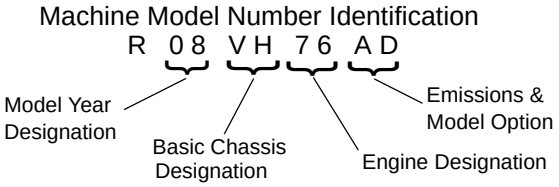
MODEL INFORMATION

Model Identification

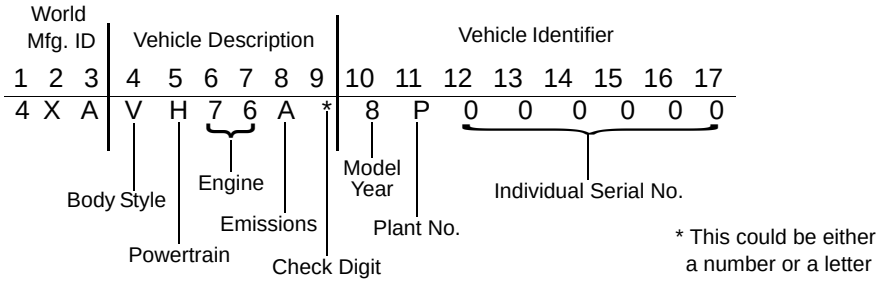
The machine model number must be used with any correspondence regarding warranty or service.



Engine Designation Number

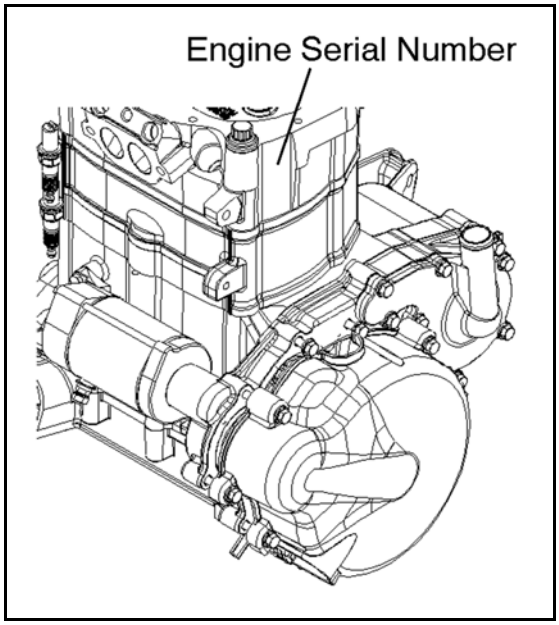
EH076OLE021.....Twin Cylinder, Liquid Cooled, OHV 4 Stroke, Electric Start

VIN Identification



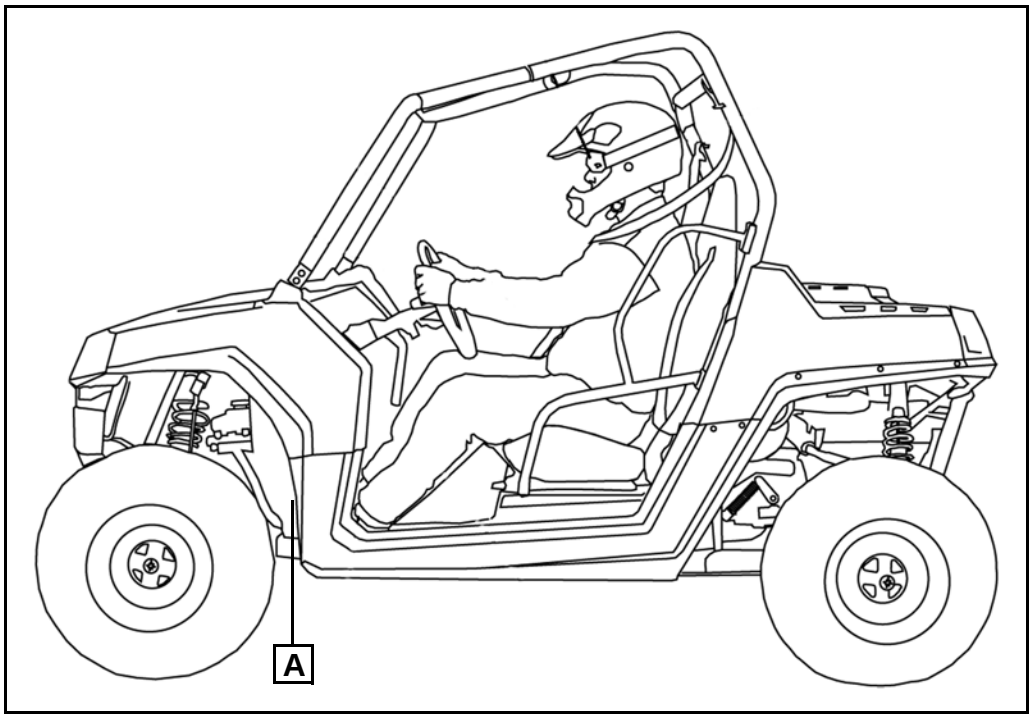
Engine Serial Number Location

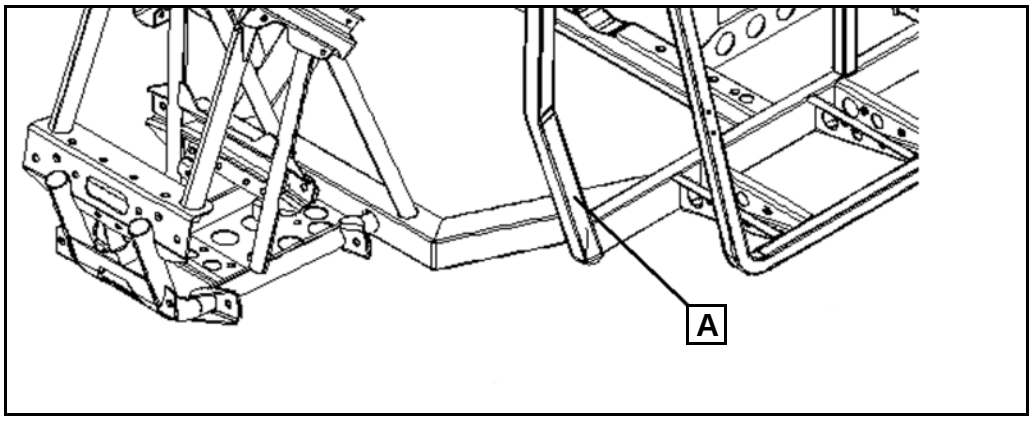
Whenever corresponding about an engine, be sure to refer to the engine model number and serial number. This information can be found on the sticker applied to the cylinder head on the side of engine.

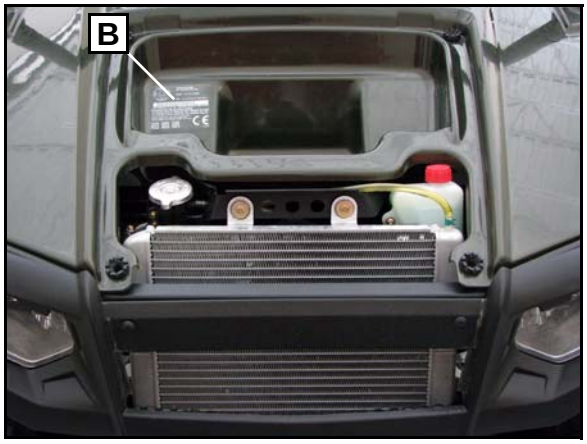


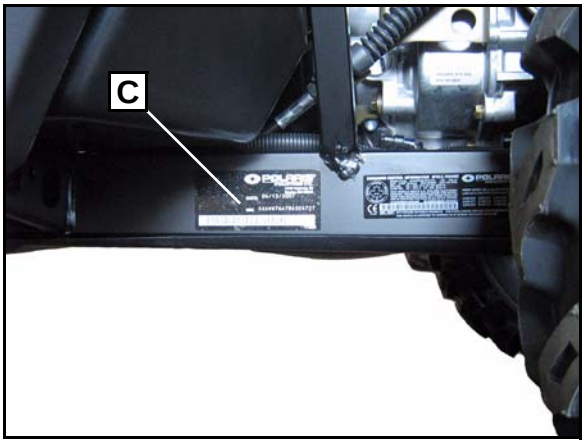
Unit Serial Number (VIN) Location

The machine model number and serial number (VIN) are important for vehicle identification. The VIN number (A) is stamped on a portion of the LH frame rail close to the front wheel. The model and VIN numbers are also located on a sticker under the hood (B) or on the lower frame rail in front of the LH rear tire (C).



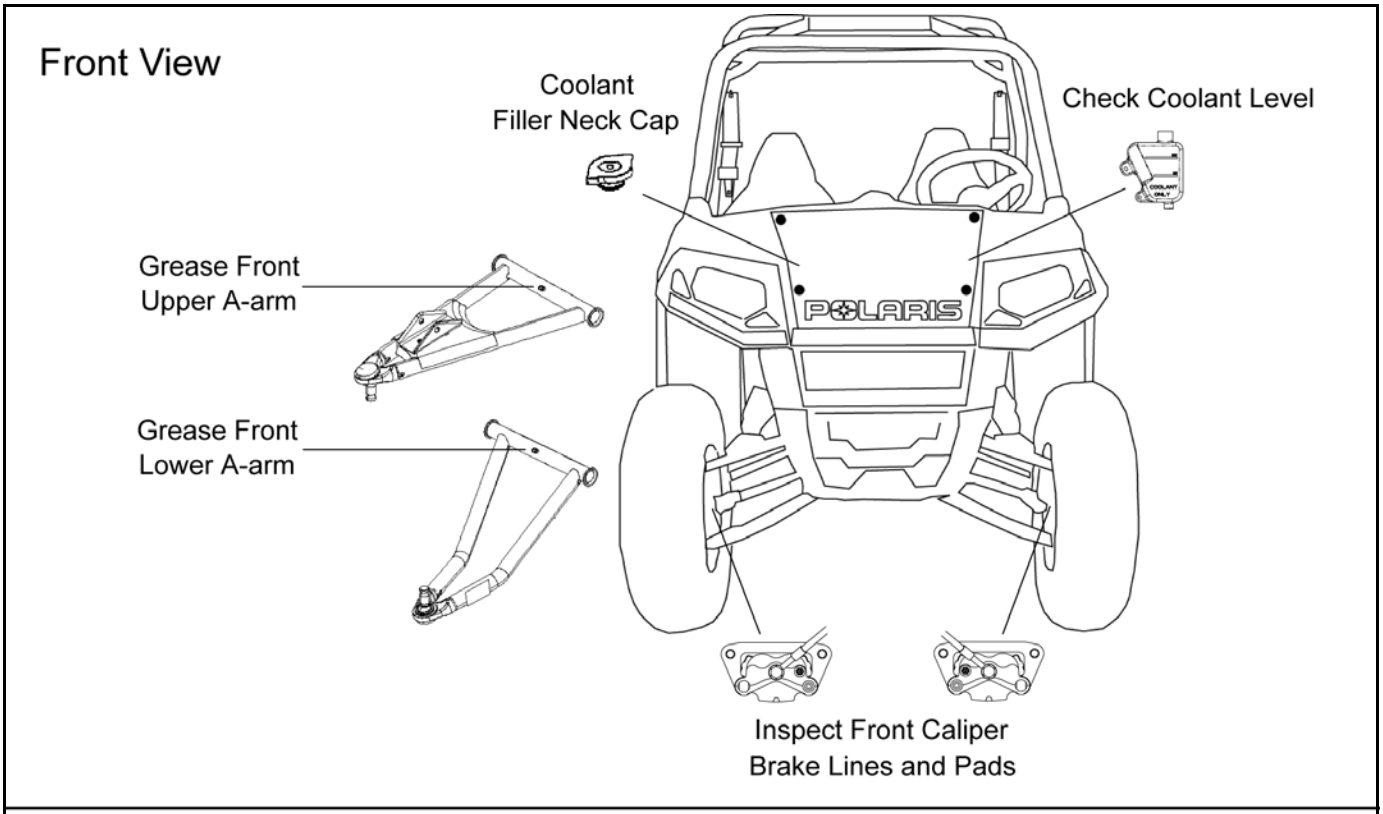


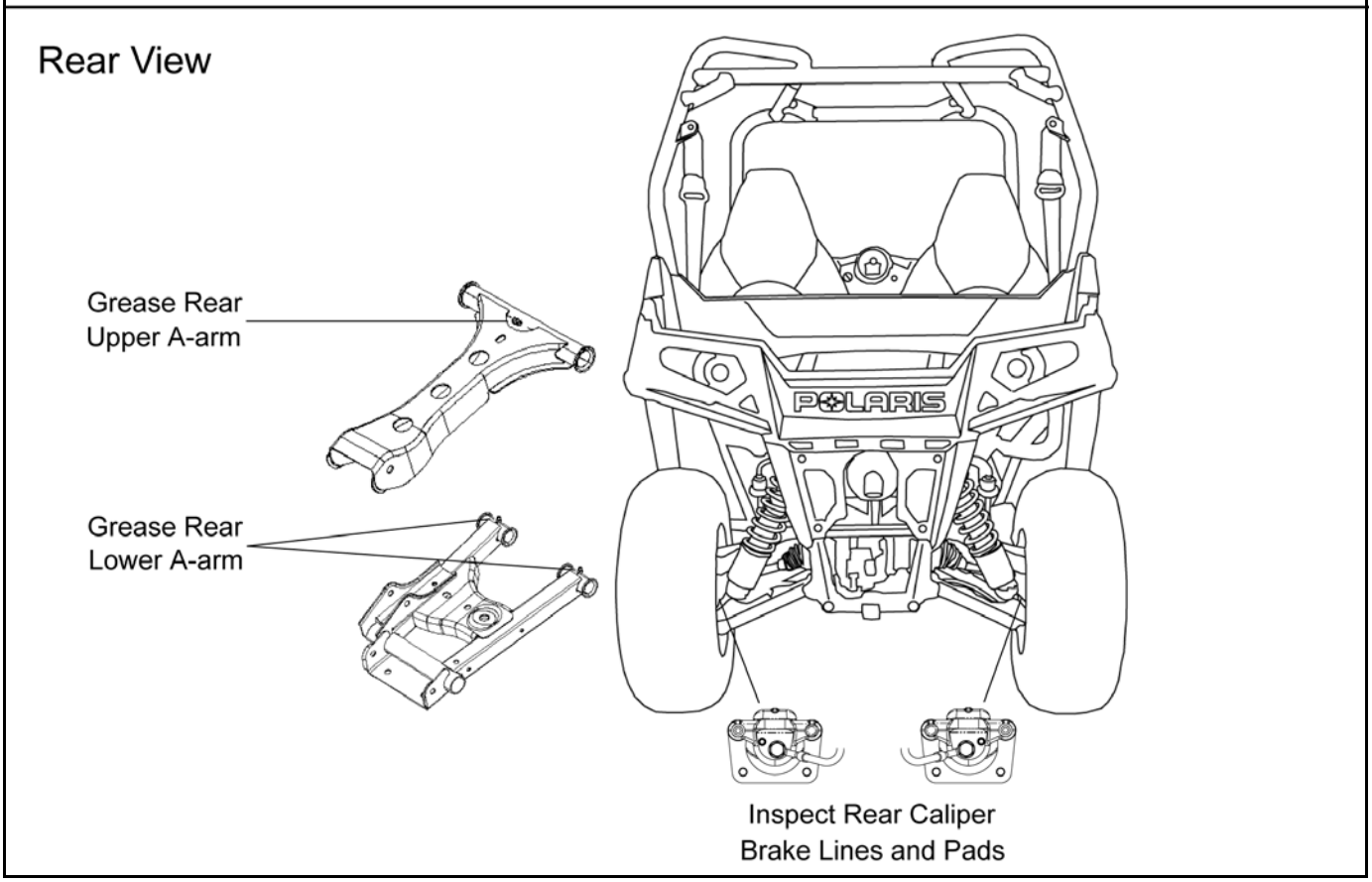




COMPONENT INSPECTION / SERVICE LOCATIONS

Front and Rear View



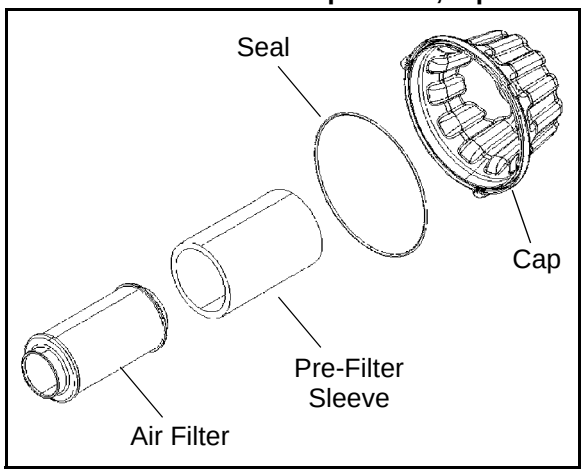


3. Remove air filter assembly and remove the pre-filter sleeve.
4. Inspect the main air filter element and replace if necessary. Do not clean the main filter, the filter should be replaced.

NOTE: If the filter has been soaked with fuel or oil it must be replaced.

5. Wash pre-filter in warm soapy water and allow it to air dry.

NOTE: If unable to clean the pre-filter, replace it.



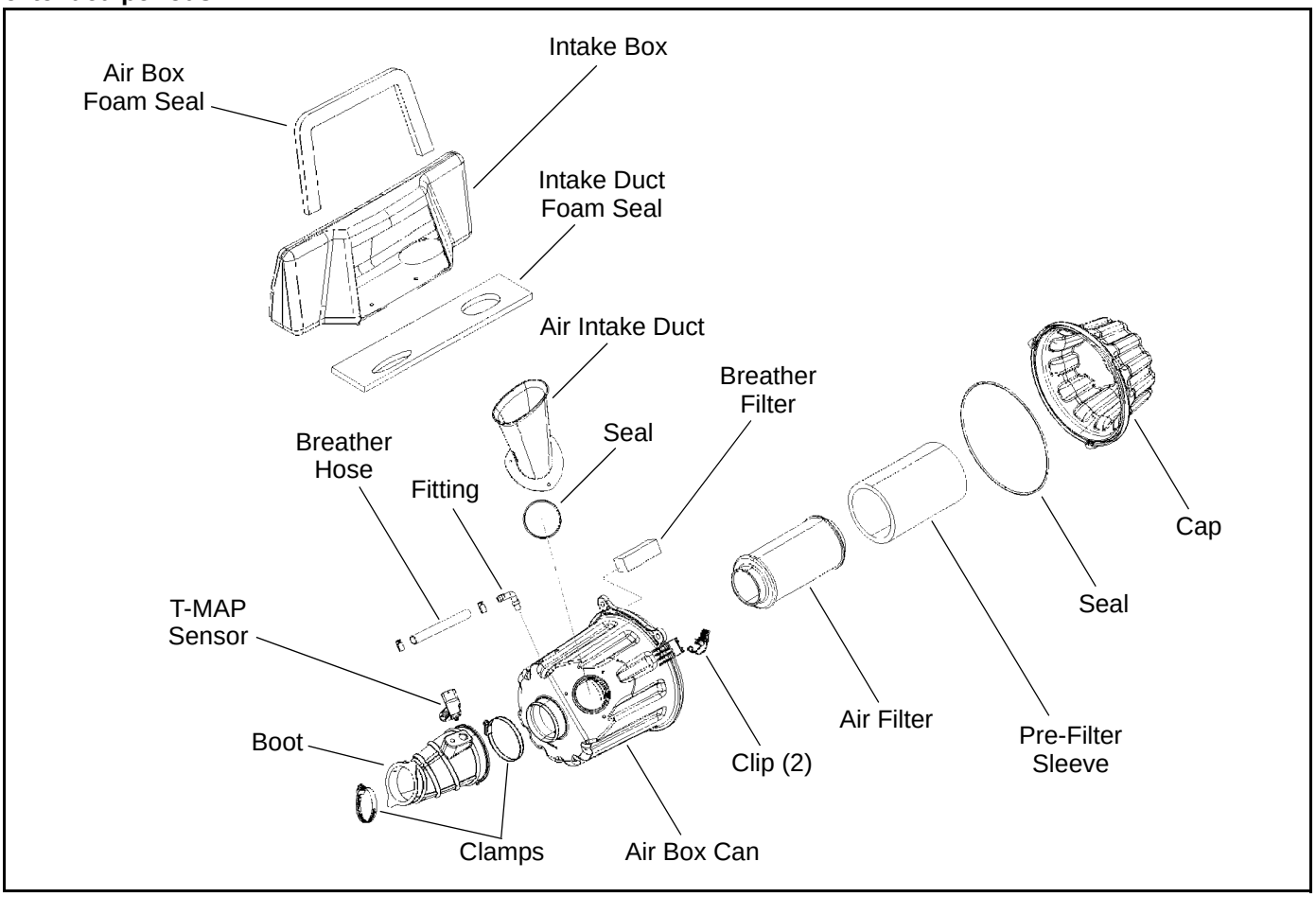
NOTE: Service more frequently if vehicle is operated in wet conditions or at high throttle openings for extended periods.

Installation

1. Clean the air box thoroughly.
2. Install a new or clean pre-filter over the main air filter element.
3. Reinstall the filter into the air box. Be sure the filter fits tightly in the air box.

NOTE: Apply a small amount of general purpose grease to the sealing edges of the filter and the air box cap seal before installing.

4. Install air box cap and secure with clips.



Battery Off Season Storage

Whenever the vehicle is not used for a period of three months or more, remove the battery from the vehicle, ensure that it's fully charged, and store it out of the sun in a cool, dry place. Check battery voltage each month during storage and recharge as needed to maintain a full charge.

NOTE: Battery charge can be maintained by using a Polaris battery tender charger or by charging about once a month to make up for normal self-discharge. Battery tenders can be left connected during the storage period, and will automatically charge the battery if the voltage drops below a pre-determined point.

Battery Charging (Sealed Battery)

The sealed battery is already filled with electrolyte and has been sealed at the factory. Never pry the sealing strip off or add any type of fluid to this battery.

The single most important thing about maintaining a sealed battery is to keep it fully charged. Since the battery is sealed and the sealing strip cannot be removed, you must use a voltmeter or multimeter to measure the DC voltage at the battery terminals.

1. Check the battery voltage with a voltmeter or multimeter. The battery voltage should read 12.8 VDC or higher.
2. If the voltage is less than 12.8 volts, charge the battery at 1.2 amps or less until battery voltage is 12.8 VDC or greater.

NOTE: When using an automatic charger, refer to the charger manufacturer's instructions for battery charging directions. When using a constant current charger, follow the guidelines in the following table:

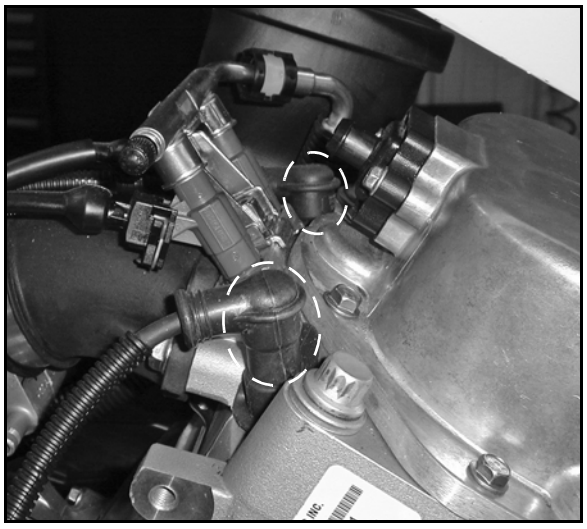
STATE OF CHARGE	VOLTAGE	ACTION	CHARGE TIME
100%	12.8 - 13 VDC	None, check again in 3 months	None Required
75% - 100%	12.5 - 12.8 VDC	May need slight charge, check again in 3 months	3 - 6 hrs
50% - 75%	12.0 - 12.5 VDC	Needs Charge	5 - 11 hrs
25% - 50%	11.5 - 12.0 VDC	Needs Charge	At least 13 hrs, verify state of charge
0% - 25%	11.5 VDC or less	Needs Charge with desulfating charger	At least 20 hrs

Spark Plug Service

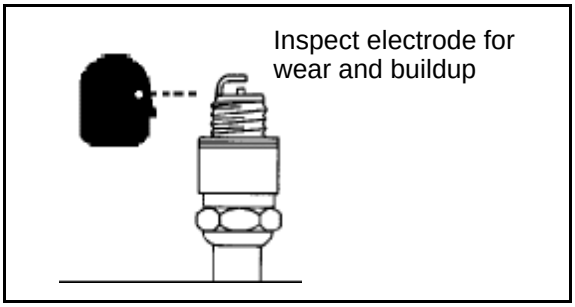
1. Remove both driver and passenger seats.
2. Remove the rear service panel.

> **⚠ WARNING**
>
> A hot exhaust system and engine can cause serious burns. Allow engine to cool or wear protective gloves when removing the spark plugs

3. The PTO side spark plug can be accessed with the service panel removed. The MAG side spark plug can be accessed through the rear RH wheel well area.
4. Remove both spark plug caps.



5. Clean plug area so no dirt and debris can fall into engine when plugs are removed.
6. Remove spark plugs.
7. Inspect electrodes for wear and carbon buildup. Look for a sharp outer edge with no rounding or erosion of the electrodes.



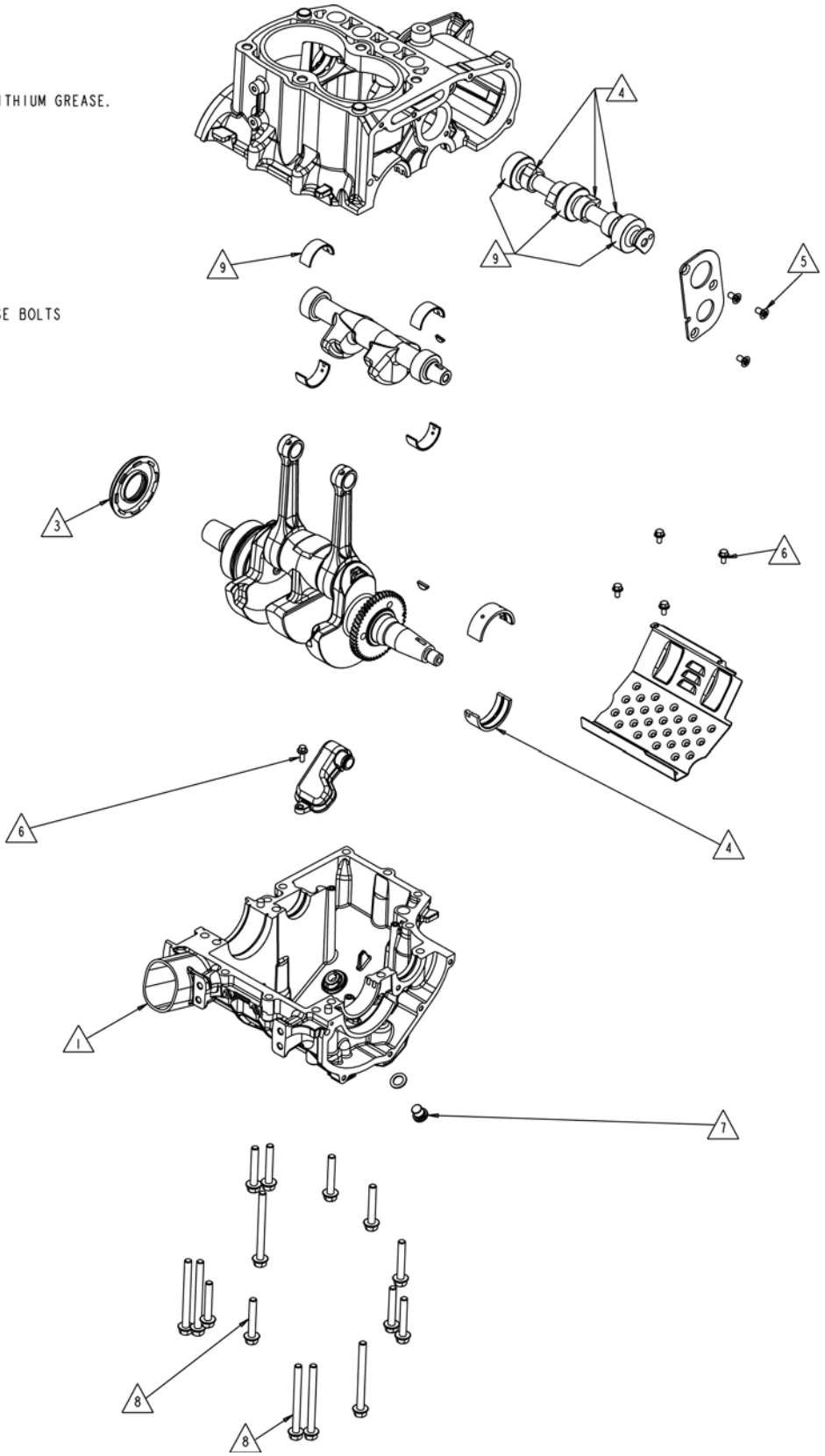
8. Clean with electrical contact cleaner or a glass bead spark plug cleaner only. **CAUTION:** A wire brush or coated abrasive should not be used.

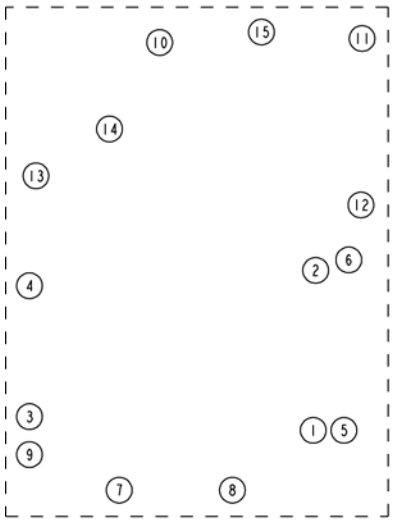
ENGINE SPECIFICATIONS

Crankcase Exploded Views

NOTES:

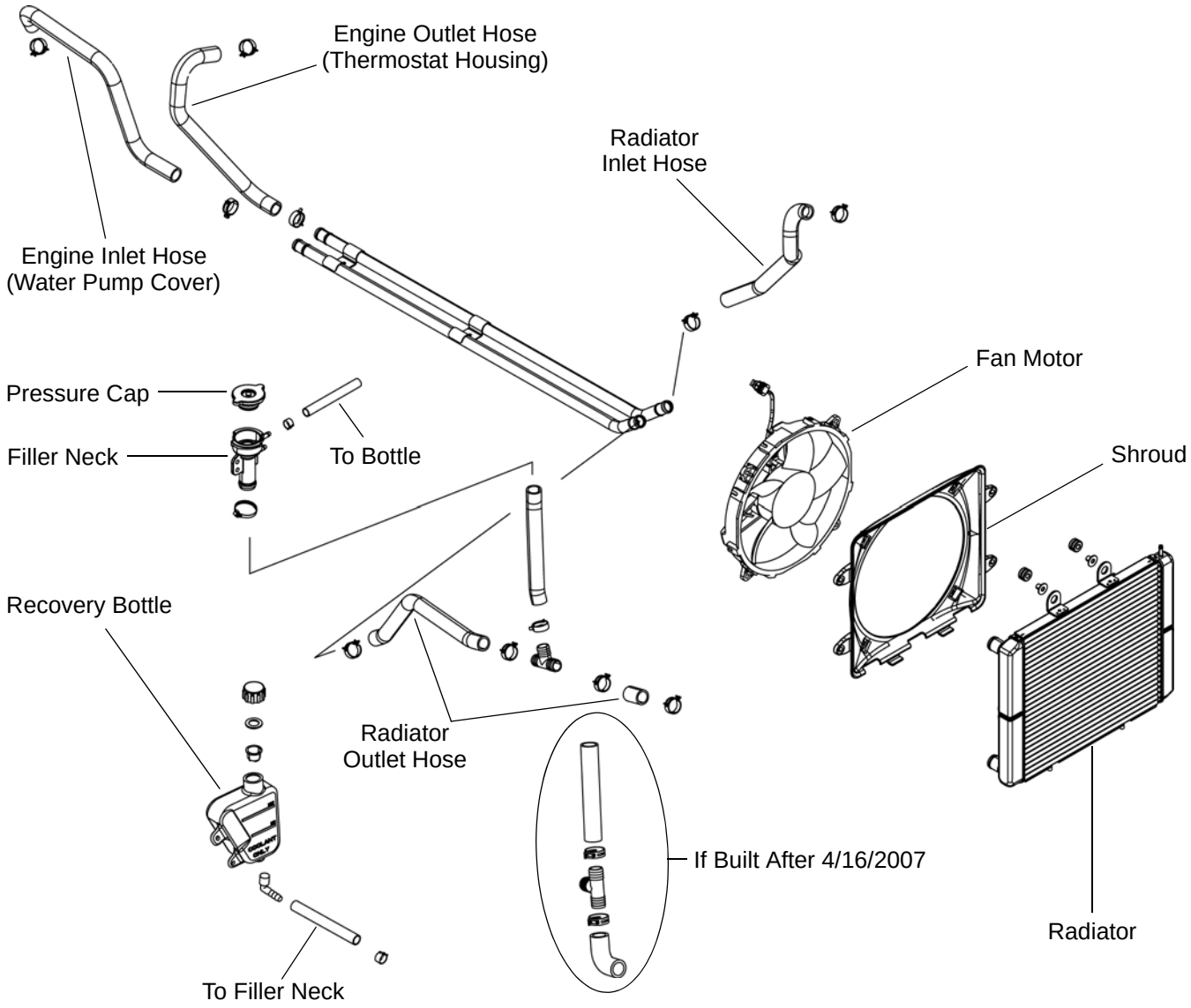
1. SEAL MATING SURFACES WITH SEALANT.
3. LUBRICATE LIP OF SEAL WITH WHITE LITHIUM GREASE.
4. APPLY MOLY LUBE GREASE TO LOBES.
5. TORQUE TO 98±10 IN-LBS.
6. TORQUE TO 60±6 IN-LBS.
7. TORQUE TO 192±24 IN-LBS.
8. TORQUE TO 22±2 FT-LBS. TORQUE CASE BOLTS IN SEQUENCE SHOWN.
9. LUBRICATE WITH ENGINE OIL



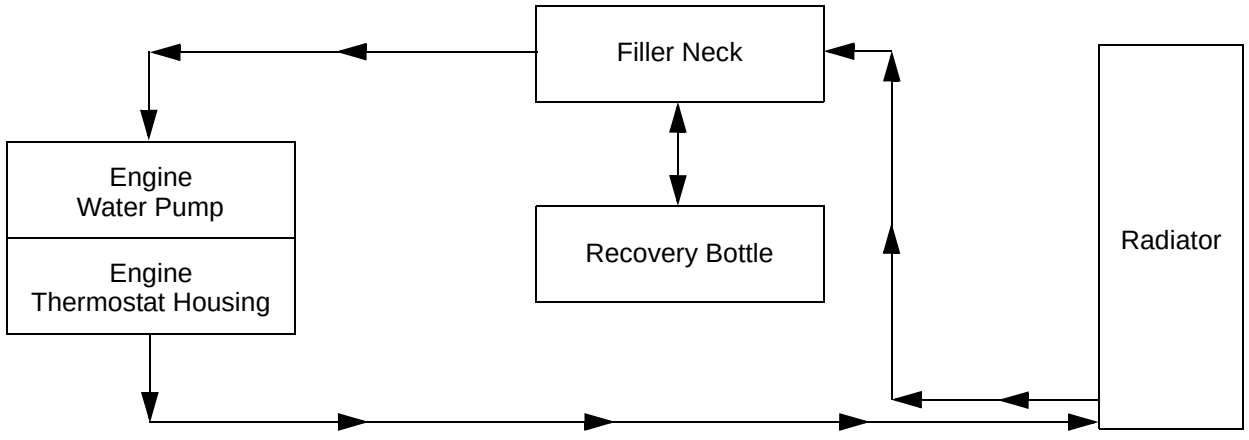


CASE TORQUE SEQUENCE:

Cooling System Exploded View

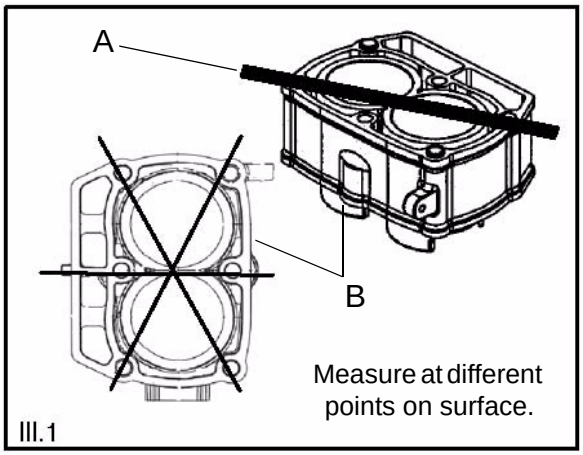


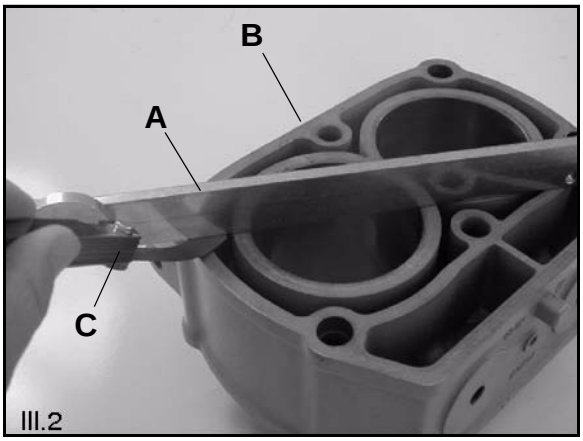
Coolant Flow Diagram



Cylinder Inspection

1. Remove all gasket material from the cylinder sealing surfaces.
2. Inspect the top of the cylinder (B) for warp using a straight edge (A) and feeler gauge (C). Refer to Ill. 1 and Ill. 2.

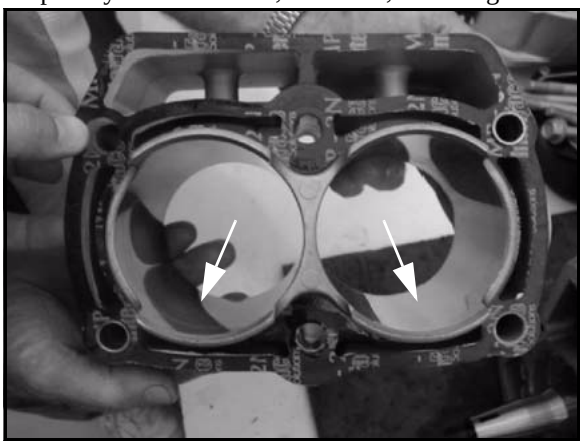




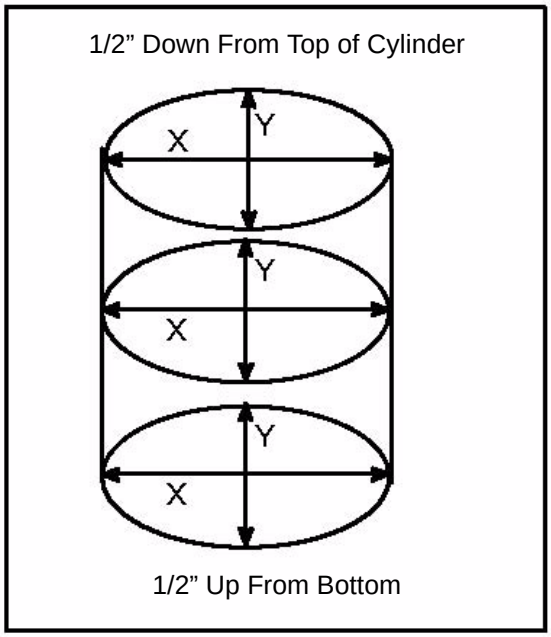
= In. / mm.

Cylinder Warp: .004" (0.1 mm) Max.

3. Inspect cylinder for wear, scratches, or damage.



4. Inspect cylinder for taper and out of round with a telescoping gauge or a dial bore gauge. Measure in two different directions, front to back and side to side, on three different levels (1/2, down from top, in the middle, and 1/2, up from bottom). Record measurements. If cylinder is tapered or out of round beyond .002", the cylinder must be replaced.



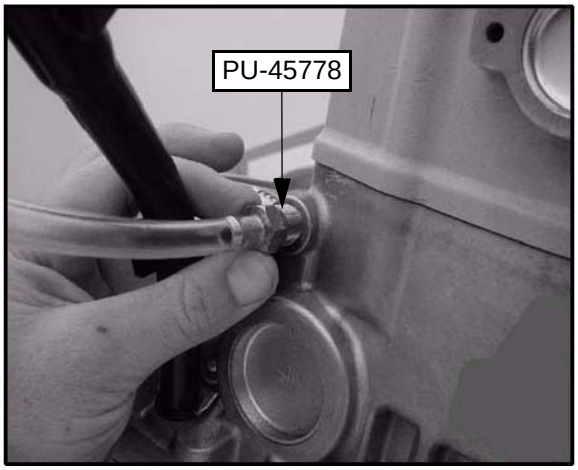
= In. / mm.

Cylinder Taper Limit:
.002" (9.05mm) Max.

Cylinder Out of Round:
Limit: .002" (.0 mm) Max.

1. After the engine is completely assembled and ready for installation, the engine must be properly primed with Polaris 0W-40 Synthetic Oil **(PN 2871281)**. Fill the oil filter three-quarters full with Polaris 0W-40 Synthetic Oil **(PN 2871281)**. Let the oil soak into the filter for 8-10 minutes. Install the filter onto the engine.

2. Remove primer plug from the engine. Install Oil System Priming Adapter **(PU-45778)** into the oil plug hole. Push 3-5 oz. (approx.) of Polaris 0W-40 into the adapter or until resistance is felt. Remove the adapter. Apply sealant to the plug threads. Install the plug and torque to specification.



= T
Primer Plug Torque **18 ± 2 ft.lbs. (24.4 ± 2.71 Nm)**

ENGINE INSTALLATION

Engine Assembly and Installation

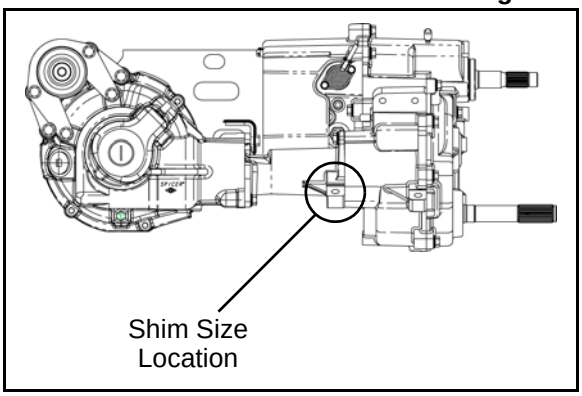
Use the following procedure to reinstall the engine assembly.

Assemble the engine to the transmission on a work bench prior to installation.

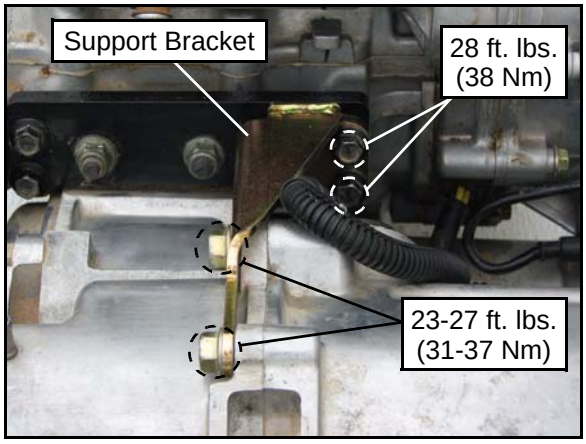
1. Support the transmission / rear gearcase assembly while setting the engine in place.

NOTE: A small number of vehicles were manufactured with shims placed between the rear transmission casting ear and the engine crankcase. Be sure to use the same amount of shims upon reassembly.

If shims were present upon disassembly but have since been misplaced, look near the rear transmission casting ear for the shim thickness specification that is scribed into the casting.

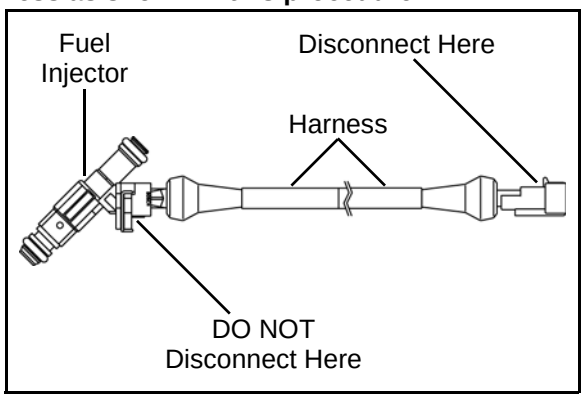


NOTE: Vehicles manufactured on or after 5/21/07, will be assembled with an added support bracket mounted between the engine and transmission. Refer to the following image for torque specifications. Snug the rear gearcase fasteners first, followed by the engine fasteners.

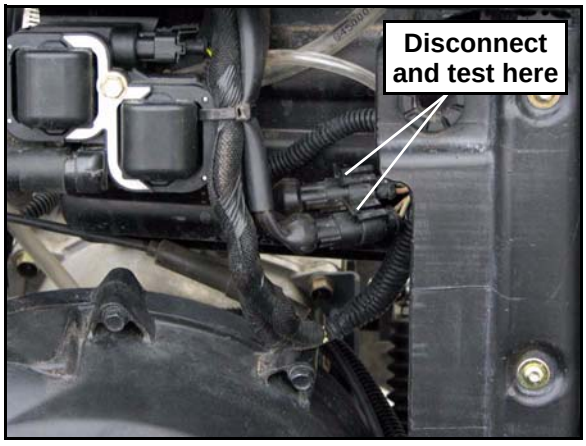


Fuel Injector Test

NOTE: The Bosch harness connector and locking spring is bonded to the fuel injectors with an epoxy mix. DO NOT attempt to disconnect the Bosch connector from the fuel injectors. Damage will occur to the injector and/or harness if attempting to separate at that location. Separate the fuel injector from the vehicle by disconnecting at the end of the harness as shown in this procedure.



The fuel injectors are non-serviceable. If fault code diagnosis indicates a problem with either injector, test the resistance of the fuel injector(s) by measuring between the two harness pin terminals:

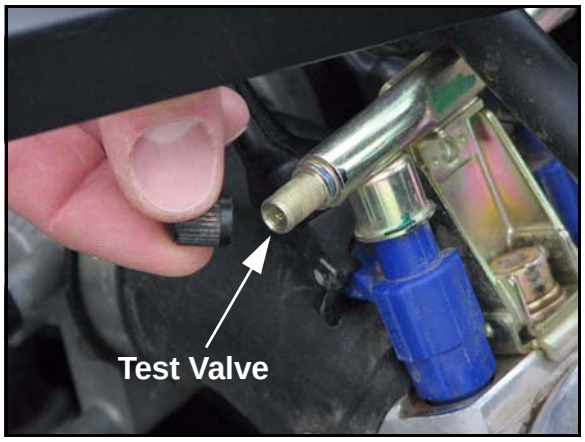


Fuel Injector Resistance Specification:
13.8Ω - 15.2Ω

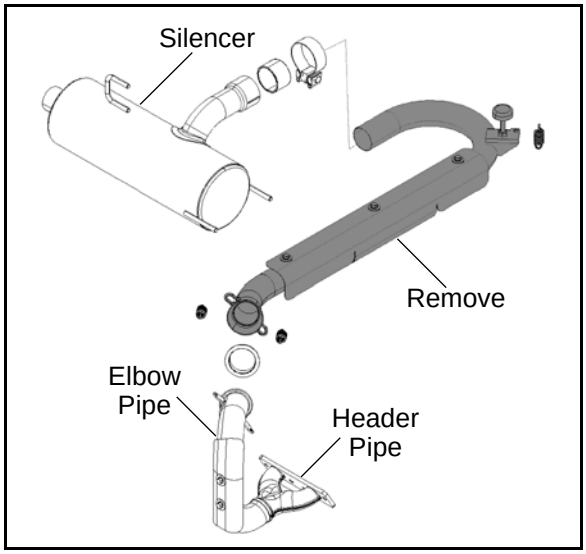
Fuel Injector Replacement

1. Be sure the engine has cooled enough to work on.

2. Depressurize the fuel system by connecting the Fuel Pressure Gauge Kit PU-43506-A to the test valve at the end of the fuel rail and properly drain the fuel into a suitable container.



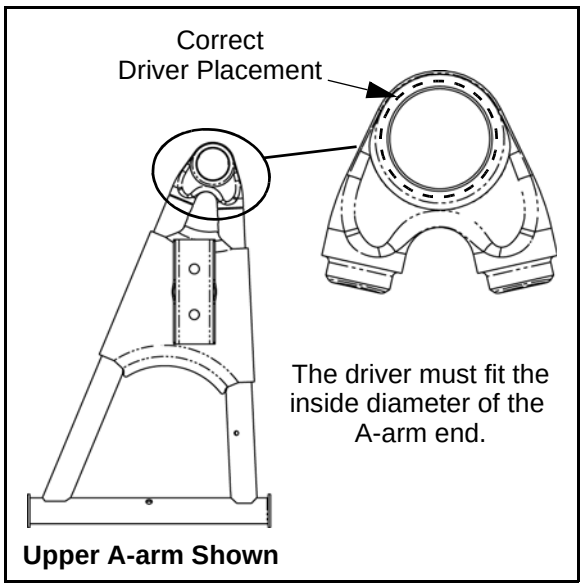
3. Remove the exhaust pipe between the exhaust silencer and the elbow pipe to allow better access to the fuel injector rail.



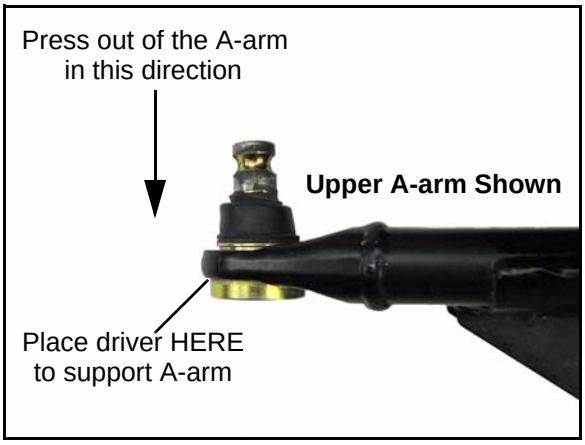
4. Remove the engine breather hose from the valve cover.

5. Remove both driver and passenger seats and remove the rear service panel.

4. Use a press and correct size driver to remove the ball joint from the A-arm.

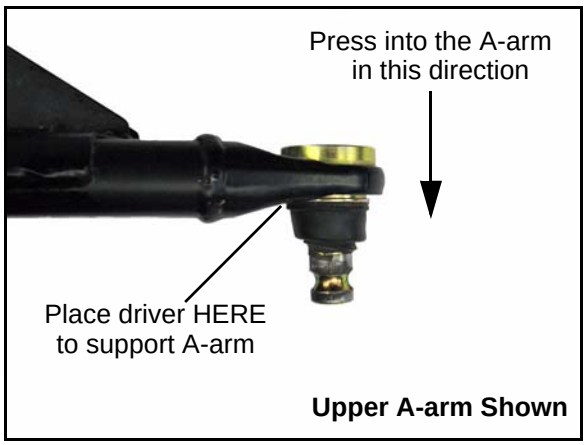


NOTE: The driver must fit the ball joint housing in the A-arm. This will allow the ball joint to be properly pressed out of the A-arm without damaging the A-arm.

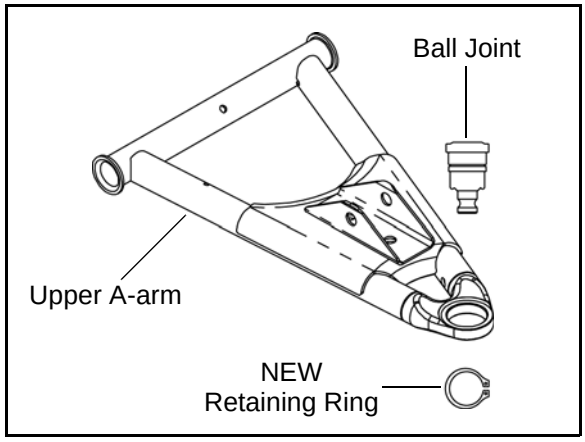


Installation

1. Place the A-arm in the correct position for ball joint installation. Face the A-arm end flat on top of the driver. Carefully drive the ball joint into place until the ball joint is properly seated.



2. After the new ball joint is installed into the A-arm, install a NEW retaining ring.



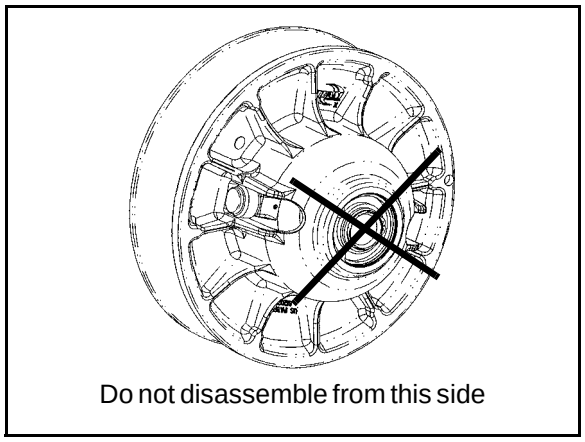
3. Reinstall the A-arm (see “FRONT A-ARMS - Removal / Replacement”).

4. Repeat the ball joint service procedure for any additional A-arm ball joint replacements.

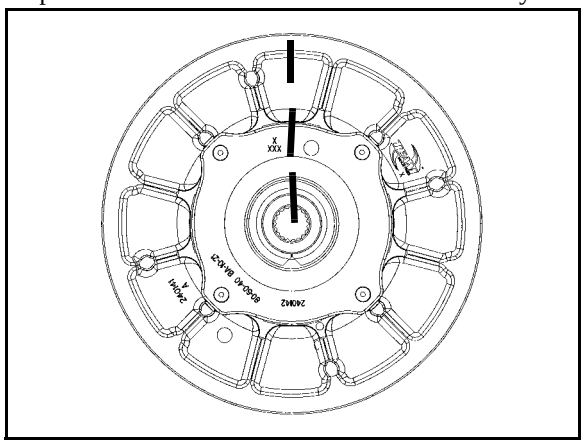
DRIVEN CLUTCH SERVICE

Clutch Disassembly

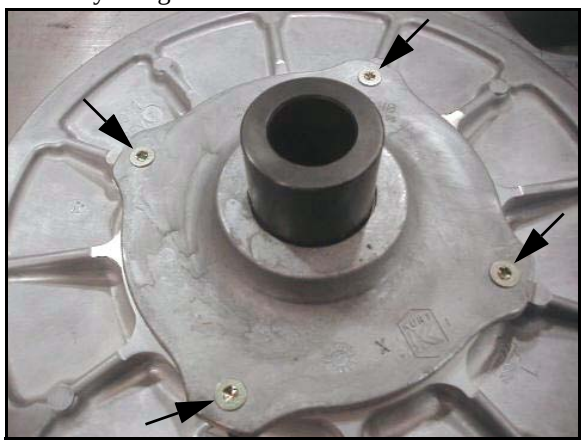
1. Remove driven clutch from the transmission input shaft. Do not attempt disassembly of the driven clutch from the outside snap ring. The driven clutch must be disassembled from the helix side.



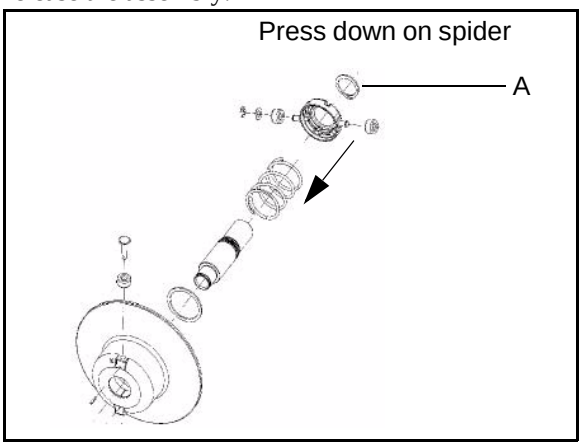
2. It is important to mark the position of the shaft, cam cover, and sheave before disassembly or use the X's on the components for reference. This will aid in reassembly and helps to maintain clutch balance after reassembly.



3. Remove the four torx screws that secure the cam (helix) assembly using a T25 torx driver.

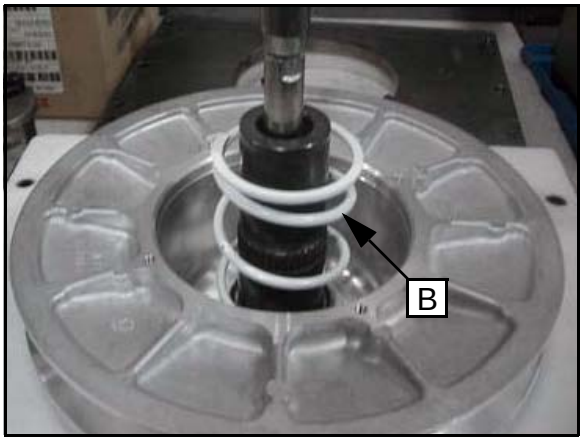


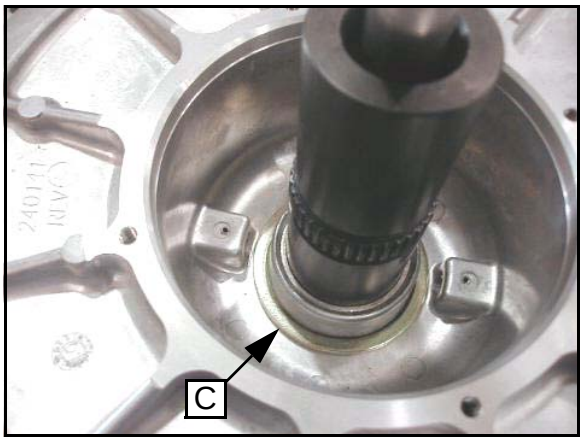
4. Place the clutch into the Clutch Compression Tool **PN 8700220**. Using Compression Extensions **PN PS-45909**, press down on top of the spider assembly, compressing the spider onto the shaft. Remove snap ring (A) and slowly release the assembly.



5. Remove the spider assembly, spring (B), and spacer washer (C).

NOTE: Spring is compression only and has no torsional wind.





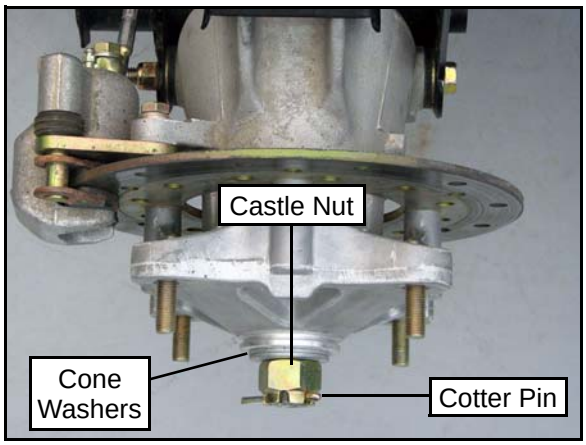
REAR BEARING CARRIER

Bearing Carrier Inspection / Removal

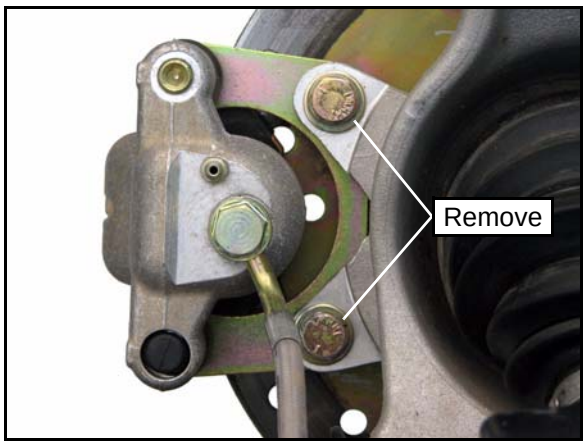
1. Elevate rear of vehicle and safely support machine under the frame area.

> **⚠ CAUTION**
>
> Serious injury may result if machine tips or falls. Be sure machine is secure before beginning this service procedure. Wear eye protection when removing bearings and seals.

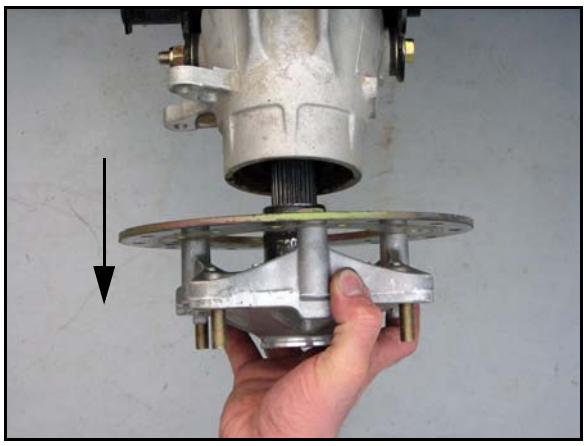
2. Check bearings for side play by grasping the top and bottom of the tire firmly and checking for movement. The tire should rotate smoothly without binding or rough spots.
3. Remove the (4) wheel nuts and remove the rear wheel.
4. Remove the cotter pin and loosen the rear wheel hub castle nut. Remove the nut, and (2) cone washers from the rear wheel hub assembly.



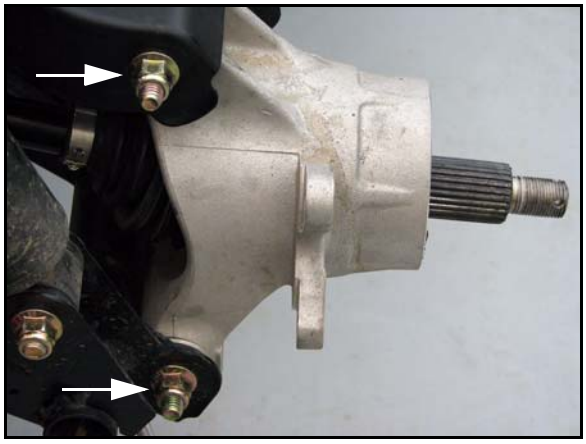
5. Remove the two brake caliper attaching bolts.
CAUTION: Do not hang the caliper by the brake line. Use wire to hang caliper to prevent damage to the brake line.



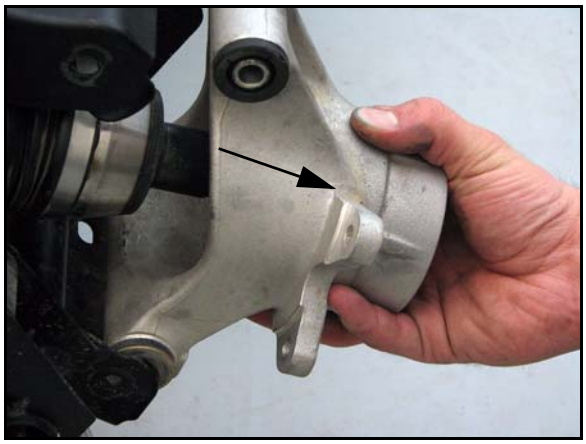
6. Remove the rear wheel hub assembly.



7. Remove the bolts that attach the rear bearing carrier to the upper and lower A-arms.



8. Remove the bearing carrier from the rear drive shaft.



9. Rotate bearing by hand and check for smooth rotation. Visually inspect bearing for moisture, dirt, or corrosion.

HYDRAULIC BRAKE SYSTEM OPERATION

The Polaris brake system consists of the following components or assemblies: brake pedal, master cylinder, hydraulic brake lines, brake calipers, brake pads, and brake discs, which are secured to the drive line.

When the foot activated brake lever is applied it applies pressure on the piston within the master cylinder. As the master cylinder piston moves inward it closes a small opening (compensating port) within the cylinder and starts to build pressure within the brake system. As the pressure within the system is increased, the pistons located in the brake calipers move outward and apply pressure to the moveable brake pads. These pads contact the brake discs and move the calipers in their floating bracket, pulling the stationary side pads into the brake discs. The resulting friction reduces brake disc and vehicle speed.

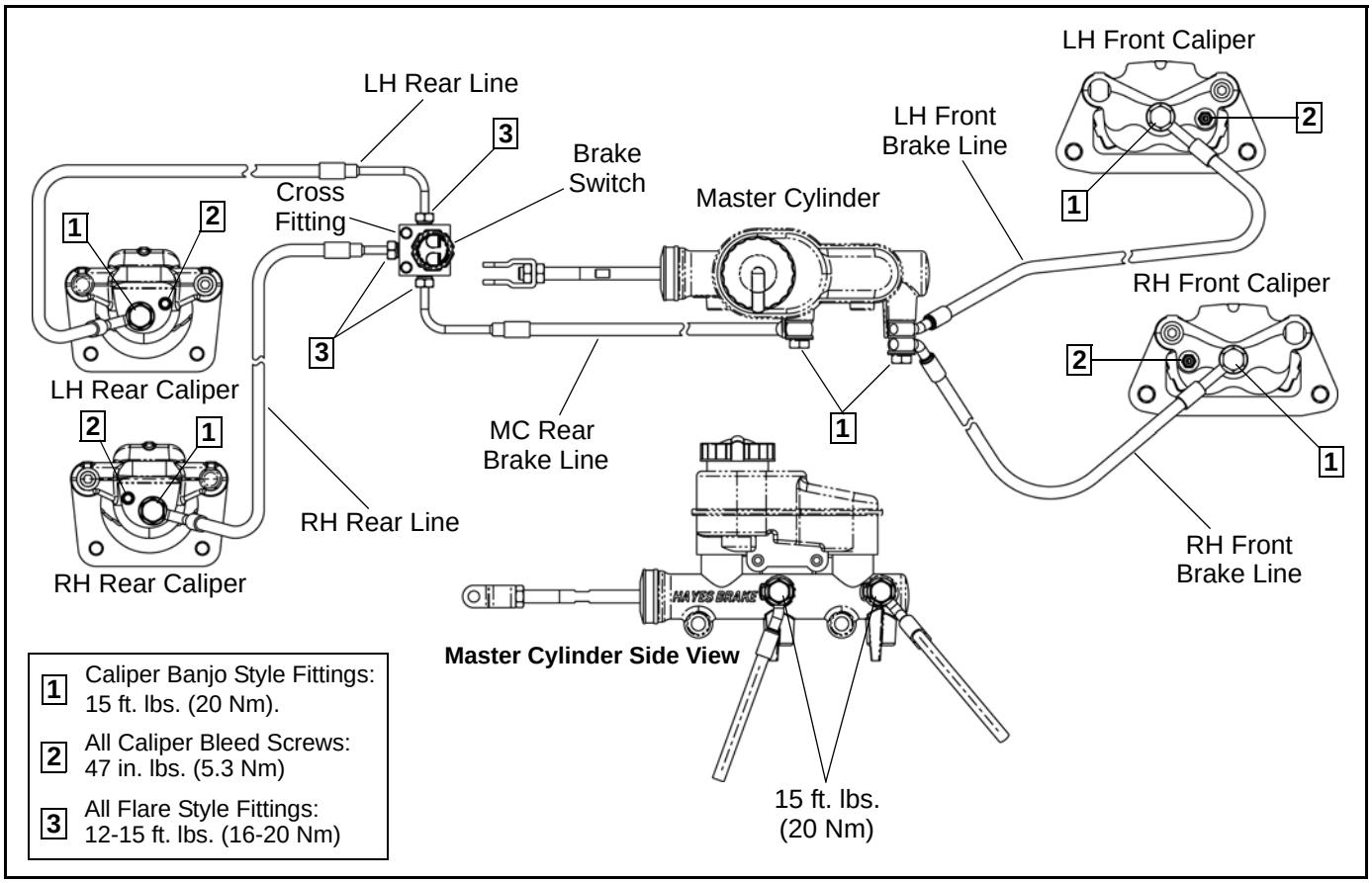
The friction applied to the brake pads will cause the pads to wear. As these pads wear, the piston within the caliper moves further outward and becomes self adjusting. Fluid from the reservoir fills the additional area created when the caliper piston moves outward.

Brake fluid level is critical to proper system operation. Too little fluid will allow air to enter the system and cause the brakes to feel spongy. Too much fluid could cause brakes to drag due to fluid expansion.

Located within the master cylinder is the compensating port which is opened and closed by the master cylinder piston assembly. As the temperature within the hydraulic system changes, this port compensates for fluid expansion or contraction. Due to the high temperatures created within the system during heavy braking, it is very important that the master cylinder reservoir have adequate space to allow for fluid expansion. **Never overfill the reservoir! Do not fill the reservoir beyond the MAX LEVEL line!**

When servicing Polaris brake systems use only **Polaris DOT 4 Brake Fluid (PN 2872189)**. **WARNING:** Once a bottle is opened, use what is necessary and discard the rest in accordance with local laws. Do not store or use a partial bottle of brake fluid. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture. This causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of serious injury.

BRAKE SYSTEM EXPLODED VIEW

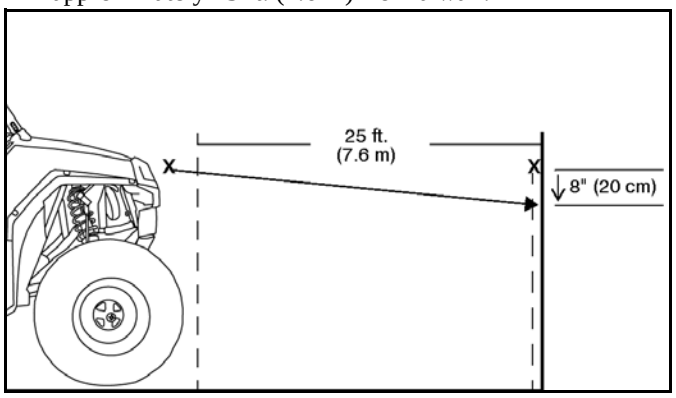


HEAD LIGHTS

Headlight Adjustment

The headlight beam is adjustable.

1. Place the vehicle on a level surface with the headlight approximately 25 ft. (7.6 m) from a wall.



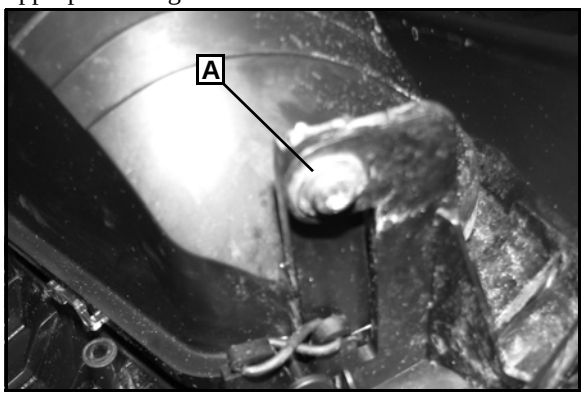
2. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height.

3. With the machine in Park, start the engine and turn the headlight switch to on.

4. The most intense part of the headlight beam should be aimed 8 in. (20 cm) below the mark placed on the wall in Step 2.

NOTE: Rider weight must be included in the seat while performing this procedure.

5. Adjust the beam to the desired position by loosening the adjustment screw (A) and moving the lamp to the appropriate height.



6. Adjust the beam to desired position. Repeat the procedure to adjust the other headlight.

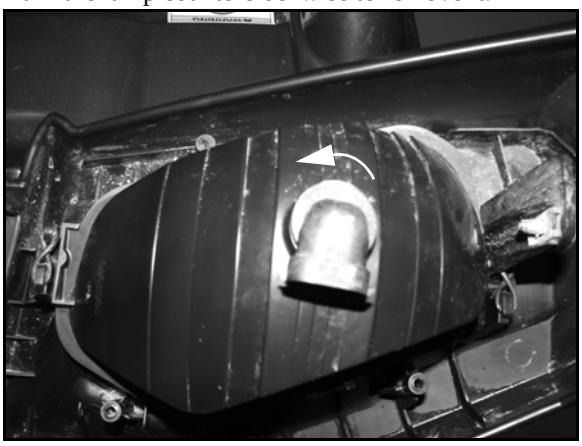
⚠ WARNING

Due to the nature of light utility vehicles and where they are operated, headlight lenses become dirty. Frequent washing is necessary to maintain lighting quality. Riding with poor lighting can result in severe injury or death.

Headlamp Bulb Replacement

1. Disconnect the headlamp bulb from the wiring harness. Be sure to pull on the connector, not on the wiring.

2. Turn the lamp counterclockwise to remove it.



3. Insert new bulb. Reinstall the harness assembly into the headlight assembly.

NOTE: Make sure the tab on the lamp locates properly in the housing.