

DVX 90/90 UTILITY



2014

SERVICE MANUAL

[ATV]



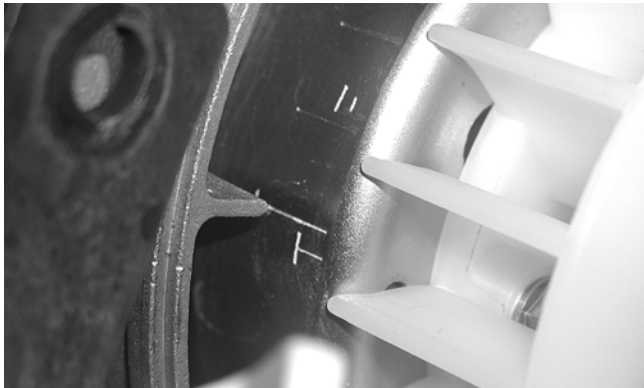
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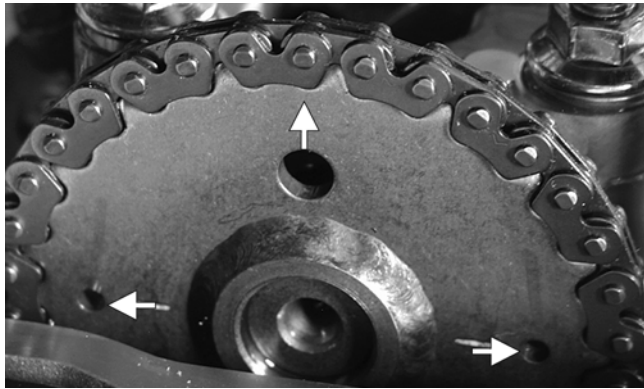


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CD652



CD656A

- Using a feeler gauge, check each valve tappet clearance. If the clearance is not 0.10 mm, 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.

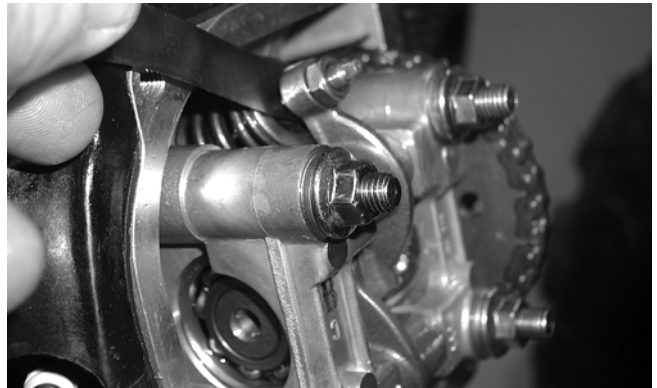


CD659



YT170

- Check the valve/tappet clearance after the jam nut has been tightened to ensure the clearance did not change.



CD658

- Install the valve cover and tighten the four cap screws to 7 ft-lb using a crisscross pattern; then install the breather tube.
- Install the fan shroud and tighten the two cap screws securely. Tighten the self-tapping screws snug taking care not to strip the plastic cover.
- Install the spark plug and tighten to 9 ft-lb; then install the spark plug wire.

Testing Engine Compression

To test engine compression, use the following procedure.

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

⚠ WARNING

Always wear safety glasses when using compressed air.

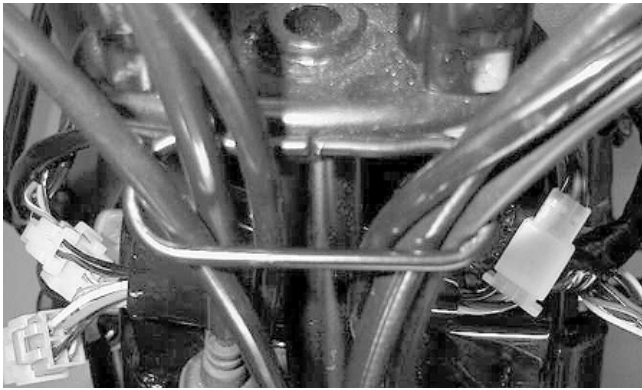
- Remove the spark plug; then attach the high tension lead to the plug and ground the plug on the cylinder head well away from the spark plug hole.
- Attach the Compression Tester Kit (p/n 0444-213).

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

- 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: Compression should be within a range of 195-230 psi in the full-open throttle position.

- If compression is abnormally low, inspect the following items.
 - Verify starter cranks engine over.
 - Gauge is functioning properly.
 - Throttle lever in the full-open position.
- Pour 29.5 ml (1 fl oz) of oil into the spark plug hole, reattach the gauge, and retest compression.



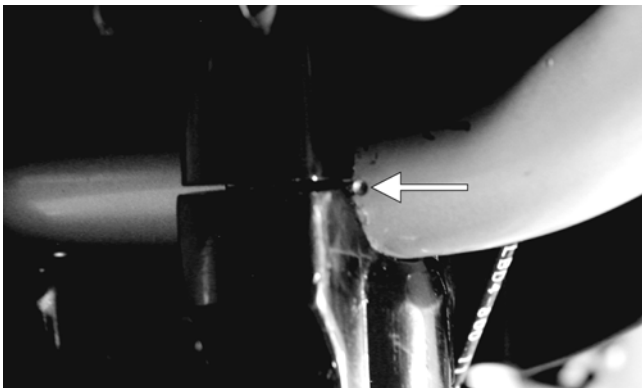
MD2135

5. Install the body panel and gas tank cap.

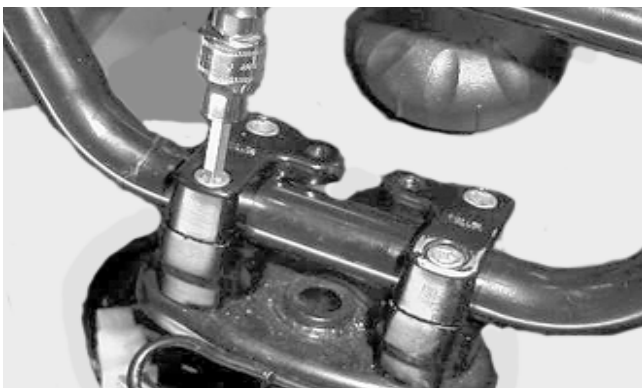


MD2405

6. Install handlebar with marks aligned with the handlebar mounting clamps. Install the caps; then tighten the cap screws to 10 ft-lb.

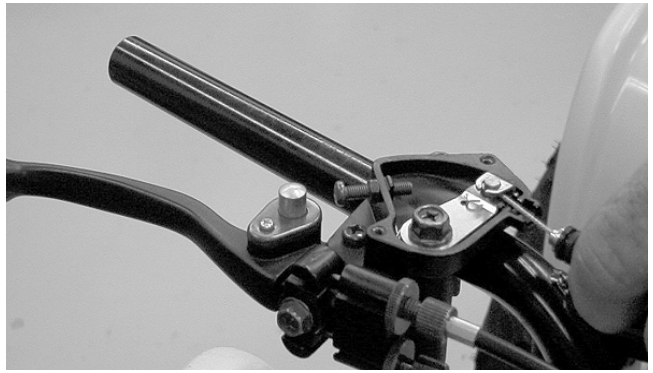


KM060A



MD2429

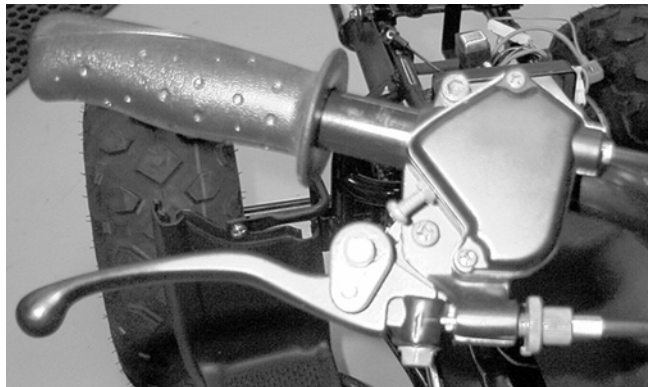
7. Install the control cables onto the handlebar.



MD2439

8. Make sure the cables (brake and throttle) are routed down and away so there is no sticking or binding.

⚠ WARNING
Make sure there is maximum right/left steering capability and the brake and throttle cables are not affected.



MD2105



MD2441



MD2106



YT115

■NOTE: Support the connecting rod with rubber bands or install a connecting rod holder to avoid damaging the rod.

CAUTION

Do not allow the connecting rod to go down inside the crankcase. If the rod is down inside the crankcase and the crankshaft is rotated, severe damage will result.

■NOTE: If the existing rings will not be replaced with new rings, note the location of each ring for proper installation. When replacing with new rings, replace as a complete set only. If the piston rings must be removed, remove them in this sequence.

👉 AT THIS POINT

To service piston, see Servicing Top-Side Components sub-section.

👉 AT THIS POINT

To service center crankcase components only, proceed to Removing Left-Side Components.

Servicing Top-Side Components

VALVE ASSEMBLY

When servicing valve assembly, inspect valve seats, valve stems, valve faces, and valve stem ends for pits, burn marks, or other signs of abnormal wear.

■NOTE: Whenever a valve is out of tolerance, it must be replaced.

Cleaning/Inspecting Cylinder Head Assembly

Inspect the combustion area of the cylinder head for cracks, burned valves or carbon build-up.

■NOTE: If valves are discolored, they must be replaced. Arctic Cat recommends taking heads to a qualified machine shop for valve replacement or valve seat grinding.

REMOVING VALVES

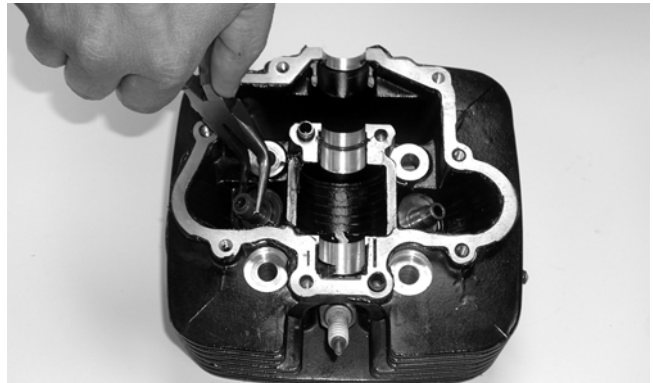
■NOTE: Keep all valves and valve components as a set. Note the original location of each valve set for use during installation. Return each valve set to its original location during installation.

1. Using a valve spring compressor, compress the valve springs and remove the valve cotters. Account for an upper spring retainer.

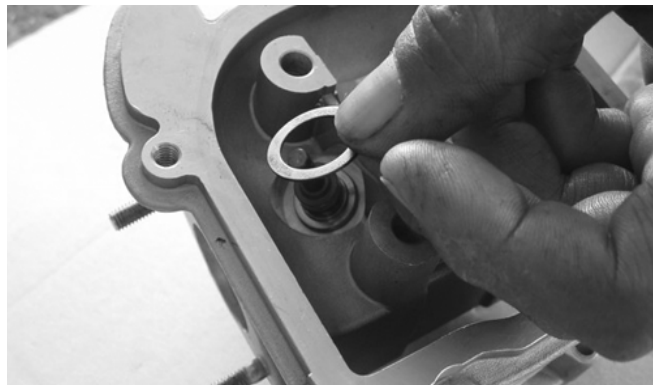


CC391D

2. Remove the valve seal and the lower remaining spring seat. Discard the valve seal.



CC928



DSC2274

■NOTE: The valve seals must be replaced.

3. Remove the valve springs; then invert the cylinder head and remove the valves.

Measuring Valve Stem Runout

1. Support each valve stem end with the V blocks; then check the valve stem runout using a dial indicator.

Installing Left-Side Components

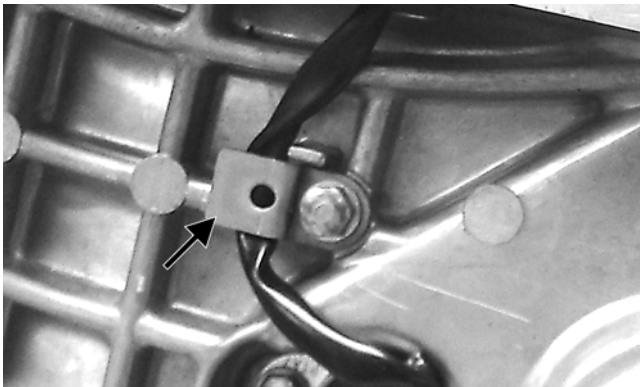
- A. GEAR POSITION SWITCH**
- B. STARTER ONE-WAY CLUTCH**
- C. ROTOR/FLYWHEEL**
- D. CENTRIFUGAL CLUTCH**
- E. V-BELT/DRIVE CLUTCH/DRIVEN PULLEY**

1. With the transmission in neutral, install a new O-ring on the gear position switch; then orient the pin as shown and install the switch into the gear case. Secure with a cap screw and tighten securely.



YT028

2. Secure the gear position switch wire as shown; then tighten the cap screw on the hold-down clip securely.



YT165A

3. Install the starter one-way clutch/gear assembly on the crankshaft; then with a thrust washer on each side of the starter countershaft gear, install the starter countershaft gear/countershaft into the crankcase.



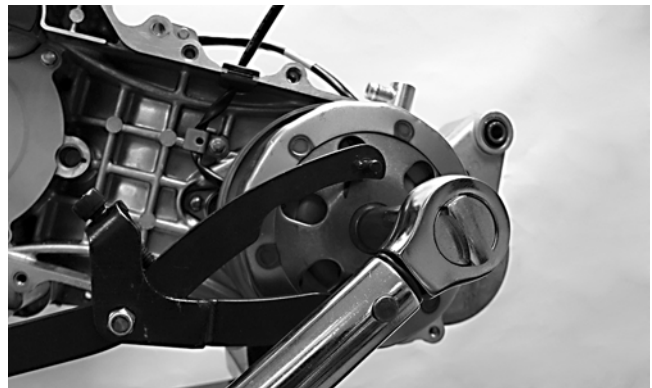
YT024B

4. Install the starter countershaft housing; then install the starter one-way clutch cover. Tighten the cap screws securely.



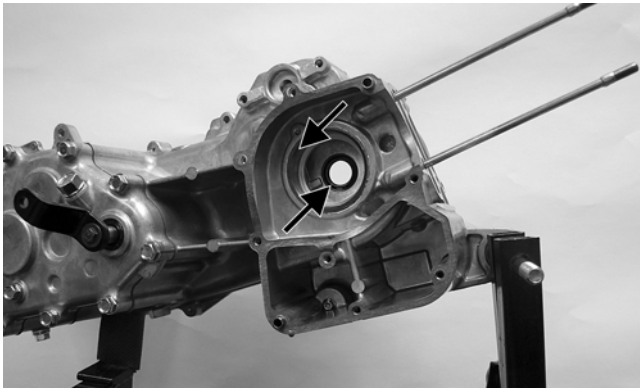
YT023A

5. Install the driven pulley/centrifugal clutch assembly onto the transmission input shaft; then install the centrifugal clutch housing and secure with a flange nut (coated with red Loctite #271). Tighten to 40 ft-lb.



YT147

6. Install the movable drive face, bushing, and speed limiter spacer.



YT122A

6. Replace all oil seals with new seals and coat wear surfaces with clean, fresh grease.



YT153A



YT122B

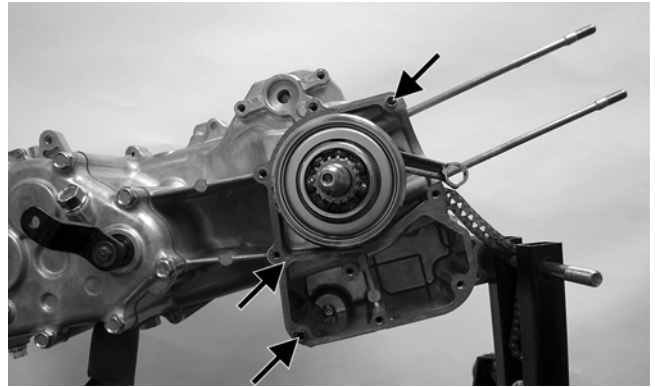
Assembling Crankcase Half

1. Place the timing chain into the crankcase; then install the crankshaft assembly into the crankcase half.

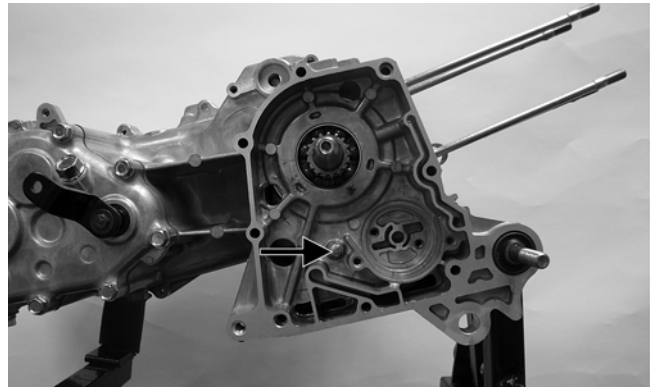


YT120

2. Install two alignment pins and a gasket; then install the right-side crankcase half. Secure with a cap screw (threads coated with red Loctite #271) and tighten to 8 ft-lb.

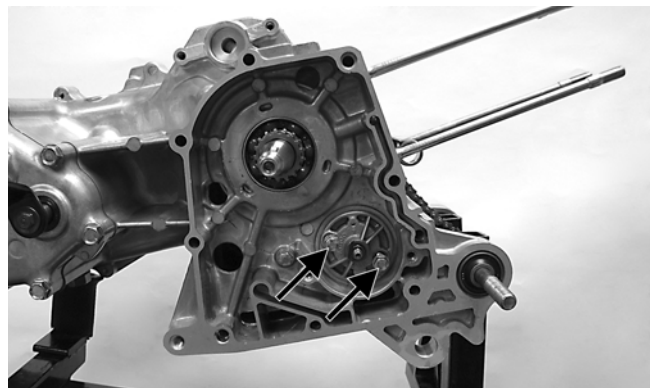


YT119A



YT118A

3. Install the oil pump into the crankcase with the arrow and dot directed upward; then secure with two cap screws and tighten to 7 ft-lb.



YT151A

- Turn the idle adjustment screw in or out until the engine idles at 1700 RPM.



YT015B

⚠ WARNING

Adjust the idle to the correct RPM. Make sure the engine is at normal operating temperature before adjusting the idle RPM.

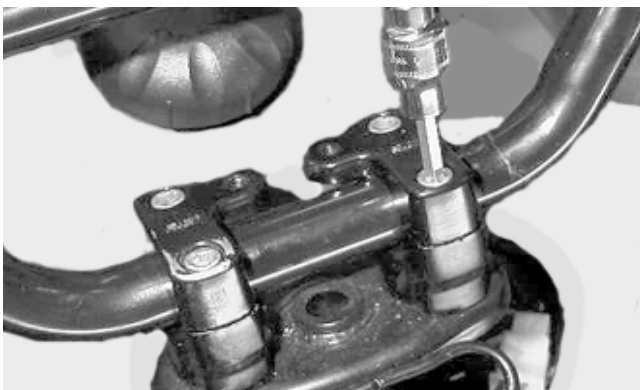
Gas Tank

⚠ WARNING

Whenever any maintenance or inspection is made on the fuel system during which there may be fuel leakage, there should be no welding, smoking, open flames, etc., in the area.

REMOVING

- Turn the gas tank valve to the OFF position.
- Remove the gas hose from the carburetor by removing the spring clamp; then funnel the gas hose into an appropriate container of sufficient size to catch all the gas from the gas tank.
- Turn the gas tank valve to the RES position and drain the gas from the gas tank.
- Remove the seat.
- Remove the top handlebar caps.

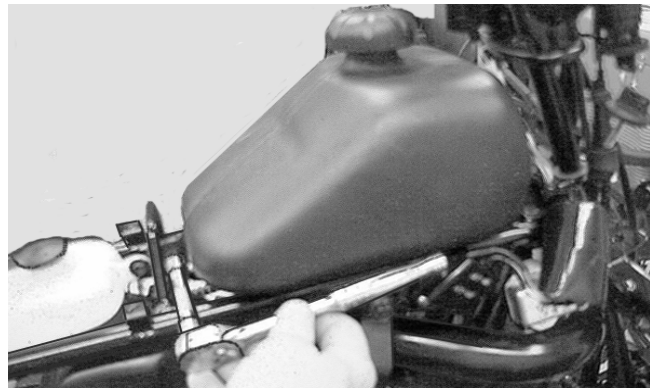


MD2139

- Carefully lay the handlebar assembly forward on the front fender panel.

■NOTE: To access the gas tank, it is necessary to move the front fender panel, which requires removing the handlebar from its clamp. However, the levers, controls, cables, and wires do not need to be disconnected. The front fender panel and handlebar assembly can be tilted forward far enough to gain access to the gas tank.

- Remove the four Phillips-head cap screws and six nuts securing the front fender panel. Account for eight washers.
- Remove the gas tank cap; then tilt the front fender panel and handlebar forward.
- Remove the two cap screws securing the gas tank; then lift the gas tank and secure it out of the way.



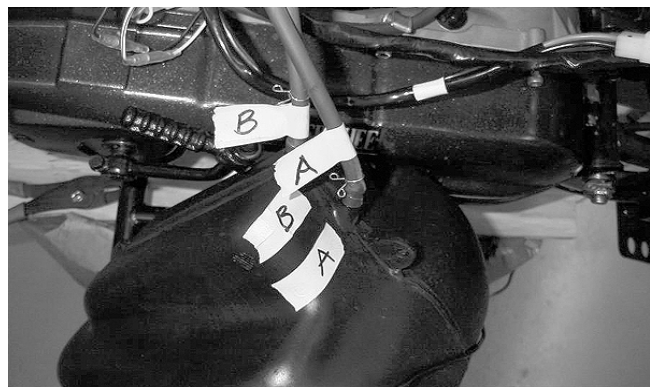
MD2393

- Remove the gas hoses from the gas tank valve noting where each one is attached.



MD1865

■NOTE: Mark the gas hoses for assembling purposes.



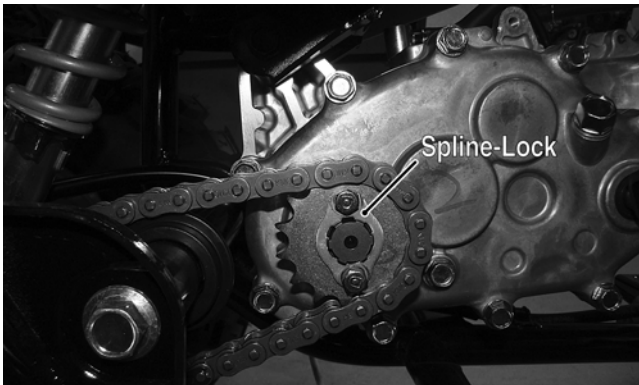
MD1848



MD1854

REMOVING FRONT DRIVE SPROCKET

1. With the chain installed and with the rear brake applied, remove the two cap screws securing the spline-lock to the drive sprocket.



YT009A

2. Loosen the drive chain.
3. Remove the drive sprocket and chain; then remove the sprocket from the chain.

INSTALLING FRONT DRIVE SPROCKET

1. Place the drive sprocket into the drive chain; then slide onto the driveshaft.
2. Install the spline-lock and two cap screws.
3. Adjust the drive chain.
4. With the rear brake lever lock applied, tighten the cap screws to 8 ft-lb.

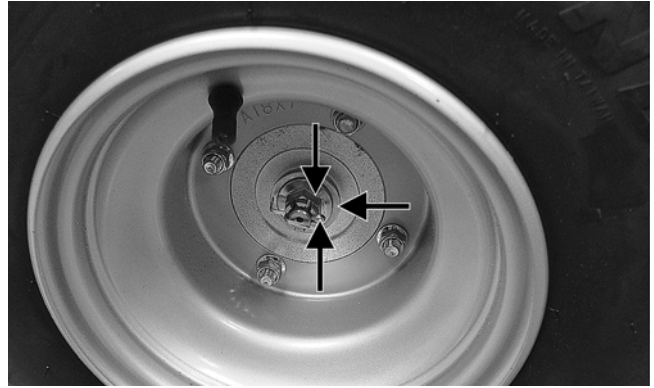
REMOVING REAR SPROCKET

1. Secure the ATV on a support stand to elevate the rear wheels.

WARNING

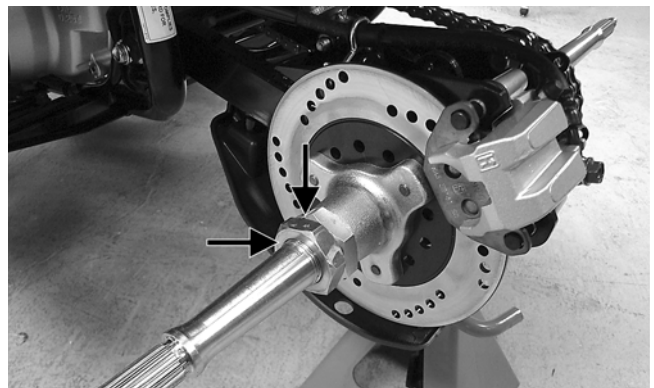
Make sure the ATV is solidly supported on the support stand to avoid injury.

2. Remove the cotter pins from the axle shaft and discard; then apply the rear brake and remove the castle nuts from the axle. Account for the flat washer.

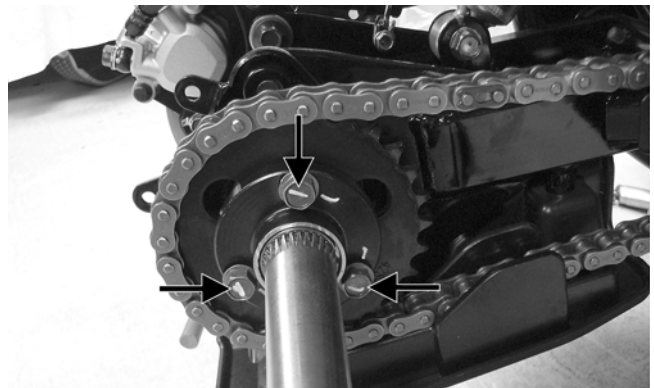


YT175A

3. Remove the left and right rear wheels.
4. Remove the two axle nuts securing the brake hub to the axle; then remove three cap screws securing the rear sprocket to the sprocket retainer.



YT195A



YT197A

■ **NOTE:** It is not necessary to remove the drive chain in order to remove the rear sprocket.

5. Slide the axle shaft out of the housing from left to right leaving the brake disc and hub and rear sprocket in place; then lift the rear sprocket out of the chain.

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