




FOREWORD

This Arctic Cat Service Manual contains service, maintenance, and troubleshooting information for the 2009 Arctic Cat Prowler XTZ. The complete manual is designed to aid service personnel in service-oriented applications.

This manual is divided into sections. Each section covers a specific vehicle component or system and, in addition to the standard service procedures, includes disassembling, inspecting, and assembling instructions. When using this manual as a guide, the technician should use discretion as to how much disassembly is needed to correct any given condition.

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

All Arctic Cat publications and decals display the words Warning, Caution, Note, and At This Point to emphasize important information. The symbol  **WARNING** identifies personal safety-related information. Be sure to follow the directive because it deals with the possibility of severe personal injury or even death. The symbol  **CAUTION** identifies unsafe practices which may result in vehicle-related damage. Follow the directive because it deals with the possibility of damaging part or parts of the vehicle. The symbol  **NOTE:** identifies supplementary information worthy of particular attention. The symbol  **AT THIS POINT** directs the technician to certain and specific procedures to promote efficiency and to improve clarity.

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

All materials and specifications are subject to change without notice.

Keep this manual accessible in the shop area for reference.

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

TABLE OF CONTENTS

Click on the blue text to go.

Foreword

Prowler XTZ

- 
- 1. General Information/Specifications** **1**
 - 2. Periodic Maintenance/Tune-Up** **2**
 - 3. Engine/Transmission** **3**
 - 4. Fuel/Lubrication/Cooling** **4**
 - 5. Electrical System** **5**
 - 6. Drive System** **6**
 - 7. Suspension** **7**
 - 8. Steering/Frame** **8**
 - 9. Controls/Indicators** **9**

UTV SERVICE MANUAL

SECTION 1 - GENERAL INFORMATION

1

TABLE OF CONTENTS

General Specifications	1-2
Torque Specifications	1-2
Torque Conversions (ft-lb/N-m)	1-3
Tightening Torque (General Bolts)	1-3
Break-In Procedure	1-4
Gasoline - Oil - Lubricant	1-4
Genuine Parts	1-5
Preparation For Storage	1-5
Preparation After Storage.....	1-6

General Specifications*

CHASSIS	
Dry Weight (approx)	564 kg (1243 lb)
Length (overall)	301 cm (118.5 in.)
Height (overall)	190.5 cm (75 in.)
Width (overall)	152.4 cm (60.0 in.)
Suspension Travel	(front) 25.4 cm (10 in.) (rear) 25.4 cm (10 in.)
Brake Type	Four-Wheel Hydraulic Disc w/Driveline Parking Brake
Wheelbase	190 cm (75 in.)
Tire Size	(front) 26 x 9-14 (rear) 26 x 11-14
Tire Inflation Pressure	0.70 kg/cm ² (10 psi)
MISCELLANY	
Gas Tank Capacity (rated)	31 L (8.2 U.S. gal.)
Coolant Capacity	2.9 L (3.0 U.S. qt)
Differential Capacity	275 ml (9.3 fl oz)**
Rear Drive Capacity	250 ml (8.5 fl oz)**
Engine Oil Capacity	2.8 L (3.0 U.S. qt) - Overhaul 2.4 L (2.5 U.S. qt) - Change
Gasoline (recommended)	87 Octane Regular Unleaded
Engine Oil (recommended)	Arctic Cat ACX All Weather Synthetic
Front Differential Lubricant	SAE Approved 80W-90 Hypoid
Rear Drive Lubricant	Arctic Cat 80W-90 Hypoid Friction Modified
Belt Width	35.0 mm (1.38 in.)
Brake Fluid	DOT 4
Taillight/Brakelight	12V/8W/27W
Headlight	12V/27W (2)
Starting System	Electric

* Specifications subject to change without notice.

** Visible at plug threads.

Torque Specifications

EXHAUST COMPONENTS			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Exhaust Pipe	Cylinder Head	20	27
Spark Arrester	Muffler	48 in.-lb	5
ELECTRICAL COMPONENTS			
Coil*	Frame	8	11
Ground Wire	Engine	8	11
STEERING COMPONENTS			
Steering Wheel Shaft**	Steering Wheel	25	34
Steering Wheel Shaft****	Intermediate Shaft (Upper)	36	49
Intermediate Shaft (Lower)****	Steering Pinion Shaft	36	49
Rack and Pinion Assembly	Frame	50	68
Tie Rod**	Rack	59	80
Tie Rod End**	Knuckle	30	41
Jam Nut	Tie Rod End	8	11

SUSPENSION COMPONENTS (Front)			
Part	Part Bolted To	Torque	
		ft-lb	N-m
A-Arm	Frame	40	54
Ball Joint Cap Screw	Knuckle	35	48
Shock Absorber (Upper)	Frame	33	45
Shock Absorber (Lower)	Upper A-Arm	33	45
Knuckle	A-Arm	33	45
SUSPENSION COMPONENTS (Rear)			
Sway Bar Bracket	Frame	33	45
A-Arm	Frame	33	45
Shock Absorber (Upper)	Frame	33	45
Shock Absorber (Lower)	Lower A-Arm	33	45
Knuckle	A-Arm	33	45
Cargo Box Hinge	Cargo Box Frame	20	27
Cargo Box	Cargo Box Frame	20	27
Latch Pivot Bushing	Cargo Box Frame	15	20
Latch Striker	Cargo Box Liner	5	7
BRAKE COMPONENTS			
Brake Disc**	Hub	15	20
Brake Hose	Caliper	20	27
Brake Hose	Master Cylinder	20	27
Master Cylinder	Frame	25	34
Parking Brake Mechanism	Frame	20	27
Hydraulic Caliper Holder	Knuckle	20	27
Driveline	Rear Drive Input Flange	20	27
Parking Brake Actuator Lever	Caliper	35	48
Parking Brake Caliper Assembly*	Mounting Bracket	20	27
CHASSIS/CANOPY ASSEMBLY			
Shift Lever*	Shift Axle	20	27
Front/Rear Canopy Tube	Arm Rest/Steering Post Support	20	27
Top Canopy Support	Front/Rear Canopy Tubes	8	11
Rear Canopy Tube	Lower Canopy Support	8	11
DRIVE TRAIN COMPONENTS			
Rear Drive	Frame	38	48
Drive Coupler	Drive Flange	40	54
Engine	Frame	40	54
Front Differential	Frame/Differential Bracket	38	52
Rear Output Flange	Rear U-Joint Flange	40	54
Pinion Housing	Differential Housing	23	31
Differential Housing Cover***	Differential Housing	23	31
Drive Bevel Gear Nut***	Shaft	80	108
Lock Collar	Differential Housing	120	163
Hub Nut	Front/Rear Shaft/Axle (min)	200	272
Oil Drain Plug	Front Differential - Rear Drive	45 in.-lb	5
Oil Fill Plug	Front Differential - Rear Drive	16	22
Oil Drain Plug	Engine	16	22
Wheel	Hub	45	61
Front Input Drive Flange	Front Drive Yoke Flange	20	27

* w/Blue Loctite #243

*** w/Green Loctite #609

** w/Red Loctite #271

**** w/Green Loctite #270

ENGINE/TRANSMISSION		Torque	
Part	Part Bolted To	ft-lb	N-m
Clutch Shoe**	Crankshaft	221	300
Clutch Cover/Housing Assembly	Crankcase	8	11
Lower Crankcase Cover (6 mm)	Crankcase	8	11
Lower Crankcase Cover (8 mm)	Crankcase	20	27
Crankcase Half	Crankcase Half	8	11
Cylinder Head (Cap Screw)	Crankcase	38	52
Cylinder Head Nut (6 mm)	Cylinder	8	11
Cylinder Head Nut (8 mm)	Cylinder	18	24
Cylinder Head Cover	Cylinder Head	8.5	11.5
Driven Pulley Nut	Driveshaft**	80	109
Movable Drive Face Nut**	Driveshaft	165	224
Ground Wire	Engine	8	11
Magneto Cover	Crankcase	8	11
Tappet Cover	Valve Cover	9	12
Crankshaft Spacer	Crankshaft	28	38
Oil Pump Drive Gear**	Crank Balancer Shaft	62	84
Output Shaft Flange Yoke/Nut	Output Shaft**	59	80
Outer Magneto Cover	Magneto Cover	8	11
Magneto Rotor Nut**	Crankshaft	105	143
Cam Sprocket**	Camshaft	11	15
CVT Cover	Crankcase	8	11
Secondary Drive Gear Nut**	Secondary Drive Output Shaft	74	100
Oil Filter Cover	Crankcase	8	11
Speed Sensor Housing	Crankcase	8	11
Shift Cam Stopper	Crankcase	8	11
Shift Cam Stopper Spring	Shift Cam Stopper	8	11
Shift Cam Plate	Shift Cam Shaft	8	11
Shifter Housing	Crankcase	8	11
Starter Motor	Crankcase	8	11
V-Belt Housing	Crankcase	8	11
Oil Pump Cover	Crankcase	8	11
Oil Strainer Cap	Crankcase	8	11

* w/Blue Loctite #243

** w/Red Loctite #271


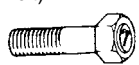
*** w/Green Loctite #609

Torque Conversions (ft-lb/N-m)

ft-lb	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb	N-m
1	1.4	26	35.4	51	69.4	76	103.4
2	2.7	27	36.7	52	70.7	77	104.7
3	4.1	28	38.1	53	72.1	78	106.1
4	5.4	29	39.4	54	73.4	79	107.4
5	6.8	30	40.8	55	74.8	80	108.8
6	8.2	31	42.2	56	76.2	81	110.2
7	9.5	32	43.5	57	77.5	82	111.5
8	10.9	33	44.9	58	78.9	83	112.9
9	12.2	34	46.2	59	80.2	84	114.2
10	13.6	35	47.6	60	81.6	85	115.6
11	15	36	49	61	83	86	117
12	16.3	37	50.3	62	84.3	87	118.3
13	17.7	38	51.7	63	85.7	88	119.7
14	19	39	53	64	87	89	121
15	20.4	40	54.4	65	88.4	90	122.4
16	21.8	41	55.8	66	89.8	91	123.8
17	23.1	42	57.1	67	91.1	92	125.1
18	24.5	43	58.5	68	92.5	93	126.5
19	25.8	44	59.8	69	93.8	94	127.8
20	27.2	45	61.2	70	95.2	95	129.2
21	28.6	46	62.6	71	96.6	96	130.6
22	29.9	47	63.9	72	97.9	97	131.9
23	31.3	48	65.3	73	99.3	98	133.3
24	32.6	49	66.6	74	100.6	99	134.6
25	34	50	68	75	102	100	136

1

Tightening Torque (General Bolts)

Type of Bolt	Thread Diameter A (mm)	Tightening Torque
(Conventional or 4 Marked Bolt) 	5	12-36 in.-lb
	6	36-60 in.-lb
	8	7-11 ft-lb
	10	16-25 ft-lb
(7 Marked Bolt) 	5	24-48 in.-lb
	6	6-8 ft-lb
	8	13-20 ft-lb
	10	29-43 ft-lb

Break-In Procedure

A new vehicle and an overhauled engine require a “break-in” period. The first 10 hours (or 200 miles) are most critical to the life of this vehicle. Proper operation during this break-in period will help assure maximum life and performance from the vehicle.

During the first 10 hours (or 200 miles) of operation, always use less than 1/2 throttle. Varying the engine RPM during the break-in period allows the components to “load” (aiding the mating process) and then “unload” (allowing components to cool). Although it is essential to place some stress on the engine components during break-in, care should be taken not to overload the engine too often. Do not pull a trailer or carry heavy loads during the 10-hour break-in period.

When the engine starts, allow it to warm up properly. Idle the engine several minutes until the engine has reached normal operating temperature. Do not idle the engine for excessively long periods of time.

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

After the completion of the break-in period, the engine oil and oil filter should be changed. Other maintenance after break-in should include checking of all prescribed adjustments and tightening of all fasteners.

Gasoline - Oil - Lubricant

RECOMMENDED GASOLINE

The recommended gasoline to use is 87 minimum octane regular unleaded. In many areas, oxygenates (either ethanol or MTBE) are added to the gasoline. Oxygenated gasolines containing up to 10% ethanol, 5% methane, or 5% MTBE are acceptable gasolines.

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

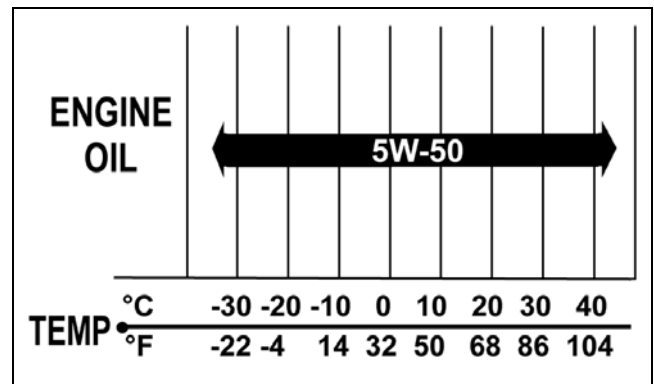
Do not use white gas. Only Arctic Cat approved gasoline additives should be used.

RECOMMENDED ENGINE/ TRANSMISSION OIL

⚠ CAUTION

Any oil used in place of the recommended oil could cause serious engine damage. Do not use oils which contain graphite or molybdenum additives. These oils can adversely affect clutch operation. Also, not recommended are racing, vegetable, non-detergent, and castor-based oils.

The recommended oil to use is Arctic Cat ACX All Weather synthetic engine oil, which has been specifically formulated for use in this Arctic Cat engine. Although Arctic Cat ACX All Weather synthetic engine oil is the only oil recommended for use in this engine, use of any API certified SM 5W-50 oil is acceptable.



OILCHART1

RECOMMENDED FRONT DIFFERENTIAL/REAR DRIVE LUBRICANT

The recommended lubricant is Arctic Cat Gear Lube or an equivalent gear lube which is SAE approved 80W-90 hypoid. This lubricant meets all of the lubrication requirements of the Arctic Cat vehicle front differential and rear drive.

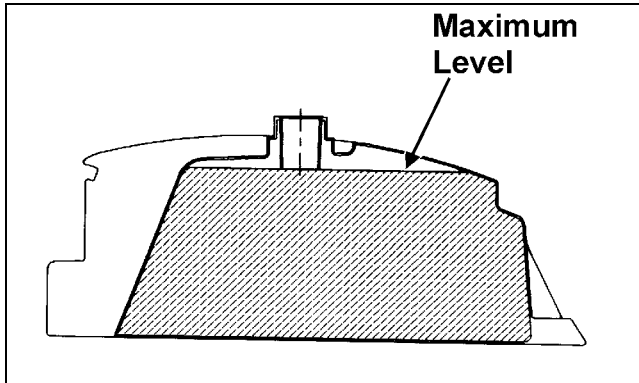
⚠ CAUTION

Any lubricant used in place of the recommended lubricant could cause serious front differential damage.

FILLING GAS TANK

⚠ WARNING

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



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Since gasoline expands as its temperature rises, 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.

⚠ WARNING

Do not overflow gasoline when filling the gas tank. A fire hazard could materialize. Always allow the engine to cool before filling the gas tank.

Tighten the gas tank cap securely after filling the tank.

⚠ WARNING

Do not over-fill the gas tank.

Genuine Parts

When replacement of parts is necessary, use only genuine Arctic Cat parts. They are precision-made to ensure high quality and correct fit. Refer to the appropriate Illustrated Parts Manual for the correct part number, quantity, and description.

Preparation For Storage

⚠ CAUTION

Prior to storing the vehicle, it must be properly serviced to prevent rusting and component deterioration.

1. Clean the seat cushion (cover and base) with a damp cloth and allow it to dry.
2. Clean the vehicle thoroughly by washing dirt, oil, grass, and other foreign matter from the entire vehicle. Allow it to dry thoroughly. **DO NOT** get water into any part of the engine or air intake.
3. Either drain the gas tank or add Fuel Stabilizer to the gas in the gas tank. Remove the air filter housing cover and air filter. Start the engine and allow it to idle. Using Arctic Cat Engine Storage Preserver, rapidly inject the preserver into the air filter opening for a period of 10 to 20 seconds; then stop the engine. Install the air filter and housing cover.

⚠ CAUTION

If the interior of the air filter housing is dirty, clean the area before starting the engine.

4. Plug the exhaust hole in the exhaust system with a clean cloth.
5. Apply light oil to the plungers of the shock absorbers.
6. Tighten all nuts, bolts, cap screws, and screws. Make sure rivets holding components together are tight. Replace all loose rivets. Care must be taken that all calibrated nuts, cap screws, and bolts are tightened to specifications.
7. Fill the cooling system to the bottom of the stand pipe in the radiator neck with properly mixed coolant.
8. Disconnect the battery cables; then remove the battery, clean the battery posts and cables, and store in a clean, dry area.
9. Store the vehicle indoors in a level position.

⚠ CAUTION

Avoid storing outside in direct sunlight and avoid using a plastic cover as moisture will collect on the vehicle causing rusting.

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Preparation After Storage

Taking the vehicle out of storage and correctly preparing it will assure many miles and hours of trouble-free riding.

1. Clean the vehicle thoroughly.
2. Clean the engine. Remove the cloth from the exhaust system.
3. Check all control wires and cables for signs of wear or fraying. Replace if necessary.
4. Change the engine/transmission oil and filter.
5. Check the coolant level and add properly mixed coolant as necessary.

6. Charge the battery; then install. Connect the battery cables.

 **CAUTION**

The ignition switch must be in the OFF position prior to installing the battery or damage may occur to the ignition system.

 **CAUTION**

Connect the positive battery cable first; then the negative.

7. Check the entire brake systems (fluid level, pads, etc.), all controls, headlights, taillight, brakelight, and headlight aim; adjust or replace as necessary.
8. Tighten all nuts, bolts, cap screws, and screws making sure all calibrated nuts, cap screws, and bolts are tightened to specifications.
9. Check tire pressure. Inflate to recommended pressure as necessary.
10. Make sure the steering moves freely and does not bind.
11. Check the spark plugs. Clean or replace as necessary.

SECTION 2 - PERIODIC MAINTENANCE/TUNE-UP

2

TABLE OF CONTENTS

Periodic Maintenance Chart.....	2-2
Periodic Maintenance.....	2-3
Lubrication Points.....	2-3
Air Filter.....	2-3
Valve/Tappet Clearance (Feeler Gauge Procedure).....	2-4
Valve/Tappet Clearance (Valve Adjuster Procedure).....	2-5
Testing Engine Compression.....	2-5
Spark Plugs.....	2-6
Muffler/Spark Arrester.....	2-6
Engine/Transmission Oil - Filter.....	2-7
Front Differential - Rear Drive Lubricant.....	2-8
Driveshaft/Coupling.....	2-8
Nuts/Bolts/Cap Screws.....	2-8
Headlight/Taillight-Brakelight.....	2-9
Shift Lever.....	2-10
Hydraulic Brake System.....	2-10
Parking Brake.....	2-12
Burnishing Brake Pads.....	2-14
Checking/Replacing V-Belt.....	2-14
Troubleshooting Brake System.....	2-16

Periodic Maintenance Chart

A = Adjust I = Inspect
 C = Clean L = Lubricate
 D = Drain R = Replace
 T = Tighten

Item	Initial Service After Break-In (First Mo or 100 Mi)	Every Day	Every Month or Every 100 Miles	Every 3 Months or Every 300 Miles	Every 6 Months or Every 500 Miles	Every Year or Every 1500 Miles	As Needed
Battery	I		I				C
Fuses				I			R
Air Filter/Drain Tube	I	I	C*				R
Valve/Tappet Clearance	I				I		A
Engine Compression						I	
Spark Plugs	I			I	I		R (4000 Mi or 18 Mo)
Muffler/Spark Arrester					C		R
Gas/Vent Hoses	I	I					R (2 Yrs)
Throttle Cable Ends/Accelerator Pedal Pivot	I	I			C-L		A-R
Engine-Transmission Oil Level		I					A
Engine-Transmission Oil/Filter	R			R*/R**/R***			R
Oil Strainer	I				I		C
Differential/Gear Case Lubricant	I		I				R (4 Yrs)
Tires/Air Pressure	I	I					R
Steering Components	I	I		I			R
V-Belt	I				I		R
Suspension (Ball joint boots, drive axle boots front and rear, tie rods, differential and rear drive bellows)	I	I					R
Nuts/Bolts/Cap Screws	T		T				A
Ignition Timing						I	
Headlight/Taillight-Brakelight	I	I					R
Switches	I	I					R
Shift Lever					I		A-L
Gauges/Indicators	I	I					R
Frame/Welds	I		I		I		
Electrical Connections					I		C
Complete Brake System (Hydraulic & Parking)	I	I					
Brake Pads	I			I*			R
Brake Fluid	I			I			R (2 Yrs)
Brake Hoses	I			I			R (4 Yrs)
Coolant/Cooling System	I		I				R (2 Yrs)
Wheel Lug Nuts	T			T			

* Service/Inspect more frequently when operating in adverse conditions.

** When using an API certified SM 5W-50 oil.

*** When using Arctic Cat ACX All Weather synthetic oil, oil change interval can be increased to every 1,000 miles or every year.

