

PERIODIC MAINTENANCE PROCEDURES

SERVICE TOOLS

Description	Part Number	Page
TEST CAP	529 035 991	8
VACUUM/PRESSURE PUMP	529 021 800	8, 23

SERVICE PRODUCTS

Description	Part Number	Page
AIR FILTER CLEANER	219 700 341	3
AIR FILTER OIL	219 700 340	3
BRAKE FLUID GTLMA DOT4	293 600 131	20, 22
ISOFLEX GREASE TOPAS NB 52	293 550 021	13
LOCTITE 767 (ANTISEIZE LUBRICANT)	293 800 070	16
LONG LIFE ANTIFREEZE(F)	619 590 204	7
LONG LIFE ANTIFREEZE	219 702 685	7
PROPELLER SHAFT GREASE	293 550 063	18
SUSPENSION GREASE	293 550 033	19–20
XPS 4-STROKE SYNTH. BLEND OIL	293 600 121	4
XPS 4-STROKE SYNTHETIC OIL	293 600 112	4
XPS BRAKES AND PARTS CLEANER (USA)	219 701 705	21
XPS BRAKES AND PARTS CLEANER	219 701 776	21
XPS SYNTHETIC GEAR OIL (75W 140)	293 600 140	11, 18
XPS SYNTHETIC GEAR OIL (75W 90)	293 600 043	17
XPS SYNTHETIC GREASE	293 550 010	22

GENERAL

This subsection provides:

- Fluid level verifications
- Maintenance procedures.

The following systems should be serviced according to the *PERIODIC MAINTENANCE SCHEDULE*.

PROCEDURES

AIR INTAKE SYSTEM

Engine Air Filter Maintenance Guideline

As with any ATV, air filter maintenance is critical to ensure proper engine performance and life span.

Air filter maintenance should be adjusted according to riding conditions.

Air filter maintenance must be increased in frequency and oil must be added to the foam filter for the following dusty conditions:

- Riding on dry sand
- Riding on dry dirt covered surfaces
- Riding on dry gravel trails or similar conditions.

NOTE: Riding in a group in these conditions would increase even more the air filter maintenance.

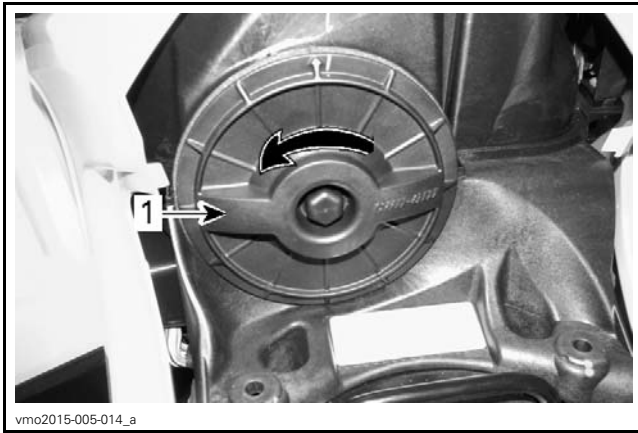
Removing the Engine Air Filter

NOTICE Never remove or modify any component in the air filter housing. Otherwise, engine performance degradation or damage can occur. The engine is calibrated to operate specifically with these components.

1. Remove seat.
2. Remove console. Refer to *BODY* subsection.
3. Rotate air filter cover counterclockwise to remove it.

Subsection 02 (PERIODIC MAINTENANCE PROCEDURES)

NOTE: A socket wrench may be used to ease removal of the filter cover.



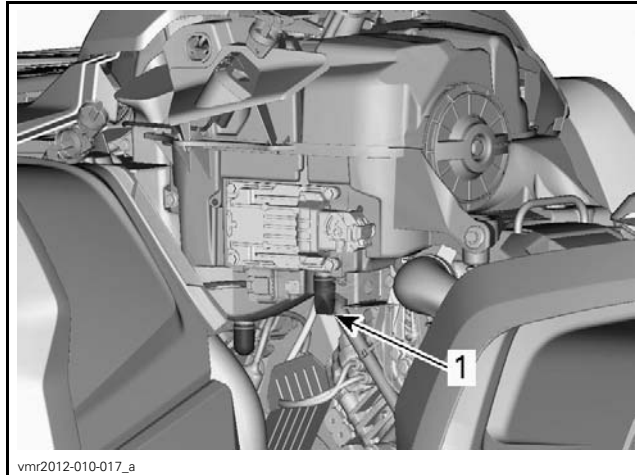
1. Air filter cover

4. Remove air filter.



Draining and Inspecting the Engine Air Filter Housing

1. Remove LH side panel and extension. Refer to *BODY* subsection.
2. Drain air filter housing drain tube.



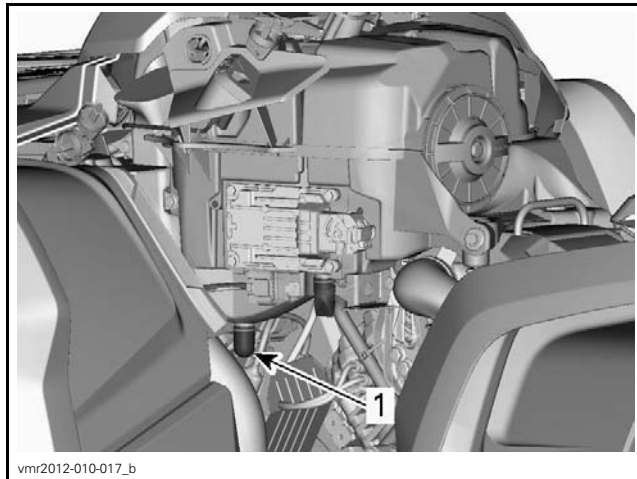
SOME PARTS REMOVED FOR CLARITY

1. Air filter housing drain tube

3. Check air filter dirty chamber for cleanliness.
 - If any debris or water are found, clean air filter chamber using a vacuum cleaner.

NOTICE Do not blow compressed air into air filter chamber.

4. Check air filter housing drain tube (clean chamber).
 - If any debris or water are found, refer to *SPECIAL PROCEDURES* subsection.
 - Investigate for contamination source.



SOME PARTS REMOVED FOR CLARITY

1. Air filter drain tube

Cleaning the Paper Filter

1. Ensure that the foam filter is removed from paper filter.
 2. Tap out heavy dust from the paper filter.
- This will allow dirt and dust to get out of the paper filter.

NOTE: Paper filter have a limited life span; replace filter if too dirty or clogged.

NOTICE It is not recommended to blow compressed air on the paper filter; this could damage the paper fibers and reduce its filtration ability when used in dusty environments.

NOTICE Do not wash the paper filter with any cleaning solution.

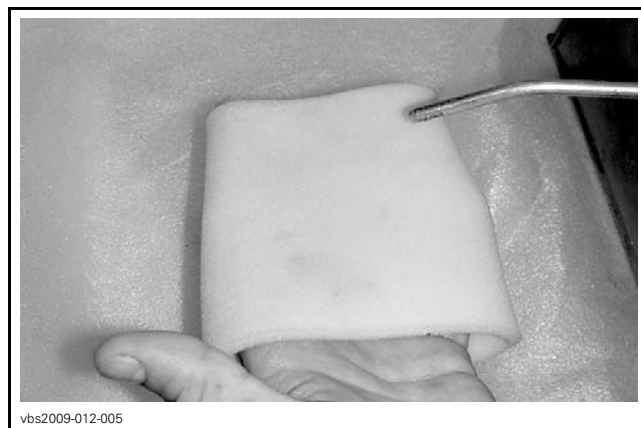
Cleaning the Foam Filter

1. Spray the foam filter inside and out with air filter cleaner and follow manufacturer's instructions.

RECOMMENDED PRODUCT	
AIR FILTER CLEANER (P/N 219 700 341)	



2. Dry the foam filter completely.



NOTE: A second application may be necessary for heavily soiled elements.

Oiling the Foam Filter

1. Spray recommended air filter oil on the foam filter previously cleaned and dried. Follow manufacturer's information.

RECOMMENDED PRODUCT	
AIR FILTER OIL (P/N 219 700 340)	



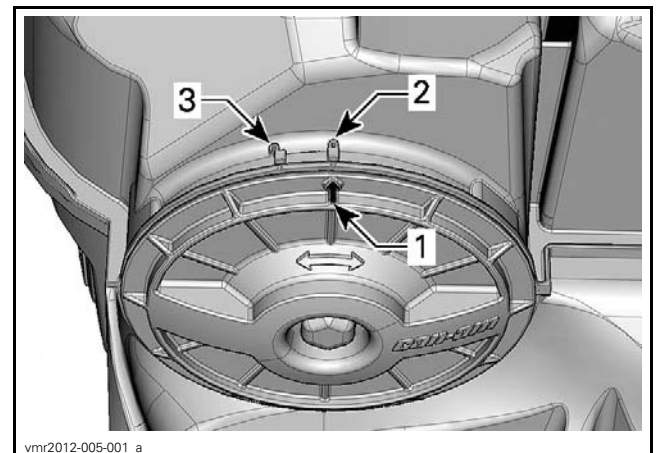
2. Reinstall oiled foam filter on paper air filter.

Installing the Engine Air Filter

Slightly grease O-ring seal and plastic body of air filter. Refer to *AIR INTAKE SYSTEM* exploded view.

Install filter assembly in air filter housing.

Ensure air filter cover is properly locked onto the air filter housing. See indications on filter cover and housing.



1. Cover position arrow
2. Locked
3. Unlocked

Reinstall the console.

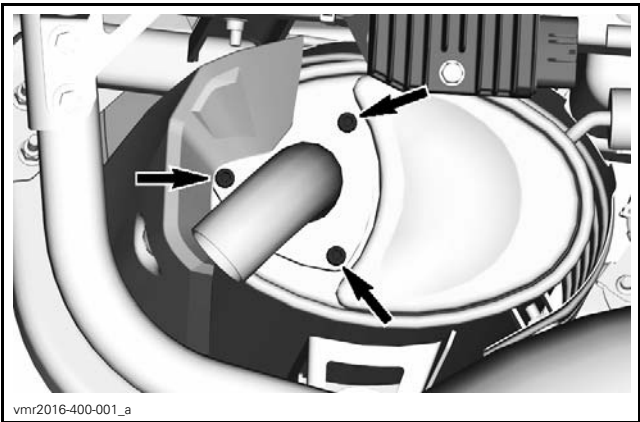
EXHAUST SYSTEM

Cleaning and Inspecting the Muffler Spark Arrester

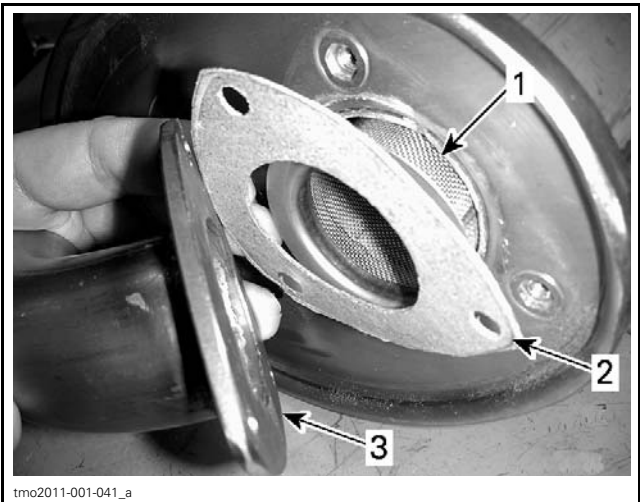
WARNING

Never run engine in an enclosed area. Never perform this operation immediately after the engine has been run because exhaust system is very hot. Make sure that there are no combustible materials in the area. Wear eye protection and gloves. Never stand behind the vehicle while purging exhaust system. Respect all applicable laws and regulations.

1. Remove and discard the tail pipe retaining screws.



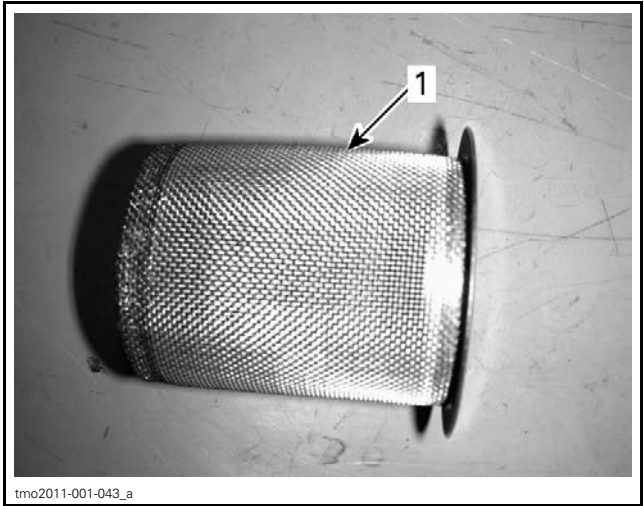
2. Remove exhaust tail pipe, gasket (discard) and spark arrester.



1. Spark arrester
2. Gasket
3. Exhaust tail pipe

3. Remove carbon deposits from the spark arrester using a brush.

NOTICE Use a soft brush and be careful to avoid damaging spark arrester mesh.



1. Clean spark arrester

4. Inspect mesh of spark arrester for any damage. Replace as required.
5. Inspect spark arrester chamber in muffler. Clean as required.

For installation, reverse the removal procedure. However pay attention to the following.

Install new gasket and new retaining screws.

TIGHTENING TORQUE	
Tail pipe retaining screws	11 N•m ± 1 N•m (97 lbf•in ± 9 lbf•in)

LUBRICATION SYSTEM

Recommended Engine Oil

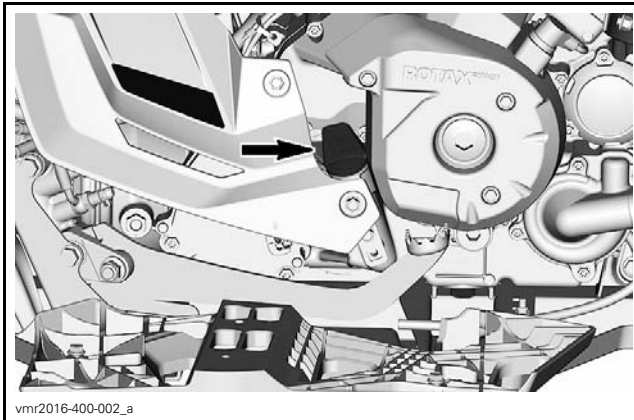
RECOMMENDED ENGINE OIL	
SEASON	TYPE
Summer	XPS 4-STROKE SYNTH. BLEND OIL (P/N 293 600 121)
All seasons	XPS 4-STROKE SYNTHETIC OIL (P/N 293 600 112)

If recommended XPS oil is not available, use a 4-stroke SAE 5W 40 engine oil that meets or exceeds the requirements for API service classification SG, SH or SJ. Always check the API service label certification on the oil container, it must contain at least one of the above standards.

Verifying the Engine Oil Level

NOTICE Operating the engine with an improper engine oil level may severely damage engine.

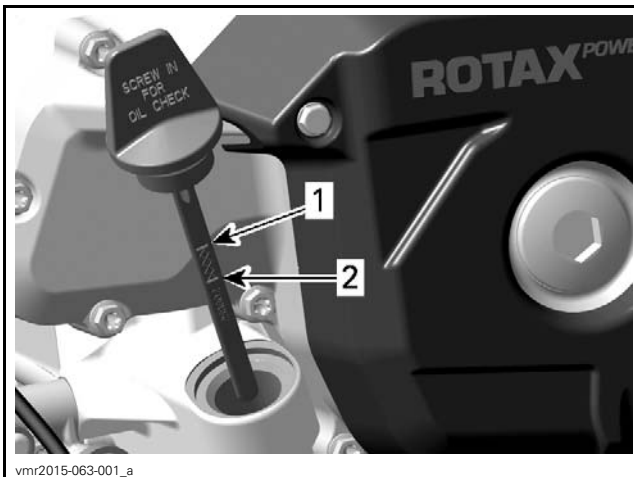
NOTE: While checking the oil level, visually inspect engine area for leaks.



NOTE: Do not lose the O-ring placed on the dipstick.

With vehicle on a level surface and engine cold, not running, check the oil level as follows:

1. Unscrew dipstick then remove it and wipe clean.
2. Reinstall dipstick, screw in it completely.
3. Remove and check oil level. It should be near or equal to the upper mark.



1. Full
2. Add

To add oil, remove the dipstick. Place a funnel into the dipstick orifice.

Add a small amount of recommended oil and recheck oil level.

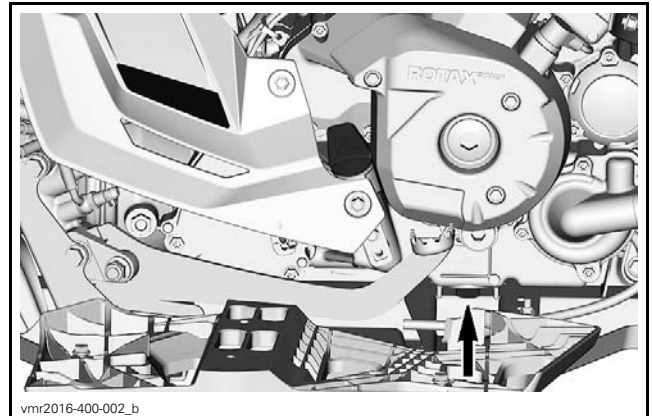
Repeat the above procedures until oil level reaches the dipstick's upper mark. **Do not over-fill. Wipe off any spillage.**

Properly tighten dipstick.

Changing the Engine Oil

1. Start and warm-up engine.
2. Stop engine.
3. Ensure vehicle is on a level surface.
4. Remove dipstick.
5. Place a drain pan under the engine drain plug area.
6. Clean the drain plug area.
7. Unscrew magnetic drain plug and discard the gasket ring.

CAUTION The engine oil can be very hot.



NOTE: Allow oil to drain completely from the crankcase.

8. Clean the magnetic drain plug from metal shavings and residue. Presence of debris gives an indication of internal engine damage.
9. Install a **NEW** gasket ring on the magnetic drain plug.

NOTICE Never use the gasket ring a second time. Always replace by a new one.

10. Install and tighten magnetic drain plug to the recommended torque.

570 Engine

TIGHTENING TORQUE	
Magnetic drain plug	20 N•m ± 2 N•m (15 lbf•ft ± 1 lbf•ft)

850 and 1000R Engines

TIGHTENING TORQUE	
Magnetic drain plug	30 N•m ± 2 N•m (22 lbf•ft ± 1 lbf•ft)

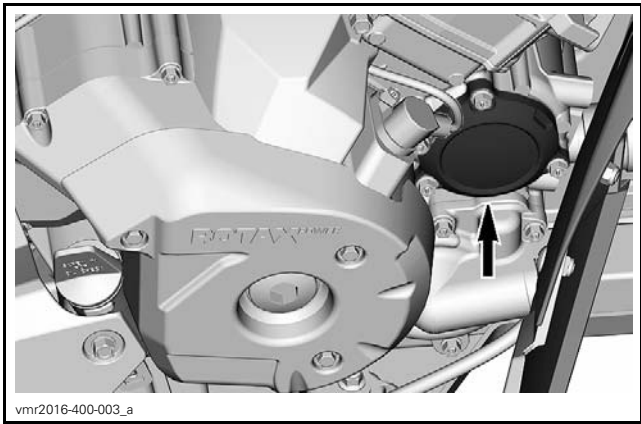
- 11. Replace oil filter. Refer to *REPLACING THE ENGINE OIL FILTER* in this subsection.
- 12. Refill engine with recommended engine oil.

ENGINE OIL CAPACITY
2 L (2.1 qt (U.S. liq.))

- 13. After filling, check the oil level, refer to *VERIFYING THE ENGINE OIL LEVEL* in this subsection.
- 14. Start engine and let it idle for a few minutes.
- 15. Ensure oil filter and drain plug areas are not leaking.
- 16. Stop engine.
- 17. Wait a while to allow oil to flow down to crankcase, then check oil level again.
- 18. Dispose oil and filter as per your local environmental regulations.

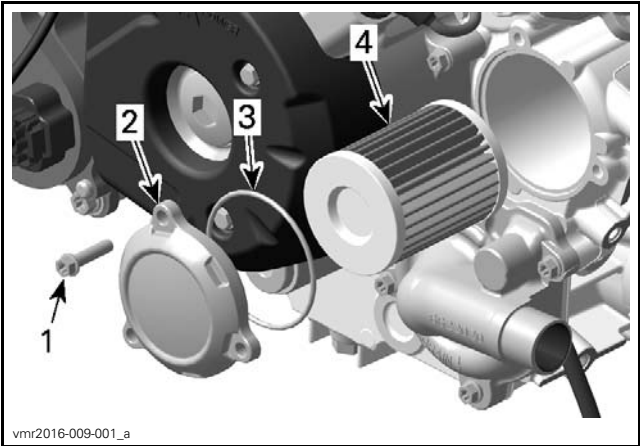
Replacing the Engine Oil Filter

Engine Oil Filter Location



Removing the Engine Oil Filter

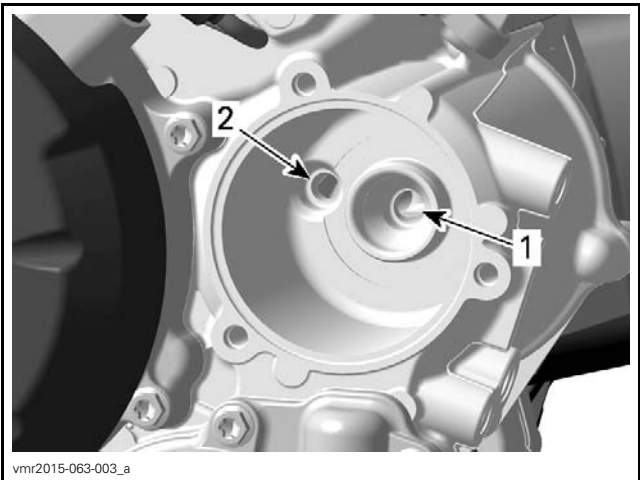
- 1. Clean oil filter area.
- 2. Remove oil filter cover screws.
- 3. Remove oil filter cover.
- 4. Remove oil filter.



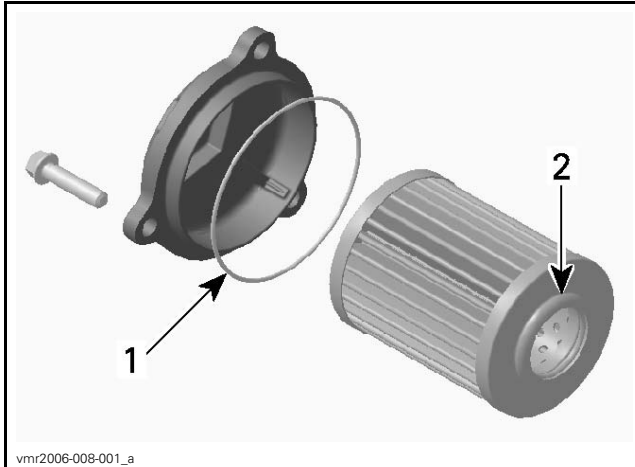
- 1. Oil filter screw
- 2. Oil filter cover
- 3. O-ring
- 4. Oil filter

Installing the Engine Oil Filter

- 1. Check and clean the oil filter inlet and outlet area of dirt and other contaminations.



- 1. Outlet bore to the engine oil providing system
 - 2. Inlet bore from the oil pump to the oil filter
- 2. Install a **NEW** O-ring on oil filter cover.
 - 3. Install the filter into the cover.
 - 4. Apply engine oil on O-ring and on end of filter.



1. Slightly oil
2. Slightly oil

5. Install the cover on the engine.
6. Tighten oil filter cover screws to recommended torque.

TIGHTENING TORQUE	
Oil filter cover screws	10 N•m ± 1 N•m (89 lbf•in ± 9 lbf•in)

7. Reinstall remaining parts if applicable.

COOLING SYSTEM

⚠ WARNING

To avoid potential burns, check coolant level with engine cold. Never remove the pressure cap when engine is hot.

Recommended Engine Coolant

BRP RECOMMENDED PRODUCT	COOLANT
Inside North America	LONG LIFE ANTIFREEZE (P/N 219 702 685)
Outside North America:	LONG LIFE ANTIFREEZE(F) (P/N 619 590 204)
Alternative, or if not available	Distilled water and antifreeze solution (50% distilled water, 50% antifreeze)

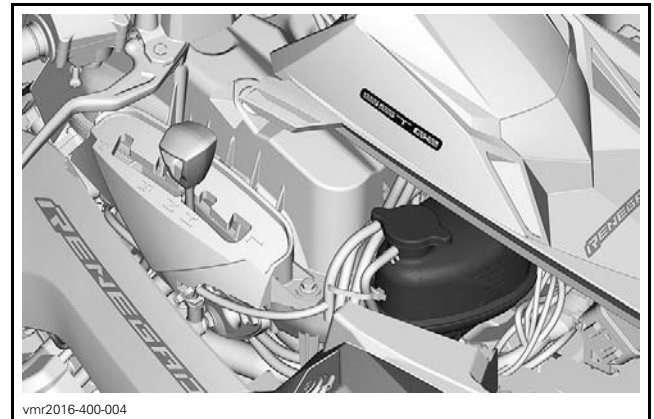
NOTICE Always use ethylene-glycol antifreeze containing corrosion inhibitors specifically for internal combustion aluminum engines.

Verifying the Engine Coolant Level

1. Place vehicle on a level surface.

2. Remove gauge support. Refer to *BODY* subsection.

With the vehicle on a level surface, coolant level should be between the MIN. and MAX. marks of the reservoir.



NOTE: When checking level at temperature lower than 20°C (68°F), it may be slightly lower than MIN. mark.

3. Add coolant up to MAX. mark if required.
4. Use a funnel to avoid spillage. **Do not overfill.**
5. Properly reinstall and tighten reservoir cap.
6. Reinstall gauge support.

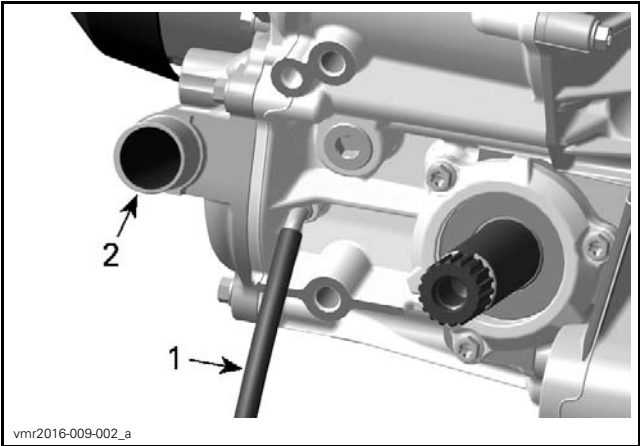
Checking the Engine Coolant Specific Gravity

1. Remove the console. Refer to *BODY* subsection.
2. Remove pressure cap.
3. Using an antifreeze tester, test coolant strength.

MINIMUM RECOMMENDED COOLANT STRENGTH
-30°C (-22°F)

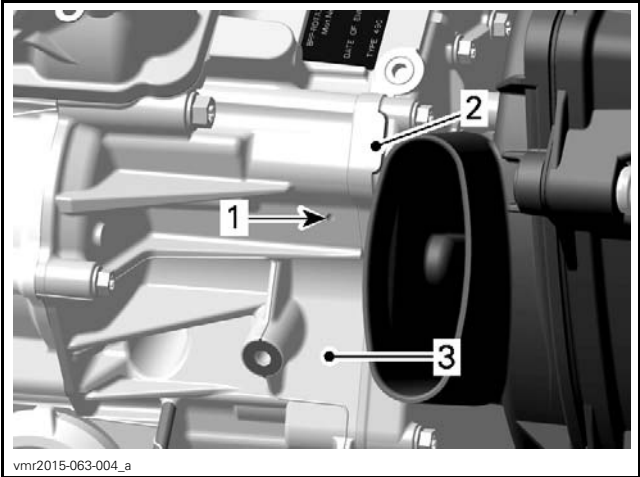
Inspecting the Engine Cooling System

1. Check general condition of hoses and clamps for tightness.
 2. Check the leak indicator hose for oil or coolant.
- Leaking coolant indicates a defective rotary seal. Leaking oil indicates a defective oil seal. If either seal is leaking, both seals must be replaced at the same time. Refer to *WATER PUMP SHAFT AND SEALS* in the *COOLING SYSTEM* subsection.



1. Leak indicator hose
2. Water pump

Another leak indicator hole is visible on the PTO side. It provides an indication of the PTO gasket condition. If a liquid leaks from this hole, PTO gasket replacement is necessary.



1. Leak indicator hole
2. PTO cover
3. Crankcase PTO, front side

3. Ensure vent hose on coolant expansion tank is not obstructed.

Testing the Engine Cooling System Pressure Cap

1. Remove the console. Refer to *BODY* subsection.
2. Remove pressure cap.
3. Test the pressure cap using a cooling system tester.
4. Replace the cap if it does not hold the pressure, or if it opens at a relief pressure that is too low or too high.

PRESSURE CAP RELIEF PRESSURE
Approximately 110 kPa (16 PSI)

Engine Cooling System Leak Test

1. Remove the console. Refer to *BODY* subsection.
2. Remove pressure cap.
3. Pressurize cooling system as follows.

REQUIRED TOOLS	
TEST CAP (P/N 529 035 991)	
VACUUM/PRESSURE PUMP (P/N 529 021 800)	
COOLING SYSTEM LEAK TEST	
110 kPa (16 PSI)	

If there is no pressure drop after 10 minutes, there is no leak in the cooling system.

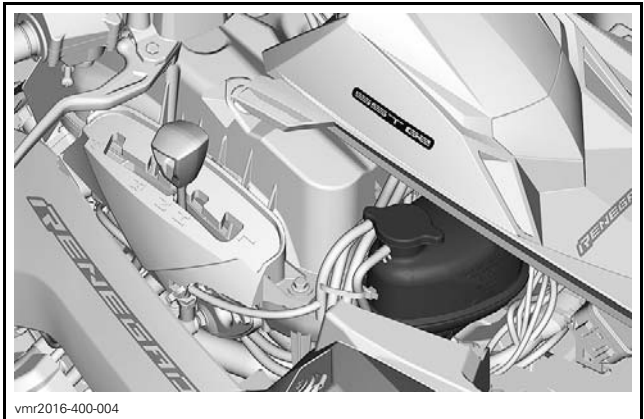
If the pressure drops, check all hoses, radiator, cylinders and engine base for coolant leaks or air bubbles.

Replacing the Engine Coolant

Draining the Engine Cooling System

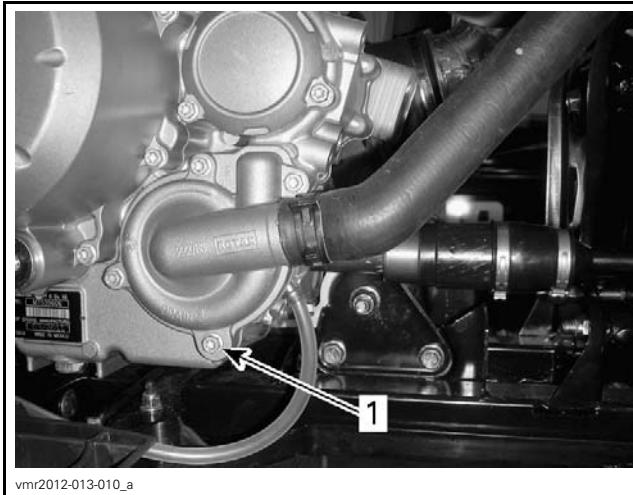
CAUTION Engine coolant can be very hot. Coolant draining should be carried out on a cold engine.

1. Remove gauge support. Refer to *BODY* subsection.
2. Remove cooling system pressure cap.



3. Unscrew coolant drain plug.

NOTE: Coolant drain plug is accessible from underneath RH footrest panel.



TYPICAL - SOME PARTS REMOVED FOR CLARITY

1. Coolant drain plug

4. Drain cooling system into a suitable container.
5. Disconnect the lower radiator hose and drain the remaining coolant.

NOTE: Take note of the hose clamp position before it is loosened for hose removal.

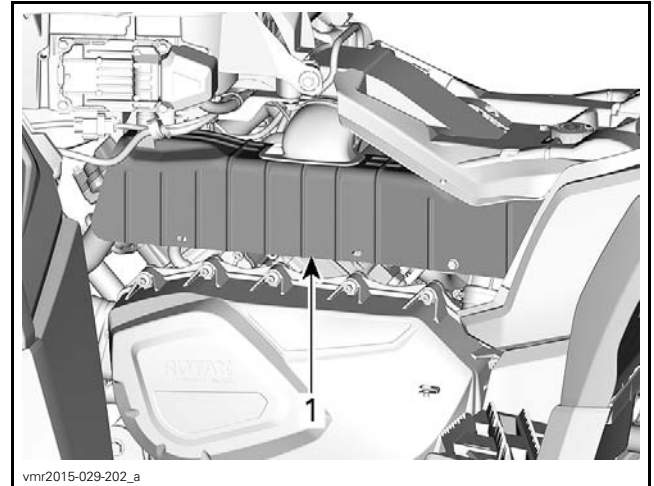
6. Reinstall coolant drain plug with a **NEW** sealing washer.
7. Tighten coolant drain plug to specification.

TIGHTENING TORQUE	
Coolant drain plug	10 N•m ± 1 N•m (89 lbf•in ± 9 lbf•in)

8. Fill cooling system with recommended coolant, refer to *COOLING SYSTEM FILLING AND BLEEDING* procedure.

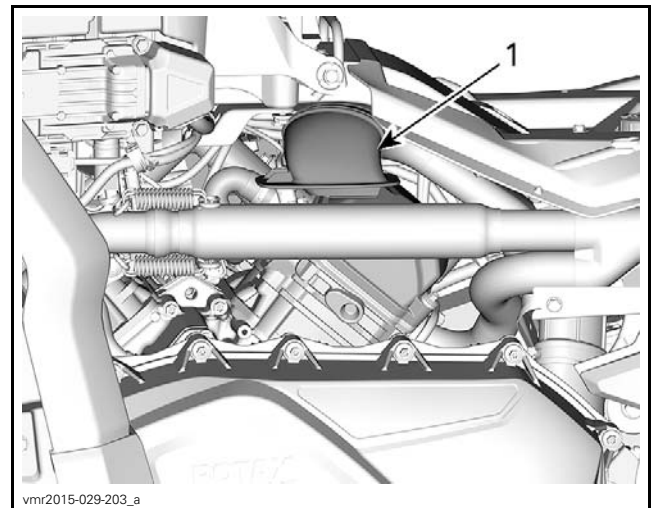
Filling and Bleeding the Engine Cooling System

1. Remove cooling system pressure cap.
2. Remove RH and LH side panels. Refer to *BODY* subsection.
3. Remove outer exhaust heat shield. Refer to *EXHAUST SYSTEM* subsection.



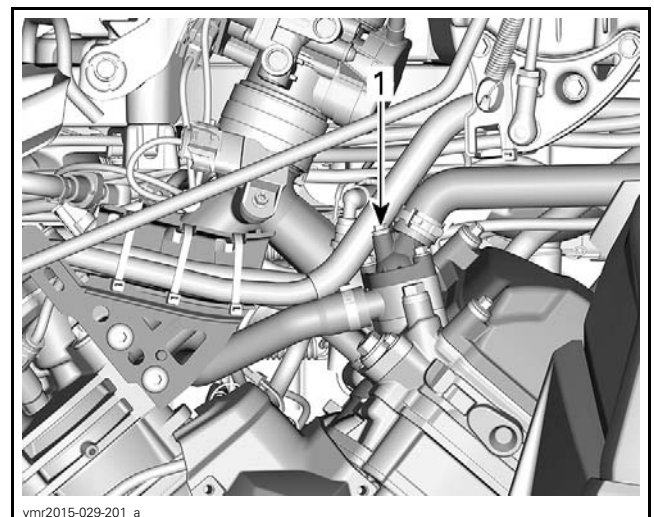
1. Outer exhaust heat shield

4. Remove CVT duct outlet.



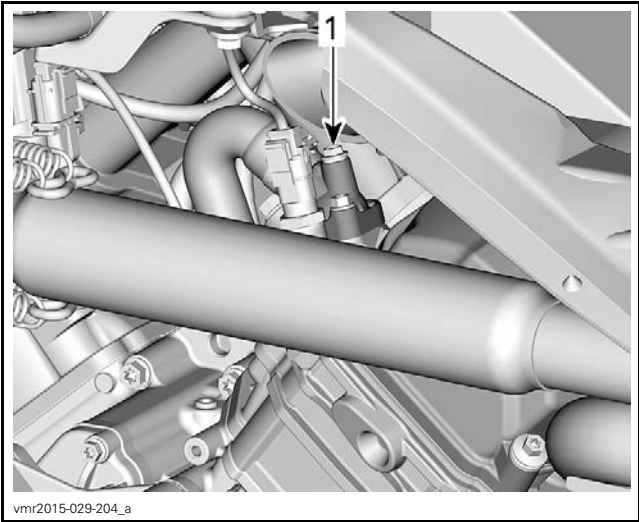
1. CVT duct outlet

5. Unscrew bleed screws on thermostat housing covers of both front and rear cylinders.



RH SIDE

1. Front cylinder bleed screw



LH SIDE
1. Rear cylinder bleed screw

- 6. Fill cooling system until coolant comes out of bleed screws.
- 7. Squeeze the top of the coolant hose between the radiator and coolant pump several times to bleed all air from the highest point of the hose.
- 8. Install bleed screws using **NEW** gasket rings.
- 9. Tighten bleed screws to specification.

TIGHTENING TORQUE	
Bleed screws	3.5 N•m ± 0.4 N•m (31 lbf•in ± 4 lbf•in)

- 10. Refill coolant tank up to MAX level mark.
- 11. Install cooling system pressure cap.
- 12. Run engine at idle with the pressure cap **ON** until the cooling fan cycles on for a second time.
- 13. Stop the engine and let it cool down.
- 14. Check coolant level in the coolant tank. Refer to *VERIFYING THE ENGINE COOLANT LEVEL* in this subsection.
- 15. Add coolant if required.

CYLINDER HEAD

Inspecting and Adjusting Engine Valve Clearance

NOTE: Check and adjust valve clearance only when engine is cold.

- 1. Remove valve covers, refer to *TOP END* subsection.

- 2. Before checking or adjusting the valve clearance, turn crankshaft clockwise to TDC ignition of the respective cylinder, refer to *CAMSHAFT TIMING GEAR* in the *TIMING CHAIN* subsection.

NOTICE Crankshaft must be turned clockwise only to avoid loosening the magneto retaining bolt.

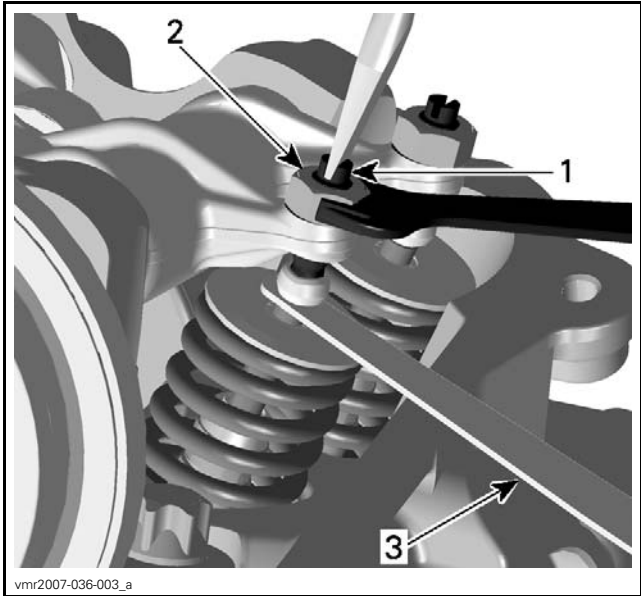
- 3. Using a feeler gauge, check the valve clearance.

VALVE CLEARANCE	
EXHAUST	0.11 mm to 0.19 mm (.0043 in to .0075 in)
INTAKE	0.06 mm to 0.14 mm (.0024 in to .0055 in)

If the valve clearance is out of specification, adjust valves as follows.

NOTE: Use the center value of exhaust/intake specification to ensure a proper valve adjustment.

- 4. Hold the adjustment screw at the proper position and torque the locking nut.



1. Adjustment screw
2. Locking nut
3. Feeler gauge

- 5. Repeat the procedure for each valve.
- 6. Before installing valve covers, recheck valve clearance.

GEARBOX

Recommended Gearbox Oil

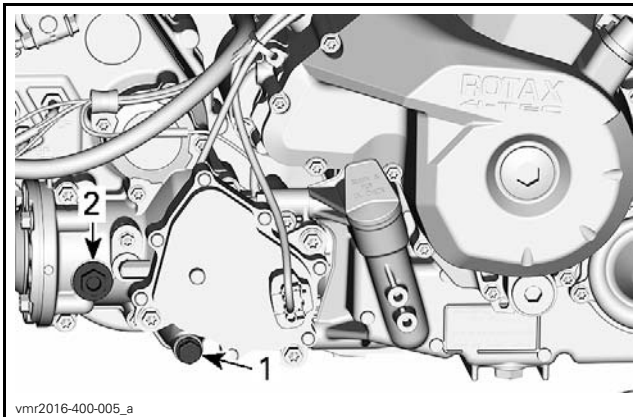
RECOMMENDED PRODUCT	QUANTITY
XPS SYNTHETIC GEAR OIL (75W 140) (P/N 293 600 140)	Approximately 450 ml (15.2 U.S. oz)

If the recommended oil is not available, use a 75W140 gearbox oil that meets the API GL-5 specification.

Verifying the Gearbox Oil Level

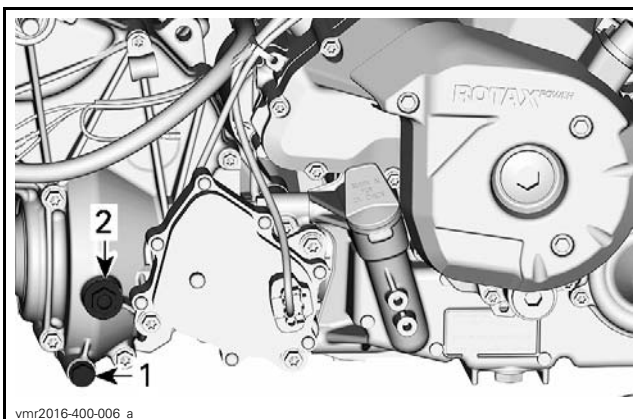
NOTE: Prior checking the gearbox oil level, ensure vehicle is on a level surface.

- To access gearbox oil level plug, refer to *BODY* subsection and remove the following parts:
 - RH side engine cover
 - RH footrest panel
- Remove the gearbox oil level plug.



GEARBOX WITH EXTERNAL SWITCHES

- Magnetic drain plug
- Oil level plug



GEARBOX WITH GBPS

- Magnetic drain plug
- Oil level plug

- Check oil level.

The oil should be level with the bottom of the oil level hole.

NOTICE Operating the gearbox with an improper oil level may severely damage gearbox.

- Install the oil level plug with its O-ring. Tighten plug as per table.

TIGHTENING TORQUE	
Oil level plug	5 N•m ± 0.6 N•m (44 lbf•in ± 5 lbf•in)

Replacing the Gearbox Oil

Draining the Gearbox Oil

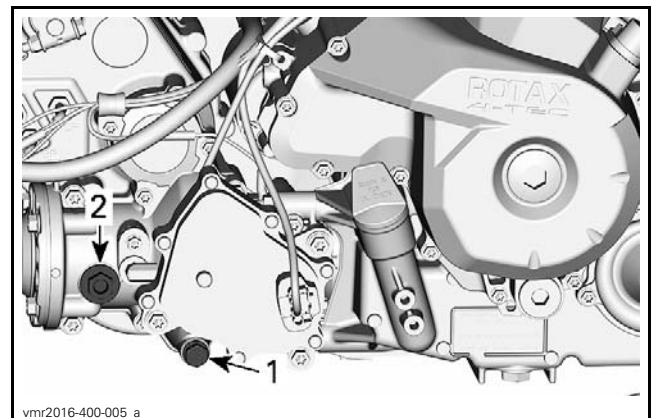
- Start engine and operate vehicle to warm-up the gearbox oil.
- NOTE:** Running engine at idle is not sufficient, vehicle transmission must be operated.
- Position vehicle on a level surface.
- Place a drain pan under the gearbox drain plug area.
- Clean oil level and drain plug area.
- Remove magnetic drain plug and sealing washer. Discard sealing washer.

WARNING

The gearbox oil can be very hot.

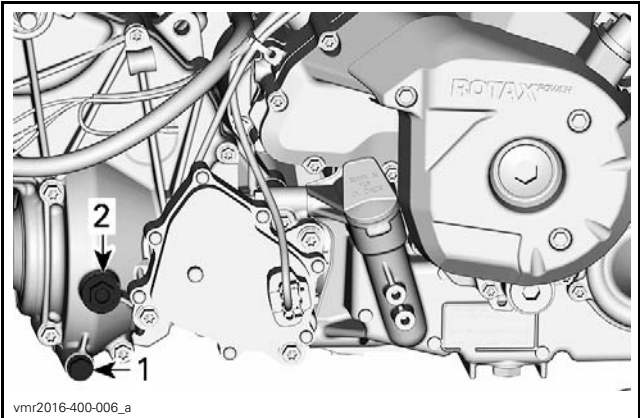
- Remove oil level plug and its O-ring.

NOTE: Allow oil to completely flow out of gearbox.



GEARBOX WITH EXTERNAL SWITCHES

- Magnetic drain plug
- Oil level plug



GEARBOX WITH GBPS
1. Magnetic drain plug
2. Oil level plug

7. Clean magnetic drain plug and pay attention to any debris present on drain plug.
- NOTE:** Presence of excessive debris provides an indication of a gearbox problem.
8. Reinstall magnetic drain plug with a **NEW** sealing washer.

TIGHTENING TORQUE	
Magnetic drain plug	20 N•m ± 2 N•m (15 lbf•ft ± 1 lbf•ft)

9. Dispose gearbox oil as per your local environmental regulations.

Filling the Gearbox Oil

1. Fill the gearbox through the oil level hole until the oil reaches the bottom of the oil level hole.
2. Install the oil level plug with its O-ring. Tighten plug to specification.

TIGHTENING TORQUE	
Oil level plug	5 N•m ± 0.6 N•m (44 lbf•in ± 5 lbf•in)

Inspecting the Gearbox Input and Output Shafts Oil Seals

Remove driven pulley. Refer to *CONTINUOUSLY VARIABLE TRANSMISSION (CVT)* subsection.

Visually inspect gearbox oil seals for leaks. Replace if required.

Cleaning the Vehicle Speed Sensor (VSS)

Remove the VSS. Refer to appropriate *GEARBOX AND 4X4 COUPLING UNIT* subsection.

Remove all metal particles and oil from the VSS magnet.

NOTE: A dirty VSS will cause erratic speedometer readings.

CONTINUOUSLY VARIABLE TRANSMISSION (CVT)

Cleaning the CVT Air Inlet / Outlet

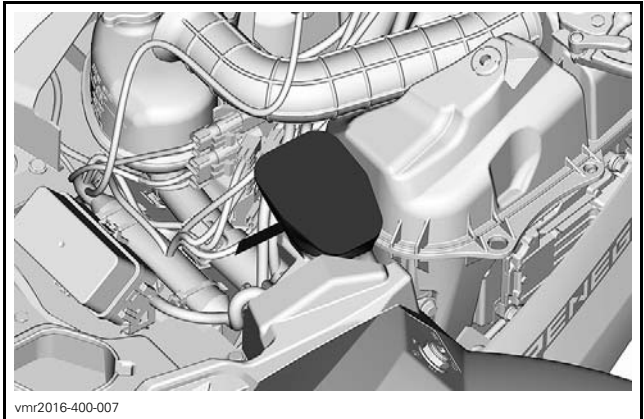
1. Remove CVT cover, refer to *CONTINUOUSLY VARIABLE TRANSMISSION (CVT)* subsection.
2. Inspect and clean the air inlet and outlet openings from inside the CVT cover.
3. Inspect and clean the air outlet duct connected to the exhaust system heat shield under the seat.

- NOTE:** If a lot of debris or grime are found in the CVT system, it may be necessary to remove the ducts and thoroughly clean them.
4. Reinstall CVT cover.

Cleaning the CVT Air Filter

Removing the CVT Air Filter

1. Remove gauge support, refer to *LIGHTS, GAUGE AND ACCESSORIES* subsection.
2. Remove air filter from CVT air inlet by stretching its sides.



Cleaning the CVT Air Filter

1. Remove CVT air filter.
2. Inspect filter and replace if damaged.
3. Gently clean filter using a solution of soft soap and tap water, then rinse thoroughly.
4. Dry filter completely.
5. Clean inside the CVT air inlet duct.

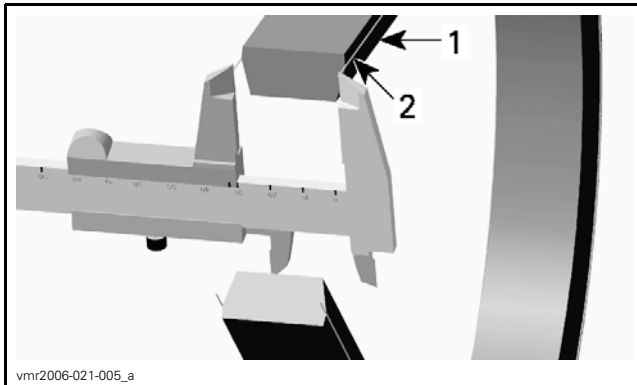
Installation the CVT Air Filter

The installation is the reverse of the removal procedure.

Inspecting the Drive Belt

1. Inspect belt for cracks, fraying or abnormal wear. Replace if necessary.
2. Check drive belt width at cord level. Replace if it is out of specification.

DRIVE BELT WIDTH	
SERVICE LIMIT	30 mm (1.181 in)



1. Drive belt
2. Cord in drive belt

Drive Pulley, Driven Pulley and One-Way Bearing Maintenance

Drive and Driven Pulley

Clean and inspect drive and drive pulley sheaves. Refer to *CONTINUOUSLY VARIABLE TRANSMISSION (CVT)* subsection.

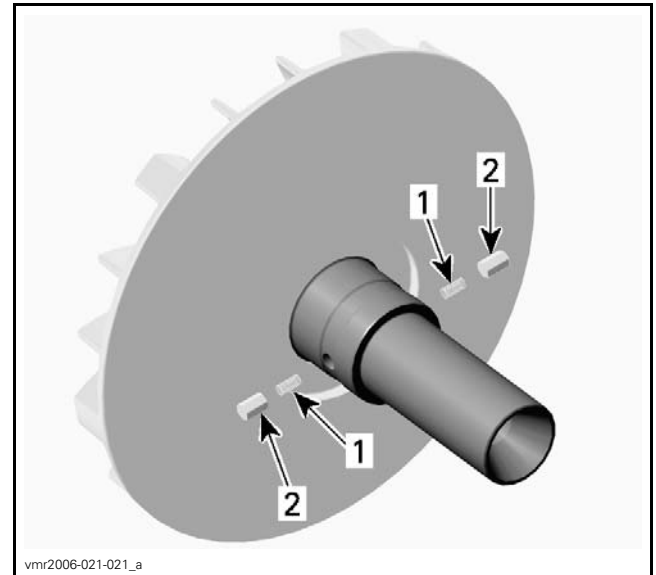
One-way Clutch

Clean parts.

Lubricate:

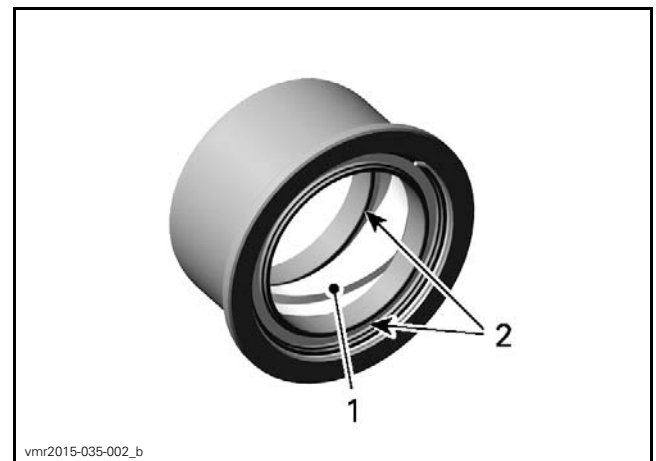
- Springs
- Spring sleeves
- Room between one-way clutch bearings.

REQUIRED PRODUCT
ISOFLEX GREASE TOPAS NB 52 (P/N 293 550 021)



LUBRICATE

1. Springs
2. Spring sleeves



LUBRICATE

1. Room between one-way clutch bearings
2. Bearings

FUEL SYSTEM

Inspecting and Cleaning the Throttle Body

1. Remove the air filter housing. Refer to *AIR INTAKE SYSTEM* subsection.
2. Visually inspect throttle plate and throttle body venturi for cleanliness.
3. Clean inside throttle body if necessary. Refer to *ELECTRONIC FUEL INJECTION (EFI)* subsection.

Lubricating the Throttle Cable

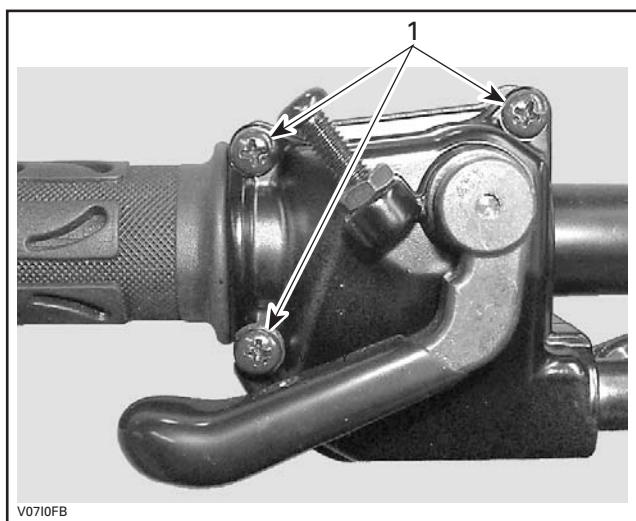
The throttle cable must be lubricated with a silicone based lubricant.

Subsection 02 (PERIODIC MAINTENANCE PROCEDURES)

WARNING

Always use a silicone-based lubricant. Using another lubricant (like a water-based lubricant) could cause the throttle lever/cable to become sticky and stiff.

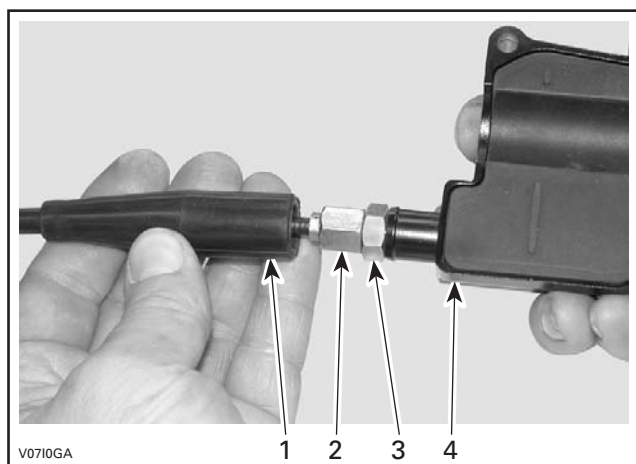
Open the throttle lever housing.



1. Remove these screws

Separate the housing.

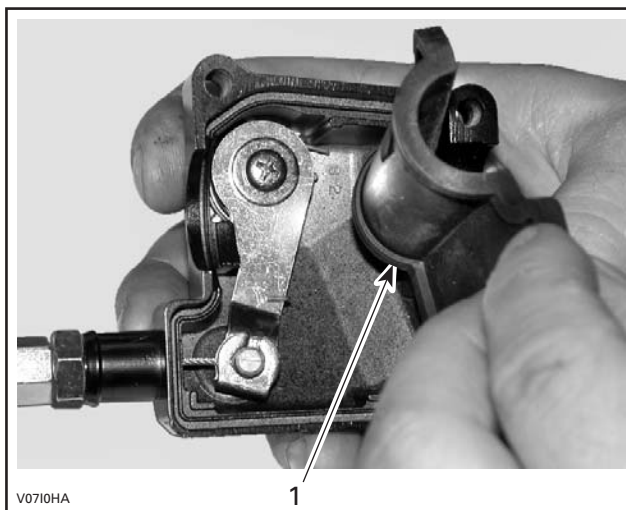
Slide rubber protector back to expose throttle cable adjuster.



1. Cable protector
2. Throttle cable adjuster
3. Lock nut
4. Throttle lever housing

Screw in the throttle cable adjuster.

Remove inner housing protector.



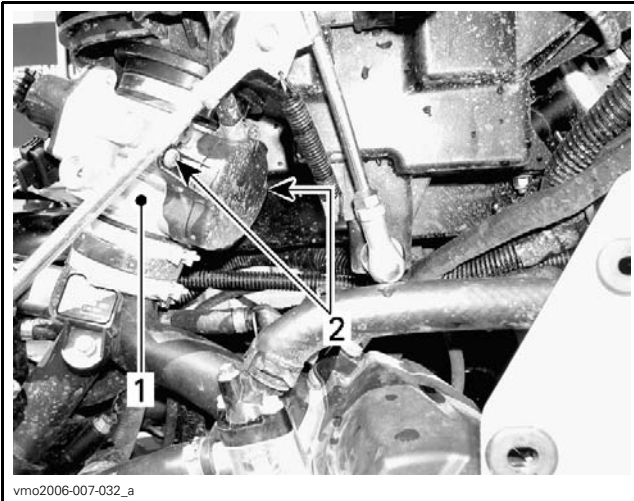
1. Inner housing protector

Remove the cable from the throttle lever housing.

NOTE: Slide cable in clip slot and remove the end of cable from clip.



Remove the throttle body side cover.



1. Throttle body
2. Side cover screws

Insert the needle of the lubricant can in the end of throttle cable adjuster.



TYPICAL

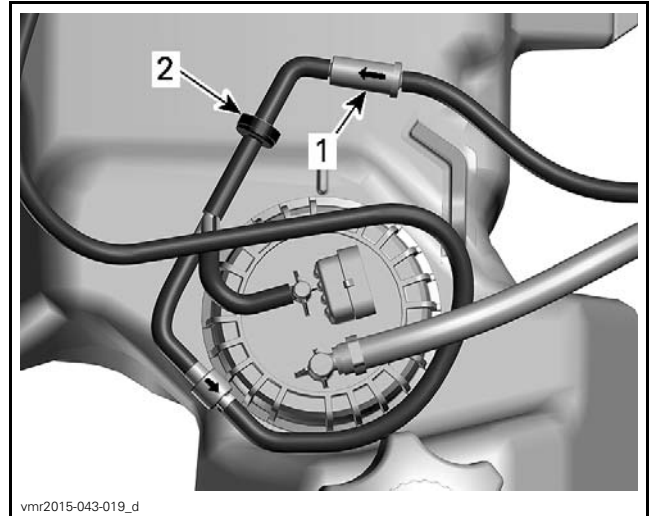
NOTE: Place a rag around the throttle cable adjuster to prevent the lubricant from splashing.

Add lubricant until it runs out at throttle body end of the throttle cable.

Reinstall and adjust the cable. Refer to *ELECTRONIC FUEL INJECTION* subsection.

Replacing the Fuel Tank Vent Breather Filter

Ensure breather filter is installed with the flow arrow pointing towards the vent inlet check valve.



1. Vent breather filter
2. Vent inlet check valve

Inspecting the Fuel System

1. Visually inspect fuel tank for cracks, wear marks, signs of leakage or any other damages.
2. Visually inspect fuel system hoses for proper routing, cracking, wear marks, signs of leakage or any other damages.
3. Carry out a *FUEL TANK LEAK TEST*, refer to *FUEL TANK AND FUEL PUMP* subsection.

⚠ WARNING

All fuel system leaks must be repaired. Damaged, worn or leaking fuel system components should be replaced to ensure fuel system tightness.

Testing the Fuel Pump Pressure

Refer to *FUEL TANK AND FUEL PUMP* subsection for procedure.

ELECTRICAL SYSTEM

Inspecting the Battery

Visually inspect battery casing for cracks or other damage. If casing is damaged, replace battery and thoroughly clean battery rack with water and sodium bicarbonate (baking soda).

Inspect battery posts condition and battery retainer plate.

For battery testing, refer to *CHARGING SYSTEM* subsection.

Replacing the Spark Plugs

Spark Plug Access

To access the front cylinder spark plug, remove the exhaust system outer heat shield. Refer to *EXHAUST SYSTEM* subsection.

To access the rear cylinder spark plug, remove the RH side panel.

Removing the Spark Plug

- 1. Remove spark plug cable from spark plug.
- 2. Clean the spark plug area using pressurized air.
- 3. Remove spark plug.

Installing the Spark Plug

Prior to installation, ensure that contact surfaces of the cylinder head and spark plug are free of grime.

- 1. Using a wire feeler gauge, set electrode gap as specified in *TECHNICAL SPECIFICATIONS*.
- 2. Apply LOCTITE 767 (ANTISEIZE LUBRICANT) (P/N 293 800 070) over the spark plug threads to prevent possible seizure.

NOTICE Do not apply antiseize lubricant on the first 2 spark plug threads.

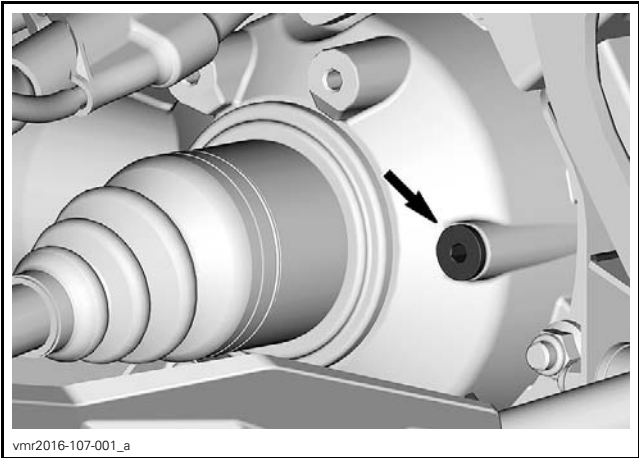
- 3. Hand screw spark plug into cylinder head, then tighten to specification using a torque wrench and an appropriate socket.

TIGHTENING TORQUE	
Spark plug	
570 engine	20 N•m ± 2 N•m (15 lbf•ft ± 1 lbf•ft)
850 and 1000R engines	11 N•m ± 1 N•m (97 lbf•in ± 9 lbf•in)

DRIVE SYSTEM

Verifying the Front Differential Oil Level

- 1. Clean filler plug area prior to checking oil level.



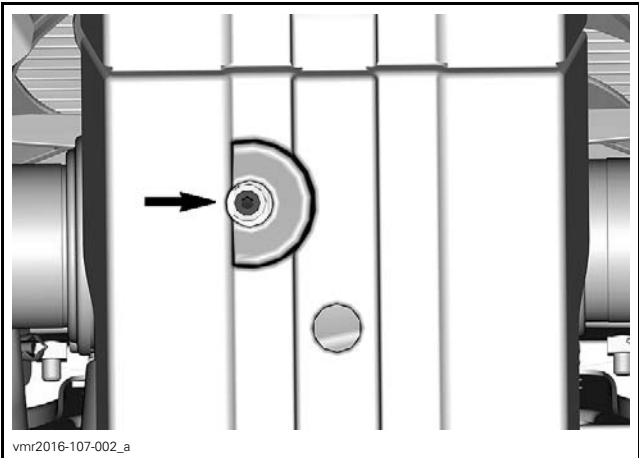
RH SIDE OF VEHICLE

- 2. With vehicle on a level surface, check oil level by removing filler plug. Oil level must reach the lower edge.
- 3. Reinstall filler plug with a **NEW** sealing washer.

TIGHTENING TORQUE	
Filler plug	22.5 N•m ± 2.5 N•m (17 lbf•ft ± 2 lbf•ft)

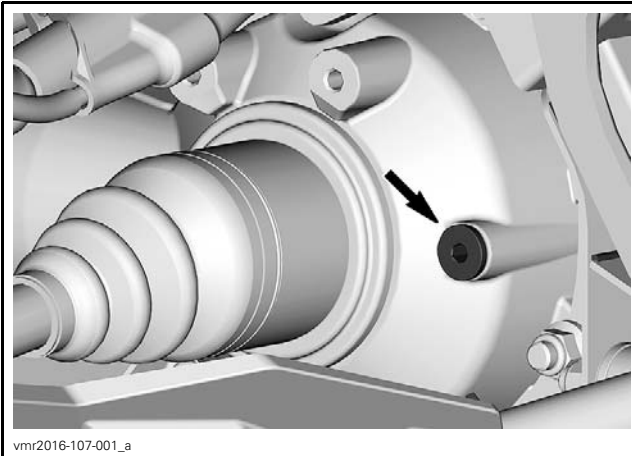
Replacing the Front Differential Oil

- 1. Place vehicle on a level surface. Set transmission in park position.
- 2. Clean filler and drain plug areas.
- 3. Place a drain pan under the front differential.
- 4. Remove drain plug.



BOTTOM VIEW OF VEHICLE

- 5. Remove filler plug.



RH SIDE OF VEHICLE

NOTE: Allow enough time for oil to flow out.
6. Install and tighten drain plug to specification.

TIGHTENING TORQUE	
Drain plug	2.5 N•m ± 0.5 N•m (22 lbf•in ± 4 lbf•in)

7. Refill front differential with recommended oil.

CAPACITY	RECOMMENDED OIL
500 ml (17 U.S. oz)	XPS SYNTHETIC GEAR OIL (75W 90) (P/N 293 600 043) or a 75W 90 (API GL-5) gear oil

8. Reinstall filler plug with a **NEW** sealing washer.
9. Tighten filler plug to specification.

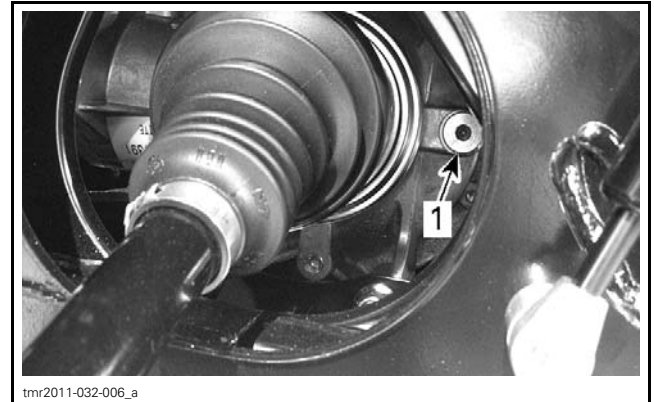
TIGHTENING TORQUE	
Filler plug	22.5 N•m ± 2.5 N•m (17 lbf•ft ± 2 lbf•ft)

Inspecting the Front Differential Oil Seals

Visually inspect oil seals for leak. Replace if required.

Verifying the Rear Final Drive Oil Level

1. Ensure vehicle is on a level surface.
2. Clean filler plug area.
3. Remove filler plug.



LH REAR SIDE OF VEHICLE

1. Filler plug

4. Verify the oil level by inserting a wire with a 90° bend through the oil filler hole.
5. Oil level must be within the following specification from the bottom of oil filler hole.

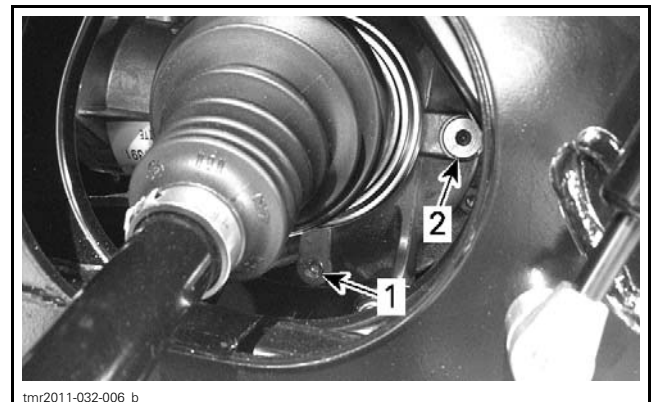
OIL LEVEL	
20 mm ± 5 mm (9/16 in ± 3/16 in)	

6. Reinstall filler plug with a **NEW** sealing washer.

TIGHTENING TORQUE	
Filler plug	22.5 N•m ± 2.5 N•m (17 lbf•ft ± 2 lbf•ft)

Replacing the Rear Final Drive Oil

1. Ensure vehicle is on a level surface.
2. Clean filler and drain plug areas.
3. Place a drain pan under rear final drive.
4. Unscrew filler plug.
5. Remove drain plug.



LH REAR SIDE OF VEHICLE

1. Drain plug
2. Filler plug

NOTE: Allow enough time for oil to flow out.
6. Install drain plug.

Subsection 02 (PERIODIC MAINTENANCE PROCEDURES)

TIGHTENING TORQUE	
Drain plug	5 N•m ± 1 N•m (44 lbf•in ± 9 lbf•in)

7. Refill the rear final drive.

RECOMMENDED OIL	QUANTITY
XPS SYNTHETIC GEAR OIL (75W 140) (P/N 293 600 140) or a 75W 140 (API GL-5) gear oil	300 ml (10 U.S. oz)

8. Reinstall filler plug with a **NEW** sealing washer.

TIGHTENING TORQUE	
Filler plug	22.5 N•m ± 2.5 N•m (17 lbf•ft ± 2 lbf•ft)

Inspecting the Rear Final Drive Oil Seals

Visually inspect final drive oil seals for leaks. Replace if required.

Inspecting the Drive Shaft Boot and Protector

1. Visually inspect each drive shaft boot for grease leak, cracks or opening.
2. Check if the drive shaft boot protectors are fixed firmly, not torn or otherwise damaged.
3. Replace if necessary.

Inspecting the Drive Shaft Joint

Turn and move drive shaft back and forth to detect excessive play.

Rear Propeller Shaft U-Joint Condition

Check yoke U-joints for wear, backlash or axial play. Replace if necessary.

Lubricating the Rear Propeller Shaft U-Joint

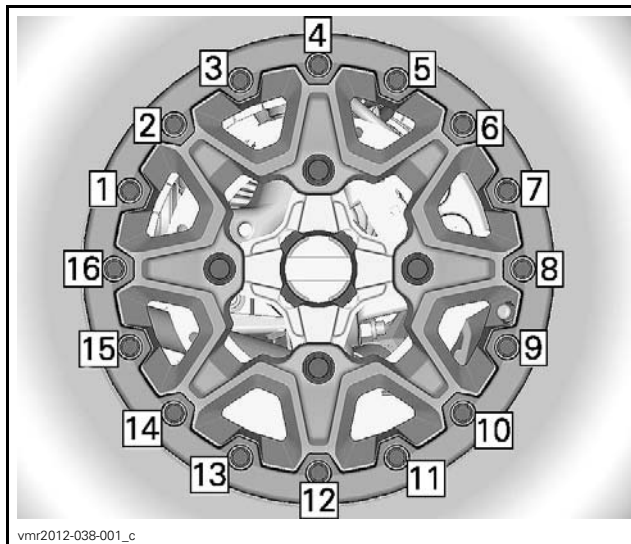
PROPELLER SHAFT U-JOINT LUBRICATION
Use PROPELLER SHAFT GREASE (P/N 293 550 063) or Hi-temp bearing grease NLGI-2 or an equivalent

WHEELS AND TIRES

Wheel Beadlocks

Tighten beadlock screws as per specification and following sequence.

TIGHTENING TORQUE	
Beadlock screws	11 N•m ± 1 N•m (97 lbf•in ± 9 lbf•in)



TIGHTENING SEQUENCE

Inspecting the Wheel Bearing

1. Safely lift and support the front of vehicle.
2. Hold wheel by the top and the bottom and try to move it by pulling and push alternately with both hands. Check for any play.
3. If there is any looseness detected, replace the wheel bearing. refer to *STEERING SYSTEM* subsection.

NOTE: To properly locate play during this inspection, be sure to check other components for wear or looseness (ball joints, suspension pivots, etc). If necessary repair or replace all defective parts before checking the wheel bearing condition. Be careful not to misinterpret a loose ball joint as a loose wheel bearing.

STEERING SYSTEM

Inspecting the Steering System

Steering Column

Turn and move steering column back and forth to detect any abnormal play.

If abnormal play is detected, inspect upper and lower steering column half bushings. Replace half bushings and O rings as necessary, refer to *STEERING SYSTEM* subsection.

If steering column feels stiff, refer to *CLEANING AND LUBRICATING THE STEERING COLUMN HALF BUSHING* in this subsection.

Tie-Rod End

Check tie-rod end ball joint for:

- Damage
- Pitting
- Abnormal play.

Replace if necessary.

Cleaning and Lubricating the Steering Column Half Bushing

Clean, inspect and lubricate upper and lower steering column half bushings and O rings. Refer to *STEERING SYSTEM* subsection.

SUSPENSION

Inspecting the Shock Absorber

Check shock absorber for any leaks, replace if necessary.

Check shock absorber for abnormal play:

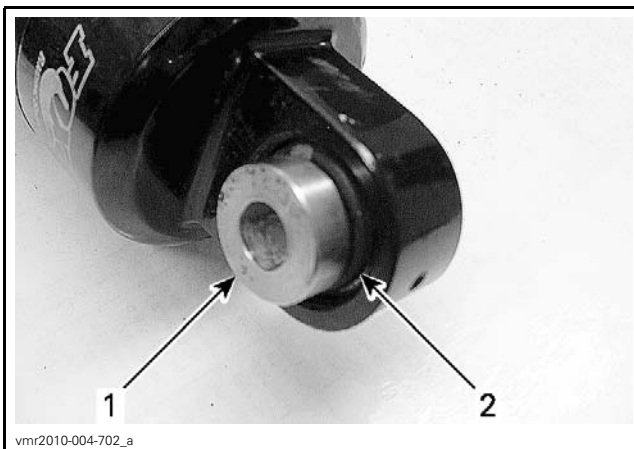
- Front to back
- Up and down.

If any play is detected, replace shock absorber bushings. Refer to *REAR SUSPENSION* subsection.

Lubricating the Shock Absorber Spherical Bearing

HPG Shock Absorber (with Remote Reservoir)

1. Remove shock absorber from vehicle.
2. Remove shock sleeves then O-rings from shock absorber.

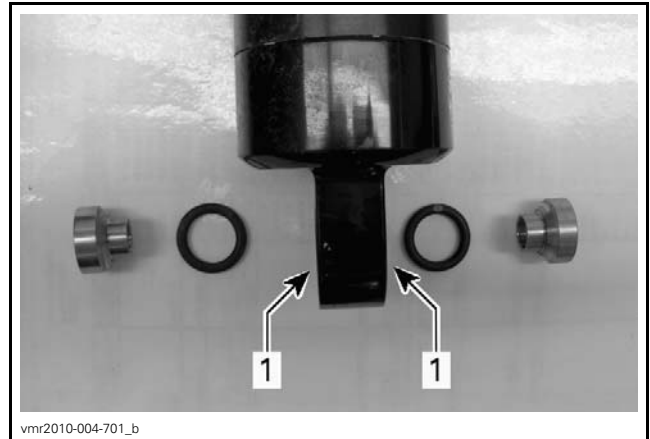


1. Sleeve
2. O-ring

3. Clean spherical bearing using a shop rag to remove any dirt and debris.
4. Lubricate spherical bearing as illustrated.

SPHERICAL BEARING LUBRICATION

SUSPENSION GREASE (P/N 293 550 033)



1. Apply grease here

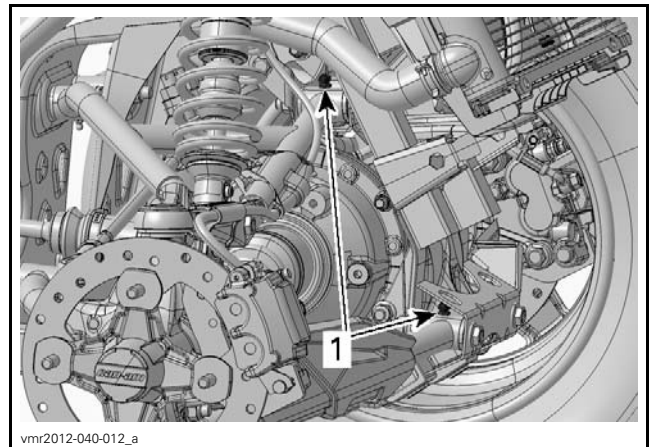
5. Install O-rings then shock sleeves.
6. Install shock absorber.

Lubricating the Front Suspension Arm

Lubricate suspension arm at grease fittings.

SUSPENSION ARM LUBRICATION

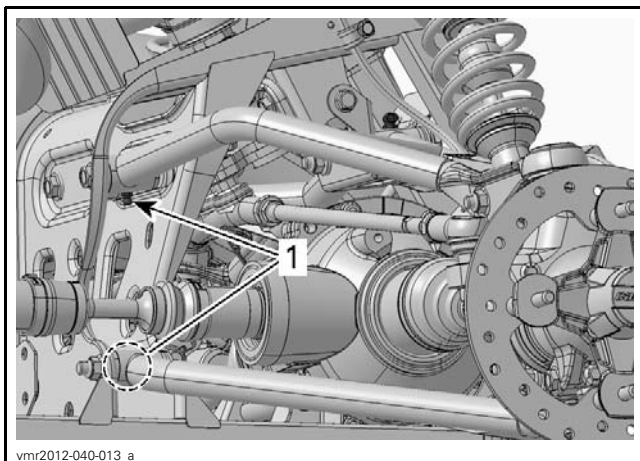
SUSPENSION GREASE (P/N 293 550 033)



TYPICAL

1. Grease fittings

Subsection 02 (PERIODIC MAINTENANCE PROCEDURES)



TYPICAL

1. Grease fittings

Inspecting the Front Suspension Arm

1. Check suspension arm for:
 - Cracks
 - Pitting
 - Bending
 - Distortion.
2. Check suspension arm for abnormal play:
 - Side to side
 - Up and down.
3. If any play is detected, inspect:
 - Wear plates
 - Bushings
 - Sleeves.
4. Check ball joint for:
 - Damage
 - Pitting
 - Play.
5. Check ball joint bellows for:
 - Damage
 - Cracks.

Inspecting the Rear Suspension Arm

1. Check suspension arm for:
 - Cracks
 - Pitting
 - Bending
 - Distortion.
2. Check suspension arm for abnormal play:
 - Side to side
 - Up and down.
3. If any play is detected, inspect:
 - Spacers

- Bearings
 - Inner spacers.
4. Check ball joint for:
 - Damage
 - Pitting
 - Play.
 5. Check ball joint bellows for:
 - Damage
 - Cracks.

Inspecting and Lubricating the Rear Stabilizer Bar Bushings

Inspecting the Rear Stabilizer Bar Bushings

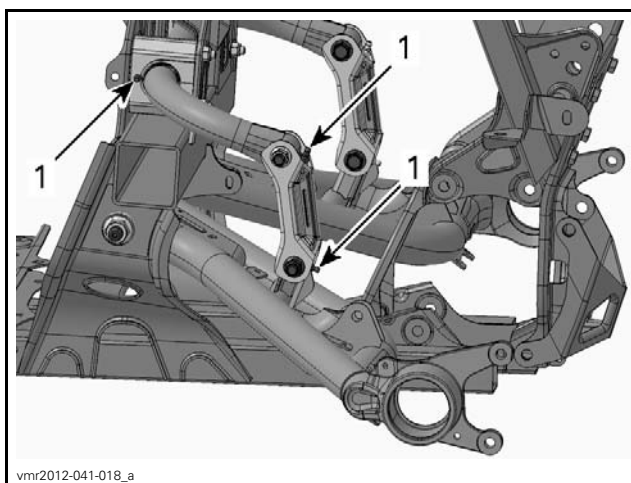
Inspect bushings for:

- Cracks
- Damage
- Abnormal wear.

Lubricating the Rear Stabilizer Bar Bushings

Lubricate bushings at grease fittings.

LUBRICATION	
Stabilizer bar bushing	SUSPENSION GREASE (P/N 293 550 033)



vmr2012-041-018_a

TYPICAL

1. Grease fittings

BRAKES

Recommended Brake Fluid

Always use brake fluid meeting the specification DOT 4 only such as the BRAKE FLUID GTLMA DOT4 (P/N 293 600 131) or an equivalent.

WARNING

To avoid damage to the braking system, do not use other brake fluid types.

Verifying the Brake Fluid Reservoir Level

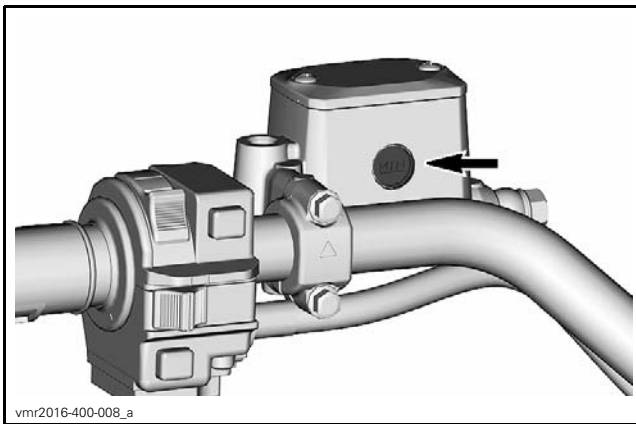
With vehicle on a level surface, check brake fluid in reservoirs for proper level.

NOTE: A low level may indicate leaks or worn brake pads.

Front Brake Reservoir

Turn steering in the straight-ahead position to ensure reservoir is level.

Check the brake fluid level, the reservoir is full when the fluid reaches the top of window.



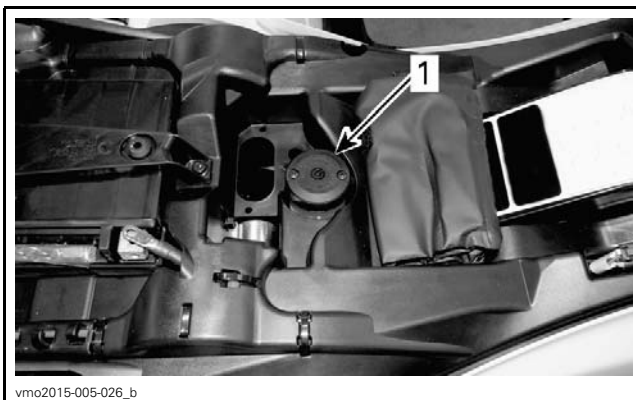
Visually inspect lever boot condition.

Check for cracks, tears, etc. Replace if damaged.

Rear Brake Reservoir

Remove the seat.

With vehicle on a level surface, liquid should be between MIN. and MAX. level marks of brake pedal fluid reservoir.



1. Rear brake fluid reservoir

Adding Brake Fluid

Clean filler cap.

⚠ WARNING

Clean filler cap before removing.

Remove screws retaining the reservoir cap.

Remove reservoir cap.

Add fluid as required using a clean funnel. **Do not overfill.**

NOTICE Brake fluid can damage plastic and painted surface. Wipe off and clean any spillage.

Reinstall reservoir cap and tighten screws.

NOTE: Ensure filler cap diaphragm is pushed inside the cap before closing the brake fluid reservoir.

Inspecting and Cleaning the Brake System

NOTICE Do not clean brake components in petroleum based solvent. Use brake system cleaner only. Soiled brake pads must be replaced with new ones.

To clean parts from the brake system, use the following recommended products or an equivalent.

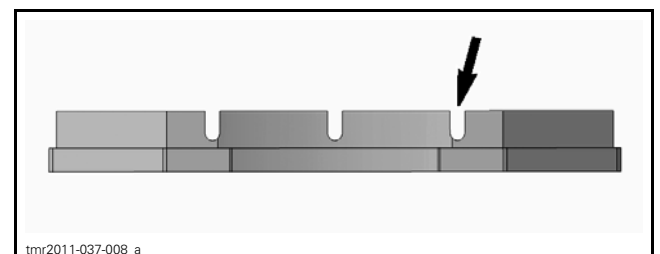
RECOMMENDED PRODUCT	
For United States of America	XPS BRAKES AND PARTS CLEANER (USA) (P/N 219 701 705)
For all other countries	XPS BRAKES AND PARTS CLEANER (P/N 219 701 776)

Brake Pads

1. Measure brake pad lining thickness.

BRAKE PAD MINIMUM THICKNESS
1 mm (1/32 in)

NOTE: The brake pad grooves are wear indicators.



BRAKE PAD GROOVE

NOTICE Brake pads must always be replaced in pairs.

Brake Caliper

1. Remove caliper then check the following components:
 - Check brake pad pin
 - Check caliper boots for cracks
 - Check caliper movement on its support
 - Check pistons movement
 - Check pistons for scratches, rust or other damages.
2. Clean the following components using the recommended product or an equivalent:
 - Brake pads
 - Caliper support and slider
 - Caliper pistons and pin.

NOTE: Do not remove pistons from caliper for cleaning them.

3. Lubricate caliper slider using an appropriate *BRAKE CALIPER SYNTHETIC GREASE*.

Brake Disc

1. Check brake disc as follows:
 - Check disc thickness
 - Check disc surfaces
 - Check disc warpage.

NOTE: Refer to *BRAKE DISC INSPECTION* in *BRAKES* subsection for details.

2. Clean brake disc using the recommended product or an equivalent.

Master Cylinder

1. Check master cylinder as follows:
 - Leaks or damages.
 - Brake fluid level.
 - Check cleanliness of master cylinder rod and boot.
 - Check master cylinder boot for cracks or damage. Replace as necessary.

Hand Lever

Check hand lever as follows:

- Lever pivot bolt cleanliness
- Lever pivot bolt movement.

Brake Pedal

1. Check brake pedal as follows:
 - Brake pedal pivot movement
 - Brake pedal pivot cleanliness.

2. If required, clean then lubricate brake pedal pivot using XPS SYNTHETIC GREASE (P/N 293 550 010).

Brake Hoses

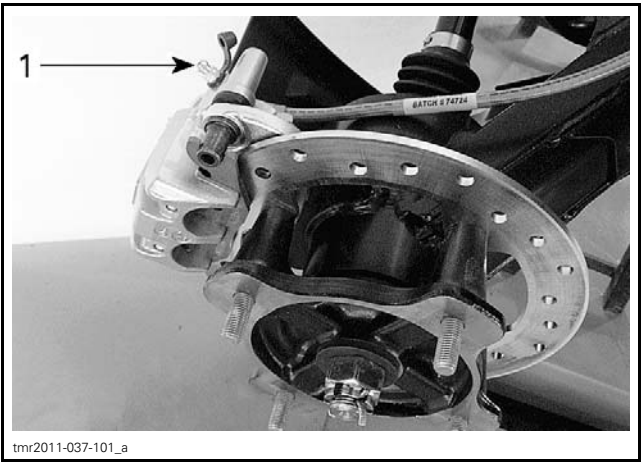
1. Check hoses for leaks, crushed, deformations, cracking or scrapes.

NOTE: Any deformation can restrict the proper flow of fluid and cause braking problems.

Replacing the Brake Fluid

Draining the Brake Fluid

1. Clean and remove reservoir cover with its diaphragm.
2. Connect a clear hose onto bleeder.



TYPICAL
1. Caliper bleeder

3. Loosen bleeder.
4. Pump brake lever(s) and/or brake pedal until no more fluid flows out.
5. Repeat draining procedure for the other bleeders.

NOTE: To locate all bleeders according to vehicle configuration, refer to *EXPLODED VIEW* and *BRAKE CIRCUIT CONFIGURATIONS*. See *BRAKES* subsection.

Brake Fluid Filling

1. Add recommended brake fluid to MAX. mark. Do not overfill.

NOTE: If applicable, ensure filler cap diaphragm is fully retracted before closing the cap.

RECOMMENDED BRAKE FLUID
BRAKE FLUID GTLMA DOT4 (P/N 293 600 131)

⚠ WARNING

Use only DOT 4 brake fluid from a sealed container.
Do not use brake fluid from an old or already opened container.

Bleeding the Brake System (Using a Vacuum Pump)

NOTE: Brake fluid reservoir must be kept full to prevent air from being pumped into the system.

1. Unscrew all bleeders until brake fluid comes out then close it.

NOTE: To locate all bleeders according to vehicle configuration, refer to *EXPLODED VIEW* and *BRAKE CIRCUIT CONFIGURATIONS*. See *BRAKES* subsection.

2. Install the Vacuum/pressure pump onto bleeder.

REQUIRED TOOL	
VACUUM/PRESSURE PUMP (P/N 529 021 800)	

3. Place pump to vacuum position.
4. Pump vacuum pump a few times.
5. Loosen bleeder.
6. Continue to pump until no more air bubbles appear in clear hose.
7. Close then tighten bleeder.

TIGHTENING TORQUE	
Bleeder	5.5 N•m ± 1.5 N•m (49 lbf•in ± 13 lbf•in)

8. Add recommended brake fluid to MAX. mark. Do not overfill.
9. Perform bleeding procedure for the other bleeders.
10. Check brakes operation:
 - If brakes feel spongy, bleed system again then carry out the *BRAKE SYSTEM PRESSURE VALIDATION* as detailed in *BRAKES* subsection.

Bleeding the Brake System (Manual Procedure)

NOTE: Brake fluid reservoir must be kept full to prevent air from being pumped into the system.

1. Connect a clear hose onto bleeder.

2. Pump up system pressure slowly using brake pedal and/or lever(s) until resistance is felt.
3. Depress and hold brake pedal and/or lever(s).
4. Open bleeder and then close it.
5. Release brake pedal and/or lever(s) slowly.

NOTE: Do not release brake pedal and/or lever(s) until bleeder has been closed.

6. Repeat procedure until fluid flows out without any air bubbles.
7. Tighten bleeder.

TIGHTENING TORQUE	
Bleeder	5.5 N•m ± 1.5 N•m (49 lbf•in ± 13 lbf•in)

8. Perform bleeding procedure for the other bleeders.

NOTE: To locate all bleeders according to vehicle configuration, refer to *EXPLODED VIEW* and *BRAKE CIRCUIT CONFIGURATIONS*. See *BRAKES* subsection.

9. Check brakes operation:
 - If brakes feel spongy, bleed system again then carry out the *BRAKE SYSTEM PRESSURE VALIDATION* as detailed in *BRAKES* subsection.