












SERVICE MANUAL

**RS90K
RS90RK
RSG90K
RS90MK
RST90K
RST90TFK**

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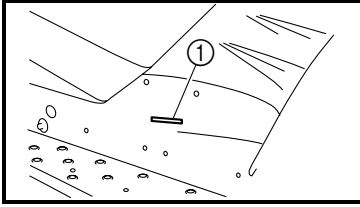
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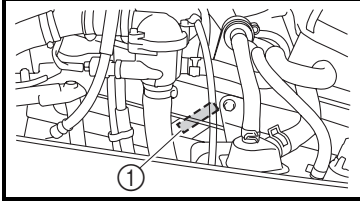
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GENERAL INFORMATION**MACHINE IDENTIFICATION****FRAME SERIAL NUMBER**

The frame serial number ① is located on the right-hand side of the frame (just below the front of the seat).

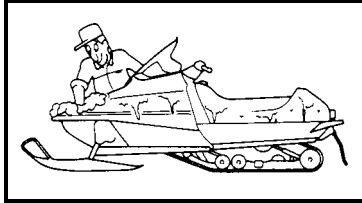
**ENGINE SERIAL NUMBER**

The engine serial number ① is located on the right-hand side of the crankcase.

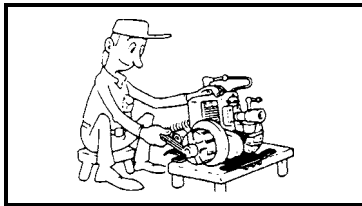
**NOTE:** _____

Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION
PREPARATION FOR REMOVAL AND DISASSEMBLY



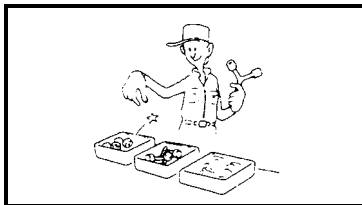
1. Remove all dirt, mud, dust, and foreign material before removal and disassembly.
While cleaning, take care to protect the electrical parts, such as relays, switches, motor, resistors, controllers, etc., from high pressure water splashes.



2. Use proper tools and cleaning equipment.
Refer to "SPECIAL TOOLS".

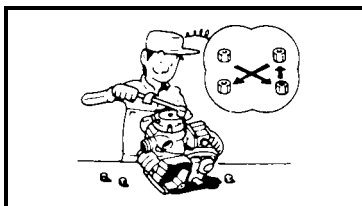


3. When disassembling the machine, keep mated parts together. This includes gears, cylinders, pistons, and other parts that have been "mated" through normal wear. Mated parts must be reused or replaced as an assembly.

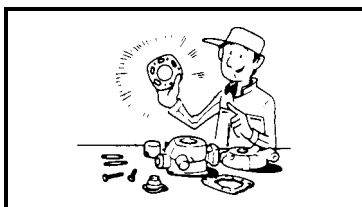


4. During disassembly of the machine, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help ensure that all parts are reinstalled correctly.

5. Keep all parts away from any source of fire.



6. Be sure to keep to the tightening torque specifications. When tightening bolts, nuts, and screws, start with those that have larger diameters, and proceed from the inside to the outside in a crisscross pattern.

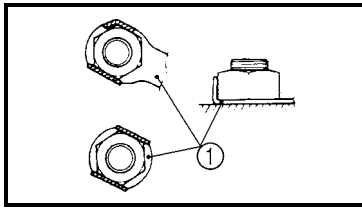


ALL REPLACEMENT PARTS

We recommend using genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for assembly and adjustments.

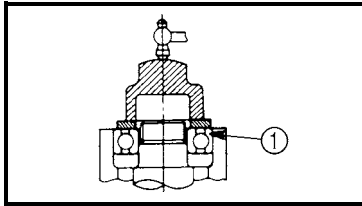
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals, and O-rings should be replaced when an engine is overhauled. All gasket surfaces, oil seal lips, and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



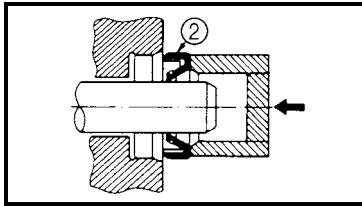
LOCK WASHERS/PLATES AND COTTER PINS

All lock washers/plates ① and cotter pins must be replaced if they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



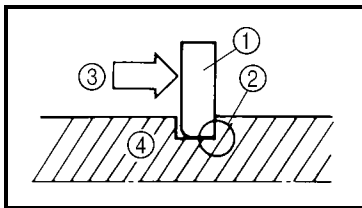
BEARINGS AND OIL SEALS

Install the bearings ① and oil seals ② with their manufacturer's marks or numbers facing outwards. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil the bearings liberally when installing.



CAUTION:

Do not use compressed air to spin the bearings dry. This causes damage to the surface of the bearings.



CIRCLIPS

All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace misshapen circlips. When installing a circlip ①, make sure that the sharp edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

LOCTITE®

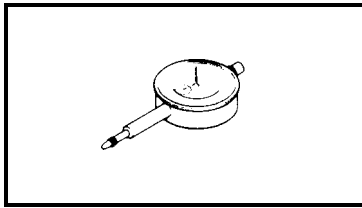
After installing fasteners that have LOCTITE® applied, wait 24 hours before using the machine. This will give the LOCTITE® time to dry properly.

SPECIAL TOOLS

Some special tools are necessary for a completely accurate tune-up and assembly. Using the correct special tool will help prevent damage that can be caused by the use of improper tools or improvised techniques.

NOTE:

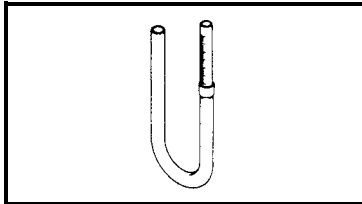
- Be sure to use the correct part number when ordering the tool, since the part number may differ according to country.
- For USA and Canada, use part number starting with "YB-", "YM-", "YU-", "YS-" or "ACC-".
- For others, use part number starting with "90890-".



FOR TUNE UP

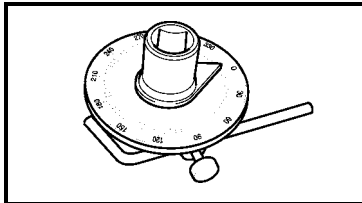
- Dial gauge
P/N: YU-03097
90890-03097

This gauge is used for run out measurement.



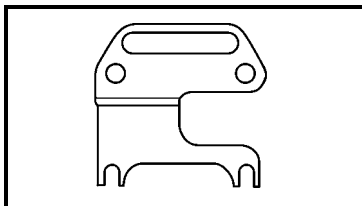
- Fuel level gauge
P/N: YM-01312-A
90890-01312

This gauge is used to measure the fuel level in the float chamber.



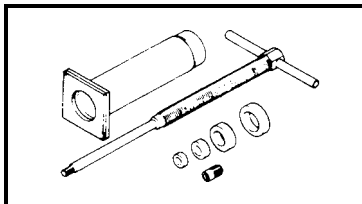
- Angle gauge
Use goods on the market.

This tool is used to tightening the torque.



- Steering linkage alignment plate
P/N: YS-01487
90890-01487

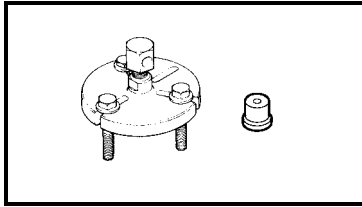
Locks steering relay arms in place while adjusting the steering linkage for front-end alignment.



FOR ENGINE SERVICE

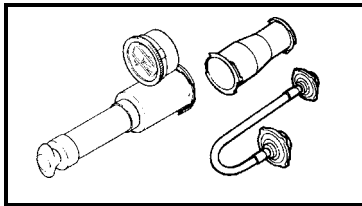
- Piston pin puller
P/N: YU-01304
90890-01304

This tool is used to remove the piston pin.



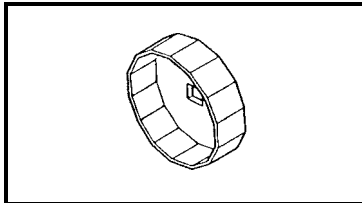
- Rotor holding puller
P/N: YU-33270-B
90890-01362
- Flywheel puller attachment
P/N: YM-33282
90890-04089

These tools are used to remove the magneto rotor.



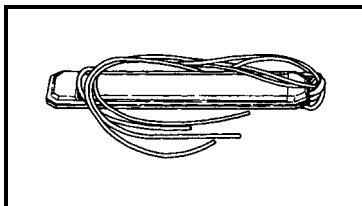
- Cooling system tester
P/N: YU-24460-01
90890-01325
- Adapter
P/N: YU-33984
90890-01352

This tester and its adapter are used for checking the cooling system.



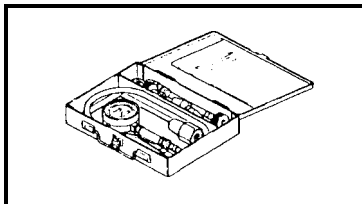
- Oil filter wrench
P/N: YM-01469
90890-01469

This tool is needed to loosen or tighten the oil filter cartridge.



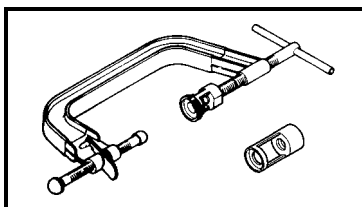
- Vacuum gauge
P/N: YU-44456
90890-03094

This guide is used to synchronize the carburetors.



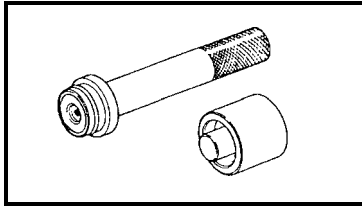
- Compression gauge set
P/N: YU-33223 (compression gage)
90890-03081
- P/N: YU-33223-4 (adapter)
90890-04136

These tools are used to measure engine compression.



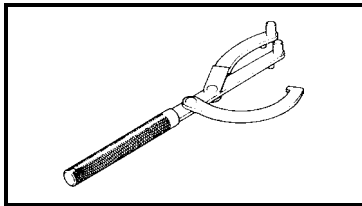
- Valve spring compressor set
P/N: YM-04019 (valve spring compressor)
90890-04019
- P/N: YM-04108 (attachment)
90890-04108

These tools are used to remove or install the valve assemblies.



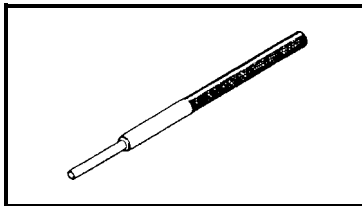
- 40 and 50 mm bearing driver
P/N: YM-04058
90890-04058
- Mechanical seal installer
P/N: YM-04145
90890-04145

These tools are used to install the water pump seal.



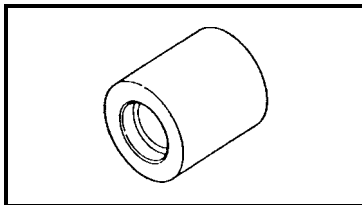
- Rotor holding tool
P/N: YU-01235
90890-01235

This tool is used to hold the camshaft sprocket.



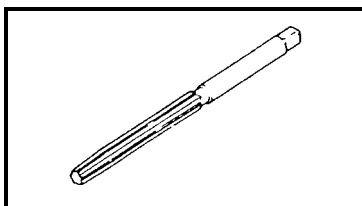
- Valve guide remover (ø5)
P/N: YM-04097
90890-04097

This tool is used to remove or install the valve guides.



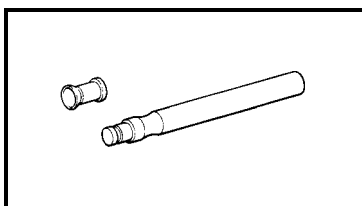
- Valve guide installer (ø5)
P/N: YM-04098
90890-04098

This tool is used to install the valve guides.



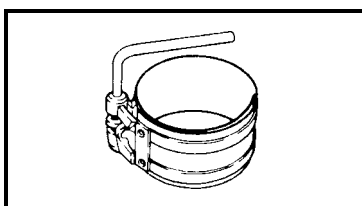
- Valve guide reamer (ø5)
P/N: YM-04099
90890-04099

This tool is used to rebores the new valve guides.



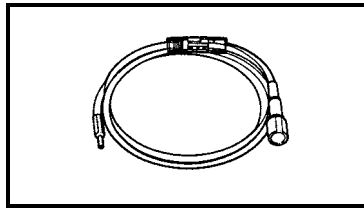
- Valve lapper
P/N: 90890-04101

This tool is needed to remove and install the valve lifters.



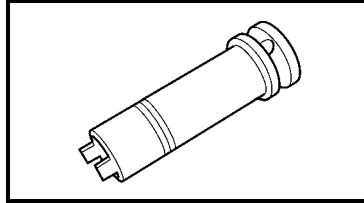
- Piston ring compressor
P/N: YM-08037
90890-05158

This tool is used to compress the piston rings when installing the piston into the cylinder.



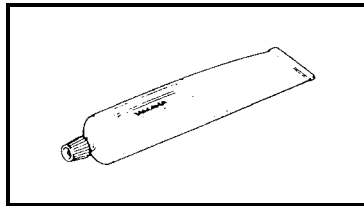
- Dynamic spark tester
P/N: YM-34487
- Ignition checker
P/N: 90890-06754

This tool is used to check the ignition system component.



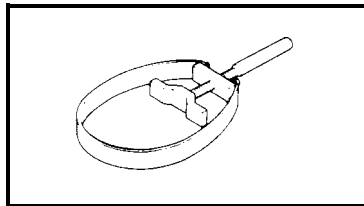
- Engine mount spacer wrench
P/N: YS-01489
90890-01489

Used to turn the engine mounting bolts when removing/installing engine.



- Quick gasket®
P/N: ACC-QUICK-GS-KT
- Yamaha bond No. 1215
P/N: 90890-85505

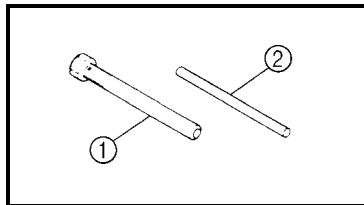
This bond is used to seal two mating surfaces (e.g., crankcase mating surfaces.)



FOR POWER TRAIN SERVICE

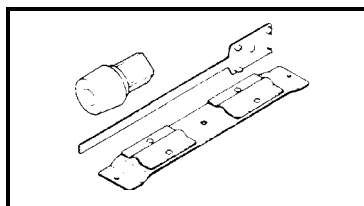
- Sheave holder
P/N: YS-01880-A
90890-01701

This tool is used to hold the primary sheave and A.C. magneto rotor.



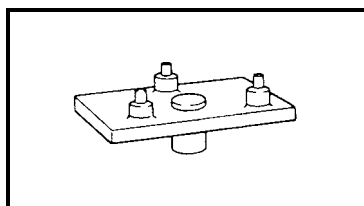
- Primary sheave puller (18 mm)
P/N: YS-01881-A ①, YS-01881-1 ②
90890-01898

This tool is used for removing the primary sheave.



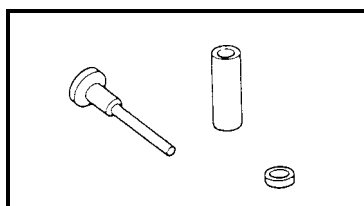
- Clutch spider separator
P/N: YS-28890-C
90890-01711

This tool is used when disassembling and assembling the primary sheave.



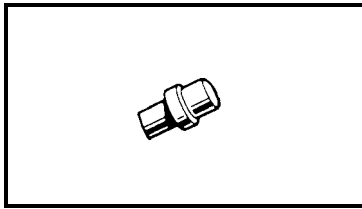
- Clutch separator adapter
P/N: YS-34480
90890-01740

This tool is used when disassembling and assembling the primary sheave.



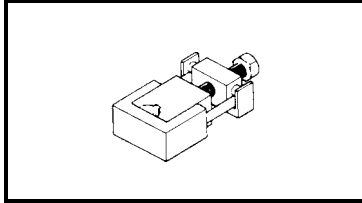
- YXR clutch bushing jig kit
P/N: YS-39752

This tool is used for removal and installation of primary clutch weight and roller bushings.



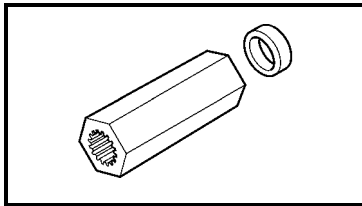
- Clutch bushing press
P/N: YS-42424

This tool is used for removing and installing the post bushings (primary sheave cap bush, sliding sheave bush and torque cam bush).



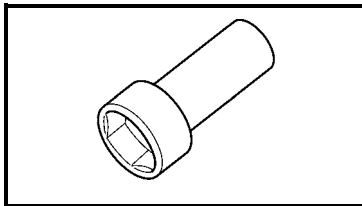
- Track clip installer
P/N: YS-91045-C
90890-01721

This tool is used for installing the track clip.



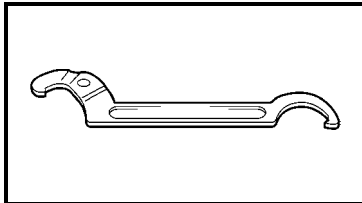
- Secondary shaft slide & holder
P/N: YS-01492
90890-01492

Remove and install secondary shaft bearing tapered collar. Also used to hold the secondary shaft when used with the drive gear socket (YS-01490/90890-01490).



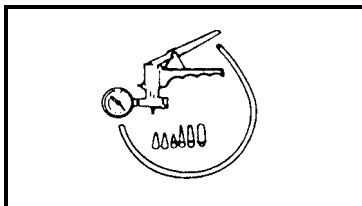
- Drive gear socket
P/N: YS-01490
90890-01490

Remove and install drive chain sprocket nut (36 100 mm (1.4 4 in) deep well socket).



- Ring nut wrench
P/N: YU-01268
90890-01268

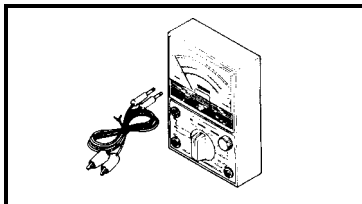
Remove and install secondary shaft bearing nut.



FOR CARBURETION SERVICE

- Mity vac
P/N: YS-42423
90890-06756

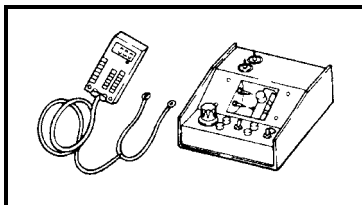
This tool is used to check the fuel pump.



FOR ELECTRICAL SERVICE

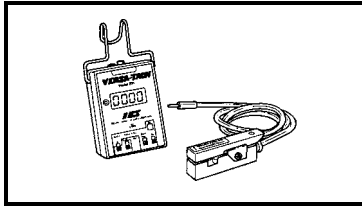
- Pocket tester
P/N: YU-03112-C
90890-03112

This instrument is necessary for checking the electrical components.



- Electro tester
P/N: YU-33260-A
90890-03021

This instrument is invaluable for checking the electrical system.



- Engine tachometer
P/N: YU-08036-C
90793-80009
- This tool is used to check engine speed.

PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable machine operation and a longer service life. In addition, the need for costly overhaul work will be greatly reduced. This information applies to machines already in service as well as new machines that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE CHART

Regular maintenance is most important for best performance and safe operation.

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Spark plugs	Check condition. Adjust gap and clean. Replace if necessary.			●
Valve clearance	Check clearance. Adjust clearance when engine is cold.	Every 40,000 km (25,000 mi)		
Engine oil	Check oil level.	●		
	Replace.		●	●
Engine oil filter cartridge	Replace.		●	Every 20,000 km (12,000 mi)
Fuel	Check fuel level.	●		
Fuel filter	Check condition. Replace if necessary.			●
Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			●
Engine coolant	Check coolant level.	●		
	Air bleed the cooling system if necessary.			●
	The coolant should be changed at least every season.			●
Carburetor	Check throttle lever operation.	●		
	Adjust the jets.	Whenever operating condition (elevation/temperature) is changed.		
Engine stop switch	Check operation. Repair if necessary.	●		
Throttle override system (T.O.R.S.)	Check operation. Repair if necessary.	●		
Throttle lever	Check operation. Repair if necessary.	●		
Exhaust system	Check for leakage. Tighten or replace gasket if necessary.			●
Drive guard	Check for cracks, bends or damage. Replace if necessary.	●		
V-belt	Check for wear and damage. Replace if necessary.	●		
Drive track and idler wheels	Check deflection, and for wear and damage. Adjust/replace if necessary.	●		
Slide runners	Check for wear and damage.	●		
	Replace if necessary.			●
Brake and parking brake	Check operation and fluid leakage.	●		
	Adjust free play and/or replace pads if necessary.			●
	Replace brake fluid.	See NOTE on page 2-2.		
Disc brake installation	Check for slight free play. Lubricate shaft with specified grease as required.			Every 1,600 km (1,000 mi)

PERIODIC MAINTENANCE CHART

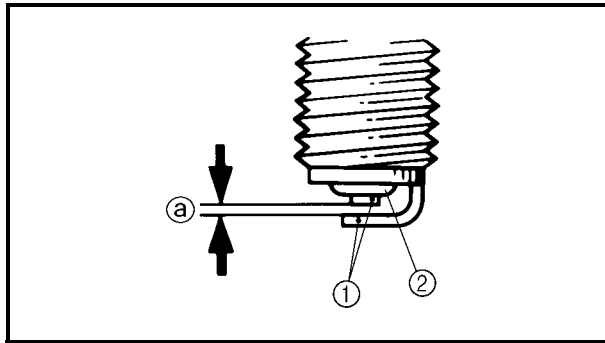


Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every
				Seasonally or 3,200 km (2,000 mi) (160 hr)
Drive chain oil	Check oil level.		●	
	Replace.			●
Drive chain	Check deflection. Adjust if necessary.	Initial at 500 km (300 mi) and every 800 km (500 mi) thereafter.		
Skis and ski runners	Check for wear and damage.	●		
	Replace if necessary.			●
Steering system	Check operation.	●		
	Adjust toe-out if necessary.			●
Strap (RS90M)	Check for damage. Replace if necessary.	●		
Lights	Check operation. Replace bulbs if necessary.	●		
Battery	Check condition. Charge if necessary.			●
Primary and secondary clutches	Check engagement and shift speed. Adjust if necessary.			●
	Whenever operating elevation is changed.			
	Inspect sheaves for wear/damage. Inspect weights/rollers and bushings for wear-for primary. Inspect ramp shoes/bushings for wear-for secondary. Replace if necessary.			●
	Lubricate with specified grease.			●
Steering column bearing	Lubricate with specified grease.			●
Ski and front suspension	Lubricate with specified grease.			●
Suspension component	Lubricate with specified grease.			●
Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●
	Check cable damage. Replace if necessary.			●
Shroud latches	Make sure that the shroud latches are hooked.	●		
Fittings and fasteners	Check tightness. Repair if necessary.	●		
Tool kit and recommended equipment	Check for proper placement.	●		

NOTE:


Brake fluid replacement:

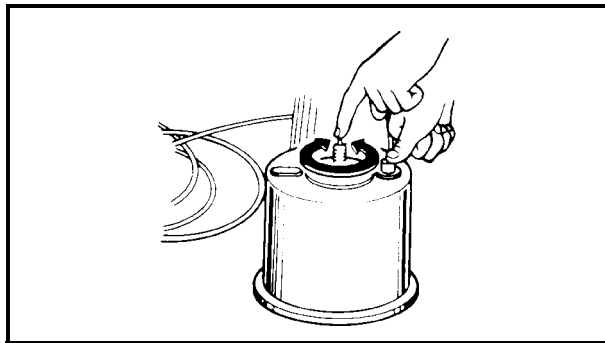
1. When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. Replace the brake hose every four years, or if cracked or damaged.



ENGINE SPARK PLUGS

1. Remove:
 - Spark plug caps
 - Spark plugs
2. Inspect:
 - Electrodes ①
 - Damage/wear → Replace the spark plug.
 - insulator color ②
3. Measure:
 - Spark plug gap ③
 - Out of specification → Regap.
 - Use a wire thickness gauge.

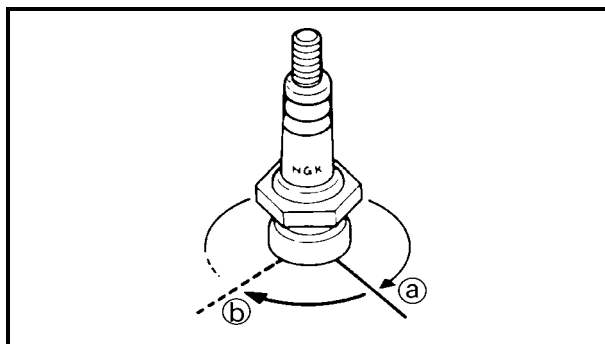
	Spark plug gap: 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
-----------------------------------------------------------------------------------	-----------------------------------------------------------




If necessary, clean the spark plugs with a spark plug cleaner.

Standard spark plug: NGK R CR8E (NGK)

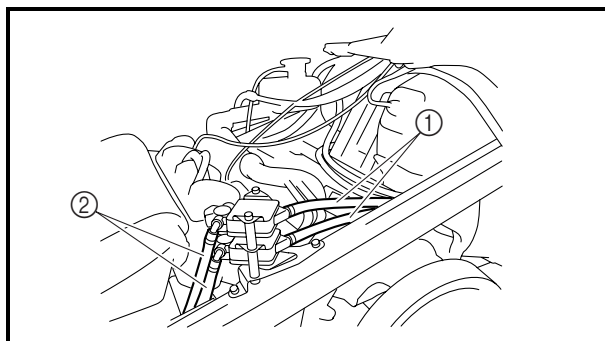
Before installing a spark plug, clean the gasket surface and spark plug surface.



4. Install:
 - Spark plugs

	Spark plug: 13 Nm (1.3 m · kg, 9.4 ft · lb)
-------------------------------------------------------------------------------------	-------------------------------------------------------

NOTE: _____
 Finger-tighten ③ the spark plug before torquing ④ it to specification.



FUEL LINE INSPECTION

1. Inspect:
 - Fuel hoses ①
 - Fuel delivery hoses ②
 - Cracks/damage → Replace.

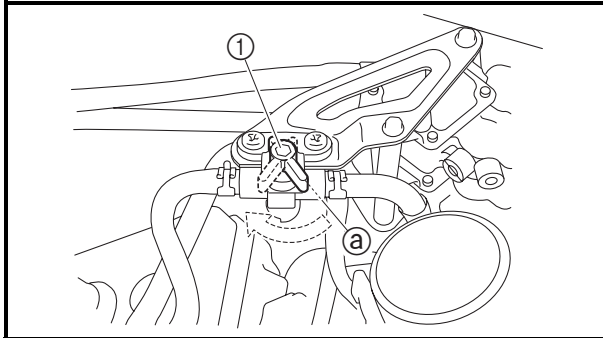
COOLING SYSTEM

Coolant replacement

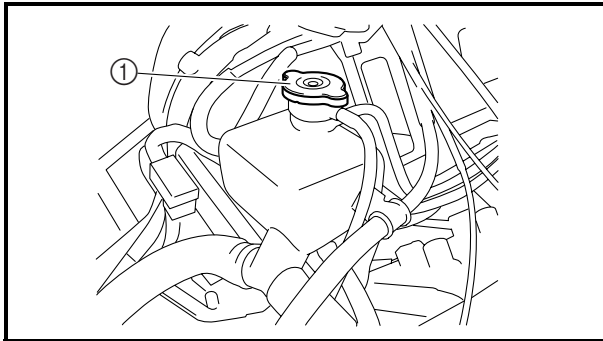
NOTE: _____

The coolant should be changed at least every season.

1. Place the machine on a level surface.



2. Make sure that the carburetor coolant shut-off lever (1) is turned to "ON" (a).
(for RS90M)

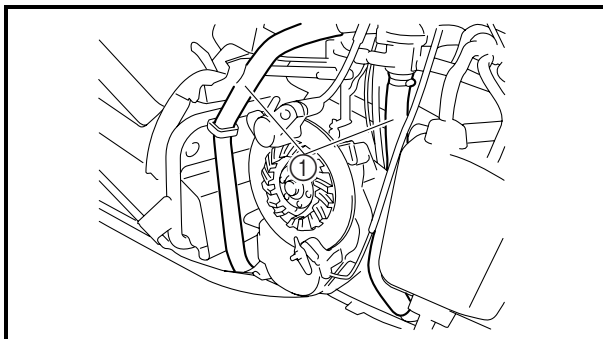


3. Remove:

- Coolant filler cap (1)

⚠ WARNING _____

Do not remove the coolant filler cap (1) when the engine is hot. Pressurized scalding hot fluid and steam may be blown out, which could cause serious injury. When the engine has cooled, place a thick rag or a towel over the coolant filler cap. Slowly turn the cap counterclockwise until it stop. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise to remove it.



4. Place an open container under the coolant hoses.

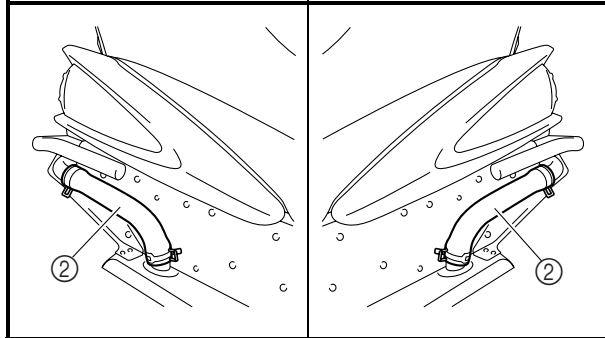
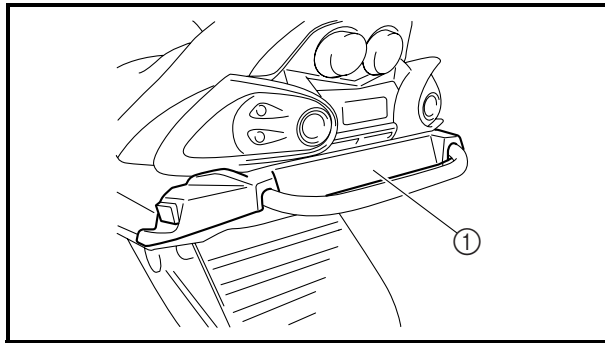
5. Disconnect:

- Coolant hoses (1)

6. Drain the coolant.

NOTE: _____

Lift up the tail of the machine to drain the coolant.



7. Remove:
 - Rear bumper cover ①
8. Disconnect:
 - Coolant hoses ②
9. Drain the coolant.

NOTE: _____

Lift up the front of the machine to drain the coolant completely.

⚠ WARNING _____

Coolant is poisonous. It is harmful or fatal if swallowed.

- If coolant is swallowed, induce vomiting immediately and get immediate medical attention.
- If coolant splashes in your eyes, thoroughly wash them with water and consult a doctor.
- If coolant splashes on your skin or clothes, quickly wash it away with soap and water.

10. Connect:
 - Front coolant hoses
11. Connect:
 - Rear coolant hoses
12. Fill:
 - Cooling system



Recommended coolant:

High quality silicate-free ethylene glycol antifreeze containing corrosion inhibitors

Coolant mixing ratio (coolant:water):
3:2 (60%:40%)

Total amount:

RS90/RS90R/RSG90

4.8 L (4.22 Imp qt, 5.07 US qt)

RS90M

6.3 L (5.55 Imp qt, 6.66 US qt)

RST90 "USA/Canada"/RST90TF
"Canada"

5.2 L (4.58 Imp qt, 5.50 US qt)

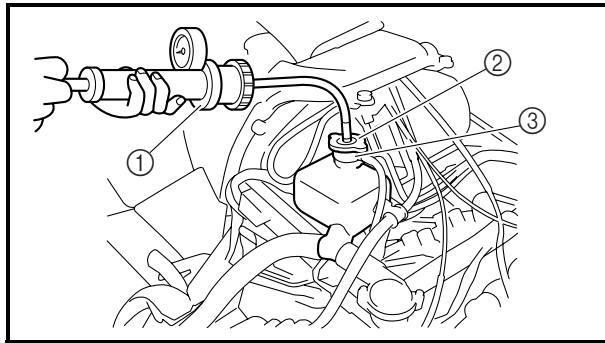
RST90 "Europe"/RST90TF
"Europe"

5.4 L (4.75 Imp qt, 5.71 US qt)

CAUTION: _____

- Hard water or salt water is harmful to engine parts. If soft water is not available, use boiled or distilled water.
- Do not use water containing impurities or oil.

13. Bleed the air from the cooling system.



14. Inspect:

- Cooling system
Decrease of pressure (leaks) → Repair as required.

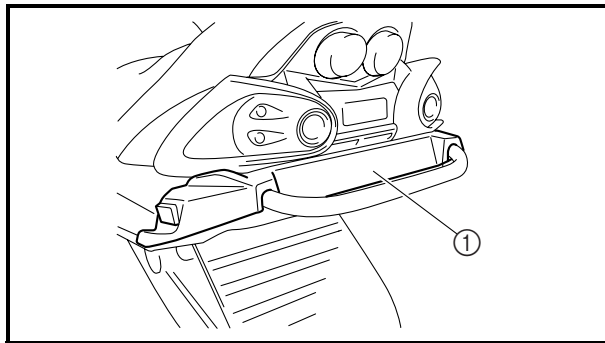
Inspection steps:

- Attach the cooling system tester ① and adapter ② to the coolant filler ③.



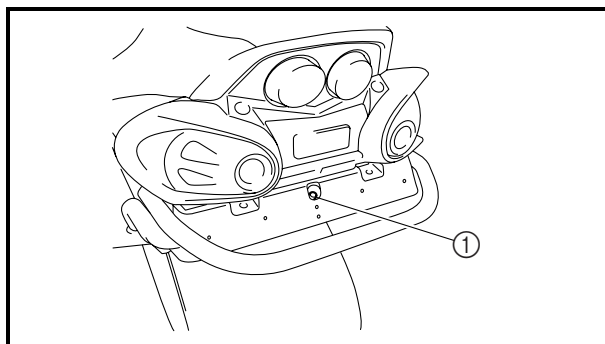
Cooling system tester:
90890-01325, YU-24460-01
Adapter:
90890-01352, YU-33984

- Apply 100 kPa (1.0 kg/cm², 14 psi).
- Measure the pressure with the gauge.



Air bleeding

1. Remove:
 - Rear bumper cover ①
2. Bleed air from the cooling system.



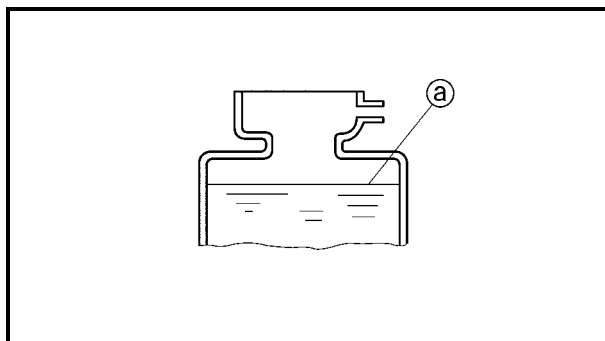
Air bleeding steps:

- Lift up the tail of the machine.
- Remove the bleed bolt ① on the heat exchanger.
- While slowly adding coolant to the coolant filler, drain the coolant until no more air bubbles appear.
- Tighten the bleed bolt ①.



Bleed bolt:
13 Nm (1.3 m · kg, 9.4 ft · lb)

- Add coolant to the coolant cold level ②.



- Install the coolant filler cap.
Apply and lock the parking brake. Start the engine and run it at approximately 2,500 ~ 2,700 r/min until the coolant circulates (approximately 3 ~ 5 minutes). The rear heat exchanger will be warm to the touch.

WARNING

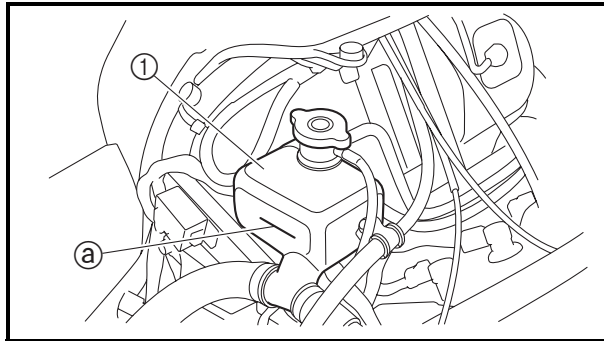
To avoid severe injury or death:

- Make sure the machine is securely supported with a suitable stand.
- Do not exceed 2,800 r/min. Drive line damage and excessive V-belt wear could occur, or the machine could unexpectedly move forward if the clutch engages.
- Operate the engine only in a well-ventilated area.

- Remove the coolant filler cap and bleed the cooling system again, as described above.
No air bubbles → OK.
- Pour coolant into the coolant reservoir ① until the coolant level reaches the “COLD LEVEL” level mark ②.

3. Install:

- Rear bumper cover



	Rear bumper cover bolt: 4 Nm (0.4 m · kg, 2.9 ft · lb)
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------

VALVE CLEARANCE ADJUSTMENT

NOTE:

- Valve clearance adjustment should be made on a cold engine, at room temperature.
- When the valve clearance is to be measured or adjusted, the piston must be at the top dead center (TDC) on the compression stroke.

1. Drain:

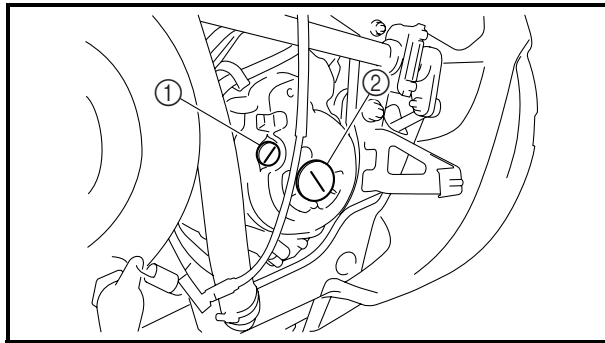
- Coolant
Refer to “COOLING SYSTEM”.

2. Drain:

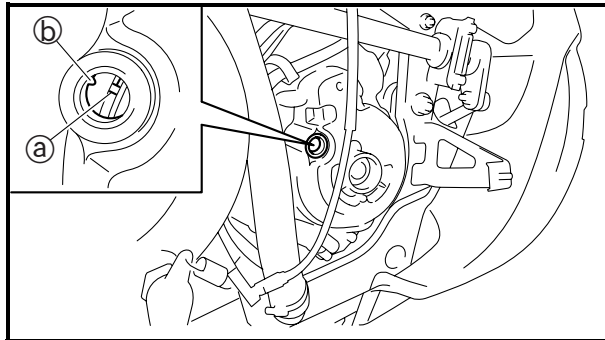
- Engine oil
Refer to “ENGINE OIL REPLACEMENT”.

3. Remove:

- Oil tank
Refer to “A.C. MAGNETO ROTOR AND STARTER CLUTCH” in CHAPTER 5.



4. Remove:
- Cylinder head cover
Refer to "CAMSHAFTS" in CHAPTER 5.
 - Timing mark accessing screw ①
 - Crankshaft end accessing screw ②



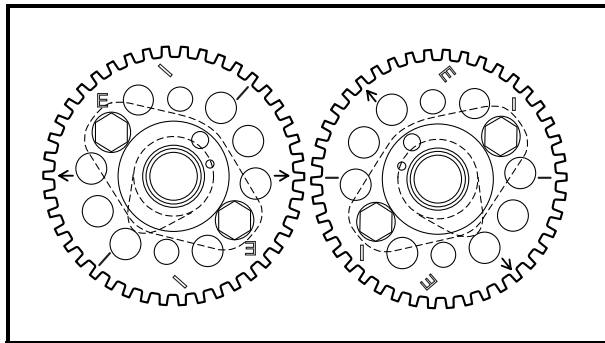
5. Measure:
- Valve clearance
Out of specification → Adjust.



Valve clearance (cold):

Intake valve:
0.15 ~ 0.22 mm
(0.0059 ~ 0.0087 in)

Exhaust valve:
0.21 ~ 0.25 mm
(0.0083 ~ 0.0098 in)



Checking steps:

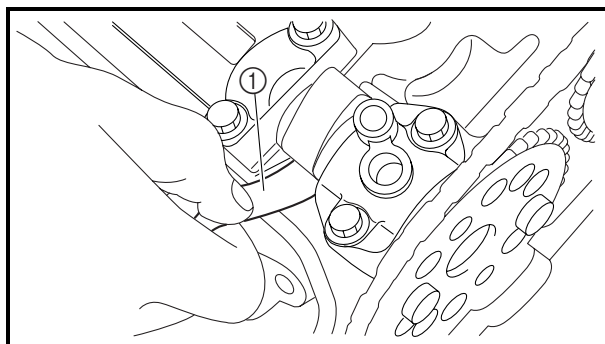
- Turn the crankshaft clockwise.
- When piston #3 is at TDC on the compression stroke, align the TDC mark (a) on the A.C. magneto rotor with the mark (b) on the A.C. magneto cover.

NOTE: _____
TDC on the compression stroke can be found when the camshaft lobes are turned away from each other.

- Measure the valve clearance with a thickness gauge ①.

NOTE: _____

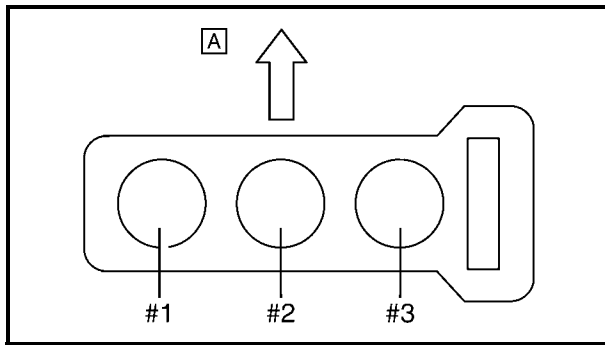
- If the valve clearance is incorrect, record the measured reading.
- Measure the valve clearance in the following sequence.



Valve clearance measuring sequence

Cylinder #3 → #2 → #1

VALVE CLEARANCE ADJUSTMENT



A Front

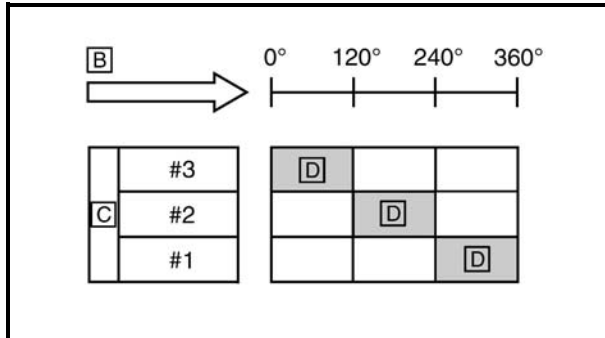
For each cylinder, starting with cylinder #3 at TDC, turn the crankshaft clockwise as specified in the following table.

B Degrees that the crankshaft is turned clockwise

C Cylinder

D Combustion cycle

#2 Cylinder	120°
#1 Cylinder	240°



6. Loosen:

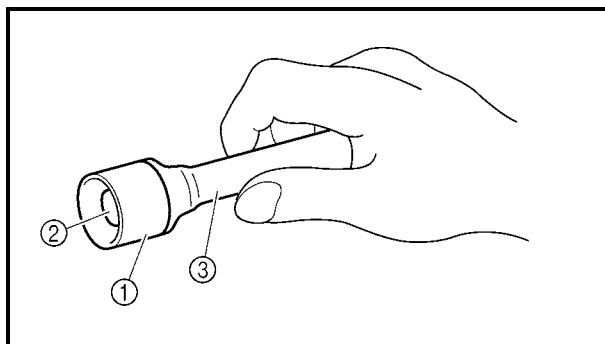
- Timing chain tensioner cap bolt
Refer to "CAMSHAFTS" in chapter 5.

7. Remove:

- Intake camshaft
- Exhaust camshaft

NOTE:

- Refer to "CAMSHAFTS" in CHAPTER 5.
- When removing the timing chain and camshafts, fasten a wire to the timing chain to retrieve it if it falls into the crankcase.



8. Adjust:

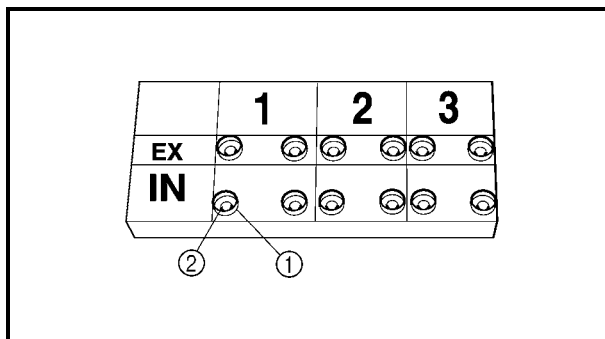
- Valve clearance

Adjustment steps:

- Remove the valve lifter ① and the valve pad ② with a valve lapper ③.

NOTE:

- Cover the timing chain opening with a rag to prevent the valve pad from falling into the crankcase.
- Make a note of the position of each valve lifter ① and valve pad ② so that they can be installed in the correct place.



- Select the proper valve pad from the following table.

Valve pad thickness range		Available valve pads
Nos. 120 ~ 240	1.20 ~ 2.40 mm (0.047 ~ 0.094 in)	25 thicknesses in 0.05 mm (0.0020 in) increments

NOTE: _____

- The thickness @ of each valve pad is marked in hundredths of millimeters on the side that touches the valve lifter.
- Since valve pads of various sizes are originally installed, the valve pad number must be rounded in order to reach the closest equivalent to the original.

- Round off the original valve pad number according to the following table.

Last digit	Rounded value
0 or 2	0
5	5
8	10

EXAMPLE:

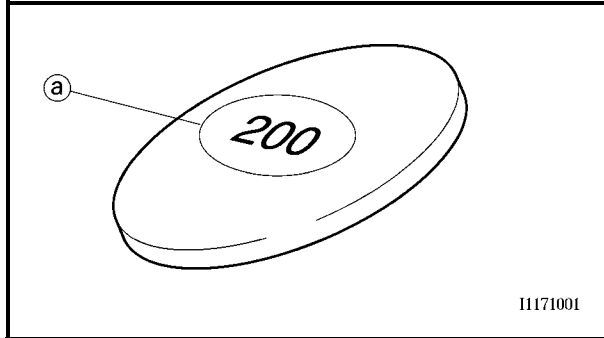
Original valve pad number = 148 (thickness = 1.48 mm (0.058 in))

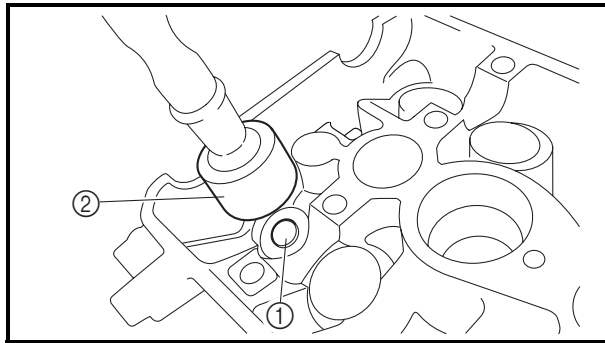
Rounded value = 150

- Locate the rounded number of the original valve pad and the measured valve clearance in the valve pad selection table. The point where the column and row intersect is the new valve pad number.

NOTE: _____

The new valve pad number is only an approximation. The valve clearance must be measured again and the above steps should be repeated if the measurement is still incorrect.





- Install the new valve pad ① and the valve lifter ②.

NOTE: _____

- Apply molybdenum disulfide oil to the valve pad and the valve lifter.
- The valve lifter must turn smoothly when rotated by hand.
- Install the valve lifter and the valve pad in the correct place.

- Install the exhaust and intake camshafts, timing chain and camshaft caps.



Camshaft cap bolt:
10 Nm (1.0 m · kg, 7.2 ft · lb)

NOTE: _____

- Refer to “CAMSHAFTS” in CHAPTER 5.
- Lubricate the camshaft caps, camshaft lobes, camshaft journals and camshaft cap bolts.
- Align the camshaft marks with the camshaft cap marks.
- Rotate the crankshaft clockwise several turns to seat the parts.

- Measure the valve clearance again.
- If the valve clearance is still out of specification, repeat all of the valve clearance adjustment steps until the specified clearance is obtained.

9. Install:

- Crankshaft end accessing screw
- Timing mark accessing screw

10. Install:

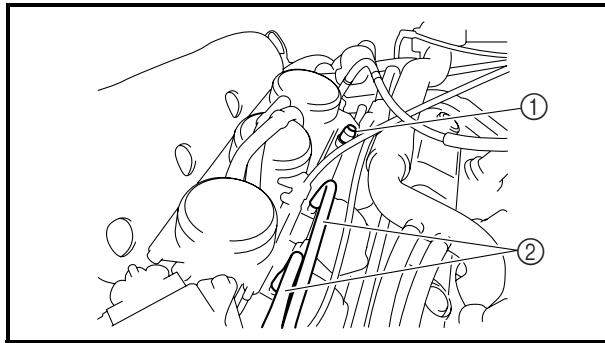
- Cylinder head cover
- Refer to “CAMSHAFTS” in CHAPTER 5.

11. Install:

- All removed parts

NOTE: _____

For installation, reverse the removal procedure. Note the following points.

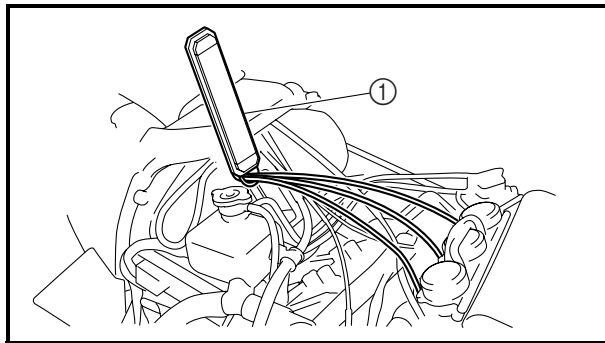


CARBURETOR SYNCHRONIZATION

NOTE:

Prior to synchronizing the carburetors, the valve clearance and the engine idle speed should be properly adjusted.

1. Remove:
 - Vacuum cap ①
2. Disconnect:
 - Vacuum hoses ②



3. Install:
 - T-joint
 - Vacuum gauge ①
 - Engine tachometer (near the spark plug)



Vacuum gauge:
90890-03094, YU-44456
Engine tachometer:
90793-80009, YU-08036-C

NOTE:

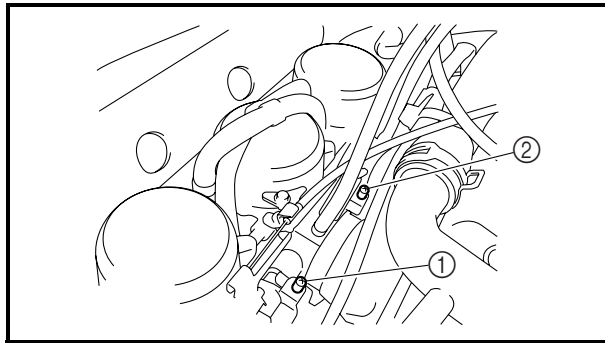
Connect the vacuum hose and vacuum gauge hose to the T-joint.

4. Start the engine and let it warm up for several minutes.
5. Inspect:
 - Engine idle speed
Out of specification → Adjust.
Refer to “ENGINE IDLE SPEED ADJUSTMENT”.



Engine idle speed:
1,300 ~ 1,500 r/min

6. Adjust:
 - Carburetor synchronization



Adjustment steps:

- Synchronize carburetor #3 to carburetor #2 by turning the synchronizing screw ① in either direction until both gauges read the same.

NOTE:

After each step, rev the engine two or three times, each time for less than a second, and check the synchronization again.

- Synchronize carburetor #3 to carburetor #1 by turning the synchronizing screw ② in either direction until both gauges read the same.



Vacuum pressure at engine idling speed:
24.0 kPa (0.24 kg/cm², 3.41 psi)

NOTE:

The difference in vacuum pressure between two carburetors should not exceed 1.33 kPa (0.01 kg/cm², 0.19 psi).

7. Measure:

- Engine idle speed
Out of specification → Adjust.
Make sure that the vacuum pressure is within specification.

8. Stop the engine and remove the measuring equipment.

9. Adjust:

- Throttle cable free play
Refer to "THROTTLE CABLE FREE PLAY ADJUSTMENT".

ENGINE IDLE SPEED ADJUSTMENT

NOTE:

Prior to adjusting the engine idling speed, the carburetor synchronization should be adjusted properly, the air filter should be clean, and the engine should have adequate compression.

1. Start the engine and let it warm up for several minutes.

2. Install:

- Engine tachometer
(near the spark plug)



Engine tachometer:
90793-80009, YU-08036-C

ENGINE IDLE SPEED ADJUSTMENT/ THROTTLE CABLE FREE PLAY ADJUSTMENT



3. Measure:

- Engine idle speed
Out of specification → Adjust.



Engine idle speed:
1,300 ~ 1,500 r/min

4. Adjust:

- Engine idle speed

Adjustment steps:

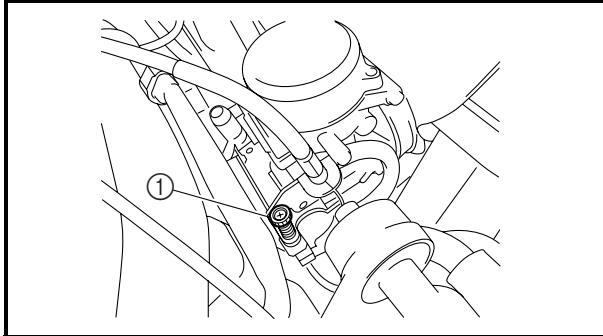
- Turn the throttle stop screw ① in or out until the specified engine idle speed is obtained.

Turning in → Idle speed is increased.

Turning out → Idle speed is decreased.

NOTE:

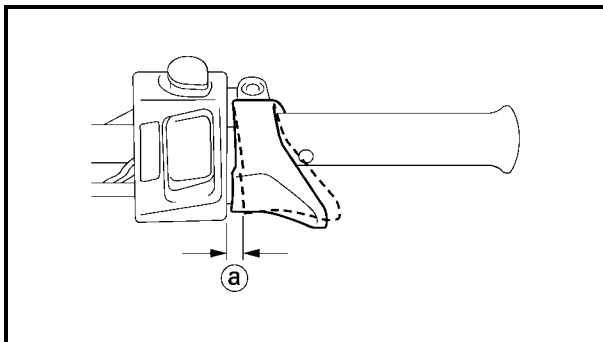
After adjusting the engine idle speed, the throttle cable free play should be adjusted.



THROTTLE CABLE FREE PLAY ADJUSTMENT

NOTE:

- Before adjusting the throttle cable free play, the engine idle speed should be adjusted.
- Adjust the throttle cable free play while the cable is in the cable guide.



1. Measure:

- Throttle cable free play ②
Out of specification → Adjust.



Throttle cable free play:
2.0 ~ 3.0 mm (0.08 ~ 0.12 in)

2. Adjust:

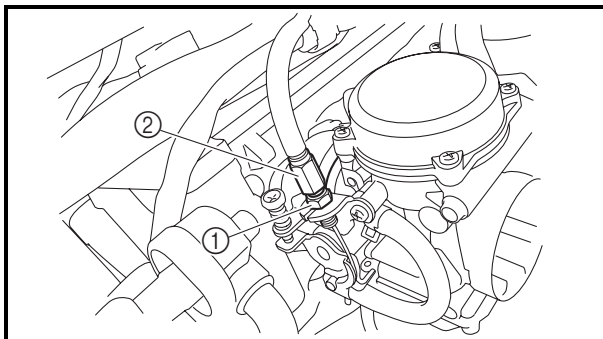
- Throttle cable free play

Adjustment steps:

- Loosen the locknut ①.
- Turn the adjusting nut ② in or out until the specified free play is obtained.

Turning in → Free play is increased.

Turning out → Free play is decreased.





- Tighten the locknut.

NOTE:

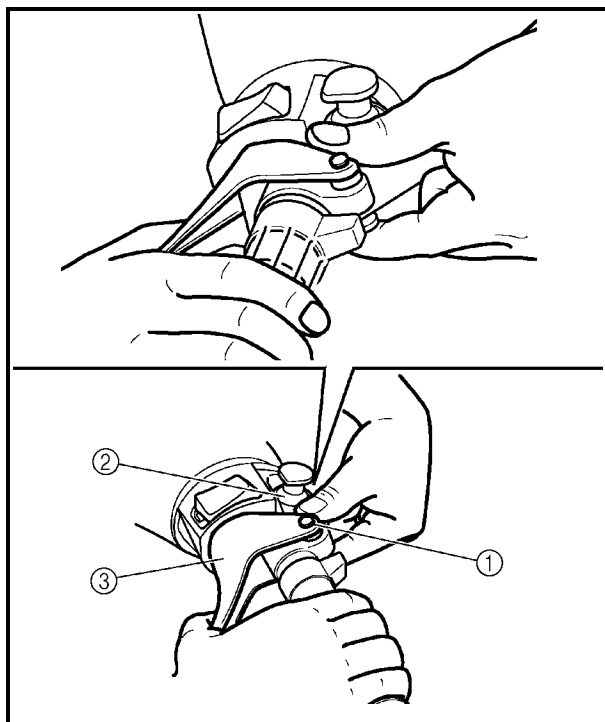
After adjusting the free play, turn the handlebar to right and left, and make sure that the engine idling does not run faster.

THROTTLE OVERRIDE SYSTEM (T.O.R.S.) CHECK

⚠ WARNING

When checking T.O.R.S.:

- Be sure the parking brake is applied.
- Be sure the throttle lever moves smoothly.
- Do not run the engine up to the clutch engagement speed. Otherwise, the machine could start moving forward unexpectedly, which could cause an accident.



1. Start the engine.
2. Hold the pivot point of the throttle lever away from the throttle switch by putting your thumb (above) and forefinger (below) between the throttle lever pivot ① and stop switch housing ②.

While holding as described above, press the throttle lever ③ gradually.

The T.O.R.S. will operate and the engine should run between 2,800 and 3,000 r/min.

⚠ WARNING

If the engine does not run between 2,800 and 3,000 r/min, stop the engine by turning the main switch to the "OFF" position and check the electrical system.

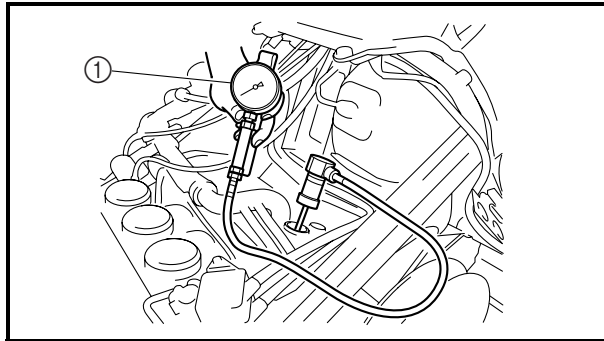
COMPRESSION PRESSURE MEASUREMENT

NOTE: _____
 Insufficient compression pressure will result in a loss of performance.


1. Measure:
 - Valve clearance
 Out of specification → Adjust.
 Refer to “VALVE CLEARANCE ADJUSTMENT”.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Remove:
 - Spark plug

CAUTION: _____

Before removing the spark plugs, use compressed air to blow away any dirt accumulated in the spark plug wells to prevent it from falling into the cylinders.



4. Install:
 - Compression gauge ①

	Compression gauge: 90890-03081, YU-33223 Compression gauge adapter: 90890-04136, YU-33223-4
------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------

5. Measure:
 - Compression pressure
 Above the maximum pressure → Inspect the cylinder head, valve surfaces, and piston crown for carbon deposits.
 Below the minimum pressure → Squirt a few drops of oil into the affected cylinder and measure again.
 Refer to the following table.

Compression pressure (with oil applied into cylinder)	
Reading	Diagnosis
Higher than without oil	Piston ring(-s) wear or damage → Repair.
Same as without oil	Piston, valves, cylinder head gasket or piston possibly defective → Repair. Compression pressure (at sea level)



Compression pressure (at sea level):

Standard:

1,450 kPa (14.5 kg/cm², 206 psi)
at 400 r/min

Minimum:

1,260 kPa (12.6 kg/cm², 179 psi)
at 400 r/min

Maximum:

1,620 kPa (16.2 kg/cm², 230 psi)
at 400 r/min

Measurement steps:

- Turn the main switch to “ON”.
- With the throttle wide open, crank the engine until the reading on the compression gauge stabilizes.

⚠ WARNING

To prevent sparking, ground all ignition coil leads before cranking the engine.

NOTE:

The difference in compression pressure between cylinders should not exceed 100 kPa (1 kg/cm², 14.2 psi).

6. Install:

- Spark plug



Spark plug:

13 Nm (1.3 m · kg, 9.4 ft · lb)

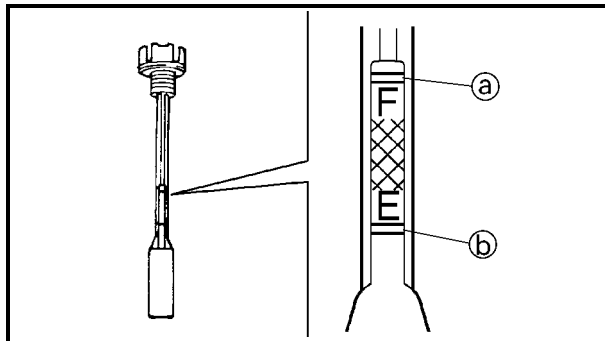
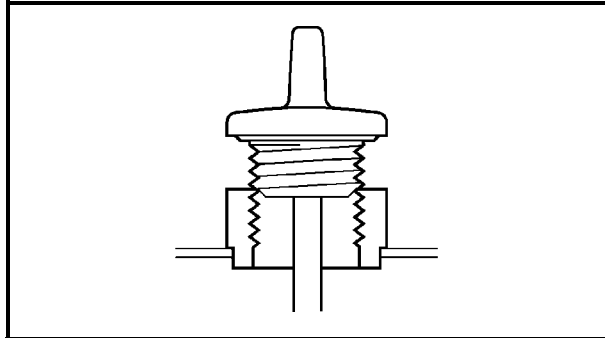
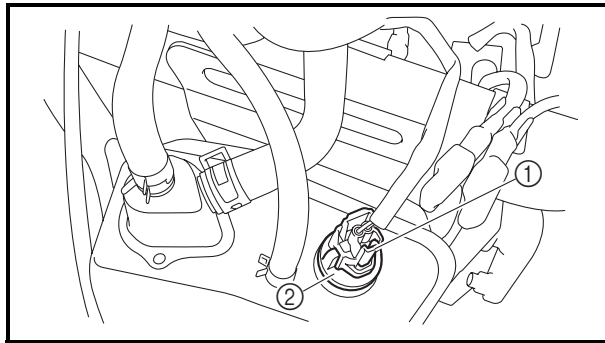
ENGINE OIL LEVEL INSPECTION

1. Inspect:

- Engine oil level

CAUTION:

Do not run the engine with too much or not enough oil in the oil tank. Oil could flow into the air filter and the engine could be damaged.



SAE						API
-40°	-20°	0°	20°	40°	60°F	SE, SF, SG or higher
-40°	-29°	-18°	-7°	4°	16°C	

← SAE 0W-30 →

Inspection steps:

- Place the snowmobile on a level surface and apply the parking brake.
- Start the engine, warm it up for 10 ~ 15 minutes, and then turn off.
- Disconnect the oil level switch coupler ①.

CAUTION:

Disconnect the oil level switch coupler before removing the oil level gauge. Otherwise the lead can twist and become severed.

- Remove the oil level gauge/dipstick ②, wipe it clean, insert it back into the filler hole (without screwing it in), and then remove it again to check the oil level.
- The engine oil level should be between the maximum level mark ① and minimum level mark ②.

Below the minimum level mark → Add the recommended engine oil to the proper level.

CAUTION:

When adding the engine oil, be careful not to fill above the maximum level mark and minimum level mark on the oil level gauge.



Recommended oil:

Refer to the chart for the engine oil grade which is best suited for certain atmospheric temperatures.

API standard:

API SE, SF, SG or higher
SAE 0W-30

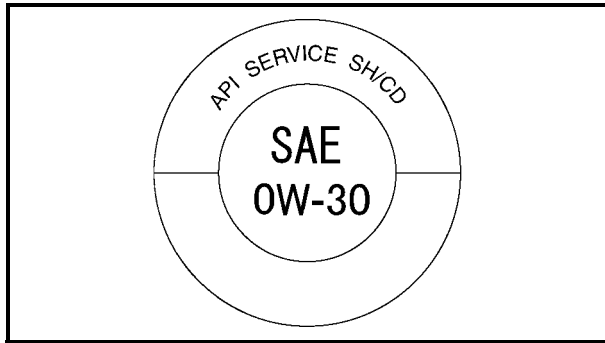
CAUTION:

Do not allow foreign materials to enter the crankcase.

NOTE:

Before checking the engine oil level, wait a few minutes until the oil has settled.

- Start the engine, warm it up for several minutes, and then turn it off.



- Check the engine oil level again.

NOTE: _____

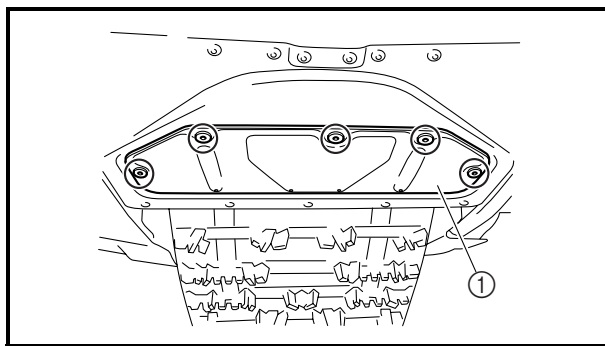
Before checking the engine oil level, wait a few minutes until the oil has settled.

CAUTION: _____

- Use only 4-stroke engine oil.
- Engine oil also lubricates the starter clutch. In order to prevent clutch slippage, do not mix any chemical additives with the oil or use oils of a higher grade than "CD". In addition, do not use oils labeled "ENERGY CONSERVING II" or higher.

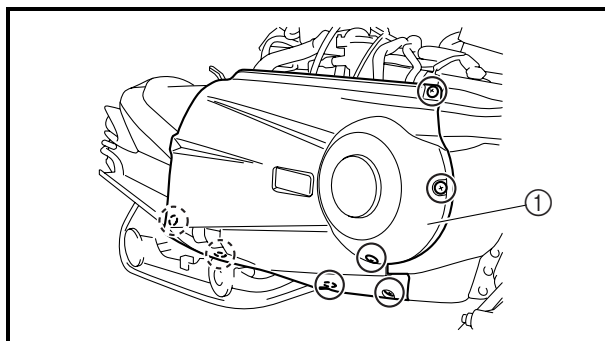
ENGINE OIL REPLACEMENT

1. Place the snowmobile on a level surface and apply the parking brake.
2. Start the engine, warm up for several minutes, and then turn it off.
3. Place a containers under the engine oil drain bolt and oil tank.



4. Remove:

- Bottom panel ①



5. Remove:

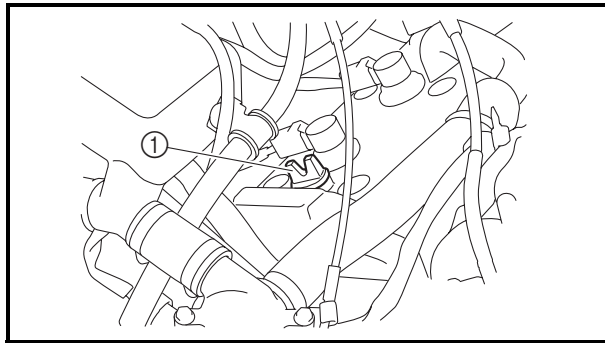
- Right side cover ①

6. Disconnect:

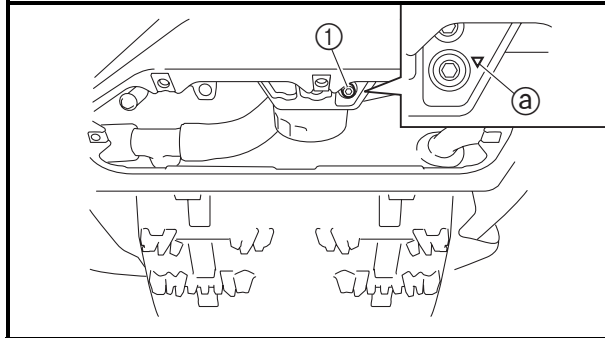
- Oil level gauge coupler
Refer to "ENGINE OIL LEVEL INSPECTION".

7. Remove:

- Oil level gauge/dipstick
Refer to "ENGINE OIL LEVEL INSPECTION".

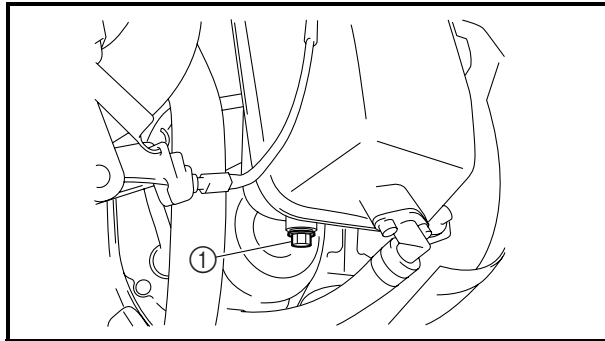


8. Remove:
- Cylinder head cap ①

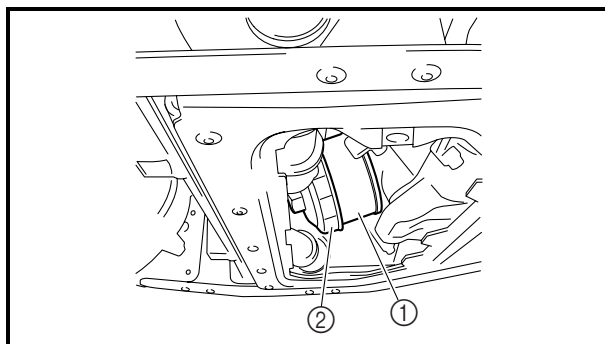


9. Remove:
- Oil pan drain bolt ①

NOTE: _____
 A “∇” mark ③ is stamped the oil pan near the oil pan drain bolt.




10. Remove:
- Oil tank engine oil drain bolt ①
11. Drain:
- Engine oil
 (completely from the oil pan and oil tank)
12. If the oil filter cartridge is also to be replaced, perform the following procedure.



Replacement steps:

- Remove the oil filter cartridge ① with an oil filter wrench ②.

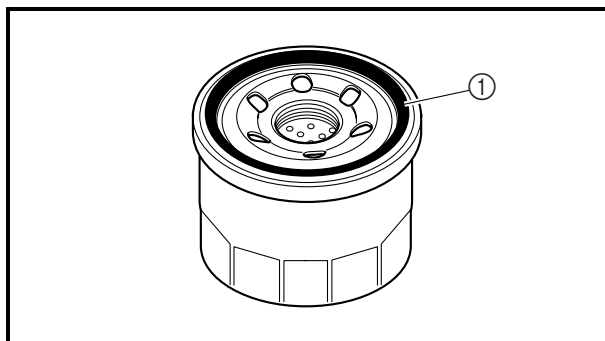
	<p>Oil filter wrench: 90890-01469, YM-01469</p>
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------


- Apply a thin coat of engine oil onto the O-ring ① of the new oil filter cartridge.

CAUTION: _____

Make sure that the O-ring ① is positioned correctly in the groove of the oil filter cartridge.

- Tighten the new oil filter cartridge to specification with an oil filter wrench.



	<p>Oil filter cartridge: 17 Nm (1.7 m · kg, 12 ft · lb)</p>
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

13. Install:

- Drain bolts
(along with the new gaskets)



Oil tank drain bolt:
16 Nm (1.6 m · kg, 12 ft · lb)
Oil pan drain bolt:
10 Nm (1.0 m · kg, 7.2 ft · lb)

14. Fill:

- Engine oil
(with the specified amount of the recommended engine oil)
Add 2.0 L (1.8 Imp qt, 2.1 US qt) of the recommended engine oil to the oil tank, and then install and tighten the oil level gauge/dipstick and the cylinder head cap.



Quantity:
Total amount:
3.7 L (3.3 Imp qt, 3.9 US qt)
Periodic oil change:
2.8 L (2.5 Imp qt, 3.0 US qt)
With oil filter replacement:
3.0 L (2.6 Imp qt, 3.2 US qt)

15. Inspect:

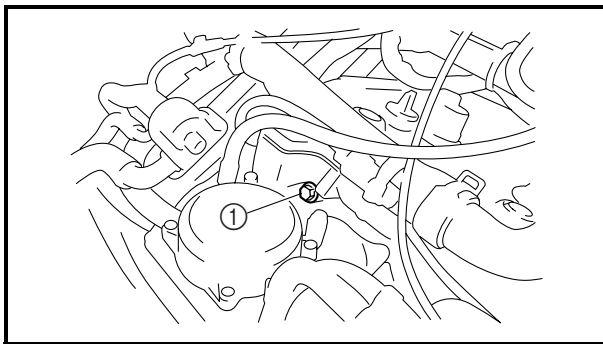
- Engine and oil tank
(for engine oil leaks)

16. Inspect:

- Engine oil level
Refer to “ENGINE OIL LEVEL INSPECTION”.

17. Inspect:

- Engine oil pressure

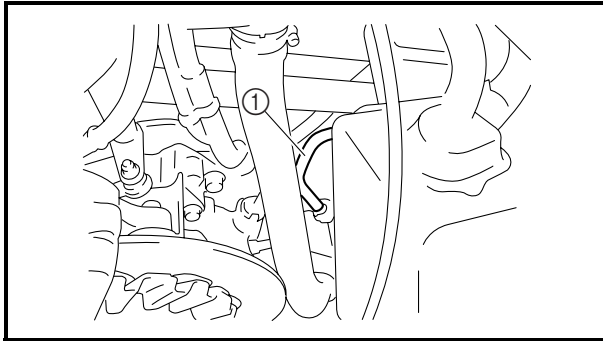


Inspection steps:

- Slightly loosen the oil gallery bolt ①.
- Start the engine and keep it idling until engine oil starts to seep from the oil gallery bolt.
If no engine oil comes out after one minute, turn the engine off so that it will not seize.
- Check the engine oil passages, the oil filter and the oil pump for damage or leakage.
- Start the engine after solving the problem(-s) and check the engine oil pressure again.
Tighten the oil gallery bolt to specification.



Oil gallery bolt:
20 Nm (2.0 m · kg, 14 ft · lb)

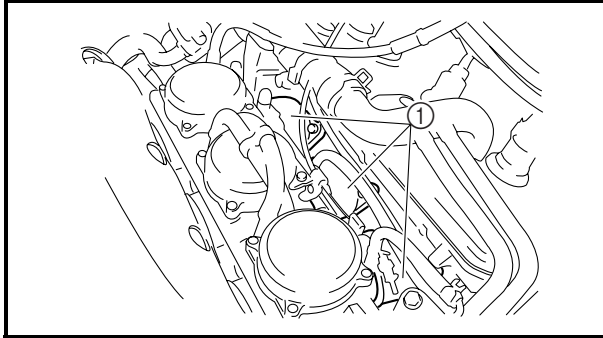


CRANKCASE BREATHER HOSE INSPECTION

1. Inspect:
 - Crankcase breather hose ①
Cracks/damage → Replace.
Loosen connection → Connect properly.

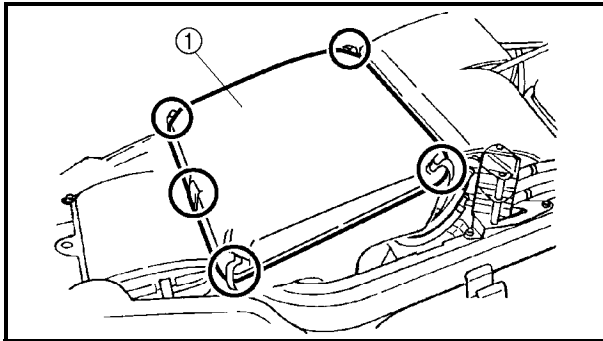
CAUTION: _____

Make sure that the crankcase breather hose is routed correctly.



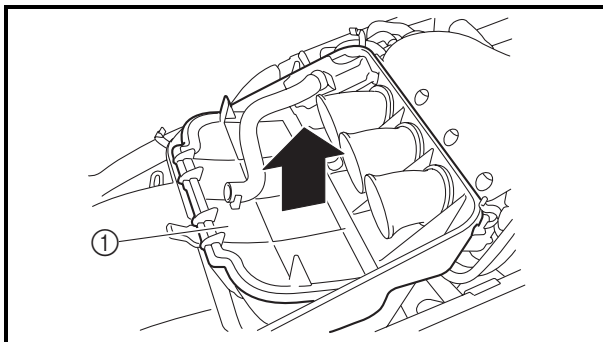
CARBURETOR JOINTS INSPECTION

1. Inspect:
 - Carburetor joints ①
Cracks/damage → Replace.
Refer to CARBURETORS AND FUEL PUMP in CHAPTER 7.

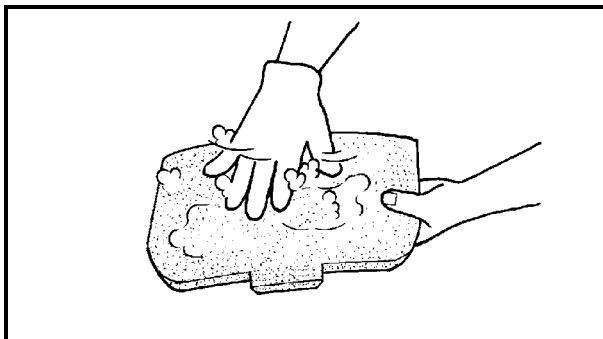


CHECKING THE AIR FILTER ELEMENT

1. Remove:
 - Air filter case cover ①



2. Remove:
 - Air filter ①
 - Air filter element



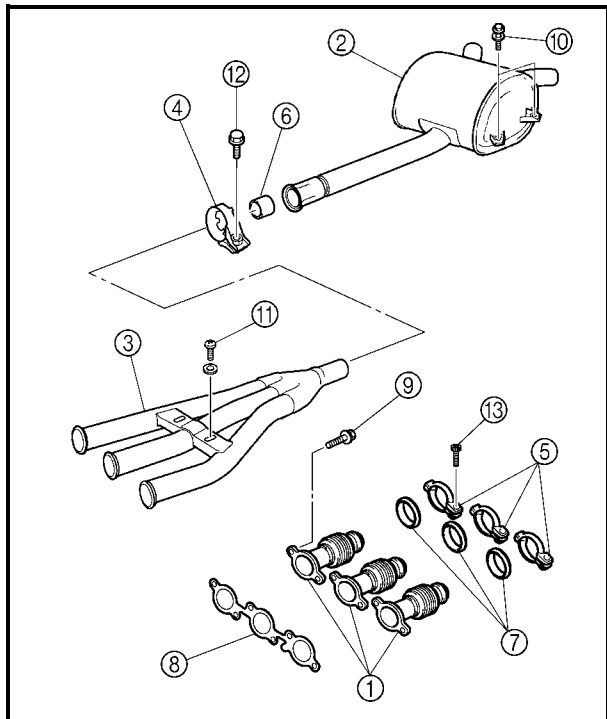
3. Clean:
 - Air filter element

NOTE: _____

Remove the snow.


4. Inspect:
 - Air filter element
Damage/clogs → Replace.

5. Install:
- Air filter element
 - Air filter
 - Air filter case cover



EXHAUST SYSTEM INSPECTION

1. Remove:
- Seat
 - Fuel tank
- Refer to “SEAT AND FUEL TANK” in CHAPTER 5.
2. Inspect:
- Exhaust joints ①
 - Muffler ②
 - Exhaust pipe ③
 - Muffler band ④
 - Exhaust pipe bands ⑤
- Cracks/damage → Replace.
- Gasket ⑥
 - Gaskets ⑦
 - Gasket ⑧
- Exhaust gas leaks → Replace.
3. Inspect:
- Tightening torque

	<p>Exhaust joint bolt ⑨: 25 Nm (2.5 m · kg, 18 ft · lb)</p> <p>Muffler bolt ⑩: 16 Nm (1.6 m · kg, 11 ft · lb)</p> <p>Exhaust pipe bolt ⑪: 25 Nm (2.5 m · kg, 18 ft · lb)</p> <p>Muffler band bolt ⑫: 20 Nm (2.0 m · kg, 14 ft · lb)</p> <p>Exhaust pipe band bolt ⑬: 9 Nm (0.9 m · kg, 6.5 ft · lb)</p>
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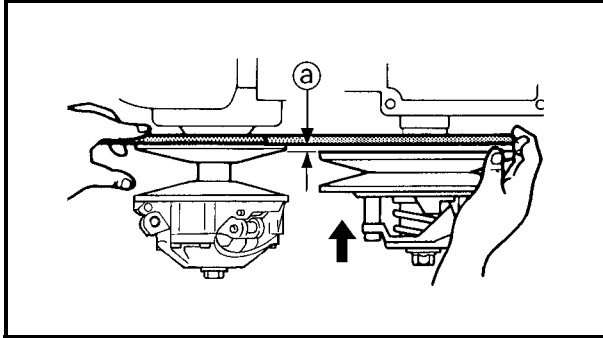
4. Install:
- Fuel tank
 - Seat
- Refer to “SEAT AND FUEL TANK” in CHAPTER 5.

POWER TRAIN SHEAVE OFFSET ADJUSTMENT

1. Lift up the shroud.
2. Remove:
 - Left side cover
Refer to "PRIMARY SHEAVE AND DRIVE V-BELT" in CHAPTER 4.
3. Remove:
 - Drive V-belt
4. Measure:
 - Sheave offset [Ⓐ]

Use a straightedge that is approximately 470 mm (18.5 in) long, 20 mm (0.79 in) wide, and 4 mm (0.16 in) thick.

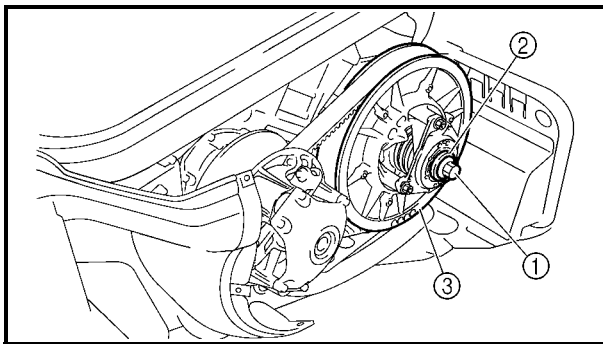
Out of specification → Adjust.





Sheave offset:
13.5 ~ 16.5 mm (0.53 ~ 0.65 in)

NOTE: _____
Push the secondary sheave inward towards the frame, and then measure the sheave offset.

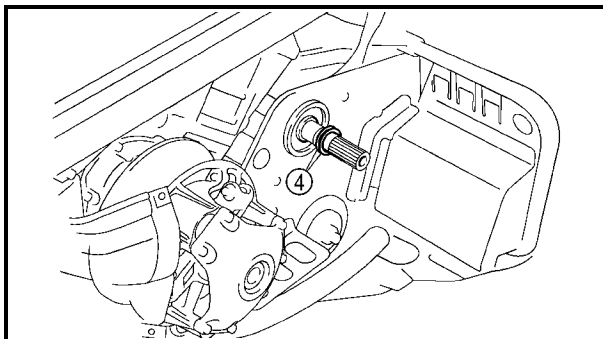


5. Adjust:
 - Sheave offset

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt (secondary sheave) ①, washer ② and secondary sheave ③.
- Adjust the sheave offset by adding or removing shim(s) ④.

Adding shim → Offset is increased.
Removing shim → Offset is decreased.



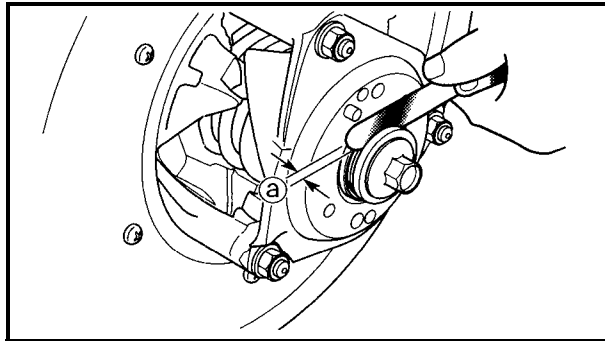
Shim size	
Part number	Thickness
90201-252F1	0.5 mm (0.02 in)
90201-25527	1.0 mm (0.04 in)
90201-25289	1.6 mm (0.06 in)
90201-25526	2.0 mm (0.08 in)

- Install the secondary sheave, bolt (secondary sheave) and washer.

	Bolt (secondary sheave): 64 Nm (6.4 m · kg, 46 ft · lb)
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------


- Recheck the sheave offset. If out of specification, repeat the above steps.

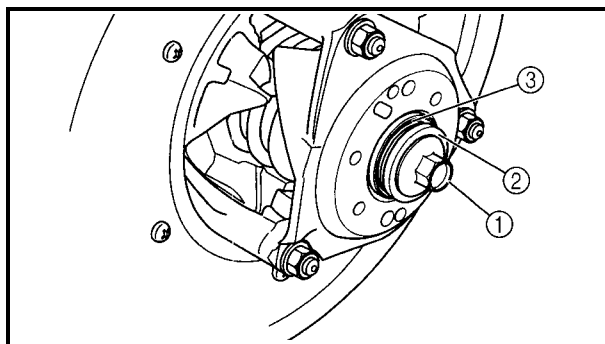
NOTE: _____
 When adjusting the sheave offset, the secondary sheave free play (clearance) should be adjusted.



6. Measure:

- Secondary sheave free play (clearance) ①
 Use a feeler gauge.
 Out of specification → Adjust.

	Secondary sheave free play (clearance): 1.0 ~ 2.0 mm (0.04 ~ 0.08 in)
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------



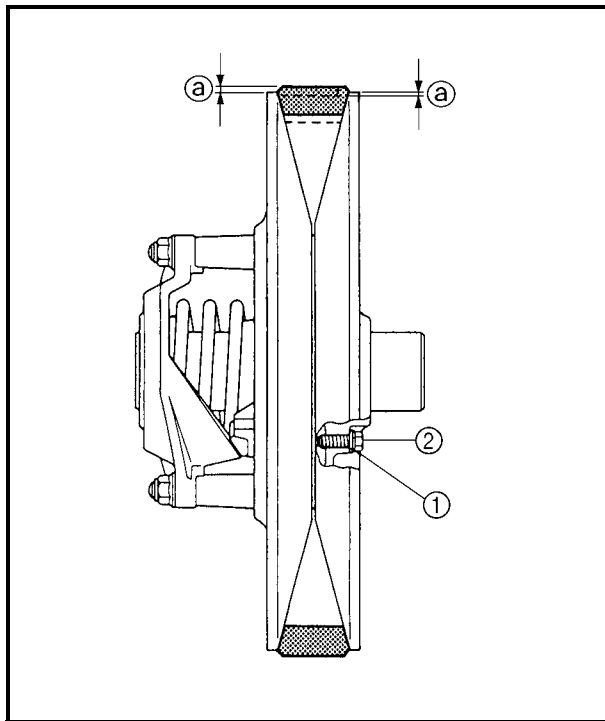
7. Adjust:

- Secondary sheave free play (clearance)

Adjustment steps:

- Apply the brake to lock the secondary sheave.
- Remove the bolt ① and washer ②.
- Adjust the secondary sheave free play (clearance) by adding or reducing a shim(s) ③.

Shim size	
Part number	Thickness
90201-222F0	0.5 mm (0.02 in)
90201-225A4	1.0 mm (0.04 in)



DRIVE V-BELT

⚠ WARNING

When installing the new V-belt, make sure that it is positioned from 1.5 mm (0.06 in) above the edge of the secondary sheave to -0.5 mm (-0.02 in) below the edge ③.

If the V-belt is not positioned correctly, the clutch engagement speed will be changed. The machine may move unexpectedly when the engine is started.

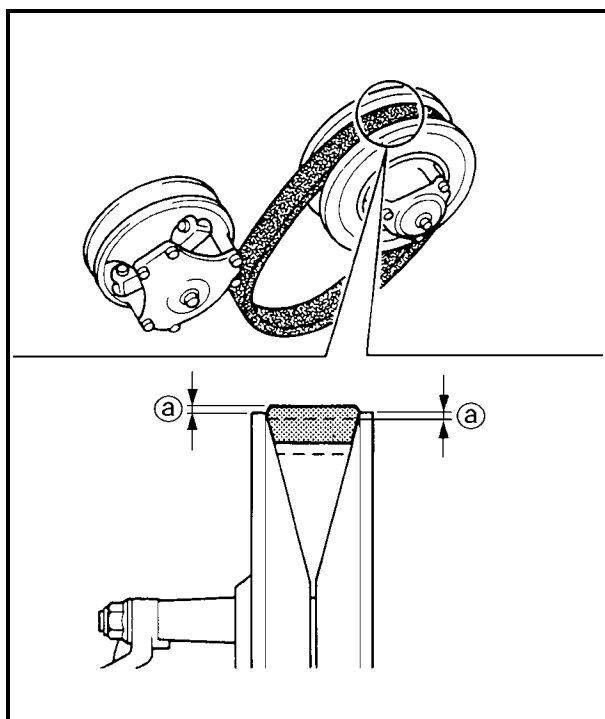
Adjust the V-belt position by removing or adding a spacer ① on each adjusting bolt ②.

CAUTION:

As the V-belt wears, adjustment may be necessary. To ensure proper clutch performance, the V-belt position should be adjusted by adding a spacer on each adjusting bolt when the V-belt position reaches 1.5 mm (0.06 in) below the edge.



New belt width:
34.5 mm (1.36 in)
Belt wear limit width:
32.5 mm (1.28 in)



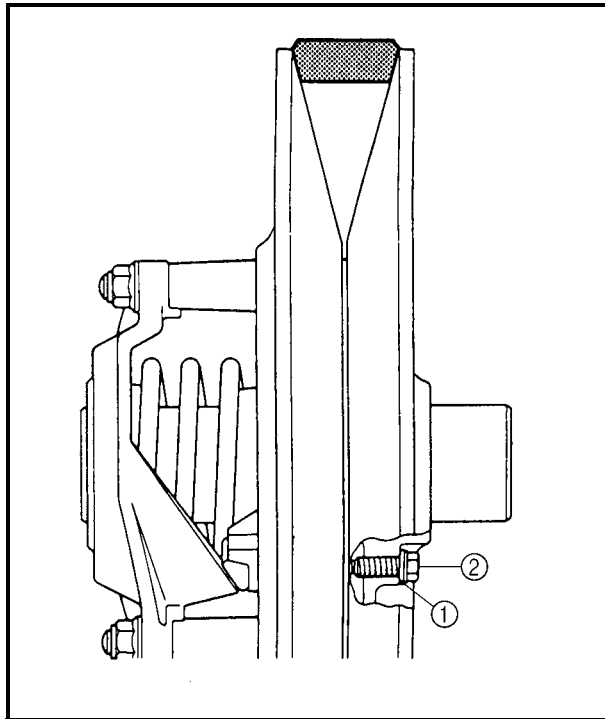
1. Measure:
 - V-belt position ③

NOTE:

Install the new V-belt onto the secondary sheave only. Do not force the V-belt between the sheaves; the sliding and fixed sheaves must touch each other.



Standard V-belt height:
-0.5 ~ 1.5 mm (-0.02 ~ 0.06 in)



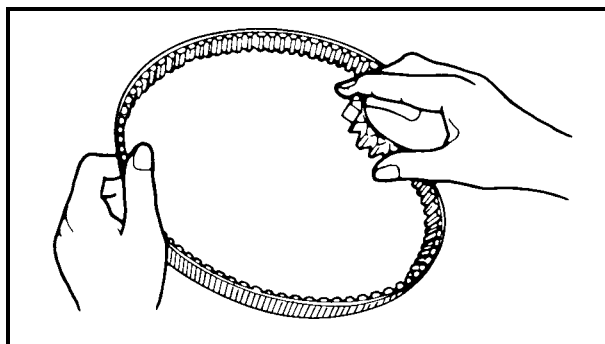
2. Adjust the position of the V-belt by removing or adding a spacer ① on each adjusting bolt ②.

V-belt position	Adjustment
More than 1.5 mm (0.06 in) above the edge	Remove a spacer
From 1.5 mm (0.06 in) above the edge to -0.5 mm (-0.02 in) below the edge	Not necessary (It is correct.)
More than -0.5 mm (-0.02 in) below the edge	Add spacer

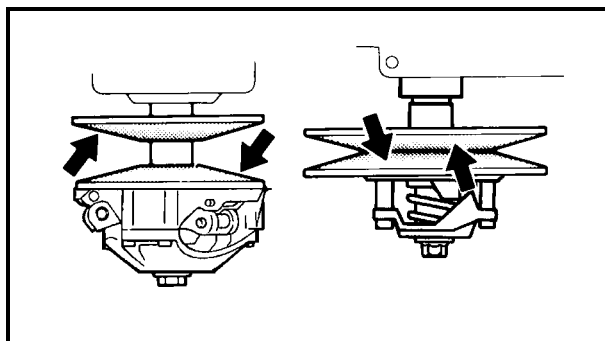
Part number	Thickness
90201-061H1	0.5 mm (0.02 in)
90201-06037	1.0 mm (0.04 in)

3. Tighten:
• Adjusting bolt ②

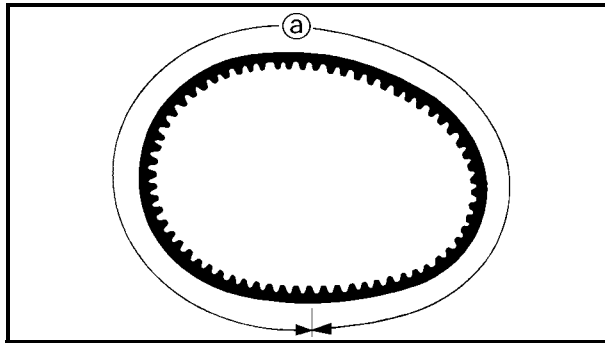
	Adjusting bolt: 10 Nm (1.0 m · kg, 7.2 ft · lb)
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4. Inspect:
• Drive V-belt
Cracks/damage/wear → Replace.
Oil or grease on the V-belt → Check the primary and secondary sheaves.



5. Inspect:
• Primary sheave
• Secondary sheave
Oil or grease on the primary and secondary sheaves → Use a rag soaked in lacquer thinner or solvent to remove the oil or grease.
Check the primary and secondary sheaves.



6. Measure:

- Drive V-belt circumference (a)
Out of specification → Replace.



V-belt circumference:
1,129 ~ 1,137 mm (44.4 ~ 44.8 in)

ENGAGEMENT SPEED CHECK

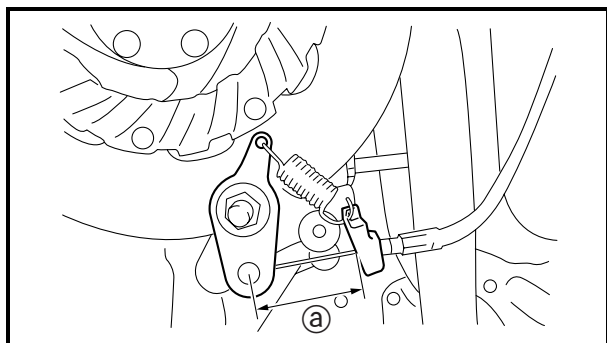
1. Place the machine on a level surface of hard-packed snow.
2. Inspect:
 - Clutch engagement speed

Inspection steps:

- Start the engine, and open the throttle lever gradually.
- Check the engine speed when the machine starts moving forward.
Out of specification → Adjust the primary sheave.



Engagement speed:
RS90/RS90R:
3,300 ~ 3,700 r/min
RSG90:
3,400 ~ 3,800 r/min
RS90M:
3,800 ~ 4,200 r/min
RST90 "For USA/Canada":
3,000 ~ 3,400 r/min
RST90 "For Europe"/RST90TF:
2,800 ~ 3,200 r/min



PARKING BRAKE ADJUSTMENT

1. Measure:

- Parking brake cable distance \textcircled{a}
Out of specification → Adjust.



Parking brake cable distance:
43.5 ~ 46.5 mm (1.713 ~ 1.831 in)

2. Adjust:

- Parking brake cable

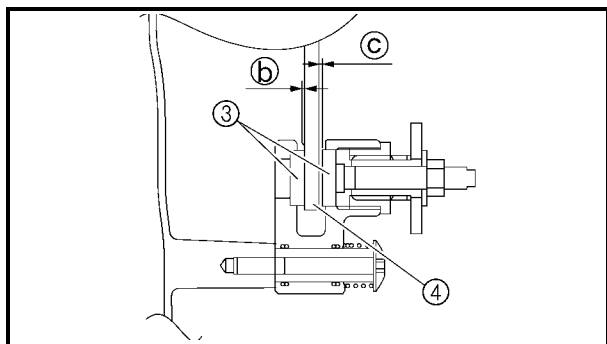
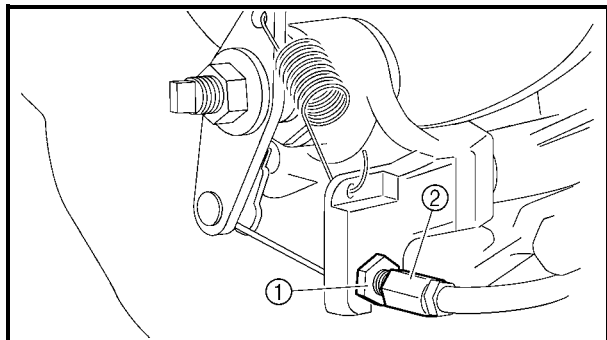
Adjustment steps:

- Loosen the locknut $\textcircled{1}$.
- Turn the adjuster $\textcircled{2}$ in or out until the specified distance \textcircled{a} is obtained.

Turning in → Distance \textcircled{a} is increased.

Turning out → Distance \textcircled{a} is decreased.

- Tighten the locknut.



3. Measure:

- Brake pad clearance ($\textcircled{b} + \textcircled{c}$)
Out of specification → Adjust.



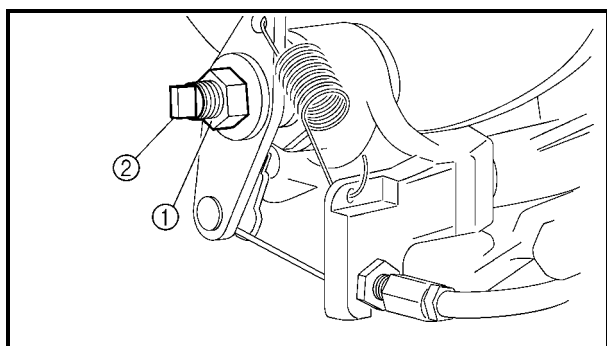
Brake pad clearance ($\textcircled{b} + \textcircled{c}$):
1.5 ~ 2.0 mm (0.059 ~ 0.079 in)

4. Adjust:

- Brake pad clearance

Adjustment steps:

- Loosen the locknut $\textcircled{1}$.
- Turn the adjuster $\textcircled{2}$ in or out until the specified clearance between the brake pad $\textcircled{3}$ and brake disc $\textcircled{4}$ is obtained.
- Tighten the locknut.

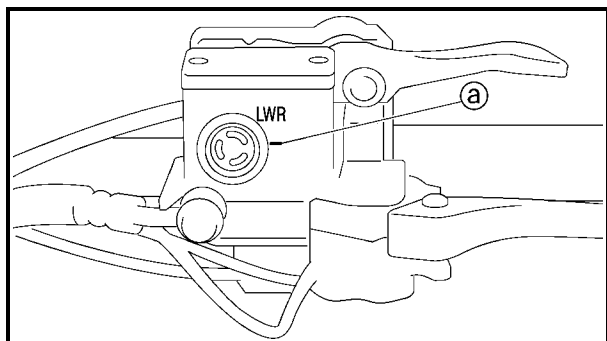


BRAKE FLUID LEVEL INSPECTION

1. Place the machine on a level surface.

2. Check:

- Fluid level
Fluid level is under the lower level line \textcircled{a} →
Fill to the proper level.



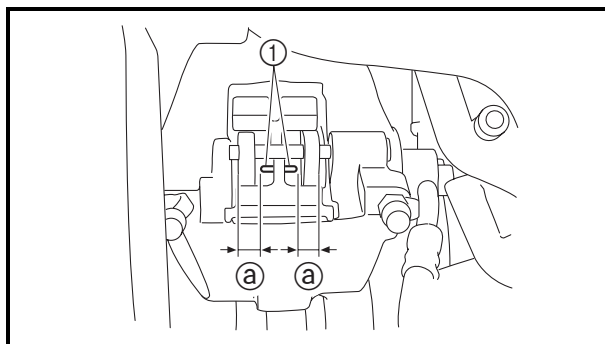
Recommended brake fluid:
DOT 4

NOTE: _____
For a correct reading of the brake fluid level, make sure that the top of the handlebar brake master cylinder reservoir is horizontal.

CAUTION: _____
Brake fluid may corrode painted surfaces or plastic parts. Always clean up spilled fluid immediately.


WARNING _____

- Use only the designated brake fluid. Other fluids may deteriorate the rubber seals, causing leakage and poor brake performance.
- Refill with the same type of fluid. Mixing fluids may result in a harmful chemical reaction leading to poor brake performance.
- When refilling, be careful that water does not enter the brake master cylinder reservoir. Water will significantly lower the boiling point of the fluid and may cause vapor lock.



BRAKE PAD INSPECTION

1. Apply the brake lever.
2. Inspect:
 - Brake pad wear @
Wear indicator ① nearly contacts the brake disc → Replace as a set.

 **Wear limit:**
7.5 mm (0.30 in)

BRAKE HOSE INSPECTION

1. Inspect:
 - Brake hose
Cracks/damage/wear → Replace.
2. Check:
 - Fluid leakage
Apply the brake lever several times.
Fluid leakage → Replace the defective parts.

AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)

⚠ WARNING

Bleed the brake system in the following cases:

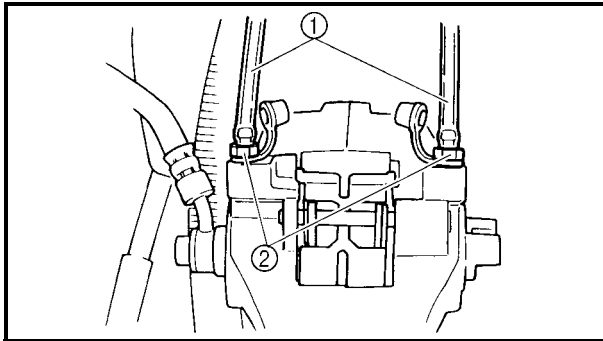
- The system has been disassembled.
- A brake hose is loosened or removed.
- The brake fluid has been very low.
- Brake operation is faulty.

If the brake system is not properly bled a loss of braking performance may occur.

1. Bleed:
 - Brake system

Air bleeding steps:

- a. Fill the brake master cylinder reservoir with the proper brake fluid.
- b. Install the diaphragm. Be careful not to spill any fluid or allow the brake master cylinder reservoir to overflow.
- c. Connect clear plastic hoses ① tightly to the brake caliper bleed screws ②.
- d. Place the other ends of the hoses in a container.
- e. Slowly apply the brake lever several times.
- f. Pull the lever in, then hold the lever in position.
- g. Loosen the bleed screws and allow the brake lever to travel towards its limit.
- h. Tighten the bleed screws when the brake lever limit has been reached, then release the lever.
- i. Repeat steps (e) to (h) until all of the air bubbles have disappeared from the fluid.
- j. Tighten the bleed screws.



Bleed screw:
6 Nm (0.6 m · kg, 4.3 ft · lb)

NOTE:

If bleeding is difficult, it may be necessary to let the brake fluid settle for a few hours.

Repeat the bleeding procedure when the tiny bubbles in the system have disappeared.

- k. Add brake fluid to the proper level.
Refer to “BRAKE FLUID LEVEL INSPECTION”.

⚠ WARNING

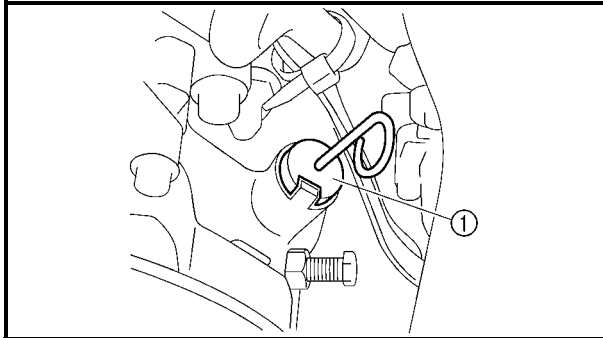
After bleeding the brake system, check the brake operation.

DRIVE CHAIN

Oil level inspection

⚠ WARNING

The engine and muffler will be very hot after the engine has run. Avoid touching a hot engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



1. Place the machine on a level surface.
2. Check:
 - Oil level

Checking steps:

- Remove the dipstick ① and wipe it off with a clean rag.
Then put the dipstick in the hole.

CAUTION:

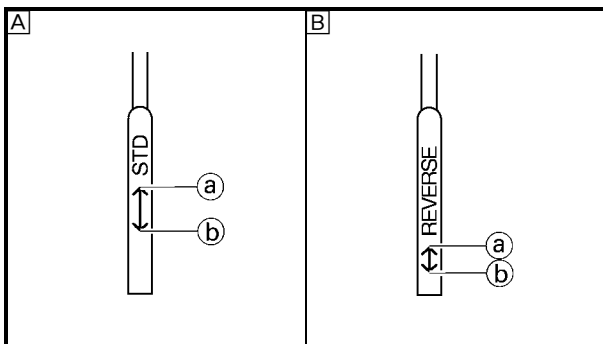
There is a magnet attached to the end of the dipstick. It is used to remove any metal particles that may accumulate in the drive chain housing.


Be sure to:

- Pull the dipstick out slowly and gently so the metal particles do not fall off the magnet back into the drive chain housing.
- Wipe off the magnet before reinserting the dipstick into the drive chain housing.

- Remove the dipstick and check that the oil is between the upper ③ and lower ④ levels. If not, add oil to the upper level.

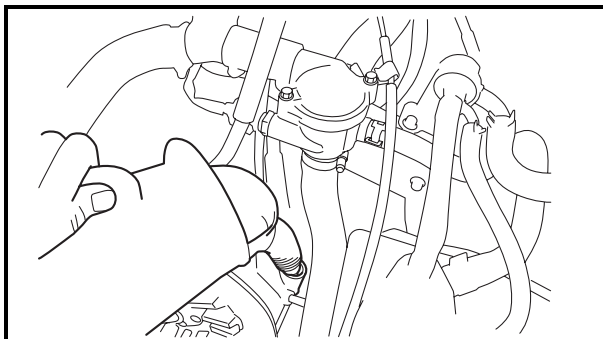
- Ⓐ For models without reverse transmissions (RS90/RS90M)
- Ⓑ For models with reverse transmissions (RS90R/RSG90/RST90/RST90TF)



	<p>Recommended oil: Gear oil "GL-3" 75W or 80W</p>
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CAUTION:

Make sure that no foreign material enters the drive chain housing.





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