




FOREWORD

This Arctic Cat Service Manual contains service, maintenance, and troubleshooting information for the 2008 Arctic Cat ATV 250 models. This manual is designed to aid service personnel in service-oriented applications.

This manual is divided into sections. Each section covers a specific ATV 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 ATV 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 ATV-related damage. Follow the directive because it deals with the possibility of damaging part or parts of the ATV. 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 red text to go.

MORE TO GO ON™

Foreword

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

DVX 250
250 US

SERVICE MANUAL



SECTION 1 - GENERAL INFORMATION

TABLE OF CONTENTS

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

General Specifications* (DVX Model)

CHASSIS	
Dry Weight (approx)	186 kg (410 lb)
Length (overall)	168.3 cm (66.25 in.)
Height (overall)	114.9 cm (45.25 in.)
Width (overall)	106.0 cm (41.75 in.)
Suspension Travel	(Front) 15.5 cm (6.1 in.) (Rear) 16.5 cm (6.5 in.)
Brake Type	Hydraulic w/Brake Lever Lock and Auxiliary Brake
Wheelbase	117.9 cm (46.4 in.)
Tire Size	(Front) AT21 x 7-10 (Rear) AT20 x 11-9
Tire Inflation Pressure	(Front) 0.28 kg/cm ² (4 psi) (Rear) 0.25 kg/cm ² (3.5 psi)
MISCELLANY	
Gas Tank Capacity (rated)	13 L (3.43 U.S. gal.)
Reserve Capacity	4.54 L (1.2 U.S. gal.)
Engine Oil Capacity	1.6 L (1.7 U.S. qt)
Transmission Lubricant Capacity	(Overhaul) 400 ml (13.5 fl/oz) (Change) 300 ml (10.1 fl/oz)
Gasoline (recommended)	87 Octane Regular Unleaded
Engine Oil (recommended)	SAE 5W-30
Cooling System Capacity	1.6 L (1.7 U.S. qt)
Brake Fluid	DOT 4
Taillight/Brakelight	12V/5W/21W
Headlight	12V/35W (2)
Starting System	Electric

* Specifications subject to change without notice.

General Specifications* (Utility Model)

CHASSIS	
Dry Weight (approx)	216 kg (477 lb)
Length (overall)	187 cm (73.6 in.)
Height (overall)	111.8 cm (44.0 in.)
Width (overall)	105.1 cm (41.40 in.)
Suspension Travel	12.7 cm (5.0 in.)
Brake Type	Hydraulic w/Brake Lever Lock and Auxiliary Brake
Wheelbase	117.9 cm (46.4 in.)
Tire Size	(Front) AT22 x 7-10 (Rear) AT22 x 10-10
Tire Inflation Pressure	(Front) 0.28 kg/cm ² (4 psi) (Rear) 0.25 kg/cm ² (3.5 psi)
MISCELLANY	
Gas Tank Capacity (rated)	13 L (3.43 U.S. gal.)
Reserve Capacity	4.54 L (1.2 U.S. gal.)
Engine Oil Capacity	1.6 L (1.7 U.S. qt)
Transmission Lubricant Capacity	(Overhaul) 600 ml (20.3 fl/oz) (Change) 500 ml (16.9 fl/oz)
Gasoline (recommended)	87 Octane Regular Unleaded
Engine Oil (recommended)	SAE 5W-30
Cooling System Capacity	1.6 L (1.7 U.S. qt)
Rear Drive Capacity	150 ml (5 fl oz)
Rear Drive Lubricant	SAE Approved 80W-90 Hypoid
Brake Fluid	DOT 4
Taillight/Brakelight	12V/5W/21W
Headlight	12V/35W (2)
Starting System	Electric w/Manual Recoil (Emergency)

* Specifications subject to change without notice.

Torque Specifications

DRIVE TRAIN COMPONENTS			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Engine Mounting Bolt	Frame	29	39
Engine Mounting Bracket Cap Screw	Frame	16	22
Rear Axle Housing (Utility)	Swing Arm	40	54
Rear Axle Housing (DVX)	Tube	29	39
Hub Nut (Front)	Front/Spindle	50	68
Wheel Lug Nut	Hub	32	44
Hub Nut (Rear)	Axle	72	98
Rear Axle Nut* (Utility)	Axle	72	98
Rear Axle Nut* (DVX)	Axle	86	117
EXHAUST COMPONENTS			
Exhaust Pipe	Engine	25	34
Muffler Mounting Bolt	Frame	25	34
ELECTRICAL COMPONENTS			
Starter Motor Lead Cable Nut	Starter	36 in.-lb	5
Starter Motor Mounting Bolt	Crankcase	9	12
STEERING COMPONENTS			
Handlebar Clamp Cap Screw	Steering Head	18	24
Steering Post Holder Cap Screw	Frame	17	23
Steering Post Nut	Steering Post	50	68
Upper And Lower Ball Joint Nut	Steering Knuckle	22	30
Tie Rod End Nut	Steering Knuckle	15	20
Tie Rod Lock Nut	Tie Rod	15	20
BRAKE COMPONENTS			
Brake Hose Union Bolt	Master Cylinder/Caliper	25	34
Brake Bleed Screw	Caliper	56 in.-lb	5
Brake Caliper Mounting Cap Screw	Steering Knuckle/Swing Arm	25	34
Master Cylinder (Front)	Handlebar	13	18
Brake Pad Mounting Pin (Front/Rear)	Brake Caliper	13	18
Brake Caliper Slide Pin (Front/Rear)	Brake Caliper	25	34
Front Brake Line Nut	Brake Line/Junction Block	25	34
Brake Caliper (Rear)	Swing Arm Housing	25	34
SUSPENSION COMPONENTS (Front)			
A-Arm Pivot Nut	Frame	32	44
Front Shock Absorber Mounting Nut* (Upper/Lower)	Frame	29	39

SUSPENSION COMPONENTS (Rear)			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Left Pivot Bolt (Utility)	Swing Arm	36 in.-lb	5
Right Pivot Bolt (Utility)	Swing Arm	82	112
Left Pivot Lock Nut (Utility)	Left Pivot Bolt	82	112
Swing Arm Pivot Nut (DVX)	Frame	50	68
Rear Shock Absorber Mounting Nut (Upper/Lower)	Frame/Swing Arm	29	39
Axle Housing Cap Screw (Utility)	Final Drive Gear Case	40	54
Axle Housing Cap Screw (DVX)	Swing Arm	29	39
ENGINE/TRANSMISSION			
Cylinder Head	Cylinder	7	10
Cylinder Nut	Crankcase	7	10
Camshaft Holder	Cylinder Head	18	24
Bevel Drive Gear (Utility)	Driveshaft	72	98
Magneto Rotor/Flywheel	Crankshaft	47	64
Bevel Driven Gear (Utility)	Output Shaft	72	98
Output Drive Sprocket Plate (DVX)	Drive Shaft	43	59
Crankcase Cap Screw	Crankcase	8	11
Engine Oil Screen/Filter Cap	Crankcase	11	15
Shift Cam Stopper* (Utility)	Left Case	20	27
Shift Cam Stopper* (DVX)	Transmission Case	35	48
Camshaft Chain Tensioner Adjuster	Cam Chain Tensioner	9	12
Camshaft Chain Tensioner Mount	Cylinder Head	9	12
Camshaft Chain Tension Spring Holder Plug	Cam Chain Tensioner	36 in.-lb	4
Timing Plug	Right Case	16	22
Driven Pulley Retaining Nut	Driven Shaft (Transmission)	43	59
Drive Plate Nut	Fixed Driven Face	43	59
Drive Pulley Nut	Crankshaft	72	98
Engine Oil Drain Plug	Crankcase	21	29
Transmission Drain Plug	Transmission	21	29
Transmission Case Cover	Transmission	20	27



* w/Red Loctite #271

1

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

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

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

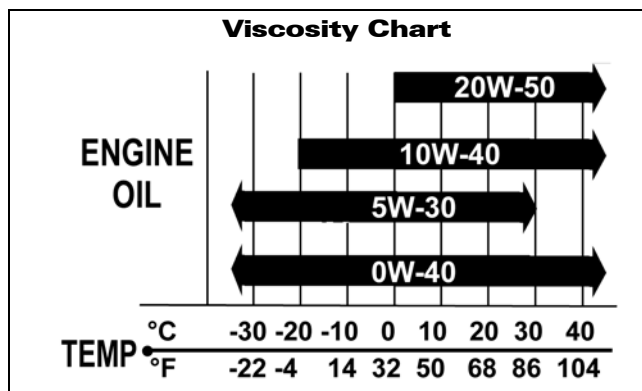
Do not use white gas. Only Arctic Cat approved gasoline additives should be used.

RECOMMENDED ENGINE 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 4-Cycle Engine Oil or an equivalent oil which is rated SE, SF, or SG under API service classification. These oils meet all of the lubrication requirements of the Arctic Cat ATV engine. The recommended engine oil viscosity is SAE 5W-30. Ambient temperature should determine the correct weight of oil. See the following viscosity chart for details.



RECOMMENDED REAR DRIVE LUBRICANT (Utility)

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 ATV rear drives.

⚠ CAUTION

Any lubricant used in place of the recommended lubricant could cause serious rear drive damage.

RECOMMENDED TRANSMISSION 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 ATV front differentials and rear drives.

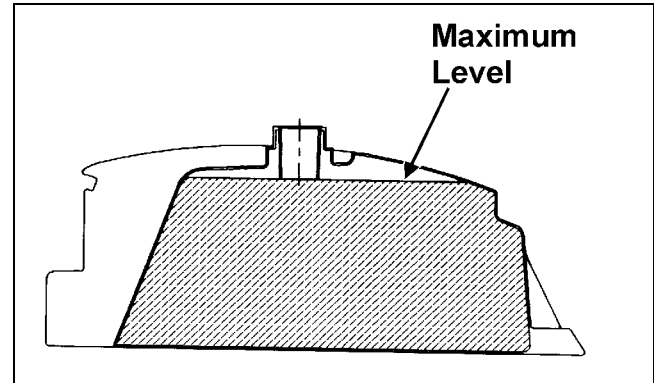
⚠ CAUTION

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 ATV gas tank near any open flames or with the engine running. DO NOT SMOKE while filling the gas tank.



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 ATV 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 ATV, it must be properly serviced to prevent rusting and component deterioration.

Arctic Cat recommends the following procedure to prepare the ATV for storage.

1. Clean the seat cushion (cover and base) with a damp cloth and allow it to dry.
2. Clean the ATV thoroughly by washing dirt, oil, grass, and other foreign matter from the entire ATV. Allow the ATV 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; then 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. Drain the carburetor float chamber.
5. Plug the exhaust hole in the exhaust system with a clean cloth.
6. Apply light oil to the upper steering post bushing and plungers of the shock absorbers.
7. 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.
8. Fill the cooling system to the FULL line in the cooling system reservoir with properly mixed coolant.
9. Disconnect the battery cables; then remove the battery, clean the battery posts and cables, and store in a clean, dry area.

⚠ CAUTION

This maintenance-free battery should be charged at the recommended rate every 30 days or permanent damage may occur if the battery completely discharges.

10. Store the ATV indoors in a level position.

⚠ CAUTION

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

Preparation After Storage

Taking the ATV out of storage and correctly preparing it will assure many miles and hours of trouble-free riding. Arctic Cat recommends the following procedure to prepare the ATV.

1. Clean the ATV 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 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

2

TABLE OF CONTENTS

Periodic Maintenance Chart.....	2-2
Periodic Maintenance.....	2-3
Lubrication Points.....	2-3
Battery.....	2-3
Fuses.....	2-4
Air Filter.....	2-4
Valve/Tappet Clearance.....	2-5
Testing Engine Compression.....	2-6
Spark Plug.....	2-6
Muffler/Spark Arrester.....	2-7
Gas/Vent Hoses.....	2-7
Adjusting Throttle Cable.....	2-7
Adjusting Engine RPM (Idle).....	2-8
Engine Oil - Filter.....	2-8
Rear Drive Lubricant (Utility Model).....	2-9
Transmission Lubricant.....	2-9
Drive Chain (DVX Model).....	2-10
Tires.....	2-11
Steering Components.....	2-11
Driveshaft/Coupling (Utility Model).....	2-11
Suspension/Shock Absorbers/Bushings.....	2-11
Nuts/Bolts/Cap Screws.....	2-11
Ignition Timing.....	2-12
Headlight/Taillight-Brakelight.....	2-12
Switches.....	2-12
Shift Lever.....	2-13
Frame/Welds/Racks.....	2-13
Electrical Connections.....	2-13
Hydraulic Brake Systems.....	2-14
Auxiliary/Rear Hydraulic Brake.....	2-15
Burnishing Brake Pads.....	2-17
Coolant.....	2-18
Checking/Replacing V-Belt.....	2-18

Periodic Maintenance Chart

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

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
Air Filter/Drain Tube	I	I	C*				R
Valve/Tappet Clearance	I				I		A
Spark Plug	I			I			R (4000 Mi or 18 Mo)
Muffler/Spark Arrester					C		R
Gas/Vent Hoses	I	I					R (2 Yrs)
Gas Tank Valve						I	C
Throttle Cable	I	I			C-L		A-R
Carb Float Chamber				D*			
Engine RPM (Idle)	I				I		A
Engine Oil Level		I					A
Engine Oil - Screen	C				C*		C
Drive Chain (DVX Model)	I	I					C-L
Rear Drive Lubricant (Utility Model)	I			I		R	A
Transmission Lubricant	I			I		R	A
Tires/Air Pressure	I	I					A-R
Steering Components	I	I		I			R
V-Belt	I					I	R
Suspension (Ball joint boots, tie rods, differential and rear drive bellows)	I	I		I*			R
Nuts/Cap Screws/Screws	I			I			T
Ignition Timing						I	
Headlight/Taillight-Brakelight	I	I					R
Switches	I	I					R
Shift Lever					I		A-L
Choke Cable		I			C-L		R
Recoil Starter (Utility Model)		I					C-R
Handlebar Grips		I					R
Handlebars	I	I					R
Gauges/Indicators	I	I					R
Frame/Welds/Racks	I		I		I		
Electrical Connections					I		C
Complete Brake System (Hydraulic and Auxiliary)	I	I		C			L-R
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)

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

