#### Arctic Cat 2012 XIQ50i4XIQ50CService\Mandas COUNT PARTS CALL 606-678-9623 OR 606-561-4983

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## **FOREWORD**

This Arctic Cat Service Manual contains service, maintenance, and troubleshooting information for the 2012 Arctic Cat XC 450i ATV. The complete 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 the complete 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 section are used for clarity purposes only and are not designed to depict actual conditions.

## **General Specifications**

CHASSIS	
Brake Type	Hydraulic w/Brake Lever Lock
Tire Size	23 x 8-12 (Front) 23 x 10-12 (Rear)
Tire Inflation Pressure	40.0 kPa (5.7 psi)
MISCELLAN	Υ
Spark Plug Type	NGK CR7E
Spark Plug Gap	0.7-0.8 mm (0.028-0.032 in.)
Gas Tank Capacity	16.3 L (4.3 U.S. gal.)
Rear Drive Capacity	250 ml (8.5 fl oz)*
Front Differential Capacity	275 ml (9.3 fl oz)**
Coolant Capacity	1.8 L (1.9 U.S. qt)
Engine Oil Capacity	3.3 L (3.5 U.S. qt) - Overhaul 2.5 L (2.6 U.S. qt) - Change
Gasoline (recommended)	87 Octane Regular Unleaded
Engine Oil (recommended)	Arctic Cat ACX All Weather (Synthetic)
Differential/Rear Drive Lubricant	SAE Approved 80W-90 Hypoid
Drive Belt Width (minimum)	28.5 mm (1.12 in.)
Brake Fluid	DOT 4
Taillight/Brakelight	12V/5W/21W (2)
Headlight	12V/35W (4)
Running Light	5W (2)
ELECTRICAL SY	STEM
Ignition Timing	10° BTDC @ 1500 RPM
Spark Plug Cap	5000 ohms
Resistance	Less than 5.0 ohms (terminal (+) to terminal (-)) 12k-19k ohms (high tension - plug cap to ground)
Ignition Coil Primary Voltage	Battery Voltage (orange (+) to blue/white(-))
Stator Coil (crankshaft position sensor) Resistance	150-250 ohms (blue to green)
(AC generator)	Less than 1 ohm (black to black)
Crankshaft Position Sensor AC Voltage	2.5 volts or more (blue to green)
AC Generator Output (no load)	60 AC volts @ 5000 RPM (black to black)
CRANKSHAF	Т
Connecting Rod (max) (small end inside diameter)	20.021 mm
Connecting Rod (big end side-to-side) (max)	0.7 mm
Connecting Rod (small end deflection) (max)	3.0 mm
Crankshaft (web-to-web)	60.8-60.9 mm
Crankshaft Runout (max)	0.03 mm

Specification	ns subject	to change	without	notice.
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\* One inch below plug threads. \*\* At the plug threads.

CYLINDER, PISTON, A	ND RINGS
Piston Skirt/Cylinder Clearance	0.025-0.055 mm
Piston Diameter 8 mm from Skirt End	88.96-88.98 mm
Cylinder Bore	89.005-89.015 mm
Piston Ring Free End Gap (min) (1st) (2nd)	8.0 mm 8.3 mm
Bore x Stroke	89.0 x 71.2 mm
Cylinder Trueness (max)	0.01 mm
Piston Ring End Gap - Installed (min)	0.38 mm
Piston Ring to Groove (1st/2nd) Clearance (max)	0.06 mm
(2nd)	1.01-1.03 mm 1.21-1.23 mm 2.01-2.03 mm
	0.97-0.99 mm 1.17-1.19 mm
Piston Pin Bore (max)	20.008 mm
	19.994 mm
VALVES AND GU	IDES
Valve Face Diameter (intake) (exhaust)	35.0 mm 30.5 mm
Valve/Tappet (intake) Clearance (cold engine) (exhaust)	0.08-0.12 mm 0.15-0.20 mm
Valve Guide/Stem (intake) Clearance (max) (exhaust)	0.1 mm 0.3 mm
Valve Guide Inside Diameter	5.000-5.012 mm
	4.975-4.990 mm 4.955-4.970 mm
Valve Stem Runout (max)	0.10 mm
Valve Margin (min)	1.1 mm
Valve Face/Seat Width (min)	0.99 mm
Valve Seat Angle	45° +30'
Valve Face Radial Runout (max)	0.15 mm
Valve Spring Free Length (min)	44.73 mm
Valve Spring Tension @ 32.5 mm (outer)	
CAMSHAFT AND CYLIN	NDER HEAD
Cam Lobe Height (min) (intake) (exhaust)	34.71 mm 34.48 mm
Camshaft Journal/Cylinder (max) Head Clearance	0.074 mm
Camshaft Journal Holder Inside Diameter (right & center) (left)	22.01-22.04 mm 17.51-17.54 mm
Camshaft Journal Outside (left) Diameter (right & center)	17.466-17.480 mm 21.966- 21.980 mm
Camshaft Runout (max)	0.03 mm
Rocker Arm Inside Diameter	10.00-10.15 mm
Rocker Arm Shaft Outside Diameter	9.972-9.987 mm
Cylinder Head/Cover Distortion (max)	0.05 mm



# **Torque Specifications**

EXHAUST (	COMPONENTS		
		Torq	ue
Part	Part Bolted To	ft-lb	N-m
Exhaust Pipe	Engine	20	27
Spark Arrester	Muffler	48 inlb	5.5
•	OMPONENTS		
Brake Disc*	Hub	15	20
Brake Hose	Caliper	20	27
Brake Hose	Master Cylinder	20	27
Brake Hose	Brake Cylinder	20	27
Master Cylinder (Rear)	Frame	8	11
Master Cylinder Clamp (Front)	Master Cylinder	5.5	8
Hydraulic Caliper****	Knuckle	20	27
Brake Pedal	Frame	20	27
ELECTRICAL	COMPONENTS		
Coil	Frame	12	16
Starter Motor Positive Cable	Starter Motor	8	11
Stator**	Housing	8	11
CHASSIS C	OMPONENTS		
Footrest	Frame	20	27
Bumper	Frame (8 mm)	20	27
	COMPONENTS		
Steering Post Bearing Housing	Frame	20	27
Handlebar Cap	Steering Post	20	27
Lower Steering Post Bearing Cap Screw		40	54
Tie Rod End	Steering Post Arm	30	41
	RANSMISSION	00	71
Clutch Shoe**	Crankshaft	147	199
Clutch Cover/Housing Assembly	Crankcase	8	11
Left-Side Cover	Crankcase	8	11
Crankcase Half (6 mm)	Crankcase Half	10	13.5
Crankcase Half (8 mm)	Crankcase Half	21	28
Cylinder Nut	Crankcase Half	8	11
Cylinder Head (Cap Screw)	Crankcase	28	38
Cylinder Head Nut	Cylinder	20	27
Cylinder Head Cover	Cylinder Head	8	11
Oil Pump Drive Gear**	Crankshaft	63	86
Driven Pulley Nut**	Driveshaft	147	199
Ground Cable	Engine	8	11
Magneto Rotor Flange Nut	Crankshaft	107	146
One-Way Clutch**	Flywheel	26	35
Cam Sprocket**	Camshaft	11	15
V-Belt Cover	Clutch Cover	8	11
Valve Adjuster Jam Nut	Valve Adjuster	7	9.5
Starter Motor	Crankcase	8	11
Oil Fitting	Engine	8	11
Oil Pump**	Crankcase	8	11
Movable Drive Face Nut**	Clutch Shaft	147	199
Output Shaft Flange Nut	Output Shaft	59	80
Cam Chain Tensioner Guide	Cylinder	11	15
Valve Cover	Cylinder	8	11
Tappet Cover	Valve Cover	8	11
Cam Chain Tensioner	Cylinder	10	13.5
Magneto Cover	Crankcase	8	11
Rear Driveline	Output Drive Flange	20	27
Water Pump Cover/Housing	Magneto Cover	8	11
Water Pump Drive Gear	Crankshaft	28	38
Intake Clamp	Intake Boot	30 inlb	3.4
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SUSPENSION COMPONENTS (Front)						
Dowt	Torq	Torque				
Part	Part Part Bolted To		N-m			
A-Arm	Frame	35	47			
Knuckle	Ball Joint	35	47			
Shock Absorber	Frame	35	47			
Shock Absorber	Upper A-Arm	35	47			
Knuckle	A-Arm	35	47			
SUSPENSION C	OMPONENTS (Rear)					
Shock Absorber (Upper)	Frame	35	47			
Shock Absorber (Lower)	Lower A-Arm	35	47			
A-Arm	Frame	35	47			
Knuckle	A-Arm	35	47			
DRIVE TRAI	N COMPONENTS					
Engine Mounting Through-Bolt	Frame	38	52			
Front Differential	Frame/Differential Bracket	38	52			
Output Flange	Rear Flange Output Joint	20	27			
Input Shaft Housing	Differential Housing	18	25			
Pinion Housing	Gear Case Housing	18	25			
Differential Housing Cover***	Differential Housing	18	25			
Drive Bevel Gear Nut**	Shaft	59	80			
Driven Bevel Gear Nut**	Driven Shaft	59	80			
Thrust Button**	Gear Case Cover	8	11			
Hub Nut	Shaft/Axle (max)	200	272			
Oil Drain Plug	Front Differential/ Rear Drive	45 inlb	5			
Oil Fill Plug	Front Differential/ Rear Drive	16	22			
Oil Drain Plug	Engine	20	27			
Rear Drive Input Shaft Housing	Differential Housing	23	31			
Lock Collar	Differential Housing	125	169			
Wheel	Hub	80	108			
Rear Drive Gear Case	Frame	38	52			
Engine Output Flange	Rear Gear Case Input Flange	20	27			

<sup>\*</sup> w/Blue Loctite #243 \*\* w/Red Loctite #271 \*\*\* w/Green Loctite #609 \*\*\*\*w/"Patch-Lock"

# 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**

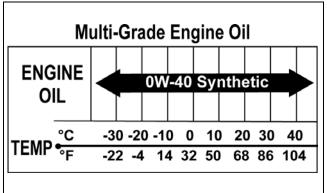
Do not use white gas. Only Arctic Cat approved gasoline additives should be used.

#### RECOMMENDED ENGINE/ 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 0W-40 oil is acceptable.



OILCHARTJ



#### 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 ATV front differentials and rear drives.

#### **CAUTION**

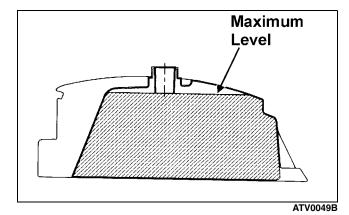
Any lubricant used in place of the recommended lubricant could cause serious front differential/rear drive damage.

#### **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 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.

- 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. 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 outlet on the muffler with a clean cloth.
- 5. Apply light oil to the upper steering post bushing and 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.
- 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 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.

- 1. Clean the ATV thoroughly.
- 2. Clean the engine. Remove the cloth from the muffler.



- 3. Check all control 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, lights, 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.
- Make sure the steering moves freely and does not bind.
- 11. Check the spark plug. Clean or replace as necessary.



## **Periodic Maintenance**

This section has been organized into sub-sections which show common maintenance procedures for the Arctic Cat ATV.

#### **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
Oil Filter Wrench	0644-389
Tachometer	0644-275
Timing Light	0644-296
Valve Clearance Adjuster	0444-078

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

## Periodic Maintenance Chart

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

Item	A = Adjust I = Inspect C = Clean L = Lubrica	•		1				1
Air Filter/Drain Tube	Item	Initial Service After Break-In (First Mo or 100 Mi)	Every Day	Every Month or 100 Miles	Every 3 Months or 300 Miles	Every 6 Months or 500 Miles	Every Year or 1500 Miles	As Needed
I	Battery	I		I				С
All   All	Fuses				I			R
	Air Filter/Drain Tube	I	- 1	C*				R
	Valve/Tappet Clearance	I				I		Α
Muffler/Spark Arrester         C         R           3asa Hoses         I         I         I         R (2 yrs           3asa Hoses         I         I         I         C-L         A-R           Engine-Transmission Oil Level         I         I         C-L         A-R           Engine-Transmission Oil/Filter         R         R*/R**/R***         A           Engine-Transmission Oil/Filter         R         R*/R**/R***         R           Front Differential/Rear Drive Lubricant         I         I         I         R (4 Yrs           Tirres/Air Pressure         I         I         I         R         R (4 Yrs         R           Steering Components         I         I         I         R         R         R         R         R         R         G         R	Engine Compression						I	
Case	Spark Plug	I			I			R (4000 Mi or 18 Mo)
I	Muffler/Spark Arrester					С		R
I	Gas Hoses	I	I					R (2 Yrs)
R	Throttle Cable	I	I			C-L		A-R
Tront Differential/Rear Drive Lubricant	Engine-Transmission Oil Level		- 1					Α
I	Engine-Transmission Oil/Filter	R			R*/R**/R***			
	Front Differential/Rear Drive Lubricant	I		I				R (4 Yrs)
V-Belt	Tires/Air Pressure	I	I					R
Complete Brake System   Comp	Steering Components	I	I		I			R
And rear, tie rods, differential and rear drive bellows	V-Belt	I				I		R
Spitton Timing	Suspension (Ball joint boots, drive axle boots front and rear, tie rods, differential and rear drive bellows)	I	-					R
I	Nuts/Cap Screws/Screws	I		I				Α
	Ignition Timing						I	
Shift Lever	Lights	I	I					R
Handlebar Grips	Switches	I	I					R
Handlebar	Shift Lever					I		A-L
Gauges/Indicators         I         I         I         R           Frame/Welds         I         I         I         I         I         I         C         C         C         C         C         L-R         Brake Pads         I         I         I         I         I         I         I         R         R         Brake Fluid         I	Handlebar Grips		I					R
Complete Brake System	Handlebar	1	- 1					R
Complete Brake System	Gauges/Indicators	I	I					R
Complete Brake System	Frame/Welds	I				I		
Brake Pads         I         I*         R           Brake Fluid         I         I         I         R (2 Yrs           Brake Hoses         I         I         R (4 Yrs	Electrical Connections	I				I		С
Brake Fluid         I         I         R (2 Yrs           Brake Hoses         I         I         R (4 Yrs	Complete Brake System	I	I		С			L-R
Brake Hoses I I R (4 Yrs	Brake Pads	I			*			R
	Brake Fluid	I			I			R (2 Yrs)
Coolant/Coolant System I I R (2 Yrs	Brake Hoses	I			I			R (4 Yrs)
	Coolant/Coolant System	I		I				R (2 Yrs)

<sup>\*</sup> Service/Inspect more frequently when operating in adverse conditions.

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



<sup>\*\*</sup> When using an API certified SM 5W-50 oil.

## **Lubrication Points**

It is advisable to lubricate certain components periodically to ensure free movement. Apply light oil to the throttle lever and brake lever pivots.

## Air Filter

#### **CLEANING AND INSPECTING FILTER**

1. Loosen the clamp securing the front air inlet boot to the air filter housing; then loosen the clamp securing the rear inlet boot to the air box. Remove the inlet pipe.



(C445/



KC44

Remove two reinstallable rivets from the air filter housing mounting bracket and slide the air filter housing rearward out of the mounting bracket.



KC447A

3. Turn and release the three locking lugs on the air filter housing and separate the air filter cover from the housing; then remove the air filter element. Separate the foam element from the spring.



KC143

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

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

- 5. Dry the element.
- 6. Put the element in a plastic bag; then pour in air filter oil and work the oil into the element. Insert the forming spring into the element with the closely wrapped end of the spring toward the open end of the element.

#### **CAUTION**

A torn air filter element 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 filter housing.
- 8. Place the filter assembly in the air filter housing making sure it is properly positioned and properly seated with the filter element straight in the housing.



KC449

#### **CAUTION**

Failure to properly seat and align the filter element may cause severe engine damage.

Install the air filter housing cover and secure with the locking tabs.



Full download: http://manualplace.com/download/arctic-cat-2012-xl450i-xl-450i-service-manual/

- Install the air filter housing assembly into the mounting bracket and secure with two reinstallable rivets.
- 11. Install the inlet pipe onto the air box; then connect to the air filter assembly making sure the boots are fully engaged. Tighten the clamps securely.



KC445A

## **CAUTION**

Failure to fully engage the inlet boots to the indicator marks could result in ingestion of dirt and severe engine damage.

#### **CHECKING AND CLEANING DRAIN**

1. Inspect the drain on the filter housing cover and clean out any dirt or debris.



KC397E

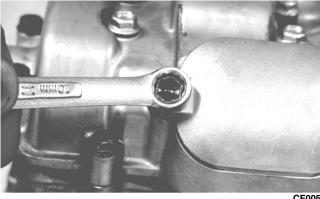
- 2. Replace any drain that is cracked or shows any signs of hardening or deterioration.
- 3. Wipe any accumulation of oil or gas from the filter housing and drain.

## Valve/Tappet Clearance

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

■NOTE: The seat, left-side and right-side engine covers, and gas tank must be removed for this procedure.

1. Remove the timing inspection plug and spark plug; then remove the tappet covers (for more detailed information, see Engine/Transmission - Servicing Top-Side Components).



CF005

2. Rotate the crankshaft to the TDC position on the compression stroke.

■NOTE: At this point, the rocker arms and adjuster screws must not have pressure on them.

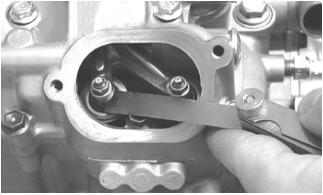
#### Feeler Gauge Procedure

Using a feeler gauge, check each valve/tappet clearance. If clearance is not within specifications, loosen the jam nut and rotate the tappet adjuster screw until the clearance is within specifications. Tighten each jam nut securely after completing the adjustment.

#### **CAUTION**

The feeler gauge must be positioned at the same angle as the valve and valve adjuster for an accurate measurement of clearance. Failure to measure the valve clearance accurately could cause valve component damage.

VALVE/TAPPET CLEARANCE				
Intake	0.076-0.127 mm (0.003-0.005 in.)			
Exhaust	0.152-0.203 mm (0.006-0.008 in.)			



CC007DC

### Valve Adjuster Procedure

- A. Place the Valve Clearance Adjuster onto the jam nut securing the tappet adjuster screw; then rotate the valve adjuster dial clockwise until the end is seated in the tappet adjuster screw.
- B. While holding the valve adjuster dial in place, use the valve adjuster handle and loosen the jam nut; then rotate the tappet adjuster screw clockwise until friction is felt.
- C. Align the valve adjuster handle with one of the marks on the valve adjuster dial.