less than specified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for service. If not under warranty, this service is at the discretion and expense of the snowmobile owner.

⚠ WARNING

Do not operate the snowmobile if the compressed distance between the brake lever and the handlebar is less than 2.54 cm (1 in.). Brake loss may occur. Brake loss can result in severe personal injury.

Bleeding Brake System

If the brake lever feels spongy when applied, the brake system may need to be bled. To bleed the brake, use the following procedure:

■ NOTE: The brake system may be bled by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

1. Remove the reservoir cover and (if necessary) fill the reservoir to the high brake fluid mark with Arctic Cat approved DOT 4 brake fluid.

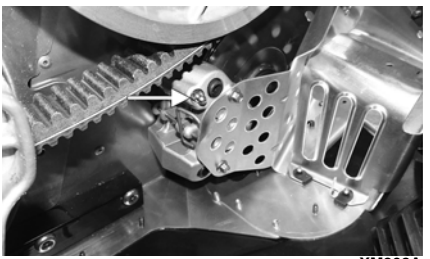
CAUTION

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the snowmobile.

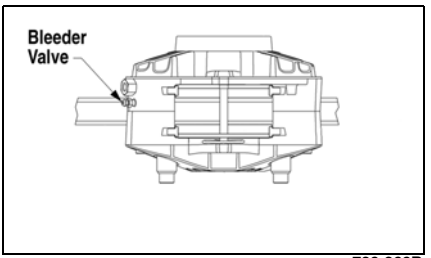
⚠ WARNING

Use only Arctic Cat approved DOT 4 brake fluid. Any substitute may result in a loss of brakes.

2. Slide a piece of flexible tubing over the ball of the bleeder valve and direct the other end into a container.



XM308A



739-269B

3. Slowly compress the brake lever until maximum pressure is attained; then hold the lever in the compressed position to maintain pressure. Open the bleeder valve to release the fluid and air. When the fluid stops, close the bleeder valve; then release the brake lever.
4. Repeat step 3 until the brake fluid flows free of air bubbles.

■ NOTE: It may be necessary to refill the reservoir during the bleeding process. Never allow the brake fluid to go below the low brake fluid mark in the reservoir.

5. When the brake fluid is free of all air and the brake lever feels firm when compressed, fill the reservoir to the high brake fluid mark; then install and secure the cover. Remove the tube from the bleeder valve.

Checking/Changing Brake Pads

The condition of the brake pads must be checked daily and changed if worn or damaged. To check and change the brake pads, use the following procedure:

■ NOTE: The brake pads may be changed by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

■ NOTE: When installing new brake pads, always install them as a set. Never install just one pad or use brake pads which have been used in another snowmobile.

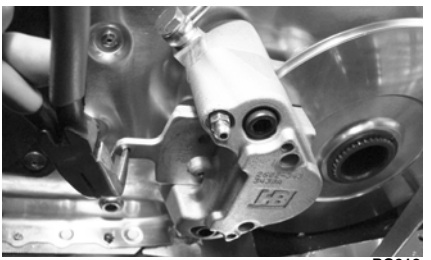
1. Remove the brake fluid reservoir cover; then remove most of the brake fluid from the reservoir. Install the cover.

CAUTION

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the snowmobile.

■ NOTE: The above procedure will allow room for the fluid from the caliper when the pistons are pushed into the caliper for installing new brake pads. Replacing the cover will prevent fluid spillage.

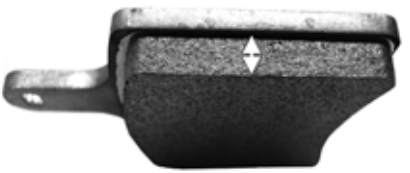
2. Open the left-side access panel.
3. Remove the torx-head screws securing the brake shield to the belt guard mount; then remove the cap screws securing the brake shield to the brake caliper.
4. Carefully move the shield out of the way; then remove the hairpin clip securing the brake pads to the caliper assembly.
5. Using a pair of pliers, pull the outer brake pad out of the caliper assembly.



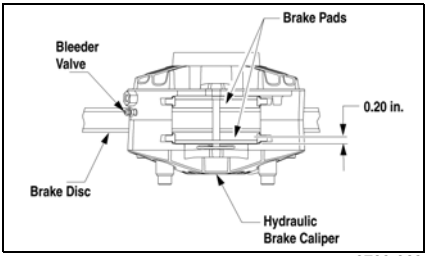
PC013

■ NOTE: Changing one pad at a time will prevent one piston from pushing out the other piston from the caliper.

6. Measure the thickness of the brake pad. The brake pad thickness must be greater than 1 mm (0.04 in.). If the brake pad thickness is less than specified, replacement of both pads is necessary.



PC011A



0739-269

7. Using a flat-blade tool, slowly and carefully push the piston into the caliper.
8. Position the outer brake pad into the caliper; then install the hair-pin clip into the caliper assembly.
9. Repeat steps 5-8 for the inner pad; then secure the pad with the hairpin clip.
10. Remove the reservoir cover and remove the remaining fluid; then fill the reservoir with fresh fluid and install the cover.
11. Pump the brake lever to ensure correct positioning of the brake pads and proper brake lever travel; then release.

■ NOTE: If brake lever travel is not within specification, bleed the brake system.

12. Remove the reservoir cover and fill the reservoir (if necessary) to the proper level with fresh brake fluid; then install the cover.
13. Secure the brake shield, the driven clutch (tightened to 51 ft-lb); then close and secure the left-side access panel.

■ NOTE: When new brake pads are installed, a "burnishing" process is required (see Burnishing Brake Pads sub-section).

Burnishing Brake Pads

After changing brake pads, the new brake pads must be burnished to achieve full braking effectiveness. Braking distance will be extended until brake pads are properly burnished.

To properly burnish the brakes, use following procedure:

1. Choose an area sufficiently large to safely accelerate to 30-40 mph and to brake to a stop.

■ NOTE: This procedure can also be accomplished using a shielded jack stand.

2. Accelerate to 30-40 mph; then compress brake lever to decelerate to a stop.

■ NOTE: Lightly apply the brake lever to come to an easy stop; do not over-apply brakes or "lock up" the track.

3. Repeat procedure 10-15 times allowing some cooling between stops.

■ NOTE: Do not repeat too soon or too aggressively as to get the brake disc "red hot."

⚠ WARNING

Do not attempt sudden stops or put yourself into a situation where a sudden stop will be required until the brake pads are properly burnished.

■ NOTE: This procedure stabilizes the pad material and extends the life of the pads.

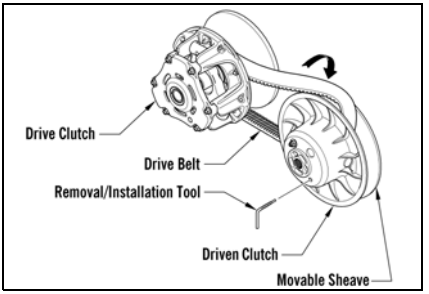
Drive Belt

■ NOTE: Changing a drive belt can be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

■ NOTE: If a new drive belt is being installed, see Drive Belt Break-In sub-section in the General Information section.

Removing - 7000

1. Set the brake lever lock; then remove the left-side access panel.
2. Thread Removal/Installation Tool clockwise into the driven clutch until the movable sheave opens far enough to remove the drive belt.



0749-025

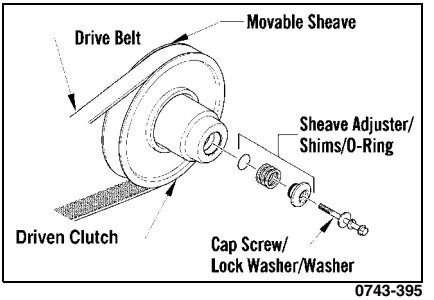
3. When the sheaves are fully apart, pull up on drive belt and roll belt over stationary sheave until it is free of the driven clutch.
4. When the belt is free of driven clutch, remove the belt from the drive clutch.

Installing - 7000

1. Place the belt (so the part number can be read) between the sheaves of the drive clutch.
2. With the sheaves fully apart, roll the belt over the stationary sheave.
3. With the drive belt properly positioned in the drive clutch and driven clutch, turn the belt tool counterclockwise and roll the belt back and forth to allow the driven clutch sheaves to fully close.
4. After the belt is installed properly, install the left-side access panel and close the hood.
5. Release the brake lever lock.

Removing - 2000/3000

1. Turn ignition key to the OFF position and wait for all moving parts to stop.
2. Set the brake lever lock.
3. Open the left-side access panel.
4. Remove the cap screw, lock washer, washer, and sheave adjuster from the end of the driven clutch; then remove the sheave adjuster from the cap screw.



0743-395

■ NOTE: Each time the driven clutch cap screw is removed, the hole in the driven shaft should be cleaned free of any Loctite residue.

■ NOTE: Verify the shims and O-ring are not removed from the adjuster.

5. Remove the lock washer and flat washer from the cap screw and reverse the sheave adjuster.
6. Install the cap screw into the driven clutch; then tighten the cap screw until the movable sheave opens far enough to allow the belt to be removed.
7. Remove the drive belt from the driven clutch first; then from the drive clutch.

■ NOTE: Before installing the drive belt, use a suitable cleaning solvent to thoroughly clean the sheaves.

Installing - 2000/3000

1. Place the drive belt (so the part number can be read and the arrows are facing the front of the snowmobile) between the sheaves of the drive clutch first; then between the sheaves of the driven clutch.

CAUTION

Before securing the driven clutch, be sure the rollers are up against the torque bracket or damage to the back-side cams may occur.

2. Install the cap screw, lock washer, washer, and sheave adjuster back into the driven clutch. Tighten the cap screw (apply a few drops of blue Loctite #243 to the threads) to 20 ft-lb.

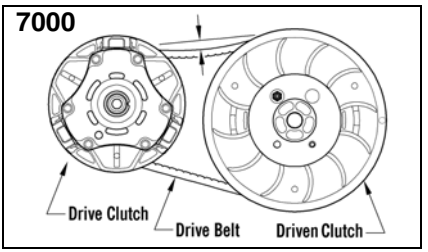
3. Install the left-side access panel.

⚠ WARNING

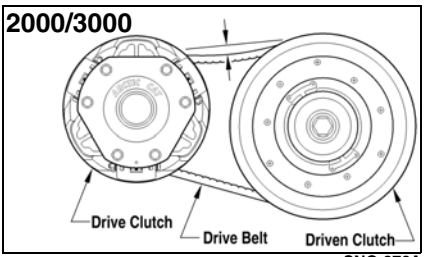
Never operate the snowmobile without the belt guard/access panel secured in place.

4. Release the brake lever lock.

Checking/Adjusting Deflection



0748-987



SNO-276A

Drive belt length, condition, and deflection are all important for peak performance.

1. With the engine off; remove the left-side access panel.
2. Make sure the drive belt is sitting at the top of the driven clutch sheaves.
3. Place a straightedge on the top of the drive belt. The straightedge should reach from the drive clutch to the top of the driven clutch.

■ NOTE: Make sure the drive belt is all the way out in the driven clutch before checking drive belt deflection.

4. Using a stiff ruler centered between the drive clutch and driven clutch, push down on the drive belt just enough to remove all slack and note the amount of deflection. The deflection should be within the range of 28.5-31.8 mm (1 1/8-1 1/4 in.).

■ NOTE: Push down on the belt with the ruler only until the bottom of the belt flexes upward; then read the amount of deflection.

■ NOTE: Steps 5 and 6 are for the 7000 only. For the 2000/3000, proceed to step 7

5. To correct drive belt deflection, loosen the jam nut on the belt width adjuster on the stationary sheave; then using an Allen wrench, adjust the set screw as needed.
6. While holding the set screw, tighten the jam nut securely.

■ NOTE: Turning the set screw clockwise increases distance between the sheaves (increases belt deflection measurement); turning the set screw counterclockwise decreases distance between the sheaves (decreases belt deflection measurement).

7. To correct drive belt deflection, remove the sheave adjuster from the clutch, remove or add shim washers to the adjuster, and install the adjuster.

■ NOTE: Adding shim washers will decrease belt deflection and removing shim washers will increase belt deflection. Available shim washers from Arctic Cat are p/n 0648-714 (0.090 in.) - one included in the tool kit, p/n 0648-715 (0.030 in.), and p/n 0648-716 (0.060 in.).

■ NOTE: Removing/adding shim washers may be done by the snowmobile owner if qualified to do so. If the owner does not feel qualified, take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

Track Tension

Track tension is directly related to the overall performance of the snowmobile. If the track is too loose, it may slap against the tunnel causing wear or it may "ratchet" on the track drive sprockets. If extremely loose, the idler wheels may climb over the track lugs forcing the track against the tunnel causing the track to "lock."

Arctic Cat recommends that the track tension be checked daily during the first 300 miles of operation and once a week thereafter and adjusted according to need. The track will stretch and take a "set" during break-in. Track deflection must be maintained within the recommended range.

⚠ WARNING

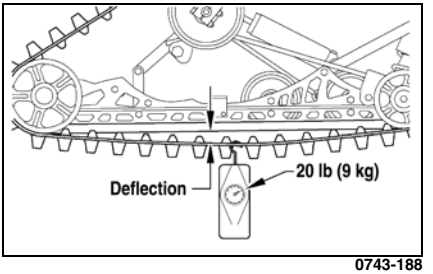
Track tension must be properly maintained. Personal injury could result if a track is allowed to become excessively loose.

Checking Track Tension

⚠ WARNING

DO NOT attempt to check or adjust track tension with engine running. Turn ignition key to the OFF position. Personal injury could result from contact with a rotating track.

1. Remove excess ice and snow buildup from the track, track drive sprockets, and the inside of the skid frame.
2. Elevate the snowmobile on a shielded safety stand high enough to use a spring scale.
3. At mid-point of the track (on the bottom side), hook a spring scale around a track clip; then pull down on the scale to 20 ft-lb. Measure the deflection (distance) between the bottom of the wear strip and the inside surface of the track clip. Measurement should be 51 mm (2 in.).



0743-188

Adjusting Track Tension

■ NOTE: To ensure proper track tension adjustment, perform all adjustments on both sides of the snowmobile.

1. Loosen the rear idler wheel adjusting bolt jam nuts.
2. If the deflection (distance between the bottom of the wear strip and the inside surface of the track clip) exceeds specifications, tighten the adjusting bolts to take up excessive slack in the track.
3. If the distance between the bottom of the wear strip and the inside surface of the track is less than specified, loosen the adjusting bolts to increase the slack in the track.
4. Check track alignment (see Track Alignment sub-section in this section).
5. After proper track tension is obtained, tighten the adjusting bolt jam nuts against the axle housings; then tighten the rear axle cap screws to 20 ft-lb.

■ NOTE: Since track tension and track alignment are interrelated, always check both even if only one adjustment seems necessary.

⚠ WARNING

If jam nuts are not tightened properly, the adjusting bolts could loosen causing the track to become extremely loose and, under some operating conditions, allow the idler wheels to climb over the track lugs forcing the track against the tunnel causing the track to "lock." If a track "locks" during operation, severe personal injury could result.

Track Alignment

Proper track alignment is obtained when the rear idler wheels are equal distance from the inner track drive lugs. Excessive wear to the idler wheels, drive lugs, and track will occur if the track is improperly aligned. Arctic Cat recommends that the track alignment be checked once a week or whenever the track tension is adjusted.

Checking Track Alignment

⚠ WARNING

Make sure the ignition key is in the OFF position and the track is not rotating before checking or adjusting track alignment. Personal injury could result if contact is made with a rotating track.

1. Remove excess ice and snow buildup from the track, track drive sprockets, and the inside of the skid frame.
2. Position the tips of the skis against a wall; then using a shielded safety stand, raise the rear of the snowmobile off the floor making sure the track is free to rotate.

⚠ WARNING

The tips of the skis must be positioned against a wall or similar object.

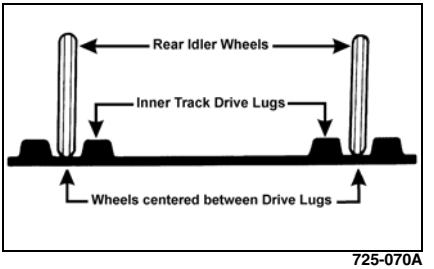
⚠ WARNING

DO NOT stand behind the snowmobile or near the rotating track. NEVER run the track at high speed when the track is suspended.

3. Start the engine and accelerate slightly. Use only enough throttle to turn the track several revolutions. SHUT ENGINE OFF.

■ NOTE: Allow the track to coast to a stop. DO NOT apply the brake because it could produce an inaccurate alignment condition.

4. When the track stops rotating, check the relationship of the rear idler wheels and the inner track drive lugs. If the rear idler wheels are centered between the inner track drive lugs, no adjustment is necessary.



725-070A

5. If the idler wheels are not centered between the inner track drive lugs, an adjustment is necessary.

Adjusting Track Alignment

1. On the side of the track which has the inner track drive lugs closer to the rear idler wheel, loosen the adjusting bolt jam nut; then rotate the adjusting bolt clockwise 1 to 1 1/2 turns.

■ NOTE: The rear axle cap screws must also be loosened.

2. Check track alignment and continue adjustment until proper alignment is obtained.

■ NOTE: Make sure correct track tension is maintained after adjusting track alignment.

3. After proper track alignment is obtained, tighten the adjusting bolt jam nut against the axle housing.

⚠ WARNING

If jam nuts are not tightened properly, the adjusting bolts could loosen causing the track to become extremely loose and, under some operating conditions, allow the idler wheels to climb over the track lugs forcing the track against the tunnel causing the track to "lock." If a track "locks" during operation, severe personal injury could result.

4. Tighten the rear axle cap screws to 20 ft-lb.
5. Field test the track under actual conditions.
6. After the field test, check the alignment of the track. If additional adjustment is necessary, repeat Adjusting Track Alignment procedure.

Suspension

The suspension should be adjusted for the operational needs and riding preference of the operator.

The front shock springs determine the amount of ski pressure and the reaction of the front suspension to rough terrain. The amount of ski pressure can also be changed by adjusting the length of the skid frame front arm limiter straps.

The rear springs influence the load carrying capability of the snowmobile and should be adjusted for the weight and riding preference of the operator.

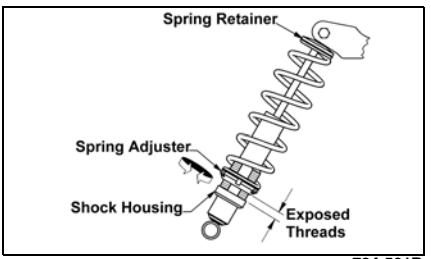
Adjusting Front Ski Shock Springs

The front (ski) shock springs are individually adjustable for the terrain conditions and driving style of the operator. The spring adjuster nut has been set at the factory so the correct amount of threads are exposed between the adjuster nut and the threaded shock body as an initial setting. Additional ski pressure can be obtained by tightening the spring tension; ski pressure can be decreased by relaxing spring tension.

■ NOTE: Equal adjustments should be maintained on both sides of the snowmobile.

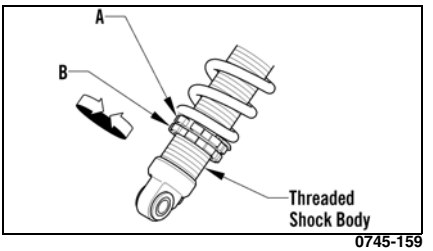
On 2000 models to adjust spring tension, rotate the entire spring in whichever direction is desired. If after adjusting spring tension you note the snowmobile front end wants to pitch, relax the spring tension on the side that is pitching. If both sides are pitching, relax the spring tension on both sides.

■ NOTE: The spring adjuster will normally rotate with the spring.



734-501B

On 3000 and 7000 models, the front (ski) shock spring pre-load adjustment is accomplished by loosening the adjuster nut locking collar (B) from the adjuster nut (A) and using the Spring Adjuster Tool from the tool kit, rotating the adjuster nut in whichever direction is desired. Tighten the locking collar against the adjuster nut.



0745-159

Adjusting Skid Frame Front Arm

On these models, the skid frame front arm shock spring tension and the limiter straps are adjustable. However, Arctic Cat recommends that the shock spring be maintained at the factory preset of 1/8-1/4 in. preload. Tightening the skid frame front arm shock spring may cause improper balance and may ruin the handling features of the snowmobile.

The length adjustment of the front arm limiter straps determines the weight distribution between the front of the skid frame and the skis. Tightening the limiter strap (shortening the strap) will pull up on the front of the skid frame and will increase ski pressure. Loosening the limiter strap (lengthening the strap) lowers the front of the skid frame and decreases ski pressure.

When customizing the amount of ski pressure, be sure to adjust both straps equally and do not over-adjust the limiter straps to adversely affect steering and operator control of the snowmobile. Some experimentation may be required until the proper adjustment for the operator's individual style is obtained.

■ **NOTE: If the limiter straps are adjusted, it is highly recommended that at least a minimum of 1/8 in. preload on the shock spring be maintained.**

⚠ WARNING

Do not adjust the front arm limiter straps to a point at which steering and operator control of the snowmobile are adversely affected.

Adjusting Rear Spring Pre-Load

2000/3000

Proper adjustment of rear spring pre-load is necessary to get the most desirable ride. The chart is designed to help in setting up rear spring pre-load; however, riding style is the single greatest factor in determining rear spring requirements.

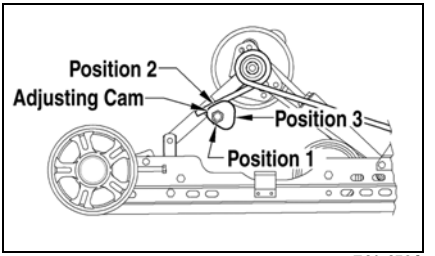
Rider Weight (lb)	Cam Position
Up to 180	1
180-240	2
Over 240	3

■ **NOTE: These cam position settings are suggestions only. Personal riding style will greatly influence cam position settings. Spend time to determine setting preferences.**

Rear spring pre-load adjustment is accomplished by rotating the adjusting cams. Position 3 provides the stiffest ride, and position 1 is for the light driver or slow-speed trail riding. Position 2 is for the average operator under normal conditions. Always rotate the cam from the lighter position to the heavier position.

CAUTION

Never force the adjustment cams from the low position to the high position. Cam damage may occur.



741-450A

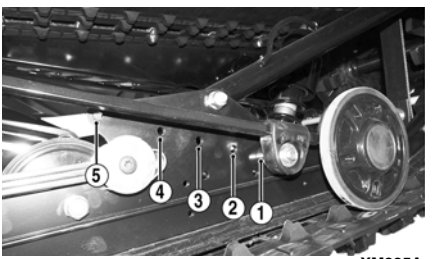
To rotate an adjusting cam, use the spark plug wrench from the tool kit. Rotate the wrench until the cam is in the desired position. To stiffen the ride, rotate the cam so as to raise the spring end. Make the appropriate adjustment on the other cam.

7000

Rider Weight (lb)	Cam Position
Up to 180	1
180-240	2
Over 240	3

Rear spring pre-load adjustment is accomplished by rotating the adjusting cams. Position 3 provides the stiffest ride, and position 1 is for the light driver or slow-speed trail riding. Position 2 is for the average operator under normal conditions. Always rotate the cam from the lighter position to the heavier position.

In addition to the three cam positions, there are five additional positions which the operator can choose from. The spring slide is mounted in location #1 during the production of the snowmobile which is the lowest spring rate. Every hole the spring slides go up, so does the spring rate, thus increasing the amount of load carrying capability. Make sure the spring slides are in the same mounting location on either side.



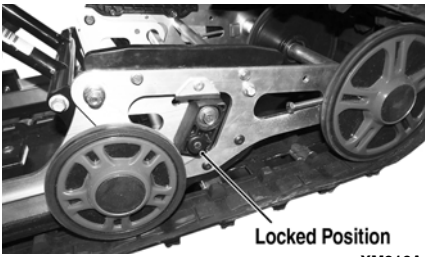
XM325A

To move the spring slide, remove the nut on the backside of the spring slide cap screw; then carefully remove the spring slide and cap screw to the desired location. Install the nut and tighten to 25 ft-lb.

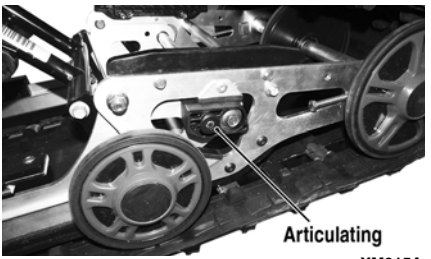
Articulating Skid Frame (7000)

The rear articulating portion of the skid frame has two skid frame knobs which allows the skid frame to be locked or allows it to articulate.

To allow the rear of the skid frame to articulate, pull out the knobs on the left-side of the skid frame and rotate the knob and adjustment block up and forward until it locks into the upper mounting hole.



XM316A



XM315A

Overload Springs

Some models have overload springs built into the rear suspension. When either carrying a heavy load or riding 2-up, the overload springs should be engaged by rotating the spring tension blocks to the UP position. The spring tension blocks lock in an over-center position when engaged.

■ **NOTE: Arctic Cat recommends that the overload springs be engaged whenever a load on the snowmobile (operator/passenger/cargo) exceeds 136 kg (300 lb).**

CAUTION

There are weight limitations for these snowmobiles. If additional cargo is being added, maximum weight on the snowmobile (operator/passenger/cargo) should not exceed the maximum limitation set for each snowmobile. See chart for details. Also, the overload springs should be engaged.

Maximum Weight Limitations		
Bearcat 2000/ 3000 LT	170 kg	375 lb
Bearcat 2000 XT/ XTE	272 kg	600 lb
Bearcat 7000/ Pantera XT LTD	272 kg	600 lb
Lynx 2000 LT	170 kg	375 lb

To either engage or disengage the spring tension blocks, use a spark plug socket and a screwdriver to adjust the spring block to the desired position. Make sure both spring blocks are in the same position (either engaged or disengaged).

744-457A

Lights

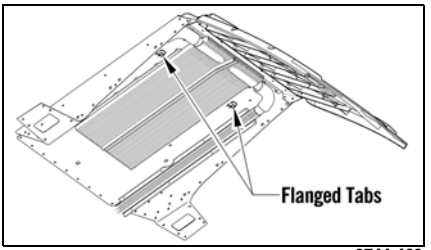
For the correct headlight bulb and/or taillight/brakelight LED, see the specifications sheet.

Removing and Installing Taillight/Brakelight

Lynx

These models are equipped with an LED taillight/brakelight. If the LED fails, it must be replaced. To remove and install the LED, use the following procedure.

■ **NOTE: To access the harness connector and the two self-tapping screws securing the taillight to the snowflap, compress the two flanged tabs (located on the under-side of the tunnel) and carefully pry up on the front of the taillight/snowflap.**

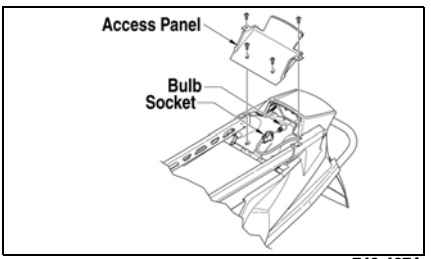


0744-462

1. Disconnect the taillight harness connector.
2. Remove the two self-tapping screws securing the taillight to the snowflap.
3. Secure the taillight to the snowflap with the two self-tapping screws; then connect the taillight connector.
4. Secure the front of the snowflap to the tunnel by carefully tapping the snowflap until the two flanged tabs snap into place.

Bearcat 2000 LT/Lynx LT

1. Remove the torx-head cap screws securing the taillight access panel.

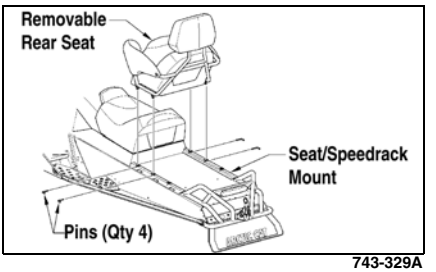


742-467A

2. Disconnect the harness connector and remove housing.
3. Push in on the socket and rotate it counterclockwise to remove it from the housing.
4. Remove the old bulb by pulling it straight out of the socket.
5. Install the new bulb in the socket by pushing it straight in.
6. Push the socket into the housing and rotate it clockwise to lock into place.
7. Connect the harness connector.
8. Secure the access panel with the torx-head cap screws.

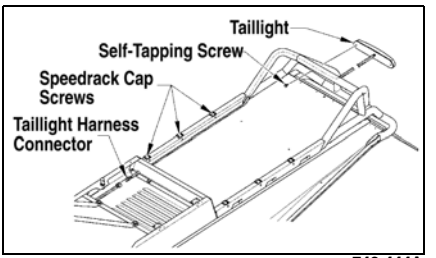
Bearcat 2000 XT/XTE

1. Remove the four pins securing the rear seat to the seat/Speedrack mount.



743-329A

2. Lift on the back of the rear seat and move rearward to remove it from the mount.
3. Compress the latch on the right side of the front seat and lift the front seat away; then disconnect the taillight harness connector.



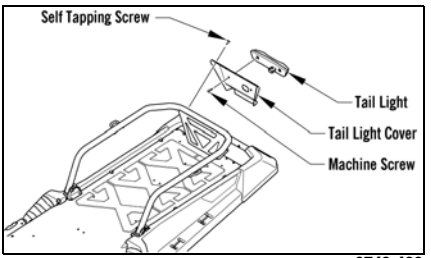
743-444A

4. Loosen (but do not remove) the three right-side seat/Speedrack mount cap screws.
5. Carefully route the harness connector through the hole in the storage compartment panel; then remove the harness from beneath the seat/Speedrack mount.
6. Remove the two self-tapping screws securing the taillight to the bumper; then route the harness out of the bumper and remove the taillight.

7. Route the taillight harness through the bumper; then secure the taillight to the bumper with the two self-tapping screws.
8. Carefully route the harness beneath the Speedrack mount and through the hole in the storage compartment panel; then connect the harness connector.
9. Tighten the three right-side mount cap screws; then lower the front seat.
10. Place the rear seat into position on the mount making sure the four pin holes are properly aligned with the mounting location on the mount.
11. Install the four pins making sure they are properly seated.

3000

These models are equipped with an LED taillight/brakelight. If the LED fails, it must be replaced. To remove and install the LED, use the following procedure.

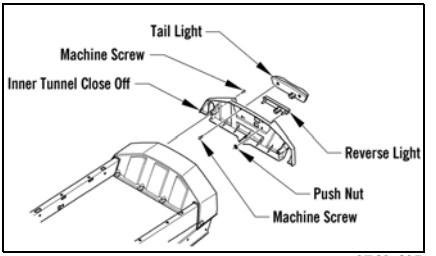


0749-426

1. Remove the self-tapping screws securing the taillight cover.
2. Remove the machine screws securing the taillight; then disconnect the harness.
3. Connect the taillight harness connector; then secure the taillight to the bracket with the torx-head screws.

7000

These models are equipped with an LED taillight/brakelight. If the LED fails, it must be replaced.



0749-425

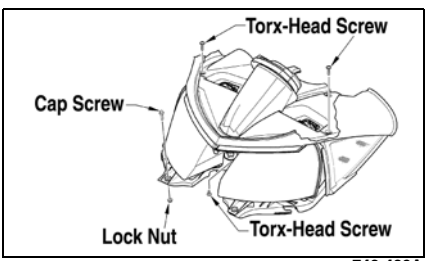
1. Remove the two screws on either side of the taillight then carefully pull back the taillight panel to access the taillight connector.
2. Disconnect the taillight harness connector.
3. Remove the two nuts securing the taillight.
4. Connect the taillight harness connector; then secure the taillight to the bracket with the two nuts.
5. Position the taillight panel and secure using the two screws.

Removing/Installing Headlight Bulb

2000

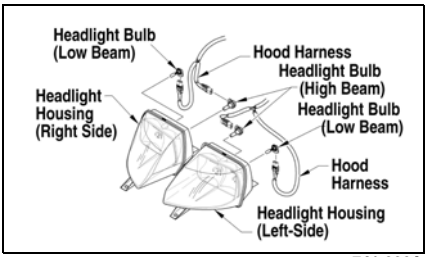
■ **NOTE: The bulb portion of headlight is fragile. HANDLE WITH CARE. When replacing the headlight bulb, the bulb assembly must first be removed from the housing. Do not touch the glass portion of the bulb. If the glass is touched, it must be cleaned with a dry cloth before installing.**

1. Remove the two torx-head screws located to the outside of the headlight adjustment knobs; then remove the single torx-head screw from beneath the console (located between the headlights).



743-439A

2. Remove the cap screw and lock nut securing the front of the headlight assembly to the air-intake silencer.
3. Lift the front of the console enough to allow the headlight housing to be removed; then remove the housing.
4. Remove the bulb from the headlight housing and disconnect the wiring harness from the bulb.



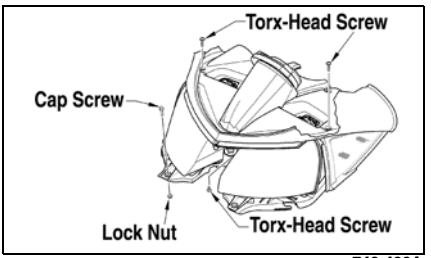
741-329A

1. Plug the wiring harness into the headlight bulb.
2. Insert the bulb into the headlight housing.

CAUTION

Do not touch the glass portion of the bulb. If the glass portion is touched, it must be cleaned with a dry cloth before installing.

3. Lift the front of the console enough to allow the headlight housing to be installed; then install the housing making sure the forks of the housing go into the grommets on top of the air-intake silencer. Secure with the cap screw and lock nut.



743-439A

4. Position the console onto the air-intake silencer; then secure with the single torx-head screw beneath the console (located between the headlights).
5. Install the two torx-head screws located to the outside of the headlight adjustment knobs; then tighten securely.
6. Check headlight aim (see Adjusting Headlight Aim in this sub-section).

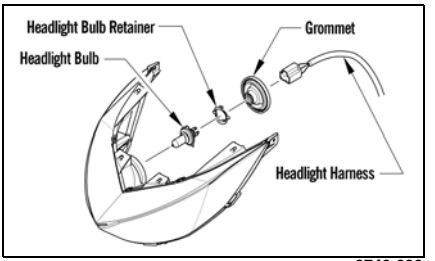
⚠ WARNING

Do not operate the snowmobile unless headlight beam is adjusted properly. An incorrectly adjusted beam will not provide the operator the optimum amount of light.

3000/7000

■ **NOTE: The bulb portion of headlight is fragile. HANDLE WITH CARE. When replacing the headlight bulb, the bulb assembly must first be removed from the housing. Do not touch the glass portion of the bulb. If the glass is touched, it must be cleaned with a dry cloth before installing.**

1. Disconnect the headlight harness connector from the bulb; then remove the rubber grommet from the headlight housing.
2. Rotate the bulb retainer counterclockwise until it unlocks from the housing; then remove the bulb.



0746-096

3. Install the bulb and retainer; then rotate the retainer clockwise until it properly locks in place.
4. Install the rubber grommet; then connect the headlight harness connector to the bulb.

5. Check headlight aim.

⚠ WARNING

Do not operate the snowmobile unless headlight beam is adjusted properly. An incorrectly adjusted beam will not provide the operator the optimum amount of light.

Adjusting Headlight Aim

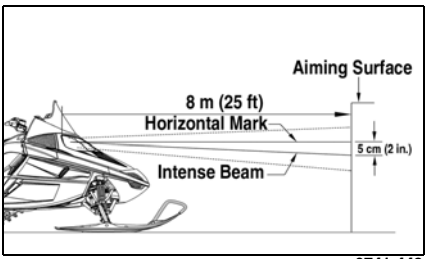
2000

The headlight can be adjusted for vertical aim of the HIGH/LOW beam. The geometric center of HIGH beam zone is to be used for vertical aiming.

1. Position the snowmobile on a level floor so the headlight is approximately 8 m (25 ft) from an aiming surface (wall or similar surface).

■ NOTE: There should be an "average" operating load on the snowmobile when adjusting headlight aim.

2. Measure the distance from the floor to midpoint of the headlight.
3. Using the measurement obtained in step 2, make a horizontal mark on the aiming surface.
4. Make a vertical mark which intersects the horizontal mark on the aiming surface directly in front of the headlight.
5. Engage the brake lever lock and start the engine. Move the headlight dimmer switch to the HIGH beam position. DO NOT USE LOW BEAM.
6. Observe the headlight beam aim. Proper aim is when the most intense beam is centered on the vertical mark 5 cm (2 in.) below the horizontal mark on the aiming surface.



0741-448

7. Adjust the headlight using the adjustment knobs until correct aim is obtained. Shut the engine off; then disengage the brake lever lock.

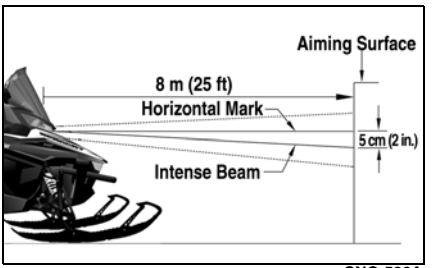
3000/7000

The headlight can be adjusted for vertical aim of the HIGH/LOW beam. The geometric center of HIGH beam zone is to be used for vertical aiming.

1. Position the snowmobile on a level floor so the headlight is approximately 8 m (25 ft) from an aiming surface (wall or similar surface).

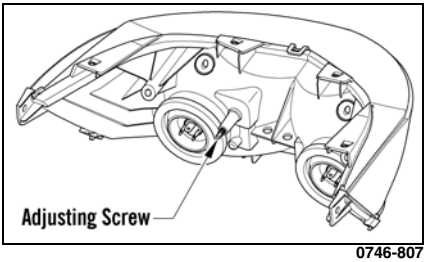
■ NOTE: There should be an "average" operating load on the snowmobile when adjusting headlight aim.

2. Measure the distance from the floor to midpoint of the headlight.
3. Using the measurement obtained in step 2, make a horizontal mark on the aiming surface.
4. Make a vertical mark which intersects the horizontal mark on the aiming surface directly in front of the headlight.
5. Engage the brake lever lock and start the engine. Move the headlight dimmer switch to the HIGH beam position. DO NOT USE LOW BEAM.
6. Observe the headlight beam aim. Proper aim is when the most intense beam is centered on the vertical mark 5 cm (2 in.) below the horizontal mark on the aiming surface.



SNO-520A

7. Adjust the headlight using the adjusting screw on the backside of the headlight using a 4 mm swivel socket and long extension until correct aim is obtained. Shut the engine off; then disengage the brake lever lock.



0746-807

Ski Wear Bars

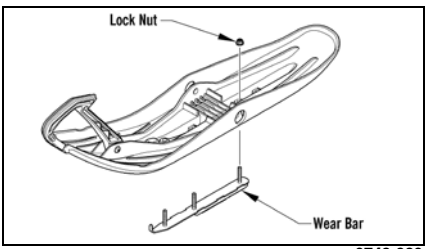
The ski wear bar is a replaceable bar attached to the underside of the ski. The purpose of the wear bar is to assist in turning the snowmobile, to minimize ski wear, and to maintain good steering control. If the snowmobile is operated primarily in deep snow, ski wear bar wear will be minimal; however, if the snowmobile is operated on terrain where the snow cover is minimal, the ski wear bar will wear faster. To maintain positive steering characteristics, Arctic Cat recommends that the ski wear bars be checked before each use and replaced if worn beyond 1/2 of the original diameter. Ski wear bars are available from an authorized Arctic Cat Snowmobile dealer.

⚠ WARNING

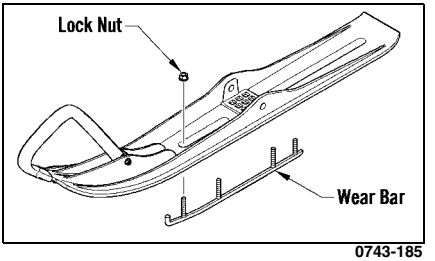
Operating the snowmobile with excessively worn ski wear bars may result in a loss of steering control.

Removing Ski Wear Bars

1. Using Front End Lift (p/n 5639-151), elevate the front of the snowmobile.
2. Remove the lock nuts securing the wear bar to the ski.



0748-980



0743-185

3. Remove the wear bar from the ski.

Installing Ski Wear Bars

1. Move the wear bar into position on the bottom of the ski.

■ NOTE: If installing a double-offset wear bar for normal steering capabilities, the carbide edge should be directed to the inside of the ski.

2. Align the wear bar studs with the holes in the ski; then install the lock nuts. Tighten to 11-15 ft-lb.

Adjusting Ski Stance

■ NOTE: Local laws and/or regulations as to maximum width of the ski stance on these snowmobiles may be applicable. Always comply with the maximum width laws and/or regulations when adjusting ski stance.

■ NOTE: Lynx models have no ski stance adjust ability.

1. Place the front of the snowmobile on a support stand.
2. Remove the cotter pin; then remove the slotted nut and cap screw securing the ski assembly to the spindle. Remove the ski. Account for the rubber damper, inserts, and washers.
3. To increase ski stance, place both ski stance spacers to the outside of spindle.
4. To decrease ski stance, place ski stance spacers to the inside of spindle.
5. Apply an all-temperature grease to the non-threaded portion of the cap screw; then slide the cap screw through the ski accounting for the rubber damper, inserts, and washers.

■ NOTE: Install the cap screw so the slotted nut will be located to the inside of the ski.

6. Apply red Loctite #271 to the threads of the cap screw; then tighten the nut to 45 ft-lb.
7. Place the cotter pin into the ski cap screw and spread the pin.
8. Repeat procedure for the other ski.

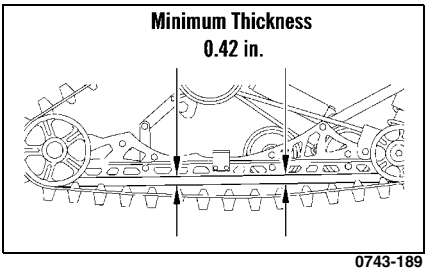
Rail Wear Strips

Arctic Cat recommends that the wear strips be checked weekly and replaced as necessary. Measure the wear strips at 25.4 cm (10 in.) intervals. Wear strips must be 10.7 mm (0.42 in.) thick or thicker.

If wear strip measurements are less than specified, replacement of both wear strips is necessary to prevent premature track clip wear and possible track damage. Take the snowmobile to an authorized Arctic Cat Snowmobile dealer for this service. This service is at the discretion and expense of the snowmobile owner.

Each time a new set of wear strips are installed, they should be tempered. Temper the wear strips by driving the snowmobile for approximately a mile on a hard pack trail; then immediately drive into deep snow and allow the wear strips to cool. Repeat the procedure (warming up the wear strips; then cooling them down) two or three times.

■ **NOTE: The rail wear strips will wear rapidly if the snowmobile is operated on terrain on which the snow cover is minimal. Loose snow is required to cool and lubricate the wear strips and prevent accelerated wear.**



0743-189

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. This service is at the discretion and expense of the snowmobile owner. To prepare the snowmobile for storage, Arctic Cat recommends the following procedure:

1. Clean the seat cushion with a damp cloth and a Vinyl Protectant.
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 and replace the air filter if necessary.
4. Place the rear of the snowmobile up on a shielded safety stand.
5. Carefully pry the intake boots partially over the throttle body inlets; then start the engine and allow to idle.
6. Spray an Engine Storage Preserver into the intakes until the engine exhaust starts to smoke heavily or until the engine starts to drop in RPM. Turn engine off. Install the intake boots.
7. Plug the exhaust system outlet with a clean cloth.
8. Fill the gas tank to its rated capacity; then add Arctic Cat Fuel Stabilizer (p/n 0436-907) to the gas tank following directions on the container for the stabilizer/gasoline ratio. Tighten the gas tank cap securely.
9. Flush the transmission and replace the lubricant.
10. Remove the drive belt from the drive clutch/driven clutch. Lay the belt on a flat surface or slide it into a cardboard sleeve to prevent warping or distortion during storage.
11. Clean and inspect the drive clutch and driven clutch.
12. Apply light oil to the upper steering post bushing and shafts of the shock absorbers.
13. Lubricate the rear suspension, spindles, and steering arms with all-temperature grease.
14. Tighten all nuts, bolts, and cap screws making sure all nuts, bolts, and cap screws are tightened securely. Make sure all rivets holding the components together are tight. Replace all loose rivets.
15. Clean and polish the hood, console, and chassis with Cat Cleaner (p/n 4639-371). DO NOT USE SOLVENTS. THE PROPELLANT WILL DAMAGE THE FINISH.
16. Disconnect the battery cables making sure to disconnect the negative cable first; then clean the battery posts and cables. Charge the battery.
17. 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.
18. 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.

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 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. Inspect the drive belt for cracks and tears. Check belt specifications. Replace if damaged or worn. Install the drive belt.

■ 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.
6. Verify the condition of and the adjustment of the throttle cable.
7. Tighten all nuts, bolts, and cap screws making sure all nuts, bolts, and cap screws are tightened securely.
8. If not done during preparation for storage, lubricate the rear suspension, spindles, and steering arms with all-temperature grease.
9. Check the coolant level and all coolant hoses and connections for deterioration or cracks. Add properly mixed coolant as necessary.
10. Charge the battery until fully charged; then connect the battery cables making sure to connect the positive cable first. Test the electric start system.
11. Inspect the entire brake system, all controls, headlight, taillight, brakelight, ski wear bars, and headlight aim; adjust or replace as necessary.
12. Adjust the track to the proper tension and alignment.

U.S. EPA Emission Control Statement/Warranty Coverage (U.S. Only)

STATEMENT/WARRANTY

Arctic Cat warrants to the original retail purchaser, and each subsequent purchaser, that all U.S. EPA-certified Arctic Cat snowmobiles are designed, built, and equipped to conform to all U.S. EPA Emission Control Regulations. Please read the following information completely.

Your authorized Arctic Cat snowmobile dealer will repair or replace any defective emission-related component at no cost to you during the warranty period. You may have non-warranty service performed by any repair establishment that uses equivalent components. The regulations provide significant civil penalties for tampering that causes your snowmobile to no longer meet U.S. EPA emission standards.

Arctic Cat further warrants that the engine and its emission-related components are free from defects in materials or workmanship that could cause the engine to fail to comply with applicable regulations during the warranty period.

If you have any questions about this information, or the emission warranty coverage statement, contact your local authorized Arctic Cat snowmobile dealer.

WARRANTY PERIOD

The emission warranty period for this snowmobile begins on the same date as the standard warranty coverage and continues for 30 months or 2500 miles, whichever comes first.

COMPONENTS COVERED

The emissions warranty covers major emissions control components and emission-related components listed as follows:

Engine Management and Sensors
- Barometric Pressure Sensor
- Camshaft Position Sensor
- Engine Control Module (ECM)
- Engine Coolant Temperature Sensor
- Intake Air Temperature Sensor
- Oxygen Sensor
- Throttle Position Sensor

Fuel/Air System
- Fuel Injectors
- Fuel Pressure Regulator
- Fuel Pump
- Carburetor(s)
- Manifold Absolute Pressure SensorAir Bypass Valve
- Crankcase Ventilation System
- ISC Valve

Ignition System Systems
- Ignition Coil
- Knock Sensor System
- Crankshaft Position Sensor
- Exhaust Temperature Sensor
- Capacitive Discharge Ignition (CDI) Module
- Magneto Pick-Up
- Spark Plugs

Miscellaneous Items Used in Aforementioned
- Connectors
- Switches
- Grommets
- Clamps
- Hoses
- Ties
- Gaskets
- Wiring

OWNER'S RESPONSIBILITIES

The owner of any snowmobile warranted under this Arctic Cat Emission Control Statement is responsible for the proper maintenance and use of the snowmobile in accordance with Arctic Cat's recommendations in the Operator's Manual.

Change of Address, Ownership, or Warranty Transfer

Arctic Cat Inc. keeps on file the current name and address of the owner of this vehicle. This allows Arctic Cat to reach the current owner with any important safety information which may be necessary to protect customers from personal injury or property damage. Please make sure a copy of this form is completed and returned to Arctic Cat Inc. if you move or if the vehicle is sold to another party.

This form may also be used to transfer the unused portion of the original warranty to a second party. In order to transfer warranty, fill out this form completely; then return a copy of this form to Arctic Cat Inc. Arctic Cat will then process the application and issue warranty for the balance of the time remaining of the original warranty. Warranty coverage is only available in the country in which the original retail purchase occurs to the original retail purchaser resident in that country or to a transferee resident in that country of the balance of the remaining warranty.

- ❑ Address Change
- ❑ Ownership Change
- ❑ Warranty Transfer

CHANGE OF ADDRESS/OWNERSHIP/ WARRANTY TRANSFER TO:

Name _____

Address _____

City/State (Province)/Zip Code (Postal Code) _____

Phone # ( ) _____

Email _____

Year and Model _____

Vehicle Identification Number (VIN) _____

Fold Back Once

Place
Stamp
Here

CHANGE OF ADDRESS/OWNERSHIP

ARCTIC CAT INC.
PRODUCT SERVICE AND
WARRANTY DEPT.
P.O. BOX 810
THIEF RIVER FALLS, MN 56701

Warranty Procedure/Owner Responsibility

At the time of sale, an Owner Registration form is to be completed by the selling dealer and consumer. The receipt of the registration form by Arctic Cat is a condition precedent to warranty coverage. It is the selling dealer's responsibility to retain and/or submit the appropriate copies of the form to the appropriate place(s) to initiate warranty coverage.

The dealer will furnish to the consumer a signed copy of the form which must be presented to the dealer when requesting warranty service. **The registration form is the consumer's proof of ownership and warranty eligibility. The form is used by the dealer to validate the warranty claim.** Retain your copy of the form and keep it in a safe place.

When warranty repair is suspected, the snowmobile should be taken to the selling dealer, who has the primary responsibility to perform warranty repairs. Subject to the limitations set forth in the Limited Warranty, in the event the selling dealer has ceased to do business, you have moved, or you are in a location away from your selling dealer, warranty may be performed by any authorized Arctic Cat Snowmobile dealer.

The authorized Arctic Cat Snowmobile dealer will examine the snowmobile or part to determine if, in his opinion, a warrantable condition exists. If a warrantable condition appears to exist, the dealer will repair or replace, at Arctic Cat's option, free of charge, including any related labor costs, all parts that are found to be warrantable and any other parts which the warrantable part caused to be damaged. You, the consumer, will then be asked to sign a warranty form to ensure Arctic Cat that the warranty work was actually performed.

It is the consumer's responsibility to maintain and service the snowmobile in accordance with Arctic Cat's recommendations in the Operator's Manual. To protect yourself and your snowmobile, follow all safety and service tips. **Arctic Cat will NOT warrant repairs required as a result of not performing standard operator maintenance, storage procedures, and service as outlined in the Operator's Manual.**

Should you have any questions concerning the warranty, contact an authorized Arctic Cat Snowmobile dealer.

Arctic Cat Inc., P.O. Box 810, Thief River Falls, MN 56701 (218) 681-8558

Printed in U.S.A. ®™Trademarks of Arctic Cat Inc. Thief River Falls, MN 56701 p/n 2260-795
Phone: (218) 681-9851 - U.S. (204) 982-1656 - Canada