



FOREWORD

This Arctic Cat Service Manual contains service, maintenance, and troubleshooting information for the 2011 Arctic Cat Prowler HDX. 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 serious personal injury or even death. A **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

Note: To navigate through this manual, use the PAGE UP/PAGE DOWN buttons on the keyboard, click on the Table of Contents bookmarks on the left side of the screen, or click the blue text below. To return to this page, click the Manual Table of Contents button at the bottom of each page.

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

SECTION 1 - GENERAL INFORMATION

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.....	1-5

General Specifications

CHASSIS	
Dry Weight (approx)	618 kg (1363 lb)
Length (overall)	327.6 cm (129 in.)
Height (overall)	193.3 cm (76.5 in.)
Width (overall)	153 cm (60.25 in.)
Suspension Travel	25.4 cm (10 in.)
Brake Type	Hydraulic
Tire Size	(front) 26 x 10R-14 (rear) 26 x 12R-14
Tire Inflation Pressure	1.41 kg/cm ² (20 psi)
MISCELLANY	
Gas Tank Capacity	31 L (8.2 U.S. gal.)
Coolant Capacity	2.9 L (3.0 U.S. qt)
Front Differential Capacity	275 ml (9.3 fl oz)*
Rear Drive Capacity	250 ml (8.5 fl oz)*
Engine Oil Capacity	2.5 L (2.6 U.S. qt) - Overhaul 1.9 L (2.0 U.S. qt) - Change
Gasoline (recommended)	87 Octane Regular Unleaded
Engine Oil (recommended)	Arctic Cat ACX All Weather Synthetic
Front Differential/Rear Drive Lubricant	SAE Approved 80W-90 Hypoid
Belt Width	35.0 mm (1.38 in.)
Brake Fluid	DOT 4
Taillight/Brakelight	12V/8W/27W
Headlight	12V/27W (4)

Specifications subject to change without notice.

* Visible at plug threads.

Torque Specifications

■NOTE: Torque specifications have the following tolerances:

Torque (ft-lb)	Tolerance
0-15	±20%
16-39	±15%
40+	±10%

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			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Coil*	Frame	8	11
Ground Wire	Engine	8	11

CHASSIS/ROPS ASSEMBLY			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Shift Axle Support	Frame	48 in.-lb	5
Front/Rear ROPS Tube	Arm Rest/Steering Post Support	20	27
Top ROPS Support	Front/Rear ROPS Tubes	8	11
Rear ROPS Tube	Lower ROPS Support	8	11
Shift Cable	Shift Axle Arm	8	11
Shift Cable Mounting/Adjuster	Shift Cable	20	27

STEERING COMPONENTS			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Steering Wheel**	Steering Wheel Shaft	25	34
Steering Wheel Shaft***	Intermediate Shaft (Upper)	36	49
Intermediate Shaft (Lower)***	Steering Pinion Shaft	36	49
Rack and Pinion Assembly	Frame	35	48
Tie Rod	Rack	37	50
Tie Rod End**	Knuckle	30	41
Jam Nut	Tie Rod End	10	14
Steering Shaft Coupler	EPS Input Shaft	11	15
EPS Cradle Bracket	Frame	20	27
EPS Assembly	Frame	35	48
EPS Assembly	Rack Coupler	11	15
Intermediate Shaft Coupler	Intermediate Shaft	31	42
Steering Shaft Housing (6 mm)	Frame	8	11
Steering Shaft Housing (8 mm)	Frame	20	27
SUSPENSION COMPONENTS (Front)			
A-Arm	Frame	33	45
Knuckle	Ball Joint	35	48
Shock Absorber	Frame/Upper A-Arm	33	45
Knuckle	A-Arm	35	48
SUSPENSION COMPONENTS (Rear)			
Sway Bar Bracket	Frame	33	45
A-Arm	Frame	33	45
Shock Absorber (Lower)	Lower A-Arm	20	27
Shock Absorber (Upper)	Frame	33	45
Knuckle	A-Arm	35	48
Cargo Box Hinge	Cargo Box Frame	20	27
Side Panel/Spacer	Cargo Box Frame	25	34
Tilt Pivot Bushing	Cargo Box Frame	15	20
Latch Striker	Cargo Box Liner	60 in.-lb	7
BRAKE COMPONENTS			
Brake Disc**	Hub	15	20
Brake Hose	Caliper	20	27
Brake Hose	Master Cylinder	20	27
Master Cylinder	Frame	25	34
Caliper Holder****	Knuckle	20	27
Driveline	Rear Drive Input Flange	20	27

* w/Blue Loctite #243

*** w/Green Loctite #270

** w/Red Loctite #271

**** w/"Patch-Lock"

DRIVE TRAIN COMPONENTS			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Rear Differential/Gear Case	Frame	38	48
Drive Coupler (Front)	Front Drive Flange	40	54
Front Engine Mounting Bracket	Frame	45	61
Rear Engine Mounting Bracket	Frame	45	61
Engine Mounting Through-Bolt	Frame	40	54
Front Differential	Frame/Differential Bracket	38	52
Rear Output Flange	Rear Driven Flange	40	54
Input Shaft Assembly	Gear Case Housing	23	31
Pinion Housing	Differential Housing	23	31
Secondary Shaft Bearing Housing	Crankcase	28	38
Rear Cradle	Frame	25	34
Driveshaft (Front/Rear)	Engine	20	27
Shift Cable Bracket	Engine	8	11
Front Input Drive Flange	Front Drive Yoke Flange	20	27
Differential Housing Cover***	Differential Housing	23	31
Drive Bevel Gear Nut***	Shaft	87	118
Lock Collar	Differential Housing	125	170
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	80	108
ENGINE/TRANSMISSION			
Clutch Shoe**	Crankshaft	221	300
Clutch Cover/Housing Assembly	Crankcase	8	11
Crankcase Half (6 mm)	Crankcase Half	10	14
Crankcase Half (8 mm)	Crankcase Half	20	27
Cylinder Head (Cap Screw)	Crankcase	40	54
Cylinder Head Nut (6 mm)	Cylinder	8	11
Cylinder Head Nut (8 mm)	Cylinder	18	24
Valve 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 Cover**	Crankcase	8	11
Oil Pump Drive Gear**	Crank Balancer Shaft	62	84
Output Shaft Flange Nut	Output Shaft**	62	84
Outer Magneto Cover	Magneto Cover	8	11
Magneto Rotor Nut**	Crankshaft	105	143
Cam Sprocket**	Camshaft	11	15
Speed Sensor Housing	Crankcase	8	11
V-Belt Cover	Crankcase	8	11
Output Yoke Nut	Secondary Driven Output Shaft	74	100
Output Shaft Flange Yoke/Nut	Output Shaft**	59	80
Secondary Shaft Bearing Housing	Crankcase Half	28	38
Stator Coil*	Magneto Cover	8.5	11.5
Intake Boot Clamp	Intake Boot	30 in.-lb	3.4

* w/Blue Loctite #243

** w/Red Loctite #271



*** w/Green Loctite #270

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 (see Periodic Maintenance Chart in Section 2).

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

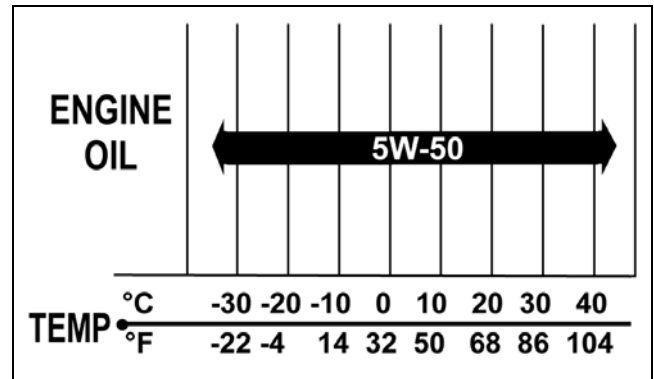
Do not use white gas. Only Arctic Cat approved gasoline additives should be used.

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.



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.

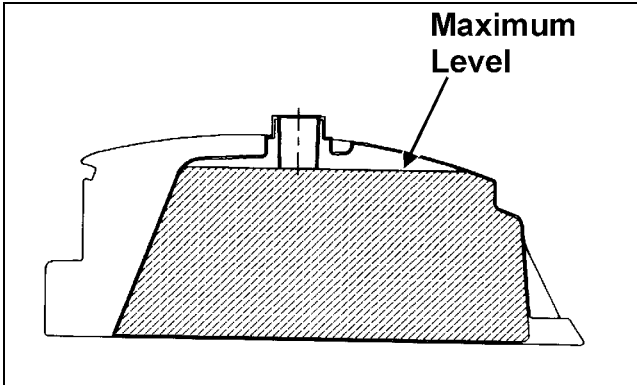
CAUTION

Any lubricant used in place of the recommended lubricant could cause serious front differential/rear drive 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.



ATV0049B

Since gasoline expands as its temperature rises, the gas tank must be filled to its specified 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.

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 plug. Clean or replace as necessary.

SECTION 2 - PERIODIC MAINTENANCE/TUNE-UP

TABLE OF CONTENTS

Periodic Maintenance Chart.....	2-2
Periodic Maintenance.....	2-3
Lubrication Points.....	2-3
Air Filter.....	2-3
Valve/Tappet Clearance.....	2-3
Testing Engine Compression.....	2-4
Spark Plug.....	2-5
Muffler/Spark Arrester.....	2-5
Engine/Transmission Oil - Filter.....	2-6
Front Differential - Rear Drive Lubricant.....	2-7
Driveshaft/Coupling.....	2-7
Nuts/Bolts/Cap Screws.....	2-7
Headlight/Taillight-Brakelight.....	2-7
Shift Lever.....	2-8
Hydraulic Brake System.....	2-10
Burnishing Brake Pads.....	2-11
Checking/Replacing V-Belt.....	2-11
Troubleshooting Brake System.....	2-14

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

Periodic Maintenance Chart

Item	Initial Service After Break-In (First Month or 100 Miles)	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 Plug	I			I	I		R (4000 Mi or 18 Mo)
Muffler/Spark Arrester					C		R
Gas 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
Front Differential - Rear Drive 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)	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 and strainer inspection interval can be increased to every 1,000 miles or every year.