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

## FOREWORD

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This Arctic Cat Service Manual contains service, maintenance, and troubleshooting information for the 2012 Arctic Cat ATV 300 Utility/DVX 300. 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. A **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.

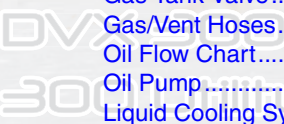
Keep this manual accessible in the shop area for reference.

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

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## General Information

■NOTE: Some photographs and illustrations used in this manual are used for clarity purposes only and are not designed to depict actual conditions.

## General Specifications

CHASSIS	DVX	Utility
Dry Weight (approx)	192.8 kg (425 lb)	216 kg (477 lb)
Length (overall)	171.9 cm (67.7 in.)	187 cm (73.6 in.)
Height (overall)	113.5 cm (44.7 in.)	111.8 cm (44.0 in.)
Width (overall)	113.5 cm (44.7 in.)	105.1 cm (41.40 in.)
Suspension Travel	(Front) 15.5 cm (6.1 in.) (Rear) 16.5 cm (6.5 in.)	12.7 cm (5.0 in.) 12.7 cm (5.0 in.)
Brake Type	Hydraulic w/Brake Lever Lock and Auxiliary Brake	
Tire Size	(Front) AT21 x 7-10 (Rear) AT20 x 11-9	AT22 x 7-10 AT22 x 10-10
Tire Inflation Pressure	(Front) 0.28 kg/cm <sup>2</sup> (4 psi) (Rear) 0.25 kg/cm <sup>2</sup> (3.5 psi)	
MISCELLANY		
Spark Plug Type	NGK DPR7EA-9	
Spark Plug Gap	0.8-0.9 mm (0.032-0.036 in.)	
Gas Tank Capacity	12.8 L (3.4 U.S. gal.)	
Reserve Capacity	4.54 L (1.2 U.S. gal.)	
Engine Oil Capacity	1.6 L (1.7 U.S. qt)	1.4 L (1.5 U.S. qt)
Transmission (Overhaul)	400 ml (13.5 fl/oz)	600 ml (20.3 fl/oz)
Lubricant Capacity (Change)	300 ml (10.1 fl/oz)	500 ml (16.9 fl/oz)
Gasoline (recommended)	87 Octane Regular Unleaded	
Engine Oil (recommended)	Arctic Cat ACX All Weather (Synthetic)	
Cooling System Capacity	1.4 L (1.5 U.S. qt)	
Rear Drive Capacity	N/A	150 ml (5 fl oz)
Rear Drive Lubricant	N/A	SAE Approved 80W-90 Hypoid
Brake Fluid	DOT 4	
Taillight/Brakelight	12V/5W/21W	
Headlight	12V/35W (2)	
Starting System	Electric	Electric w/Manual Recoil (Emergency)
FUEL SYSTEM		
Carburetor Type	Keihin CVK32	
Main Jet	112	
Starter Jet	60	
Slow Jet	38	
Pilot Screw Setting (turns)	1 3/4	
Needle Jet	4.0/3.6	
Jet Needle	NLRA	
Idle RPM	1250-1350	
Float Arm Height	17.0 mm (0.67 in.)	
Throttle Cable Free-Play (at lever)	1-4 mm (1/16-3/16 in.)	
IGNITION		
Ignition Timing	5° BTDC ("F" mark) @ 1000 RPM	
Spark Plug Cap	4500-6150 ohms	
Ignition Coil Resistance	(primary) 2.4-3.0 ohms (terminal to terminal) (secondary) 12,300-16,600 ohms (high tension - plug cap removed - to ground)	
Ignition Coil Peak Voltage	(primary/CDI)	9.6-16.4 DC volts (black/white to green/gray)

MAGNETO		
Magneto Coil Resistance	(trigger) (charging)	105-110 ohms (blue/yellow to green/white) Less than 1 ohm (yellow to yellow)
Stator Coil Peak Voltage	(trigger)	1.1-1.4 DC volts (blue/yellow to green/white)
Magneto Output (approx)		220W @ 5000 RPM
Stator Coil Output (no load)		40-60 AC volts @ 3500 RPM (yellow to yellow)
CAMSHAFT AND CYLINDER HEAD		
Cam Lobe Height (min)	(intake) (exhaust)	34.15 mm 34.05 mm
Rocker Arm/Shaft Clearance	(max)	0.1 mm
Cylinder Head/Cover Distortion	(max)	0.05 mm
CYLINDER, PISTON, AND RINGS		
Piston Skirt/Cylinder Clearance	(max)	0.12 mm
Cylinder Bore		72.705-72.715 mm
Piston Diameter 18 mm from Skirt End (max)		72.625 mm
Bore x Stroke		72.7 x 65.2 mm
Cylinder Trueness	(max)	0.05 mm
Piston Ring to Groove Clearance (max) (1st/2nd)		0.09 mm
Piston Ring End Gap - Installed	(top) (middle) (oil)	0.15-0.30 mm 0.30-0.45 mm 0.20-0.70 mm
Piston Pin Bore	(max)	17.06 mm
Piston Pin Outside Diameter	(min)	16.96 mm
CRANKSHAFT		
Connecting Rod (small end inside diameter)	(max)	17.06 mm
Connecting Rod (big end side-to-side)		0.05-0.40 mm
Connecting Rod (small end deflection) (max)		1 mm
Crankshaft (web-to-web)		55.15-55.20 mm
Crankshaft Runout	(max)	0.1 mm
Oil Pressure at 60°C (140°F) @ 3000 RPM	(above) (below)	0.3 kg/cm <sup>2</sup> (4.3 psi) 0.7 kg/cm <sup>2</sup> (10 psi)
TRANSMISSION		
Clutch Release Screw		1/8 turn back
Drive Plate (fiber) Thickness	(min)	2.4 mm
Drive Plate (fiber) Tab	(min)	11 mm
Driven Plate (warpage)	(max)	0.1 mm
Clutch Spring Length	(min)	27.5 mm
Clutch Wheel Inside Diameter	(max)	Scuffing of contact surface
Clutch Shoe Lining Thickness		0.5 mm
Clutch Engagement RPM		2000 ± 200
Clutch Lock-Up RPM		3400 ± 300
Valve/Tappet Clearance (intake/exhaust) (cold engine)		0.1 mm
Valve Guide/Stem Clearance (max) (intake)		0.06 mm 0.08 mm
Valve Spring Free Length (min)	(inner) (outer)	29.4 mm 39.0 mm
Valve Spring Tension @ 18.0 mm (intake)		10.2-11.8 kg (22.5-26.0 lb)
Valve Spring Tension @ 21.5 mm (exhaust)		19.05-22.0 kg (42.0-48.5 lb)

Specifications subject to change without notice.

# Torque Specifications

STEERING COMPONENTS			
Part	Part Bolted To	Torque	
		ft-lb	N-m
Handlebar Clamp Cap Screw	Steering Head	18	24
Steering Post Support Block	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
ELECTRICAL COMPONENTS			
Starter Motor Lead Cable Nut	Starter	36 in.-lb	5
Starter Motor Mounting Bolt	Crankcase	9	12
EXHAUST COMPONENTS			
Exhaust Pipe	Engine	25	34
Muffler Mounting Bolt	Frame	25	34
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)			
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
DRIVE TRAIN COMPONENTS			
Engine Mounting Through-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
Gear Case	Swing Arm	50	68
Pinion Nut	Shaft	72	98
Gear Case Cover (8 mm)	Gear Case	19	26
(10 mm)		36	49
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

\*w/Red Loctite #271

ENGINE/TRANSMISSION			
Part	Part Bolted To	Torque	
		ft-lb	N-m
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)	Driven Shaft	72	98
Output Drive Sprocket Lock Plate (DVX)	Driveshaft	43	59
Crankcase Cap Screw	Crankcase	8	11
Engine Oil Screen/Filter Cap	Crankcase	11	15
Shift Cam Stopper Plug* (Utility)	Left Case	20	27
Shift Cam Stopper Plug* (DVX)	Transmission Case	35	48
Camshaft Chain Tensioner Adjuster	Cam Chain Tensioner	9	12
Cam Chain Tensioner Cover Bolt	Tensioner	24 in.-lb	3
Starter Ratchet	Crankshaft	68	92
Camshaft Chain Tensioner Mount	Cylinder Head	9	12
Camshaft Chain Tension Spring Holder Plug	Cam Chain Tensioner	36 in.-lb	4
Centrifugal Clutch Housing	Driveshaft	40	54
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

## 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

## 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

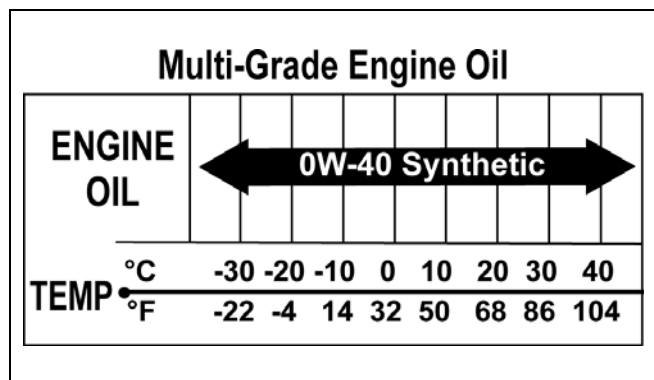
Do not use white gas. Only Arctic Cat approved gasoline additives should be used.

### 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 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 0W-40 oil is acceptable.



OILCHARTJ

## 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 drive.

### 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 the lubrication requirements of the Arctic Cat ATV front differential and rear drive.

### CAUTION

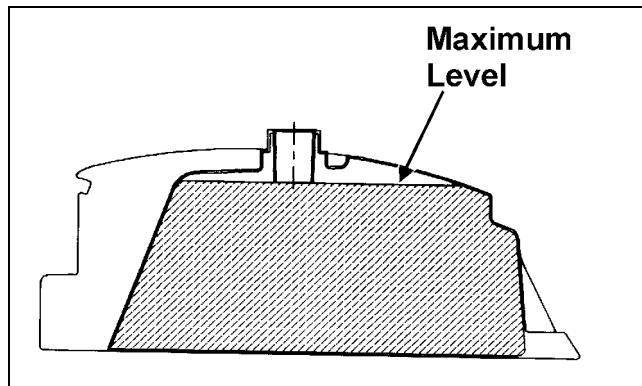
Any lubricant used in place of the recommended lubricant could cause serious front differential/rear drive damage.

## FILLING GAS TANK

### ⚠ WARNING

Always fill the gas tank in a well-ventilated area. Never add fuel to the 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.



ATV0049B

### ⚠ 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.

### ⚠ WARNING

Do not over-fill the gas tank.

Tighten the gas tank cap securely after filling the 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, slowly 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

Rapid induction of oil or any liquid into a four-cycle engine can cause "hydraulic-lock" resulting in severe engine damage.

### 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.**

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## Preparation After Storage

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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.

## Periodic Maintenance/ Tune-Up

### SPECIAL TOOLS

A number of special tools must be available to the technician when performing service procedures in this section. Refer to the current Special Tools Catalog for the appropriate tool description.

Description	p/n
Compression Tester Kit	0444-213
Tappet Adjuster	0444-189

■NOTE: Special tools are available from the Arctic Cat Service Parts Department.

## Periodic Maintenance Chart

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

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
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)	I	I					C-L
Rear Drive Lubricant (Utility)	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)		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.

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



## Lubrication Points

It is advisable to lubricate certain components periodically to ensure free movement. Apply light oil to the components using the following list as reference.

- A. Throttle Lever Pivot/Cable Ends
- B. Brake Lever Pivot
- C. Auxiliary Brake Pivot/Clevis
- D. Choke Cable Upper End
- E. Shift Lever/Ball Joints
- F. Idle RPM Screw

## Air Filter

Use the following procedure to remove the filter and inspect and/or clean it.

### CLEANING AND INSPECTING FILTER

#### CAUTION

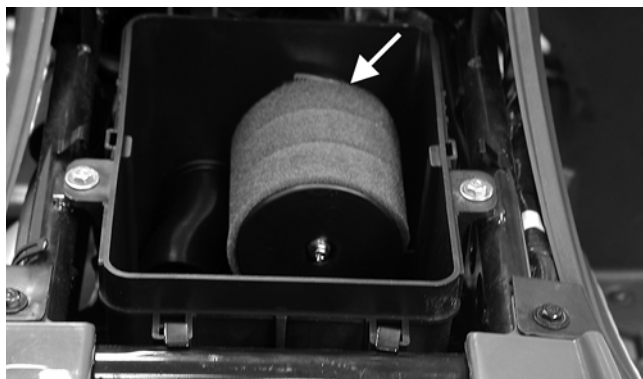
Failure to inspect the air filter frequently if the vehicle is used in dusty, wet, or muddy conditions can damage the engine.

1. Remove the seat.
2. Remove the air filter housing cover from the retaining clips.



KM095A

3. Loosen the clamp; then remove the filter.



KM097B

4. Fill a wash pan larger than the filter with a non-flammable cleaning solvent; then dip the filter in the solvent and wash it.

■NOTE: Foam Filter Cleaner and Foam Filter Oil are available from Arctic Cat.

5. Dry the filter.
6. Put the filter in a plastic bag; then pour in air filter oil and work the filter.

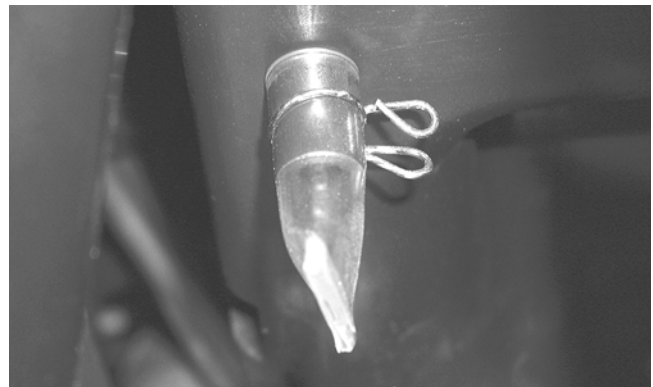
#### CAUTION

A torn air filter can cause damage to the ATV engine. Dirt and dust may get inside the engine if the element is torn. Carefully examine the element for tears before and after cleaning it. Replace the element with a new one if it is torn.

7. Clean any dirt or debris from inside the air cleaner. Make sure no dirt enters the carburetor.
8. Place the filter in the air filter housing making sure it is properly seated and secure with the clamp.
9. Install the air filter housing cover and secure with the retaining clips; then install the seat making sure it locks securely.

### CHECKING/DRAINING DRAIN TUBE

Periodically check the drain tube for gasoline or oil accumulation. If noticed, remove the drain tube cap from beneath the housing and drain the gasoline or oil into a suitable container; then install and secure the tube cap.



KM114

## Valve/Tappet Clearance

To check and adjust valve/tappet clearance, use the following procedure.

■NOTE: The seat assembly, side panels, and gas tank must be removed for this procedure.

1. Remove the timing inspection plug; then remove the cylinder head cover (see Engine/Transmission - Removing Top-Side Components).
2. Rotate the crankshaft so the "T" mark on the flywheel aligns with the index mark on the right-side crankcase cover.

■NOTE: At this point, the round hole in the camshaft gear should be up.

Full download: <http://manualplace.com/download/arctic-cat-2012-dvx-300-300-utility-service-manual/>

3. Place Tappet Adjuster onto the jam nut securing the tappet adjuster screw; then rotate the adjuster dial clockwise until the end is seated in the tappet adjuster screw.
4. While holding the adjuster dial in place, use the adjuster handle and loosen the jam nut; then rotate the tappet adjuster screw clockwise until friction is felt.
5. Align the adjuster handle with one of the marks on the adjuster dial.
6. While holding the adjuster handle in place, rotate the adjuster dial counterclockwise until proper valve/tappet clearance is attained.

■NOTE: Refer to the appropriate specifications in Engine/Transmission for the proper valve/tappet clearance.

■NOTE: Rotating the adjuster dial counterclockwise will open the valve/tappet clearance by 0.05 mm (0.002 in.) per mark.

7. While holding the adjuster dial at the proper clearance setting, tighten the jam nut securely with the valve adjuster handle.
8. Place the cylinder head cover with a new O-ring into position; then tighten the cover securely.



KM703

9. Install the timing inspection plug.

## Testing Engine Compression

To test engine compression, use the following procedure.

1. Remove the high tension lead from the spark plug.
2. Using compressed air, blow any debris from around the spark plug.

### ⚠ WARNING

Always wear safety glasses when using compressed air.

3. Remove the spark plug; then attach the high tension lead to the plug and ground the plug on the cylinder head well away from the spark plug hole.
4. Attach the gauge from Compression Tester Kit.

■NOTE: The engine must be warm and the battery must be fully charged for this test.

5. While holding the throttle lever in the full-open position, crank the engine over with the electric starter until the gauge shows a peak reading (five to 10 compression strokes).

■NOTE: The compression should be within a range of 210-230 psi in the full-open throttle position.

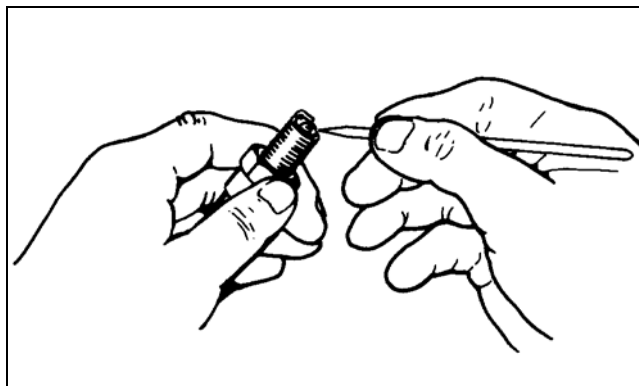
6. If compression is abnormally low, verify the following items.
  - A. Starter cranks engine over.
  - B. Gauge functions properly.
  - C. Throttle lever in the full-open position.
  - D. Valve/tappet clearance correct.
  - E. Valve not bent or discolored.
  - F. Valve seat not discolored.

■NOTE: To service valves, see Engine/Transmission.

7. Pour 29.5 ml (1 fl oz) of oil into the spark plug hole, attach the gauge, and test compression.
8. If compression is now evident, service the piston rings (see Engine/Transmission).

## Spark Plug

A light brown insulator indicates that the plug is correct. A white or dark insulator indicates that the engine may need to be serviced or the carburetor may need to be adjusted. To maintain a hot, strong spark, keep the plug free of carbon.



ATV-0051

### CAUTION

Before removing the spark plug, make sure to clean the area around the spark plug. Dirt could enter engine when removing or installing the spark plug.

Adjust the gap to 0.8-0.9 mm (0.032-0.036 in.) for proper ignition. Use a wire feeler gauge to check the gap.