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# FOREWORD

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This manual contains service, maintenance, and troubleshooting information for the 2011 Arctic Cat Y-12+ Youth ATV. The manual is designed to aid service personnel in service-oriented applications and may be used as a text-book for service training.

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. A troubleshooting section is also included in this manual.

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 section are used for clarity purposes only and are not designed to depict actual conditions.

## Specifications

| CHASSIS                              |   |
|--------------------------------------|---|
| Length (Overall)                     | 146.8 cm (57.8 in.)                                       |
| Height (Overall)                     | 96.2 cm (37.9 in.)  |
| Width (Overall)                      | 87.6 cm (34.5 in.)  |
| Suspension Travel                    | (Front) 71.00 mm (2.8 in.)<br>(Rear) 73.66 mm (2.9 in.)   |
| Tire Size                            | (Front) AT20 x 7-8<br>(Rear) AT19 x 8-8                   |
| Tire Inflation Pressure              | 0.21 kg-cm <sup>2</sup> (3.0 psi)                         |
| MISCELLANY                           |   |
| Dry Weight (Approx)                  | 118 kg (260 lb) - DVX<br>120.2 kg (265 lb) - Utility      |
| Gas Tank Capacity                    | 5.7 L (1.5 U.S. gal.)                                     |
| Reserve Capacity                     | 1.3 L (0.34 U.S. gal.)                                    |
| Transmission Lubricant (Recommended) | SAE 80W-90 Hypoid   |
| Transmission Lubricant Capacity      | 250 ml (8.4 fl oz)  |
| Engine Oil Capacity                  | 0.8 L (0.84 U.S. qt)                                      |
| Gasoline (Recommended)               | 87 Octane Regular Unleaded                                |
| Engine Oil (Recommended)             | Arctic Cat ACX All Weather (Synthetic)                    |
| Brake Type                           | Front Double Drum/Rear Hydraulic Disc w/Brake Lever Locks |
| Headlight                            | 12V/35W   |
| Brakelight                           | 12V/5W  |
| Starting System                      | Electric w/Kick Start (Emergency)                         |

Specifications subject to change without notice.

## Torque Specifications


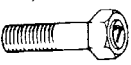
| EXHAUST COMPONENTS              |                                  |              |
|---------------------------------|----------------------------------|--------------|
| Part                            | Part Bolted To                   | Torque ft-lb |
| Exhaust Pipe                    | Cylinder Head                    | 7            |
| Muffler                         | Frame                            | 32           |
| BRAKE SYSTEM COMPONENTS         |                                  |              |
| Brake Banjo-Fitting             | Caliper                          | 25           |
| Brakeline Hose                  | Master Cylinder                  | 20           |
| Rear Brake Caliper              | Rear Axle Housing                | 22           |
| ELECTRICAL COMPONENTS           |                                  |              |
| Stator*                         | Stator Plate                     | 8            |
| STEERING COMPONENTS             |                                  |              |
| Wheel                           | Front/Rear Hub                   | 30           |
| Front Wheel Hub                 | Spindle Axle                     | 45           |
| Handlebar Cap                   | Lower Clamp                      | 10           |
| Steering Post Outer Bearing Cap | Inner Bearing Clamp              | 20           |
| Steering Post                   | Frame                            | 51           |
| Tie Rod End                     | Steering Post                    | 20           |
| SUSPENSION COMPONENTS           |                                  |              |
| Front Shock Absorber            | Frame/A-Arm                      | 29           |
| Rear Shock Absorber             | Frame/Swing Arm                  | 29           |
| Swing Arm                       | Frame                            | 50           |
| Swing Arm                       | Rear Axle Housing                | 29           |
| A-Arm                           | Frame                            | 29           |
| Knuckle                         | A-Arm                            | 29           |
| Tie Rod End                     | Knuckle                          | 25           |
| ENGINE COMPONENTS               |                                  |              |
| Oil Drain Plug                  | Crankcase                        | 18           |
| Spark Plug                      | Cylinder Head                    | 9            |
| Cylinder Head (Nut)             | Cylinder                         | 15           |
| Crankcase Half*                 | Crankcase Half                   | 8            |
| Flywheel*                       | Crankshaft                       | 30           |
| Camshaft Holder                 | Cylinder                         | 15           |
| Stationary Drive Sheave*        | Crankshaft                       | 27.5         |
| Centrifugal Clutch Housing*     | Driven Pulley/Centrifugal Clutch | 40           |
| Oil Pump                        | Crankcase                        | 7            |
| Oil Pump Gear                   | Oil Pump                         | 7            |
| Oil Screen/Filter Cap           | Crankcase                        | 10           |
| Cam Chain Tensioner             | Cylinder                         | 7            |
| Transmission Drain Plug         | Transmission                     | 18           |
| Cylinder Head (Cap Screw)       | Crankcase                        | 7            |
| Valve Cover                     | Cylinder Head                    | 7            |
| Spline-Lock                     | Drive Sprocket                   | 8            |
| Engine Mount                    | Engine/Frame                     | 32.5         |
| Intake Pipe                     | Cylinder Head                    | 7            |
| DRIVE TRAIN COMPONENTS          |                                  |              |
| Rear Hub                        | Rear Axle Shaft                  | 58           |
| Rear Axle Nut (Inner/Outer)*    | Rear Axle                        | 86           |
| V-Belt Cover                    | Crankcase                        | 7            |
| Transmission Case Cover         | Transmission                     | 22           |
| Rear Sprocket                   | Sprocket Retainer                | 20           |

\* w/Red Loctite #271

## 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<br>A (mm) | Tightening<br>Torque |
|--|---------------------------|----------------------|
| (Conventional or 4 Marked Bolt)<br> | 5                         | 12-36 in.-lb         |
|  | 6                         | 36-60 in.-lb         |
|  | 8                         | 7-11 ft-lb           |
|  | 10                        | 16-25 ft-lb          |
| (7 Marked Bolt)<br>                 | 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 month is 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 three hours 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.

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.

After the completion of the break-in period, the engine lubricant 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 MTBE are acceptable gasolines.

#### CAUTION

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

### RECOMMENDED ENGINE OIL

The recommended oil to use is Arctic Cat ACX All Weather (Synthetic).

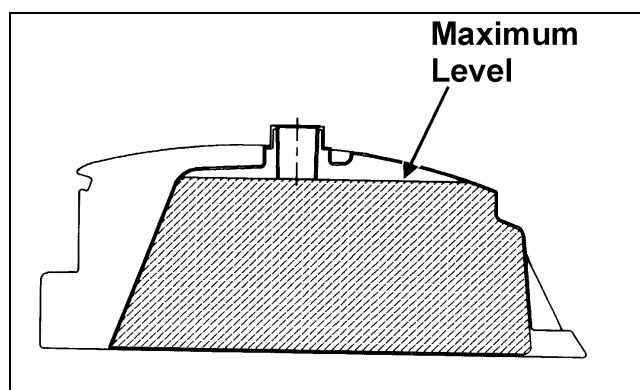
### RECOMMENDED TRANSMISSION LUBRICANT

The recommended transmission lubricant to use is SAE 80W-90 hypoid.

### FILLING GAS TANK

#### ⚠ WARNING

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



ATV0049B



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 over-fill or 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.

## **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 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 Preserver, rapidly inject the preserver into the air filter opening for a period of 10 to 20 seconds. 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 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. Disconnect the battery cables (negative cable first); 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 will result if the battery completely discharges.**

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

1. Clean the ATV thoroughly.
2. Clean the engine.
3. Remove the cloth from the exhaust system.
4. Check all control wires and cables for signs of wear or fraying. Replace if necessary.
5. Change the transmission lubricant.
6. Charge the battery; then install. Connect the battery cables making sure to connect the positive cable first.
7. Check the entire brake system (cables, shoes, etc.), and all controls. Adjust or replace if necessary.
8. Check the tire pressure. Inflate to recommended pressure as necessary.
9. Tighten all nuts, bolts, cap screws, and screws making sure all calibrated nuts, cap screws, and bolts are tightened to specifications.
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

Tighten all nuts, bolts, and cap screws. Make sure rivets holding components together are tight. Replace all loose rivets. Care must be taken that all calibrated nuts, bolts, and cap screws are tightened to specifications.

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/Cable Ends
- C. Brake Cable Ends
- D. Idle RPM Adjustment Screw (Carburetor)

## Periodic Maintenance Chart

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

| Item                                    | Initial Service After Break-In (First Mo) | Every Day | Every Month | Every 3 Months | Every 6 Months | Every Year | As Needed            |
|---|---|-----------|-------------|----------------|----------------|------------|----------------------|
| Battery                                 | I   |           | CH          |                |                | I          | C                    |
| Fuse                                    |   |           |             | I              |                |            | R                    |
| Air Filter                              | I   |           | C*          |                |                |            | R                    |
| Engine Compression                      |   |           |             |                |                | I          |                      |
| Spark Plug                              |   |           |             | I/C            |                |            | R (4000 Mi or 18 Mo) |
| Chassis                                 |   |           |             | C*/L*          |                | I          |                      |
| Gas/Vent Hoses                          |   | I         |             |                |                |            | C, R (2 Years)       |
| Gas Tank Valve                          |   |           |             |                |                | I          | C                    |
| Throttle Cable                          | I   | I         |             |                | C/L            |            | A, R                 |
| Carburetor                              | I   |           |             | D*             |                | D*         |                      |
| Engine RPM (Idle)                       | I   |           |             |                |                | I          | I/A                  |
| Engine Oil                              | R   | I         |             | R              |                |            |                      |
| Valve/Tappet Clearance                  | A   |           |             |                |                | A          |                      |
| Transmission Lubricant/Level            | R   |           |             |                |                |            | I                    |
| Fuel Filter                             | I   |           |             | I              |                |            | R                    |
| Tires/Air Pressure/Wear                 | I   | I         |             |                |                |            | I/R                  |
| Steering Components                     | I   | I         |             |                |                |            | R                    |
| Drive Chain                             | I   |           |             | C*/L*          |                |            | R                    |
| Suspension (Tie Rods, Protective Boots) | I   | I         |             |                |                |            | R                    |
| Nuts/Bolts/Cap Screws                   | I   |           | I/T         |                |                |            | T                    |
| Ignition Timing                         |   |           |             |                |                |            | I                    |
| Brakelight                              | I   | I         |             |                |                |            | R                    |
| Switches                                |   | I         |             |                |                |            | R                    |
| Kick Starter                            |   | I         |             |                |                |            | C                    |
| Handlebar/Grips                         |   | I         |             |                |                |            | R                    |
| Frame/Welds                             |   |           | I           |                |                |            |                      |
| Electrical Connections                  | I   |           |             |                |                | I          | C                    |
| Complete Brake Systems                  | I   | I         |             | C*             |                |            | L, R                 |
| Brake Fluid                             | I   |           | I           |                |                |            | R (2 Years)          |
| Shock Absorbers                         |   |           | I           |                |                |            | R                    |

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

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